

# Final (100%) Remedial Design Report

Waste-Stream, Inc. Site  
Potsdam, New York  
Site No. 6-45-022

August 2018



---

## Certification

I, Terry W. Young, certify that I am currently a New York State registered Professional Engineer and that this design was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.



8/27/2018

---

Terry W. Young, P.E.  
Principal Engineer

Date

## FINAL (100%) REMEDIAL DESIGN REPORT

Waste-Stream, Inc. Site  
Potsdam, New York

Prepared for:  
WSI Group

Prepared by:  
Arcadis of New York, Inc.  
One Lincoln Center  
110 West Fayette Street  
Suite 300  
Syracuse, New York 1320213202  
Tel 315 446 9120  
Fax 315 449 0017

Our Ref.:  
B0031006.0005 #10  
Date:  
August 2018

*This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.*

## CONTENTS

Certification.....	i
Acronyms and Abbreviations.....	iv
1 Introduction .....	1-1
1.1 Summary of Selected Remedy .....	1-1
1.2 Report Organization and Structure .....	1-4
1.3 Background Information.....	1-4
1.3.1 Site Location and Setting .....	1-4
1.3.2 Site History .....	1-5
1.4 Site Characterization .....	1-6
1.4.1 Site Topography and Drainage .....	1-6
1.4.2 Geology .....	1-7
1.4.3 Hydrogeology .....	1-7
1.4.4 Nature and Extent of Impacts.....	1-8
1.5 Remediation Objectives .....	1-10
2 Basis of Design .....	2-1
2.1 Design Components .....	2-1
2.1.1 Soil Excavation .....	2-1
2.1.2 Sediment Removal .....	2-2
2.1.3 Temporary On-Site Water Treatment System.....	2-2
2.1.4 Upland Restoration.....	2-3
2.1.5 On-Site Consolidation .....	2-3
2.1.6 Wetland Restoration .....	2-4
2.1.7 Storm Water Management .....	2-5
3 Organizational Structure and Responsibilities .....	3-6
3.1 WSI Group Responsibilities .....	3-7
3.2 Engineer Responsibilities .....	3-7
3.3 Contractor Responsibilities .....	3-8
4 Pre-Remedial Construction Activities.....	4-1
4.1 Citizen Participation .....	4-1

Final (100%) Remedial Design Report

4.2	Permitting .....	4-1
4.3	Building Demolition and Removal .....	4-2
4.4	Monitoring Well Decommissioning.....	4-2
4.5	Contractor Pre-Mobilization Submittals .....	4-2
4.6	Pre-Construction Conference .....	4-3
5	Remedial Construction Activities .....	5-4
5.1	Mobilization .....	5-5
5.2	Site Preparation .....	5-5
5.3	Vapor and Dust Monitoring and Control .....	5-7
5.4	Upland Soil Excavation .....	5-7
5.5	Sediment Removal.....	5-7
5.6	Material and Waste Handling.....	5-8
5.6.1	Soil/Sediment Transported Off-Site for Disposal .....	5-8
5.6.2	Soil/Sediment Consolidated On-Site .....	5-9
5.6.3	Water Management/Treatment .....	5-9
5.7	Upland Backfilling .....	5-10
5.8	Sediment Backfill and Wetland Restoration .....	5-10
5.9	Consolidation Area Construction .....	5-11
5.10	Upland Restoration .....	5-12
5.10.1	Soil Cover .....	5-12
5.10.2	Storm Water Management Controls.....	5-13
5.11	Project Close-Out.....	5-13
5.11.1	Decontamination.....	5-13
5.11.2	Survey .....	5-14
5.11.3	Demobilization .....	5-15
6	Post-Remedial Construction Activities .....	6-1
6.1	Final Engineering Report .....	6-1
6.2	Institutional Controls .....	6-1
6.3	Site Management Plan .....	6-2
6.4	Post-Remediation Monitoring .....	6-2
6.4.1	Groundwater Monitoring.....	6-3

Final (100%) Remedial Design Report

6.4.2	Wetland Monitoring.....	6-3
6.4.3	Biota Monitoring.....	6-3
7	Schedule .....	7-1
8	References.....	8-1

## FIGURE

- 1 WSI Property Limits

## APPENDICES

- A Design Drawings
- B Technical Specifications
- C Community and Environmental Response Plan
- D Community Air Monitoring Plan
- E Storm Water Pollution Prevention Plan
- F Verification Sampling Plan

## ATTACHMENTS (PROVIDED ELECTRONICALLY)

- 1 February 19, 2018 Self-Implementing Cleanup and Disposal Notification for PCB Remediation Waste
- 2 Risk-Based PCB Disposal Approval Request for PCB Remediation Waste (to be included as attachment to 100% Final RD)
- 3 Select RI Report Figures
- 4 October 27, 2015 PDI Letter Report
- 5 December 18, 2017 Supplemental Investigation Letter Report

## ACRONYMS AND ABBREVIATIONS

AST	aboveground storage tank
bgs	below ground surface
CAMP	Community Air Monitoring Plan
CERP	Community and Environmental Response Plan
CFR	Code of Federal Regulations
CLSM	Controlled Low-Strength Material
COC	constituent of concern
CP	Contingency Plan
cy	cubic-yard
DER	Division of Environmental Remediation
FS	Feasibility Study
FER	Final Engineering Report
gpm	gallon per minute
HASP	Health and Safety Plan
JAP	Joint Application Permit
LNAPL	light non-aqueous phase liquid
ug/L	microgram per liter
mg/kg	milligram per kilogram
NDA	northern drainage area
NWP	nationwide permit
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PDI	pre-design investigation
POP	Project Operations Plan
PRP	potentially responsible party
psf	pounds per square foot

## Final (100%) Remedial Design Report

QA/QC	quality assurance/quality control
RD	Remedial Design
RD/RA	Remedial Design/Remedial Action
RI	Remedial Investigation
ROD	Record of Decision
SCO	soil cleanup objective
SDA	southern drainage area
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SRI	Supplemental Remedial Investigation
SVOC	semi-volatile organic compound
SWPPP	Storm Water Pollution Prevention Plan
TSCA	Toxic Substances Control Act
UCS	unconfined compressive strength
USACE	United States Army Corp of Engineers
UST	underground storage tank
VOC	volatile organic compound
WQC	Water Quality Certification
WSI	Waste-Stream, Inc.
UCS	Unconfined Compressive Strength
USEPA	United States Environmental Protection Agency

## 1 INTRODUCTION

This draft Final (100%) *Remedial Design Report* (100% RD Report) has been prepared to support the implementation of the New York State Department of Environmental Conservation- (NYSDEC-) selected remedy for the Waste-Stream, Inc. (WSI) Site (the site) located in Potsdam, New York (Site No. 6-45-022). This 100% RD Report has been prepared on behalf of the WSI Group (consisting of Casella Waste Systems, Inc. (Casella), Niagara Mohawk Power Corporation d/b/a National Grid, Alcoa, Inc., and Reynolds Metals Company), pursuant to October 2013 Order on Consent and Administrative Settlement # A6-0798-12-10 (Remedial Design/Remedial Action [RD/RA] Order). Additionally, General Motors/Motors Liquidation Company is considered a potentially responsible party (PRP). However, GM is not an active part of the WSI Group and NYSDEC has been reimbursed from a settlement of liability from GM. The selected remedy to address environmental impacts identified at the site is presented in the June 2011 Record of Decision (ROD) (NYSDEC 2011).

This 100% RD Report has been prepared in accordance with the following documents:

- October 2013 Order on Consent
- June 2011 ROD
- NYSDEC Division of Environmental Remediation (DER) *Technical Guidance for Site Investigation and Remediation* (DER-10) (NYSDEC 2010b)
- NYSDEC-approved *RD/RA Work Plan* (Arcadis 2014)

### 1.1 Summary of Selected Remedy

The remedial component requirements are presented in the ROD. The NYSDEC-selected remedy for the site consists of the following:

- Excavating soil from off-site areas that contain volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and/or metals at concentrations greater than the lower of the ecological resource and residential use soil cleanup objectives (SCOs). Consolidating excavated material on-site beneath a soil cover.
- Excavating soil from on-site and off-site locations containing PCBs at concentrations greater than or equal to 50 milligrams per kilogram (mg/kg). Disposing excavated soil at an approved off-site facility.
- Excavating sediment from the off-site northern drainage area (NDA) and drainage channel that contains PCBs at concentrations greater than or equal to 50 mg/kg. Disposing excavated sediment at an approved off-site facility.
- Excavating sediment from both the on-site southern drainage areas (SDAs) (including SDA-1 through SDA-3) and off-site NDA that contains PCBs at concentrations between 1 and 50 mg/kg. Consolidating excavated sediment on-site beneath a soil cover.
- Backfilling on-site excavation areas with a minimum 24-inch thick layer of material that meets DER-10 and the lowest of the 6 New York Codes, Rules and Regulations (NYCRR) Part 375-6.7(d) protection



## Final (100%) Remedial Design Report

of ecological resources, restricted-residential or protection of groundwater SCOs. Backfilling off-site excavation areas with material that meets the lower of the 6 NYCRR Part 375-6.7(d) protection of ecological resources or residential use criteria for backfill. Excavations within 5 feet of the high groundwater elevation will be backfilled with material that meets 6 NYCRR Part 375-6.8 SCOs for the protection of groundwater.

- Maintaining a site cover consisting of driveways, parking/staging areas and buildings that currently exist and to allow for the current use of the site. If the site is redeveloped in the future, a site-wide cover system (i.e., areas beyond those addressed by the site cover described below) will be established and will consist of either structure (such as buildings, pavement, sidewalks) included as part of the site development or a soil cover in areas where the upper two feet of soil (i.e., exposed following redevelopment) will exceed the applicable SCOs. In areas where such a soil cover is required, it will consist of a minimum of 2 feet of soil that meets the SCOs for cover material, as set forth in 6 NYCRR part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper 6 inches of soil of sufficient quality to maintain a vegetative layer. Any fill material brought to the site will meet the requirements for the identified site use, as set forth in 6 NYCRR Part 375-6.7(d).
- Restoring delineated wetland areas SDA-3 and the NDA via importation and placement of appropriate fill materials, topsoil, wetland seed mixtures, shrubs, and trees to recreate natural conditions. As described in the December 19, 2014 NYSDEC ROD modification memorandum, SDA-1 and SDA-2 will be backfilled with riprap stone.
- Decommissioning existing monitoring wells and installing new monitoring wells both upgradient and downgradient from areas containing dissolved phase impacts to evaluate the effectiveness of the soil excavation activities.
- Constructing a cover over soil and sediment that is consolidated on-site and over any remaining on-site soil that contains constituents at concentrations greater than ecological resource or restricted residential SCOs, whichever is lower. The cover will have a minimum thickness of 24 inches of clean soil that meets 6 NYCRR Part 375-6.7(d) criteria and will consist of clean soil underlain by a demarcation layer. The top 6 inches of soil will be of sufficient quality to support vegetation. Soil and sediment placed in the consolidation area must be placed on a filter fabric (to limit migration of fine-grained materials and serves a bottom demarcation layer) at least 5 feet above the seasonally high groundwater table. Working areas including roadways and parking lots, where constituents exceed the ecological resource SCOs will be covered by either pavement or concrete that is a minimum of 6 inches thick.
- Imposing an institutional control in the form of an environmental easement that will require:
  - Limiting the use and development of the property to restricted residential use, which also permits industrial use.
  - Compliance with an NYSDEC-approved Site Management Plan (SMP).
  - Restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) and/or the St. Lawrence County Department of Health.

## Final (100%) Remedial Design Report

- Prevention of current or future property owners from conducting activities that will potentially jeopardize the integrity of the soil cover.
- Periodic sampling of the water supply wells to monitor water quality and continued supply of an alternative source of potable water to affected parties
- Preparing a periodic certification of institutional and engineering controls which will be submitted to the NYSDEC and NYSDOH.
- Developing an SMP that will include the following institutional and engineering controls:
  - Management of the cover to restrict excavation below the cover's demarcation layer, pavement, or buildings.
  - Excavated soil will be tested, properly handled to protect the health and safety of workers and the nearby community and will be properly managed in a manner acceptable to the NYSDEC.
  - Continued evaluation of the potential for soil vapor intrusion for any new buildings development on the site, including provision for mitigation of any identified impacts.
  - Periodic monitoring of groundwater, surface water, sediment, and wetland vegetation and restoration efforts.
  - Biennial biota monitoring that includes submitting biota samples for PCBs and lipids content.
  - Identification of any use restrictions at the site.
  - 6-foot tall galvanized steel chain link fencing surrounding the soil cover to control site access.
  - Provisions for the continued operation and maintenance of the selected remedy.
- Providing periodic certification (by the property owner) of institutional and engineering controls, prepared and submitted by a professional engineer or such expert acceptable to NYSDEC, until NYSDEC notifies the property owner in writing that certification is no longer needed. This submittal will:
  - Contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with NYSDEC-modifications.
  - Allow NYSDEC access to the site.
  - State that nothing has occurred that will impair the ability of the control to protect public health or the environment or constitute a violation or failure to comply with the site management plan unless otherwise approved by NYSDEC.

Arcadis prepared and submitted an August 18, 2017 to the United States Environmental Protection Agency (USEPA) presenting a modified remedial approach for the Site including the relocation of scrapyards operations to facilitate low occupancy future use of the site. In a November 13, 2017 correspondence, the USEPA agreed that the upland areas of the Site can be remediated for low-occupancy future use under the self-implementing regulations presented in 40 CFR Part 761.61(a). In response, Arcadis submitted a self-implementing cleanup and disposal notification to the USEPA on February 18, 2018 (Attachment 1). Based on the requirements for performing a self-implementing clean-

## Final (100%) Remedial Design Report

up for low occupancy future site use, the WSI Group isn't required to cap soil containing PCBs at concentrations of 50 ppm or less (because the Site will be fenced, and signage will indicate the presence of PCBs). Therefore, the soil cover component of the upland remedy proposed herein is more protective than the TSCA self-implementing cleanup requirements.

Based on applicability restriction presented in 40 CFR 761.61(a), USEPA noted in their November 13, 2017 correspondence that cleanup sediments required a risk-based approval from USEPA. A risk-based PCB disposal approval request for PCB remediation waste was submitted to the USEPA in April 2018 and a copy of this letter is included as Attachment 2.

### 1.2 Report Organization and Structure

The 100% RD Report, the associated Design Drawings, Technical Specifications, and supporting documents will be collectively referred to as the Remedial Design. This 100% RD Report is supported by Design Drawings (included as Appendix A), Technical Specifications (included as Appendix B), and supporting documents consisting of the following:

- *Community and Environmental Response Plan (CERP)*, Appendix C – presents a summary of the site monitoring and work practices that will be completed to address potential short-term impacts to the surrounding community and/or environmental resources.
- *Community Air Monitoring Plan (CAMP)*, Appendix D – describes the monitoring activities that will be conducted to monitor for potential airborne releases of constituents of concern during the implementation of remedial construction activities.
- *Storm Water Pollution Prevention Plan (SWPPP)*, Appendix E – describes the sedimentation and erosion control measures, as well as general site practices, to be implemented during the implementation of the remedial construction activities.
- *Verification Sampling Plan (VSP)*, Appendix F – describes verification sampling rationale/locations, procedures, and collection methodology.

### 1.3 Background Information

This section presents a summary of site background information, including a description of the site location and physical setting, as well as a brief site history.

#### 1.3.1 Site Location and Setting

The WSI site consists of several parcels that have historically been referred to as the on-site and off-site areas for the purposes of this project. The on-site area consists of the property identified as 147 Maple Street (U.S. Route 11), in the Town of Potsdam, St. Lawrence County, New York and was formally known as the WSI scrapyard property. The property includes upland areas and the wetlands located in the southern portion of the property (referred to as Southern Drainage Areas SDA-2 and SDA-3). The off-site area consists of the undeveloped property to the east of the on-site area, comprised of upland areas, the wetlands referred to as the Northern Drainage Area (NDA), and the drainage swale that conveys storm

water from the on-site area to the NDA. The off-site area also includes the CSX Transportation, Inc. railroad property that includes SDA-1.

The approximately 29.2-acre property is comprised of two parcels currently occupied by several structures, including a scale house, vehicle maintenance building, office building, storage barn, a solid waste transfer station and above ground fuel storage tank area, and various outbuildings. As described in Section 4, existing above grade structures are anticipated to be demolished and removed prior to remedial construction activities.

In 2011, Casella purchased an approximately 58-acre portion of the NDA from Potsdam Hardwood, Inc. (Potsdam Hardwood). Ownership of an approximately 14-acre portion of the NDA (i.e., northern most portion) was transferred to Lavalley Realty, Inc. and the remaining 44 acres was retained by Casella. The current extent of Casella-owned property is shown on Figure 1.

The WSI scrapyard property (on-site) is bordered to the north by an industrial facility, undeveloped land to the east (off-site), Route 11 to the south, and a lightly developed property to the west. In addition, the division between the Town of Potsdam and the Village of Potsdam extends along the eastern property boundary, and an active CSX rail line extends across the southern portion of the site, of which WSI owns property to the north and south of the transecting rail line.

### **1.3.2 Site History**

The former WSI scrapyard property is the location of a metal recycling and scrapyard business that has operated since approximately 1957. The facility initially operated as Chet Bisnett, Inc., until the company merged with B&C Carting in 1987. The resulting company was renamed Waste Stream Management, Inc. (WSMI). WSMI was subsequently renamed WSI and has operated the site from 1987 until the present. In 1998, WSI became a wholly owned subsidiary of Casella Waste Systems, Inc.

Prior to the mid-1960s, operations were primarily conducted within the southern portion of the property. During the period between the mid-1960s and mid-1970s, facility operations expanded to the north (extending just north of the solid waste transfer station). Site activities conducted during this period reportedly included tin press operations, metal shearing, car crushing, and scrap metal processing. During this period, the facility reportedly processed electrical transformers that contained PCB-containing dielectric fluids (i.e., mineral oil). The transformers were reportedly drained for subsequent recycling/wire recovery. The transformer recycling/wire recovery activities were conducted in an area north of the tin press operation. During the period between the mid-1960s and mid-1970s, the facility also reportedly processed scrap manufacturing equipment that had fluid reservoirs with PCB-containing oils. The manufacturing equipment that was brought to the site during this period was staged and processed (including disassembly and cutting) in an area southwest of the vehicle maintenance building. Between the mid-1970s and the present, scrapyard operations expanded to the north into the current operating area. A municipal solid waste transfer station was constructed at the WSI scrapyard property in the mid-1980s. The solid waste transfer station has not operated since November 2001.

Throughout the history of site operations, several aboveground and underground storage tanks (ASTs and USTs, respectively) have been in service at the facility. Petroleum product storage at the site included fuel oil and kerosene for heating purposes and gasoline and diesel for vehicles and equipment. The USTs were reportedly closed prior to April 1991 and May 1996. The ASTs were reportedly closed in

1995 and 1996. In addition to the closed petroleum storage tanks listed above, a 20,000-gallon diesel aboveground storage tank (AST) and a 10,000-gallon gasoline AST were previously located near the northeast corner of the storage barn. These tanks were subsequently relocated into a secondary containment structure, south of the storage barn in the southeast corner of the property, where they are presently located. The 10,000-gallon gasoline tank was reportedly converted to diesel storage at the time the tank was relocated to the secondary containment structure.

Over the past several years, WSI has relocated the majority of operations from the site. Scrap handling operations were conducted in accordance with a Site Operations Plan that addressed worker health and safety during typical site operations. Other activities currently conducted at the site included periodic use of the vehicle maintenance building. Additionally, office and clerical staff continue to occupy the office building located in the southern portion of the site.

## 1.4 Site Characterization

This section presents an overall site characterization and a summary of the nature and extent of impacted media at the site based on the results obtained for the site investigation activities and remedial measures completed to date, which include the following:

- Scrap equipment and soils remediation (1989-1992)
- NYSDEC sediment sampling (1992)
- Golder Associates – Due Diligence Site Assessment (1998)
- Spectra Engineering – Due Diligence Site Assessment (1998)
- InteGreyted – Focused Remedial Investigation/Feasibility Study (RI/FS) (1999)
- Arcadis (formerly Blasland, Bouck & Lee, Inc. [BBL]) – Focused Remedial Investigation (2001/2002)
- Arcadis – Supplemental Remedial Investigation (2005)
- Arcadis – Pre-Design Investigation (PDI) (2014-2015)
- Arcadis – Supplemental Investigation (2017)

### 1.4.1 Site Topography and Drainage

Surface topography in the vicinity of the site is relatively flat, with elevations ranging from approximately 427 feet to 439 feet above mean sea level. Storm water from the property is conveyed from the WSI property to adjacent low-lying areas. Three on-site drainage areas located in the southern portion of the WSI scrapyards property (SDA-1 through SDA-3) are the primary surface water features present on-site. SDA-2 and SDA-3 receive surface drainage from most of the central and southwestern portions of the WSI scrapyards property. SDA-2 also receives drainage from areas located hydraulically upgradient (west) of the WSI scrapyards property. Surface water from SDA-2 and SDA-3 is conveyed through a subsurface drainage pipe that extends from west to east beneath the southern portion of the WSI scrapyards property. The pipe discharges to a drainage swale that conveys water to the NDA, located approximately 450 feet northeast of the on-site area. Where drainage from SDA-2 flows into the pipe, the pipe consists of a 32-inch diameter corrugated metal pipe. At some point along the pipe (prior to discharging into the drainage

swale), the pipe diameter increases to 36-inches. The drainage pipe was reportedly installed after 1975 within (or along the approximate path of) an open drainage ditch that previously conveyed surface drainage across the site. As observed during the PDI, the drainage pipe consists of sections of corrugated metal pipe and smooth metal pipe.

## 1.4.2 Geology

The WSI site is located within the St. Lawrence Hills subdivision of the Champlain Lowland physiographic province. Subsurface conditions encountered at the site consist of approximately 30 to 50 feet of overburden overlying sandstone and limestone bedrock.

The overburden generally consists of a heterogeneous mixture of glacio-fluvial silts, sands, and gravels (fine sand unit). A finer-grained silty clay layer (silt and clay unit) was encountered below the fine sand unit across the majority of the site at depths of approximately 1.5 to 10 feet below grade, with a thickness ranging from approximately 2 to 6 feet. The silt and clay unit appear to be relatively continuous across the western and central portions of the site, though the silt and clay layer was not typically encountered in soil borings located along the eastern property boundary. Where present, the upper surface of the silt and clay layer is generally highest in the central portion of the site (near monitoring well MW-202) and slopes downward to the north-northeast and south-southeast, generally following the land surface contours.

Additionally, a sand and gravel unit was encountered below the silt and clay unit in the central and northern portion of the site. The top of the sand and gravel unit was encountered at depths of approximately 6 to 10 below grade.

## 1.4.3 Hydrogeology

Shallow groundwater is encountered at depths between one and six feet below grade. Additionally, a shallow groundwater mound was observed in the central portion of the site, near monitoring well MW-202, coinciding with the silt and clay layer (which is highest in this portion of the site). The low vertical permeability in the silt and clay layer suggests that groundwater flow above the silt and clay layer is predominately horizontal and downward groundwater flow is inhibited, causing the localized mounding.

The direction of shallow groundwater flow varies across the site largely due to the effects of the discontinuous silt and clay unit (described above) and influences of the drainage swale that conveys surface water from the SDA to the north drainage areas. The high elevation of the silt and clay layer in the vicinity of MW-202 causes a shallow groundwater divide in this portion of the site. Groundwater flows towards the north-northeast and south-southeast from this area. A groundwater depression extends along the on-site drainage ditch (SDA-2) and the subsurface drainage pipe that extends across the southern portion of the property, which indicates that the drainage swale and drainage pipe may serve as a groundwater drain. Groundwater discharges towards the south-southeast direction (from the mounded groundwater near MW-202) and towards the north-northeast direction (from the area south of the drainage ditch). The average linear velocity for groundwater flowing in the north-northwest direction ranges from  $5.4 \times 10^{-3}$  ft/day (2 ft/year) to  $4.5 \times 10^{-2}$  ft/day (16 ft/year). The average linear velocity for groundwater flowing in the south-southeast direction is 0.14 ft/day (50 ft/year).

Regional deep groundwater flow is generally to the north-northwest, toward the St. Lawrence River. Groundwater within deep overburden at the site flows towards the southeast with an estimated average

linear velocity of approximately  $2.3 \times 10^{-3}$  ft/day (0.83 feet/yr). The WSI property does not overlie a primary or principal aquifer.

#### 1.4.4 Nature and Extent of Impacts

The nature and extent of these COCs in soil, groundwater, surface water and sediment at the site is summarized below. Additional site characterization information based on the PDI and Supplemental Investigation is incorporated in this section and in Section 2, as appropriate, and is supported by the following:

- Select figures from the Focused Remedial Investigation Report (Focused RI Report) (BBL 2003) (included as Attachment 3).
- the October 27, 2015 PDI Letter Report (Arcadis 2015) (included as Attachment 4).
- the December 18, 2017 Supplemental Investigation Summary Letter Report (Arcadis 2017) (included as Attachment 5).

Based on the results of these investigations, PCBs are the primary constituent of concern (COC) in surface and subsurface soil and sediment at the site. Additional COCs include VOCs (in groundwater), SVOCs (primarily polynuclear aromatic hydrocarbons [PAHs]) and inorganic constituents. Individual COCs are listed in the following table (as presented in the ROD).

**Table 1.1 Constituents of Concern**

Parameter Group	COCs
PCBs	PCBs
VOCs	benzene, toluene, ethylbenzene, xylene (mixed), 1,2-dichloroethane, vinyl chloride
SVOCs	anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, diebenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, bis(2-ethylhexyl)phthalate
Inorganics	copper, lead, mercury

As described in previously project documents, the nature and extent of site impacts includes the following:

- PCBs were detected at concentrations greater than the 1 mg/kg 6 NYCRR Part 375-6 restricted use SCO for the protection of ecological resources at surface and subsurface soil sampling locations throughout on-site portion of the site, as well as off-site areas immediately east of the on-site area.
- In the on-site area (and immediately south of the on-site area), PCBs were detected concentrations greater than or equal to the 50 mg/kg Toxic Substance Control Act- (TSCA-) regulated/New York State (NYS) hazardous waste regulatory level.

## Final (100%) Remedial Design Report

- SVOCs and inorganic constituents are also present in surface and subsurface soil in on-site and off-site areas. In most instances, sampling locations where SVOCs or inorganic constituents were detected coincided with locations where PCBs were detected at concentrations greater than 1 mg/kg. At select locations, soil samples only contained elevated levels of SVOCs or inorganics in the off-site area.
- Light non-aqueous phase liquid (LNAPL) was initially encountered in monitoring well MW-207 during the 2003 groundwater sampling event. Approximately one gallon of LNAPL was removed from the well and submitted for laboratory analysis for total petroleum hydrocarbons. Laboratory analysis indicated that the LNAPL sample consisted of an unknown hydrocarbon that did not match the characteristics of fuel oil, gasoline, or lube oil. LNAPL has not been observed in monitoring well MW-207 or any other site monitoring wells to date since 2003.
- During the June 2001 sampling event, PCBs were detected in groundwater at concentrations greater than the New York State Class GA groundwater standards and guidance values presented in the NYSDEC Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1) document titled, *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (NYSDEC 2004). Analytical results for the follow-up sampling (using low-flow techniques) indicated detectable concentrations of PCBs at MW-206 only (1.2 ug/L). During an April 2003 sampling event, both an unfiltered and filtered sample were collected and submitted for laboratory analysis. Results obtained for the analysis of the unfiltered and filtered sample collected at monitoring well MW-206 indicated PCB concentrations of 1.1 and 0.29 ug/L, respectively.
- SVOCs were detected in groundwater at concentrations exceeding New York State Class GA standards and guidance values in samples collected from three groundwater monitoring wells during June 2001 (MW-206, MW-207, and MW-209). Pentachlorophenol was detected in the April 2003 sample collected from MW-207 at a concentration that exceeded NYSDEC Class GA standards and guidance values. However, the concentration of pentachlorophenol detected in the April 2003 sample (18 ug/l) was much less than the result that was reported for the June 2001 sample (700 ug/l). Monitoring well MW-207 is located in close proximity to a treated wood pole which could potentially be a source for the pentachlorophenol detected at this location.
- VOCs were detected at concentrations exceeding Class GA groundwater standards and guidance values in groundwater samples collected during 2001 from three shallow groundwater monitoring wells (i.e., MW-203, MW-204, and MW-209). The source of the low concentrations of VOCs detected at MW-203 and MW-204 is not known. Eight temporary wells (TW-1 through TW-8) were installed in April 2003 in the vicinity of monitoring well MW-209 to further investigate the presence of VOCs in groundwater near the former AST area. The groundwater sampling results indicate that benzene, toluene, ethylbenzene and xylene (BTEX) groundwater impacts are localized to the former AST area and do not extend beyond the WSI property to the east.
- PCBs were detected at concentrations exceeding the NYSDEC Class A surface water quality standard (i.e., 0.09 ug/l) in two surface water samples, including one sample collected at the outfall of the drainage pipe that extends beneath the site and one sample collected from the drainage swale near the point where the swale flows into the NDA. VOCs and SVOCs were also detected at the downgradient surface water sampling location near the drainage pipe outfall (i.e., at the eastern property boundary) at concentrations that slightly exceeded NYSDEC Class A surface water



standards and guidance values. As PCBs do not readily dissolve in water, the detected PCB concentrations are likely associated with PCBs sorbed to suspended solids in the water.

- The sediment investigation results indicate that PCBs are the primary COC in sediment in SDA-1 through SDA-3, the drainage swale that flows to the NDA, and within the NDA. Note that analytical results for SVOCs and inorganics that exceeded the sediment screening values were collocated with sampling locations containing PCBs at concentrations greater than screening values. Sediment samples collected from the drainage swale contained PCBs at concentrations greater than or equal to the 50 mg/kg TSCA-regulated/NYS hazardous waste regulatory level. The highest concentrations of PCBs (greater than 50 mg/kg) in sediment within the NDA generally coincide with areas of lower elevation and lower surface water velocity where PCB-containing suspended solids settled out of the water column.

## 1.5 Remediation Objectives

As presented in the NYSDEC ROD, the selected remedy must eliminate or mitigate all significant threats to public health and/or the environment. To achieve this goal, the following remediation objectives have been established for the site.

### Groundwater

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.
- Restore the groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of groundwater or surface water contamination.

### Soil

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.
- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

### Surface Water

- Prevent ingestion of water impacted by contaminants.
- Prevent contact with contaminants from impacted water bodies.
- Prevent surface water contamination that may result in fish advisories.
- Restore surface water to ambient water quality criteria for the contaminant of concern.
- Prevent impacts to biota from ingestion/direct contact with surface water causing toxicity and impacts from bioaccumulation through the marine or aquatic food chain.

## Final (100%) Remedial Design Report

### Sediment

- Prevent direct contact with contaminated sediments.
- Prevent surface water contamination which may result in fish advisories.
- Prevent releases of contaminant(s) from sediments that would result in surface water levels in excess of ambient water quality criteria.
- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the marine or aquatic food chain.
- Restore sediment to pre-release/background conditions, to the extent feasible.

## 2 BASIS OF DESIGN

This section describes the process and tools that were used to identify the scope and extent of the required remedial components.

### 2.1 Design Components

As indicated in Section 1.1, the primary remedial components of the site remedy consist of:

- Excavation of soil and sediment.
- Off-site transportation and disposal of material containing PCBs at concentrations greater than 50 mg/kg.
- Backfilling the excavation areas.
- On-site consolidation of excavated soil and sediment containing PCBs at concentrations less than 50 mg/kg (and/or SVOCs, VOCs, or inorganics at concentrations greater than the lower of protection of ecological resource or residential use SCOs) will be consolidated on-site.
- Restoration of the disturbed wetlands.
- Installation of a soil cover.

The basis of design for the major design components of the site remedy are described in the following subsections.

#### 2.1.1 Soil Excavation

The soil excavation limits presented in this remedial design have been established to meet the site-specific goals for the on-site and off-site portions of the site, as presented in Section 1.1 of this 100% RD Report and in the NYSDEC ROD. The vertical and horizontal extent of soil removal was initially estimated based on the analytical results for RI soil samples collected from 2001 to 2003 and refined based on the analytical results for 2014-2015 PDI and 2017 supplement investigation soil samples. The soil excavation areas are presented on Design Drawing C-101 (Appendix A). The results of these investigations are summarized on RI figures, an October 27, 2015 PDI summary letter, and a December 18, 2017 Supplemental Sampling letter report which are included as Attachments 3, 4 and 5, respectively.

In addition to existing site data, verification sampling will be conducted during remedial construction to verify that:

- At on-site removal areas:
  - Each verification soil sample will be analyzed for PCBs. Analytical results will be compared to the 50 mg/kg on-site soil removal criteria.
- At off-site removal areas:
  - Verification soil samples will be analyzed for the COCs (i.e., PCBs, inorganics, SVOCs) that are the basis for the soil excavation at the given area. Analytical results will be compared to the 1

mg/kg PCB off-site soil removal criteria or the lower of the ecological resource or residential use SCOs for inorganics and/or SVOCs (as applicable).

- Select verification soil samples will also be analyzed for BTEX compounds in removal area 1-22 where BTEX compounds were detected in Remedial Investigation samples at concentrations greater than NYSDEC Part 375 Protection of Groundwater SCOs.

The soil verification sampling protocols and proposed sampling locations are presented in Verification Sampling Plan (Appendix F). As indicated in Section 1, most sampling locations where SVOCs or inorganic constituents were detected coincided with locations where PCBs were detected at concentrations greater than 1 mg/kg. During the PDI, additional soil delineation samples only contained inorganics at concentrations exceeding ecological resource or residential use SCOs at select locations (and elevated concentrations of SVOCs at one location only) (i.e., immediately east of the scrapyards property). Therefore, verification sampling for inorganics and SVOCs will only be completed at removal areas that are being excavated solely based on elevated concentrations of these specific constituents.

### **2.1.2 Sediment Removal**

The sediment excavation limits presented in this remedial design have been established to meet the site-specific goals for the NDA and SDAs, as presented in Section 1.1 of this 100% RD Report and in the NYSDEC ROD. The vertical and horizontal extent of sediment removal was initially established based on the analytical results for sediment samples collected from 2001 to 2003 as part of the RI and a Supplemental Remedial Investigation (SRI). Results for the SRI are presented in the March 2006 *Supplemental Remedial Investigation Report* (BBL 2006). Sediment excavation limits were further refined based on the analytical results for 2014-2015 PDI and 2017 supplemental sediment samples. The sediment excavation areas are presented on Design Drawing C-107 (Appendix A). As indicated above, RI figures, the October 27, 2015 PDI summary letter, and the December 18, 2017 Supplemental Sampling letter report are included as Attachments 3, 4 and 5, respectively.

Verification sampling will be required during remedial construction to verify that sediment at the limits of the removal limits does not contain PCBs at concentrations greater than 1 mg/kg. As indicated in Section 1, SVOCs or inorganics concentrations exceeding sediment screening values were collocated with sampling locations containing elevated concentrations of PCBs. The sediment verification sampling protocols and proposed sampling locations are presented in Verification Sampling Plan (Appendix F).

### **2.1.3 Temporary On-Site Water Treatment System**

Based on the depth of the excavation activities and depth to the water table at the site, as well as the nature of the excavation activities (i.e., excavation of wetland material), the Contractor will be required to manage groundwater and surface water in the removal areas. Collected water will be treated on-site via a temporary water treatment system and discharged downstream of the active remediation area under a State Pollution Discharge Elimination System (SPDES) Permit Equivalent. As an alternative, per an NYSDEC Division of Environmental Remediation (DER) internal guidance, short-term batch discharges may be appropriate for surface water discharges for at remediation sites. Depending on the volume of water generated during the remedial construction activities, water treatment and discharge may be

conducted in either batches or on a continuous basis. Treatment system effluent sampling will be conducted by the Engineer in accordance with the SPDES Permit Equivalent.

Water treatment system components (e.g., pumps, bag filters, media filters, clarifiers, etc.) will be selected by the Remediation Contractor to meet specified performance requirements. The Remediation Contractor will select components to operate at a minimum instantaneous flow rate of 150 gallons per minute (gpm). The treatment system flow rate was selected based on an evaluation of potential excavation area dewatering rates that may be required during remedial construction. The NDA is the largest excavation area, and therefore would require the most dewatering. Grainsize data collected during the PDI was used to determine a hydraulic conductivity for the underlying wetland material (i.e., below the sediment to be excavated) to calculate a groundwater infiltration rate into the excavation areas. A local 2-year, 24-hour storm event (2.5 inches of rain) was used to evaluate potential precipitation falling into NDA and surface water runoff into NDA from the immediately surrounding areas. Using this information, a dewatering rate of 350 gpm would be necessary to maintain dewatered conditions throughout the entire NDA area (approximately 4 acres) during the given storm event. However, the NDA is anticipated to be excavated and backfilled in small sections and a maximum treatment system flow rate of 150 gpm was selected as a conservative measure.

Anticipated treatment system components presented in this Remedial Design will be finalized by the Remediation Contractor and reviewed by the Remediation Engineer and were selected based on the analytical results for groundwater samples collected from existing site monitoring wells and surface water samples collected from the SDA and NDA during the PDI. A treatment system process flow diagram is presented on Design Drawing C-601 (Appendix A).

#### **2.1.4 Upland Restoration**

Following completion of the on-site and off-site (i.e., upland area immediately east and south of the scrapyard/on-site property boundary) upland soil removal activities, the on-site excavation areas will be backfilled to facilitate installation of the on-site cover and the off-site excavation areas will be restored to the surrounding grade with a vegetative surface.

The ROD requires that on-site excavation areas be backfilled with a minimum of 24 inches of material that meets the site-specific SCOs or covered with asphalt pavement or concrete. As identified in Section 1, the former scrapyard area will be covered with a minimum of 24 inches soil. The on-site soil removal areas will be backfilled to pre-remediation grade with imported material meeting the site-specific SCOs (minimum of one foot of material) followed by installation of a 24-inch soil cover. Off-site upland excavation areas will be restored with a vegetative surface restoration that will consist of general fill to approximately six inches from existing grade and six inches of vegetated topsoil to existing grade. The upland restoration plan is presented on Design Drawing C-111 (Appendix A).

#### **2.1.5 On-Site Consolidation**

Excavated soil and sediment that contains PCBs at concentrations less than 50 mg/kg will be placed within an on-site consolidation area. The consolidation area has been designed to accommodate approximately 28,000 cy of material: 2,640 cy of soil and 10,780 cy of sediment (i.e., 13,240 cy total, neat volumes) plus an approximately 100% contingency to account for soil solidification material,

sloping/benching of removal areas, temporary cover/access roadway material, and potential expansion of excavation areas (i.e., based on the results of soil and sediment confirmation sampling).

Based on the results of a bench-scale treatability study testing conducted as part of the PDI, boiler ash sourced by the Casella is the anticipated solidification agent. The boiler ash will be mixed at a rate of approximately 5% by weight sediment/soil for solidification. Evaluations of the consolidation area configuration indicate that a minimum unconfined compressive strength (UCS) of 625 pounds per square foot (psf) of the solidified soil/sediment is required for material stability in the proposed consolidation area configuration.

The location and configuration of the consolidation area has been developed based on, the physical location in relation to the current site activities, the estimated quantity of material to be consolidated, the required limits of the on-site soil cover, and the vertical separation between existing grade and groundwater. The consolidation area will be constructed such that it is located within the limits of the required on-site soil cover, thereby providing the required minimum 24 inches of clean soil cover for the underlying material.

The NYSDEC ROD requires that material placed within the consolidation area be located a minimum of 5 feet above the water table. By locating the consolidation area where the depth to groundwater is greatest at the site, less imported material is required to achieve the required 5-foot groundwater offset. Based on historic water level data, as well as data collected during the PDI, up to 3 feet of imported fill will be used within the footprint of the consolidation area to meet this requirement.

The consolidation area grading plans and cross sections are presented on Design Drawings C-104, C-109, C-110 and C-304 (Appendix A).

### **2.1.6 Wetland Restoration**

The excavation of wetland sediments will require the restoration of wetland habitats disturbed during the remedial construction activities. Portions of the NDA wetlands have formed as the result of the creation and expansion of an approximate 900-foot beaver dam over the past several years. The presence of the beaver dam has impounded surface water entering the western portion of the NDA. The impounded surface water has flooded periphery upland habitats and converted these areas into wetlands. Remnants of upland tree species that could not tolerate the altered hydrology are present around the edges of the wetlands, and young wetland shrubs and emergent vegetation have established themselves in these peripheral areas. Due to the beaver dam being constructed with logs, branches, sticks, vegetation, rocks, sediment, and other debris, it is semi-permeable with various locations where surface water passes through the dam and discharges to the downstream wetland habitats. As documented in the 2017 Supplemental Investigation Summary Letter Report (Attachment 5), a breach was observed in the beaver dam in northern portion of the NDA and the elevation of the ponded water was significantly lower than previously observed; a majority of the surface water had drained. The cause of the breach is unknown.

As future actions of the local beavers cannot be predicted (if the beavers are still present), this 100% RD Report has been prepared such that the NDA will be restored with emergent wetland and palustrine forest plant communities at the existing elevations without the construction of any man-made dam/feature. The lowest elevation portions of the NDA will be restored to an emergent wetland community, without the planting of any woody tree or shrub species. This approach assumes that native shrubs and trees would

colonize this community over time and mimic a natural successional pattern. The proposed restoration of the lowest elevation areas to an emergent wetland community will provide more long-term flexibility and a higher potential for ecological restoration success (which targets a mosaic of native plant communities and habitats). Woody species would not be planted in these areas due to the high risk of ponding or herbivory from both beaver and deer. A forested wetland plant community will be restored in remaining (i.e., higher elevation) areas to provide an approximately 1:1 replacement for impacted acreage of forested wetlands. The higher elevation portions of the NDA will be easier to manage and protect from either prolonged ponding or herbivory.

Appropriate backfill (e.g., imported fill, topsoil, etc.) will be placed to establish new wetland habitats. Wetland restoration design and details are presented on Design Drawing C-108 (Appendix A). Note that Based on the 2014 wetland delineation activities conducted as part of the PDI, only portions of the SDAs are classified as wetlands. Therefore, SDAs not classified as wetlands will be restored with a soil cover.

### **2.1.7 Storm Water Management**

Based on the upland and wetland restoration requirements presented above, the remedial design includes new and/or replacement storm water management components to manage the storm water runoff and convey surface water flows currently conveyed through the existing storm sewer system. Storm water runoff associated with the restored upland area (i.e., based on the limits of the new soil cover) was calculated using United States Geological Survey (USGS) Streamstats web application. The new storm water management system to be constructed as part of the remedial construction activities will include conveyance piping and energy dissipation features for surface water conveyance and erosion resistance.

As indicated in Section 1, the existing storm sewer piping ranges from 32 to 36 inches in diameter. The new piping will consist of 30-inch diameter HDPE piping. The new pipe will manage anticipated storm water flows up to and including a 100-year, 24-hour storm event. However, the design standards (i.e., 10-year, 24-hour storm event) would only require 24-inch diameter piping. As a conservative measure, the existing storm sewer piping will be replaced with piping that closely matches the existing pipe diameter to minimize the potential for surface water flow changes at the site, as well as at adjacent off-site areas.

WSI anticipates that storm water runoff will be reduced from the current site conditions (based on modification of surface cover types) and therefore no adverse effects (increases in storm water runoff rates) are anticipated due to the remedial construction activities and post-remediation site conditions. The proposed storm water management system has been designed in accordance with all Federal, State, and local requirements.

The storm water management design components are presented on Design Drawings C-102, C-302, and C-502 (Appendix A).

### 3 ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

The WSI Group, the NYSDEC, and NYSDOH will participate jointly in the implementation of the remedial activities described herein. The WSI Group has the ultimate responsibility for implementing the remedial activities and will procure Remediation Contractor and Remediation Engineer services. Arcadis is anticipated to serve as the Remediation Engineer. NYSDEC and NYSDOH personnel are anticipated to be on-site periodically to observe work activities. The WSI Group will manage communication with regulatory agencies and with members of the surrounding community.

Key WSI Group, NYSDEC, NYSDOH, and Arcadis personnel are identified below.

**Table 3.1 Key Project Personnel**

Name/Affiliation	Address	Contact Information
<b>WSI Group</b>		
Brian M. Stearns, P.E. Manager, Site Investigation & Remediation – Upstate NY National Grid	300 Erie Boulevard Syracuse, NY 13202	315.428.5731 <a href="mailto:brian.stearns@nationalgrid.com">brian.stearns@nationalgrid.com</a>
Steve Beam Project Manager, Site Investigation & Remediation – Upstate NY National Grid	300 Erie Boulevard Syracuse, NY 13202	315.428.5690 <a href="mailto:steve.beam@nationalgrid.com">steve.beam@nationalgrid.com</a>
Russell F Anderson, LEED AP Project Manager Casella Waste Systems, Inc.	4 Chenell Drive Suite 200 Concord NH 03301	603.290.5846 <a href="mailto:russell.anderson@casella.com">russell.anderson@casella.com</a>
<b>NYSDEC</b>		
Peter Taylor, P.E.	317 Washington Street Watertown, NY 13601	315.785.2511 <a href="mailto:peter.taylor@dec.ny.gov">peter.taylor@dec.ny.gov</a>
Peter Ouder Kirk, P.E.	317 Washington Street Watertown, NY 13601	315.785.2523 <a href="mailto:peter.ouderkirk@dec.ny.gov">peter.ouderkirk@dec.ny.gov</a>
Rachel Gardner	317 Washington Street Watertown, NY 13601	315.785.2522 <a href="mailto:rachel.gardner@dec.ny.gov">rachel.gardner@dec.ny.gov</a>
Christopher Balk	317 Washington Street Watertown, NY 13601	315.785.2252 <a href="mailto:christopher.balk@dec.ny.gov">christopher.balk@dec.ny.gov</a>
<b>NYSDOH</b>		
Renata Ockerby	Corning Tower; Room 1787 Empire State Plaza Albany, NY 12237	518.402.7860 <a href="mailto:renata.ockerby@health.ny.gov">renata.ockerby@health.ny.gov</a>
<b>Engineer: Arcadis</b>		
Jason Brien, P.E. Project Manager	110 West Fayette St Suite 300 Syracuse, NY 13202	T: 315.671.9114 <a href="mailto:jason.brien@arcadis.com">jason.brien@arcadis.com</a>
Terry Young, P.E. Engineer of Record	110 West Fayette St Suite 300 Syracuse, NY 13202	T: 315.671.9478 <a href="mailto:Terry.Young2@arcadis.com">Terry.Young2@arcadis.com</a>



## Final (100%) Remedial Design Report

Minimum responsibilities of the WSI Group, the Engineer, and the Contractor for work to be conducted prior to, during, and following implementation of the remedial activities at the site are presented in the following subsections.

### 3.1 WSI Group Responsibilities

The WSI Group will have the final authority on all aspects of the remedial construction activities. The WSI Group will be responsible for the following:

- Coordinate with the Contractor and Engineer (as necessary) to implement the required work activities in conformance with this 100% RD Report.
- Assist NYSDEC in preparing and sending a Notice and Fact Sheet consistent with NYSDEC Program Policy DER-23, *Citizen Participation Handbook for Remedial Programs* (DER-23) (NYSDEC 2010a).
- Contract with the selected Contractor.
- Act as the “Generator” for material resulting from the remedial activities for off-site treatment and/or disposal of the waste.
- Coordinate with the NYSDEC and NYSDOH regarding environmental-related work activities.
- Attend periodic site meetings.
- Evaluate the remedial activities to confirm that construction meets or exceeds the requirements defined by this 100% RD Report.

### 3.2 Engineer Responsibilities

The Engineer will provide the following services prior to the implementation of the remedial activities:

- Preparing Contractor bid documents and evaluating bid documents submitted by prospective Contractors.
- Decommission select site monitoring wells (as presented in Section 4).
- Coordinate with the team (including the Contractor as necessary) to prepare a SPDES Permit Equivalent application and Joint Application for Permit to obtain a Nationwide Permit #38 and Section 401 Water Quality Certification (as presented in Section 4.2) on behalf of the WSI Group.

The Engineer will provide the following services during implementation of the remedial activities:

- Review Contractor submittals and provide comments, if any, to the Contractor.
- Provide experienced and qualified project management/oversight personnel to observe and monitor remedial construction activities.
- Resolve design-related technical questions or problems that may arise when the 100% RD Report is implemented.

## Final (100%) Remedial Design Report

- Maintain records of the work efforts associated with implementation of the remedial activities, including daily field reports and digital photographs of the work in progress and to document observations, problems, and deficiencies.
- Maintain records of labor, materials, and equipment utilized for the remedial activities and any unusual circumstances, if any are encountered.
- Document that the remedial activities are conducted in general conformance with the 100% RD Report and notify the WSI Group of any deviations.
- Facilitate and coordinate analysis and quality assurance testing of off-site fill material samples provided by the Contractor in accordance with Specification Section 31 05 16 – Aggregates for Earthwork.
- Provide a sampling technician to conduct community air monitoring in accordance with the CAMP (Appendix D) and Specification Section 01 35 49 – Community Air Monitoring Plan (Appendix B)
- Observe solid and liquid waste characterization sampling performed by the Contractor.
- Conduct noise monitoring in accordance with the CERP (Appendix C).
- Monitor the Contractor's survey control for evaluating payment quantities, as applicable.
- Review and sign (as an authorized agent for the WSI Group) waste manifests/bills of lading for shipments of waste materials generated by the remedial activities.
- Maintain an on-site project log containing manifests/bills of lading for wastes generated by the remedial activities.
- Assist the WSI Group in the reviewing Contractor invoices/requests for payment.
- Coordinate pre-construction project meeting, project construction/coordination meetings (as required), and a project close-out meeting for the remedial activities.
- Issue formal design modifications (if necessary). Note that design modifications will be signed and sealed by the New York State Licensed Professional Engineer.

The Engineer will provide the following services following implementation of the remedial activities:

- Prepare (and certify) a *Final Engineering Report* (FER) to document completion of the remedial activities (as presented in Section 6).
- Prepare an SMP to detail the post-remedial construction activities to be conducted at the site (as presented in Section 6).
- Install new monitoring wells following the completion of remedial construction activities to facilitate post-remediation groundwater monitoring.

### 3.3 Contractor Responsibilities

In general, the Contractor is responsible for providing the supervision, labor, equipment, and materials necessary to implement the activities described in this 100% RD Report. Contractor responsibilities are

## Final (100%) Remedial Design Report

detailed throughout the Design Drawings (Appendix A) and the Technical Specifications (Appendix B). The Contractor's responsibilities also include:

- Verify all existing site conditions including understanding the site data summarized in the supporting information presented as attachments to the remedial design.
- Thoroughly review and comply with the requirements of the Contract Documents.
- Coordinate with all equipment and material suppliers to document compliance with the 100% RD Report.
- Provide the Engineer with samples of aggregate and fill materials as required by the 100% RD Report.
- Prepare and submit to the Engineer all shop drawings and other required submittals and project record documents specified in the 100% RD Report.
- Notify the Engineer and the WSI Group immediately upon discovery of a conflict between the Contract Documents and actual site conditions.
- Coordinate with waste disposal facilities to identify waste characterization requirements and conducting solid and liquid waste characterization sampling as required by the disposal facilities.
- Contract with waste haulers and waste disposal vendors.
- Provide bills of lading/manifests for the off-site shipment of waste materials from the site. These shipping documents may be provided to the Engineer to sign as an agent for the WSI Group, under separate agreement with the WSI Group.
- Perform erosion and sediment control inspections and provide the Engineer with weekly inspection reports.

## 4 PRE-REMEDIAL CONSTRUCTION ACTIVITIES

The following pre-remediation activities will be completed by the WSI Group and/or its representatives, the Engineer, and/or the Remediation Contractor prior to the initiation of remedial construction:

- Assisting NYSDEC in preparing a citizen participation notice and fact sheet
- Obtaining regulatory permits and submitting notifications
- Conducting building demolition and removal
- Decommissioning monitoring wells
- Preparing pre-mobilization submittals
- Conducting a pre-construction conference

The overall purpose of the pre-remediation activities is to coordinate with the local community, officials, and other stake holders to facilitate the initiation of the remediation construction activities. Additional information regarding these pre-remediation activities is provided in the following subsections.

### 4.1 Citizen Participation

Consistent with DER-23, a Notice and Fact Sheet will be sent to the site contact list before field work begins. The WSI Group will work with the NYSDEC (as appropriate) to develop the information regarding the upcoming remedial work that will be sent to all parties on the site contact list (i.e., residents and business owners within a specified radius of the site, as well as additional community and political personnel) and to the document repository. NYSDEC will electronically distribute the Notice and Fact Sheet to government officials, community officials and community members with registered emails. WSI distribute the Fact Sheet to community members on the site contact list that do not have registered e-mail addresses.

### 4.2 Permitting

Based on the remedial activities to be conducted at the site and information currently available, the following permit(s), authorization(s) and/or notification(s) have been identified, at a minimum, as being potentially applicable with respect to approval of remedial activities:

- *SPDES Permit Equivalent* – Groundwater will be removed for excavation activities, from soil staging area and decontamination area sumps, and surface water/groundwater will be generated during sediment removal/ solidification activities. Water is expected to be treated via a temporary on-site treatment system. Treated water is anticipated to be discharged to the NDA (i.e., downstream of the remediation activities) under a SPDES Permit Equivalent.
- *Nationwide Permit #38 (NWP 38)* – Authorization will be required from the United States Army Corps of Engineers (USACE) under NWP 38 for the discharge of backfill into federally-regulated wetlands in the SDA and NDA.

- *Section 401 Water Quality Certification* – A Water Quality Certification (WQC) will be required from the NYSDEC, indicating that the proposed remedial activities will not violate water quality standards, in support of USACE authorizing the work under NWP 38. Authorization under NWP 38 and the WQC will be requested using the Joint Application for Permit (JAP).
- *Self-Implementing Cleanup and Disposal Notification* – A notification has been submitted to the USEPA for upland PCB-impacted soil at the site in accordance with the TSCA regulations presented in 40 Code of Federal Regulations (CFR) Part 761.61(a).
- *Risk-Based Disposal and Alternative Decontamination and Sampling Approval Request (for Sediment)* – A revised notification was submitted to USEPA for PCB-impacted sediment in on-site and off-site drainage areas in accordance with the TSCA regulations presented in 40 CFR Part 761.61(c).
- *CSX Railroad Property Access Agreement* – An access agreement will be obtained from CSX to facilitate remedial activities on their property in the southern portion of the scrapyard property as necessary.

### 4.3 Building Demolition and Removal

With the implementation of the remedial construction activities, Casella will no longer conduct the scrapyard and waste transfer operations at the site. Casella will demolish and remove (at a minimum) the Vehicle Maintenance Building and the office and barn located north of the CSX railroad prior to the remedial activities. Building demolition and removal is not an NYSDEC-required component of the remedy and is not included in the scope of Contractor-required remedial construction activities. Building demolition and removal will be completed by others.

### 4.4 Monitoring Well Decommissioning

Although considered part of the remedial design, the Contractor is not responsible for decommissioning the existing monitoring wells at the site. In accordance with the NYSDEC ROD, the Engineer will decommission the existing monitoring well network (except for monitoring wells MW-201 and PZ-03) prior to commencement of the remedial construction activities. A *Monitoring Well Decommissioning Plan* will be submitted to NYSDEC prior to conducting the decommissioning activities.

Decommissioning activities will be completed in accordance with the NYSDEC's guidance CP-43 *Groundwater Monitoring Well Decommissioning Policy* (NYSDEC, 2009). Consistent with the NYSDEC policy, the monitoring well casings will be pulled, and the remaining voids will be tremie-grouted with a non-shrink grout. NYSDEC Well Decommissioning Records will be completed for the wells and submitted to the NYSDEC as part of the *Final Engineering Report*. Following completion of the remedial construction activities, the Engineer (via an appropriate drilling subcontractor) will install a new monitoring well network to facilitate post-remediation groundwater monitoring (as described in Section 6.4).

### 4.5 Contractor Pre-Mobilization Submittals

Following contract award, the selected Contractor will be required to prepare pre-mobilization submittals for review by the WSI Group and the Engineer. The Contractor will not be allowed to mobilize to the site

## Final (100%) Remedial Design Report

prior to review and approval of all required pre-mobilization submittals. These submittals will include, but not necessarily be limited to, the following:

- *Project Operations Plan* – The Project Operations Plan (POP) is required to present the Contractor's detailed approach for implementing the pertinent work activities (incorporating, as necessary, specifications, site maps, details, flow diagrams, charts, site geologic/geotechnical information, and schedules).
- *Health and Safety Plan (HASP)* – The Contractor will be required to prepare and submit a site-specific HASP (for use by the on-site personnel during the remedial activities) to provide a mechanism for establishing safe working conditions at the site. The HASP will be prepared in accordance with all applicable rules and regulations, including 29 CFR 1910 and 29 CFR 1926, and will be prepared by a Certified Industrial Hygienist. The Contractor is required to take all necessary precautions for the health and safety of all on-site personnel in compliance with all applicable provisions of federal, state, and local health/safety laws and the provisions associated with the HASP. The Contractor will assume sole responsibility for the accuracy and content of its HASP.
- *Preliminary Progress Schedule* – The Contractor will prepare a preliminary schedule that identifies major work items and work sequences.
- Contractor sign-off on the Storm Water Permit Certification Statement included as an attachment to Specification Section 01 41 26 – SWPPP and Permit.

Additional requirements regarding the content of these Contractor pre-mobilization submittals and the overall submittal process are presented in the following Specification Sections (Appendix B):

- 01 15 00 – Contractor's Project Operations Plan
- 01 33 00 – Submittal Procedures
- 01 35 29 – Contractor's Health and Safety Plan

Additionally, select submittals will be provided to NYSDEC for review (as requested).

### 4.6 Pre-Construction Conference

A pre-construction conference will be held to designate responsible personnel, establish working relationships, discuss preliminary schedules submitted by the Contractor, and review administrative and procedural requirements for the remedial construction activities. The Engineer will be responsible for coordinating the conference. Prior to the conference, the Contractor will provide the required submittals as presented in Specification Section 01 31 19.13 – Pre-Construction Conference (Appendix B).

## 5 REMEDIAL CONSTRUCTION ACTIVITIES

This section presents a task-by-task summary of the remedial activities to be completed as part of this project. Based on the scope of selected remedy, remedial activities are anticipated to be completed during multiple construction seasons. The remedial Design includes provisions for completing the project in two “phases”. The design was organized to include these separate phases to align with the USEPA *Risk-Based PCB Disposal Approval Request for PCB Remediation Waste and Self-Implementing Cleanup and Disposal Notification*. As such, the phases are not intended to represent the scheduling of the remedial activities nor infer that the remedial activities will be completed in separate mobilization efforts. The general sequence of the remedial activities will be to progress from upland/upstream to lowland/downstream. The Contractor will be responsible for providing a project schedule to present the timing and sequence of project remedial construction activities. The remedial construction activities are anticipated to begin in the spring of 2019 and include the following:

- Excavating and backfilling on-site and off-site soil removal areas (estimated 5,130 cy).
- Constructing the base layer for the on-site consolidation area.
- Constructing new storm water management features.
- Constructing the on-site cover (i.e., 24-inch soil cover and/or temporary cover to support Phase 2 activities).
- Transporting TSCA-regulated/New York State hazardous waste (i.e., soils containing PCBs at concentrations >50 mg/kg) for off-site disposal.
- Placing excavated off-site soil in the consolidation area and constructing a soil cover over the consolidated material.
- Removing the existing beaver dam in the NDA.
- Excavating impacted sediment from the SDAs, drainage swale, and the NDA (11,350 cy).
- Processing/stabilizing excavated sediment.
- Transporting TSCA-regulated/New York State hazardous waste (i.e., sediment containing PCBs at concentrations >50 mg/kg) for off-site disposal.
- Placing remaining excavated sediment in the consolidation area.
- Restoring the SDA wetlands.
- Restoring the NDA wetlands.
- Constructing the final consolidation area cover.
- Constructing the final on-site soil cover.

A description of each remediation task, including references to supporting information to be included elsewhere in the Contract Documents, is presented in the following subsections.

The Contractor will be responsible for worker health and safety and work space monitoring in accordance with the Specification Section 01 35 29 – Contractor’s HASP.

## 5.1 Mobilization

Site mobilization will be initiated by the Contractor after notification to proceed. Mobilization will be conducted prior to each construction phase. In general, mobilization activities include establishing personnel, equipment, and materials at the site necessary to support the remedial construction activities. Mobilization activities to be conducted by the Contractor include, but are not limited to, the following:

- Mobilizing necessary labor, equipment, materials, tools, and supervision to commence work on the project.
- Coordinating with Dig Safely New York, as well as a private utility locator, prior to construction activities to mark all underground utilities.
- Mobilizing and establishing three field office trailers: one to be utilized by the Contractor, one by the Engineer, and one by the NYSDEC during implementation of the remedial activities. Conform the trailers (and supporting telephone and internet services) to the requirements presented in Specification Section 01 52 13 – Field Offices and Sheds (Appendix B).
- Providing and maintaining first-aid facilities and portable sanitary services for use by on-site personnel engaged in the remedial activities. Conform first-aid and portable sanitary services to the requirements presented in Specification Sections 01 52 16 – First-Aid Facilities and 01 52 19 – Sanitary Facilities (Appendix B).
- Coordinating with National Grid Customer Service to obtain electrical service. The Contractor will be responsible for coordinating for electrical service and all necessary utilities for use during the remedial construction, in accordance with Specification Section 01 51 05 – Temporary Utilities (Appendix B).
- Preparing and providing submittals (in addition to the pre-mobilization submittals) to the Engineer and/or the WSI Group as required by the Contract Documents (e.g., Design Drawings, Technical Specifications, etc.). Select submittals may be provided NYSDEC for review and comment.
- Obtaining any additional permits not identified in Section 4.2. The Contractor will be responsible for obtaining local permits (e.g., city building and/or construction permits) necessary to facilitate the remedial activities during each phase.

## 5.2 Site Preparation

Site preparation activities will generally consist of the following:

- Verifying site conditions and identifying, marking, and verifying the location(s) of all aboveground and underground utilities, equipment, and structures, as necessary in accordance with Specification Section 01 71 33 – Protection of Work and Property, to implement the remedial activities. Current site conditions (i.e., a site plan and approximate locations of known existing utilities) are shown on Design Drawings G-101 and G-102 (Appendix A).

The Contractor will also be responsible for maintaining appropriate clearances from utilities (e.g., active overhead electric lines, underground conduit/piping, etc.). If the Contractor damages existing utilities, equipment, or structures, the Contractor will be responsible for notifying the utility



## Final (100%) Remedial Design Report

company/municipality and fully repairing all damages at no additional cost to the WSI Group. Complete repairs (if necessary) in accordance with requirements of the utility company/municipality.

- Installing temporary erosion and sedimentation controls in accordance with Design Drawings G-104, G-105, and G-502 (Appendix A) and Specification Sections 01 41 26 – SWPPP and Permit and 01 57 05 – Temporary Controls (Appendix B), and the SWPPP (Appendix E). Temporary erosion and sedimentation controls include, but are not limited to, silt fencing, straw bales, rock check dams, temporary access roads, and construction entrance and exit pads and stabilized construction access features.
- Erecting project signs in accordance with Specification Section 01 58 13 – Temporary Project Signage (Appendix B).
- Performing general site grading for staging of office trailers and the temporary water treatment system.
- Establishing survey control for soil and sediment excavation areas and work limits. Requirements for establishing survey control are presented in Specification Section 01 71 23 – Field Engineering (Appendix B). The Contractor will survey and mark-out the limits of the soil and sediment excavation areas, consolidation area, etc.
- Clearing and grubbing in accordance with Specification Section 31 11 00 – Clearing and Grubbing (Appendix B). Blanket tree removal and grubbing is prohibited. Trees and shrubs will only be removed as necessary to complete the remedial construction activities presented herein (i.e., including the removal of felled trees and vegetation used to construct the existing beaver dam).
- Installing work zone air monitoring equipment (to be relocated, as appropriate, based on wind direction) as required by the Contractor's HASP.
- Installing construction entrances in accordance with Design Drawing G-502 (Appendix A).
- Constructing a material staging area/sediment processing area and equipment and personnel decontamination areas. Materials used in the construction of the material staging area and decontamination area will be in accordance with the following specification sections (Appendix B):
  - 31 05 19.13 – Geotextiles for Earthwork
  - 31 05 19.16 – Geomembranes for Earthwork
  - 31 05 16 – Aggregates for Earthwork
- Constructing and testing the temporary water treatment system (or alternative water management approach) in accordance with Specification Section 01 53 53 – Temporary Water Management System (Appendix B).

Refer to Design Drawings G-104 and G-105 (Appendix A) for additional information regarding site preparation.

### 5.3 Vapor and Dust Monitoring and Control

The Engineer will be responsible for implementing community air monitoring for vapor and dust in accordance with the CAMP (Appendix D). The Contractor will implement corrective actions (in the event of an exceedance) in accordance with the CERP and CAMP (included as Appendices C and D, respectively) and Specification Sections 01 35 49 – Community Air Monitoring Plan, and 01 57 05 – Temporary Controls (Appendix B).

### 5.4 Upland Soil Excavation

The Contractor will conduct soil excavation activities to the horizontal and vertical limits of the upland areas (i.e., on-site areas and off-site areas immediately east and south of the scrapyards property boundary) shown on Design Drawing G-103A, C-101, and C-301 (Appendix A). As shown on Design Drawing C-101 (Appendix A), a majority of the soil excavations will be completed to depths up to 3 feet below grade, with select areas excavated to depths up to 6 feet below grade. The Contractor will bench and/or slope excavation side walls to adequately maintain excavation stability. Additionally, soil excavation activities will be conducted in accordance with the following specification sections (Appendix B):

- 01 35 43.13 – Environmental Procedures for Hazardous Materials
- 02 61 05 – Removal and Disposal of Contaminated Material
- 31 23 00 – Excavation and Fill

An estimated 4,380 cy of upland soil will be excavated during the Phase 1 of the remedial construction activities (1,920 cy containing PCBs at concentrations exceeding 50 mg/kg and approximately 2,460 cy containing PCBs at concentrations less than 50 mg/kg). An anticipated 25 cy of soil containing PCBs at concentrations greater than 50 mg/kg will be excavated from beyond the southern scrapyards property boundary on CSX property. Soil removed from areas with PCB concentrations exceeding 50 mg/kg will be transported off-site for disposal as a TSCA-regulated/NYS hazardous waste.

Following construction of the consolidation area base layer (described in Section 5.9), soil containing PCBs at concentrations less than 50 mg/kg (and/or SVOCs, VOCs, or inorganics at concentrations greater than SCOs) will be placed in the consolidation area. Additional details regarding soil handling/management are presented in Section 5.6.

### 5.5 Sediment Removal

The Contractor will conduct sediment excavation activities to the horizontal and vertical limits shown on Design Drawings G-103B, C-107, and C-303 (Appendix A). Sediment excavation activities will be conducted in accordance with the following specification sections (Appendix B):

- 01 35 43.13 – Environmental Procedures for Hazardous Materials
- 02 61 05 – Removal and Disposal of Contaminated Material
- 02 61 15 – Sediment Removal and Handling

The Contractor will excavate approximately 11,350 cy of sediment during the remedial construction activities. Sediment containing PCBs at concentrations greater than 50 mg/kg (i.e., an anticipated 570 cy) will be transported off-site for disposal as a TSCA-regulated/NYS hazardous waste. An anticipated 10,780 cy of sediment (containing PCBs at concentrations less than 50 mg/kg, but greater than 1 mg/kg) will be processed (i.e., dewatered and stabilized) prior to being consolidated on-site. Additional details regarding sediment handling/ management are presented in Section 5.6.

During excavation of the SDAs, the Contractor will temporarily dam or bypass surface water flows within the drainage swale. During excavation of the drainage swale and NDA, the Contractor will bypass surface water flows from the new storm water sewer pipe (i.e., bypass tee depicted on Drawing C-502) to existing drainage ways located east (i.e., downgradient) of the NDA sediment removal limits. Bypass system outlet details are presented on Design Drawing C-501 (Appendix A) and pumping requirements are presented in Specification Section 01 51 41 – Temporary Pumping (Appendix B).

Sediment excavation activities will generally proceed from upstream to downstream. Based on the horizontal extent of the NDA excavation activities (i.e., covering more than 185,000 square-feet, more than 4 acres), temporary access roads will be constructed to facilitate the sediment removal and hauling (i.e., to the on-site consolidation area or off-site for disposal) in accordance with Specification Section 01 55 13 – Temporary Access Roads and Parking Areas (Appendix B).

## 5.6 Material and Waste Handling

Soil, sediment, debris, water, and miscellaneous wastes generated during the remedial construction activities will be handled, consolidated, and/or transported off-site for disposal in accordance with applicable federal, state, and local regulations and the following specification sections (Appendix B):

- 01 35 43.13 – Environmental Procedures for Hazardous Materials
- 01 74 19 – Construction Waste Management and Disposal
- 02 61 05 – Removal and Disposal of Contaminated Material

### 5.6.1 Soil/Sediment Transported Off-Site for Disposal

An estimated 2,490 cy of excavated soil and sediment (not including potential additional volume for solidification/stabilization media) containing PCBs at concentrations greater than 50 mg/kg will be transported off-site for disposal as a TSCA-regulated/NYS hazardous waste. A staging area will be constructed on a generally level surface with the closest part of the staging area no closer than 15 feet from any delineated wetland area. The Contractor will use appropriate means and methods to dewater/stabilize materials prior transporting the material off-site. At a minimum, excavated material will not contain any free liquids and will pass paint filter testing, as well as meet moisture content requirements of off-site disposal facilities. The Contractor will collect waste characterization samples for processed/stabilized waste materials and provide analytical results to the Waste Disposal facilities to establish a waste profile(s). Copies of the waste characterization results will also be provided to the Engineer.

Handling, sampling, and disposal of the debris (e.g., upland trees/shrubs, beaver dam construction material, etc.) removed as part of the soil/sediment excavation activities is described on Design Drawing

G-002 (Appendix A) and in Specification Section 02 61 05 – Removal and Disposal of Contaminated Material (Appendix B).

### **5.6.2 Soil/Sediment Consolidated On-Site**

Excavated soil and sediment containing PCBs at concentrations less than 50 mg/kg (and/or SVOCs, VOCs, or inorganics at concentrations greater than SCOs) will be consolidated on-site. As presented in Section 5.9, the consolidation area will be constructed in the northern portion of the scrapyards property. Material consolidated during Phase 1 (i.e., off-site soil) will be permanently covered where no additional soil consolidation is anticipated during Phase 2. The portion of the consolidation area where the Phase 1 material meets the Phase 2 material will be temporarily covered following completion of Phase 1 to prevent potential erosion prior to starting Phase 2. Sediment excavated from the SDAs and NDA will be placed in the consolidation area adjacent to the Phase 1 material to create one continuous mass of consolidated material. After the Phase 2 consolidation activities are completed, the remaining consolidation area will be permanently covered.

Prior to being placed within the consolidation area, saturated soil and sediment will be amended with a solidification agent (anticipated to be boiler ash) so that consolidated material meets minimum density, moisture content, and strength requirements. Requirements for the amended material “mix design” are presented in Specification Section 02 61 15 – Sediment Removal and Handling (Appendix B). The “mix design” for the amended material includes the minimum amount of solidification agent to be added to excavated material and a minimum strength that solidified material will be required to achieve when placed in the consolidation area (based on bench testing completed during the PDI). The Contractor may submit alternative mix designs based on their own bench-scale studies (if desired).

Additional material handling, solidification, and quality assurance/quality control (QA/QC) sampling requirements, and sequencing details are provided in Specification Section 02 61 15 – Sediment Removal and Handling (Appendix B).

### **5.6.3 Water Management/Treatment**

Water generated during the remedial construction activities may include: water removed from soil and sediment excavation areas; water from staging area sumps, water generated during soil/sediment solidification; and decontamination water. Water is anticipated to be treated on-site via a temporary water treatment system and discharged downstream of the NDA (i.e., downstream of sediment removal areas) under a SPDES Permit Equivalent (to be obtained prior to remedial construction activities, as described in Section 4), or temporarily containerized on-site and transported off-site for treatment/disposal (depending on the volume of water generated during each phase). The Contractor will be responsible for identifying the water management approach.

The Contractor will be responsible for the set-up and operation of a temporary water treatment system and achieving the discharge criteria to be specified in the permit. The Engineer will be responsible for conducting sampling required under the SPDES Permit Equivalent. Anticipated water treatment components (i.e., conceptual process flow diagram) is presented on Design Drawing C-601 (Appendix A). The Contractor will be responsible for identifying the water treatment system process and components

necessary to comply with applicable requirements. Additional water treatment system details are provided in Specification Section 01 53 53 – Temporary Water Management System.

The Contractor will be responsible for dewatering soil removal areas as necessary. Soil excavation area dewatering will be conducted using temporary sumps installed within the limits of the excavation area. During sediment excavation activities, the Contractor will construct temporary dams/berms (or utilize other means) to isolate sediment removal areas and allow surface water to drain (via gravity) downstream of the removal the area. Where water collects following gravity drainage, dewatering will be completed via pumps suspended a minimum of 6 inches above the top of the sediment. Unless visual impacts (i.e., sheens) or sediment disturbance are observed, water pumped from greater than 6 inches above the top of sediment (if present) may be directly pumped to a downstream location for further gravity drainage. Visually impacted water or water within 6 inches of the top of the sediment surface will be collected and treated at the on-site water treatment system or through another management method proposed by the Contractor and approved by the Engineer (including off-site treatment). All direct pumping activities will be performed to the satisfaction of the Engineer.

## 5.7 Upland Backfilling

The Contractor will backfill upland excavation areas with imported soil fill to generally match the pre-existing lines and grades. Backfilling activities will be conducted in accordance with the details shown on Design Drawing C-503 (Appendix A) and Specification Sections 31 05 16 – Aggregates for Earthwork and 31 23 00 – Excavation and Fill (Appendix B). In accordance with the ROD, imported soil placed in on-site excavation areas will meet the lower of 6 NYCRR Part 375 protection of ecological resource, restricted-residential, and/or protection of groundwater criteria for backfill and imported soil placed in off-site excavation areas will meet the lower of 6 NYCRR Part 375 protection of ecological resources or residential criteria for backfill. Additionally, as a majority of material will be placed within 5 feet of the water table, imported fill must meet the 6 NYCRR Part 375 protection of groundwater criteria.

The elevation of the ground surface over most of the former scrapyards property will be raised due to the placement of the soil cover and consolidated material. Upland surface restoration details are presented in Section 5.10.

## 5.8 Sediment Backfill and Wetland Restoration

Sediment backfilling and wetland restoration activities will be conducted at the locations shown on Design Drawing C-108 (Appendix A) and in accordance Design Drawings C-506 and C-507 (Appendix A) and the following specification sections (Appendix B):

31 23 00 – Excavation and Fill

32 72 00 – Wetland Restoration

31 91 19.32 – Topsoil Placement and Grading

As presented in Section 2, the existing beaver dam will not be replaced. Rather, the NDA will be restored with a preferential pathway for surface water, surrounded by emergent wetlands, including micromounds. Disturbed wetland areas will be restored using a minimum of 12 inches of wetland topsoil. Emergent wetland habitats will be seeded with a wetland seed mix to restore the emergent plant community. The

emergent community will transition to a scrub-shrub community with water tolerant shrubs at the current ground elevations that define the shrub-land boundary. Trees and shrubs will be planted between the scrub-shrub community and the wetland boundary to restore the forested wetland habitats. Tree and shrub species planting schedule for SDA-3 and NDA are presented on Design Drawing C-507 (Appendix A), respectively.

Drainage restoration details are shown on Design Drawings C-505 and C-508. The ROD requires that the drainage swale be restored without riprap. However, the drainage swale current drainage swale consists of large stone and given the slope from the upland portion of the site to the NDA, restoration of the drainage swale as vegetated pathway is not practicable. As shown on the design drawings, a series of boulder veins will be constructed to create surface water pools, allowing water to cascade down to the NDA.

Consistent with the ROD, SDA-1 and SDA-2 will be restored with riprap stone to prevent vegetation reestablishing and discourage wildlife habitation, while portions of SDA-3 that do not directly border the on-site cover system will be restored with wetland topsoil and appropriate wetland seed mixtures, shrubs and trees to reestablish the existing scrub shrub wetland conditions.

## 5.9 Consolidation Area Construction

As indicated in Section 5.6, soil and sediment containing PCBs at concentrations less than 50 mg/kg (and/or SVOCs, VOCs, or inorganics at concentrations greater than SCOs) will be consolidated on-site. The consolidation area construction components are shown on the following drawings (Appendix A):

- The approximate consolidation area location is shown on Design Drawing G-103.
- The consolidation area subgrade and construction design are shown on Design Drawings C-106 and C-304.
- The consolidated material and consolidation area grading plans are shown on Design Drawings C-109 and C-110, respectively.

The consolidation area will be constructed in accordance with the following specification sections (Appendix B):

- 31 05 19.13 – Geotextiles for Earthwork
- 31 05 16 – Aggregates for Earthwork
- 31 23 00 – Excavation and Fill
- 32 91 19.13 – Topsoil Placement and Grading

In accordance with the ROD, consolidated material must be placed at least 5 feet above the water table. As the water table is located at depths between 2 and 6 feet below existing grade in the northern portion of the scrapyard property, the Contractor will place up to 3 feet of imported soil fill prior to placing excavated material to create the consolidation area base. Following processing/stabilization (described in Section 5.6.2), the Contractor will place material within the on-site consolidation area. Requirements for lift thickness and percent compaction of solidified material are presented in Specification Section 02 61 15 – Sediment Removal and Handling (Appendix B). Consolidated material will have a maximum height of

10 feet and maximum slope of 4:1 (H:V). The consolidation area cover will be constructed consistent with the soil cover, as described in Section 5.10.

The configuration and elevations for the consolidation area depicted on the Design Drawings are based on the need to accommodate the design soil/sediment removal volume plus a 100% contingency volume (as described in Section 2). This configuration may require field modification based on the actual soil/sediment volume containing PCB's at concentrations less than 50 mg/kg, as determined by soil confirmation sampling during remedial construction. Any field adjustments will maintain compliance with the NYSDEC ROD.

## 5.10 Upland Restoration

In general, a soil cover will be constructed over a majority of the scrapyard property. Components to the upland restoration are shown on the design drawings (Appendix A) as follows:

- An interim Phase I site restoration plan is shown on Drawing C-103.
- Final grading plan for northern and southern portion of soil cover are shown on Drawings C-104 and C-105, respectively.
- Final upland restoration is shown on Drawing C-111.
- Upland Restoration Details are shown on Drawings C-503 and C-504.

Upland restoration activities will be conducted in accordance with the following specification sections (included in Appendix B):

- 31 05 19.13 – Geotextiles for Earthwork
- 31 05 16 – Aggregates for Earthwork
- 31 23 00 – Excavation and Fill
- 32 31 13 – Chain-Link Fences and Gates
- 32 91 19.13 – Topsoil Placement and Grading

Following Phase 1 soil excavation and backfilling activities, the Contractor will construct and maintain an appropriate temporary working surface over all areas within the soil cover limits that are not covered with the final soil cover.

Following construction of the consolidation area and final soil cover, the Contractor will install a chain-link fence and gate(s) to control access to the scrapyard property. In addition, chain-link fence and gate(s) will be installed to limit access to portions of the scrapyard property containing the soil cover/consolidation area.

Additional upland area restoration requirements are presented in the following subsections.

### 5.10.1 Soil Cover

As indicated in Section 5.9, the consolidation area will be constructed in the northern portion of the scrapyard property. The Contractor will construct a soil cover over the consolidation area, as well as soil

containing COCs at concentrations greater than the site-specific criteria in the remaining portions of the scrapyard property. The cover will extend over the soil excavation areas after they have been backfilled to the existing site grade. The soil cover will consist of a geotextile demarcation layer and 24 inches of imported soil that meets the lower of the 6 NYCRR Part 375 protection of ecological resources, restricted-residential, and protection of groundwater criteria. The top 6 inches of the soil cover will consist of vegetated topsoil and gravel access roads.

The consolidation area cover design is presented on Design Drawings C-110 and C-304 (Appendix A). Vegetated topsoil will be installed in Phase 2 support areas following the completion of all material handling/consolidation activities. The final soil cover limits are shown on Design Drawing C-111 (Appendix A) with design details provided on Design Drawing C-503 (Appendix A).

### **5.10.2 Storm Water Management Controls**

As shown on Design Drawing C-102 (Appendix A), the existing storm sewer at the site will be abandoned and replaced with a new storm sewer pipe. The Contractor will install the new storm water management features in accordance with Specification Section 33 41 00 – Storm Utility Drainage Piping (Appendix B).

Select portions of the existing storm sewer culvert will be removed to facilitate installation of the new storm water management controls. Remaining portions of existing storm sewer culvert will be abandoned in place by capping and plugging the ends of the existing sewer and completely filling the remaining portion of the existing storm sewer with control low-strength material (CLSM). CLSM requirements and pipe abandonment requirements are presented in Specification Sections 31 05 16 – Aggregates for Earthwork, and 31 23 00 – Excavation and Fill (Appendix B).

## **5.11 Project Close-Out**

The Contractor will conduct the project close-out activities, described in the following subsection (as necessary), in accordance with the following specification sections (Appendix B):

- 01 74 05 – Cleaning
- 01 77 19 – Closeout Procedures

Project close-out activities will be conducted after the completion of each phase of remedial construction. In addition to Contractor close-out activities, the Engineer will install new monitoring wells (to replace those abandoned prior to remedial construction) at the locations shown on Design Drawing C-111 (Appendix A). Monitoring wells will be constructed of 2-inch diameter polyvinyl chloride (PVC) casing and screen, with the screens positioned at the water table.

### **5.11.1 Decontamination**

The Contractor will decontaminate (as necessary) all personnel, equipment, and vehicles that come into contact with excavated materials. All construction vehicles leaving the site will be decontaminated by the Contractor (as necessary) to prevent the tracking of soil off-site (including vehicles transporting clean fill to the site).



## Final (100%) Remedial Design Report

At a minimum, the Contractor will decontaminate the Contractor's project equipment (including, but not limited to, excavation equipment, soil mixing equipment, trucks, pumps, and hand tools, etc.) that contacts excavated and/or solidified materials prior to demobilizing and prior to handling clean material in accordance with Specification Section 02 51 00 – Decontamination (Appendix B). In addition, equipment used to handle excavated/solidified material or liquids will be decontaminated prior to further handling of non-impacted material.

Unless otherwise directed by the WSI Group and/or the Engineer, any equipment to be taken off-site by the Contractor will be cleaned within the constructed decontamination area and subject to a final visual inspection by the Engineer and/or NYSDEC. The extent and method of cleaning will be at the discretion of the Contractor. However, the Contractor will perform decontamination activities until no visible soil, debris, or stains are present on the equipment surfaces (to the satisfaction of the WSI Group, the Engineer, and/or NYSDEC). Equipment, such as pumps, will be flushed using clean water and appropriate cleaning agents (as necessary) to the satisfaction of the Engineer. Precautions will be taken to limit contact between the equipment, personnel performing the cleaning activities, and any cleaning liquids that may accumulate in the decontamination area. Any observed soils, staining, or other debris will be promptly removed by the Contractor to the satisfaction of the WSI Group and/or the Engineer.

The Contractor will manage the solid and liquid waste streams generated by the decontamination activities for off-site disposal or on-site treatment. Water that is generated during decontamination activities will be collected and transferred for on-site treatment. Treatment/disposal of collected wash water, solids, and other materials will be completed in accordance with Section 5.6 and Specification Sections 01 74 19 – Construction Waste Management and Disposal and 02 61 05 – Removal and Disposal of Contaminated Material (Appendix B).

### 5.11.2 Survey

The Contractor will retain a New York State licensed surveyor to conduct survey control during completion of the remedial actions, as required by the Contract Documents. The survey information will be used to document that the remedial activities have been completed consistent with the project design requirements.

The Contractor will supply the survey information (including an as-built survey, sealed and signed by the Contractor's NYS licensed surveyor) to the Engineer for inclusion in the FER upon completion of the remedial activities (see Section 6). Survey work associated with the remedial activities will be performed in accordance with Specification Sections 01 71 23 – Field Engineering, and 01 78 39 – Project Record Documents (Appendix B) and includes, but is not limited to the following:

- Pre-construction survey to document pre-remediation site conditions.
- Horizontal and vertical extent of soil removal.
- Horizontal and vertical extent of sediment removal.
- Consolidation area base layer.
- Top of consolidated material.

## Final (100%) Remedial Design Report

- Post-construction survey to document final site conditions (e.g., extent of site cover, storm water management features, etc.) and topography.

The Contractor will provide a final as-built survey within 21 days of final site demobilization and prior to final payment by the WSI Group.

### **5.11.3 Demobilization**

Following completion of each phase of remedial construction activities, the Contractor will conduct the following demobilization activities:

- Completion of “punch list” items, to be identified by the Engineer.
- Dismantle the work area(s), staging area(s), and decontamination area.
- Appropriately remove/dispose all material, equipment and support structures from the site.

## 6 POST-REMEDIAL CONSTRUCTION ACTIVITIES

Activities to be conducted following the completion of remedial construction activities at the site include the following:

- Preparing a Final Engineering Report
- Establishing institutional controls
- Preparing a Site Management Plan
- Completing post-remedial action monitoring

### 6.1 Final Engineering Report

Following the completion of remedial construction activities, the Engineer will prepare and submit a FER to the NYSDEC. In conformance with DER-10 the FER will present, at a minimum, the following information:

- Description of the remediation activities completed in accordance with the approved remedial design, including problems encountered and variations (if any) from the NYSDEC-approved *Final (100%) Remedial Design Report*.
- Record drawings, tables, and figures detailing the remedial activities completed.
- Certification statement.
- Information and documentation regarding the final quantities and disposition of materials disposed/treated off site during implementation of the remedial activities, including executed manifests and bills of lading.

The FER will be prepared in a format based on available templates on the NYSDEC website. A professional engineer licensed in New York State will sign and seal the FER, including the record drawings and certification statement.

### 6.2 Institutional Controls

As required by the ROD, institutional controls in the form of an environmental easement will be established for the site. The WSI Group will establish the environmental easement in support of the following:

- Restricting the use and development of the site to restricted residential use, which also permits commercial and industrial use.
- Requiring management of the site in accordance with the provisions of the NYSDEC-approved SMP (as described in the following subsection).
- Restricting use of groundwater at the site.
- Preventing current or future property owners from conducting activities that could jeopardize the integrity of the site cover.

## Final (100%) Remedial Design Report

- Requiring the remedial party (i.e., the WSI Group) to complete and submit periodic certifications to NYSDEC confirming that the institutional and engineering controls are still in place and remain effective.
- Sampling of the water supply wells to monitor water quality and continued supply of an alternative source of potable water to affected parties.

### 6.3 Site Management Plan

Following completion of the remedial construction activities and consistent with the requirements of DER-10 (NYSDEC 2010b), the Engineer will prepare an SMP that will detail the post-remedial action activities to be conducted at the site. In general, the SMP will provide the methods and protocols to be followed when conducting post-remediation monitoring (described in Section 6.4) and potential future intrusive site activities.

As indicated in Section 1, the NYSDEC ROD requires the SMP to include details regarding the following institutional and engineering controls:

- Managing the cover to restrict excavation below the cover's demarcation layer, pavement, or buildings.
- Testing, properly handling, and managing excavated soil (in a manner acceptable to the NYSDEC) to protect the health and safety of workers and the nearby community.
- Evaluating the potential for soil vapor intrusion for any new buildings development on the site and providing provision for mitigation of any identified impacts.
- Monitoring groundwater, surface water, sediment, and wetland vegetation and restoration efforts.
- Monitoring biota, including submitting biota samples for PCBs and lipids content.
- Identifying use restrictions on the site.
- Installing and maintaining fencing to control site access.
- Identifying provisions for the continued operation and maintenance of the selected remedy.

### 6.4 Post-Remediation Monitoring

Following the completion of the remedial construction activities, periodic monitoring will be conducted to evaluate/monitor the following:

- site groundwater
- restored wetland vegetation
- wetland biota

### **6.4.1 Groundwater Monitoring**

As indicated in Section 3.2 and 5.11, following the completion of remedial construction activities, the Engineer will install new monitoring wells to facilitate post-remediation groundwater monitoring. The recommended scope, frequency, and duration for post-remediation groundwater monitoring will be presented in the SMP.

### **6.4.2 Wetland Monitoring**

Wetland monitoring requirements will be defined by the conditions of the NWP 38 and the WQC JAP. In general, herbaceous ground cover of the wetland habitats will be monitored to evaluate its development towards meeting performance standards to be developed as part of permit. In addition, the survival of planted trees and shrubs will be monitored to determine if the restoration requirements are achieved by the end of the permit-required monitoring period. Monitoring may also include water level measurements in the restored wetlands to evaluate the functionality of the impoundment structure at retaining water to provide hydrology for periphery wetlands and passing water to feed downstream wetlands.

### **6.4.3 Biota Monitoring**

Biota samples will be collected from the NDA wetland following the completion of the remedial construction activities to document post-remediation PCB concentrations. Additional information regarding post-remediation biota monitoring will be presented in the SMP.

## 7 SCHEDULE

This section presents the preliminary project schedule for remainder of the remedial design phase.

**Table 7.1 Preliminary Project Schedule**

Schedule Component	Date
Final (100%) Remedial Design to NYSDEC	August 2018
Contractor Procurement	September-December 2018
Permitting	September 2018 – March 2019
Remedial construction	Q2 2019 – Q4 2020

Commencement of remedial construction will be contingent on meeting all the preliminary schedule components defined above and receipt of all required permits, access agreements, and approvals.

## 8 REFERENCES

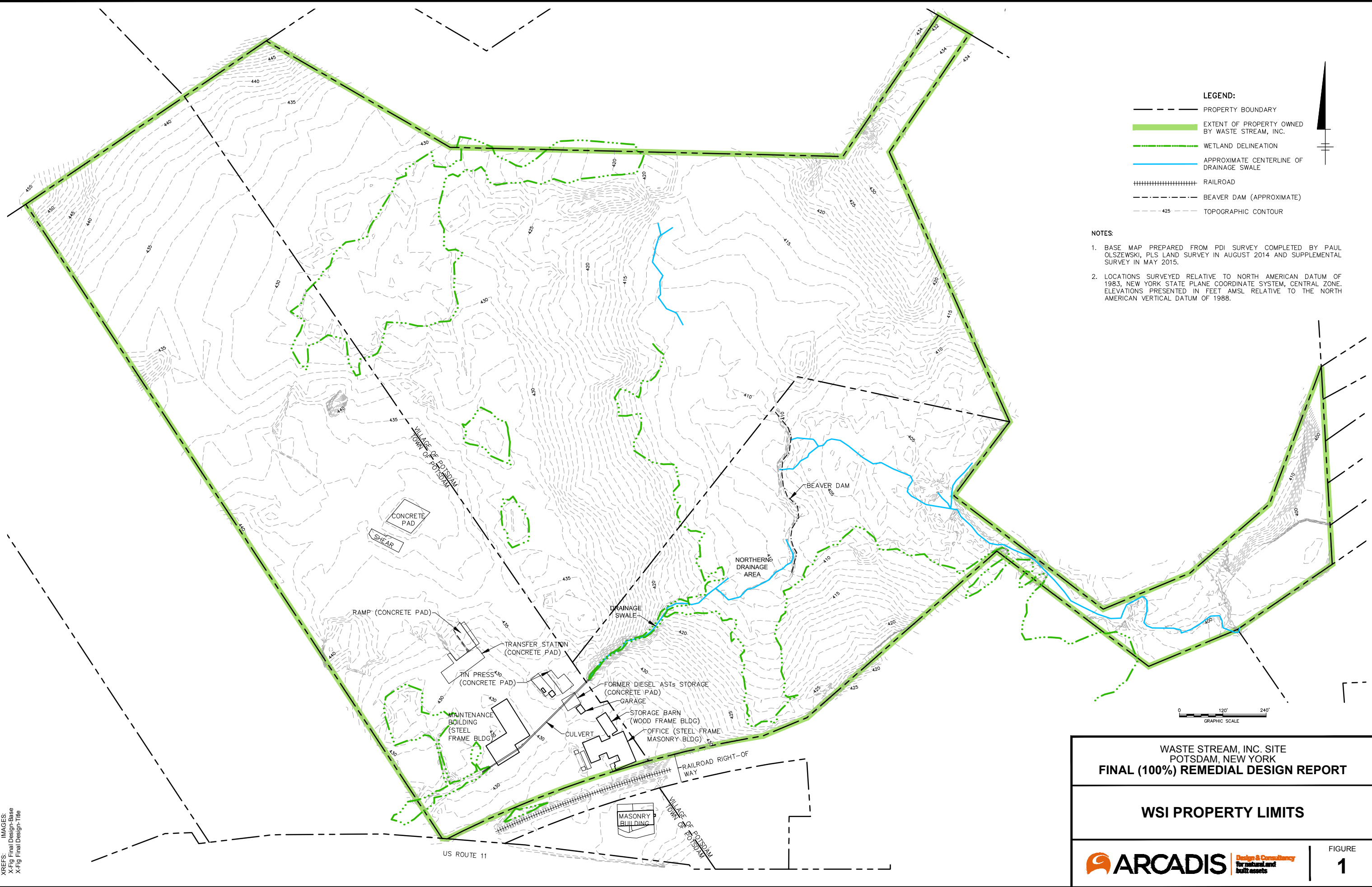
- BBL, 2003. *Focused Remedial Investigation Report*, Waste-Stream, Inc. Site, Prepared for the WSI Group, Potsdam, New York, October 2003.
- BBL, 2006. *Supplemental Remedial Investigation Report*, Waste-Stream, Inc. Site, Prepared for the WSI Group, Potsdam, New York, March 2006.
- Arcadis, 2014. *Remedial Design/Remedial Action Work Plan*, Waste-Stream, Inc. Site, Prepare for the WSI Group, Potsdam, New York, January 2014; Revised April 2014.
- Arcadis, 2015. PDI Summary Report letter, October 27, 2015.
- Arcadis, 2017, Supplement Investigation Summary Report letter, December 18, 2017.
- Arcadis, 2018, Self-Implementing Cleanup and Disposal Notification for PCB Remediation Waste, WSI Site, February 19, 2018.
- NYSDEC, 2004. *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (TOGS 1.1.1), Reissued June 1998 and addended April 2000 and June 2004.
- NYSDEC, 2009. *CP-43 Groundwater Monitoring Well Decommissioning Policy*, November 2009.
- NYSDEC, 2010a. *DER-23. Citizen Participation Handbook for Remedial Programs*, January 2010.
- NYSDEC, 2010b. *DER-10, Technical Guidance for Site Investigation and Remediation*, May 2010.
- NYSDEC, 2011. *Record of Decision, WSI site, Potsdam, St. Lawrence County, Site Number 6-45-022*, June 2011.

**FIGURE**





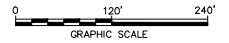
CITY: SYRACUSE NY DIV/GROUP: ENVCAD DE: E. KRAHMER K. SARTORI LD.(Opt) PIC: PM: J. BRIEN TM: TR: J.GAL. OUBSKI LVR(Opt) ON="OFF" REF="C:\Users\jdeclerc\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam\former Scrap Yaru\2018\B0031006.0005\01-DWG\Final Design-Fig 1-WSI Property.dwg PLOTTED: 3/28/2018 3:52 PM BY: DECLERCQ, BRIAN XREFS: IMAGES: X-Fig Final Design-Base X-Fig Final Design-Title



- LEGEND:**
- PROPERTY BOUNDARY
  - EXTENT OF PROPERTY OWNED BY WASTE STREAM, INC.
  - - - WETLAND DELINEATION
  - APPROXIMATE CENTERLINE OF DRAINAGE SWALE
  - ||||| RAILROAD
  - - - BEAVER DAM (APPROXIMATE)
  - - - 425 TOPOGRAPHIC CONTOUR



- NOTES:**
1. BASE MAP PREPARED FROM PDI SURVEY COMPLETED BY PAUL OLSZEWSKI, PLS LAND SURVEY IN AUGUST 2014 AND SUPPLEMENTAL SURVEY IN MAY 2015.
  2. LOCATIONS SURVEYED RELATIVE TO NORTH AMERICAN DATUM OF 1983, NEW YORK STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE. ELEVATIONS PRESENTED IN FEET AMSL RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988.



**WASTE STREAM, INC. SITE  
POTSDAM, NEW YORK  
FINAL (100%) REMEDIAL DESIGN REPORT**

---

**WSI PROPERTY LIMITS**

---

**ARCADIS** Design & Consultancy  
for natural and built assets

FIGURE  
**1**

# APPENDIX A

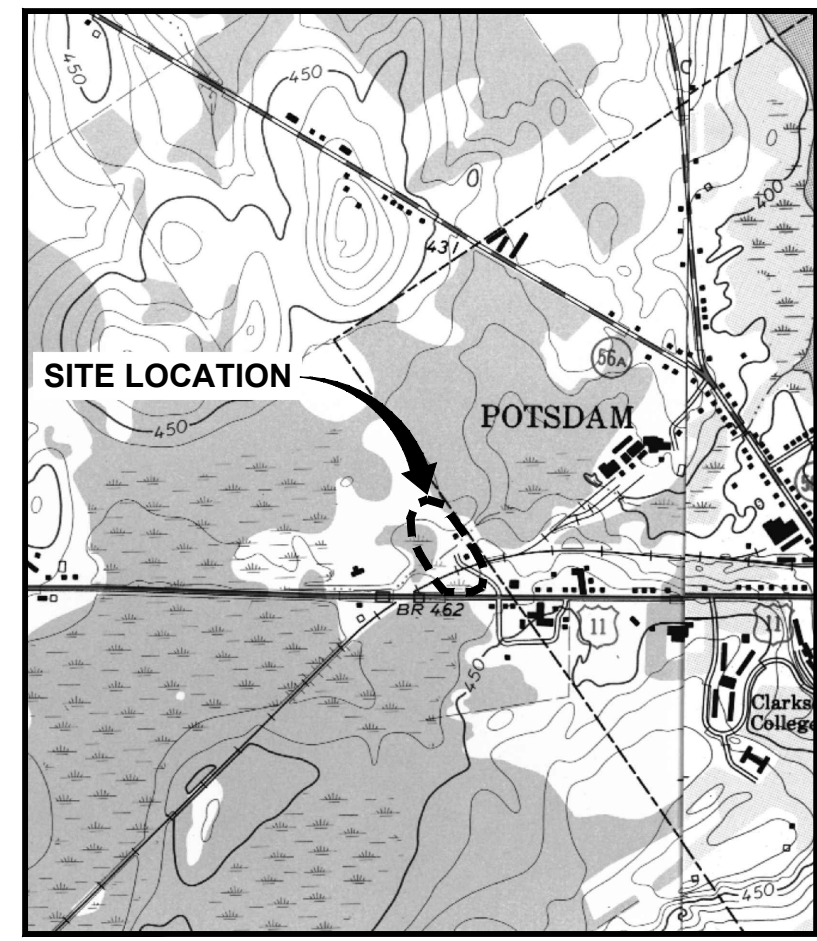
Design Drawings



CITY: SYRACUSE, NY DB: B. DECLERCO  
 C:\Users\bdeclerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI - Potsdam former Scrap Yard\2018\B003\1006\000501-DWG\Rem Design-DWG G-001-Cover Sheet.DWG LAYOUT: COVER  
 PLOT: 8/24/2018 10:18 AM BY: DECLERCO, BRIAN  
 IMAGES: 074647-STAMP.MXD  
 XREFS: X-Rem Design-Site Location.jpg

# DESIGN DRAWINGS

# WASTE-STREAM, INC. SITE FINAL (100%) REMEDIAL DESIGN



REFERENCE: BASE MAP SOURCE USGS 7.5 MINUTE QUAD, SERIES WEST POTSDAM AND POTSDAM, NEW YORK 1964.

**LOCATION MAP**



## WSI GROUP POTSDAM, NEW YORK

DATE ISSUED  
**AUGUST 2018**



ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

### INDEX TO DRAWINGS

#### GENERAL

- G-001 COVER SHEET, LOCATION MAP AND LIST OF DRAWINGS
- G-002 GENERAL REQUIREMENTS, NOTES, ABBREVIATIONS, AND LEGEND
- G-101 SITE PLAN
- G-102 EXISTING UTILITY PLAN
- G-103 GENERAL SITE REMEDIATION PLAN
- G-103A PHASE 1 REMEDIATION LIMITS
- G-103B PHASE 2 REMEDIATION LIMITS
- G-104 PHASE 1 SITE PREPARATION PLAN
- G-105 PHASE 2 SITE PREPARATION PLAN
- G-501 MATERIAL STAGING AREA AND DECONTAMINATION PAD DETAILS
- G-502 EROSION AND SEDIMENT CONTROL DETAILS

#### CIVIL

- C-101 PHASE 1 SOIL EXCAVATION PLAN
- C-102 NEW STORM SEWER PLAN
- C-103 PHASE 1 INTERIM SITE RESTORATION PLAN
- C-104 SOIL COVER FINAL GRADE PLAN
- C-105 SOIL COVER FINAL GRADE PLAN
- C-106 CONSOLIDATION AREA SUBGRADE PLAN
- C-107 PHASE 2 SEDIMENT EXCAVATION PLAN
- C-108 PHASE 2 RESTORATION PLAN AND DETAILS
- C-109 CONSOLIDATED MATERIAL GRADING PLAN
- C-110 CONSOLIDATION AREA FINAL GRADING PLAN
- C-111 FINAL UPLAND RESTORATION PLAN
- C-301 PHASE 1 EXCAVATION CROSS-SECTIONS
- C-302 NEW STORM SEWER PROFILE
- C-303 PHASE 2 EXCAVATION CROSS-SECTIONS
- C-304 CONSOLIDATION AREA CROSS-SECTIONS
- C-501 TEMPORARY BYPASS DETAILS
- C-502 STORM SEWER DETAILS
- C-503 SITE COVER AND RESTORATION DETAILS
- C-504 FENCE DETAILS
- C-505 PHASE 2 RESTORATION PLAN AND PROFILE
- C-506 PLANTING PLAN DETAILS AND NOTES
- C-507 PLANTING TABLES
- C-508 BOULDER CROSS VANE DETAILS
- C-601 CONCEPTUAL TEMPORARY WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAM

CITY: SYRACUSE, NY DB: B.DECLERCO C:\Users\bdclerc\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam former Scrap Yard\2018\B003 1006.0005\01-DWG\Rem Design-DWG G-002-General Notes & Legend.DWG LAYOUT: G-002  
 XREFS: IMAGES: X:\Rem Design\161617-STAMP.liff  
 PLOTTED: 8/24/2018 10:27 AM BY: DECLERCQ, BRIAN  
 ACADVER: 21.05 (LMS TECH) PAGES: 17  
 LAYOUT: G-002  
 SAVER: 8/24/2018 10:17 AM

**GENERAL NOTES:**

- ACTUAL SITE FEATURES AT THE TIME OF CONSTRUCTION MAY DIFFER FROM THOSE SHOWN ON THE DESIGN DRAWINGS. PROMPTLY NOTIFY THE OWNER AND ENGINEER (IN WRITING) OF ANY SUCH DIFFERENCES THAT MAY AFFECT THE PERFORMANCE OF THE WORK.
- THE OWNER WILL OBTAIN A CSX OUTSIDE PARTY NUMBER TO FACILITATE ACQUIREMENT OF A WORK PERMIT FOR CSX'S PROPERTY. THE ENGINEER WILL PREPARE A JOINT APPLICATION FOR PERMIT TO OBTAIN A NATIONWIDE PERMIT #38 AUTHORIZATION FROM THE USACE TO DO WORK IN THE WETLANDS AND 401 WATER QUALITY CERTIFICATION FROM NYSDEC. THE ENGINEER WILL ALSO COORDINATE WITH THE USEPA TO OBTAIN PCB DISPOSAL APPROVAL.
- THE ENGINEER WILL WORK WITH THE CONTRACTOR TO PREPARE A STATE POLLUTION DISCHARGE ELIMINATION SYSTEM (SPDES) EQUIVALENT PERMIT FOR DISCHARGING TREATED WATER TO SURFACE WATER. CONTRACTOR SHALL OBTAIN ANY OTHER FEDERAL-, STATE-, COUNTY-, AND/OR CITY-SPECIFIC PERMITS THAT MAY BE REQUIRED TO PERFORM THE WORK, INCLUDING CSX WORK PERMITS.
- INFORMATION RELATED TO SUBSURFACE CONDITIONS IS APPROXIMATE AND SHOULD NOT BE RELIED ON AS A COMPLETE DEPICTION OF SITE CONDITIONS. VERIFY ALL EXISTING CONDITIONS, INCLUDING ABOVEGRADE AND SUBSURFACE FEATURES WHETHER OR NOT SHOWN ON DESIGN DRAWINGS OR OTHERWISE DESCRIBED IN THE CONTRACT DOCUMENTS.
- THE TECHNICAL WORK AND CONTRACTOR REQUIREMENTS ARE DESCRIBED IN SEVERAL DOCUMENTS THAT COLLECTIVELY REPRESENT THE REMEDIAL DESIGN. THESE DOCUMENTS INCLUDE THE REMEDIAL DESIGN NARRATIVE, DESIGN DRAWINGS, TECHNICAL SPECIFICATIONS, CAMP, CERP, VSP, AND SWPPP. THOROUGHLY REVIEW THESE DOCUMENTS, SUBMIT IN WRITING TO THE ENGINEER FOR CLARIFICATION ANY IDENTIFIED DIFFERENCES BETWEEN THE INFORMATION PRESENTED IN THE ABOVE-LISTED DOCUMENTS.
- FOLLOW THE REMEDIAL CONSTRUCTION SEQUENCE PRESENTED IN THIS REMEDIAL DESIGN. PROPOSE AN ALTERNATE CONSTRUCTION SEQUENCE IN WRITING FOR REVIEW BY THE ENGINEER PRIOR TO IMPLEMENTATION (AS APPROPRIATE).

**UTILITY NOTES:**

- THE LOCATIONS, ALIGNMENTS, AND CONSTRUCTION OF UTILITIES SHOWN ON THE DESIGN DRAWINGS ARE APPROXIMATE AND BASED ON INFORMATION READILY AVAILABLE TO THE OWNER/ENGINEER. VERIFY THE PRESENCE AND LOCATION OF ALL OVERHEAD/UNDERGROUND SITE FEATURES AND UTILITIES RELEVANT TO AND POTENTIALLY TO BE ENCOUNTERED DURING THE WORK. ADDITIONAL SITE FEATURES AND UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE DESIGN DRAWINGS.
- CONTACT/COORDINATE WITH DIG SAFELY NEW YORK TO LOCATE AND IDENTIFY UNDERGROUND UTILITIES UP TO THE PROPERTY LINE. THE DIG SAFELY NEW YORK PHONE NUMBER IS 811; THE WEBSITE IS WWW.DIGSAFELYNEWYORK.COM.
- SUBCONTRACT/COORDINATE WITH AN APPROPRIATE PRIVATE UTILITY LOCATOR TO LOCATE AND IDENTIFY UNDERGROUND UTILITIES WITHIN PROPERTY LIMITS.
- EXCEPT WHERE NOTED OR AS OTHERWISE INDICATED IN THE REMEDIAL DESIGN, MAINTAIN AND PROTECT ALL OVERHEAD/UNDERGROUND SITE FEATURES AND UTILITIES THAT MAY BE AFFECTED BY THE WORK. ALL UTILITIES, UNLESS STATED OTHERWISE, SHALL REMAIN IN OPERATION FOR THE DURATION OF THE WORK.
- CONTACT/COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES FOR THE TEMPORARY BRACING, REMOVAL, RELOCATION, AND/OR REPLACEMENT OF ANY UTILITIES, UTILITY POLES, OR GUY WIRES.
- COORDINATE WITH NATIONAL GRID TO OBTAIN ELECTRICAL SERVICE NECESSARY TO SUPPORT REMEDIAL CONSTRUCTION ACTIVITIES.
- IF THE CONTRACTOR DAMAGES EXISTING UTILITY EQUIPMENT OR STRUCTURES, NOTIFY THE UTILITY COMPANY OR MUNICIPALITY AND FULLY REPAIR DAMAGES IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY/ MUNICIPALITY.

**REFERENCE AND SURVEY-RELATED NOTES:**

- BASE MAP PREPARED FROM PDI SURVEY COMPLETED BY PAUL OLSZEWSKI, PLS LAND SURVEY IN AUGUST 2014 AND SUPPLEMENTAL SURVEY IN MAY 2015.
- LOCATIONS SURVEYED RELATIVE TO NORTH AMERICAN DATUM OF 1983, NEW YORK STATE PLANE COORDINATE SYSTEM, EAST ZONE. ELEVATIONS PRESENTED IN FEET AMSL RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988.
- ESTABLISH AND MAINTAIN CONSTRUCTION SURVEY CONTROL AND VERIFY GRADES DURING THE PERFORMANCE OF WORK USING A NEW YORK STATE-LICENSED LAND SURVEYOR.
- ALL LOCATIONS ARE APPROXIMATE.

**WASTE MANAGEMENT NOTES:**

- REMOVE ABOVEGROUND AND UNDERGROUND (AS NEEDED) NON-EARTHEN MATERIALS (E.G., BRUSH, LOGS, TREES, STUMPS, BRICK, CONCRETE, PIPING, STEEL STRUCTURES, ETC.) AS REQUIRED TO PERFORM THE WORK. MANAGE AND DISPOSE OF VEGETATION IN ACCORDANCE WITH SPECIFICATION SECTION 31 11 00 - CLEARING AND GRUBBING.
- REMOVE MANAGE AND DISPOSE OF LOGS, BRANCHES, STICKS, ROCKS, SEDIMENT AND OTHER DEBRIS ASSOCIATED WITH THE EXISTING BEAVER DAM IN ACCORDANCE WITH SPECIFICATION SECTION 02 61 05 - REMOVAL AND DISPOSAL OF CONTAMINATED MATERIAL.
- EXISTING SITE FEATURES NOT SPECIFICALLY IDENTIFIED ON THE DESIGN DRAWINGS MAY REQUIRE REMOVAL AND DISPOSAL BY THE CONTRACTOR TO FACILITATE CONSTRUCTION. DO NOT REMOVE SUCH FEATURES WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- COLLECT, CONVEY, CONTAINERIZE, TREAT, AND DISCHARGE ALL WATER GENERATED DURING THE PROJECT (E.G., FROM EXCAVATION/MATERIAL DEWATERING, DECONTAMINATION OF EQUIPMENT, ETC.) IN ACCORDANCE WITH THE REMEDIAL DESIGN. THE CONTRACTOR SHALL PERIODICALLY COLLECT INFLUENT, EFFLUENT, AND ADDITIONAL WATER SAMPLES AS NECESSARY TO MONITOR THE PERFORMANCE OF THE WATER TREATMENT SYSTEM AND TO SATISFY NYSDEC DISCHARGE REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS AND FEES ASSOCIATED WITH THE OPERATION AND MAINTENANCE OF THE WATER TREATMENT SYSTEM (E.G., MEDIA CHANGE-OUT, SYSTEM REPAIRS, ETC.).
- HANDLE, STAGE, AND DISPOSE OF ALL TSCA-REGULATED, NYS HAZARDOUS WASTE SEPARATELY FROM OTHER WASTES. DECONTAMINATE EQUIPMENT THAT COMES INTO CONTACT WITH TSCA-REGULATED MATERIAL PRIOR TO HANDLING NON-TSCA MATERIAL.
- DEWATER AND STABILIZE (IF REQUIRED) AND PLACE ALL SOIL/SEDIMENT WITH CONCENTRATIONS OF PCBs <50 MG/KG IN THE ONSITE CONSOLIDATION AREA IN ACCORDANCE WITH THE REMEDIAL DESIGN.

**SITE MANAGEMENT/PROJECT PERFORMANCE NOTES:**

- UTILIZE COMPETENT, EXPERIENCED PERSONNEL TO PERFORM ALL WORK IN A NEAT AND ORDERLY MANNER, IN CONFORMANCE WITH BEST MODERN TRADE PRACTICE. MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH ALL CODES, REGULATIONS, AND REQUIREMENTS OF ALL APPLICABLE CITY, STATE, FEDERAL, AND OTHER PUBLIC OR PRIVATE AUTHORITIES. KEEP THE CONSTRUCTION AREAS FREE FROM ACCUMULATIONS OF WASTE MATERIALS OR RUBBISH AT ALL TIMES; REMOVE ANY RUBBISH, TOOLS, EQUIPMENT, AND MATERIALS FROM THE PREMISES PRIOR TO COMPLETION OF THE WORK.
- DECONTAMINATE ALL EQUIPMENT OPERATED WITHIN THE PROJECT WORK LIMITS IN ACCORDANCE WITH THE REMEDIAL DESIGN PRIOR TO ARRIVING ONSITE AND PRIOR TO LEAVING THE SITE. DECONTAMINATE PROJECT EQUIPMENT THAT COMES IN CONTACT WITH EXCAVATED MATERIALS PRIOR TO HANDLING IMPORTED BACKFILL MATERIAL AND PRIOR TO LEAVING THE SITE. PREVENT TRACKING OF SOIL MATERIALS ONTO OFF-SITE AREAS AND THROUGHOUT ON-SITE AREAS. IMMEDIATELY CLEAN UP ANY SOIL MATERIALS TRACKED, SPILLED OR DROPPED AT NO ADDITIONAL COST TO THE OWNER.
- ESTABLISH, MAINTAIN, AND PROTECT THE PROJECT WORK LIMITS (INCLUDING EXCLUSION, CONTAMINATION REDUCTION, AND SUPPORT ZONES) IN ACCORDANCE WITH THE CONTRACTOR'S HASP. PERFORM ALL WORK WITHIN THE PROJECT WORK LIMITS UNLESS PRIOR APPROVAL IS OBTAINED FROM THE OWNER/ENGINEER.
- PROVIDE TEMPORARY TRAFFIC CONTROL MEASURES (E.G., FLAG MEN, SIGNS, CONES, ETC.). DO NOT STORE EXCAVATED MATERIALS OR SUPPLIES OF ANY KIND ON PRIVATE OR PUBLIC PREMISES WITHOUT PRIOR APPROVAL FROM THE OWNER/ENGINEER.
- THE ENGINEER WILL PERFORM COMMUNITY AIR MONITORING FOR VOLATILE ORGANIC COMPOUNDS AND PARTICULATES ON A CONTINUOUS BASIS DURING ALL INTRUSIVE AND/OR POTENTIAL DUST GENERATING ACTIVITIES (E.G., INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES, EXCAVATION/MATERIAL HANDLING ACTIVITIES, ETC.). ENSURE THAT COMMUNITY AIR MONITORING IS BEING PERFORMED PRIOR TO INITIATING INTRUSIVE AND/OR POTENTIAL DUST GENERATING ACTIVITIES EACH DAY. PERFORM WORK ZONE AIR MONITORING IN ACCORDANCE WITH THE CONTRACTOR'S HASP AND THE REMEDIAL DESIGN.
- CONTROL DUST AND VAPORS GENERATED DURING THE PROJECT, AS NECESSARY, TO MEET THE COMMUNITY AIR MONITORING ACTION LEVELS SPECIFIED IN THE CAMP. IMPLEMENT DUST AND VAPOR CONTROLS, AS SPECIFIED IN THE CAMP. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH PROJECT DELAYS ASSOCIATED WITH UNCONTROLLED DUST AND VAPOR EMISSIONS.
- RESTORE ALL AREAS IMPACTED BY OR OTHERWISE DISTURBED DURING THE PROJECT TO PRE-CONSTRUCTION CONDITIONS AND/OR AS INDICATED IN THE REMEDIAL DESIGN IN A TIMELY MANNER AND PRIOR TO DEMOBILIZATION.
- COMPLY WITH ALL NOISE ORDINANCES AND MAKE EVERY EFFORT TO MINIMIZE NOISE CAUSED BY CONSTRUCTION OPERATIONS. EQUIPMENT SHALL BE EQUIPPED WITH SILENCERS OR MUFFLERS DESIGNED TO OPERATE WITH THE LEAST POSSIBLE NOISE IN COMPLIANCE WITH LAWS AND REGULATIONS.
- DO NOT STORE EXCAVATED MATERIALS OR SUPPLIES OF ANY KIND ON PRIVATE OR PUBLIC PREMISES WITHOUT PRIOR APPROVAL FROM THE OWNER OR ENGINEER.





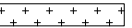

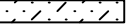

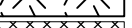
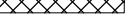
**SAFETY NOTES:**

- PROVIDE EVIDENCE OF ALL ONSITE PERSONNEL COMPLETING OSHA 40-HOUR TRAINING AND 8-HOUR REFRESHER TRAINING PRIOR TO INITIATING REMEDIAL CONSTRUCTION ACTIVITIES. PROVIDE A LIST OF ALL CHEMICAL PRODUCTS AND AN SDS FOR ALL CHEMICAL PRODUCTS TO BE USED ON-SITE. THE LIST MUST BE APPROVED BY THE OWNER PRIOR TO BEING BROUGHT ON-SITE.
- IMPLEMENT, MAINTAIN, AND SUPERVISE ALL SAFETY MEASURES AND PROGRAMS IN CONNECTION WITH THE PROJECT. TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF, AND PROVIDE THE NECESSARY PRECAUTIONS TO PROTECT SITE WORKERS, ENGINEERING PERSONNEL, AND SITE VISITORS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SAFETY PROGRAMS FOR THEIR EMPLOYEES, SUBCONTRACTORS, AND ANY OTHER PERSONS WHO MAY BE AFFECTED THEREBY.
- COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF PUBLIC BODIES HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY OR TO PROTECT THEM FROM DAMAGE, INJURY, OR LOSS, INCLUDING, WITHOUT LIMITATION, THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 (PL 91-596) AND UNDER SECTION 107 OF THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT (PL 91-54) AND AMENDMENTS THERETO.
- FURNISH AND PLACE PROPER GUARDS FOR PREVENTION OF ACCIDENTS, AND PROVIDE ALL EXCAVATION SHORING/BACKING, SCAFFOLDING, SHIELDING, DUST/VAPOR/ODOR PROTECTION, MECHANICAL/ELECTRICAL PROTECTION, SPECIAL GROUNDING, SAFETY RAILINGS, BARRIERS, PROPER WORKING EQUIPMENT WITH FUNCTIONING SAFETY MECHANISMS (E.G., LIFT GATE WARNING SIGNALS), AND ALL APPLICABLE RECOMMENDATIONS OF THE MANUAL OF ACCIDENT PREVENTION IN CONSTRUCTION OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC.
- THE MATERIALS SUBJECT TO HANDLING AS PART OF THE PROJECT MAY CONTAIN HAZARDOUS CONSTITUENTS OR CHEMICALS AND SHOULD BE HANDLED IN ACCORDANCE WITH APPLICABLE REGULATIONS. DEVELOP AND IMPLEMENT APPROPRIATE HEALTH AND SAFETY MEASURES FOR ITS EMPLOYEES, SUBCONTRACTORS, AND SITE VISITORS, AND FOR THE PROTECTION OF THE ENVIRONMENT AND SURROUNDING COMMUNITY. DEVELOP THE CONTRACTOR'S HASP IN ACCORDANCE WITH APPLICABLE OSHA, FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING 29 CFR 1910.120 AND 29 CFR 1926.65.
- SEVERAL CONTRACTOR ACTIVITIES WILL BE PERFORMED WITHIN, ADJACENT TO, OR IN THE VICINITY OF THE EXCAVATION/BACKFILL AREAS. THE CONTRACTOR'S HASP SHALL RECOGNIZE THE TYPES OF ACTIVITIES TO BE PERFORMED, THE UNIQUE HAZARDS SPECIFIC TO THESE ACTIVITIES, AND SPECIAL PRECAUTIONS AND CONTROLS THAT ARE TO BE IMPLEMENTED. OF ADDITIONAL NOTE AND EMPHASIS ARE THOSE ACTIVITIES THAT POTENTIALLY INVOLVE WORK WITHIN THE EXCAVATION AREAS ONCE EXCAVATION/BACKFILL ACTIVITIES ARE INITIATED, AND THAT POTENTIALLY REQUIRE WORKER ACCESS INTO THE EXCAVATED AREAS. CLEARLY IDENTIFY AND EVALUATE THE SPECIFIC TYPES OF ACTIVITIES THAT COULD INVOLVE WORKER ENTRY INTO THE EXCAVATION AREAS, SPECIFIC INGRESS/EGRESS ROUTES AND PROVISIONS, PERSONNEL AND WORK AREA MONITORING, PERSONAL PROTECTIVE EQUIPMENT, COMMUNICATIONS, ETC. FURTHER, TO THE EXTENT PRACTICABLE (AS DETERMINED BY THE CONTRACTOR), THE CONTRACTOR IS ENCOURAGED TO MINIMIZE WORKER ENTRY INTO THE EXCAVATED AREAS.

**ABBREVIATIONS:**

AMSL	ABOVE MEAN SEA LEVEL
AST	ABOVE GRADE STORAGE TANK
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
CAMP	COMMUNITY AIR MONITORING PLAN
CERP	COMMUNITY AND ENVIRONMENTAL RESPONSE PLAN
CFR	CODE OF FEDERAL REGULATIONS
CMP	CORRUGATED METAL PIPE
CQAP	CONSTRUCTION QUALITY ASSURANCE PLAN
CY	CUBIC YARDS
DER	DIVISION OF ENVIRONMENTAL REMEDIATION
GPM	GALLONS PER MINUTE
HASP	HEALTH AND SAFETY PLAN
HDPE	HIGH DENSITY POLYETHYLENE
INV.	INVERT
LBS	POUNDS
MG/KG	MILLIGRAMS PER KILOGRAM
MGP	MANUFACTURED GAS PLANT
NDA	NORTHERN DRAINAGE AREA
NYSDEC	NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NYSDOT	NEW YORK STATE DEPARTMENT OF TRANSPORTATION
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OZ	OUNCE
PCB	POLYCHLORINATED BIPHENYLS
PDI	PRE-DESIGN INVESTIGATION
PDF	PERSONAL FLOTATION DEVICE
RI	REMEDIATION INVESTIGATION
SCO	SOIL CLEANUP OBJECTIVE
SDA	SOUTHERN DRAINAGE AREA
SDS	SAFETY DATA SHEET
SPDES	STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
TSCA	TOXIC SUBSTANCES CONTROL ACT
TYP.	TYPICAL
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USEPA	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
VSP	VERIFICATION SAMPLING PLAN
WMP	WASTE MANAGEMENT PLAN
WSI	WASTE STREAM, INC.
WTS	WATER TREATMENT SYSTEM

**GENERAL LEGEND:**

MW-201	EXISTING MONITORING WELL
PZ-01	EXISTING PIEZOMETER LOCATION
--- 430 ---	EXISTING TOPOGRAPHIC CONTOUR
	MONITORING WELL PIEZOMETER TO BE ABANDONED
1-1-A X	SURVEY CONTROL POINT
-----	WETLAND BOUNDARY
-----	APPROXIMATE CENTERLINE OF DRAINAGE SWALE
---	PROPERTY BOUNDARY
OH	OVERHEAD UTILITIES
ST	EXISTING STORM SEWER
U	UNKNOWN UTILITY
FO	FIBER OPTIC LINE
E	ELECTRIC LINE
-----	PROJECT WORK LIMITS
+++++	RAILROAD
-o-	EXISTING UTILITY POLE
	SOIL/SEDIMENT REMOVAL AREA
	SOIL/SEDIMENT CONTAINING PCBs >= 50 mg/kg
2	SOIL/SEDIMENT REMOVAL DEPTH (IN FEET)
(1-1)	PHASE 1 EXCAVATION AREA
(2-1)	PHASE 2 EXCAVATION AREA
////	SITE FEATURE TO BE REMOVED OR ABANDONED
--- 443 ---	NEW TOPOGRAPHIC CONTOUR
---	NEW GRADE BREAK
---	LIMIT OF GRADING
449.2 X	NEW SPOT ELEVATION
-----	SITE COVER LIMITS
	SOIL COVER LIMITS
	VEGETATIVE SURFACE RESTORATION
	GRAVEL SURFACE RESTORATION COVER
	EMERGENT WETLAND RESTORATION LIMITS
	FORESTED WETLAND RESTORATION LIMITS
	SHRUB SWAMP WETLAND RESTORATION LIMITS
	TEMPORARY EROSION CONTROL MAT

NOT TO SCALE

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name	
TERRY W. YOUNG	
Professional Engineer's No.	
074847	
State	Date Signed
NY	8/24/2018
Project Mgr.	JDB
Designed by	Checked by
JRG	JDB
Drawn by	
BKD	



**ARCADIS** Design & Consultancy for natural and built assets.

ARCADIS OF NEW YORK, INC.

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN

**GENERAL REQUIREMENTS, NOTES, ABBREVIATIONS, AND LEGEND**

ARCADIS Project No. B0031006.0005.00080
Date AUGUST 2018
ARCADIS One Lincoln Center 110 West Fayette Street-Suite 300 SYRACUSE, NEW YORK 13202 315.446.9120

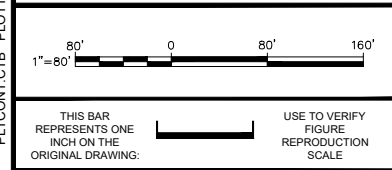
**G-002**





- LEGEND:**
- OH — OVERHEAD UTILITIES
  - ST — EXISTING STORM SEWER
  - U — UNKNOWN UTILITY
  - FO — FIBER OPTIC LINE
  - E — ELECTRIC LINE
  - ◆ EXISTING UTILITY POLES

- NOTES:**
1. UTILITIES SHOWN MAY BE REMOVED OR ABANDONED AS PART OF BUILDING DEMOLITION/REMOVAL ACTIVITIES TO BE COMPLETED BY OTHERS PRIOR TO REMEDIAL CONSTRUCTION.
  2. CONFIRM LOCATIONS OF ALL ABOVE GROUND AND UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE WORK PRIOR TO THE START OF THE WORK.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 JRG  
 Drawn by  
 BKD  
 Checked by  
 JDB



**ARCADIS** | Design & Consultancy for natural and built assets.

ARCADIS OF NEW YORK, INC.

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

**EXISTING UTILITY PLAN**

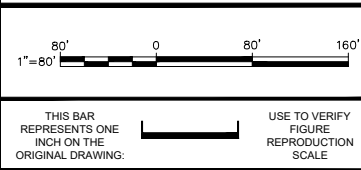
ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**G-102**

CITY: SYRACUSE, NY DB: B, DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam former Scrap Yard\2018\B0031006.0005\01-DWG\Rem Design-DWG G-103-General Site Remediation Plan.dwg LAYOUT: G-103 SAVED: 7/23/2018 3:12 PM ACADVER: 21.05 (LMS TECH) PAGES: 1 OF 1  
 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:28 AM BY: DECLERCO, BRIAN



- LEGEND:**
- SOIL COVER LIMITS
  - PROJECT WORK LIMITS
  - SOIL/SEDIMENT REMOVAL AREA
  - SOIL/SEDIMENT CONTAINING PCBs >= 50 mg/kg



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 JRG  
 Drawn by  
 BKD  
 Checked by  
 JDB



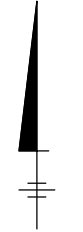
**ARCADIS** | Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**GENERAL SITE REMEDIATION PLAN**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

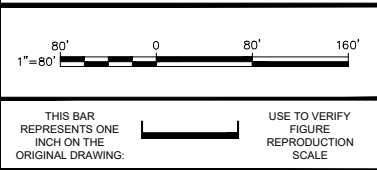
**G-103**

CITY: SYRACUSE, NY DB: B, DECLERCO Arcadis\BIM 360 Docs\NATIONAL GRID\WIS Potsdam former Scrap Yard\2018\B0031006.000501-DWG\Rem Design-DWG G-103A-Phase 1 Remediation Limits.dwg LAYOUT: . . . . . PLOTSTYLETABLE: C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WIS Potsdam former Scrap Yard\2018\B0031006.000501-DWG\Rem Design-DWG G-103A-Phase 1 Remediation Limits.dwg LAYOUT: . . . . . PLOTSTYLETABLE: PLOTCONT.CTB PLOTTED: 8/24/2018 10:28 AM BY: DECLERCO, BRIAN



- LEGEND:**
- SOIL COVER LIMITS
  - PROJECT WORK LIMITS
  - SOIL/SEDIMENT REMOVAL AREA
  - SOIL/SEDIMENT CONTAINING PCBs > 50 mg/kg

- GENERAL REMEDIATION SEQUENCE:**
- PHASE 1**
1. PHASE 1 MOBILIZATION AND SITE PREPARATION.
  2. CONSTRUCT TSCA WASTE STAGING AREA (AS APPLICABLE).
  3. EXCAVATE AND TRANSPORT TSCA REGULATED/NEW YORK STATE HAZARDOUS WASTE FOR OFF-SITE DISPOSAL.
  4. CONSTRUCT ON-SITE CONSOLIDATION AREA SUBGRADE (SEE DRAWING C-106) AND PERIMETER BERM.
  5. EXCAVATE UPLAND OFF-SITE, NON-TSCA SOILS, STABILIZE AS NECESSARY WITHIN THE EXCAVATION LIMITS, AND PLACE IN ON-SITE CONSOLIDATION AREA.
  6. ABANDON EXISTING STORM SEWER AND INSTALL NEW STORM SEWER SYSTEM AND MANHOLES.
  7. INSTALL SOIL COVERS, AS WELL AS A TEMPORARY GRAVEL COVER TO SUPPORT PHASE 2 ACTIVITIES. FINAL COVER TO BE INSTALLED FOLLOWING PHASE 2.
  8. PLACE SOIL COVER OVER PHASE 1 CONSOLIDATED MATERIAL.
  9. PHASE 1 DEMOBILIZATION.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
Professional Engineer's No.  
074847  
State  
NY  
Date Signed  
8/24/2018  
Project Mgr.  
JDB  
Designed by  
JRG  
Drawn by  
BKD  
Checked by  
JDB



**ARCADIS** Design & Consultancy for natural and built assets.

ARCADIS OF NEW YORK, INC.

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN

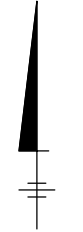
**PHASE 1 REMEDIATION LIMITS**

ARCADIS Project No.  
B0031006.0005.00080  
Date  
AUGUST 2018  
ARCADIS  
One Lincoln Center  
110 West Fayette Street-Suite 300  
SYRACUSE, NEW YORK 13202  
315.446.9120

**G-103A**

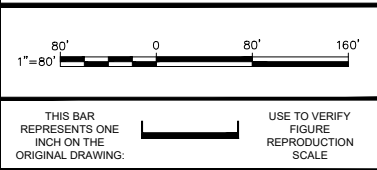


CITY: SYRACUSE, NY DB: B DECLERCO  
 C:\Users\bdclerc\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI PotSDam former Scrap Yard\2018\B0031006.000501-DWG\Rem Design-DWG G-103B-Phase 2 Remediation Limits.dwg LAYOUT: . . . . . PLOTSTYLETABLE: PLOTCONT.CTB PLOTTED: 8/24/2018 10:28 AM BY: DECLERCO, BRIAN



- LEGEND:**
- PROJECT WORK LIMITS
  - SOIL/SEDIMENT REMOVAL AREA
  - SOIL/SEDIMENT CONTAINING PCBs ≥ 50 mg/kg

- PHASE 2**
1. PHASE 2 MOBILIZATION AND SITE PREPARATION.
  2. CUT TREES AND RELOCATE BEAVERS (IF NECESSARY).
  3. EXCAVATE AND RESTORE SOUTHERN DRAINAGE AREAS.
  4. HYDROFLUSH/CLEAN NEW STORM SEWER SYSTEM FOLLOWING SOUTHERN DRAINAGE AREA RESTORATION.
  5. INITIATE BYPASS PUMPING AND REMOVE WATER UPSTREAM OF BEAVER DAM.
  6. BREACH EXISTING BEAVER DAM (IF NECESSARY).
  7. EXCAVATE AND STABILIZE IMPACTED SEDIMENT AND DEBRIS (I.E., BEAVER DAM MATERIALS) FROM DRAINAGE SWALE AND NORTHERN DRAINAGE AREA.
  8. MANAGE, STABILIZE AND TRANSPORT SEDIMENT CONTAINING PCBs AT CONCENTRATIONS ≥ 50mg/kg AND TRANSPORT FOR OFF-SITE DISPOSAL.
  9. STABILIZE REMAINING EXCAVATED SEDIMENT AND PLACE IN ON-SITE CONSOLIDATION AREA.
  10. BACKFILL EXCAVATION AREAS.
  11. RESTORE DRAINAGE SWALE AND NORTHERN DRAINAGE AREA.
  12. PLACE FINAL SOIL COVER OVER CONSOLIDATED MATERIAL.
  13. INSTALL FINAL SITE COVER IN UPLAND AREAS.
  14. PHASE 2 DEMOBILIZATION.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 JRG  
 Drawn by  
 BKD  
 Checked by  
 JDB



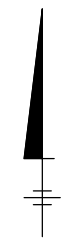
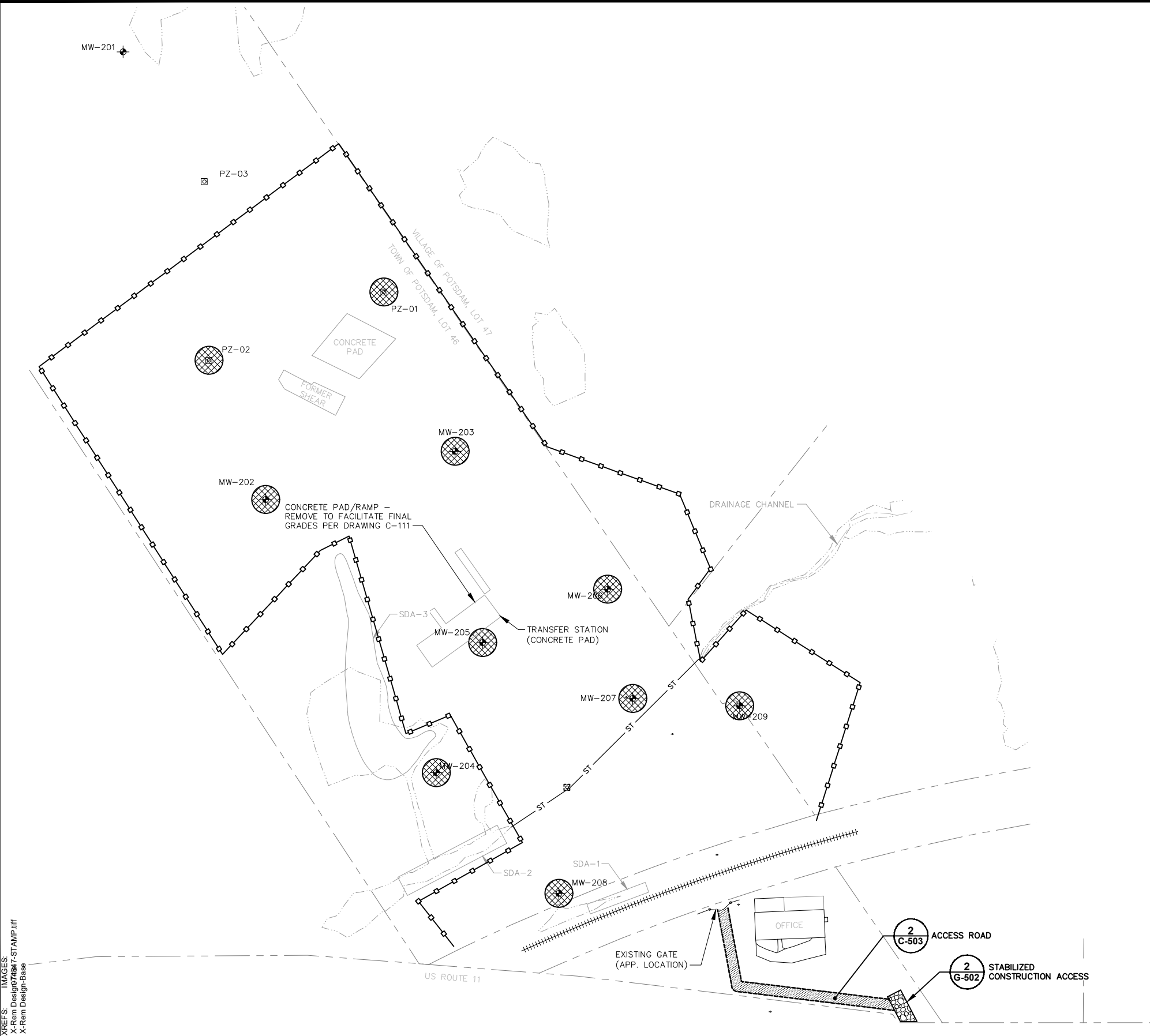
**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**PHASE 2 REMEDIATION LIMITS**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

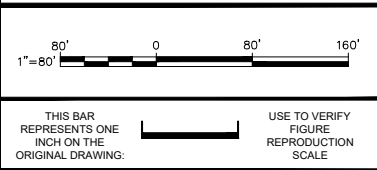
**G-103B**

CITY: SYRACUSE, NY DB: B, DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam\former Scrap Yard\2018\B0031006.0005\01-DWG\Rem Design-DWG G-104-Phase 1 Site Preparation Plan.dwg LAYOUT: G-104  
 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:29 AM BY: DECLERCO, BRIAN  
 XREFS: IMAGES: X:\Rem Design\BIM7-STAMP.liff X:\Rem Design\Bases



- LEGEND:**
- REINFORCED SILT FENCE
  - MONITORING WELL PIEZOMETER TO BE DECOMMISSIONED (SEE NOTE 9)
  - INLET PROTECTION (SEE NOTES 2 AND 10)

- NOTES:**
1. INSTALL SITE SECURITY MEASURES AND EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO DISTURBING SITE SOILS.
  2. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT MIGRATION OF CONSTRUCTION RELATED SOIL, DEBRIS, FUEL, SOLVENTS, LUBRICANTS, CONCRETE, LEACHATE, OR OTHER MATERIALS BEYOND THE PROJECT WORK LIMITS.
  3. ACTUAL LOCATION OF EROSION AND SEDIMENT CONTROL MEASURES MAY VARY BASED ON ACTUAL SITE CONDITIONS AT THE TIME OF CONSTRUCTION.
  4. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED AT TIME OF CONSTRUCTION.
  5. INSPECT, MAINTAIN AND INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROLS (AS NEEDED AND IN COORDINATION WITH THE CONSTRUCTION MANAGER) DURING CONSTRUCTION. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN AND NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
  6. INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES, AT A MINIMUM, ONCE EVERY SEVEN CALENDAR DAYS.
  7. MOBILIZE AND STAGE OFFICE TRAILERS, DECONTAMINATION PAD(S), ACCESS ROADS, AND OTHER CONSTRUCTION SUPPORT FEATURES WITHIN THE PROJECT WORK LIMITS (AS SHOWN ON DRAWING G-103) AND TO FACILITATE IMPLEMENTATION OF THE PHASE 1 SOIL EXCAVATION ACTIVITIES.
  8. PROTECT ALL ABOVE AND BELOW GROUND UTILITIES.
  9. EXISTING MONITORING WELLS AND PIEZOMETERS TO BE DECOMMISSIONED BY OTHERS PRIOR TO REMEDIAL CONSTRUCTION.
  10. PROTECT EXISTING STORM SEWER INLETS PRIOR TO SOIL DISTURBANCE ACTIVITIES USING DROP-IN FILTER BAGS OR APPROVED EQUAL.
  11. CLEAR TREES AS NEEDED TO FACILITATE EXCAVATION OF UPLAND OFF-SITE SOILS.
  12. CONSTRUCT MATERIAL STAGING AREA FOR TSCA WASTE AT LOCATION TO BE PROPOSED BY THE CONTRACTOR IN THE PROJECT OPERATIONS PLAN (SEE SPECIFICATION SECTION 01 15 00 - CONTRACTOR PROJECT OPERATIONS PLAN).



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 JRG  
 Drawn by  
 BKD  
 Checked by  
 JDB



**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

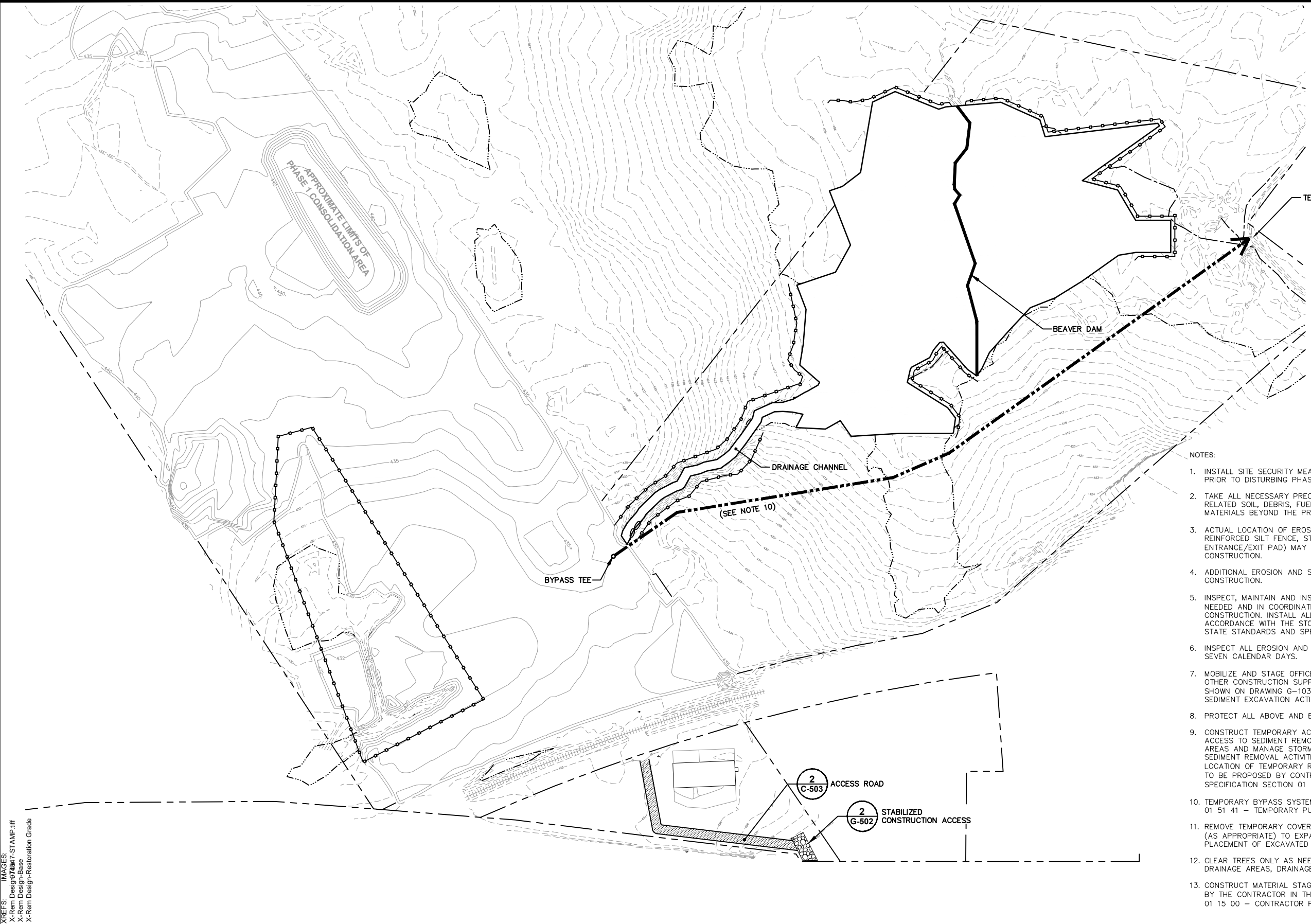
WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

# PHASE 1 SITE PREPARATION PLAN

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**G-104**

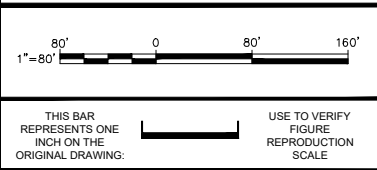
CITY: SYRACUSE, NY DB: B, DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam\former Scrap Yard\2018\B0031006\0005\01-DWG\Rem Design-DWG G-105-Phase 2 Site Preparation Plan.dwg LAYOUT: G-105 SAVED: 7/27/2018 10:53 AM ACADVER: 21.05 (LMS TECH) PAGESETUP: ---  
 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:29 AM BY: DECLERCO, BRIAN



**LEGEND:**

- BEAVER DAM
- TEMPORARY BYPASS PUMPING DISCHARGE SYSTEM
- REINFORCED SILT FENCE **1 G-502**
- STABILIZED CONSTRUCTION ENTRANCE **2 G-502**

- NOTES:**
1. INSTALL SITE SECURITY MEASURES AND EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO DISTURBING PHASE 2 SEDIMENT.
  2. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT MIGRATION OF CONSTRUCTION RELATED SOIL, DEBRIS, FUEL, SOLVENTS, LUBRICANTS, CONCRETE, LEACHATE, OR OTHER MATERIALS BEYOND THE PROJECT WORK LIMITS.
  3. ACTUAL LOCATION OF EROSION AND SEDIMENT CONTROL MEASURES (i.e., SWALE, REINFORCED SILT FENCE, STABILIZED CONSTRUCTION ENTRANCE, CONSTRUCTION ENTRANCE/EXIT PAD) MAY VARY BASED ON ACTUAL SITE CONDITIONS AT THE TIME OF CONSTRUCTION.
  4. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED AT TIME OF CONSTRUCTION.
  5. INSPECT, MAINTAIN AND INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROLS (AS NEEDED AND IN COORDINATION WITH THE CONSTRUCTION MANAGER) DURING CONSTRUCTION. INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN AND NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.
  6. INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES, AT A MINIMUM, ONCE EVERY SEVEN CALENDAR DAYS.
  7. MOBILIZE AND STAGE OFFICE TRAILERS, DECONTAMINATION PAD(S), ACCESS ROADS, AND OTHER CONSTRUCTION SUPPORT FEATURES WITHIN THE PROJECT WORK LIMITS AS SHOWN ON DRAWING G-103) AND TO FACILITATE IMPLEMENTATION OF THE PHASE 2 SEDIMENT EXCAVATION ACTIVITIES.
  8. PROTECT ALL ABOVE AND BELOW GROUND UTILITIES.
  9. CONSTRUCT TEMPORARY ACCESS ROAD, DIVERSION SWALES, ETC., TO FACILITATE ACCESS TO SEDIMENT REMOVAL AREAS, MANAGE SURFACE WATER WITHIN THE REMOVAL AREAS AND MANAGE STORM WATER RUNOFF. CONDUCT NORTHERN DRAINAGE AREA SEDIMENT REMOVAL ACTIVITIES IN THE DRY, TO THE EXTENT PRACTICABLE. FINAL LOCATION OF TEMPORARY ROADS MATERIAL STAGING/TRANSFER AREAS, SWALES, ETC. TO BE PROPOSED BY CONTRACTOR IN THE PROJECT OPERATIONS PLAN (SEE SPECIFICATION SECTION 01 15 00 - CONTRACTOR PROJECT OPERATIONS PLAN).
  10. TEMPORARY BYPASS SYSTEM(S) SHALL BE IN ACCORDANCE WITH SPECIFICATION SECTION 01 51 41 - TEMPORARY PUMPING.
  11. REMOVE TEMPORARY COVER MATERIAL AND TEMPORARY BERMS IN CONSOLIDATION AREA (AS APPROPRIATE) TO EXPAND THE CONSOLIDATION AREA AND PREPARE THE AREA FOR PLACEMENT OF EXCAVATED NON-TSCA PHASE 2 MATERIALS.
  12. CLEAR TREES ONLY AS NEEDED TO FACILITATE SEDIMENT EXCAVATION FROM SOUTHERN DRAINAGE AREAS, DRAINAGE CHANNEL, AND NORTHERN DRAINAGE AREA.
  13. CONSTRUCT MATERIAL STAGING AREA FOR TSCA WASTE AT LOCATION TO BE PROPOSED BY THE CONTRACTOR IN THE PROJECT OPERATIONS PLAN (SEE SPECIFICATION SECTION 01 15 00 - CONTRACTOR PROJECT OPERATIONS PLAN).



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 JRG  
 Drawn by  
 BKD  
 Checked by  
 JDB

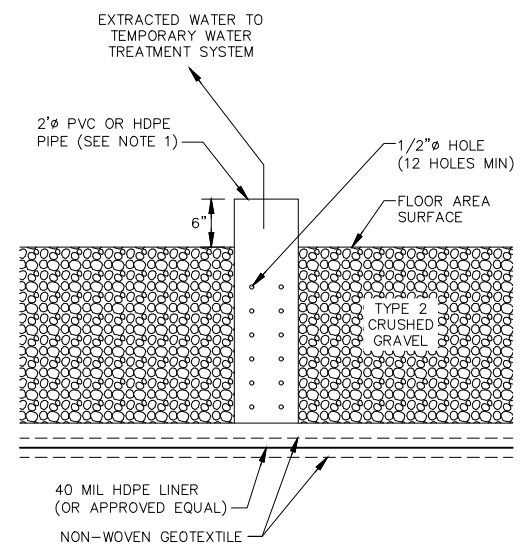


**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**PHASE 2 SITE PREPARATION PLAN**

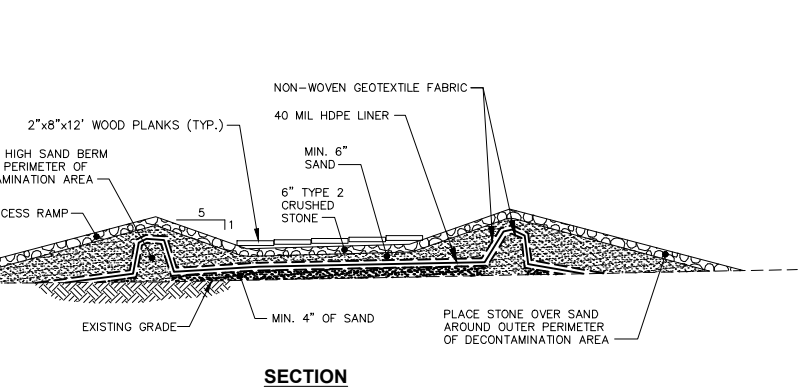
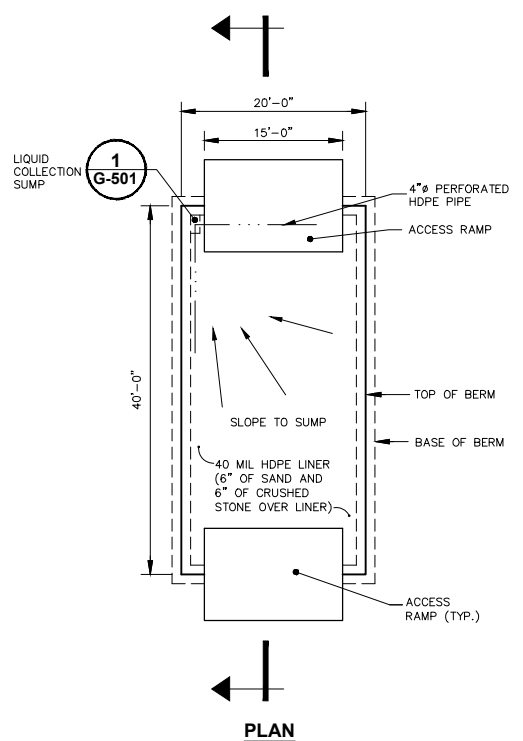
ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**G-105**



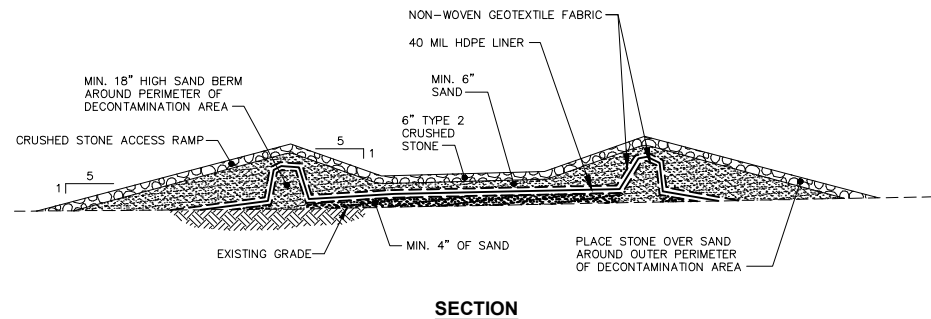
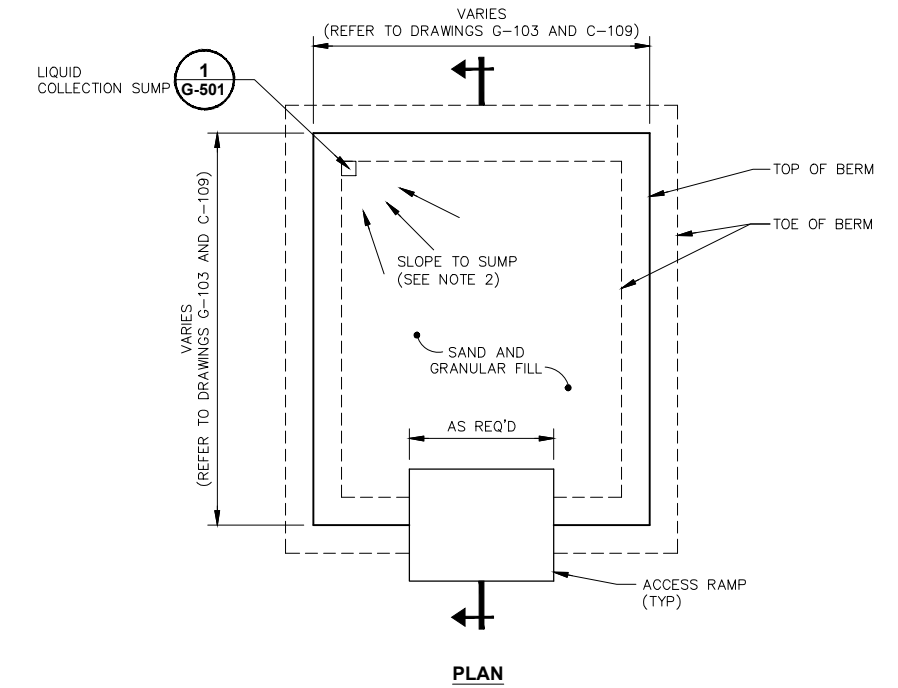
**LIQUID COLLECTION SUMP 1**  
NOT TO SCALE

- NOTE:  
1. LIQUID COLLECTION SUMP TO CONSIST OF PERFORATED PVC OR HDPE PIPE INSTALLED VERTICALLY.



- NOTES:
- SLOPE DECONTAMINATION AREA TOWARD A COLLECTION SUMP TO FACILITATE COLLECTION AND REMOVAL OF DECONTAMINATION LIQUIDS. PUMP LIQUIDS FROM COLLECTION SUMP TO ON-SITE TEMPORARY WATER TREATMENT SYSTEM.
  - PREPARE SUBGRADE TO BE UNIFORM AND FREE OF DELETERIOUS MATERIALS (E.G., SHARP STONES, WOODY DEBRIS, CONSTRUCTION DEBRIS) THAT COULD DAMAGE THE HDPE LINER. ADD ADDITIONAL MATERIAL (AS NECESSARY) TO STABILIZE AND GRADE THE GROUND SURFACE TO FACILITATE CONSTRUCTION OF THE DECONTAMINATION AREA.
  - SUFFICIENTLY COMPACT CRUSHED STONE TO PROVIDE A FIRM AND UNIFORM SURFACE. COMPACT MATERIAL (AS NECESSARY) IN A MANNER AND USING APPROPRIATE EQUIPMENT THAT AVOIDS DAMAGE TO THE GEOSYNTHETICS.
  - REMOVE ALL DECONTAMINATION AREA MATERIALS FOR OFF-SITE DISPOSAL AS TSCA-REGULATED NEW YORK STATE HAZARDOUS WASTE UPON COMPLETION OF THE CONSTRUCTION ACTIVITIES.
  - PREFABRICATED STEEL PADS MAY BE USED IN LIEU OF CONSTRUCTION STONE PADS.

**EQUIPMENT DECONTAMINATION AREA 2**  
NOT TO SCALE



- NOTES:
- CONSTRUCT STAGING AREA ON A GENERALLY LEVEL SURFACE WITH THE CLOSEST PART OF THE STAGING AREA NO CLOSER THAN 15 FEET FROM ANY DELINEATED WETLAND AREA.
  - PREPARE SUBGRADE TO BE UNIFORM AND FREE OF DELETERIOUS MATERIALS (E.G., SHARP STONES, WOODY DEBRIS, CONSTRUCTION DEBRIS) THAT COULD DAMAGE THE HDPE LINER. ADD ADDITIONAL MATERIAL (AS NECESSARY) TO STABILIZE AND GRADE THE GROUND SURFACE TO FACILITATE CONSTRUCTION OF THE STAGING AREA.
  - COVER MATERIALS WITHIN STAGING AREA WITH 10 MIL PLASTIC SHEETING AT ALL TIMES EXCEPT WHEN MATERIALS ARE BEING LOADED IN OR REMOVED FROM THE STAGING AREA. SECURE THE COVER TO RESIST WIND FORCES.
  - SLOPE STAGING AREA TOWARD A COLLECTION SUMP TO FACILITATE COLLECTION AND REMOVAL OF LIQUIDS. PUMP LIQUIDS FROM COLLECTION SUMP TO ON-SITE TEMPORARY WATER TREATMENT SYSTEM.
  - SUFFICIENTLY COMPACT CRUSHED STONE TO PROVIDE A FIRM AND UNIFORM SURFACE. COMPACT MATERIAL (AS NECESSARY) IN A MANNER AND USING APPROPRIATE EQUIPMENT THAT AVOIDS DAMAGE TO THE GEOSYNTHETICS.
  - NON-TSCA MATERIALS (I.E. MATERIALS CONTAINING PCBs AT CONCENTRATIONS <50 MG/KG) THAT DO NOT REQUIRE DEWATERING/PROCESSING TO MEET GEOTECHNICAL REQUIREMENTS MAY BE PLACED DIRECTLY IN THE CONSOLIDATION AREA.
  - SEPARATE STAGING AREAS ARE REQUIRED FOR TSCA AND NON-TSCA MATERIALS. REUSE OR SHARING OF STAGING AREAS FOR THE TWO MATERIALS IS PROHIBITED.
  - REMOVE ALL STAGING AREA MATERIALS FOR OFF-SITE DISPOSAL OR ON-SITE CONSOLIDATION UPON COMPLETION OF THE CONSTRUCTION ACTIVITIES.

**STAGING AREA 3**  
NOT TO SCALE

NOT TO SCALE		USE TO VERIFY FIGURE REPRODUCTION SCALE	
No.	Date	Revisions	By Ckd
THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.			

Professional Engineer's Name  
**TERRY W. YOUNG**  
Professional Engineer's No.  
074847  
State  
NY  
Date Signed  
8/24/2018  
Project Mgr.  
JDB  
Designed by  
JRG  
Drawn by  
BKD  
Checked by  
JDB



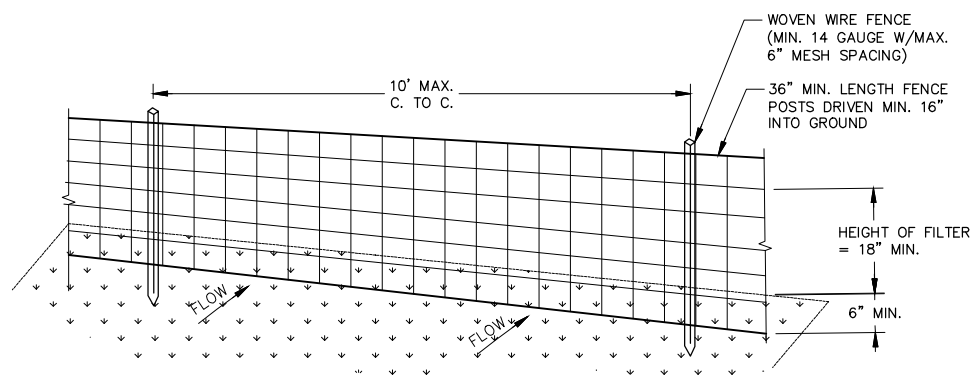
**ARCADIS** Design & Consultancy for natural and built assets.  
ARCADIS OF NEW YORK, INC.  
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN  
**MATERIAL STAGING AREA AND DECONTAMINATION PAD DETAILS**

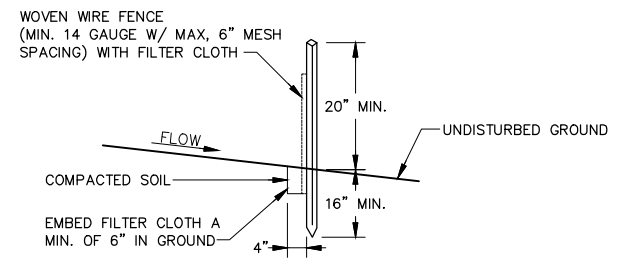
ARCADIS Project No.  
B0031006.0005.00080  
Date  
AUGUST 2018  
ARCADIS  
One Lincoln Center  
110 West Fayette Street-Suite 300  
SYRACUSE, NEW YORK 13202  
315.446.9120

**G-501**

CITY: SYRACUSE, NY DB: B. DECLERCO C:\Users\bdeclercq\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam former Scrap Yard\2018\B0031006\005\01-DWG\Rem Design-DWG G-502-Erosion and Sediment Control Details.dwg LAYOUT: G-502 - SAVED: 7/23/2018 4:12 PM ACAD: VER: 21.05 (LMS TECH) PAGESETUP: --- XREFS: IMAGES: X:\Rem Design\1817-STAMP.liff



PERSPECTIVE VIEW

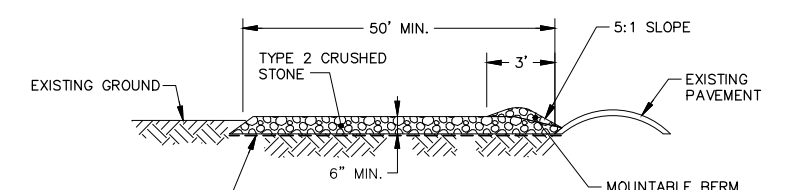


SECTION VIEW

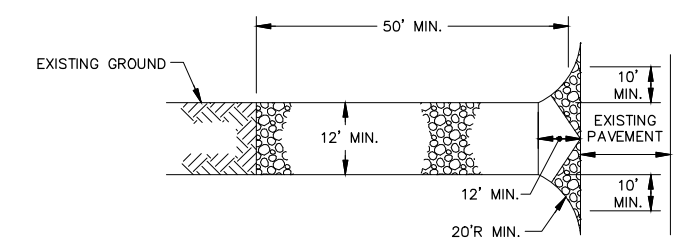
NOTES:

1. SECURELY FASTEN WOVEN WIRE FENCE TO FENCE POSTS WITH WIRE TIES OR STAPLES. USE EITHER "T" OR "U" TYPE OR HARDWOOD.
2. SECURELY FASTEN FILTERCLOTH TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MIDSECTION. USE WOVEN WIRE FENCE WITH 6" MAXIMUM MESH SPACING.
3. OVER-LAP AND FOLD ADJOINING SECTIONS OF FILTER CLOTH BY SIX INCHES. USE EITHER FILTER X, MIRIFI 100X, STABILINKA T10N, OR APPROVED EQUIVALENT FILTER CLOTH.
4. PREFABRICATED UNITS SHALL MEET THE MINIMUM REQUIREMENTS INDICATED ABOVE.
5. PERFORM MAINTENANCE AS NEEDED AND REMOVE MATERIAL WHEN 'BULGES' DEVELOP IN THE SILT FENCE.

**REINFORCED SILT FENCE** ①  
NOT TO SCALE



PROFILE

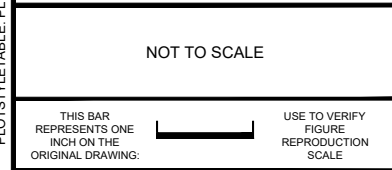


PLAN VIEW

NOTES:

1. PLACE GEOTEXTILE OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
2. PIPE STORM WATER RUNOFF FLOWING OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE BENEATH THE ENTRANCE. IF PIPING IS NOT PRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
3. MAINTAIN THE STABILIZED CONSTRUCTION ENTRANCE IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. IMMEDIATELY REMOVE ANY SEDIMENT THAT IS SPILLED, DROPPED, WASHED OR TRACKED ON TO PUBLIC ROADWAYS.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE AT ALL ACCESS POINTS TO ASPHALT PAVEMENT.
5. INSPECT AND REPAIR (AS NECESSARY) THE STABILIZED CONSTRUCTION ENTRANCE AFTER EACH PRECIPITATION EVENT.

**STABILIZED CONSTRUCTION ENTRANCE** ②  
NOT TO SCALE



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
Professional Engineer's No.  
074847  
State: NY Date Signed: 8/24/2018 Project Mgr.: JDB  
Designed by: JRG Drawn by: BKD Checked by: JDB



**ARCADIS** Design & Consultancy for natural and built assets.  
ARCADIS OF NEW YORK, INC.  
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN  
**EROSION AND SEDIMENT CONTROL DETAILS**

ARCADIS Project No. B0031006.0005.00080  
Date: AUGUST 2018  
ARCADIS  
One Lincoln Center  
110 West Fayette Street-Suite 300  
SYRACUSE, NEW YORK 13202  
315.446.9120

**G-502**

CITY: SYRACUSE, NY DB: B DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WIS POTSDAM FORMER SCRAP YARD\2018\B0031006.0005\01-DWG\Rem Design-DWG C-101-Phase 1 Soil Excavation Plan.dwg LAYOUT: C-101  
 PLOTTED: 8/24/2018 10:19 AM BY: DECLERCO, BRIAN  
 XREFS: IMAGES: 7-STAMP.liff  
 X-Rem Design-Excavation Areas  
 X-Rem Design-Excavation Areas  
 X-Rem Design-Excavation Areas



- LEGEND:**
- X SURVEY CONTROL POINT
  - (1-21) SOIL REMOVAL AREA
  - 3 SOIL REMOVAL DEPTH

- NOTES:**
1. ESTABLISH AND MAINTAIN SAFETY BARRIERS AND OTHER RELATED FEATURES TO LIMIT ACCESS TO SITE HAZARDS INCLUDING OPEN EXCAVATIONS.
  2. CONDUCT EXCAVATION ACTIVITIES IN ACCORDANCE WITH ALL APPLICABLE OSHA REQUIREMENTS.
  3. NO EXCAVATION IS PERMITTED WITHIN RAILROAD LIVE LOAD INFLUENCE ZONE. SEE DRAWING C-301.
  4. VERIFY THE EXISTENCE AND LOCATION OF ALL SUBSURFACE UTILITIES PRIOR TO EXCAVATION.
  5. ADDITIONAL REMOVAL BEYOND LIMITS SHOWN MAY BE REQUIRED BASED ON THE RESULTS OF VERIFICATION SAMPLING TO BE CONDUCTED BY THE ENGINEER.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State NY Date Signed 8/24/2018 Project Mgr. JDB  
 Designed by JRG Drawn by BKD Checked by JDB

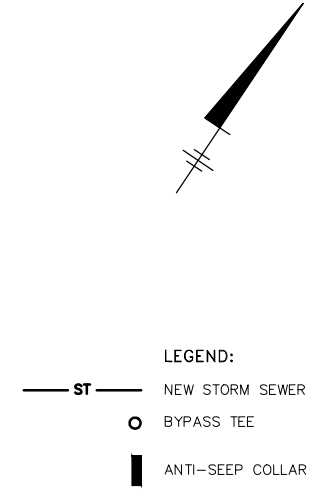
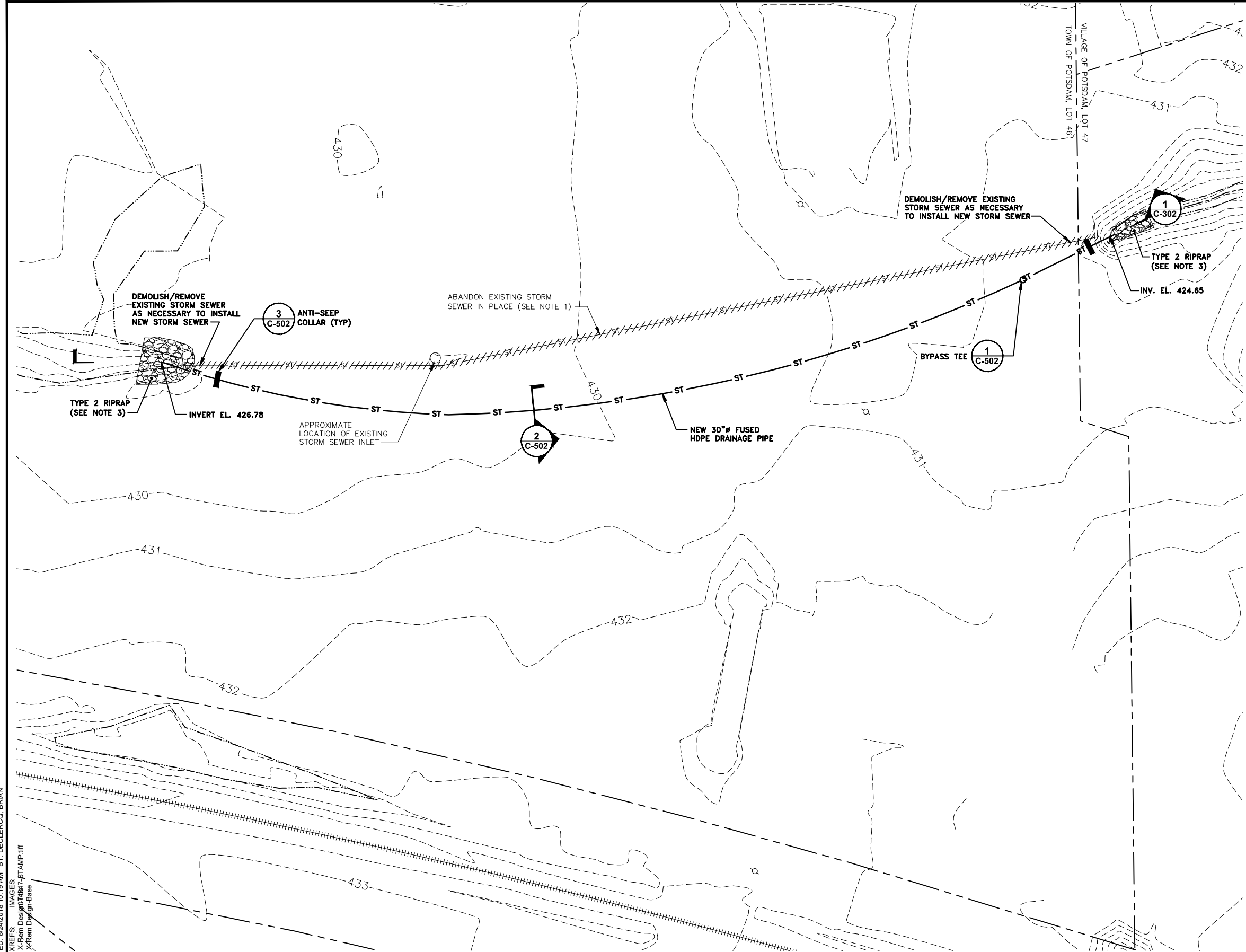


**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

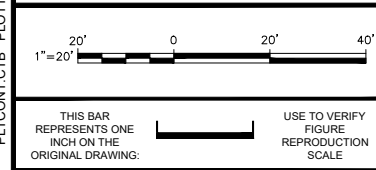
WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**PHASE 1 SOIL EXCAVATION PLAN**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-101**



- NOTES:**
- CLEAN/HYDROFLUSH EXISTING STORM SEWER PIPE, CAP ENDS AND ABANDON IN PLACE BY COMPLETELY FILLING WITH CONTROLLED LOW-STRENGTH MATERIAL.
  - TEMPORARILY MANAGE STORM WATER ASSOCIATED WITH STORM SEWER SYSTEM IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
  - TEMPORARILY PLACE TYPE 2 RIPRAP PRIOR TO DISTURBING THE DRAINAGE CHANNEL RIPRAP AND UNDERLYING SEDIMENT TO BE REMOVED AS PART OF PHASE 2 AS INDICATED ON DRAWING C-107.
  - MAINTAIN OPERATION OF EITHER EXISTING OR NEW STORM SEWER AT ALL TIMES. BYPASS PUMP AS NECESSARY TO MAINTAIN STORM SEWER FLOWS.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
Professional Engineer's No.  
074847  
State: NY Date Signed: 8/24/2018 Project Mgr.: JDB  
Designed by: JRG Drawn by: BKD Checked by: JDB



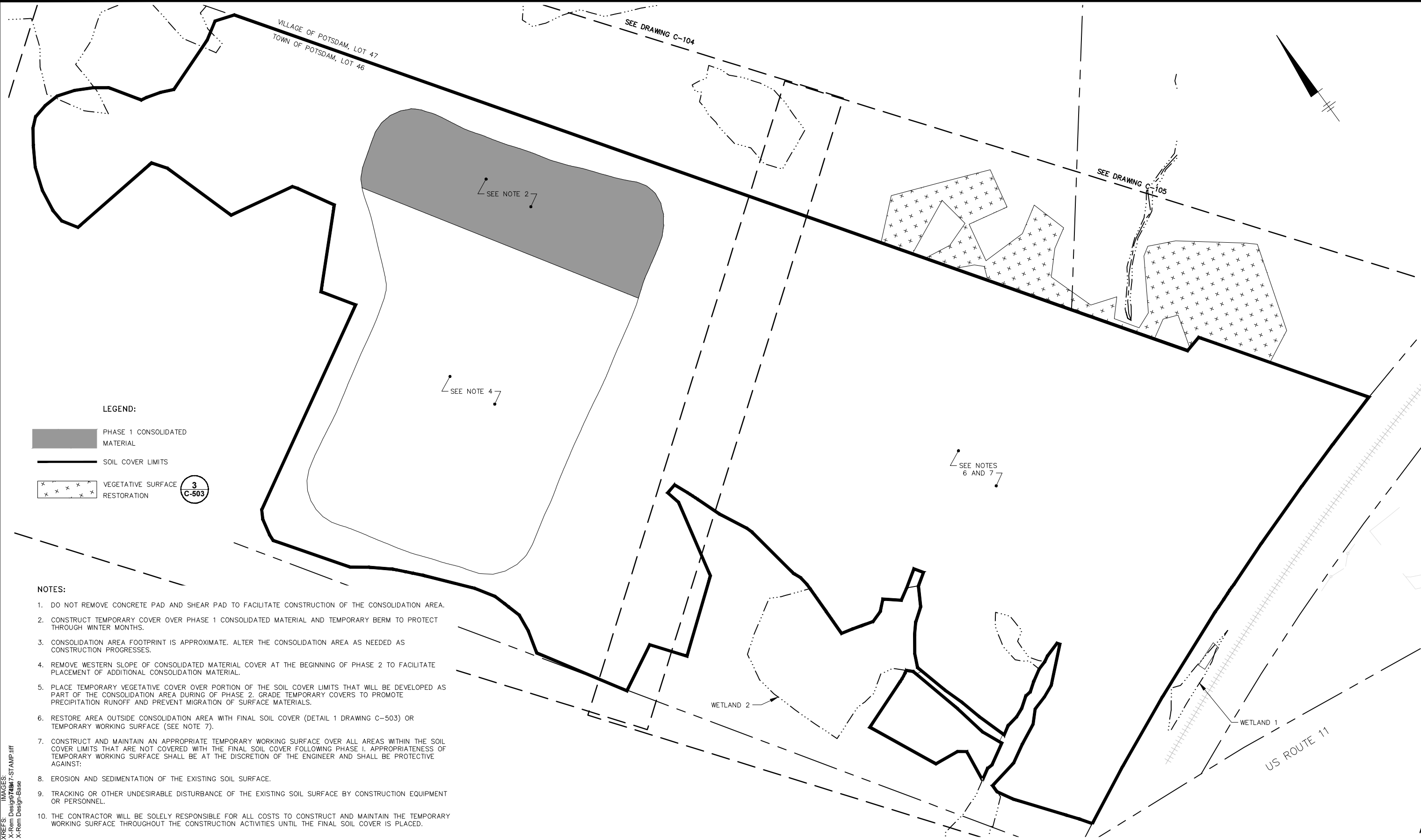
**ARCADIS** Design & Consultancy for natural and built assets.  
ARCADIS OF NEW YORK, INC.  
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN  
**NEW STORM SEWER PLAN**



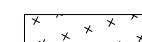
ARCADIS Project No. B0031006.0005.00080  
Date: AUGUST 2018  
ARCADIS  
One Lincoln Center  
110 West Fayette Street-Suite 300  
SYRACUSE, NEW YORK 13202  
315.446.9120

**C-102**

CITY: SYRACUSE, NY DB: B, DECLERCO C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam\former Scrap Yard\2018\B0031006.0005\01-DWG\Rem Design-DWG C-103-Phase 1 Site Restoration Plan.dwg LAYOUT: C-103 SAVED: 7/23/2018 4:16 PM ACADVER: 2.1.05 (LMS TECH) PAGES: 10  
 PLOTSTYLETABLE: PLOTCONT.CTB PLOTTED: 8/24/2018 10:19 AM BY: DECLERCO, BRIAN XREFS: IMAGES: Rem Design\Fab7-STAMP.liff X-Ref Design\Fab7-STAMP.liff



**LEGEND:**

-  PHASE 1 CONSOLIDATED MATERIAL
-  SOIL COVER LIMITS
-  VEGETATIVE SURFACE RESTORATION

**3**  
C-503

**NOTES:**

1. DO NOT REMOVE CONCRETE PAD AND SHEAR PAD TO FACILITATE CONSTRUCTION OF THE CONSOLIDATION AREA.
2. CONSTRUCT TEMPORARY COVER OVER PHASE 1 CONSOLIDATED MATERIAL AND TEMPORARY BERM TO PROTECT THROUGH WINTER MONTHS.
3. CONSOLIDATION AREA FOOTPRINT IS APPROXIMATE. ALTER THE CONSOLIDATION AREA AS NEEDED AS CONSTRUCTION PROGRESSES.
4. REMOVE WESTERN SLOPE OF CONSOLIDATED MATERIAL COVER AT THE BEGINNING OF PHASE 2 TO FACILITATE PLACEMENT OF ADDITIONAL CONSOLIDATION MATERIAL.
5. PLACE TEMPORARY VEGETATIVE COVER OVER PORTION OF THE SOIL COVER LIMITS THAT WILL BE DEVELOPED AS PART OF THE CONSOLIDATION AREA DURING OF PHASE 2. GRADE TEMPORARY COVERS TO PROMOTE PRECIPITATION RUNOFF AND PREVENT MIGRATION OF SURFACE MATERIALS.
6. RESTORE AREA OUTSIDE CONSOLIDATION AREA WITH FINAL SOIL COVER (DETAIL 1 DRAWING C-503) OR TEMPORARY WORKING SURFACE (SEE NOTE 7).
7. CONSTRUCT AND MAINTAIN AN APPROPRIATE TEMPORARY WORKING SURFACE OVER ALL AREAS WITHIN THE SOIL COVER LIMITS THAT ARE NOT COVERED WITH THE FINAL SOIL COVER FOLLOWING PHASE 1. APPROPRIATENESS OF TEMPORARY WORKING SURFACE SHALL BE AT THE DISCRETION OF THE ENGINEER AND SHALL BE PROTECTIVE AGAINST:
8. EROSION AND SEDIMENTATION OF THE EXISTING SOIL SURFACE.
9. TRACKING OR OTHER UNDESIRABLE DISTURBANCE OF THE EXISTING SOIL SURFACE BY CONSTRUCTION EQUIPMENT OR PERSONNEL.
10. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR ALL COSTS TO CONSTRUCT AND MAINTAIN THE TEMPORARY WORKING SURFACE THROUGHOUT THE CONSTRUCTION ACTIVITIES UNTIL THE FINAL SOIL COVER IS PLACED.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
074847  
 State NY Date Signed 8/24/2018 Project Mgr. JDB  
 Designed by JRG Drawn by BKD Checked by JDB



**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**PHASE 1 INTERIM SITE RESTORATION PLAN**

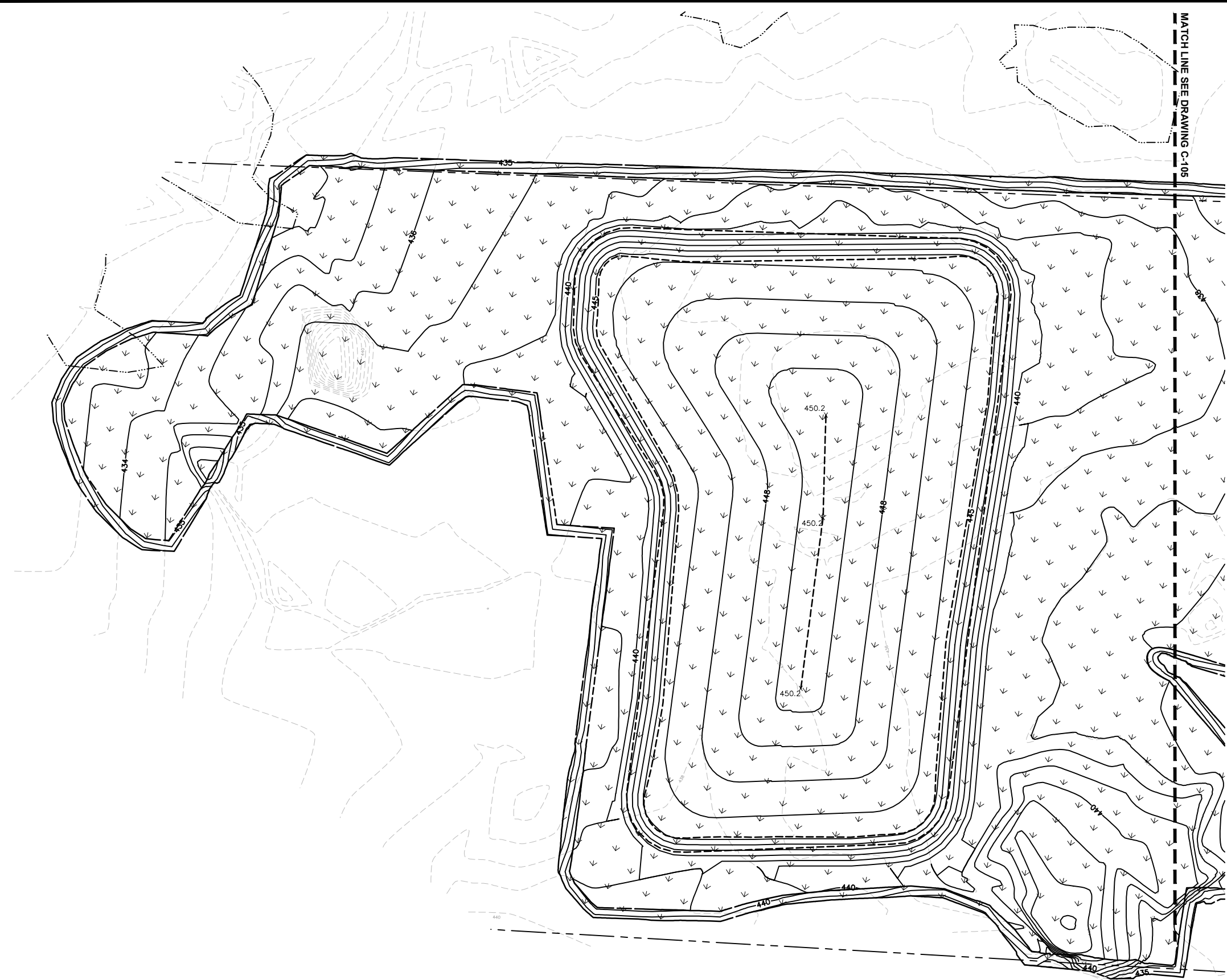
ARCADIS Project No. B0031006.0005.00080  
 Date AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-103**



CITY: SYRACUSE, NY DB: B. DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL\_GRID\WIS\ Potsdam\former Scrap Yard\2018\B0031006.0005\01-DWG\Rem Design-DWG C-104-Soil Cover Final Grade Plan.dwg LAYOUT: C-104 SAVED: 7/26/2018 4:27 PM ACADVER: 2.1.0S (LMS TECH) PAGESETUP: ---  
 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:20 AM BY: DECLERCO, BRIAN

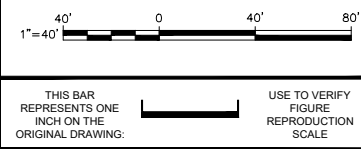
XREFS: IMAGES: 7-STAMP.liff  
 X:Rem Design-Base  
 X:Rem Design-Soil Final Grade



**LEGEND:**

- 435 NEW TOPOGRAPHIC CONTOUR (1-FT INTERVAL)
- NEW GRADE BREAK
- 435.21 X TOPOGRAPHIC SPOT ELEVATION
- SOIL COVER LIMIT 1  
C-503

- NOTES:**
1. TOPOGRAPHIC CONTOURS REPRESENT FINAL GRADE (I.E. TOP OF SOIL COVER).
  2. FINAL GRADES IN THE VICINITY OF THE CONSOLIDATION AREA ARE BASED ON MAXIMUM ANTICIPATED EXCAVATION VOLUME. CONTRACTOR TO ADJUST GRADE AS NECESSARY TO MAINTAIN A MINIMUM OF 24-INCHES OF SOIL COVER OVER CONSOLIDATED WASTES AND/OR SOIL COVER SUBGRADES (I.E. BOTTOM OF SOIL COVER LAYER).
  3. TOP OF SOIL COVER ELEVATIONS ARE GENERALLY 24-INCHES ABOVE THE EXISTING GROUND SURFACE. TOPOGRAPHY SHOWN IS BASED ON ASSUMED SITE CONDITIONS FOLLOWING FACILITY DEMOLITION REMOVAL. REVIEW TOPOGRAPHY WITH ENGINEER PRIOR TO INSTALLATION OF FINAL COVER TO DETERMINE THE NEED FOR ADDITIONAL GRADE CHANGES.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State NY Date Signed 8/24/2018 Project Mgr. JDB  
 Designed by PTO Drawn by BKD Checked by JRG



**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

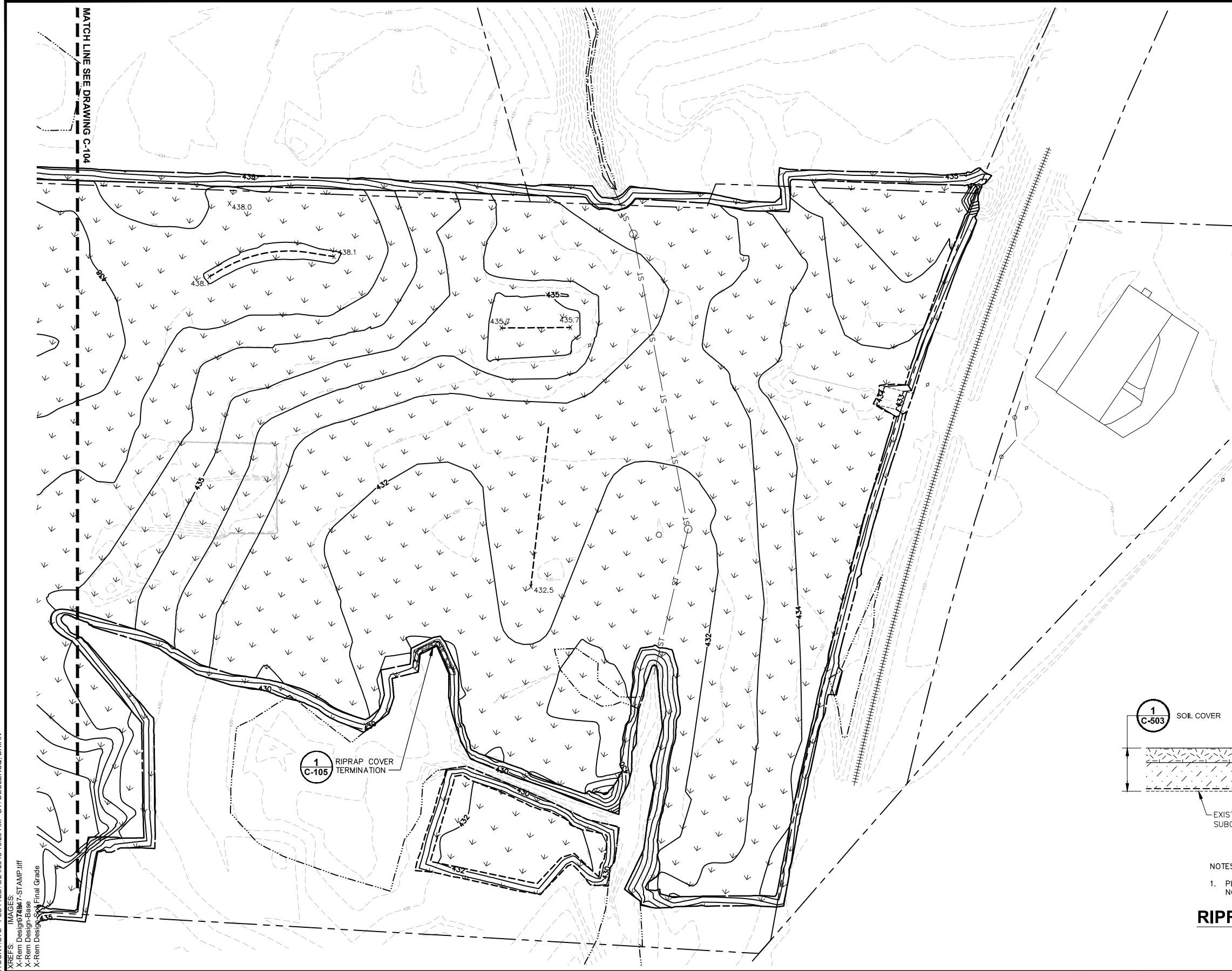
**SOIL COVER FINAL GRADE PLAN**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-104**

CITY: SYRACUSE, NY DB: B. DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WIS POTSDAM former Scrap Yard\2018\B0031006\0005\01-DWG\Rem Design-Final Grade Plan.dwg ACADVER: 2.1.05 (LMS TECH) PAGES: 1/1  
 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:20 AM BY: DECLERCO, BRIAN

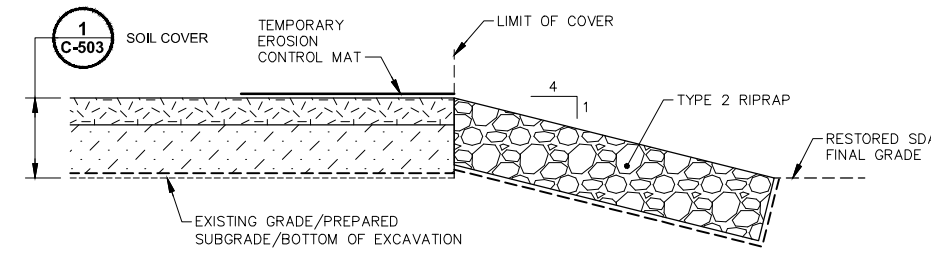
REFS: IMAGES: STAMP: 1/1  
 X: Rem Design-Final Grade  
 X: Rem Design-Final Grade  
 X: Rem Design-Final Grade



**LEGEND:**

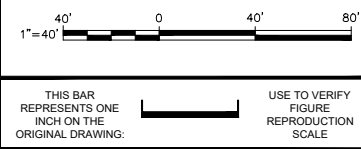
- 435 NEW TOPOGRAPHIC CONTOUR (1-FT INTERVAL)
- NEW GRADE BREAK
- 435.21 X TOPOGRAPHIC SPOT ELEVATION
- SOIL COVER LIMIT **1** C-503

- NOTES:**
- TOPOGRAPHIC CONTOURS REPRESENT FINAL GRADE (I.E. TOP OF SOIL COVER).
  - TOP OF SOIL COVER ELEVATIONS ARE GENERALLY 24-INCHES ABOVE THE EXISTING GROUND SURFACE. TOPOGRAPHY SHOWN IS BASED ON ASSUMED SITE CONDITIONS FOLLOWING FACILITY DEMOLITION REMOVAL. REVIEW TOPOGRAPHY WITH ENGINEER PRIOR TO INSTALLATION OF FINAL COVER TO DETERMINE THE NEED FOR ADDITIONAL GRADE CHANGES.



- NOTES:**
- PLACE RIPRAP IN A 15-INCH THICK LAYER UNDERLAIN WITH NON-WOVEN GOETEXTILE.

**RIPRAP COVER TERMINATION 1**  
 NOT TO SCALE



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 PTO  
 Drawn by  
 BKD  
 Checked by  
 JRG

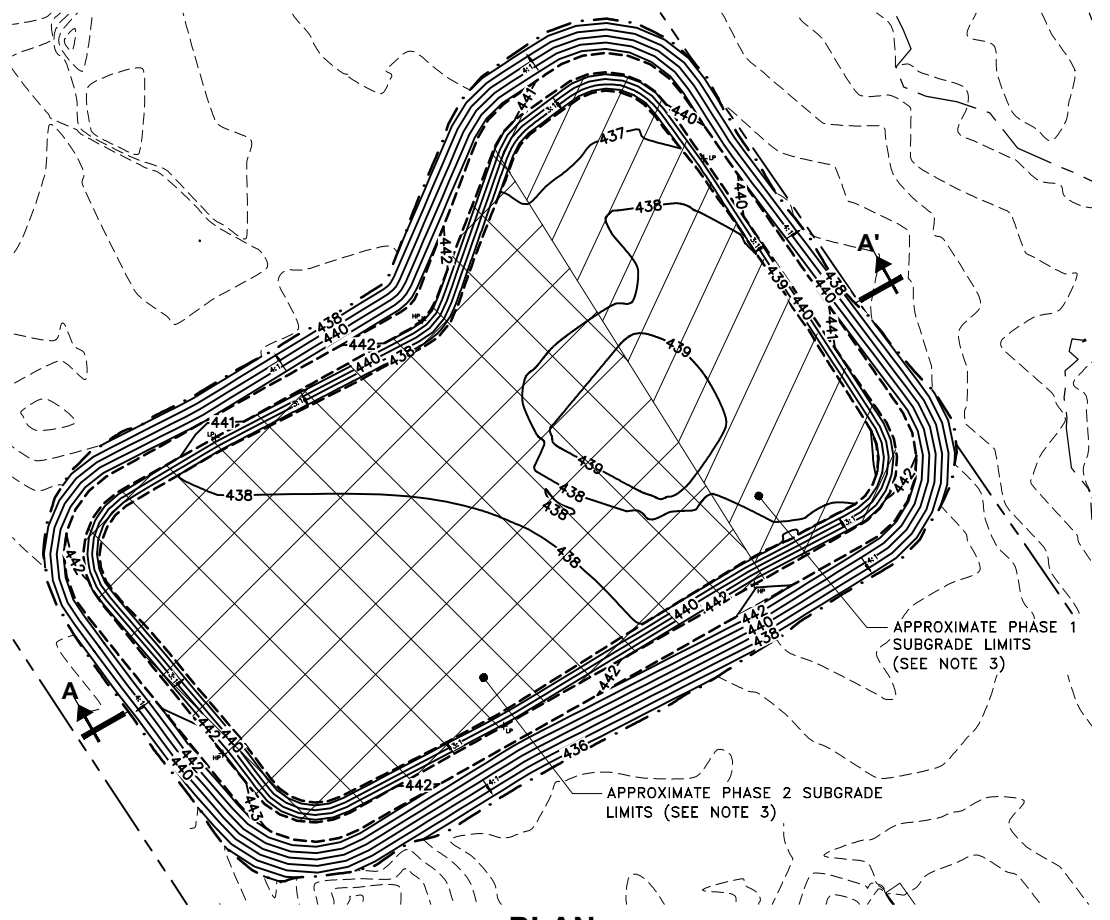


**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**SOIL COVER FINAL GRADE PLAN**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

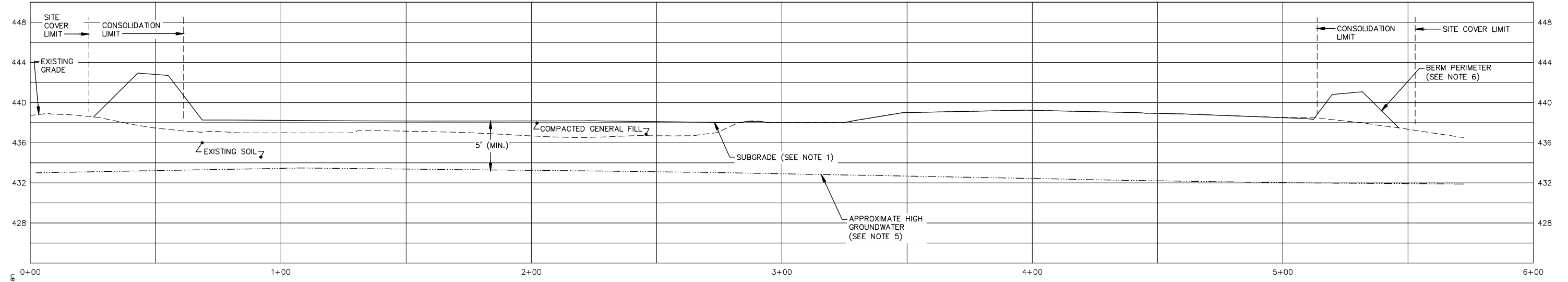
**C-105**



**LEGEND:**  
 ——— 440 ——— NEW TOPOGRAPHIC CONTOUR (1-FT INTERVAL)  
 - - - - - NEW GRADE BREAK  
 - · - · - NEW GRADING LIMIT  
 449.2 × NEW SPOT ELEVATION

- NOTES:**
1. DO NOT REMOVE EXISTING CONCRETE PAD OR SHEAR PAD TO FACILITATE CONSTRUCTION OF THE CONSOLIDATION AREA.
  2. ADD TEMPORARY RAMPS AS NECESSARY TO ACCESS THE CONSOLIDATION AREA DURING CONSTRUCTION ACTIVITIES.
  3. CONSOLIDATION AREA FOOTPRINT IS APPROXIMATE AND WILL BE ALTERED AS NEEDED AS CONSTRUCTION PROGRESSES. REFER TO DRAWINGS C-103 AND C-304 FOR ADDITIONAL DETAIL REGARDING CONSOLIDATION AREA PHASING.
  4. SUBGRADE REPRESENTS THE SURFACE ON WHICH CONSOLIDATION MATERIALS ARE PLACED. PLACE CONSOLIDATED MATERIAL A MINIMUM OF 5-FT ABOVE THE WATER TABLE.
  5. DEPICTED GROUNDWATER ELEVATIONS ARE BASED ON HISTORIC SITE DATA COLLECTED FROM 2001 TO 2015.
  6. CONSTRUCT PERIMETER BERMS TO MINIMIZE SURFACE WATER RUNOFF WHILE MATERIAL IS BEING PLACED WITHIN THE CONSOLIDATION AREA. REFER TO DRAWING C-304 REGARDING THE REMOVAL OF THE PERIMETER BERMS AND FINAL GRADING OF THE CONSOLIDATION AREA.

**PLAN**  
 0 60' 120'  
 SCALE: 1"=60'



**SECTION A-A'**  
 0 20' 40'  
 HORIZONTAL SCALE: 1"=20'  
 0 5' 10'  
 VERTICAL SCALE: 1"=5'

XREFS: IMAGES: STAMP.lif  
 X: Rem Design-Subgrade Plan

SCALE AS INDICATED				
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.				
USE TO VERIFY FIGURE REPRODUCTION SCALE				
No.	Date	Revisions	By	Ckd
THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.				

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State: NY  
 Date Signed: 8/24/2018  
 Project Mgr.: JDB  
 Designed by: PTO  
 Drawn by: BKD  
 Checked by: JRG

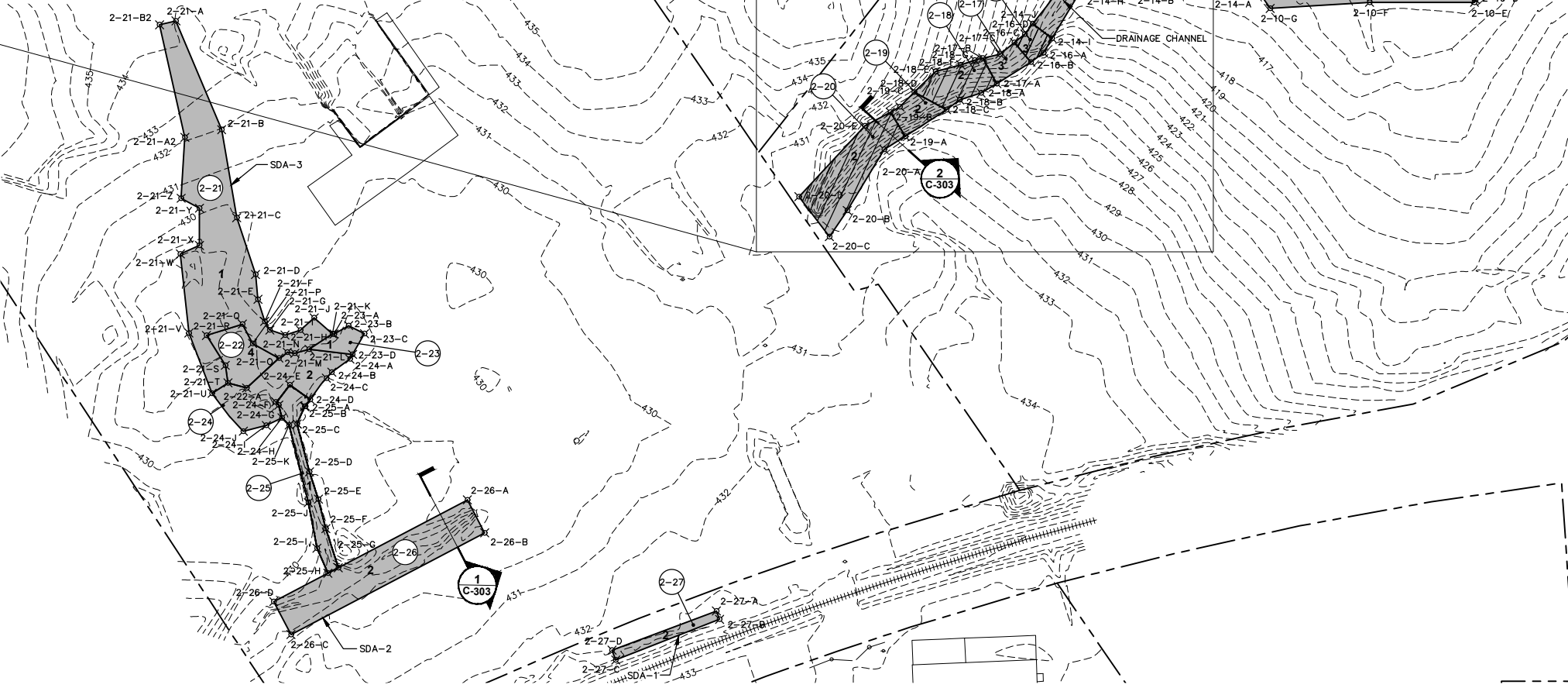
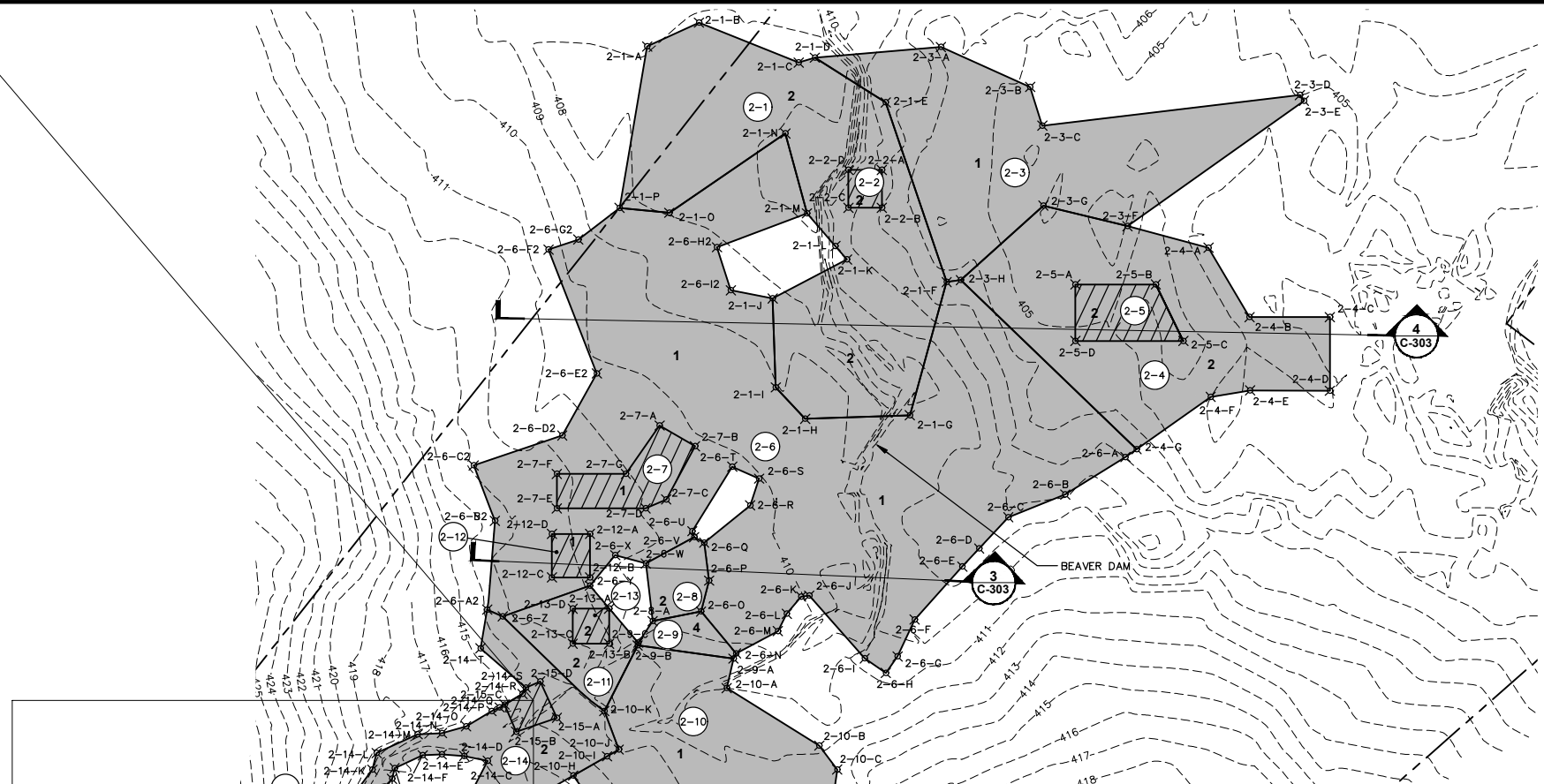
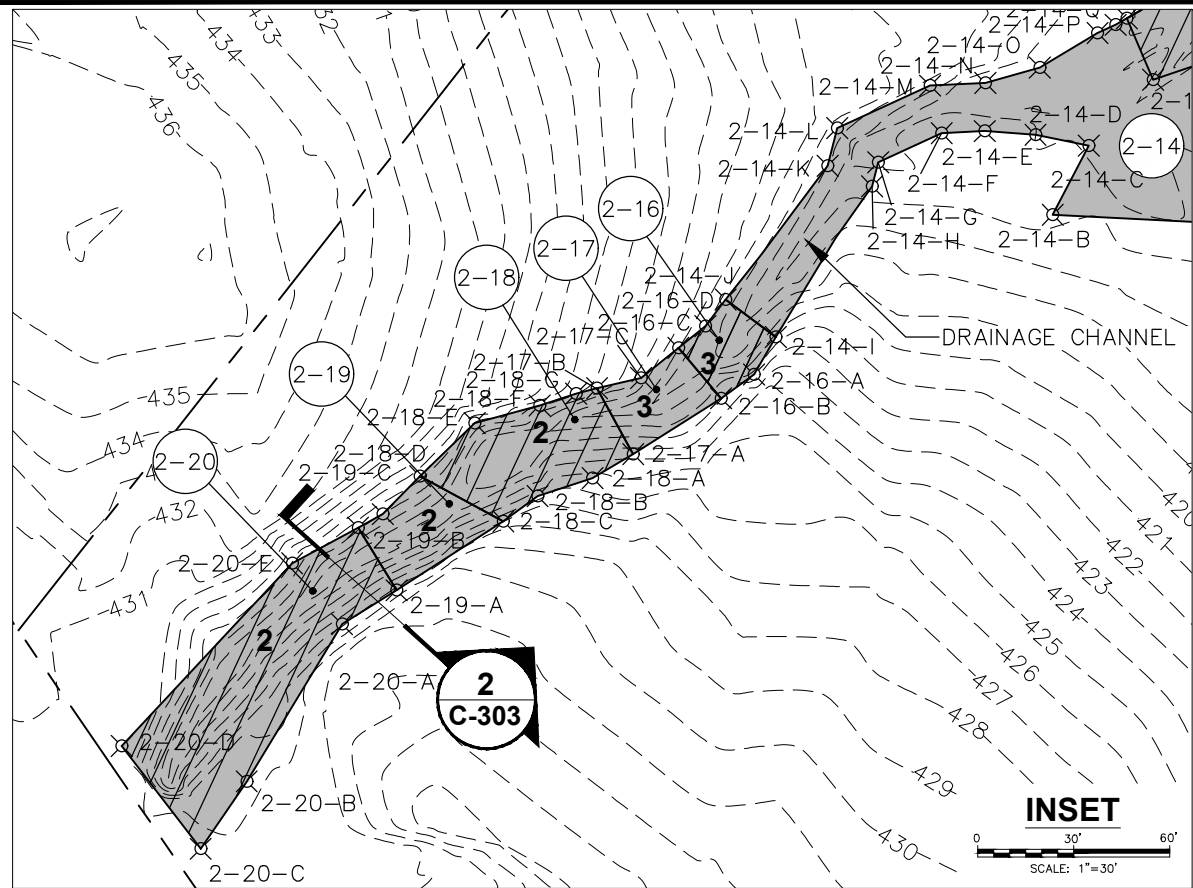


WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

**CONSOLIDATION AREA SUBGRADE PLAN**

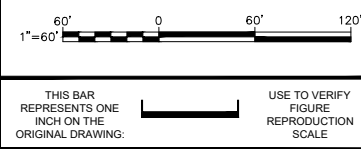
ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-106**



- LEGEND:**
- ⊗ SURVEY CONTROL POINT
  - 2-14 SEDIMENT REMOVAL AREA
  - 2 SEDIMENT REMOVAL DEPTH

- NOTES:**
1. ESTABLISH AND MAINTAIN SAFETY BARRICADES AND OTHER RELATED FEATURES TO LIMIT ACCESS TO SITE HAZARDS INCLUDING OPEN EXCAVATIONS.
  2. CONDUCT EXCAVATION ACTIVITIES IN ACCORDANCE WITH ALL APPLICABLE OSHA REQUIREMENTS.
  3. VERIFY THE EXISTENCE AND LOCATION OF ALL SUBSURFACE UTILITIES PRIOR TO EXCAVATION.
  4. GENERALLY CONDUCT SOUTHERN DRAINAGE AREA, DRAINAGE SWALE, AND NORTHERN DRAINAGE AREA EXCAVATION AND RESTORATION FROM WEST TO EAST.
  5. REMOVE BEAVER DAM AND THEN REMOVE UNDERLYING SEDIMENT TO DEPTHS SHOWN.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State NY Date Signed 8/24/2018 Project Mgr. JDB  
 Designed by JRG Drawn by BKD Checked by JDB



**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

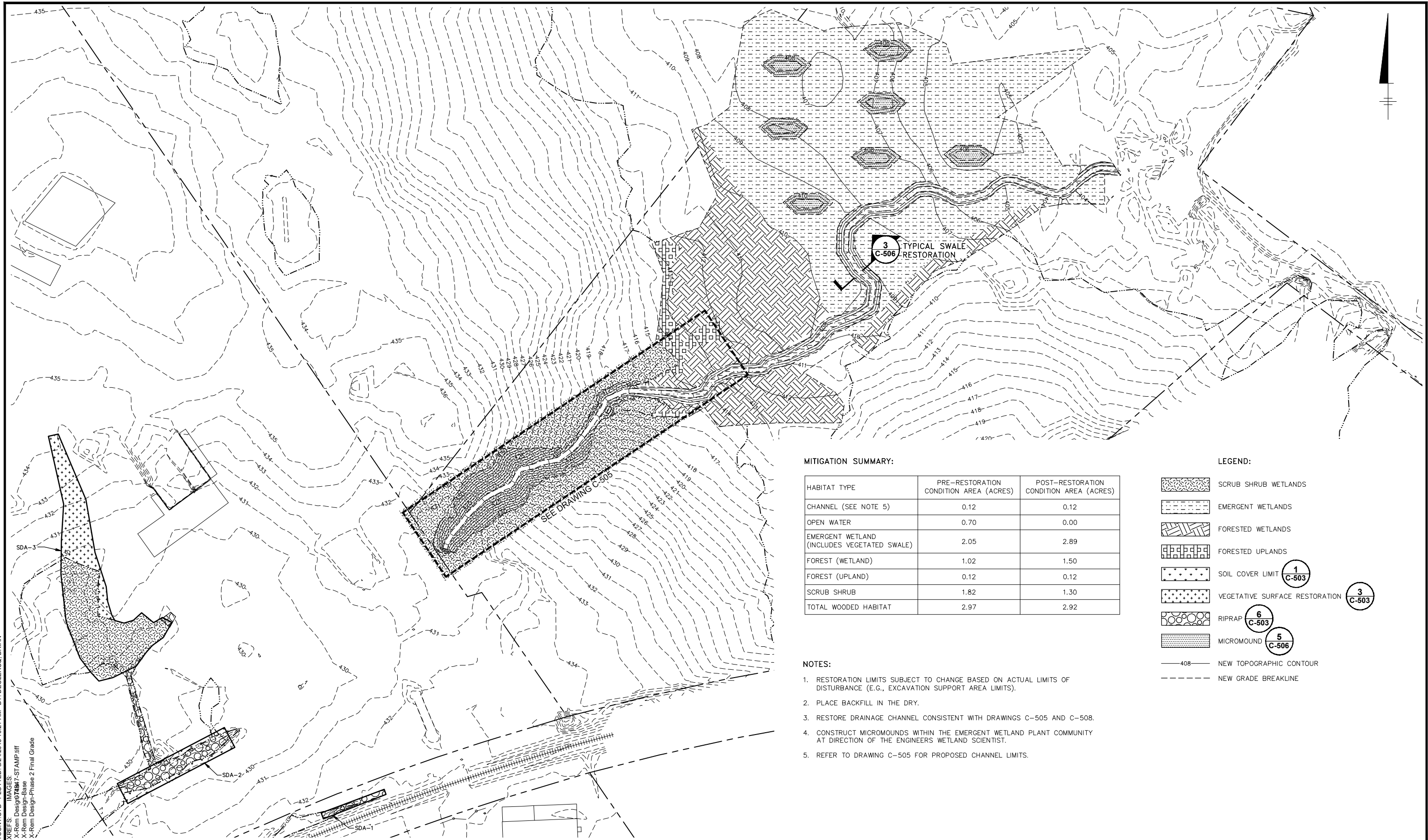
WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**PHASE 2 SEDIMENT EXCAVATION PLAN**

ARCADIS Project No. B0031006.0005.00080  
 Date AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-107**

CITY: SYRACUSE, NY DB: B, DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam former Scrap Yard\2018\B0031006.0005\01-DWG\Rem Design-Phase 2 Final Grade  
 PLOTSTYLETABLE: PLT\CONT.ctb PLOTTED: 8/24/2018 10:21 AM BY: DECLERCO, BRIAN


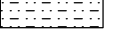


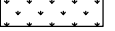
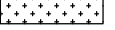


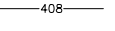

ACADVER: 21.05 (LMS TECH) PAGESETUP: ---  
 LAYOUT: C-108  
 SAVED: 7/23/2018 3:29 PM



**MITIGATION SUMMARY:**

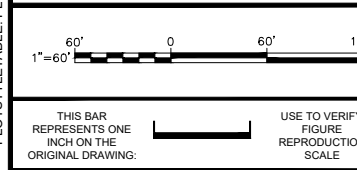
HABITAT TYPE	PRE-RESTORATION CONDITION AREA (ACRES)	POST-RESTORATION CONDITION AREA (ACRES)
CHANNEL (SEE NOTE 5)	0.12	0.12
OPEN WATER	0.70	0.00
EMERGENT WETLAND (INCLUDES VEGETATED SWALE)	2.05	2.89
FOREST (WETLAND)	1.02	1.50
FOREST (UPLAND)	0.12	0.12
SCRUB SHRUB	1.82	1.30
TOTAL WOODED HABITAT	2.97	2.92

**LEGEND:**

-  SCRUB SHRUB WETLANDS
-  EMERGENT WETLANDS
-  FORESTED WETLANDS
-  FORESTED UPLANDS
-  SOIL COVER LIMIT **1** C-503
-  VEGETATIVE SURFACE RESTORATION **3** C-503
-  RIPRAP **6** C-503
-  MICROMOUND **5** C-506
-  -408- NEW TOPOGRAPHIC CONTOUR
-  --- NEW GRADE BREAKLINE

**NOTES:**

- RESTORATION LIMITS SUBJECT TO CHANGE BASED ON ACTUAL LIMITS OF DISTURBANCE (E.G., EXCAVATION SUPPORT AREA LIMITS).
- PLACE BACKFILL IN THE DRY.
- RESTORE DRAINAGE CHANNEL CONSISTENT WITH DRAWINGS C-505 AND C-508.
- CONSTRUCT MICROMOUNDS WITHIN THE EMERGENT WETLAND PLANT COMMUNITY AT DIRECTION OF THE ENGINEERS WETLAND SCIENTIST.
- REFER TO DRAWING C-505 FOR PROPOSED CHANNEL LIMITS.



No.	Date	Revisions	By	Ckd

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

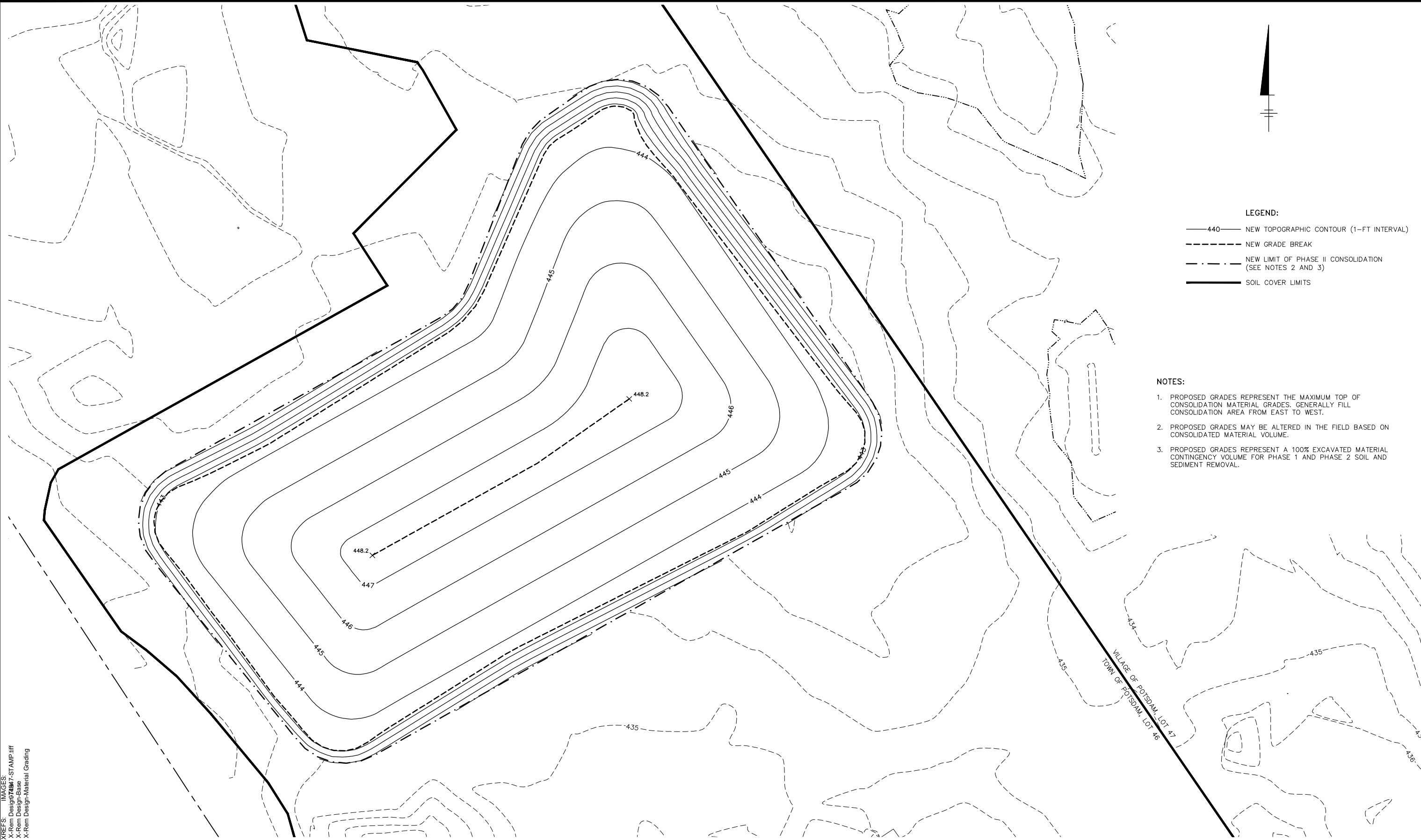
Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 DP/PTO  
 Drawn by  
 BKD  
 Checked by  
 JDB



**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

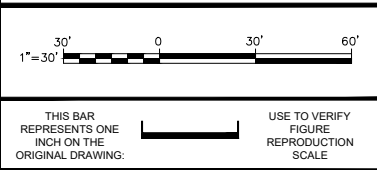
WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**PHASE 2 RESTORATION PLAN  
 AND DETAILS**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120  
**C-108**



- LEGEND:**
- 440 — NEW TOPOGRAPHIC CONTOUR (1-FT INTERVAL)
  - - - - NEW GRADE BREAK
  - · - · - NEW LIMIT OF PHASE II CONSOLIDATION (SEE NOTES 2 AND 3)
  - SOIL COVER LIMITS

- NOTES:**
1. PROPOSED GRADES REPRESENT THE MAXIMUM TOP OF CONSOLIDATION MATERIAL GRADES. GENERALLY FILL CONSOLIDATION AREA FROM EAST TO WEST.
  2. PROPOSED GRADES MAY BE ALTERED IN THE FIELD BASED ON CONSOLIDATED MATERIAL VOLUME.
  3. PROPOSED GRADES REPRESENT A 100% EXCAVATED MATERIAL CONTINGENCY VOLUME FOR PHASE 1 AND PHASE 2 SOIL AND SEDIMENT REMOVAL.



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State NY Date Signed 8/24/2018 Project Mgr. JDB  
 Designed by PTO Drawn by BKD Checked by JRG

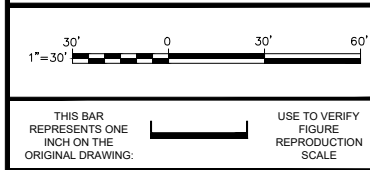
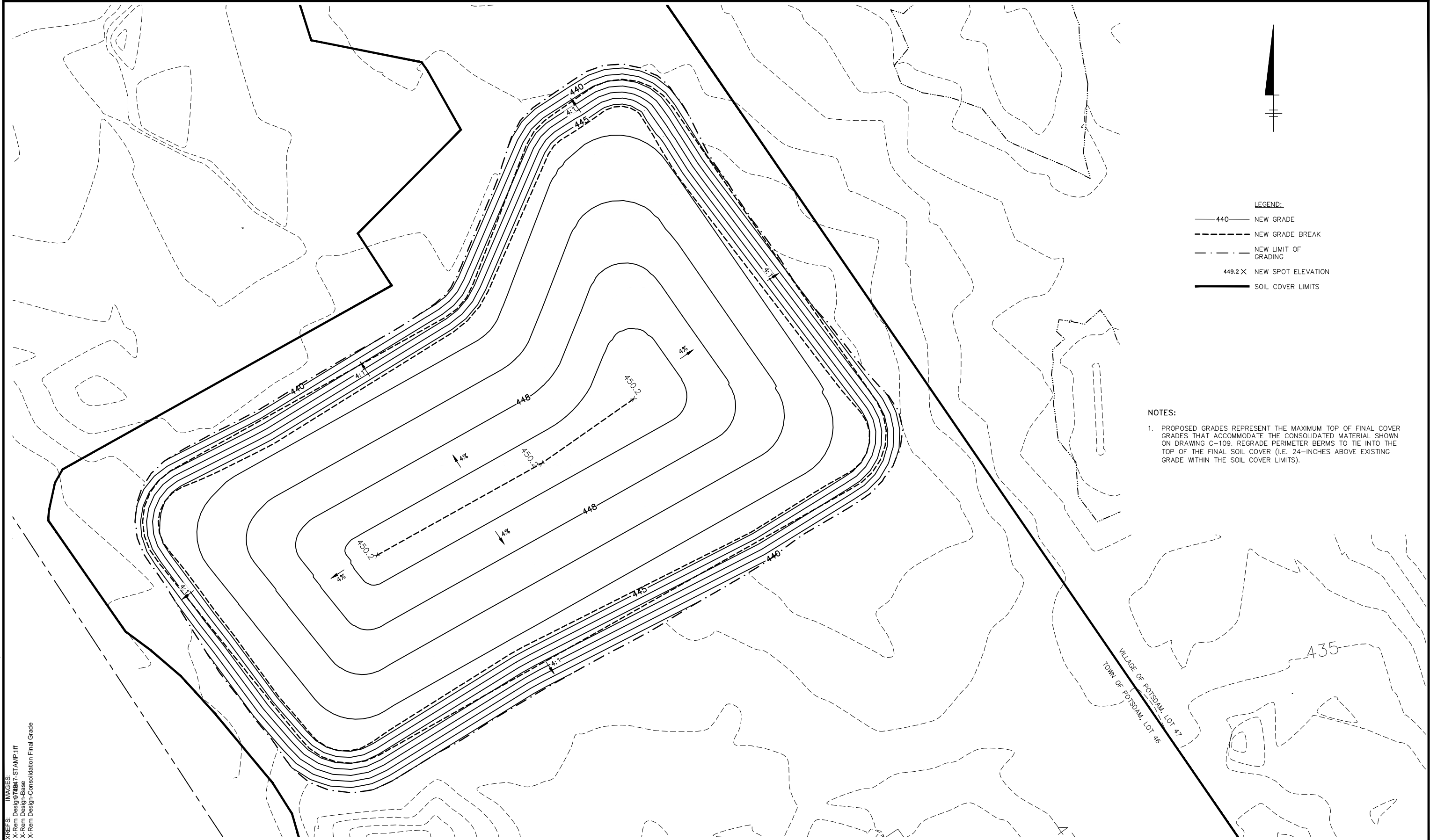


**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**CONSOLIDATED MATERIAL GRADING PLAN**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-109**



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State NY Date Signed 8/24/2018 Project Mgr. JDB  
 Designed by PTO Drawn by BKD Checked by JRG



**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

**CONSOLIDATION AREA FINAL GRADING PLAN**

ARCADIS Project No. B0031006.0005.00080  
 Date AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-110**

CITY: SYRACUSE, NY DB: B DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WIS\WIS Potsdam\former Scrap Yard\2018\B0031006.0005\01-DWG\Rem Design-Plan.DWG LAYOUT: C-111  
 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:23 AM BY: DECLERCO, BRIAN  
 XREFS: IMAGES: design\mk7-STAMP.liff  
 X:Rem Design-Base  
 X:Rem Design-Soil Final Grade

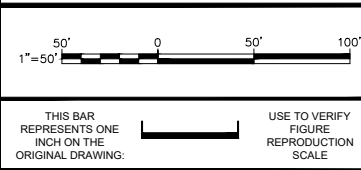


**LEGEND:**

- SITE COVER LIMITS
- SOIL COVER **1**  
C-503
- VEGETATIVE SURFACE RESTORATION **3**  
C-503
- ACCESS ROAD **2**  
C-503
- CHAIN LINK FENCE **1**  
C-504
- NEW MONITORING WELL

**NOTES:**

1. MONITORING WELLS TO BE INSTALLED BY OTHERS.
2. TOP OF SOIL COVER ELEVATIONS ARE GENERALLY 24-INCHES ABOVE THE EXISTING GROUND SURFACE. TOPOGRAPHY SHOWN IS BASED ON ASSUMED SITE CONDITIONS FOLLOWING FACILITY DEMOLITION REMOVAL. REVIEW TOPOGRAPHY WITH ENGINEER PRIOR TO INSTALLATION OF FINAL COVER TO DETERMINE THE NEED FOR ADDITIONAL GRADE CHANGES.



No.	Date	Revisions	By	Ckd

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 JRG  
 Drawn by  
 BKD  
 Checked by  
 JDB



**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

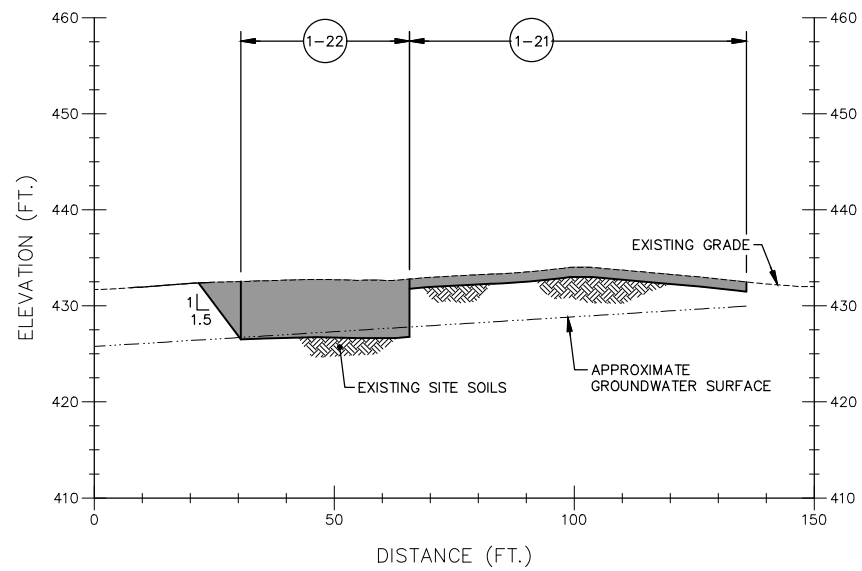
**FINAL UPLAND RESTORATION PLAN**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-111**

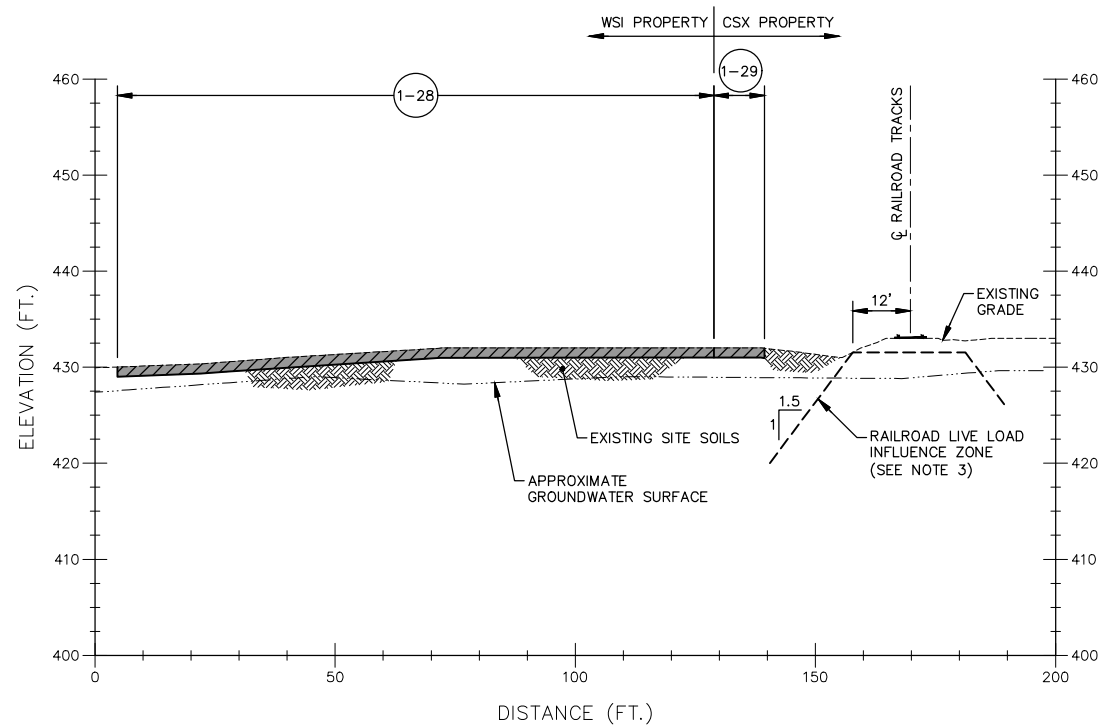


CITY: SYRACUSE, NY DB: B. DECLERCO C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL\_GRID\WSI\_Potsdam\former\_Scrap\_Yard\2018\B0031006.0005\01-DWG\Rem Design-DWG C-301-Phase 1 Excavation Cross-Sections.DWG LAYOUT: C-301 SAVER: 7/23/2018 2:56 PM ACADVER: 21.05 (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:23 AM BY: DECLERCO, BRIAN



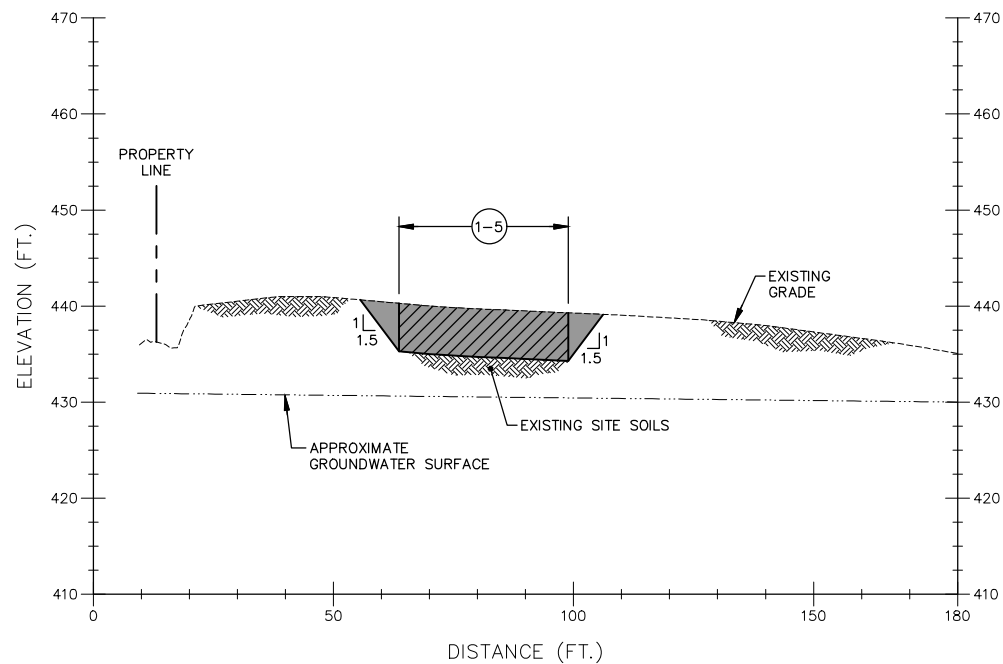
**CROSS-SECTION 1**

0 20' 40'  
HORIZONTAL SCALE: 1"=20'  
0 10' 20'  
VERTICAL SCALE: 1"=10'



**CROSS-SECTION 2**

0 20' 40'  
HORIZONTAL SCALE: 1"=20'  
0 10' 20'  
VERTICAL SCALE: 1"=10'



**CROSS-SECTION 3**

0 20' 40'  
HORIZONTAL SCALE: 1"=20'  
0 10' 20'  
VERTICAL SCALE: 1"=10'

- LEGEND:**
- EXISTING GRADE
  - ..... APPROXIMATE GROUNDWATER SURFACE
  - SOIL REMOVAL
  - SOIL CONTAINING PCBs>50 mg/kg
  - 1-22 REMOVAL AREA

**NOTES:**

1. INFORMATION RELATED TO SUBSURFACE CONDITIONS SHOULD BE CONSIDERED APPROXIMATE AND SHOULD NOT BE RELIED UPON AS A COMPLETE DEPICTION OF SITE CONDITIONS. VERIFY SITE FEATURES PRIOR TO THE START OF WORK.
2. ALL EXCAVATION MUST BE CONDUCTED IN ACCORDANCE WITH OSHA REGULATIONS.
3. NO EXCAVATION IS PERMITTED WITHIN RAILROAD LIVE LOAD INFLUENCE ZONE.
4. SLOPE EXCAVATION, AS NECESSARY, TO MAINTAIN SIDEWALL STABILITY BASED ON SITE SOIL CONDITIONS.

SCALE AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name  
**TERRY W. YOUNG**

Professional Engineer's No.  
074847

State  
NY

Date Signed  
8/24/2018

Project Mgr.  
JDB

Designed by  
JRG

Drawn by  
BKD

Checked by  
JDB



**ARCADIS** Design & Consultancy for natural and built assets.

ARCADIS OF NEW YORK, INC.

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN

**PHASE 1 EXCAVATION CROSS-SECTIONS**

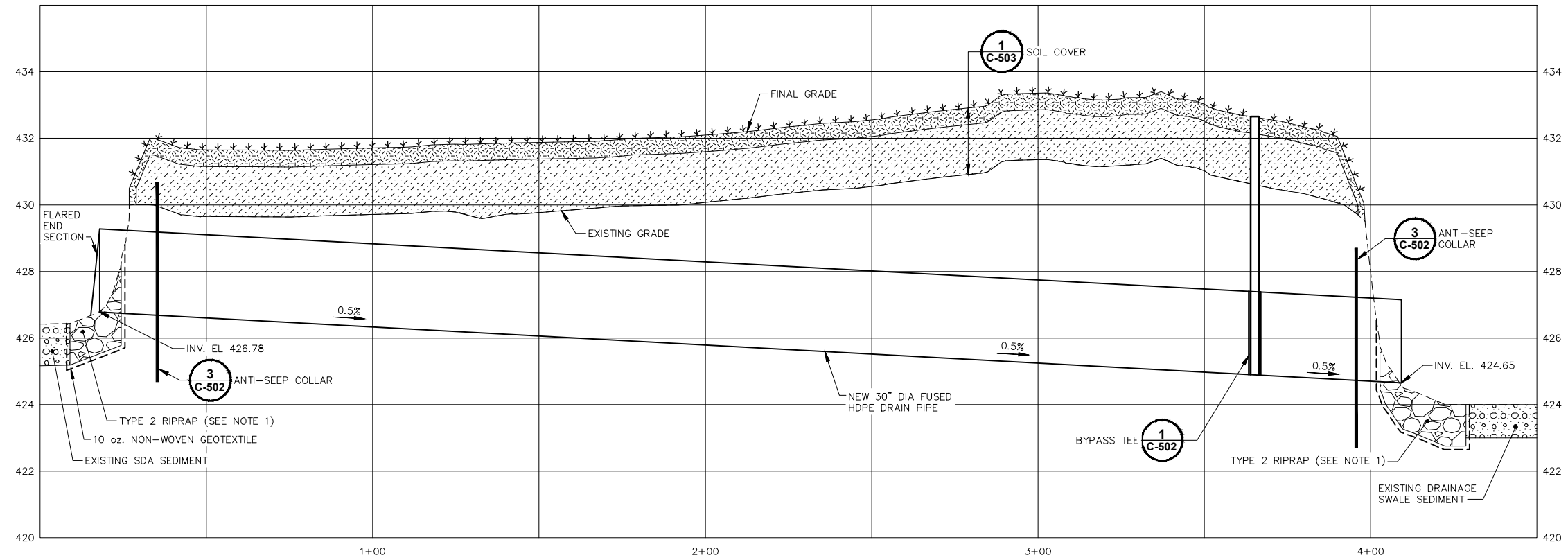
ARCADIS Project No.  
B0031006.0005.00080

Date  
AUGUST 2018

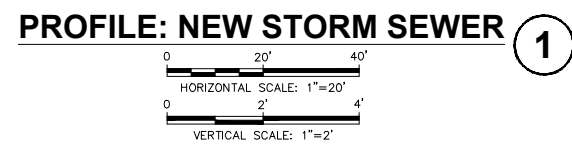
ARCADIS  
One Lincoln Center  
110 West Fayette Street-Suite 300  
SYRACUSE, NEW YORK 13202  
315.446.9120

**C-301**

CITY: SYRACUSE, NY DB: B. DECLERCO C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam former Scrap Yard\2018\B0031006.000501-DWG\Rem Design-DWG C-302-New Storm Sewer Profile.DWG LAYOUT: C-302 - SAVED: 7/23/2018 3:30 PM ACAD/VER: 21.05 (LMS TECH) PAGES/SETUP: --- PLOT/STYLE/TABLE: PLOT/CONT.CTB PLOTTED: 8/24/2018 10:23 AM BY: DECLERCO, BRIAN XREFS: IMAGES: X-Rem Design\7-STAMP.liff



NOTE:  
 1. REFER TO DRAWING C-102 FOR EXTENTS OF RIPRAP INLET AND OUTLET PROTECTION.



SCALE AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State: NY Date Signed: 8/24/2018 Project Mgr.: JDB  
 Designed by: PTO Drawn by: BKD Checked by: JRG



**ARCADIS** Design & Consultancy for natural and built assets.

ARCADIS OF NEW YORK, INC.

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

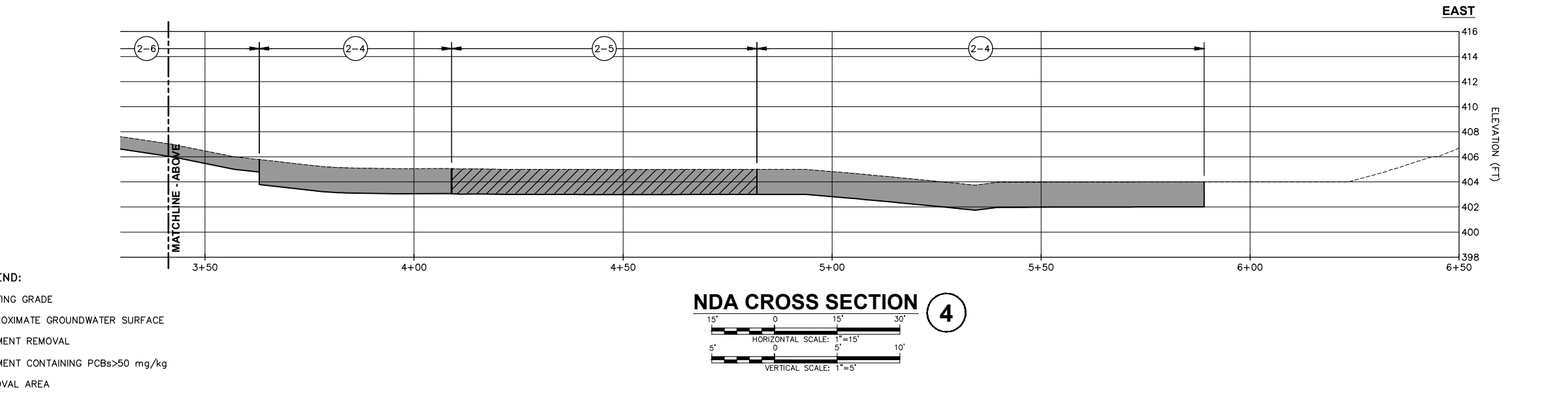
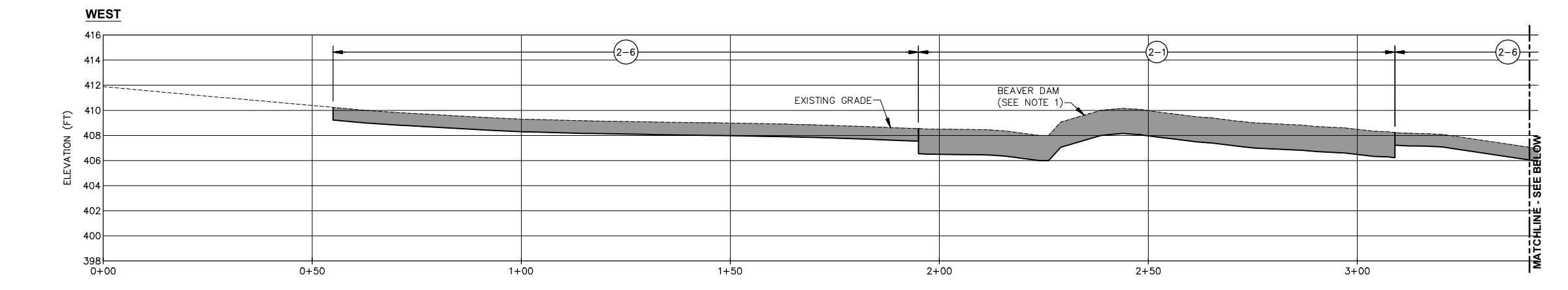
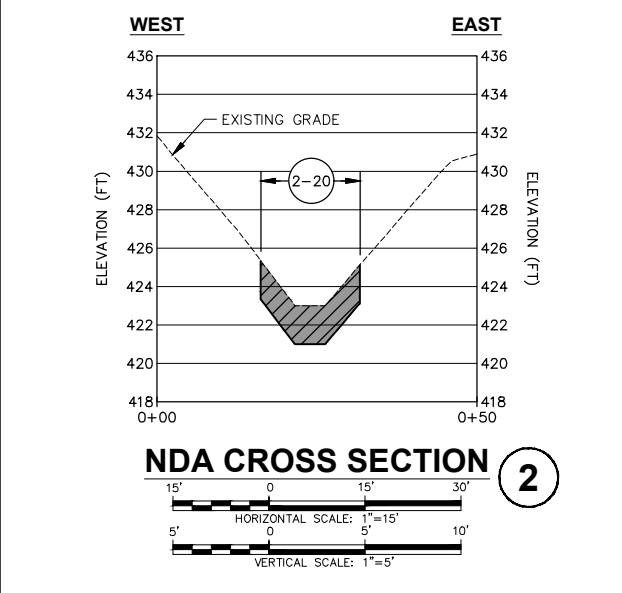
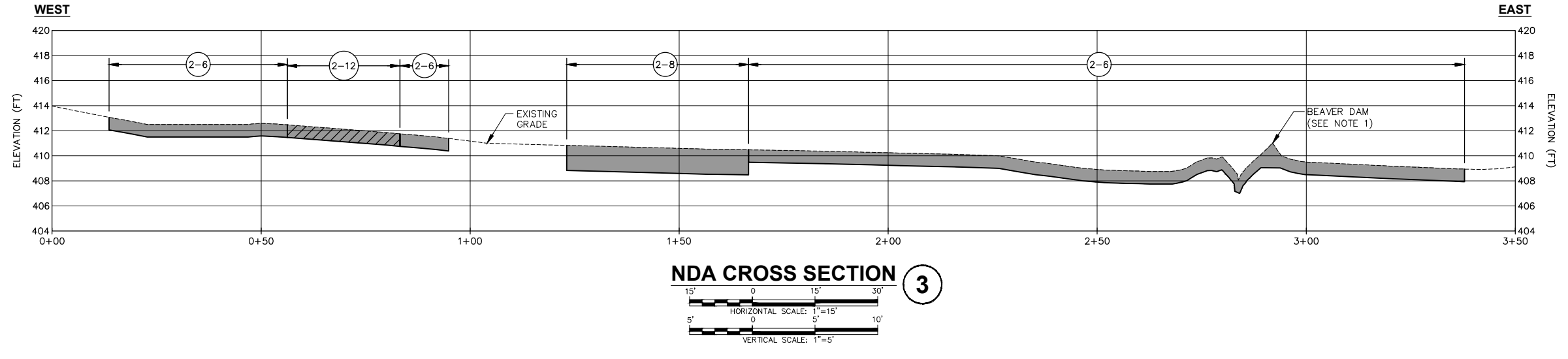
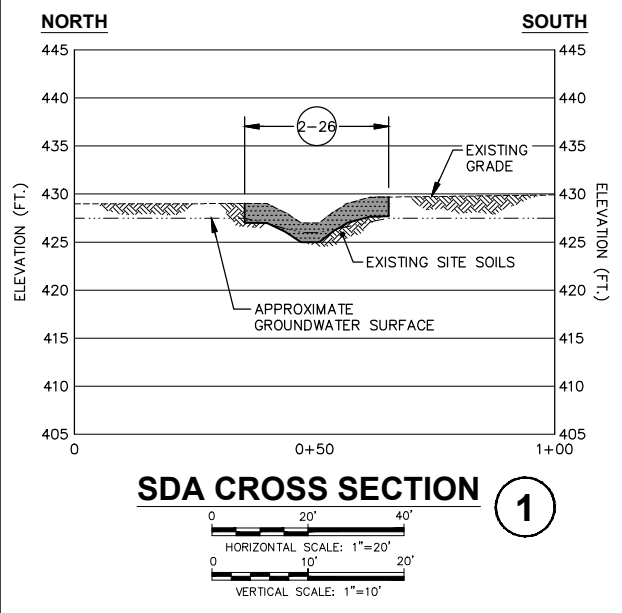
WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

**NEW STORM SEWER PROFILE**

ARCADIS Project No. B0031006.0005.00080  
 Date: AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-302**

CITY: SYRACUSE, NY DB: B. DECLERCO 201808031006.000501-DWG:Rem Design-DWG C-303-Phase 2 Excavation Cross-Sections.DWG LAYOUT: C-303 SAVER: 7/23/2018 4:25 PM ACADVER: 21.05 (LINS TECH) PAGESETUP: ---  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WIS\ Potsdam\former Scrap Yard\2018\B0031006.000501-DWG:Rem Design-DWG C-303-Phase 2 Excavation Cross-Sections.DWG LAYOUT: C-303 SAVER: 7/23/2018 4:25 PM ACADVER: 21.05 (LINS TECH) PAGESETUP: ---  
 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:23 AM BY: DECLERCO, BRIAN XREFS: IMAGES: X-Rem Design\7-STAMP.liff



- NOTES:**
- REMOVE BEAVER DAM TO GRADE AND THEN REMOVE SEDIMENT TO DEPTH SHOWN ON DRAWING C-107.
  - INFORMATION RELATED TO SUBSURFACE CONDITIONS SHOULD BE CONSIDERED APPROXIMATE AND SHOULD NOT BE RELIED UPON AS A COMPLETE DEPICTION OF SITE CONDITIONS. VERIFY SITE FEATURES PRIOR TO THE START OF WORK.
  - ALL EXCAVATION MUST BE CONDUCTED IN ACCORDANCE WITH OSHA REGULATIONS.
  - SLOPE EXCAVATION, AS NECESSARY, TO MAINTAIN SIDEWALL STABILITY BASED ON SITE SEDIMENT CONDITIONS.

**LEGEND:**

-----	EXISTING GRADE
-----	APPROXIMATE GROUNDWATER SURFACE
█	SEDIMENT REMOVAL
█	SEDIMENT CONTAINING PCBs>50 mg/kg
○	REMOVAL AREA

SCALE AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name  
**TERRY W. YOUNG**  
Professional Engineer's No.  
074847  
State  
NY  
Date Signed  
8/24/2018  
Project Mgr.  
JDB  
Designed by  
JRG  
Drawn by  
BKD  
Checked by  
JDB



**ARCADIS** Design & Consultancy for natural and built assets.  
ARCADIS OF NEW YORK, INC.  
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

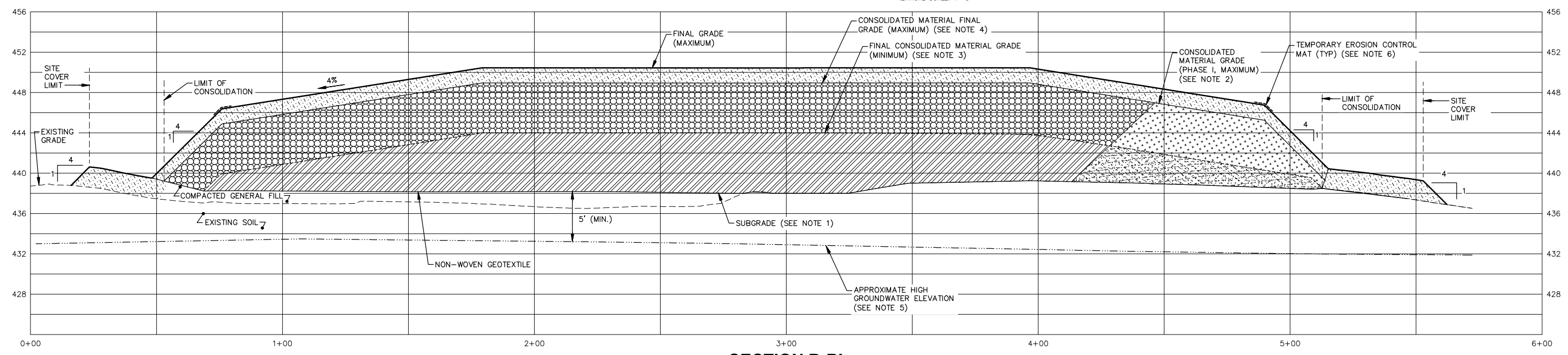
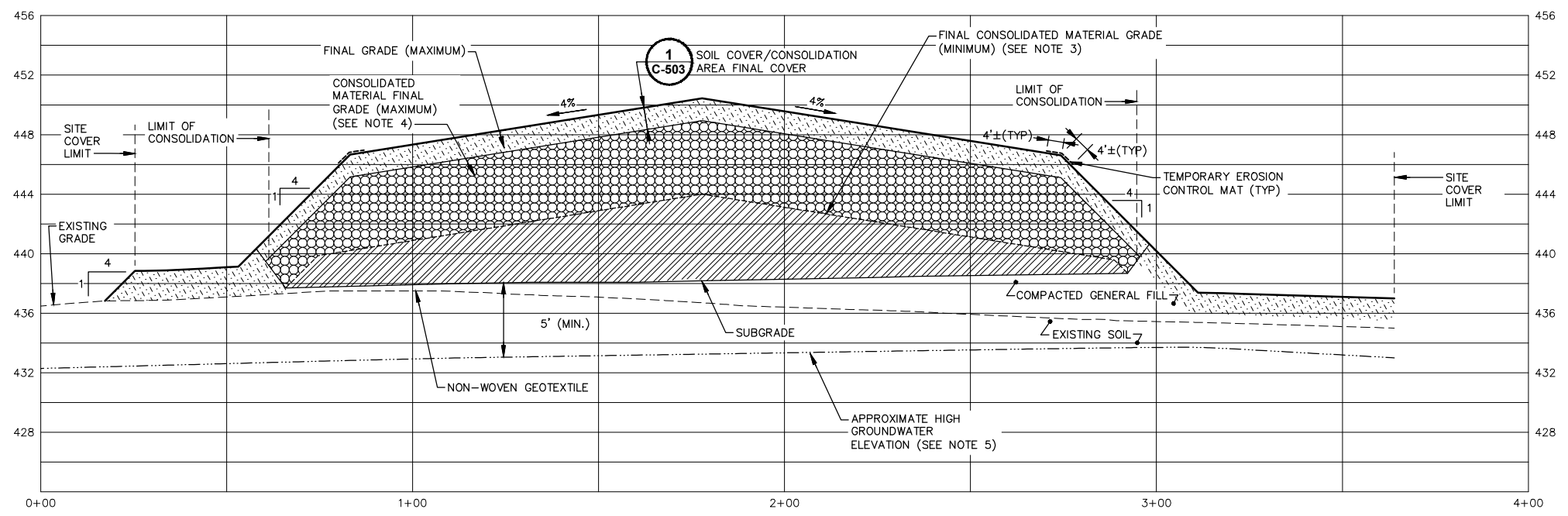
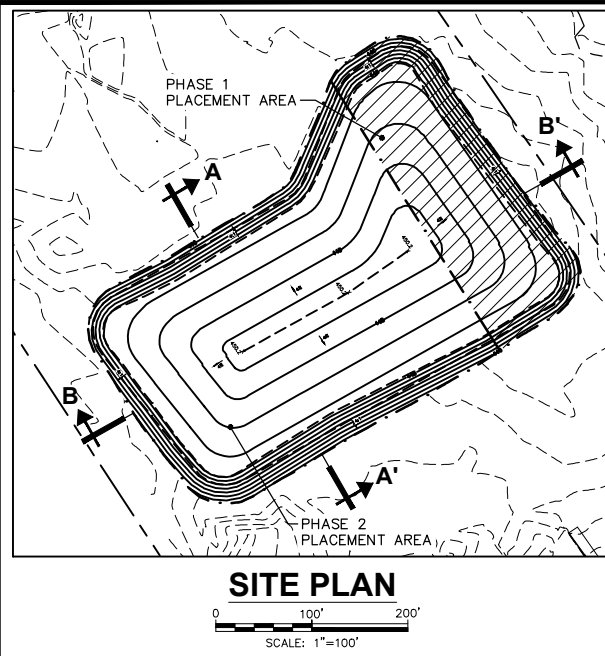
WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN

**PHASE 2 EXCAVATION CROSS-SECTIONS**

ARCADIS Project No.  
B0031006.0005.00080  
Date  
AUGUST 2018  
ARCADIS  
One Lincoln Center  
110 West Fayette Street-Suite 300  
SYRACUSE, NEW YORK 13202  
315.446.9120

**C-303**

CITY: SYRACUSE, NY DB: B. DECLERCO CADVER: 21.05 (LMS TECH) PAGESETUP: ---  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam\former Scrap Yard\2018\B0031006\0005\01-DWG\Rem Design-DWG C-304-Consolidation Area Cross-Sections.DWG LAYOUT: C-304  
 PLOTTED: 8/24/2018 10:24 AM BY: DECLERCO, BRIAN  
 XREFS: IMAGES: 7-STAMP.rvt  
 X-Rem Design-Base  
 X-Rem Design-Consolidation Final Grade



**LEGEND:**

	PHASE 1 CONSOLIDATED MATERIAL
	PHASE 1 CONSOLIDATED MATERIAL (CONTINGENCY VOLUME)
	PHASE 2 CONSOLIDATED MATERIAL
	PHASE 2 CONSOLIDATED MATERIAL (CONTINGENCY VOLUME)
	SOIL COVER/CONSOLIDATION AREA FINAL COVER

- NOTES:**
- SUBGRADE REPRESENTS THE SURFACE ON WHICH CONSOLIDATION MATERIALS ARE PLACED AND SHALL BE A MINIMUM OF 5-FT ABOVE THE WATER TABLE. REFER TO DRAWING C-106 FOR SUBGRADE PLAN.
  - CONSOLIDATED MATERIAL GRADE (PHASE 1, MAXIMUM) REPRESENTS GRADE THAT WOULD ACCOMMODATE A 100% PHASE 1 CONSOLIDATED MATERIAL CONTINGENCY VOLUME.
  - CONSOLIDATED MATERIAL FINAL GRADE (MINIMUM) REPRESENTS GRADE THAT WOULD ACCOMMODATE DESIGN PHASE 1 AND PHASE 2 CONSOLIDATED MATERIAL VOLUME.
  - CONSOLIDATED MATERIAL FINAL GRADE (MAXIMUM) REPRESENTS GRADE THAT WOULD ACCOMMODATE A 100% PHASE 1 AND PHASE 2 CONSOLIDATED MATERIAL CONTINGENCY VOLUME.
  - DEPICTED GROUNDWATER ELEVATIONS ARE BASED ON HISTORIC SITE DATA FROM 2001 TO 2015.
  - TEMPORARY EROSION CONTROL MAT SHALL BE NORTH AMERICAN GREEN C125BN OR APPROVED EQUAL.

SCALE AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.		USE TO VERIFY FIGURE REPRODUCTION SCALE	
No.	Date	Revisions	By Ckd

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 PTO  
 Drawn by  
 BKD  
 Checked by  
 JRG



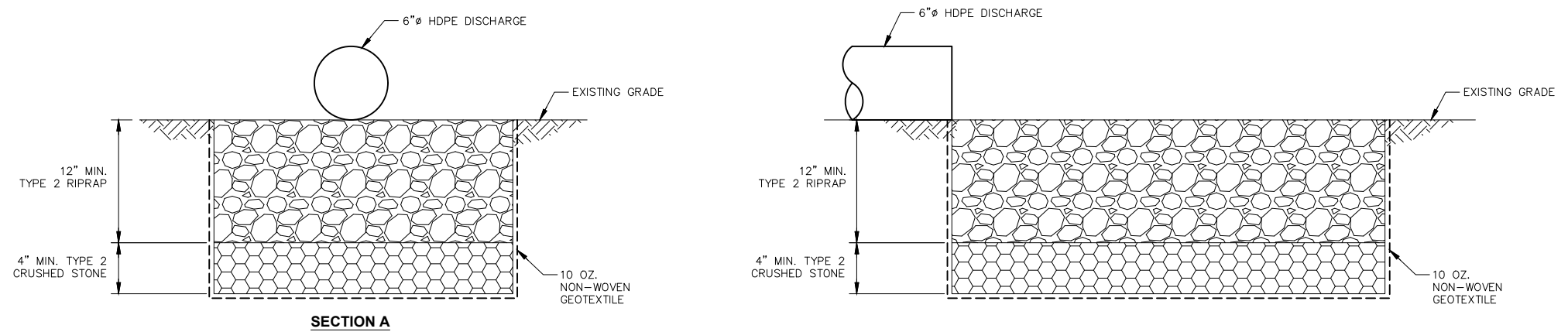
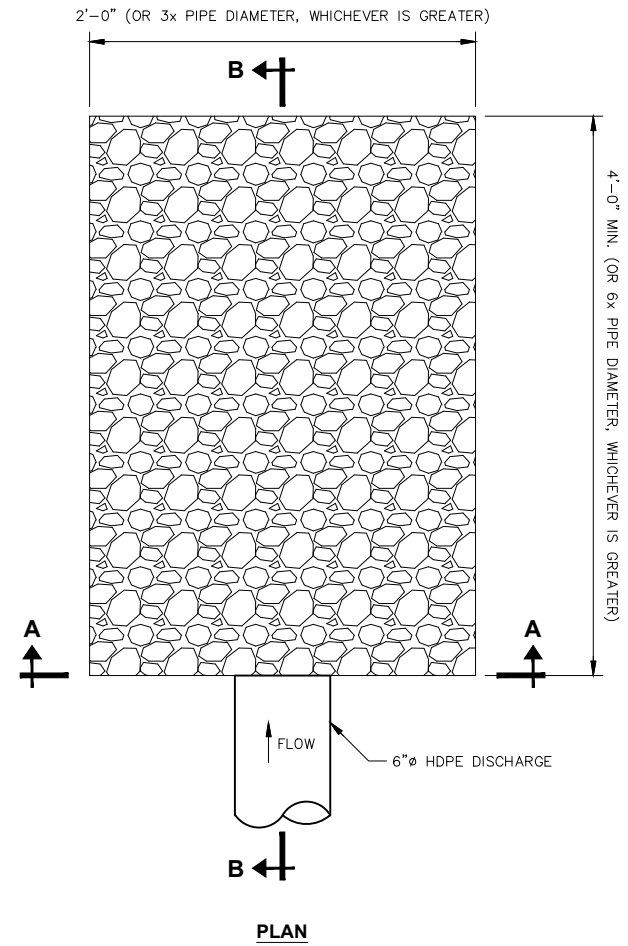
**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN  
**CONSOLIDATION AREA CROSS-SECTIONS**

ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-304**

CITY: SYRACUSE, NY DB: B. DECLERCO  
 C:\Users\bdeclerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam former Scrap Yard\2018\B0031006.000501-DWG\Rem Design-DWG C-501-Temporary Bypass Details.dwg LAYOUT: C-501 - SAVED: 7/23/2018 2:56 PM ACADVER: 21.05 (LMS TECH) PAGES: 1 OF 1 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:24 AM BY: DECLERCO, BRIAN  
 XREFS: IMAGES: X:\Rem Design\17-17-STAMP.lif



**TEMPORARY BYPASS OUTLET 1**  
NOT TO SCALE

NOT TO SCALE				
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.	USE TO VERIFY FIGURE REPRODUCTION SCALE			
No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
Professional Engineer's No.  
074847  
State  
NY  
Date Signed  
8/24/2018  
Project Mgr.  
JDB  
Designed by  
JSB  
Drawn by  
BKD  
Checked by  
JDB



**ARCADIS** | Design & Consultancy for natural and built assets.  
ARCADIS OF NEW YORK, INC.  
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN

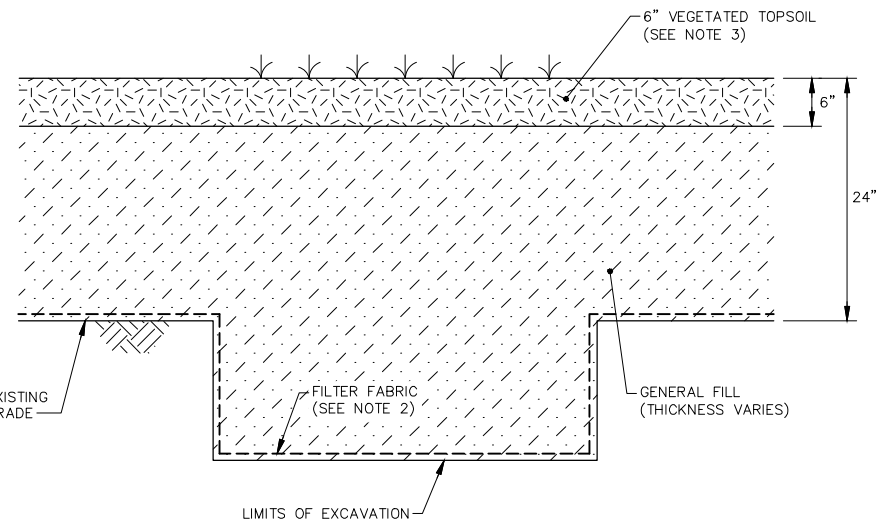
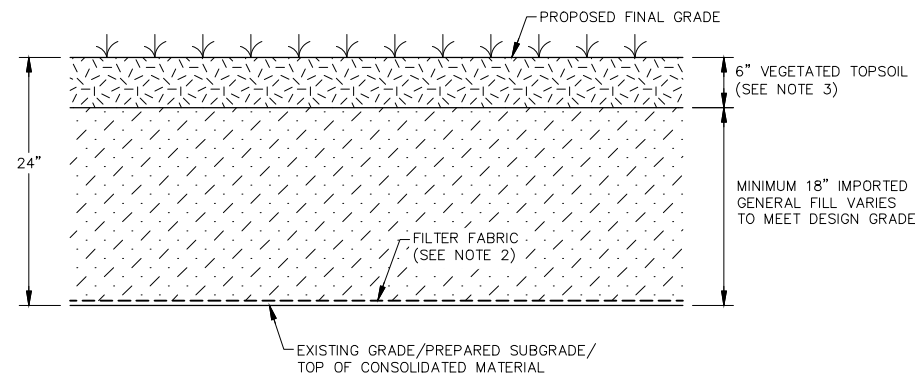
**TEMPORARY BYPASS DETAILS**

ARCADIS Project No.  
B0031006.0005.00080  
Date  
AUGUST 2018  
ARCADIS  
One Lincoln Center  
110 West Fayette Street-Suite 300  
SYRACUSE, NEW YORK 13202  
315.446.9120

**C-501**

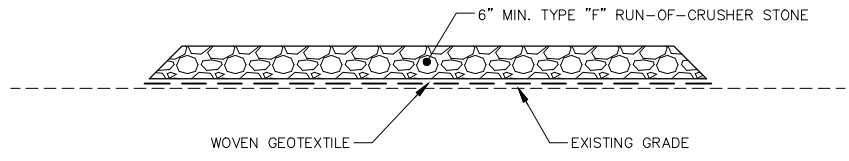


CITY: SYRACUSE, NY DB: B. DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam\former Scrap Yard\2018\B0031006\01-DWG\Rem Design-DWG C-503-Site Cover and Restoration Details.DWG LAYOUT: C-503-503-21.05 (LMS TECH) PAGESETUP: ---  
 XREFS: IMAGES: X-Rem Design\7-Stamp.liff



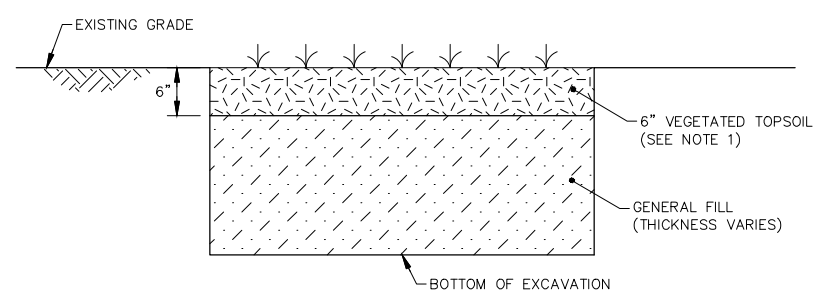
- NOTES:**
1. PLACE SOIL COVER TO THE LIMITS INDICATED ON THESE DRAWINGS.
  2. INSTALL FILTER FABRIC PRIOR TO SOIL BACKFILL/COVER PLACEMENT (AT BOTTOM OF EXCAVATION, OVER NATIVE/EXISTING SURFACE SOIL, AND OVER CONSOLIDATED MATERIAL TO BE CAPPED). DEMARCATION LAYER IS NOT REQUIRED OVER CONCRETE SLABS.
  3. VEGETATE TOPSOIL IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
  4. INSTALL TEMPORARY EROSION CONTROL MAT WHERE SHOWN ON DRAWINGS.

**SOIL COVER/CONSOLIDATION AREA FINAL COVER** ①  
NOT TO SCALE



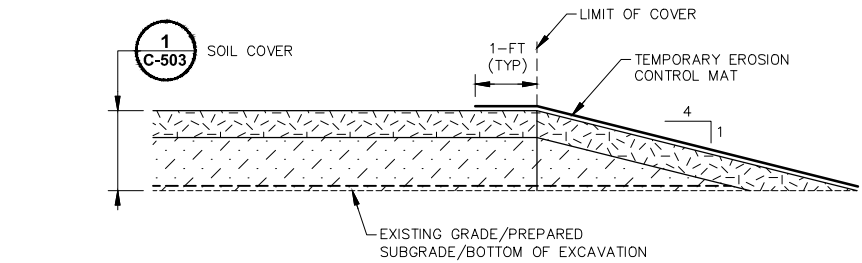
- NOTES:**
1. TEMPORARY ROAD WIDTH SHALL BE 15'.
  2. ADD ADDITIONAL MATERIAL AS NECESSARY FOR ROAD/SURFACE STABILIZATION.

**ACCESS ROAD/TEMPORARY WORKING SURFACE** ②  
NOT TO SCALE



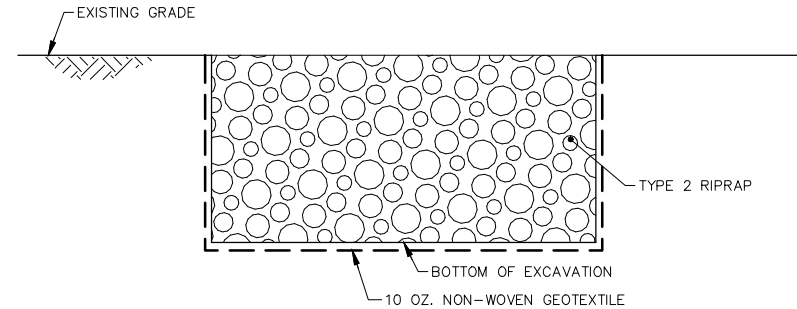
- NOTES:**
1. VEGETATE TOPSOIL IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS.

**VEGETATIVE SURFACE RESTORATION** ③  
NOT TO SCALE



- NOTES:**
1. INSTALL ADDITIONAL VEGETATION AS REQUIREMENT FOR WETLAND RESTORATION.

**SEDIMENT RESTORATION** ⑤  
NOT TO SCALE



**RIPRAP RESTORATION** ⑥  
NOT TO SCALE



No.	Date	Revisions	By	Ckd

Professional Engineer's Name  
**TERRY W. YOUNG**  
Professional Engineer's No.  
074847  
State  
NY  
Date Signed  
8/24/2018  
Project Mgr.  
JDB  
Designed by  
PTO  
Drawn by  
BKD  
Checked by  
JRG



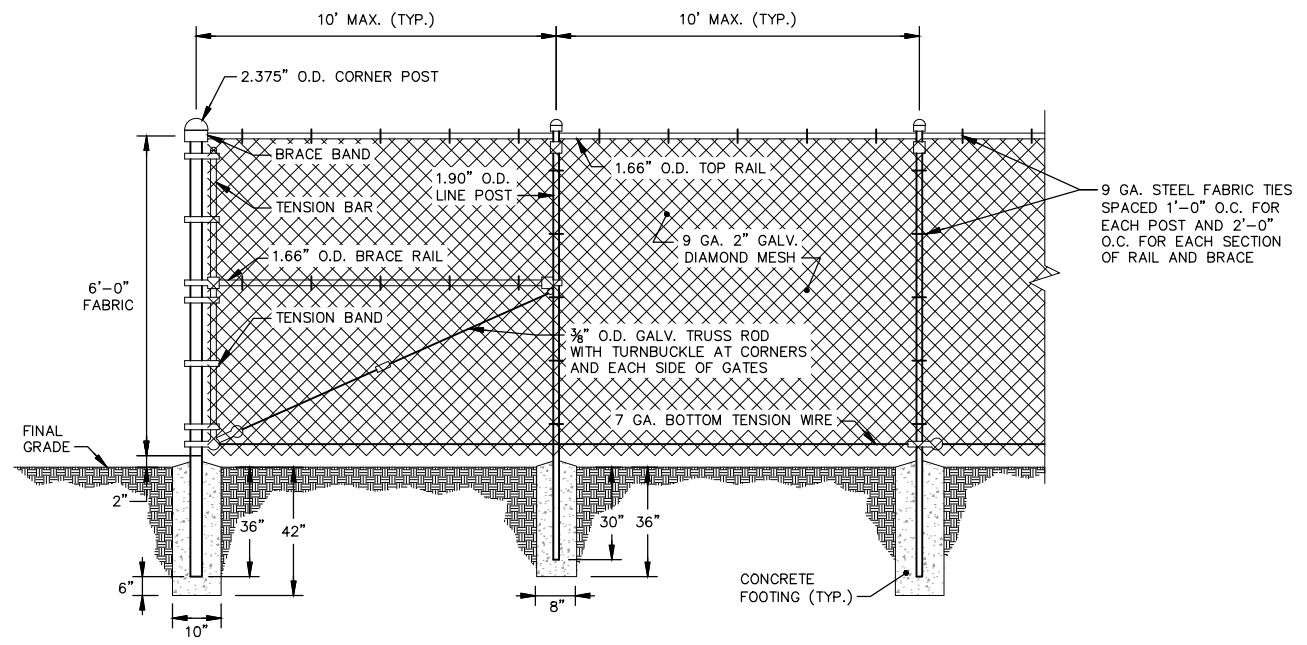
**ARCADIS** Design & Consultancy for natural and built assets.  
ARCADIS OF NEW YORK, INC.  
NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
WASTE-STREAM, INC. SITE  
FINAL (100%) REMEDIAL DESIGN  
**SITE COVER AND RESTORATION DETAILS**

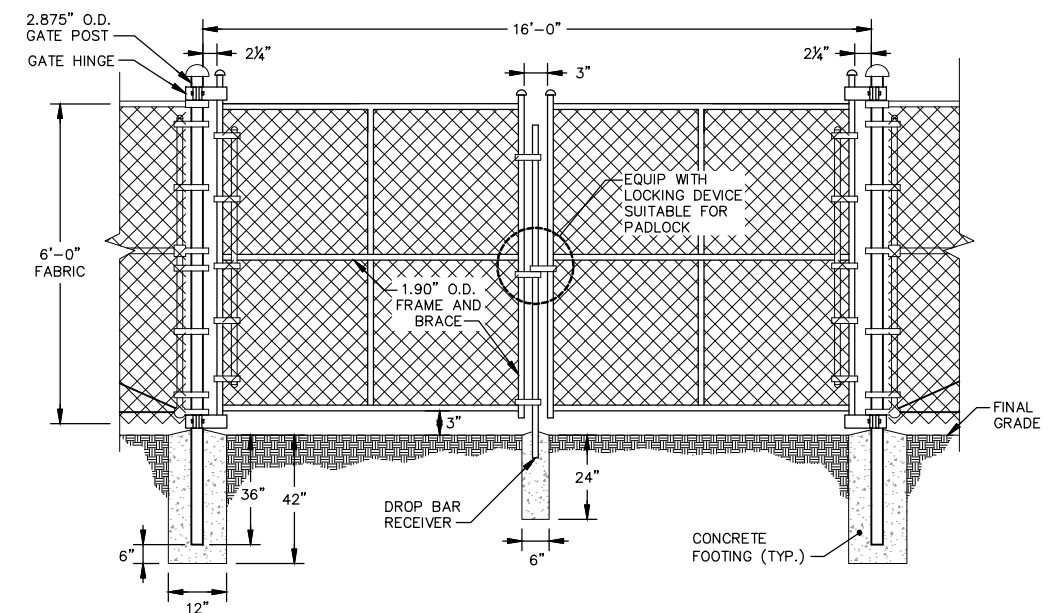
ARCADIS Project No.  
B0031006.0005.00080  
Date  
AUGUST 2018  
ARCADIS  
One Lincoln Center  
110 West Fayette Street-Suite 300  
SYRACUSE, NEW YORK 13202  
315.446.9120

**C-503**

CITY: SYRACUSE ANY DIV/GROUP: 141/ENV. DB: B.GEITTS K.SARTORI LD: B.GEITTS PIC: PM: TM: LYRONE OFF=REF  
 C:\Users\bradec\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WIS\ Potsdam former Scrap Yard\2018\B0031006.000501-DWG\Rem Design-DWG C-504-Fence Details.DWG LAYOUT: C-504 - PLOTSTYLETABLE: XREFS: IMAGES: X-Ref: Design\074847-STAMP.rvt



**6-FOOT CHAIN-LINK FENCE** ①  
 NOT TO SCALE



**DOUBLE SWING GATE** ②  
 NOT TO SCALE

NOT TO SCALE

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State NY Date Signed 8/24/2018 Project Mgr. JDB  
 Designed by JRG Drawn by BKD Checked by JDB



**ARCADIS** Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

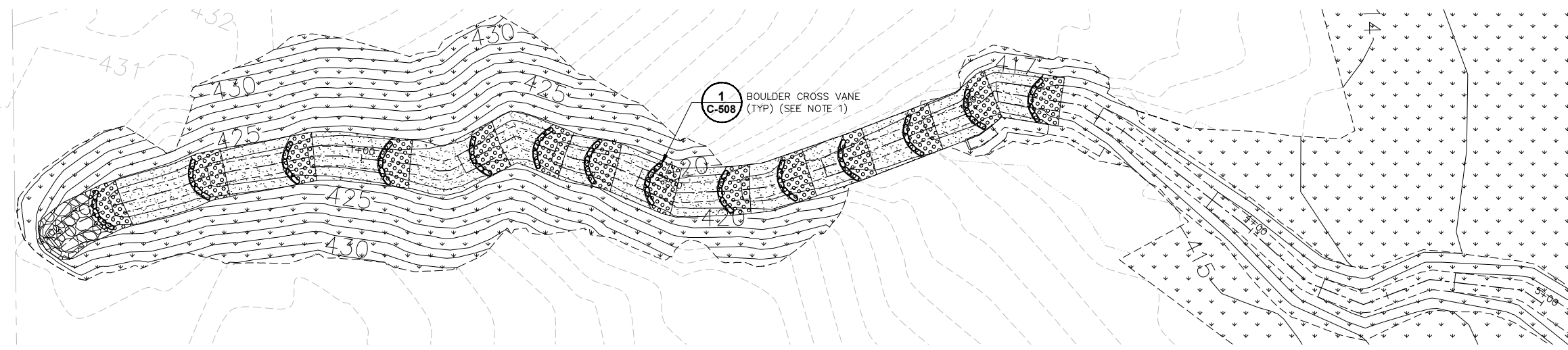
**FENCE DETAILS**

ARCADIS Project No. B0031006.0005.00080  
 Date AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

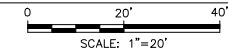
**C-504**



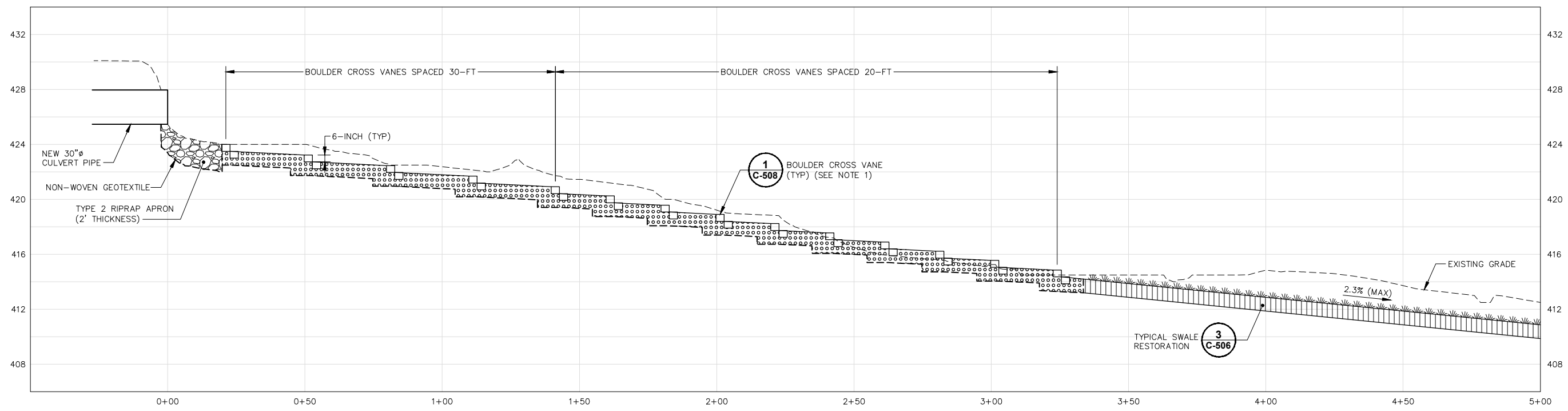
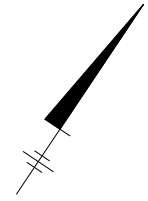
CITY: SYRACUSE, NY DB: B. DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam former Scrap Yard\2018\B0031006\01-DWG\Rem Design-DWG C-505-Phase 2 Restoration Plan and Profile.DWG LAYOUT: C-505 - SAVED: 7/23/2018 2:56 PM ACADVER: 21.05 (LMS TECH) PAGES: 1-4  
 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:25 AM BY: DECLERCO, BRIAN  
 XREFS: IMAGES: 1-7-STAMP.liff  
 X: Rem Design-Phase 2 Final Grade  
 X: Rem Design-Phase 2 Final Grade



**CHANNEL RESTORATION PLAN**

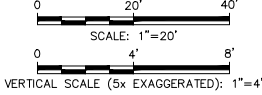


LEGEND:  
 ---431--- EXISTING TOPO  
 —414— NEW TOPOGRAPHIC CONTOUR  
 - - - - - NEW GRADE BREAKLINE



- NOTES:
1. FINAL GRADES DEPICTED ON PROFILE EXCLUDE LOCALIZED GRADING NECESSARY FOR BOULDER CROSS VANE CONSTRUCTION. REFER TO DETAIL 1 ON DRAWING C-508 FOR LOCALIZED GRADING REQUIREMENTS.
  2. INSTALL TEMPORARY EROSION CONTROL MAT ON RESTORED CHANNEL BANKS (SEE DRAWING C-508).

**CHANNEL RESTORATION PROFILE**



SCALE AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd
THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.				

Professional Engineer's Name  
**TERRY W. YOUNG**  
 Professional Engineer's No.  
 074847  
 State  
 NY  
 Date Signed  
 8/24/2018  
 Project Mgr.  
 JDB  
 Designed by  
 DP/PTO  
 Drawn by  
 BKD  
 Checked by  
 JDB



**ARCADIS** | Design & Consultancy for natural and built assets.

ARCADIS OF NEW YORK, INC.

NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

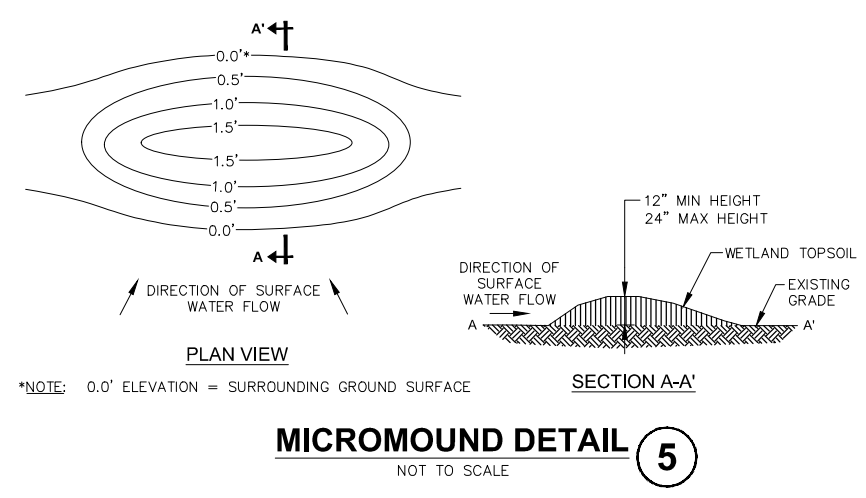
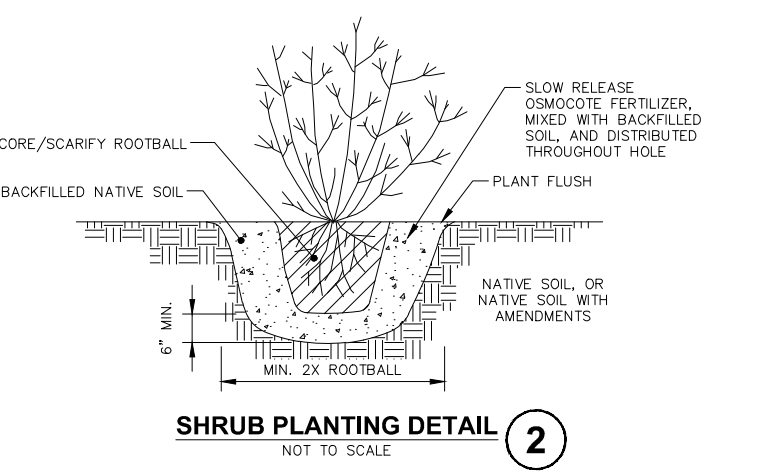
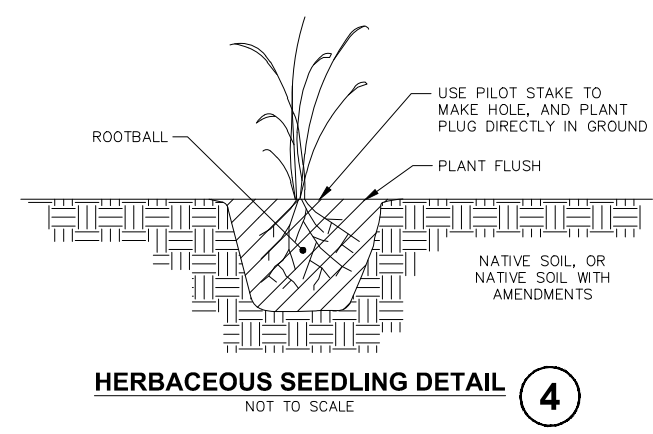
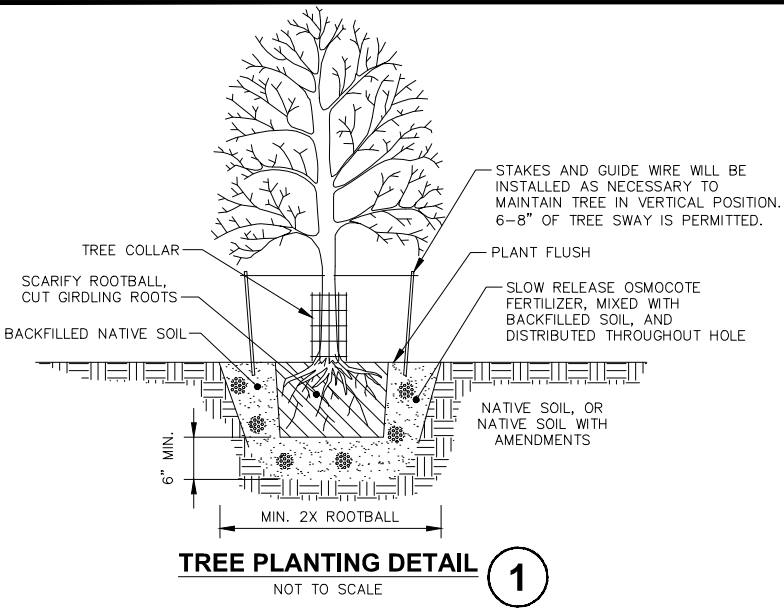
WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

**PHASE 2 RESTORATION PLAN AND PROFILE**

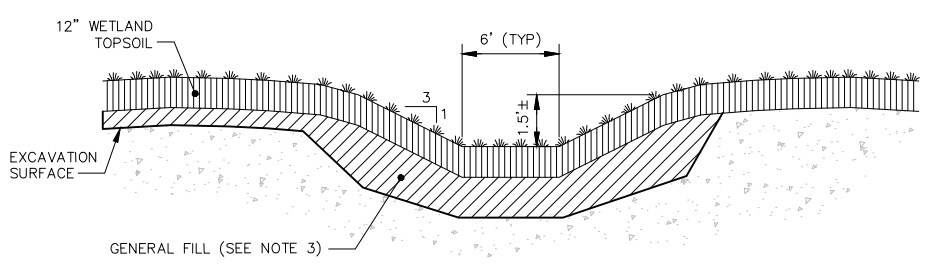
ARCADIS Project No.  
 B0031006.0005.00080  
 Date  
 AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-505**

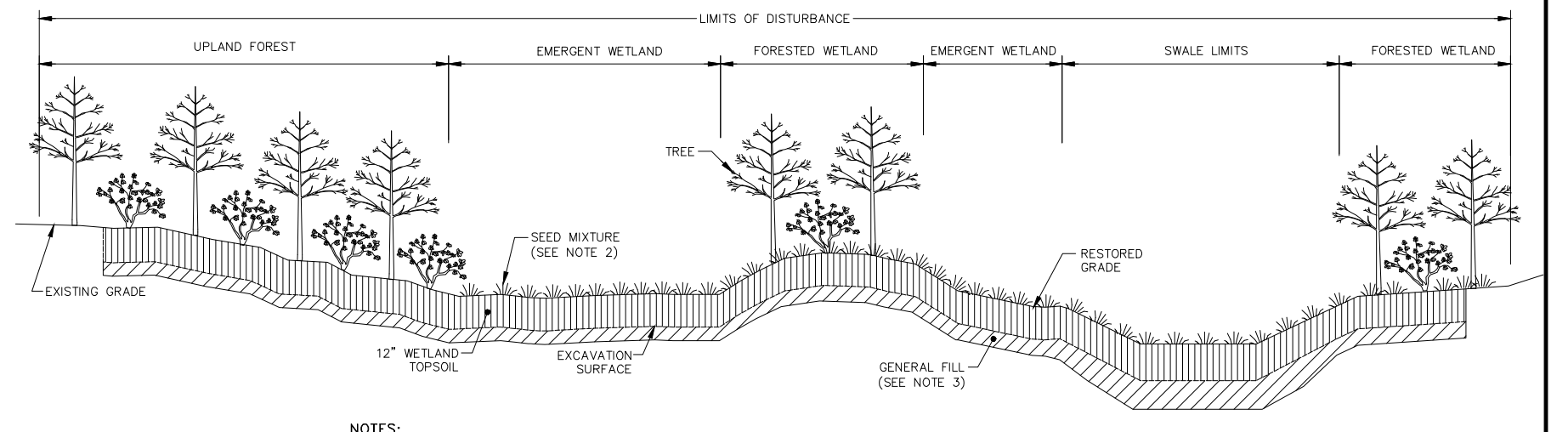
CITY: SYRACUSE, NY, DB: B, DECLERCO  
 C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\National Grid\WIS\Potsdam former Scrap\_Yard\201810\1800031006\000501-DWG\Rem Design-DWG C-506-Planting Plan Details and Notes.dwg LAYOUT: C-506 (LMS TECH) PAGESETUP: 21.05 (LMS TECH) PAGESETUP: - PLOTSTYLETABLE:  
 XREFS: IMAGES: X-Item Design\7-Stamp\17



- SEEDING AND PLANTING NOTES:**
- SEED AND STABILIZE SCRUB-SHRUB WETLAND, EMERGENT WETLAND, FORESTED WETLAND AREAS, AND UPLAND AREAS WITH THE SPECIFIED SEEDING MIXTURES BEFORE PLANTING OF TREES AND SHRUBS. APPLY SEED MIX AT OR ABOVE THE RATE INDICATED IN THE SEED MIX TABLES.
  - PRIOR TO PLANTING AND SEEDING, SCARIFY, HARROW, RAKE AND BROOM THE GROUND UNTIL THE SURFACE IS SMOOTH AND OF UNIFORMLY FINE TEXTURE. NO SEEDING SHALL BE DONE DURING WINDY WEATHER. SEEDING SHALL BE DONE IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER. SOW SEED EVENLY BY HAND OR WITH AN APPROVED MECHANICAL SEEDING DEVICE IN THE PROPORTIONS AND AT THE RATE PER UNIT AREA HERETOFORE SPECIFIED. HYDROSEEDING WILL BE ACCEPTABLE. THE SOWN SEED SHALL BE COVERED WITH A 1/4" THIN LAYER OF WETLAND TOPSOIL BY LIGHT RAKING OR OTHER APPROVED METHOD, ROLLED IN BOTH DIRECTIONS WITH A HAND ROLLER WEIGHING NO MORE THAN 100 POUNDS PER FOOT OR WIDTH, AND WATERED WITH A FINE SPRAY. CONTRACTOR SHALL EXERCISE THE NECESSARY PRECAUTIONS TO KEEP THE AREA UNDISTURBED UNTIL THE GRASS IS ESTABLISHED.
  - SPREAD WEED-FREE MULCH AS NEEDED TO LEAVE SEEDED SURFACE WITH MINIMUM AMOUNT OF DAMAGE.
  - PLANT TREES AND SHRUBS RANDOMLY WITHIN THE RESPECTIVE COMMUNITY ACCORDING TO SPECIFICATIONS SHOWN ON THE PLANTING DETAILS. AMEND TOPSOIL WITH FERTILIZER, WATER ABSORBING GEL (TERRA-SORB™ OR SIMILAR), AND MYCORRHIZAL INOCULANT AS NECESSARY. MULCH TREES AND SHRUBS AS NEEDED.
  - PROVIDE ALL TREES AND PLANTS OF QUANTITY, SIZE, GENUS AND SPECIES AS PROVIDED HEREIN. PROVIDE HEALTHY, VIGOROUS STOCK FROM A RECOGNIZED REGIONAL NURSERY. ALL PLANTS SHALL BE FREE FROM DISEASE AND INFESTATION. THE ENGINEER RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL THAT IS DEEMED TO BE INFERIOR QUALITY OR THAT IS DAMAGED. SPECIES AND QUANTITIES ARE DEPENDANT UPON AVAILABILITY FROM NURSERY SUPPLIER AT THE TIME OF PLANTING.
  - DELIVER TREES AND SHRUBS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANTING IMMEDIATELY IS PRACTICABLE. IF PLANTING IS NOT POSSIBLE WITHIN 12 HOURS AFTER DELIVERY, MAINTAIN PLANTING STOCK IN A DESIGNATED AREA ON SITE THAT PROVIDES SUITABLE SHADE, PROTECTION FROM WIND, WEATHER AND MECHANICAL DAMAGE. KEEP ROOTS MOIST WHILE HELD IN THIS STAGING AREA.
  - LOCATIONS OF ALL TREES AND SHRUBS TO BE DETERMINED IN THE FIELD BY THE ENGINEERS WETLAND ECOLOGIST.
  - PROTECT CONTAINERIZED TREES AND SHRUBS FROM RODENT AND DEER DAMAGE BY INSTALLING APPROPRIATE DEER FENCING OR RIGID PLASTIC MESH TREE BARK PROTECTOR OF APPROPRIATE HEIGHT. THE RIGID PLASTIC SHOULD HAVE A MESH SIZE OF 3/4" X 3/4". SIMILAR TO PRODUCT MANUFACTURED BY A.M. LEONARD OR COMPARABLE. THE CONTRACTOR WILL DETERMINE THE SELECTED APPROACH AND SUBMIT TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR 1 YEAR GUARANTEE INCLUDES PROTECTION FROM POTENTIAL HERBIVORY BY DEER, RODENTS, OR OTHER WILDLIFE.
  - TILL TEMPORARY ACCESS ROAD AREAS TO DEPTH OF 6-12" PRIOR TO SEEDING.



- NOTES:**
- REFER TO C-108 FOR MAXIMUM EXTENT OF SWALE RESTORATION. ACTUAL LIMITS SUBJECT TO CHANGE BASED ON ACTUAL LIMITS OF DISTURBANCE. CHANNEL BANKS SHALL TIE INTO ADJACENT WETLANDS RESTORED AS CLOSE TO ORIGINAL GRADE AS PRACTICABLE.
  - VEGETATION TO BE PLANTED IN ACCORDANCE WITH PLANTING PLAN DETAILS.
  - GENERAL FILL MAY BE USED TO RESTORE SUBGRADE AS NECESSARY IN DEEPER EXCAVATION AREAS. SUBGRADE SHALL BE 12 INCHES BELOW FINAL GRADE.



- NOTES:**
- VEGETATION TO BE PLANTED IN ACCORDANCE WITH PLANTING PLAN DETAILS.
  - IF EXCAVATION IS GREATER THAN 1-FOOT IN THE WETLANDS, GENERAL FILL WILL BE INSTALLED TO CREATE SUBSURFACE AT 1-FOOT BELOW ORIGINAL GRADE.

NOT TO SCALE

No.	Date	Revisions	By	CKd

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.

Professional Engineer's Name <b>TERRY W. YOUNG</b>		
Professional Engineer's No. 074847		
State NY	Date Signed 8/24/2018	Project Mgr. JDB
Designed by DP/PTO	Drawn by BKD	Checked by JDB



**ARCADIS**  
 Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
 FINAL (100%) REMEDIAL DESIGN

**PLANTING PLAN DETAILS AND NOTES**

ARCADIS Project No.  
B0031006.0005.00080  
 Date  
AUGUST 2018  
 ARCADIS  
 One Lincoln Center  
 110 West Fayette Street-Suite 300  
 SYRACUSE, NEW YORK 13202  
 315.446.9120

**C-506**

CITY: SYRACUSE, NY DB: B: DECLERCO C:\Users\declerc\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WIS\ Potsdam former Scrap Yard\2018\B0031006.0005\01-DWG\Rem Design-DWG C-507-Planting Tables.dwg LAYOUT: C-507 SAVED: 7/23/2018 2:56 PM ACADYER: 21.05 (LMS TECH) PAGES: 11 PLOTSTYLE: TABLE: PLTCONT.CTB  
 PLOTTED: 8/24/2018 10:26 AM BY: DECLERCO, BRIAN XREFS: IMAGES: X-Rem Design\7-STAMP.lrf

TABLE 1. EMERGENT WETLAND SEED SPECIFICATION AND APPLICATION RATE:

Proportion of Seed Mix (%)	Scientific Name	Common Name
25.0%	Carex vulpinoidea	Fox Sedge
13.0%	Carex lurida	Lurid (Shallow) Sedge
11.5%	Elymus riparius	Riverbank Wildrye
10.0%	Carex lupulina	Hop Sedge
10.0%	Carex scoparia	Blunt Broom Sedge
5.0%	Verbena hastata	Blue Vervain
5.0%	Scirpus cyperinus	Woolgrass
3.0%	Cinna arundinacea	Wood Reedgrass
2.5%	Juncus effusus	Soft Rush
2.0%	Asclepias incarnata	Swamp Milkweed
2.0%	Glyceria canadensis	Rattlesnake Grass
2.0%	Onoclea sensibilis	Sensitive Fern
2.0%	Eupatorium fistulosum	Joe Pye Weed
2.0%	Mimulus ringens	Square Stemmed Monkeyflower
1.0%	Aster novae-angliae	New England Aster
1.0%	Helenium autumnale	Common Sneezeweed
1.0%	Eupatorium perfoliatum	Boneset
0.5%	Alisma subcordatum	Mud Plantain (Water Plantain)
0.5%	Aster puniceus	Purplestem Aster
0.5%	Aster umbellatus	Flat Topped White Aster
0.5%	Ludwigia alternifolia	Seedbox

Species composition may change based upon market availability.  
 Seeding Rate: 25 lbs per acre  
 Seeding Timing: October to May

TABLE 2. FORESTED SEED MIX SPECIFICATIONS AND APPLICATION RATE:

Proportion of Seed Mix (%)	Scientific Name	Common Name
30.0%	Panicum clandestinum	Deertonuge
16.0%	Sorghastrum nutans	Indiangrass
15.0%	Elymus riparius	Riverbank Wildrye
11.0%	Andropogon gerardii	Big Bluestem
8.0%	Panicum viratum	Switchgrass
3.0%	Chamaecrista fasciculata	Partridge pea
3.0%	Rudbeckia hastata	Blackeyed susan
3.0%	Verbena hastata	Blue vervain
2.0%	Aster novae-angliae	New England Aster
2.0%	Juncus effusus	Soft Rush
2.0%	Juncus tenuis	Path rush
1.2%	Asclepias incarnata	Swamp milkweed
0.8%	Eupatorium fistulosum	Joe Pye Weed
0.8%	Eupatorium perfoliatum	Boneset
0.8%	Vernonia noveboracensis	New York Ironweed
0.7%	Helenium autumnale	Common Sneezeweed
0.5%	Monarda fistulos	Wild Bergamont
0.2%	Solidago patula	Roughleaf goldenrod

Species composition may change based upon market availability.  
 Seeding Rate: 25 lbs per acre  
 Seeding Timing: October to May

TABLE 3. FORESTED MOUNDS WETLAND PLANTING SPECIFICATIONS:

Scientific Name	Common Name	Stratum	Area (acres)	Size	Density (stems/acre)	Total to Plant
Betula alleghaniensis	Yellow birch	Tree	0.25	7 Gallon	100	25
Acer rubrum	Red maple	Tree		7 Gallon	100	25
Chamaecyparis thyoides	White Cedar	Tree		7 Gallon	200	50
Larix laricina	Tamarack	Tree		7 Gallon	50	13
Salix nigra	Black willow	Shrub		1 Gallon	50	13
Cornus sericea	Red-osier dogwood	Shrub		1 Gallon	50	13
Alnus incana	Speckled alder	Shrub		1 Gallon	50	13

7 gallon trees will be minimum height of 7-8' tall. Shrubs will be planted with 1 or 3 gallon containerized nursery stock based upon availability.

TABLE 4. PALUSTRINE AND UPLAND FOREST PLANTING SPECIFICATIONS:

Scientific Name	Common Name	Stratum	Area (acres)	Size	Density (stems/acre)	Total to Plant
Acer rubrum	Red maple	Tree	1.37	7 Gallon	75	103
Platanus occidentalis	Sycamore	Tree		7 Gallon	75	103
Populus deltoides	Cottonwood	Tree		7 Gallon	50	69
Acer negundo	Box elder	Tree		7 Gallon	40	55
Quercus palustris	Pin oak	Tree		7 Gallon	50	69
Quercus bicolor	Swamp white oak	Tree		7 Gallon	50	69
Celtis occidentalis	Hackberry	Tree		7 Gallon	50	69
Vaccinium corymbosum	High-bush blueberry	Shrub		1 Gallon	50	69
Ilex verticillata	Winterberry	Shrub		1 Gallon	50	69
Salix nigra	Black willow	Shrub		1 Gallon	50	69
Alnus incana	Speckled alder	Shrub		1 Gallon	50	69

7 gallon trees will be minimum height of 7-8' tall. Shrubs will be planted with 1 or 3 gallon containerized nursery stock based upon availability.

TABLE 5. SCRUB SHRUB WETLAND PLANTING SPECIFICATIONS:

Scientific Name	Common Name	Stratum	Area (acres)	Size	Density (stems/acre)	Total to Plant
Salix nigra	Black willow	Shrub	1.3	1 Gallon	150	225
Cornus sericea	Red-osier dogwood	Shrub		1 Gallon	50	75
Alnus incana	Speckled alder	Shrub		1 Gallon	250	375

Shrubs will be planted with 1 or 3 gallon containerized nursery stock based upon availability.

TABLE 6. UPLAND GRASSLAND SEED MIX SPECIFICATIONS AND APPLICATION RATE:

Proportion of Seed Mix (%)	Scientific Name	Common Name
18.0%	Elymus virginicus	Virginia wildrye
17.0%	Schizachyrium scoparium	Little bluestem
15.0%	Festuca rubra	Creeping red fescue
15.0%	Andropogon gerardii	Big bluestem
10.0%	Sorghastrum nutans	Indian grass
6.0%	Chamaecrista fasciculata	Partridge pea
6.0%	Panicum virgatum	Switch grass
3.0%	Desmodium paniculatum	Panicleleaf Tick Trefoil
3.0%	Verbena hastata	Blue vervain
2.5%	Asclepias tuberosa	Butterfly milkweed
1.0%	Rudbeckia hirta	Black eyed susan
1.0%	Helenium autumnale	Common sneezeweed
1.0%	Aster pilosus	Heath aster
1.0%	Solidago juncea	Early goldenrod
0.5%	Agrostis perennans	Upland bentgrass

Species composition may change based upon market availability.  
 Seeding Rate: 25 lbs per acre  
 Seeding Timing: October to May

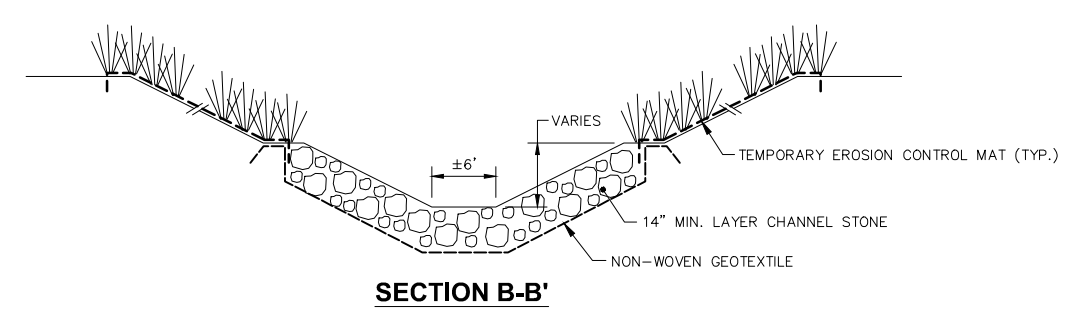
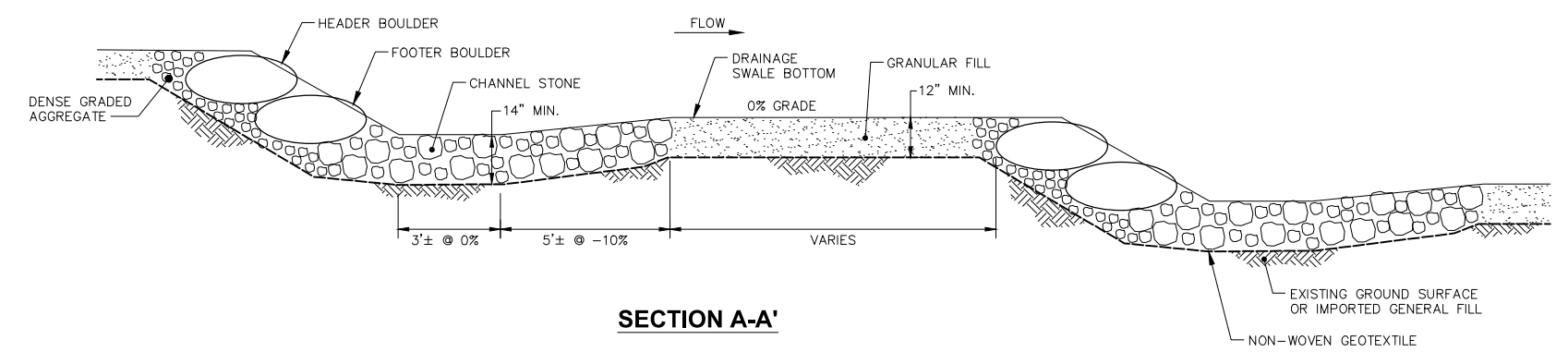
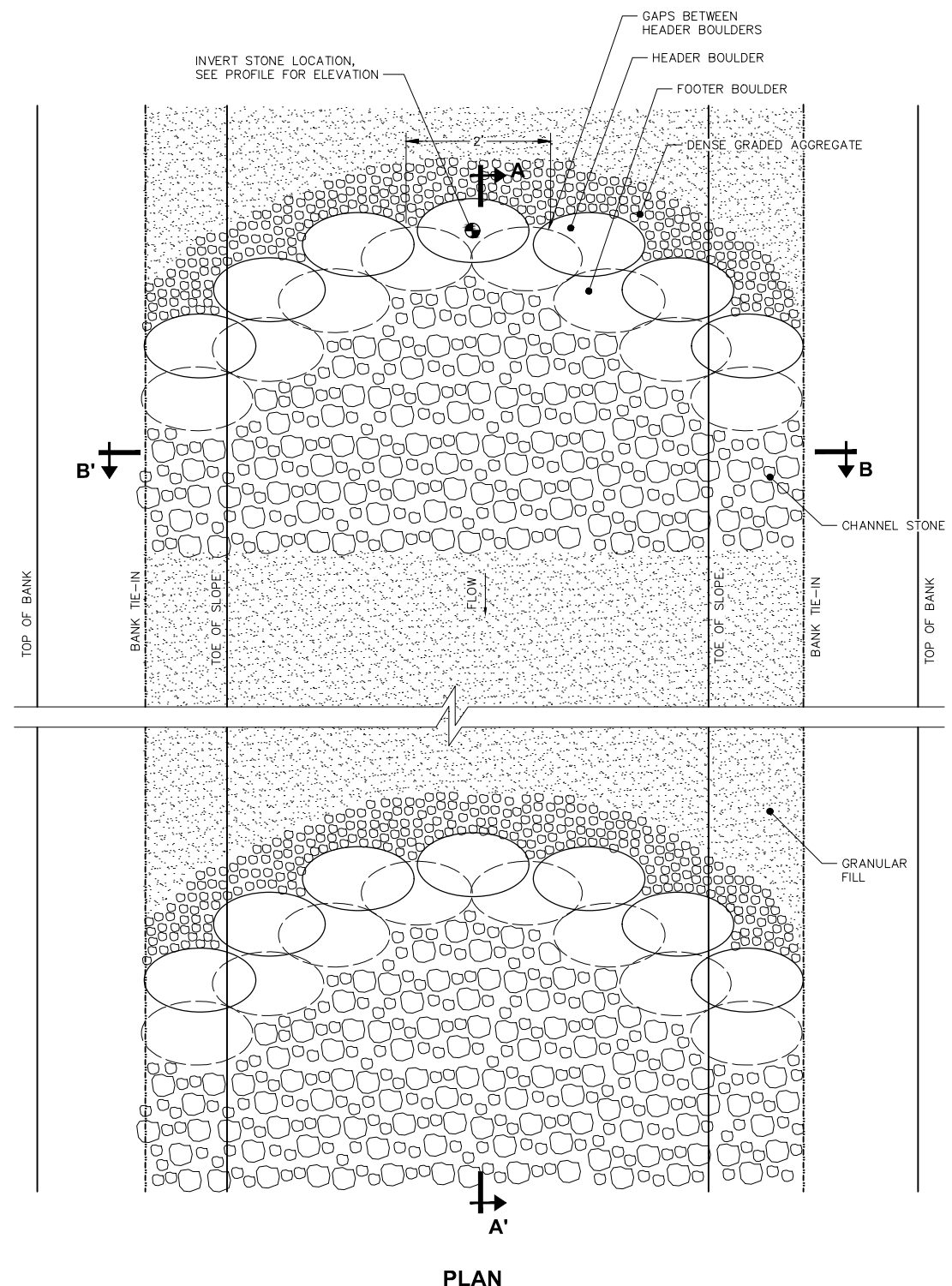
GENERAL NOTE:

- TOTAL QUANTITIES PRESENTED ARE BASED ON THE REMOVAL/DISTURBANCE LIMITS SHOWN ON DRAWING C-108. TOTAL QUANTITIES ARE SUBJECT TO CHANGE BASED ON ACTUAL EXTENT OF WORK. ADDITIONAL RESTORATION, AS NEEDED, WILL BE COMPLETED AT THE STATED DENSITIES.

NOT TO SCALE  THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.  USE TO VERIFY FIGURE REPRODUCTION SCALE	Professional Engineer's Name <b>TERRY W. YOUNG</b> Professional Engineer's No. 074847 State NY		 Design & Consultancy for natural and built assets.  ARCADIS OF NEW YORK, INC.  NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW	WSI GROUP • POTSDAM, NEW YORK WASTE-STREAM, INC. SITE FINAL (100%) REMEDIAL DESIGN  <b>PLANTING TABLES</b>	ARCADIS Project No. B0031006.0005.00080  Date AUGUST 2018	<b>C-507</b>
	Revisions No. Date By Ckd THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.				Date Signed 8/24/2018 Project Mgr. JDB  Designed by DP/PTO Drawn by BKD Checked by JDB	

CITY: SYRACUSE, NY; DB: B DECLERCO; C:\Users\declerco\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WSI Potsdam former Scrap Yard\2018\B0031006\000501-DWG\Rem Design-DWG C-508-Cross Vane Details.dwg LAYOUT: C-508 SAVED: 7/23/2018 4:38 PM ACADVER: 2.1.05 (LMS TECH) PAGES: 1 OF 1 PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/24/2018 10:26 AM BY: DECLERCO, BRIAN

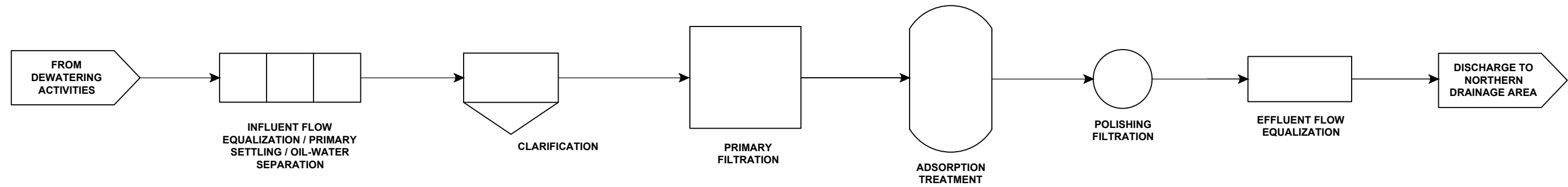
XREFS: IMAGES: X-Rem Design\7-STAMP.liff



### BOULDER CROSS VANE 1

- BOULDER CROSS VANE STRUCTURE NOTES:**
1. USE NON-WOVEN FILTER FABRIC TO SEAL GAPS BETWEEN BOULDERS.
  2. FOOTER BOULDER - DIG A TRENCH BELOW THE CHANNEL BED FOR FOOTER BOULDERS. START AT BANK AND PLACE FOOTER BOULDERS FIRST. PLACE HEADER BOULDER NEXT, FOLLOWING ANGLE AND SLOPE SPECIFICATIONS.
  3. HEADER BOULDER - INSTALL FILTER FABRIC FOR DRAINAGE BEGINNING AT THE MIDDLE OF THE HEADER BOULDERS AND EXTEND DOWNWARD TO THE DEPTH OF THE BOTTOM FOOTER BOULDERS, AND THEN UPSTREAM FOR A MINIMUM OF SIX FEET.
  4. TRIM FILTER FABRIC ALONG THE TRANSITION BETWEEN THE STONE BACKFILL AND THE HEADER BOULDERS SO THAT THE FILTER FABRIC DOES NOT OVERLAP THE HEADER BOULDERS.
  5. HEADER AND FOOTER BOULDERS SHALL BE ROUNDED OR SUBROUNDED WITH THE FOLLOWING APPROXIMATE DIMENSIONS.  $D_{MAX}=18$  INCHES,  $D_{50}=12$  INCHES, AND  $D_{MIN}=8$  INCHES.
  6. CHANNEL STONE SHALL BE ROUNDED RIVER ROCK WITH A WITH A  $D_{MAX}=9$  INCHES,  $D_{50}=6$  INCHES, AND  $D_{MIN}=4$  INCHES.

NOT TO SCALE	Professional Engineer's Name <b>TERRY W. YOUNG</b>				WSI GROUP • POTSDAM, NEW YORK WASTE-STREAM, INC. SITE FINAL (100%) REMEDIAL DESIGN	ARCADIS Project No. B0031006.0005.00080	Date AUGUST 2018	<b>C-508</b>
	Professional Engineer's No. 074847							
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.	USE TO VERIFY FIGURE REPRODUCTION SCALE	THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.		Designed by DP/PTO	Drawn by BKD	Checked by JDB		

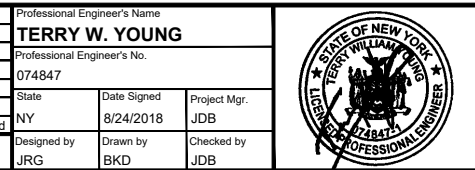


**NOTES:**

1. CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR WATER MANAGEMENT AND COMPLIANCE WITH THE NYSDEC DISCHARGE REQUIREMENTS.
2. TEMPORARY WATER TREATMENT SYSTEM COMPONENTS SHOWN ARE CONCEPTUAL ONLY. IDENTIFY ALL WATER MANAGEMENT METHODS INCLUDING, BUT NOT LIMITED TO: TREATMENT SYSTEM PROCESS, TREATMENT COMPONENTS, LOCATION OF SYSTEM, SIZING ALL TREATMENT SYSTEM ELEMENTS, AND IDENTIFICATION OF ALTERNATIVE PROPOSED METHODS FOR WATER MANAGEMENT (I.E., TREATMENT PROCESS, OFF-SITE TREATMENT, ETC).
3. ENSURE THE WATER TREATMENT SYSTEM IS CAPABLE OF OPERATING IN COLD (FREEZING) CONDITIONS WITHOUT DISRUPTION.
4. PERFORM ANY ADDITIONAL TESTING (JAR TESTS, CHEMICAL TESTING, ETC.) TO CONFIRM THE ABILITY OF THE TREATMENT SYSTEM TO MEET NYSDEC DISCHARGE REQUIREMENTS. CONTRACTOR WILL ALSO BE REQUIRED TO OPERATE THE SYSTEM IN ACCORDANCE WITH THE NYSDEC DISCHARGE REQUIREMENTS TO DEMONSTRATE THE SYSTEM'S ABILITY TO MEET DISCHARGE REQUIREMENTS DURING OPERATION.
5. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY WATER TREATMENT SYSTEM OPERATION, MAINTENANCE, AND MONITORING.

**WATER TREATMENT PROCESS FLOW DIAGRAM 1**  
 NOT TO SCALE

NOT TO SCALE		Professional Engineer's Name <b>TERRY W. YOUNG</b>	
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING.		Professional Engineer's No. 074847	
USE TO VERIFY FIGURE REPRODUCTION SCALE		State NY	Date Signed 8/24/2018
No.	Date	Revisions	By Ckd
THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY IDENTIFIED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.			
Designed by JRG		Drawn by BKD	Checked by JDB



**ARCADIS** | Design & Consultancy for natural and built assets.  
 ARCADIS OF NEW YORK, INC.  
 NO ALTERATIONS PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW

WSI GROUP • POTSDAM, NEW YORK  
 WASTE-STREAM, INC. SITE  
**FINAL (100%) REMEDIAL DESIGN**  
**CONCEPTUAL TEMPORARY WATER TREATMENT SYSTEM PROCESS FLOW DIAGRAM**

ARCADIS Project No. B0031006.0005.00080
Date AUGUST 2018
ARCADIS One Lincoln Center 110 West Fayette Street-Suite 300 SYRACUSE, NEW YORK 13202 315.446.9120

**C-601**

# APPENDIX B

## Technical Specifications



SECTION 00 01 10

TABLE OF CONTENTS

Document No.:      Title:      Initial Page:

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

00 01 10      Table of Contents ..... 00 01 10 – 1

DIVISION 01 – GENERAL REQUIREMENTS

01 11 00	Summary of Work .....	01 11 00 – 1
01 15 00	Contractor’s Project Operations Plan .....	01 15 00 – 1
01 22 00	Measurement and Payment (included in Bid Package Only) .....	01 22 00 – 1
01 26 00	Contract Modification Procedures .....	01 26 00 – 1
01 29 76	Progress Payment Procedures (included in Bid Package Only) .....	01 29 76 – 1
01 31 13	Project Coordination .....	01 31 13 – 1
01 31 19.13	Pre-Construction Conference .....	01 31 19.13 – 1
01 31 19.23	Progress Meetings.....	01 31 19.23 – 1
01 32 16	Construction Progress Schedule .....	01 32 16 – 1
01 32 26	Construction Progress Reporting .....	01 32 26 – 1
01 33 00	Submittal Procedures .....	01 33 00 – 1
01 35 29	Contractor’s Health and Safety Plan .....	01 35 29 – 1
01 35 43.13	Environmental Procedures for Hazardous Materials.....	01 35 43.13 – 1
01 35 49	Community Air Monitoring Plan .....	01 35 49 – 1
01 41 26	Storm Water Pollution Prevention Plan and Permit .....	01 41 26 – 1
01 51 05	Temporary Utilities.....	01 51 05 – 1
01 51 41	Temporary Pumping.....	01 51 41 – 1
01 52 13	Field Offices and Sheds .....	01 52 13 – 1
01 52 16	First-Aid Facilities .....	01 52 16 – 1
01 52 19	Sanitary Facilities .....	01 52 19 – 1
01 53 53	Temporary Water Treatment System .....	01 53 53 – 1
01 55 13	Temporary Access Roads and Parking Areas .....	01 55 13 – 1
01 57 05	Temporary Controls.....	01 57 05 – 1
01 58 13	Temporary Project Signage.....	01 58 13 – 1
01 62 00	Product Options.....	01 62 00 – 1
01 65 00	Product Delivery Requirements.....	01 65 00 – 1
01 66 00	Product Storage and Handling Requirements.....	01 66 00 – 1
01 71 23	Field Engineering.....	01 71 23 – 1
01 71 33	Protection of Work and Property .....	01 71 33 – 1
01 74 05	Cleaning.....	01 74 05 – 1
01 74 19	Construction Waste Management and Disposal .....	01 74 19 – 1
01 77 19	Closeout Procedures .....	01 77 19 – 1
01 78 39	Project Record Documents.....	01 78 39 – 1

DIVISION 02 – EXISTING CONDITIONS

02 41 00	Demolition.....	02 41 00 – 1
02 51 00	Decontamination.....	02 51 00 – 1
02 61 05	Removal and Disposal of Contaminated Materials .....	02 61 05 – 1
02 61 15	Sediment Removal and Handling.....	02 61 15 – 1

Document No.: Title:

Initial Page:

DIVISION 03 – CONCRETE

DIVISION 04 – MASONRY (NOT USED)

DIVISION 05 – METALS (NOT USED)

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES (NOT USED)

DIVISION 07 – THERMAL AND MOISTURE PROTECTION (NOT USED)

DIVISION 08 – OPENINGS (NOT USED)

DIVISION 09 – FINISHES (NOT USED)

DIVISION 10 – SPECIALTIES (NOT USED)

DIVISION 11 – EQUIPMENT (NOT USED)

DIVISION 12 – FURNISHINGS (NOT USED)

DIVISION 13 – SPECIAL CONSTRUCTION (NOT USED)

DIVISION 14 – CONVEYING EQUIPMENT (NOT USED)

DIVISION 21 – FIRE SUPPRESSION (NOT USED)

DIVISION 22 – PLUMBING (NOT USED)

DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (NOT USED)

DIVISION 25 – INTEGRATED AUTOMATION (NOT USED)

DIVISION 26 – ELECTRICAL (NOT USED)

DIVISION 27 – COMMUNICATIONS (NOT USED)

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY (NOT USED)

DIVISION 31 – EARTHWORK

31 05 16	Aggregates for Earthwork.....	31 05 16 – 1
31 05 19.13	Geotextiles for Earthwork .....	31 05 19.13 – 1
31 05 19.16	Geomembranes for Earthwork .....	31 05 19.16 – 1
31 11 00	Clearing and Grubbing .....	31 11 00 – 1
31 23 00	Excavation and Fill .....	31 23 00 – 1
31 23 18	Water Handling and Treatment .....	31 23 19 – 1



Document No.:      Title:

Initial Page:

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 31 13	Chain-Link Fences and Gates .....	32 31 13 – 1
32 72 00	Wetland Restoration .....	32 72 00 – 1
32 91 19.13	Topsoil Placement and Grading .....	32 91 19.13 – 1

DIVISION 33 – UTILITIES

33 05 05	Buried Pipe Installation .....	33 05 05 – 1
33 41 00	Storm Utility Drainage Piping.....	33 41 00 – 1

DIVISION 34 – TRANSPORTATION (NOT USED)

DIVISION 35 – WATERWAY AND MARINE CONSTRUCTION (NOT USED)

DIVISION 40 – PROCESS INTERCONNECTIONS (NOT USED)

DIVISION 41 – MATERIAL PROCESSING AND HANDLING EQUIPMENT (NOT USED)

DIVISION 42 – PROCESS HEATING, COOLING, AND DRYING EQUIPMENT (NOT USED)

DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT (NOT USED)

DIVISION 44 – POLLUTION AND WASTE CONTROL EQUIPMENT (NOT USED)

DIVISION 45 – INDUSTRY-SPECIFIC MANUFACTURING EQUIPMENT (NOT USED)

DIVISION 46 – WATER AND WASTEWATER EQUIPMENT (NOT USED)

DIVISION 48 – ELECTRICAL POWER GENERATION (NOT USED)

END OF TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 01 11 00  
SUMMARY OF WORK

PART 1 – GENERAL

1.01 LOCATION AND DESCRIPTION OF WORK

- A. The Work is located at the Waste-Stream, Inc. Site located in Potsdam, New York.
- B. The Work to be performed under this Contract includes, but is not limited to, the work activities described below.
  - 1. Excavating and backfilling “on-site” and “off-site” soil removal areas.
  - 2. Transporting soil containing PCBs at concentrations greater than 50 milligrams per kilogram (mg/kg) off-site for disposal.
  - 3. Constructing the base layer for the on-site consolidation area for soil.
  - 4. Placing excavated soil containing PCBs at concentrations less than 50 mg/kg in the consolidation area and constructing a soil cover over the consolidated material.
  - 5. Installing a new storm water culvert.
  - 6. Removing select portions of the “on-site” storm water culvert and filling the remainder with controlled low strength material (CLSM)/flowable fill.
  - 7. Constructing new storm water management features.
  - 8. Constructing an “on-site” cover (permanent and temporary covers) and restoring vegetative surface in “off-site” excavation areas.
  - 9. Excavating sediment from the “on-site” southern drainage areas (SDAs), “off-site” portion of the drainage channel, and the northern drainage area (NDA).
  - 10. Removing the beaver dam that transects the NDA (north to south).
  - 11. Transporting sediment containing PCBs at concentrations greater than 50 mg/kg off-site for disposal.
  - 12. Constructing additional base layer (as needed) for the “on-site” consolidation area for placement of the excavated sediment.
  - 13. Solidifying/stabilizing and placing excavated sediment containing PCBs at concentrations less than 50 mg/kg in the “on-site” consolidation area.
  - 14. Restoring remaining “on-site” areas, the “off-site” drainage channel, and the NDA wetlands.
  - 15. Installing a chain link fence to restrict site access.
  - 16. Constructing the final consolidation area soil cover.
- C. Contracting Method: Work shall be performed under one prime contract.
- D. Contaminants: PCBs and other site-related contaminants.

1.02 CONTRACTOR'S USE OF SITE

- A. Use of Premises:
  - 1. Confine construction operations to the work areas shown or indicated on the Design Drawings. Do not disturb portions of the Site beyond areas of the Work. Resolve all conflicts over use of the premises without additional cost to the Owner. Costs related to the Contractor's use of the property (e.g., telephone, electric, etc.) shall be borne by the Contractor.
  - 2. To the extent practicable, conduct all work in such manner that will cause the minimum inconvenience and disturbance to the surrounding community, wetlands, and wooded areas.

3. Confine storage of materials and equipment, and locations of temporary facilities to the areas shown. Move stored products that interfere with operations of Owner, other contractors, and others performing work for Owner.
  4. Authorities having jurisdiction at the Site and others performing work for Owner shall, for all purposes that may be required by their contracts be provided safe and proper access to the site and the premises used by Contractor.
- B. Promptly repair damage to premises caused by construction operations. Upon completion of the Work, restore premises to specified condition. If condition is not specified, restore to pre-construction condition. All repairs will be to the satisfaction of the Owner and Engineer.

#### 1.03 EASEMENTS AND RIGHTS-OF-WAY

- A. Confine construction operations within Owner's property, easements obtained by Owner, and the limits shown or pre-cleared (if pre-clearing has been performed). Use care in placing construction tools, equipment, excavated materials, and materials and equipment to be incorporated into the Work to avoid damaging property and interfering with traffic. Do not enter private property outside the construction limits without permission from the owner of the property.
- B. On Private Property: Limits of Contractor's operations on private property are shown on the Design Drawings.

#### 1.04 NOTICES TO OWNERS AND AUTHORITIES OF PROPERTIES ADJACENT TO THE WORK

- A. Notify Owner when execution of the Work may affect adjacent properties or use of adjacent properties. Owner will notify adjacent property owners; do not contact adjacent property owners directly unless authorized by Owner to do so.
- B. When it is necessary to temporarily obstruct access to property, or when utility service connection will be interrupted, provide notices sufficiently in advance to enable affected persons to provide for their needs. Conform notices to Laws and Regulations and, whether delivered orally or in writing, include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.
- C. Notify utility owners and other concerned entities at least two working days, but not more than 10 working days, prior to cutting or closing streets or other traffic areas or excavating near Underground Facilities or exposed utilities.

### PART 2 – PRODUCTS (NOT USED)

### PART 3 – EXECUTION (NOT USED)

END OF SECTION

## SECTION 01 15 00

### CONTRACTOR'S PROJECT OPERATIONS PLAN

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Preparing and submitting a Project Operations Plan (POP) in accordance with this Section to Owner for review and approval.
2. Describing proposed means, methods, and sequence of construction operations, and compliance with the Contract Documents.

###### B. Related Sections

1. Section 01 32 16 – Construction Progress Schedule
2. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials
3. Section 01 57 05 – Temporary Controls
4. Section 01 71 23 – Field Engineering
5. Section 01 74 19 – Construction Waste Management and Disposal
6. Section 02 61 05 – Removal and Disposal of Contaminated Material
7. Section 31 23 00 – Excavation and Fill

##### 1.02 SUBMITTALS

###### A. Informational Submittals:

1. Contractor's POP: Submit in accordance with Article 1.03 of this Section.

##### 1.03 POP SUBMITTAL

###### A. Address and include the following in POP:

1. Contractor's Organizational Structure: Specific chain of command and overall responsibilities of Contractor personnel. Include the following:
  - a. Name and general functions and responsibilities of the following:
    - 1) Project manager.
    - 2) Site superintendent.
    - 3) Field engineer.
    - 4) Foreman.
    - 5) Equipment operators and laborers.
    - 6) Others as appropriate.
  - b. Designation of Contractor personnel that will reside at the Site for the duration of the Project.
2. Work Schedule: Proposed work days and work hours. Include copy of Contractor's initial Progress Schedule, prepared in accordance with Paragraph 2.06 of the General Conditions and Section 01 32 16 – Construction Progress Schedule.
3. List of major construction equipment.
4. List of major Sub Contractors and Suppliers. Include name, role, and contact information for the following:
  - a. Safety representative.
  - b. Surveyor.
  - c. Suppliers and sources of off-site fill, aggregates, and asphalt.
  - d. Treatment, disposal, and recycling facilities.
  - e. Others as appropriate.

5. Site Utilization Plan: Site plan showing the proposed location and layout of the following:
  - a. Temporary facilities (i.e., sanitary, first-aid, parking/storage, exclusion zones, frac tanks, etc.).
  - b. Temporary access roads and parking areas.
  - c. Equipment storage and fueling area(s).
  - d. Temporary decontamination area(s). Clearly identify location and size of each.
  - e. Temporary containment area(s) (e.g., material solidification areas, TSCA material staging areas). Clearly identify location and size of each.
6. Comprehensive Work Plan: Written description of the general sequence and scope of the following:
  - a. Mobilization and site preparation – including a proposed layout of project support areas within the Area for Contractor use as shown on Drawing G-104 – Phase 1 Site Preparation Plan.
  - b. Site access controls and security.
  - c. Utility clearance, mark-out, and verification.
  - d. Odor, dust and vapor control (in accordance with the requirements presented in Section 01 57 05 – Temporary Controls).
  - e. Erosion and sediment control (in accordance with the requirements presented in Section 01 57 05 – Temporary Controls).
  - f. Survey control (in accordance with the Survey Control Plan requirements presented in Section 01 71 23 – Field Engineering).
  - g. Site clearing.
  - h. Excavation (in accordance with the Excavation and Dewatering Plan requirements presented in Section 31 23 00 – Excavation and Fill).
  - i. Sediment handling and dewatering (in accordance with the Sediment Handling and Dewatering Plan in Section 02 61 15 – Sediment Removal and Handling).
  - j. Water treatment system process and components necessary to comply with performance requirements.
  - k. Waste management including treated water, excavated soil/sediment and on-site consolidation – Prepare separate Waste Management Plan in accordance with Sections 01 74 19 – Construction Waste Management and Disposal; 02 61 05 Removal and Disposal of Contaminated Material).
  - l. Hazardous materials communications (in accordance with the Hazardous Materials Communication Plan requirements presented in Section 01 35 43.13 – Environmental Procedures for Hazardous Materials).
  - m. Emergency spill response (in accordance with the Emergency/Spill Response Plan requirements presented in Section 01 35 43.13 – Environmental Procedures for Hazardous Materials).
  - n. Restoration – including site cover system, vegetated surface restoration and wetland restoration.
  - o. Decontamination.
  - p. Project Close-Out and Demobilization.
7. Contractor's Construction Quality Assurance Plan: Written description of the quality assurance measures to be performed by the Contractor. Such measures will be used to demonstrate and/or document that all work has been performed in full satisfaction of the requirements for all aspects of the Work.

- B. Submit POP to Engineer the sooner of: seven days prior to pre-construction conference, or 30 days prior to Contractor's scheduled mobilization to the Site.

## PART 2 – PRODUCTS (NOT USED)

CONTRACTOR'S PROJECT OPERATIONS PLAN  
 01 15 00 – 2  
 REVISION NO. 00  
 DATE ISSUED: 8/17/18

WSI GROUP  
 100% REMEDIAL DESIGN  
 WASTE STREAM, INC. SITE  
 VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

ARCADIS of New York, Inc.

PART 3 – EXECUTION (NOT USED)

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

CONTRACTOR'S PROJECT OPERATIONS PLAN  
01 15 00 - 4  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

ARCADIS of New York, Inc.



## SECTION 01 26 00

### CONTRACT MODIFICATION PROCEDURES

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. This Section expands upon the provisions of the General Conditions and Supplementary Conditions, and includes administrative and procedural requirements for the following:
  - a. Requests for interpretation.
  - b. Clarification notices.
  - c. Minor changes in the Work and Field Orders.
  - d. Work Change Directives.
  - e. Proposal requests.
  - f. Change Order requests.
  - g. Change Orders.

###### B. Submit Contract modification documents to Engineer.

- C. Retain at Contractor's office and at the Site a complete copy of each Contract modification document and related documents, and Engineer's response.

##### 1.02 REQUESTS FOR INTERPRETATION

###### A. General:

1. Submit requests for interpretation to obtain clarification or interpretation of the Contract Documents. Report conflicts, errors, ambiguities, and discrepancies in the Contract Documents using requests for interpretation.
2. Do not submit request for interpretation when other form of communication is appropriate, such as submittals, requests for substitutions or "or equals", notices, ordinary correspondence, or other form of communication. Improperly prepared or inappropriate requests for interpretation will be returned without response or action.
3. Submit written requests for interpretation to Engineer. Contractor and Owner may submit requests for interpretation.

###### B. Procedure:

1. Submit one original and one copy of each request for interpretation. Submit each request for interpretation with separate letter of transmittal.
2. Engineer will provide timely review of requests for interpretation. Allow sufficient time for review and response.
3. Engineer will maintain a log of all requests for interpretation. A copy of the log will be provided upon request.
4. Engineer will provide written response to each request for interpretation. One copy of Engineer's response will be distributed to:
  - a. Contractor.
  - b. Owner.
  - c. Engineer.
5. If Engineer requests additional information to make an interpretation, provide requested information within ten days, unless Engineer allows additional time, via correspondence referring to request for interpretation number.

6. If Contractor or Owner believes that a change in the Contract Price or Contract Times or other change to the Contract is required, notify Engineer in writing before proceeding with the Work associated with the request for interpretation.
- C. Submit each request for interpretation on the request for interpretation form included with this Section, or other form acceptable to Engineer.
1. Number each request for interpretation using a two-digit sequential number. First request for interpretation will be "01".
  2. In space provided on form, describe the interpretation requested. Provide additional sheets as necessary. Include text and sketches as required in sufficient detail for Engineer's response.
  3. When applicable, request for interpretation shall include Contractor's recommended resolution.

### 1.03 CLARIFICATION NOTICES

- A. General:
1. Clarification notices provide clarification or interpretation of conflicts, errors, ambiguities, and discrepancies in the Contract Documents that are identified by the Engineer.
  2. Clarification notices do not change the Contract Price or Contract Times, and do not alter the Contract Documents.
  3. Clarification notices, when required, will be initiated and issued by the Engineer as correspondence with additional information as required.
- B. Procedure:
1. One copy of each written clarification notice will be distributed to:
    - a. Contractor.
    - b. Owner.
    - c. Engineer.
    - d. NYSDEC.
  2. If Contractor or Owner believes that a change in the Contract Price or the Contract Times or other change to the Contract is required, notify Engineer in writing before proceeding with the Work associated with clarification notice.
  3. If clarification notice is unclear, submit request for interpretation.

### 1.04 MINOR CHANGES IN THE WORK AND FIELD ORDERS

- A. General:
1. Field Orders authorize minor variations in the Work, but do not change the Contract Price or Contract Times.
  2. Field Orders, when required, will be initiated and issued by Engineer on the Field Order form included with this Section, or other form acceptable to Engineer.
  3. Engineer will maintain a log of all Field Orders issued.
- B. Procedure:
1. One copy of each Field Order will be distributed to:
    - a. Contractor.
    - b. Owner.
    - c. Engineer.
    - d. NYSDEC.
  2. If Contractor or Owner believes that a change in the Contract Price or the Contract Times or other change to the Contract is required, immediately notify Engineer in writing before proceeding with the Work associated with the Field Order.
  3. If Field Order is unclear, submit request for interpretation.

## 1.05 WORK CHANGE DIRECTIVES

### A. General:

1. Work Change Directives, when required, order additions, deletions, or revisions to the Work.
2. Work Change Directives do not change the Contract Price or Contract Times but is evidence that the parties to the Contract expect that the change ordered or documented by the Work Change Directive will be included in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.
3. Work Change Directives, when required, will be initiated and issued by the Engineer on the Work Change Directive form included with this Section, or other form acceptable to the Owner and Engineer.

### B. Procedure:

1. Four originals of Work Change Directive signed by the Owner and Engineer will be furnished to the Contractor, who shall promptly sign each original Work Change Directive and, within five days of receipt, return all originals to the Engineer.
2. Signed Work Change Directives will be distributed as follows:
  - a. Contractor: One original.
  - b. Owner: Two originals.
  - c. Engineer: One original.
3. When required by the Engineer, document the Work performed under each separate Work Change Directive. For each day, document the following in a format acceptable to Engineer:
  - a. Number and type of workers employed and hours worked.
  - b. Equipment used, including manufacturer, model, and year of equipment, and number of hours for each.
  - c. Materials used.
  - d. Receipts for and descriptions of materials and equipment incorporated into the Work.
  - e. Invoices and labor and equipment breakdowns for Subcontractors and Suppliers.
  - f. Other information required by Owner or Engineer.
4. Submit documentation to Engineer as a Change Order request.

## 1.06 PROPOSAL REQUESTS

### A. General:

1. Proposal requests are for requesting the effect on the Contract Price and the Contract Times and other information relative to contemplated changes in the Work.
2. Proposal requests do not authorize changes or variations in the Work, and do not change the Contract Price or Contract Times, or terms of the Contract.
3. Proposal requests may be initiated by Engineer or Owner.
4. Proposal requests will be issued on the proposal request form included with this Section, or other form acceptable to Owner and Engineer.

### B. Procedure:

1. One copy of each signed proposal request will be furnished to Contractor, with one copy each distributed to:
  - a. Owner.
  - b. Engineer.
2. Submit request for interpretation to clarify conflicts, errors, ambiguities, and discrepancies in proposal request.
3. Upon receipt of proposal request, prepare and submit a Change Order request, in accordance with this Section, for the proposed Work described in the proposal request.

## 1.07 CHANGE ORDER REQUESTS

### A. General:

1. Submit written Change Order request to Engineer in response to each proposal request, and when Contractor believes a change in the Contract Price or Contract Times, or other change to the terms of the Contract is required.

### B. Procedure:

1. Submit to Engineer one original and one copy of each Change Order request with accompanying documentation. Submit each Change Order request with separate letter of transmittal.
2. Engineer will review Change Order request and either request additional information from Contractor or provide to Owner a recommendation regarding approval of the Change Order request.
3. When Engineer requests additional information to render a decision, submit required information within five days of receipt of Engineer's request, unless Engineer allows more time. Submit the required information via correspondence that identifies the Change Order request number.
4. Upon completing review, one copy of Engineer's written response, if any, will be distributed to:
  - a. Contractor.
  - b. Owner.
5. If Change Order request is recommended for approval by Engineer and approved by Owner, a Change Order will be issued.

### C. Submit each Change Order request on the Change Order request form included with this Section, or other form acceptable to Owner and Engineer.

1. Number each Change Order request using a two-digit sequential number. First Change Order request will be "01".
2. In space provided on the form:
  - a. Describe the scope of each proposed change. Include text and sketches on additional sheets as required to provide detail sufficient for Engineer's review and response. If the proposed change is submitted in response to a proposal request, write in as scope, "In accordance with Proposal Request No." followed by the proposal request number. Provide written clarifications, if any, to scope of change.
  - b. Provide justification for each proposed change. If the proposed change is submitted in response to a proposal request, write in as justification, "In accordance with Proposal Request No." followed by the proposal request number.
  - c. List the total change in the Contract Price and Contract Times for each proposed change.
3. Unless otherwise directed by Engineer, attach to the Change Order request detailed breakdowns of pricing (Cost of the Work and Contractor's fee), including:
  - a. List of Work tasks to accomplish the change.
  - b. For each task, labor cost breakdown including labor classification, total hours per labor classification, and hourly cost rate for each labor classification.
  - c. Construction equipment and machinery to be used, including manufacturer, model, and year of manufacture, and number of hours for each.
  - d. Detailed breakdown of materials and equipment to be incorporated into the Work, including quantities, unit costs, and total cost, with Supplier's written quotations.
  - e. Breakdowns of the Cost of the Work and fee for Subcontractors, including labor, construction equipment and machinery, and materials and equipment incorporated into the Work, other costs, and Subcontractor fees.
  - f. Breakdown of other eligible costs, in accordance with the General Conditions.
  - g. Other information required by Engineer.

- h. Contractor's fees applied to eligible Contractor costs and eligible Subcontractor costs.

## 1.08 CHANGE ORDERS

### A. General:

1. Change Orders will be recommended by Engineer, and signed by Owner and Contractor, to authorize additions, deletions, or revisions to the Work, or changes to the Contract Price or Contract Times.
2. Change Orders will be issued on the Change Order form included with this Section or other form acceptable to Owner and Engineer.

### B. Procedure:

1. The Engineer will furnish four originals of each Change Order to Contractor, who shall promptly sign each original Change Order and, within five days of receipt, return all originals to Engineer.
2. Engineer will sign each original Change Order and forward them to Owner.
3. After approval and signature by Owner, signed Change Orders will be distributed as follows:
  - a. Contractor: One original.
  - b. Owner: Two originals.
  - c. Engineer: One original.

## PART 2– PRODUCTS (NOT USED)

## PART 3 – EXECUTION

### 3.01 ATTACHMENTS

- A. The attachments listed below, which follow after the “End of Section” designation, are part of this Section:
  1. Attachment A: Request for interpretation form (one page).
  2. Attachment B: Field Order form (one page).
  3. Attachment C: Work Change Directive form (two pages).
  4. Attachment D: Proposal request form (one page).
  5. Attachment E: Change Order request form (two pages).
  6. Attachment F: Change Order form (two pages).

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

CONTRACT MODIFICATION PROCEDURES  
01 26 00 – 6  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

WSI GROUP  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

REQUEST FOR INTERPRETATION NO. \_\_\_\_\_

Contractor: \_\_\_\_\_ Purchase Order No.: \_\_\_\_\_

Date Transmitted: \_\_\_\_\_ Date Received: \_\_\_\_\_

Date Response Requested: \_\_\_\_\_ Date Response Transmitted: \_\_\_\_\_

Subject: \_\_\_\_\_

Reference(s): \_\_\_\_\_  
Specification Section(s) Drawing(s) / Note(s) / Detail(s)

---

Interpretation Requested:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

---

Engineer's Response:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

END OF REQUEST FOR INTERPRETATION

THIS PAGE INTENTIONALLY LEFT BLANK



WSI GROUP  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

FIELD ORDER NO.

Contractor: \_\_\_\_\_ Purchase Order No.: \_\_\_\_\_

Date Issued: \_\_\_\_\_ Effective Date: \_\_\_\_\_

Subject: \_\_\_\_\_

Reference(s): \_\_\_\_\_  
Specification Section(s) Drawing(s) / Note(s) / Detail(s)

---

Attention:

Contractor is hereby directed to promptly execute this Field Order for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, please notify Engineer immediately and before proceeding with this Work.

Description:

Attachments:

---

Issued by Engineer:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Receipt Acknowledged by Contractor:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

END OF FIELD ORDER

THIS PAGE INTENTIONALLY LEFT BLANK

FIELD ORDER FORM  
01 26 00B- 2  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

WSI GROUP  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

WORK CHANGE DIRECTIVE NO \_\_\_\_\_

Contractor: \_\_\_\_\_ Purchase Order No.: \_\_\_\_\_

Date Issued: \_\_\_\_\_ Effective Date: \_\_\_\_\_

---

Contractor is directed to proceed promptly with the following change(s):

Item No.	Description

Scope of Work:

Attachments:

---

Purpose for Work Change Directive:

Authorization for the Work described herein to proceed on the basis of Cost of the Work due to:

- Non-agreement on pricing of proposed change.
- Necessity to expedite Work described herein prior to agreeing to changes in Contract Price and Contract Times.

Estimated Change in Contract Price and Contract Times:

Contract Price:

\$ \_\_\_\_\_  Increase  Decrease  No Change

Contract Times:

\_\_\_\_\_ Days  Increase  Decrease  No Change

---

Recommended for Approval by Engineer:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Authorized by Owner:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Receipt Acknowledged by Contractor:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

END OF WORK CHANGE DIRECTIVE

WSI GROUP  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

PROPOSAL REQUEST NO.

Contractor: \_\_\_\_\_ Purchase Order No.: \_\_\_\_\_

Date: \_\_\_\_\_

Subject: \_\_\_\_\_

---

Please submit a complete Change Order request for the proposed modifications described below. If the associated Change Order request is approved, a Change Order will be issued to authorize adjustment to the scope of the Work. This proposal request is not a Change Order, Work Change Directive, or an authorization to proceed with the proposed Work described below.

Scope of Proposed Work:

---

Requested by Engineer:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

END OF PROPOSAL REQUEST

THIS PAGE INTENTIONALLY LEFT BLANK

PROPOSAL REQUEST FORM  
01 26 00D - 2  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

WSI GROUP  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

CHANGE ORDER REQUEST NO.

Contractor: \_\_\_\_\_ Purchase Order No.: \_\_\_\_\_

Date: \_\_\_\_\_ Submitted in Response to Proposal Request No.: \_\_\_\_\_

Subject: \_\_\_\_\_

---

Scope of Work:

*Attach and list supporting information as required.*

---

Justification:

---

Changes in Contract Price and Contract Times:

For Contract Price, when requested by Engineer, attach detailed cost breakdowns for Contractor and Subcontractors, Supplier quotations, and other information required. For the Contract Times, state increase, decrease, or no change to Contract Times for Substantial Completion, readiness for final payment, and Milestones, if any. If increase or decrease, state specific number of days for changes to the Contract Times.

The following changes are proposed to the Contract Price and Contract Times:

Description	Contract Price (dollars)	Contract Times (days)	
		Substantial	Final
1.	\$		
2.	\$		
<b>Total This Change Order Proposal:</b>	<b>\$</b>		

Changes to Milestones (if any): \_\_\_\_\_

The adjustment proposed is the entire adjustment to the Contract to which Contractor believes it is entitled as a result of the proposed change.

Requested by Contractor:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

END OF CHANGE ORDER REQUEST



WSI GROUP  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

CHANGE ORDER NO. \_\_\_\_\_

Contractor: \_\_\_\_\_ Purchase Order No.: \_\_\_\_\_

Date Issued: \_\_\_\_\_ Effective Date: \_\_\_\_\_

---

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments:

---

Change in Contract Price:

- A. Original Contract Price: \$ \_\_\_\_\_
- B.  Increase  Decrease  No Change  
from previously approved Change Order Nos. \_\_\_\_ to \_\_\_\_: \$ \_\_\_\_\_
- C. Contract Price prior to this Change Order (Lines A+B): \$ \_\_\_\_\_
- D.  Increase  Decrease  No Change  
of this Change Order: \$ \_\_\_\_\_
- E. Contract Price incorporating this Change Order (Lines C+D): \$ \_\_\_\_\_

Change in Contract Times:

A. Original Contract Times  Working days  Calendar days:

Substantial Completion (days or date): \_\_\_\_\_

Ready for Final Payment (days or date): \_\_\_\_\_

B.  Increase  Decrease  No Change  
from previously approved Change Order Nos. \_\_\_ to \_\_\_:

Substantial Completion (days or date): \_\_\_\_\_

Ready for Final Payment (days or date): \_\_\_\_\_

C. Contract Times prior to this Change Order (Lines A+B):

Substantial Completion (days or date): \_\_\_\_\_

Ready for Final Payment (days or date): \_\_\_\_\_

D.  Increase  Decrease  No Change  
of this Change Order:

Substantial Completion (days or date): \_\_\_\_\_

Ready for Final Payment (days or date): \_\_\_\_\_

E. Contract Times incorporating this Change Order (Lines C+D):

Substantial Completion (days or date): \_\_\_\_\_

Ready for Final Payment (days or date): \_\_\_\_\_

---

Recommended for Approval by Engineer:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Accepted by Owner:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Accepted by Contractor:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

END OF CHANGE ORDER

## SECTION 01 31 13

### PROJECT COORDINATION

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. This Section includes general requirements for coordinating construction operations on the Project.

###### B. Related Sections

1. Section 01 11 00 – Summary of Work

##### 1.02 COORDINATION

- ###### A. Coordinate the Work with all necessary parties (whether hired by Contractor, Owner, or others) including testing agencies, subcontractors, suppliers, and others, in accordance with this Section, to complete the Work in accordance with the Contract Documents.

- ###### B. Cooperate with other contractors, utility service companies, and other entities working at the Site, in accordance with Section 01 11 00 – Summary of Work.

- ###### C. Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

- ###### D. Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Prepare progress schedule.
2. Install and remove temporary utilities, facilities, and controls.
3. Deliver and process submittals.
4. Progress meetings.
5. Startup and adjust systems.
6. Project closeout activities.

- ###### E. Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

PROJECT COORDINATION  
01 31 13 – 2  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.

## SECTION 01 31 19.13

### PRE-CONSTRUCTION CONFERENCE

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Scope:
  - 1. Engineer will host a pre-construction conference; distribute an agenda prior to the conference; preside at conference; and prepare and distribute minutes to all conference participants and others as requested.
  - 2. Attend the conference and be prepared to discuss all items on the agenda.
- B. The purpose of the conference is to designate responsible personnel, establish working relationships, discuss preliminary schedules submitted by Contractor, and review administrative and procedural requirements for the Project. Matters requiring coordination will be discussed and procedures for handling such matters will be established.
- C. Date, Time, and Location: Conference will be held within 20 days after the Contract Times start to run and before Work starts at the Site. Owner will establish the date, time, and location of conference and will notify the interested and involved parties.
- D. Prior to the conference, the Contractor shall submit the following preliminary schedules:
  - 1. Preliminary Progress Schedule.
  - 2. Preliminary Schedule of Submittals.
- E. Provide required information and contribute appropriate items for discussion. Bring to the conference the following, with sufficient number of copies for each attendee:
  - 1. Preliminary Progress Schedule.
  - 2. Preliminary Schedule of Submittals.
  - 3. List of emergency contact information for Contractor's project manager, Site superintendent, safety representative, and foreman.

##### 1.02 ATTENDANCE

- A. Representatives present for each entity shall be qualified and authorized to act on that entity's behalf.
- B. Attendance:
  - 1. Contractor:
    - a. Project manager.
    - b. Site superintendent.
    - c. Safety representative.
  - 2. Owner.
  - 3. Engineer.
  - 4. New York State Department of Environmental Conservation and New York State Department of Health, if available.  
Others as requested by Owner, Contractor, or Engineer.

## 1.03 PRELIMINARY AGENDA

### A. Safety Moment

### B. Procedural and Administrative:

1. Personnel and Teams:
  - a. Designation of roles and responsible personnel.
  - b. Limitations of authority of personnel, including personnel who will sign Contract modifications and make binding decisions.
  - c. List of proposed Subcontractors and Suppliers.
  - d. Authorities having jurisdiction.
2. Procedures for communication and correspondence.
3. Copies of Contract Documents and availability.
4. The Work and Scheduling:
  - a. Scope of Work.
  - b. Contract Times, including Milestones (if any).
  - c. Phasing and sequencing.
  - d. Preliminary Progress Schedule.
  - e. Critical path activities.
  - f. Working hours.
5. Safety:
  - a. Responsibility for safety.
  - b. Designation of Contractor's safety representative.
  - c. Emergency procedures and accident reporting.
  - d. Emergency contact information.
  - e. Impact of Project on public safety.
6. Permits.
7. Coordination:
  - a. Project coordination.
  - b. Progress meetings.
8. Products and Submittals:
  - a. Preliminary Schedule of Submittals.
  - b. Shop Drawings, Samples, and other submittals.
  - c. Product options, "or equals", and substitutions.
9. Contract Modification Procedures:
  - a. Requests for interpretation.
  - b. Clarification notices.
  - c. Field Orders.
  - d. Proposal requests.
  - e. Change Order proposals.
  - f. Work Change Directives.
  - g. Change Orders.
10. Payment:
  - a. Progress payment procedures.
  - b. Taxes.
  - c. Retainage.
11. Testing and inspections.
12. Record documents.
13. Preliminary Discussion of Contract Closeout:
  - a. Procedures for Substantial Completion.
  - b. Contract closeout requirements.
  - c. Correction period.
  - d. Duration of bonds and insurance.

- C. Site Mobilization:
  - 1. Field offices and staging areas.
  - 2. Temporary facilities and utilities.
  - 3. Access to Site, access roads, and parking.
  - 4. Maintenance and protection of traffic.
  - 5. Use of premises.
  - 6. Protection of existing property.
  - 7. Security.
  - 8. Temporary Controls:
    - a. Erosion and sediment control.
    - b. Storm water control.
    - c. Odor, vapor, and dust control.
    - d. Noise control.
    - e. Pollution control.
  - 9. Temporary fencing.
  - 10. Temporary facilities (office trailers, sanitary, health and safety)
  - 11. Storage of materials and equipment.
  - 12. Reference points and benchmarks; surveys and layouts.
  - 13. Site maintenance and housekeeping during the Project, including cleaning and removal of trash and debris.
  - 14. Restoration.
- D. General discussion and questions.
- E. Next meeting.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

PRE-CONSTRUCTION CONFERENCE  
01 31 19 13 – 4  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK



## SECTION 01 31 19.23

### PROGRESS MEETINGS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Scope:
  - 1. Attend progress meetings to be held on a regular basis throughout the Project and be prepared to discuss in detail all items on the agenda.
  - 2. Engineer will preside at progress meetings and will prepare and distribute minutes of progress meetings to all meeting participants and others as requested.
- B. Date and Time:
  - 1. Regular Meetings: Every week on a day and time agreeable to Owner, Engineer, and Remediation Contractor.
  - 2. Other Meetings: As required.
- C. Location: Remediation Contractor's field office at the Site or other location mutually agreed upon by Owner, Engineer, and Remediation Contractor.
- D. Handouts: Bring to each progress meeting a minimum of 10 copies of each of the following:
  - 1. List of Work accomplished since the previous progress meeting.
  - 2. Up-to-date Progress Schedule.
  - 3. Up-to-date Schedule of Submittals.
  - 4. Detailed "look-ahead" schedule of Work planned for the next two weeks, with specific starting and ending dates for each activity, including shutdowns, deliveries of important materials and equipment, Milestones (if any), and important activities affecting Owner, the Project, and the site.

##### 1.02 ATTENDANCE

- A. Representatives present for each entity shall be qualified and authorized to act on that entity's behalf.
- B. Attendance:
  - 1. Remediation Contractor:
    - a. Project manager.
    - b. Site superintendent.
    - c. Safety representative.
    - d. Representatives of other subcontractors and suppliers when needed for the discussion of a particular agenda item.
  - 2. Owner.
  - 3. Engineer.
    - a. Project Manager
    - b. Engineer of Record
    - c. On-site Observer
    - d. Air Monitoring Technician
  - 4. NYSDEC and NYSDOH, if available.
  - 5. Others as appropriate.

### 1.03 PRELIMINARY AGENDA

- A. Review, comment, and amendment (if required) of minutes of previous progress meeting.
- B. Safety and safe work practices.
- C. Results of community air monitoring performed since previous progress meeting.
- D. Review of progress since previous progress meeting.
- E. Planned progress through next progress meeting.
- F. Review of Progress Schedule:
  - 1. Contract Times, including Milestones (if any).
  - 2. Critical path.
  - 3. Schedules for fabrication and delivery of materials and equipment.
  - 4. Issues potentially affecting the Contract Times, including Milestones (if any).
  - 5. Corrective measures, if required, to achieve Contract Times, including Milestones (if any).
- G. Submittals:
  - 1. Status of critical submittals.
  - 2. Review of Schedule of Submittals and Engineer's submittal log.
- H. Field observations, problems, and conflicts.
- I. Quality standards, testing, and inspections.
- J. Coordination between parties.
- K. Site management issues, including access, security, temporary controls, maintenance and protection of traffic, and housekeeping.
- L. Permits.
- M. Punch list status, as applicable.
- N. Other business.

### PART 2 – PRODUCTS (NOT USED)

### PART 3 – EXECUTION (NOT USED)

END OF SECTION

## SECTION 01 32 16

### CONSTRUCTION PROGRESS SCHEDULE

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Preparing, submitting, maintaining, and updating Progress Schedules in accordance with this Section, unless otherwise accepted by the Owner.
2. The Owner's acceptance of the Progress Schedule, and comments or opinions concerning the activities in the Progress Schedule shall not control the Contractor's independent judgment relative to the means, methods, techniques, sequences, and procedures of construction. The Contractor is solely responsible for complying with the Contract Times.
3. If the Progress Schedule reflects completion date(s) different than the Contract Times, the Contract Times are not thereby voided, nullified, or affected. The Contract Times govern. Where the Progress Schedule reflects completion date(s) that are earlier than the Contract Times, Owner may accept such Progress Schedule with Contractor to specifically understand that no Claim for additional Contract Times or additions to the Contract Price shall be brought against Owner resulting from Contractor's failure to complete the work by the earlier date(s) indicated on the accepted Progress Schedule.

###### B. Related Sections

1. Section 01 11 00 – Summary of Work
2. Section 01 31 19.23 – Progress Meetings
3. Section 01 33 00 – Submittal Procedures

###### C. Factors Affecting the Progress Schedule

1. In preparing the Progress Schedule, take into consideration submittal requirements and submittal review times, time for fabricating and delivering materials and equipment, work by subcontractors, availability and abilities of workers, availability of construction equipment, weather conditions, restrictions in operations at the Site and coordination with the Owner's operations, if any, and other factors that have the potential to affect completion of the work within the Contract Times.
2. Comply with sequencing requirements, if any, indicated in the Contract Documents.

##### 1.02 SUBMITTALS

###### A. Informational Submittals

1. Preliminary Progress Schedule: Submit preliminary Progress Schedule in accordance with this Section.
2. Initial Progress Schedule: After making revisions in accordance with Owner's/Engineer's comments on the preliminary Progress Schedule, submit initial Progress Schedule in accordance with this Section.
3. Progress Schedule Updates:
  - a. Submit updated Progress Schedule at each progress meeting. Bring to meeting the minimum number of copies specified in Section 01 31 19.23 – Progress Meetings.
  - b. Submit each updated Progress Schedule with letter of transmittal complying with requirements of Section 01 33 00 – Submittal Procedures and specifically indicating the following:

- 1) Listing of activities and dates that have changed since the previous Progress Schedule submittal.
- 2) Discussion of problems causing delays, anticipated duration of delays, and proposed countermeasures.
- 3) Completed activities, if any, and the anticipated and actual durations of each.
- c. If the Progress Schedule remains unchanged from one progress meeting to the next, submit a written statement to that effect.
4. Look-Ahead Schedules: Submit two-week look-ahead schedule at each progress meeting.
5. Recovery Schedules: Submit in accordance with this Section.

### 1.03 PROGRESS SCHEDULE FORMAT AND CONTENT

#### A. Format

1. Type: Gantt chart prepared using Microsoft Project 2007 or later edition.
2. Data Format: Submit as Microsoft Project and in Portable Document Format in accordance with Section 01 33 00 – Submittal Procedures.
3. Submit and maintain on site a hard copy of the schedule printed on a format of suitable size. The Portable Document Format version shall be formatted to print on 11 x 17.
4. Time Scale: Indicate first date of each work week.
5. Organization:
  - a. Group deliveries of materials and equipment into a separate sub-schedule that is part of the Progress Schedule.
  - b. Group construction into a separate sub-schedule (that is part of the Progress Schedule) by activity.
  - c. Group Work by Subcontractors into a separate sub-schedule (that is part of the Progress Schedule) by activity.
  - d. Group critical activities that dictate the rate of progress (the “critical path”) into a separate sub-schedule that is part of the Progress Schedule. Clearly indicate the critical path on the Progress Schedule.
  - e. Organize each sub-schedule by Specification Section or payment item number.
6. Activity Designations: Indicate title and related Specification Section or payment item number.

#### B. Content

1. At a minimum, the following major work items and in the general sequence provided for Phase 1 and 2 in Section 01 11 00 – Summary of Work should be included, with appropriate subtasks included as necessary, in the general sequence listed below:
2. Progress Schedules shall also indicate the following:
  - a. Dates for shop-testing.
  - b. Delivery dates for materials and equipment to be incorporated into the Work.
  - c. Dates for beginning and completing each phase of the Work by activity and by trade.
  - d. Dates for start-up, check-out, and field-testing.
  - e. Dates corresponding to the Contract Times, and planned completion date associated with each Milestone (if any), Substantial Completion, and readiness for final payment.
  - f. Manpower for each item and percent complete for each task.

- C. Progress Schedule Updates: Update Progress Schedule on a bi-weekly basis (i.e., every two weeks) and to reflect changes to the Contract Times, if any.

- D. Coordinate the Progress Schedule with the Schedule of Submittals.

## 1.04 RECOVERY SCHEDULES

### A. General

1. When updated Progress Schedule indicates that the ability to comply with the Contract Times falls two or more weeks behind schedule, and there is no excusable delay, Change Order, or Work Change Directive to support an extension of the Contract Times, Contractor shall prepare and submit a Progress Schedule demonstrating Contractor's plan to accelerate the work to achieve compliance with the Contract Times ("recovery schedule") for Owner's acceptance.
2. Submit recovery schedule within three days after submittal of updated Progress Schedule where need for recovery schedule is indicated.

### B. Implementation of Recovery Schedule

1. At no additional cost to Owner, do one or more of the following: furnish additional labor, provide additional construction equipment, provide suitable materials, employ additional work shifts, expedite procurement of materials and equipment to be incorporated into the Work, and other measures necessary to complete the Work within the Contract Times.
2. Upon acceptance of recovery schedule by Owner, incorporate recovery schedule into the next Progress Schedule update.

- C. Lack of Action: Refusal, failure, or neglect to take appropriate recovery action, or to submit a recovery schedule, shall constitute reasonable evidence that Contractor is not prosecuting the work or separable part thereof with the diligence that will ensure completion within the Contract Times.

## PART 2 – PRODUCTS (NOT USED)

## PART 3 – EXECUTION (NOT USED)

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

CONSTRUCTION PROGRESS SCHEDULE  
01 32 16 - 4  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

## SECTION 01 32 26

### CONSTRUCTION PROGRESS REPORTING

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Scope:
  - 1. Preparing and submitting construction progress reports in accordance with this Section.
  - 2. Construction progress reports include:
    - a. Daily construction reports.
    - b. Field condition reports.
- B. Related sections
  - 1. Section 01 26 00 – Contract Modification Procedures
  - 2. Section 01 35 29 – Contractor’s Health and Safety Plan

##### 1.02 SUBMITTALS

- A. Informational Submittals:
  - 1. Daily Construction Reports: Submit in accordance with Article 1.03 of this Section.
  - 2. Field Condition Reports: Submit in accordance with Article 1.04 of this Section.

##### 1.03 DAILY CONSTRUCTION REPORTS

- A. Prepare daily construction reports throughout the Project. Include in each report, at a minimum, the following:
  - 1. Contractor’s name.
  - 2. Owner’s name.
  - 3. Project name.
  - 4. Site name and location.
  - 5. Date and day of the week.
  - 6. High and low temperatures and general weather conditions.
  - 7. Number of Contractor employees at the Site.
  - 8. Number of employees at the Site for each Subcontractor.
  - 9. Breakdown of employees by trades.
  - 10. Major construction equipment used.
  - 11. Material and equipment deliveries.
  - 12. Waste shipments.
  - 13. Meter readings and similar recordings.
  - 14. Work performed, including field quality control measures and testing.
  - 15. Location of areas in which construction was performed.
  - 16. Major equipment and materials installed as part of the Work.
  - 17. Services connected and disconnected.
  - 18. Equipment or system tests and startups.
  - 19. Stoppages, delays, shortages, and losses.
  - 20. Accidents. Comply with accident reporting requirements of Section 01 35 29 – Contractor’s Health and Safety Plan.
  - 21. Emergency procedures.
  - 22. Field meetings and significant decisions.
  - 23. Orders and requests of authorities having jurisdiction.
  - 24. Change Orders received and implemented.

- 25. Work Change Directives received and implemented.
  - 26. Field Orders received and implemented.
  - 27. Other instructions received from Owner or Engineer.
- B. Submit daily construction reports to Engineer by 9:00 a.m. the next working day after the day covered in the associated report. Daily report shall be signed by responsible member of Contractor's staff, such as Contractor's project manager or superintendent, or foreman designated by Contractor as having authority to sign daily reports.

1.04 FIELD CONDITION REPORTS

- A. Immediately upon discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- B. Submit field condition reports to Engineer with request for interpretation, prepared in accordance with Section 01 26 00 – Contract Modification Procedures.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION



## SECTION 01 33 00

### SUBMITTAL PROCEDURES

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Following the general methods and requirements of submissions applicable to Contractor submittals, including plans, shop drawings, product data, samples, mock-ups, and schedules. Detailed and specific submittal requirements are provided elsewhere in the Specifications and are summarized in the submittal log form included with this Section.
2. Providing submittals well in advance (as indicated in this Section) of the need for the material, equipment, or procedure (as applicable) in the Work and with ample time required for delivery of material or equipment and to implement procedures following Engineer's review or acceptance of the associated submittal. Work covered by a submittal will not be included in progress payments until review or acceptance of related submittals has been obtained in accordance with the Contract Documents.
3. Confirming and correcting dimensions at the Site, for information pertaining solely to the fabrication processes and to techniques of construction, and for coordinating the work of all trades. Contractor's signature of submittal's stamp and letter of transmittal shall be Contractor's representation that Contractor has met its obligations under the Contract Documents relative to that submittal.

###### B. Related sections

1. Section 01 32 16 – Construction Progress Schedule
2. Section 01 78 39 – Project Record Documents

###### C. Samples:

1. Conform sample submittal to the specification section in which the sample is specified.
2. Furnish at the same time of samples and submittals that are related to the same unit of Work or specification section. Engineer will not review submittals without associated samples and will not review samples without associated submittals.
3. Samples shall clearly illustrate functional characteristics of product, all related parts and attachments, and full range of color, texture, pattern, and material.

- D. Each submittal shall be prepared and transmitted to the Engineer a minimum of 10 working days in advance of the Contractor's intended performance of the related Work or other applicable activities, or within the time specified in the individual Work of other related sections, so that Work will not be delayed by processing times (including rejections and resubmittals, if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. The Owner/Engineer will not be liable for any expense and/or delay resulting from the Contractor's failure to provide submittals in a timely manner.

- E. The Engineer shall forward select submittals to New York State Department of Environmental Conservation (NYSDEC) for review, as requested by NYSDEC.

##### 1.02 TYPES OF SUBMITTALS

- A. Submittals are classified as Action Submittals, Informational Submittals, Closeout Submittals, and Maintenance Material Submittals. The type of each required submittal is designated in

the respective Specification Sections. When type of submittal is not specified in the associated Specification Section, submittal will be classified as follows:

1. Action Submittals include:
    - a. Shop Drawings.
    - b. Product data.
    - c. Delegated design submittals, which include documents prepared, sealed, and signed by a design professional retained by Contractor, Subcontractor, or Supplier for materials and equipment to be incorporated into the completed Work. Delegated design submittals do not include submittals related to temporary construction unless specified otherwise in the related Specification Section. Delegated design submittals include design drawings, design data including calculations, specifications, certifications, and other submittals prepared by such design professional.
    - d. Samples.
    - e. Testing plans, procedures, and testing limitations.
  2. Informational Submittals include:
    - a. Certificates.
    - b. Design data not sealed and signed by a design professional retained by Contractor, Subcontractor, or Supplier.
    - c. Pre-construction test and evaluation reports, such as reports on pilot testing, subsurface investigations and similar reports.
    - d. Supplier instructions, including installation data, and instructions for handling, starting-up, and troubleshooting.
    - e. Source quality control submittals (other than testing plans, procedures, and testing limitations), including results of shop testing.
    - f. Field quality control submittals (other than testing plans, procedures, and testing limitations), including results of operating and acceptability tests at the Site.
    - g. Supplier reports.
    - h. Sustainable design submittals (other than sustainable design closeout documentation).
    - i. Special procedure submittals, including health and safety plans and other procedural submittals.
    - j. Qualifications statements.
  3. Closeout Submittals include:
    - a. Maintenance contracts.
    - b. Operations and maintenance data.
    - c. Bonds, such as maintenance bonds and bonds for a specific product or system.
    - d. Warranty documentation.
    - e. Record documentation.
    - f. Sustainable design closeout documentation.
    - g. Software.
  4. Maintenance Material Submittals include:
    - a. Spare parts.
    - b. Extra stock materials.
    - c. Tools.
  5. When type of submittal is not specified and is not included in the list above, Engineer will determine the type of submittal.
- B. Not Included in this Section: Administrative and procedural requirements for the following are covered elsewhere in the Contract Documents:
1. Requests for interpretations of the Contract Documents.
  2. Field Orders, Work Change Directives, and Change Orders.
  3. Applications for Payment.
  4. Progress Schedules.
  5. Progress reports.

6. Photographic documentation.
7. Reports and documentation required in accordance with applicable permits.
8. Site survey data.

### 1.03 SUBMITTALS REQUIRED IN THIS SECTION

#### A. Informational Submittals:

##### 1. Schedule of Submittals:

- a. Timing:
  - 1) Provide submittal within time frames specified in the Contract Documents.
  - 2) Provide updated Schedule of Submittals with each submittal of the updated Progress Schedule.
- b. Content: Requirements for content of preliminary Schedule of Submittals and subsequent submittals of the Schedule of Submittals are identical. Identify on Schedule of Submittals all submittals required in the Contract Documents. Updates of Schedule of Submittals shall show scheduled dates and actual dates for completed tasks. Indicate submittals that are on the Project's critical path. Indicate the following for each submittal:
  - 1) Date by which submittal will be provided to Engineer.
  - 2) Whether submittal will be for a substitution or "equal".
  - 3) Date by which Engineer's response is required. At least 10 working days shall be allowed from Engineer's receipt of each submittal. Allow increased time, upwards of 20 working days, for large or complex submittals.
  - 4) For submittals for materials or equipment, date by which material or equipment must be at the Site to avoid delaying the Work and to avoid delaying the work of other Contractors.
- c. Prepare Schedule of Submittals using same software, and in same format, specified for Progress Schedules (see Section 01 32 16 – Construction Progress Schedule).
- d. Coordinate Schedule of Submittals with the Progress Schedule.
- e. Schedule of Submittals that is not compatible with the Progress Schedule, or that does not indicate submittals on the Project's critical path, or that places extraordinary demands on Engineer for time and resources, is unacceptable. Do not include submittals not required by the Contract Documents.
- f. In preparing Schedule of Submittals:
  - 1) Considering the nature and complexity of each submittal, allow sufficient time for review and revision.
  - 2) Reasonable time shall be allowed for Engineer's review and processing of submittals, for submittals to be revised and resubmitted, and for returning submittals to Contractor.
  - 3) Identify and accordingly schedule submittals that are expected to have long anticipated review times and submittals that may be subject to review by NYSDEC or other authorities having jurisdiction.

### 1.04 PROCEDURE FOR SUBMITTALS

#### A. Submittal Identification System: Use the following submittal identification system, consisting of submittal number and review cycle number.

1. Submittal number shall be separate and unique number correlating to each individual submittal required. Contractor shall assign submittal number as follows:
  - a. First part of submittal number shall be the applicable Specification Section number, followed by a hyphen.
  - b. Second part of submittal number shall be a three-digit number (sequentially numbered from 001 through 999) assigned to each separate and unique submittal provided under the associated Specification Section.

- c. Typical submittal number for the third submittal provided for Section 31 23 00 (Excavation and Fill) would be "31 23 00-003".
    2. Review cycle number shall be a letter designation indicating the initial submittal or re-submittal associated with each submittal number:
      - a. "A" = Initial (first) submittal.
      - b. "B" = Second submittal (i.e., first re-submittal).
      - c. "C" = Third submittal (i.e., second re-submittal).
    3. Typical submittal identification for the second submission (first re-submission) of the third submittal provided for Section 31 23 00 (Excavation and Fill) would be "31 23 00-003-B".
- B. Letter of Transmittal for Submittals:**
1. Provide separate letter of transmittal with each submittal. Each submittal shall be for one Specification Section.
  2. Each letter of transmittal shall contain the following:
    - a. Contractor's name.
    - b. Owner's name.
    - c. Project name.
    - d. Contract or Purchase Order number.
    - e. Transmittal number.
    - f. Submittal number and review cycle.
    - g. Submittal date and dates of any previous submissions.
    - h. Reference to appropriate Specification Section number, page, and paragraph(s).
    - i. Reference to appropriate Drawing sheet(s) and detail(s).
    - j. Clear space at least three inches by three inches in size for affixing Engineer's review stamp.
    - k. Clear space suitably sized for affixing Contractor's stamp.
  3. For submittals with proposed deviations from requirements of the Contract Documents, letter of transmittal shall specifically describe each proposed variation.
- C. Remediation Contractor's Review and Stamp:**
1. Contractor's Review: Before transmitting submittals to Engineer, review submittals to:
    - a. Ensure proper coordination of the Work.
    - b. Determine that each submittal is in accordance with Contractor's desires.
    - c. Verify that submittal contains sufficient information for Engineer to determine compliance with the Contract Documents.
  2. Incomplete or inadequate submittals will be returned without review.
  3. Contractor's Stamp and Signature:
    - a. Each submittal provided shall bear Contractor's stamp of approval and signature, as evidence that submittal has been reviewed by Contractor and verified as complete and in accordance with the Contract Documents.
    - b. Submittals without Contractor's stamp and signature will be returned without review.
    - c. Contractor's stamp shall contain the following certification statement:
 

"By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers, and similar data, and I have checked and coordinated each item with other applicable Shop Drawings and all Project requirements."
- D. Submittal Marking and Organization:**
1. Mark each page of submittal, and each individual component submitted, with submittal number and applicable Specification paragraph.
  2. Arrange submittal information in same order as requirements are written in the associated Specification Section.

3. Each Shop Drawing sheet shall have title block with complete identifying information satisfactory to Engineer.
  4. Package together submittals for the same Specification Section. Do not provide required information piecemeal.
- E. Format of Submittal and Recipients:
1. Action Submittals and Informational Submittals: Provide Action Submittals and Informational Submittals as electronic files in PDF format, except that submittals of Samples shall be as specified in Paragraph 1.04.E.2 of this Section.
  2. Samples:
    - a. Securely label or tag Samples with submittal identification number. Label or tag shall include clear space at least three inches by three inches in size for affixing Engineer's review stamp. Label or tag shall not cover, conceal, or alter appearance or features of Sample. Label or tag shall not be separated from the Sample.
    - b. Submit number of Samples required in Specifications. If number of Samples is not specified in the associated Specification Section, provide at least three identical Samples of each item required for Engineer's review. Samples will not be returned to Contractor. If Contractor requires Sample(s) for Contractor's use, notify Engineer in writing and provide additional Sample(s). Contractor is responsible for furnishing, shipping, and transporting additional Samples.
    - c. Deliver one Sample to Engineer's field office at the Site. Deliver balance of Samples to Engineer's office, unless otherwise directed by Engineer.
  3. Closeout Submittals:
    - a. Provide the following Closeout Submittals as electronic files in PDF format:
      - 1) Maintenance contracts.
      - 2) Operations and maintenance data.
      - 3) Bonds for specific products or systems.
      - 4) Warranty documentation.
      - 5) Sustainable design closeout documentation.
    - b. Record Documentation: Submit in accordance with Section 01 78 39 – Project Record Documents.
    - c. Software: Submit number of copies required in Specification Section where the software is specified. If number of copies is not specified, provide two copies on compact disc in addition to software loaded on to Owner's computer(s) or microprocessor(s).
  4. Maintenance Material Submittals: For spare parts, extra stock materials, and tools, submit quantity of items specified in associated Specification Section.
- F. Distribution:
1. Engineer will distribute each reviewed submittal requiring Engineer's written response as electronic file in PDF format.
  2. Contractor shall distribute hardcopy reproductions of reviewed submittals, where required, to the job site file and elsewhere, as directed by Engineer. Number of hardcopies shall be as directed by Engineer but will not exceed six.
- G. Resubmittals: Resubmittal requirements are provided in Article 1.05 of this Section.
- H. Engineer's Submittal Log:
1. Engineer will maintain a log of required submittals using the form included with this Section. Updated submittal log will be provided to Contractor upon request.
  2. Review submittal log and status of each submittal with Engineer on a weekly or more frequent basis.
  3. Coordinate updates to Schedule of Submittals with Engineer's updates to submittal log.

## 1.05 ENGINEER'S REVIEW

- A. Timing: Engineer's review will conform to timing accepted by Engineer in the accepted Schedule of Submittals.
- B. Submittals not required in the Contract Documents will not be reviewed by Engineer and will not be recorded in Engineer's submittal log. Hardcopies, if any, of such submittals will be returned to Contractor.
- C. Results of Engineer's Review:
  - 1. Action Submittals: Each submittal will be given one of the following dispositions:
    - a. Reviewed: Upon return of submittal marked "Reviewed", order, ship, or fabricate materials and equipment included in the submittal (pending Engineer's review or acceptance, as applicable, of source quality control submittals) or otherwise proceed with the Work in accordance with the submittal and the Contract Documents.
    - b. Reviewed and Noted: Upon return of submittal marked "Reviewed and Noted", order, ship, or fabricate materials and equipment included in the submittal (pending Engineer's review or acceptance, as applicable, of source quality control submittals) or otherwise proceed with the Work in accordance with the submittal and the Contract Documents, provided it is in accordance with corrections indicated.
    - c. Revise and Resubmit: Upon return of submittal marked "Revise and Resubmit", make the corrections indicated and re-submit to Engineer for review.
    - d. Rejected: This disposition indicates material or equipment that cannot be reviewed. Upon return of submittal marked "Rejected", repeat initial submittal procedure utilizing reviewable material or equipment.
  - 2. Informational Submittals:
    - a. Each submittal will be given one of the following dispositions:
      - 1) Accepted: Information included in submittal conforms to the applicable requirements of the Contract Documents and is acceptable. No further action by Contractor is required relative to this submittal, and the Work covered by the submittal may proceed, and products with submittals with this disposition may be shipped or operated, as applicable.
      - 2) Not Accepted: Submittal does not conform to applicable requirements of the Contract Documents and is not acceptable. Revise submittal and re-submit to indicate acceptability and conformance with the Contract Documents.
    - b. The following types of Informational Submittals, when acceptable to Engineer, will not receive a written response from Engineer. Disposition as "Accepted" will be recorded in Engineer's submittal log. When submittals of the following are not acceptable, Engineer will provide written response to Contractor:
      - 1) Safety data sheets.
      - 2) Manifests and other shipping documents.
      - 3) Delivery tickets.
      - 4) Compaction testing reports.
      - 5) Concrete testing reports.
      - 6) Manufacturer's instructions.
  - 3. Closeout Submittals: Dispositions and meanings are the same as specified for Informational Submittals. When acceptable, Closeout Submittals will not receive a written response from Engineer. Disposition as "Accepted" will be recorded in Engineer's submittal log. When Closeout Submittal is not acceptable, Engineer will provide written response to Contractor.
  - 4. Maintenance Material Submittals: Dispositions and meanings are the same as specified for Informational Submittals. When acceptable, Maintenance Material Submittals will not receive a written response from Engineer. Disposition as "Accepted" will be recorded in Engineer's submittal log. When Maintenance Material Submittal is not acceptable,

Engineer will provide written response to Contractor, and Contractor is responsible for costs associated with transporting and handling of maintenance materials until compliance with the Contract Documents is achieved.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 ATTACHMENTS

- A. The form listed below, which follows after the “End of Section” designation, is part of this Specification Section:
1. Attachment A: Engineer’s submittal log form (2 pages).

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SUBMITTAL PROCEDURES  
01 33 00 – 8  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK



Submittal Reference No.	Specification / Document Reference	Submittal Description	Schedule of Submittal	Date Received	Review Conducted by:		Interim Status/Date (see Note 1)	Final Status/Date (see Note 1)	Notes
					Project Manager	Engineer			
Section 01 15 00 Contractor's Project Operations Plan		Contractor's Organizational Structure							
		Work Schedule							
		List of Major Construction Equipment	Submit the sooner of seven days prior to pre-construction conference or 30 days prior to Contractor's scheduled mobilization to the site						
		List of major Sub Contractors and Suppliers							
		Site Utilization Plan							
Section 01 31 19.13 Pre-Construction Conference		Comprehensive Work Plan							
		Contractor's Construction Quality Assurance Plan (CQAP)							
		Preliminary Progress Schedule	Submit prior to Pre-Construction Conference						
Section 01 31 19.23 Progress Meetings		Preliminary Schedule of Submittals							
		Contractors Emergency Contact Information							
Section 01 32 16 Construction Progress Schedule		Up-to-date handouts covering work completed, progress schedule, schedule of submittals, and future schedule for each weekly meeting	Submit prior to each weekly meeting						
		Status of critical submittals	Submit prior to close of each weekly meeting						
		Review of Schedule of Submittals and Engineer's submittal log							
		Preliminary Progress Schedule	Submit prior to Pre-Construction Conference						
Section 01 32 26 Construction Progress Reporting		Initial Progress Schedule	Submit after addressing comments from Owner/Engineer on Preliminary Progress Schedule						
		Progress Schedule Updates	Submit at each progress meeting						
		Look-Ahead Schedule	Submit at each progress meeting						
		Recovery Schedules	Submit as necessary						
Section 01 35 29 Contractor's Health and Safety Plan		Daily Construction Reports	Submit to Engineer by 9:00 AM the next working day after the day covered in the associated report						
		Field Condition Reports	Submit with request for interpretation, as necessary						
Section 01 35 43.13 Environmental Procedures for Hazardous Materials		Contractor's HASP							
		Qualification Statements (for HASP preparer and Safety representative)	Submit the sooner of seven days prior to pre-construction conference or 30 days prior to Contractor's scheduled mobilization to the site						
		Accident Reports							
		Daily Health and Safety Field Reports							
		Training Certificates							
Section 01 35 49 Community Air Monitoring Plan		Hazardous Materials Communication Plan	Submit within 3 days of Contractor's receipt of request						
		Emergency Spill Response Plan	Submit at least 3 days prior to bringing Hazardous Material to the Site						
		Hazardous Materials Proposed for Use at the Site	Submit Information not less than 3 days after Contractor's Receipt of Analytical Results						
		Hazardous Materials Generated at the Site	Submit at least 3 days prior to bringing Hazardous Material to the Site						
		Permits (for storing, handling, using, transporting, and disposing of Hazardous Materials)	Submit within 3 days of Contractor's receipt of request						
Section 01 41 26 Storm Water Pollution Prevention Plan and Permit		Other Documents required for the Hazardous Materials Management Plan	Submit within 3 days of Contractor's receipt of request						
		Weekly Air Monitoring Reports	Submit prior to 12:00 PM the Monday after the week covered in the associated report.						
		Exceedance Reports	Submit within 24 hours after exceedance						
Section 01 51 41 Temporary Pumping		Community Air Monitoring and Weather Data	Submit monthly						
		Storm Water Permit Certification Statement	Submit at least 2 weeks prior to performing any work at the Site						
Section 01 52 13 Field Offices and Sheds		Qualifications Statements	Submit within 3 days after each inspection						
		Storm Water Inspection Reports							
		Submittals for Temporary Pumping System	Provide to Engineer at least 15 days prior to delivery to Site						
Section 01 53 53 Temporary Water Treatment System		Schedule	Provide prior to mobilization and update, as necessary						
		Temporary Pumping System	Provide to Engineer at least 15 days prior to delivery to Site						
Section 01 57 05 Temporary Controls		Qualification Statements	Submit to Engineer for approval prior to staging on Site						
		Field Office Submittal (site plan, field office dimensions, layout, internet service information, office equipment)							
Section 01 58 13 Temporary Project Signage		Shop Drawings	Submit as part of Contractor's POP or Separately						
		Operation and Maintenance Manual							
Section 01 71 23 Field Engineering		Product Data for reinforced silt fencing	Submit at least 2 weeks prior to installation at the Site						
		Product Data for erosion control mats or netting and staples or anchoring stakes							
		Shop Drawings - layout, text, font, character size, colors, graphics or logos (if any), materials of construction, and dimensions of each temporary sign, and the proposed locations and orientations at the Site	Submit at least 2 weeks prior to installation at the Site						
Section 01 74 19 Construction Waste Management and Disposal		Surveying Plan	Submit at least 10 days prior to starting survey Work						
		Survey Field Books example							
		Qualification Statements	Provide to Engineer within 24 hours						
		Survey Data							
Section 01 77 19 Closeout Requirements		Certificates - Accuracy of Field Engineering	Submit upon request by Engineer						
		Certificates - Compliance with Contract Documents							
		Optical Survey Data							
Section 01 78 39 Project Record Documents		Waste Management Plan	Submit within 14 days before the date the Contract Times commence running, and before removing any waste						
		Waste Profiles	Submit counter-signed waste profile and proof of acceptance of waste for each landfill and incinerator facility						
Section 02 41 00 Demolition		Disposal Records	Submit counter-signed manifests with each concurrent Application for Payment						
		Work Completion Documentation - Actual excavated volumes							
Section 02 41 00 Demolition		Work Completion Documentation - Actual backfill volumes							
		Work Completion Documentation - Construction Drawings							
		Work Completion Documentation - Certified survey data							
		Work Completion Documentation - Executed warranties	Submit prior to submitting an application for Final Certification Inspection						
		Work Completion Documentation - Certified weigh slips from disposal facility							
		Work Completion Documentation - Maintenance Agreements							
		Work Completion Documentation - Inspection certificates							
Section 02 41 00 Demolition		Truck volume counts and measurement summary							
		Record Documents	Submit to Engineer prior to readiness for final payment.						
Section 02 41 00 Demolition		Demolition and Removal Plan	Submit at least 21 days prior to starting demolition Work						
		Qualification Statements							
Section 02 41 00 Demolition		Notification of Intended Demolition Start	Submit at least 48 hours prior to commencing demolition or removal work						

Submittal Reference No.	Specification / Document Reference	Submittal Description	Schedule of Submittal	Date Received	Review Conducted by:		Interim Status/Date (see Note 1)	Final Status/Date (see Note 1)	Notes
					Project Manager	Engineer			
	Section 02 51 00 Decontamination	SDSs for all cleaning/decontamination solutions	Submit as part of Contractor's Health and Safety Plan						
	Section 02 61 05 Removal and Disposal of Contaminated Material	Product Data Waste Transporter Permits Written record of the operation and maintenance activities associated with the water management system Waste Profiles Chain of Custody records Disposal records	Submit as part of Contractor's POP or Separately Submit at least 10 days prior to material transport Submit to Owner weekly Submit weekly Submit monthly						
	Section 02 61 15 Sediment Removal and Handling	Sediment Handling and Dewatering Plan Contractor's Testing Laboratory Information Off-Site Fill Sources Delivery Tickets Solidification Performance and Placement Monitoring	Submit as part of Contractor's POP or separately Submit weekly Submit to Engineer within 24 hours of completion of test						
	Section 03 30 05 Cast-in-Place Concrete	Shop drawings Concrete Materials/Mix designs Laboratory Trial Batch Reports Concrete Placement Drawings Concrete Reinforcement Drawings Product Data Samples Delivery Tickets Site Quality Control Submittals Material Certificates Mix Designs for each mix required Testing Results Inspection and Test Results Ready-Mix Concrete Batch Ticket Weigh-tickets	Submit to Engineer at least 2 weeks prior to placement of concrete Submit to Engineer at least 15 days prior to placement of concrete Submit to Engineer within 24 hours of completion of test Provide for each batch, as necessary Provide for each batch of concrete delivered to site						
	Section 31 05 16 Aggregates for Earthwork	Background information for each proposed borrow pit 50-pound sample from each of the borrow pits Geotechnical and Chemical testing results, as necessary CLSM mix design, producer's certification, Contractor's proposed method of placement for CLSM Bills of lading for the transport and delivery of imported fill materials to the site Certified batch reports for CLSM delivered to the site Delivery Tickets	Submit to Engineer at least 2 weeks prior to placement Submit to Engineer at least 4 weeks prior to placement of materials Submit to Engineer at least 2 weeks prior to placement Submit to Engineer certified batch report for each load delivered to the Site Submit weekly						
	Section 31 05 19.13 Geotextiles for Earthwork	Product Data - lot and roll identification Quality control certificates Geotextile quality assurance tests from the manufacturer	Submit to Engineer prior to shipment of any geotextile material						
	Section 31 05 19.16 Geomembranes for Earthwork	Manufacturer's certification Manufacturer's standard warranty for the geomembrane Results of QC tests conducted by the manufacturer Contractor's written certification that material is not damaged HDPE lot and roll number of field-delivered material QC testing results	Submit to Engineer at least 2 weeks prior to mobilizing material to Site						
	Section 31 23 00 Excavation and Fill	Excavation and Backfilling Plan Qualification Statements - Nuclear Density Testing firm Field Quality Control Submittals Field test results	Submit at least 2 weeks prior to starting excavation operations Submit to Engineer within 24 hours of completion of test						
	Section 31 23 18 Water Handling and Treatment	Water treatment plan and specifications Waste Handling and Disposal Plan	Submit to as part of Contractor's POP or separately						
	Section 32 31 13 Chain-Link Fence and Gates	Shop drawings - identifying all materials and components, and construction details Manufacturer's product information and compliance with ASTM A90/A90M Manufacturer's certifications, installation instructions, and installer qualifications Product warranty documentation Keys for locksets and padlocks	Submit to Engineer at least 2 weeks prior to installation Submit prior to submitting an application for Final Certification Inspection						
	Section 32 72 00 Wetland Restoration	Seed mixture certificates Woody plant certificates Maintenance Data Geotechnical/Chemical testing results Source location and pH & organic content data	Submit to Engineer at least 2 weeks prior to installation Submit to Engineer at least 2 weeks prior to placement/use						
	Section 32 91 19.13 Topsoil Placement and Grading	Geotechnical/Chemical testing results Seed Certificates Mulch Information Fertilizer Information	Submit to Engineer at least 2 weeks prior to installation						
	Section 33 41 00 Storm Utility Drainage Pipe	Detailed, dimensioned drawings Changes to piping layout or materials, as necessary Piping specifications, shop drawings, dimensions, joint details, design and installation details Bedding material acceptance HDPE Pipe Manufacturer information Warranty conditions	Submit to Engineer at least 2 weeks prior to installation Submit to Engineer for approval prior to proceeding with work Submit to Engineer at least 2 weeks prior to installation Submit to owner for acceptance						
	Section 33 49 13 Storm Drainage Manholes, Frames, and Covers	Shop drawings Product data	Submit to Engineer at least 2 weeks prior to installation						

**Notes:**

- Submittal status nomenclature is as follows:  
 R - Reviewed  
 N - Reviewed and noted  
 S - Resubmit  
 J - Rejected  
 I - For your information
- Refer to Referenced Specification for detailed submittal requirements

## SECTION 01 35 29

### CONTRACTOR'S HEALTH AND SAFETY PLAN

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Preparing and maintaining a written, Project-specific Contractor's Health and Safety Plan (HASP), and conduct all construction activities in a safe manner that avoids:
  - a. Injuries to employees, subcontractors, and other persons with an interest at or near the Site.
  - b. Employee exposures to health hazards above occupational limits established respectively by the Occupational Safety and Health Administration (OSHA), American Conference of Governmental Industrial Hygienists (ACGIH), and Nuclear Regulatory Commission (NRC), as applicable.
  - c. Exposure of the public and Owner's employees to air contaminants above levels established for public exposure by USEPA, NRC, NYSDEC, NYSDOH, and other authorities having jurisdiction at the Site.
  - d. Significant increases in concentrations of contaminants in soil, water, or sediment near the Site.
  - e. Violations of the Occupational Safety and Health Act, or other Laws or Regulations.

###### B. Related sections

1. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials

##### 1.02 QUALITY ASSURANCE

###### A. Qualifications:

1. CHASP Preparer:
  - a. Engage a certified industrial hygienist, accredited by the American Board of Industrial Hygiene, or safety professional certified by the Board of Certified Safety Professionals, to prepare or supervise preparation of Contractor's HASP.
2. Safety Representative:
  - a. Retain the services of an independent, safety industry professional to manage, oversee, and enforce Contractor's health and safety program at the Site, and ensure compliance with Contractor's HASP and applicable Laws and Regulations during the Project. Contractor's safety representative shall have a minimum of five years of direct construction safety experience and appropriate training to supervise hazardous waste operations and emergency response (HAZWOPER) activities.
  - b. Contractor's safety representative shall be present at the Site at all times when Work is being performed and shall be dedicated solely to the supervision of Contractor's health and safety program.
  - c. Responsibilities include, but are not necessarily limited to, the following:
    - 1) Supervising the implementation of Contractor's HASP.
    - 2) Providing health and safety orientation training to Contractor's employees, Subcontractors, and Site visitors.
    - 3) Attending pre-construction conference, progress meetings, and other Project meetings, as required.
    - 4) Preparing and maintaining health and safety records and statistics.
    - 5) Leading and documenting daily job safety briefings.

- 6) Preparing and submitting accident reports in accordance with Article 1.05 of this Section.
- 7) Leading accident investigations on Contractor's behalf.
- 8) Preparing and submitting daily health and safety field reports in accordance with Article 1.06 of this Section.

**B. Regulatory Requirements:**

1. Laws and Regulations applying to the Work under this Section include, but are not limited to, the following:
  - a. 29 CFR 1904, Recording and Reporting Occupational Injuries and Illnesses.
  - b. 29 CFR 1910, Occupational Safety and Health Standards.
  - c. 29 CFR 1926, Safety and Health Regulations for Construction.
  - d. 40 CFR 261.3, 264, and 265, Resource Conservation and Recovery Act (RCRA).
  - e. 40 CFR 761.61, Storage and Disposal of PCB Remediation Waste
  - f. 49 CFR 171.8, Transportation, Definitions and Abbreviations.
  - g. 6 NYCRR 371, Identification and Listing of Hazardous Wastes.
  - h. 6 NYCRR 375, Environmental Remediation Programs.
  - i. 12 NYCRR 23, Protection in Construction, Demolition, and Excavation Operations.
  - j. 12 NYCRR 56, Asbestos.
  - k. 12 NYCRR 57, High Voltage Proximity.
  - l. 12 NYCRR 59, Workplace Safety and Loss Prevention Program.
  - m. 12 NYCRR 61, Occupational Licensing and Certification.
  - n. 16 NYCRR 753, Protection of Underground Facilities.
  - o. 17 NYCRR 32, Oil Spill Prevention and Control – Actions to be Taken in Case of Discharge.

**1.03 SUBMITTALS**

**A. Informational Submittals:**

1. Contractor's HASP: Submit in accordance with Article 1.04 of this Section.
2. Qualifications Statements:
  - a. HASP Preparer: Submit name and qualifications of certified industrial hygienist or safety professional, including summary of experience and copy of valid certifications.
  - b. Safety Representative: Submit name and qualifications of safety representative, including summary of experience, training received, and copy of valid certifications applicable to the Project.
3. Reports:
  - a. Accident Reports: Submit in accordance with Article 1.05 of this Section.
  - b. Daily Health and Safety Field Reports: Submit in accordance with Article 1.06 of this Section.
4. Submit in accordance with Article 1.07 of this Section, the following valid training certificates:
  - a. Initial 40-hour HAZWOPER training.
  - b. Initial 24-hour HAZWOPER training.
  - c. Eight-hour HAZWOPER supervisor training.
  - d. Annual eight-hour HAZWOPER refresher training.

**1.04 HASP SUBMITTAL**

**A. General:**

1. Each employer working at the Site shall develop and implement a written HASP for its employees involved in Hazardous Waste operations. HASP shall include procedures that will be used to ensure the safe handling of Hazardous Waste during excavating, loading, and transporting activities.

2. Comply with 29 CFR 1904, 29 CFR 1910, 29 CFR 1926, 12 NYCRR 23, 12 NYCRR 56, 12 NYCRR 57, 12 NYCRR 59, 12 NYCRR 61, 17 NYCRR 32, and other Laws and Regulations.
  3. Include in HASP requirements for complying with Owner's health and safety requirements and Site-specific hazard/emergency response plans, if any.
  4. HASP shall be kept at the Site, shall address safety and health hazards of each phase of operations at the Site, and shall include requirements and procedures for employee protection.
- B. HASP Contents: HASP shall address and include the following:
1. Organizational Structure:
    - a. Specific chain of command and overall responsibilities of supervisors and employees. Include the following:
      - 1) Designation of general supervisor who has responsibility and authority to direct all Hazardous Waste operations.
      - 2) Name of Site safety representative who has responsibility and authority to implement and modify the HASP and verify compliance.
      - 3) Other personnel required for Hazardous Waste operations at the Site and emergency response, and general functions and responsibilities of each.
      - 4) Lines of authority, responsibility, and communication.
    - b. Review and update organizational structure as necessary to reflect current status of Site operations and personnel.
  2. Site description, background, and scope of Work.
  3. Safety and health risk or hazard analysis, and planned hazard controls, for each task and operation required to complete the Project.
  4. Site control measures, including:
    - a. Preventing trespassing.
    - b. Preventing unqualified or unprotected workers from entering restricted areas.
    - c. Preventing the "tracking" of contaminants out of the Site.
    - d. Maintaining a log of employees at the Site and visitors to the Site.
    - e. Delineating exclusion, contamination reduction, and support zones.
    - f. Locating personnel and equipment decontamination zones.
    - g. Communicating routes of escape and gathering points.
  5. Training Program:
    - a. Initial training requirements for Site workers and supervisors.
    - b. Exceptions to initial training requirements.
    - c. Site briefings for visitors and workers.
    - d. Refresher training requirements.
    - e. Certification of training for all Contractor and Subcontractor employees assigned to the Project.
  6. Medical Surveillance Program:
    - a. Provisions of the Site medical surveillance program.
    - b. Communication protocols between the Site, physicians, and workers.
    - c. Medical recordkeeping procedures.
    - d. Certification of medical clearance for all Contractor and Subcontractor employees assigned to the Project.
  7. Personal Protective Equipment (PPE):
    - a. PPE selection criteria.
    - b. Site- and task-specific PPE ensembles.
    - c. Training in the use of PPE.
    - d. Respiratory protection.
    - e. Hearing conservation.
    - f. PPE maintenance and storage.
  8. Exposure Monitoring Program:

- a. Monitoring procedures to detect the presence of hazardous substances.
  - b. Monitoring procedures to determine worker exposures to hazardous substances and physical hazards.
  - c. Action levels and required responses for known and expected hazardous substances and physical hazards.
  - d. Calibration and maintenance procedures for monitoring equipment.
9. Heat stress prevention program.
10. Spill containment program. Comply with Section 01 35 43.13 – Environmental Procedures for Hazardous Materials.
11. Decontamination Program:
- a. Location and type of temporary decontamination facilities.
  - b. General and specific decontamination procedures for personnel and PPE.
  - c. General and specific decontamination procedures for equipment and vehicles.
  - d. Disposal of residual waste from decontamination.
  - e. Decontamination equipment and materials.
  - f. Monitoring procedures used to evaluate the effectiveness of decontamination.
12. Emergency Response Plan:
- a. Potential emergencies that may occur at the Site.
  - b. Pre-emergency planning.
  - c. On-site emergency response equipment, materials, and PPE.
  - d. Emergency Maps: Evacuation routes, gathering points, and route to nearest hospital.
  - e. Emergency roles and responsibilities.
  - f. Emergency alerting and evacuation procedures for Site personnel.
  - g. Procedures for notifying, and list of emergency contact information for:
    - 1) Emergency responders, including fire officials, ambulance service, poison control, police, and local hospitals.
    - 2) Authorities having jurisdiction.
    - 3) Owner and Engineer.
    - 4) Contractor's project manager, Site superintendent, safety representative, and foreman.
    - 5) Other entities, as required.
  - h. Emergency response procedures.
  - i. Emergency decontamination, medical treatment, and first-aid.
  - j. Emergency response training.
13. Other standard operating procedures applicable to the Work.

C. Submittal Procedure:

- 1. Submit HASP to Engineer the sooner of: seven days prior to pre-construction conference, or 30 days prior to Contractor's scheduled mobilization to the Site.
- 2. Engineer's review and acceptance of HASP will be only to determine if the topics covered in HASP comply with the Contract Documents. Engineer's review and acceptance will not extend to safety measures, means, methods, techniques, procedures of construction, or whether representations made in the HASP comply with Laws and Regulations, or standards of good practice.
- 3. Do not perform Work at the Site until written HASP has been accepted by Engineer.
- 4. Notwithstanding other provisions of the Contract Documents, changes in the Contract Price or Contract Times will not be authorized due to delay by Contractor in developing, submitting, or revising the HASP.

1.05 ACCIDENT REPORTING AND INVESTIGATION

- A. Immediately notify Owner and Engineer of all accidents that:
- 1. Result in bodily injury, illness, or property damage.
  - 2. Affect the environment.

3. Involve the public.
- B. Submit accident report to Owner and Engineer within 24 hours after accident occurs. Include in each report the following:
    1. Date, time, and location of accident.
    2. Names of all Site personnel involved in or affected by accident.
    3. Description of accident and activities being performed when accident occurred.
    4. Medical treatment administered, if any.
    5. Nature and seriousness of injury or damage.
  - C. Comply with 29 CFR 1904.29, including using OSHA 300, 300-A, and 301 forms (or equivalent) to document all accidents that result in bodily injury.
  - D. Based upon results of accident investigation, modify HASP as required by changing tasks or procedures to prevent reoccurrence of accident.
  - E. Post current copy of Contractor's OSHA 300-A report at conspicuous place at the Site from February 1 through April 30 of each year.

#### 1.06 DAILY HEALTH AND SAFETY FIELD REPORTS

- A. Prepare daily health and safety field reports throughout the Project. Include in each report, at a minimum, the following:
  1. Contractor's name.
  2. Owner's name.
  3. Project name.
  4. Site name and location.
  5. Date and day of the week.
  6. Weather conditions.
  7. Delays encountered in construction.
  8. Acknowledgment of deficiencies noted along with corrective actions taken on current and previous deficiencies.
  9. Daily health and safety exposure monitoring results, documentation of instrument calibration, new hazards encountered, and PPE utilized.
  10. Problems, real or anticipated, encountered during the Work that should be brought to the attention of Owner and Engineer.
  11. Deviations from planned Work described in previously-submitted daily health and safety field report(s).
- B. Submit daily health and safety field reports to Engineer by 9:00 a.m. the next working day after the day covered in the associated report. Daily reports shall be signed by the Contractor's safety representative.

#### 1.07 RECORDS

- A. Retain at the Site complete and accurate health and safety records for all Contractor and Subcontractor employees assigned to the Project. Records shall include, at a minimum, the following:
  1. Valid Training Certificates:
    - a. Initial 40-hour HAZWOPER training.
    - b. Initial 24-hour HAZWOPER training.
    - c. Eight-hour HAZWOPER supervisor training.
    - d. Annual eight-hour HAZWOPER refresher training.
    - e. 10-hour construction safety training.

- f. First-aid/cardiopulmonary resuscitation training.
  - g. Other training required by Contractor's HASP.
  2. Valid medical clearance certificates.
  3. Valid respirator fit test certificates.
  4. Accident reports prepared in accordance with Article 1.05 of this Section.
  5. Daily health and safety field reports prepared in accordance with Article 1.06 of this Section.
  6. Other records required by Laws and Regulations.
- B. Keep records up-to-date throughout the Project.
- C. Contractor's safety representative shall meet at least monthly with Owner and Engineer to review Contractor's health and safety records and verify compliance with this Section.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION



## SECTION 01 35 43.13

### ENVIRONMENTAL PROCEDURES FOR HAZARDOUS MATERIALS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Developing, implementing, and maintaining a Hazardous Materials Management Program (HMMP) throughout the Project, in accordance with Laws and Regulations.
  - a. Hazardous Materials Brought to Site by Contractor: Transport, handle, store, label, use, and dispose of in accordance with this Section, and Laws and Regulations.
  - b. Hazardous Material Generated by Contractor:
    - 1) Properly handling, storing, labeling, transporting, and disposing Hazardous Material in accordance with Laws and Regulations, and this Section.
    - 2) Obtaining Owner's USEPA identification number listing Owner's name and address of the Site as generator of the Hazardous Material in the event that Contractor generates Hazardous Material at the Site.
    - 3) Identifying, characterizing, profiling, transporting, and disposing of Hazardous Material generated by Contractor.
  - c. Fines or civil penalties levied against Owner for violations committed at the Site by Contractor, and costs to Owner (if any) associated with cleanup of Hazardous Materials shall be paid by Contractor.

###### B. Enforcement of Laws and Regulations:

1. Interests of Owner are that accidental spills and emissions, Site contamination, and injury of personnel at the Site are avoided.
2. When Owner is aware of suspected violations, Owner will notify Contractor, and authorities having jurisdiction if Owner reasonably concludes that doing so is required by Laws or Regulations.

##### 1.02 DEFINITIONS

###### A. The following terms are defined for this Section and supplement the terms defined in the General Conditions:

1. Hazardous Material: Material, whether solid, semi-solid, liquid, or gas, that, if not stored or used properly, may cause harm or injury to persons through inhalation, ingestion, absorption or injection, or that may negatively impact the environment through use or discharge of the material on the ground, in water (including groundwater), or to the air. Hazardous Material includes, but is not limited to, chemicals, Asbestos, Hazardous Waste, PCBs, Petroleum, Radioactive Material, and which is or becomes listed, regulated, or addressed pursuant to the following:
  - a. Comprehensive Environmental Response, Compensation, and Liability Act, 42 United States Code (USC) §§9601 et seq. ("CERCLA").
  - b. Hazardous Materials Transportation Act, 49 USC §§1801 et seq.
  - c. Resource Conservation and Recovery Act, 42 USC §§6901 et seq. ("RCRA").
  - d. Toxic Substances Control Act, 15 USC §§2601 et seq.
  - e. Clean Water Act, 33 USC §§1251 et seq.

- f. Clean Air Act, 42 USC §§7401 et seq.
- g. Any other Law or Regulation relating to or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

### 1.03 QUALITY ASSURANCE

#### A. Regulatory Requirements:

- 1. Laws and Regulations applying to the Work under this Section include, but are not limited to, the following:
  - a. 29 CFR 1910, Occupational Safety and Health Standards.
  - b. 29 CFR 1926, Safety and Health Regulations for Construction.
  - c. 40 CFR 261.3, 264, and 265, Resource Conservation and Recovery Act (RCRA).
  - d. 49 CFR 171.8, Transportation, Definitions and Abbreviations.
  - e. 6 NYCRR 364, Waste Transporter Permits.
  - f. 6 NYCRR 371, Identification and Listing of Hazardous Wastes.
  - g. 6 NYCRR 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities.
  - h. 6 NYCRR 375, Environmental Remediation Programs.
  - i. 17 NYCRR 32, Oil Spill Prevention and Control – Actions to be Taken in Case of Discharge.

### 1.04 SUBMITTALS

#### A. Informational Submittals:

- 1. Hazardous Materials (including Chemicals) Proposed for Use at the Site: Submit current (dated within the past two years) safety data sheets (SDSs) in accordance with 29 CFR 1910.1200 (OSHA Hazard Communication Standard), manufacturer, Supplier (if different than manufacturer), container size(s) and number of containers proposed to be at the Site, minimum and maximum volume of material intended to be stored at the Site, and description of process or procedures in which Hazardous Material will be used. Furnish information in sufficient time to obtain Owner's acceptance no later than at least three days before bringing Hazardous Material to the Site.
- 2. Hazardous Material Generated at the Site: Submit for each Hazardous Material generated at the Site an identification number, analysis results, and number and size of storage containers at the Site. Furnish information not less than three days after Contractor's receipt of analytical results.
- 3. Permits: Submit copies of permits for storing, handling, using, transporting, and disposing of Hazardous Materials, obtained from authorities having jurisdiction.
- 4. Other Documents required for the HMMP: Submit requested documents within three days of Contractor's receipt of request. HMMP documents may include Hazardous Materials Communications Plan (described in Article 1.05 B), Emergency/Spill Response Plan (described in Article 1.05 C), and other documents.

### 1.05 HAZARDOUS MATERIALS MANAGEMENT

- A. Obtain Owner's acceptance before bringing each Hazardous Material to the Site.
- B. *Hazardous Materials Communication Plan*: Develop and submit a *Hazardous Materials Communication Plan*. At a minimum, maintain at the Site two notebooks containing the following:
  - 1. Inventory of Hazardous Materials, including all chemicals.

2. Current (dated within the past two years) SDSs for all materials being used to accomplish the Work, whether or not defined as Hazardous Material in this Section. Keep one notebook in Contractor's field office at the Site; keep second notebook at location acceptable to Owner and Engineer. Keep notebooks up-to-date as materials are brought to and removed from the Site.
- C. *Emergency/Spill Response Plan*: Develop, implement, and maintain an *Emergency/Spill Response Plan*, for each Hazardous Material or each class/group of Hazardous Materials as applicable. Response plan shall include, at a minimum, the following:
1. Description of equipment and materials available at the Site to contain a spill of, or respond to an emergency related to, the material.
  2. Procedures for notifying, and list of emergency contact information for:
    - a. Authorities having jurisdiction.
    - b. Emergency responders.
    - c. Contractor's project manager, Site superintendent, safety representative, and foreman.
    - d. Owner and Engineer.
    - e. Other entities as required.
  3. Response coordination procedures between Contractor, Owner, and others as appropriate.
  4. Site plan showing proposed location of Hazardous Materials storage area, location of spill containment/response equipment and materials, and location of storm water drainage inlets and drainage routes.
  5. Description of Hazardous Material handling and spill response training provided to Contractor's and Subcontractors' employees, in accordance with 29 CFR 1926.21(b) and other Laws and Regulations.
- D. Storage of Hazardous Materials and Non-Hazardous Materials:
1. Hazardous Materials containers shall bear applicable hazard diamond(s).
  2. Container Labeling:
    - a. Properly label each container of consumable materials, whether or not classified as Hazardous Materials under this Section.
    - b. Stencil Contractor's name and, as applicable, subcontractor's name, on each vessel containing Hazardous Material and, for non-Hazardous Materials, on each container over five-gallon capacity. Containers shall bear securely-attached label clearly identifying contents. Label containers that are filled from larger containers.
    - c. If Owner becomes aware of unlabeled containers at the Site, Owner will notify Contractor. Properly label container(s) within one hour of receipt of notification or remove container from the Site.
  3. To greatest extent possible, store Hazardous Materials off-site until required for use in the Work.
- E. Hazardous Materials Storage Area:
1. Maintain designated storage area for Hazardous Materials that includes secondary containment. Storage area shall include barriers to prevent vehicles from colliding with storage containers and shall include protection from environmental factors such as weather.
  2. Provide signage in accordance with Laws and Regulations, clearly identifying the Hazardous Materials storage area.
- F. Contractor's safety representative shall meet at least monthly with Owner and Engineer to review Contractor's HMMP documents and procedures, and inspect storage areas and the Site in general, to verify compliance with this Section.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

ENVIRONMENTAL PROCEDURES FOR HAZARDOUS MATERIALS  
01 35 43 13 – 4  
REVISION NO. 00  
DATE ISSUED: 8/17/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

## SECTION 01 35 49

### COMMUNITY AIR MONITORING PLAN

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Contractor and Engineer shall provide all labor, materials, equipment, services, and incidentals as specified and required to comply with the Project's Community Air Monitoring Plan (CAMP), respectively. The CAMP is part of the Contract Documents.
2. Engineer shall perform community air monitoring on a continuous basis during all ground-intrusive Work or dust-generating Work. Community air monitoring will consist of real-time air monitoring for total volatile organic compounds (TVOCs) and particulate matter less than 10 micrometers in diameter (PM<sub>10</sub>).
3. Supporting the Engineer in establishing access and setup of the CAMP stations.

###### B. Coordination:

1. Coordinate requirements of this Section with requirements for odor, vapor, and dust control in the Contract Documents.

###### C. Related Sections:

1. Section 01 57 05 – Temporary Controls
2. Community Air Monitoring Plan

##### 1.02 TERMINOLOGY

###### A. The following words or terms are not defined but, when used in this Section, have the following meaning:

1. "Dust-generating Work" means any Work with the potential to generate dust. Examples of dust-generating Work include, but are not limited to, the following:
  - a. Crushing and processing demolition debris.
  - b. Handling excavated material and fill material.
  - c. Ground-intrusive Work.
2. "Ground-intrusive Work" means any Work performed below the existing level of the ground, or that involves the disturbance of existing earth, regardless of quantity. Examples of ground-intrusive Work include, but are not limited to, the following:
  - a. Grubbing.
  - b. Demolitions and removals of below-grade construction and Underground Facilities.
  - c. Excavating, trenching, and test pitting.
  - d. Backfilling and grading.
3. "Perimeter of work area" means the limits of Work, or half the distance to the nearest potential receptor or occupied residential/commercial structure, whichever is less, but in no case less than 20 feet.
4. "Work area" means any area where ground-intrusive Work or dust-generating Work is being performed.

## 1.03 QUALITY ASSURANCE

### A. Qualifications:

#### 1. Air Monitoring Technician:

- a. Engineer's air monitoring technician shall have a minimum of three years of direct construction safety or environmental monitoring experience, and appropriate health and safety training in accordance with Laws and Regulations.
- b. Engineer's air monitoring technician shall be present at the Site at all times when Work is being performed and shall be dedicated solely to the implementation of the CAMP.
- c. Responsibilities include, but are not necessarily limited to, the following:
  - 1) Installing the meteorological monitoring system.
  - 2) Selecting upwind and downwind monitoring locations and setting up air monitoring stations on a daily basis.
  - 3) Calibrating air monitoring equipment on a daily basis, or other frequency recommended by the manufacturer.
  - 4) Coordinating equipment maintenance and repairs.
  - 5) Monitoring meteorological conditions throughout the work day and relocating air monitoring stations as necessary and appropriate.
  - 6) Performing hourly or more frequent inspections of air monitoring stations to verify proper function.
  - 7) Removing air monitoring stations and downloading TVOC and PM<sub>10</sub> data from monitoring equipment at the end of each work day.
  - 8) Managing a database of TVOC, PM<sub>10</sub>, and meteorological data at the Site.
  - 9) Attending progress meetings and other Project meetings, as required.
  - 10) Preparing and submitting weekly air monitoring reports in accordance with Article 1.05 of this Section.
  - 11) Preparing and submitting exceedance reports in accordance with Article 1.06 of this Section.
  - 12) Notifying the Owner and Contractor personnel when alert or action levels are exceeded at downwind monitoring locations, and when MGP-related odors are noted at the perimeter of the work area.

### B. Regulatory Requirements:

1. Comply with applicable provisions and recommendations of the NYSDEC Technical Guidance for Site Investigation and Remediation (DER-10).
  - a. Appendix 1A – NYSDOH Generic Community Air Monitoring Program
  - b. Appendix 1B - Fugitive Dust and Particulate Monitoring

## 1.04 SUBMITTALS

### A. Informational Submittals:

1. Reports:
  - a. Weekly Air Monitoring Reports: Submit in accordance with Article 1.05 of this Section.
  - b. Exceedance Reports: Submit in accordance with Article 1.06 of this Section.
2. Submit community air monitoring and weather data in accordance with Article 1.07 of this Section.

## 1.05 WEEKLY AIR MONITORING REPORTS

- A. Prepare weekly air monitoring reports throughout the Project. Include in each report, at a minimum, the following:
1. Contractor's name.
  2. Owner's name.
  3. Engineer's name.
  4. Project name.
  5. Site name and location.
  6. The following for each day that community air monitoring is performed:
    - a. Date and day of the week.
    - b. General location and brief description of work performed at the Site.
    - c. Daily average concentration of TVOCs and PM<sub>10</sub> for each air monitoring station.
    - d. Daily maximum 15-minute time-weighted average (TWA) concentration of TVOCs and PM<sub>10</sub> for each air monitoring station.
    - e. Exceedances (if any) of the action levels specified in Paragraph 3.01.C of this Section. Provide the following:
      - 1) Time, location, and 15-minute TWA concentration (above background) of exceedance.
      - 2) Copy of exceedance report, prepared in accordance with Article 1.06 of this Section.
    - f. Site plan showing approximate locations of upwind and downwind air monitoring stations at the Site and predominant wind direction for the day. Note if air monitoring stations were relocated during the day.
- B. Submit weekly air monitoring reports. Engineer will distribute weekly air monitoring reports by 12:00 p.m. the Monday after the week covered in the associated report to:
1. Owner.
  2. Contractor.
  3. NYSDEC.
  4. NYSDOH.
  5. Others as appropriate.

## 1.06 EXCEEDANCE REPORTS

- A. Prepare an exceedance report whenever the action levels specified in Paragraph 3.01.C of this Section are exceeded. Include in each report the following:
1. Contractor's name.
  2. Owner's name.
  3. Engineer's name.
  4. Project name.
  5. Site name and location.
  6. Date, day of the week, and time of exceedance.
  7. General location and brief description of work being performed at time of exceedance.
  8. Weather conditions at time of exceedance.
  9. For each air monitoring station, 15-minute TWA concentration of TVOCs and PM<sub>10</sub> at time of exceedance.
  10. Source or cause of exceedance.
  11. Corrective actions taken or to be taken in response to exceedance.
  12. Date and time verbal or written notification was provided to NYSDEC.

- B. Submit exceedance reports. Engineer will distribute exceedance reports within 24 hours after exceedance to:
  - 1. Owner.
  - 2. Contractor.
  - 3. NYSDEC.
  - 4. NYSDOH.
  - 5. Others as appropriate.

## 1.07 DATA MANAGEMENT

- A. Maintain a database of TVOC, PM<sub>10</sub>, and meteorological data files at the Site.
  - 1. Index TVOC and PM<sub>10</sub> data files by date, station number, station location (upwind or downwind), and data type (TVOC or PM<sub>10</sub>).
  - 2. Index meteorological data files by date.
- B. Back up data files to disc or portable hard drive on a weekly or more frequent basis.
- C. Submit TVOC, PM<sub>10</sub>, and meteorological data files on a monthly basis throughout the Project. Label each disc with the following information:
  - 1. Dates covered.
  - 2. Owner's name.
  - 3. Project name.
  - 4. Site name and location.

## PART 2 – PRODUCTS

### 2.01 PERIMETER AIR MONITORING SYSTEM

- A. System Description:
  - 1. Provide complete, integrated perimeter air monitoring system consisting of the following:
    - a. Four portable air monitoring stations, each capable of measuring real-time ambient air concentrations of TVOCs and PM<sub>10</sub>, logging air monitoring data, and alerting Site personnel if alert levels or action levels are exceeded.
    - b. One portable meteorological monitoring system capable of measuring wind speed, wind direction, relative humidity, dry bulb temperature, and barometric pressure, and displaying and logging weather data.
- B. Air Monitoring Stations:
  - 1. Photoionization Detectors: Direct-reading, data-logging photoionization detector with 10.6 eV lamp. Provide one of the following for each air monitoring station:
    - a. MiniRAE 3000 by RAE Systems.
    - b. Or equal.
  - 2. Aerosol Photometers: Direct-reading, data-logging aerosol monitor. Provide one of the following for each air monitoring station:
    - a. DustTrak II Aerosol Monitor Model 8530 by TSI, Inc.
    - b. Or equal.
  - 3. Spare Equipment: Provide and retain at the Site the following:
    - a. Spare photoionization detectors and aerosol photometers to allow for uninterrupted monitoring in the event of equipment damage or malfunction.
    - b. Spare batteries for each photoionization detector and aerosol photometer to allow for continuous real-time monitoring and data-logging for a period of not less than 12 hours.



4. Environmental Enclosures and Mounting Tripods: Provide portable, weather-tight enclosure and compatible mounting (survey) tripod for each air monitoring station. Environmental enclosures shall provide proper operating conditions for photoionization detectors and aerosol photometers.
  5. Alarms and Wireless Alert System: Provide for each air monitoring station audible and visible alarms and wireless alert system capable of alerting air monitoring technician in real-time (via handheld radio, cell phone, etc.) if alert or action levels are exceeded.
  6. Accessories: Provide equipment calibration kits, sampling inlets, data management software, and other accessories recommended by the equipment manufacturers for the intended application.
- C. Meteorological Monitoring System:
1. Product and Manufacturer: Provide one of the following:
    - a. Wireless Vantage Pro2 by Davis Instruments.
    - b. Or equal.
  2. Accessories: Provide the following:
    - a. WeatherLink data logger and software suite by Davis Instruments.
    - b. Mounting Pole Kit by Davis Instruments.
    - c. Other accessories recommended by equipment manufacturer for the intended application.

## PART 3 – EXECUTION

### 3.01 REAL-TIME AIR MONITORING FOR TVOCS AND PM10

- A. Air Monitoring Stations:
1. Installation:
    - a. Deploy air monitoring stations at the start of each work day before any ground-intrusive Work or dust-generating Work is initiated.
      - 1) Position one air monitoring station at the upwind perimeter of the work area and three air monitoring stations at the downwind perimeter of the work area. Determine and designate upwind and downwind air monitoring stations based on predominant wind direction, and nature and location of Work to be performed.
      - 2) Set alarm levels on real-time TVOC and PM<sub>10</sub> monitoring equipment to respond to 15-minute TWA concentrations at or below the action levels specified in Paragraph 3.01.C of this Section.
      - 3) Ensure that community air monitoring is being performed before initiating ground-intrusive Work or dust-generating Work.
    - b. Monitor wind direction throughout the day and adjust locations of air monitoring stations if wind direction shifts more than 60 degrees from original upwind direction. Document original upwind and downwind air monitoring stations, and any changes made to monitoring locations during the day.
  2. Protection:
    - a. Protect air monitoring stations from damage due to construction operations, weather, and vandalism.
    - b. Immediately remove from service, and replace at Engineer's expense, damaged equipment.
  3. Removal:
    - a. Remove air monitoring stations at the end of each work day, and only after all ground-intrusive Work or dust-generating Work has been completed for the day.
    - b. Download TVOC and PM<sub>10</sub> data from air monitoring stations at the end of each day.

B. Alert Levels and Response:

1. Alert Levels:
  - a. TVOCs: 15-minute TWA concentration at downwind air monitoring station of three parts per million (ppm) above background (upwind) 15-minute TWA concentration.
  - b. PM<sub>10</sub>: 15-minute TWA concentration at downwind air monitoring station of 100 micrograms per cubic meter (ug/m<sup>3</sup>) above background (upwind) 15-minute TWA concentration, or visible dust observed leaving the work area.
2. Response: Implement the following if alert levels are exceeded:
  - a. Notify Contractor.
  - b. Continue Work and employ additional odor, vapor, and dust controls to abate emissions in accordance with Section 01 57 05 – Temporary Controls.
  - c. Evaluate and, if necessary and appropriate, modify construction techniques.

C. Action Levels and Response:

1. Action Levels:
  - a. TVOCs: 15-minute TWA concentration at downwind air monitoring station of five ppm above background (upwind) 15-minute TWA concentration.
  - b. PM<sub>10</sub>: 15-minute TWA concentration at downwind air monitoring station of 150 ug/m<sup>3</sup> above background (upwind) 15-minute TWA concentration.
2. Response: Implement the following if action levels are exceeded:
  - a. Stop all Work and Engineer shall immediately notify Owner. Owner or Engineer will notify the NYSDEC project manager by telephone or e-mail within two hours after the exceedance.
  - b. Engineer shall continue monitoring and Contractor shall employ additional odor, vapor, and dust controls to abate emissions in accordance with Section 01 57 05 – Temporary Controls.
  - c. Identify the source or cause of the exceedance.
  - d. Evaluate and, if necessary and appropriate, modify construction techniques.
  - e. Engineer shall prepare exceedance report in accordance with Article 1.06 of this Section.
  - f. Work shall not resume until 15-minute TWA concentrations are below the action levels. If the 15-minute TWA concentration of TVOCs exceeds 25 ppm above the background (upwind) 15-minute TWA concentration, work shall not resume until authorized by Owner.

3.02 FIELD QUALITY CONTROL

- A. Engineer shall calibrate air monitoring equipment on a daily basis, or other frequency recommended by the manufacturer, in accordance with manufacturer's calibration and quality assurance requirements. Document all instrument readings, field reference checks, and calibrations in a dedicated log.
- B. During the work day, Engineer shall perform hourly or more frequent field checks of monitoring equipment to verify proper function. Document the date, day, time, and outcome of each field check in a dedicated log.
- C. Engineer shall immediately remove from service, and replace at Engineer's expense, damaged or malfunctioning equipment.
- D. Preventative maintenance and repair of monitoring equipment, if required, shall only be performed by qualified personnel, or authorized representatives of the manufacturer.

- E. Engineer shall prepare and retain at the Site electronic or written records of all equipment calibrations, field checks, maintenance, and repairs.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

## SECTION 01 41 26

### STORM WATER POLLUTION PREVENTION PLAN AND GENERAL PERMIT

#### PART 1 – GENERAL

##### 1.01 SCOPE

- A. Complying with the Project's Storm Water Pollution Prevention Plan (SWPPP) and the substantive requirements of the most current version of NYSDEC's SPDES General Permit for Storm Water Discharges from Construction Activity (hereinafter, the "SPDES General Permit"). Providing necessary materials and taking appropriate measures to comply with requirements of the SPDES General Permit and minimize pollutants in storm water run-off from the Site.
- B. The following documents are part of the Work included under this Section:
  - 1. SWPPP: Prepared by Engineer, on behalf of Owner, and filed with NYSDEC. The SWPPP is included as Appendix G to the Remedial Design and is part of the Contract Documents.
  - 2. SWPPP Revisions: Prepared by Engineer, on behalf of Owner, in accordance with Article 1.04 of this Section. Copy of each SWPPP Revision will be furnished to Contractor. SWPPP Revisions, if any, will become part of the Contract Documents.
  - 3. Storm Water Permit Certification Statement: To be submitted by Contractor to Engineer on the form included with this Section. Do not perform Work at the Site until the storm water permit certification statement has been submitted to Engineer.
  - 4. Storm Water Inspection Reports: Prepared by Contractor's qualified inspector and submitted to Engineer in accordance with Article 1.05 of this Section. A storm water inspection report shall be prepared for each Site inspection and assessment required by the SPDES General Permit and this Section.
- C. Preventing discharge of sediment to and erosion from the Site to surface waters, drainage routes, public streets and rights-of-way, and private property, including dewatering operations. Preventing trash and construction and demolition debris from leaving the Site via storm water run-off. Providing berms, dikes, and other acceptable methods of directing storm water around work areas to drainage routes.
- D. Do not cause or contribute to a violation of water quality standards, Laws, or Regulations. Provide and implement measures to control pollutants in storm water run-off from the Site to prevent:
  - 1. Turbidity increases that will cause a substantial visible contrast to natural conditions.
  - 2. Increase in suspended, colloidal, and settleable solids that would cause sediment deposition, or impair receiving water quality and use.
  - 3. Presence of residue from oil and floating substances, visible oil, and globules of grease.
- E. Contractor shall pay civil penalties and other costs incurred by Owner, including additional engineering, construction management, and inspection services, associated with non-complying with the SPDES General Permit and erosion and sediment controls associated with the Work.
- F. Contract Price includes all material, labor, and other permits and incidental costs related to:
  - 1. Installing and maintaining structural and non-structural items used in complying with the SWPPP and its revisions, if any.

2. Clean-up, disposal, and repairs following wet weather events or spills caused by Contractor.
  3. Implementing and maintaining “best management practices”, as defined in applicable permits and Laws or Regulations, to comply with requirements that govern storm water discharges at the Site.
  4. Inspecting erosion, sediment, and storm water controls as specified.
- G. Coordinating requirements of this Section with requirements for earthwork, erosion control, and landscaping in the Contract Documents, applicable permit requirements, and Laws and Regulations.
- H. Implementing SWPPP controls and practices prior to starting other Work at the Site.

## 1.02 QUALITY ASSURANCE

### A. Qualifications:

#### 1. Qualified Inspector:

- a. Contractor’s qualified inspector shall be knowledgeable in the principles and practices of erosion and sediment control and shall be responsible for performing Site inspections and assessments, and preparing and certifying storm water inspection reports, in accordance with this Section.
- b. Contractor’s qualified inspector shall be one of the following:
  - 1) Professional engineer licensed and registered in the State of New York.
  - 2) Landscape architect licensed and registered in the State of New York.
  - 3) Certified Professional in Erosion and Sediment Control.
  - 4) NYSDEC-endorsed individual.
  - 5) An individual working under the direct supervision of, and employed by the same company as, a professional engineer or landscape architect licensed and registered in New York State, provided that said individual has received four hours of NYSDEC-endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC-endorsed entity. Following the initial training, the individual shall have completed four hours of training every three years.

### B. Regulatory Requirements:

1. Comply with Laws and Regulations related to environmental protection and restoration, including:
  - a. SPDES General Permit.
  - b. New York State Standards and Specifications for Erosion and Sediment Control.

## 1.03 SUBMITTALS

### A. Informational Submittals:

1. Storm Water Permit Certification Statement: Submit in accordance with Paragraph 1.01.B.3 of this Section.
2. Qualifications Statements: Submit name and qualifications of qualified inspector, including summary of experience, training received, and copy of valid certifications applicable to the Project.
3. Storm Water Inspection Reports: Submit in accordance with Article 1.05 of this Section.

## 1.04 SWPPP REVISIONS

- A. Engineer will prepare a SWPPP Revision in accordance with the SPDES General Permit:

1. When the provisions of the SWPPP prove to be ineffective in minimizing pollutants in storm water discharges from the Site.
2. When there is a significant change in design, construction, operation, or maintenance of the Project that has or could have an effect on the discharge of pollutants from the Site.
3. To address issues or deficiencies identified during an inspection by Contractor's qualified inspector, NYSDEC, or other regulatory authority having jurisdiction.

#### 1.05 STORM WATER INSPECTION REPORTS

- A. Prepare a storm water inspection report for each Site inspection and assessment required by the SPDES General Permit and this Section. Each report shall be prepared using the form included with this Section.
- B. Include in each storm water inspection report, at a minimum, the following:
  1. Date and time of inspection.
  2. Name, title, and affiliation of Contractor's qualified inspector.
  3. Weather and soil conditions (e.g., dry, wet, saturated, etc.) at the time of the inspection.
  4. Description of and site plan showing areas that are disturbed at the time of the inspection and any areas that have been stabilized (either temporary or final) since the previous inspection.
  5. Repairs, maintenance, or corrective actions implemented since the previous inspection. Include digital photographs, with date stamp, that clearly show the areas or items installed, repaired, or replaced.
  6. Condition of storm water run-off at all points of discharge from the Site.
  7. Identification of any erosion, sediment, and storm water controls that require repair or maintenance.
  8. Identification of any erosion, sediment, and storm water controls that were not installed properly or are not functioning as designed.
  9. Repairs, maintenance, or corrective actions required to correct any deficiencies observed during the inspection. Include digital photographs, with date stamp, that clearly show the deficient areas or items.
- C. Submit storm water inspection reports to Engineer within three days after each inspection. Inspection reports shall be signed by Contractor's qualified inspector.
- D. Retain copies of storm water inspection reports at the Site. Keep with the SWPPP and any SWPPP revisions.

### PART 2 – PRODUCTS (NOT USED)

### PART 3 – EXECUTION

#### 3.01 INSPECTIONS AND REPAIRS

- A. Perform Site inspections and assessments as required by the SPDES General Permit and this Section to ensure the continued effectiveness and integrity of all SWPPP controls and practices, including erosion and sediment controls. Inspections and assessments shall be done by Contractor's qualified inspector, together with Engineer's Resident Project Representative.

- B. Inspections:
1. Site inspections shall be performed:
    - a. After installation of SWPPP controls, including erosion and sediment controls, and temporary field offices and other temporary facilities, prior to starting other Work at the Site.
    - b. Every seven days during the Work, and within 24 hours after wet weather events, until all disturbed areas have achieved final stabilization in accordance with the SPDES General Permit and the SWPPP. For temporary Work stoppages and seasonal shut-downs greater than two weeks in duration, inspection frequency may be reduced to once every 30 days if temporary stabilization measures have been applied to all disturbed surfaces, and if approved by Engineer and NYSDEC.
  2. During each inspection, verify sediment control practices and record approximate degree of sediment accumulation as percentage of acceptable sediment storage volume. Inspect erosion and sediment control practices and record repairs and maintenance performed, if any. Observe and record deficiencies relative to implementation of the SWPPP.
  3. Prepare storm water inspection report for each inspection in accordance with Article 1.05 of this Section.
- C. Notify Engineer within one day after each inspection of any observed deficiencies, and any repairs, maintenance, or corrective actions required to correct such deficiencies.
- D. Complete repairs or maintenance to SWPPP controls in accordance with applicable requirements and to satisfaction of Engineer within two days after each inspection. If site conditions prevent repairs or maintenance from being completed, document such conditions in the subsequent storm water inspection report and complete repairs or maintenance as soon as site conditions permit.
- E. Cooperate with representatives of authorities having jurisdiction during periodic visits to Site, and promptly provide information requested by authorities having jurisdiction.

### 3.02 ATTACHMENTS

- A. The attachments listed below, which follow the "End of Section" designation, are part of this Section:
1. Attachment A: SPDES General Permit (46 pages).
  2. Attachment B: Storm water permit certification statement form (two pages).
  3. Attachment C: Storm water inspection report form (four pages).

END OF SECTION





Department of  
Environmental  
Conservation

NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
SPDES GENERAL PERMIT  
FOR STORMWATER DISCHARGES

From

**CONSTRUCTION ACTIVITY**

Permit No. GP-0-15-002

Issued Pursuant to Article 17, Titles 7, 8 and Article 70  
of the Environmental Conservation Law

Effective Date: January 29, 2015

Expiration Date: January 28, 2020

Modification Date:

July 14, 2015 – Correction of typographical error in definition of “New Development”,  
Appendix A

November 23, 2016 – Updated to require the use of the New York State Standards and  
Specifications for Erosion and Sediment Control, dated November  
2016. The use of this standard will be required as of February 1,  
2017.

John J. Ferguson  
Chief Permit Administrator

  
Authorized Signature

11.14.16  
Date

Address: NYS DEC  
Division of Environmental Permits  
625 Broadway, 4th Floor  
Albany, N.Y. 12233-1750

## PREFACE

Pursuant to Section 402 of the Clean Water Act (“CWA”), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System (“NPDES”)* permit or by a state permit program. New York’s *State Pollutant Discharge Elimination System (“SPDES”)* is a NPDES-approved program with permits issued in accordance with the *Environmental Conservation Law (“ECL”)*.

This general permit (“permit”) is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL. An *owner or operator* may obtain coverage under this permit by submitting a Notice of Intent (“NOI”) to the Department. Copies of this permit and the NOI for New York are available by calling (518) 402-8109 or at any New York State Department of Environmental Conservation (“the Department”) regional office (see Appendix G). They are also available on the Department’s website at:

<http://www.dec.ny.gov/>

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of “*construction activity*”, as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a point source and therefore, pursuant to Article 17-0505 of the ECL, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. They cannot wait until there is an actual *discharge* from the construction site to obtain permit coverage.

**\*Note: The italicized words/phrases within this permit are defined in Appendix A.**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES  
 FROM CONSTRUCTION ACTIVITIES**

Part I. PERMIT COVERAGE AND LIMITATIONS .....	1
A. Permit Application .....	1
B. Effluent Limitations Applicable to Discharges from Construction Activities .....	1
C. Post-construction Stormwater Management Practice Requirements .....	4
D. Maintaining Water Quality .....	8
E. Eligibility Under This General Permit.....	9
F. Activities Which Are Ineligible for Coverage Under This General Permit .....	9
Part II. OBTAINING PERMIT COVERAGE .....	12
A. Notice of Intent (NOI) Submittal .....	12
B. Permit Authorization.....	13
C. General Requirements For Owners or Operators With Permit Coverage .....	15
D. Permit Coverage for Discharges Authorized Under GP-0-10-001.....	17
E. Change of <i>Owner or Operator</i> .....	17
Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP).....	18
A. General SWPPP Requirements .....	18
B. Required SWPPP Contents .....	20
C. Required SWPPP Components by Project Type.....	23
Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS .....	24
A. General Construction Site Inspection and Maintenance Requirements .....	24
B. Contractor Maintenance Inspection Requirements .....	24
C. Qualified Inspector Inspection Requirements.....	24
Part V. TERMINATION OF PERMIT COVERAGE .....	28
A. Termination of Permit Coverage .....	28
Part VI. REPORTING AND RETENTION OF RECORDS .....	30
A. Record Retention .....	30
B. Addresses .....	30
Part VII. STANDARD PERMIT CONDITIONS.....	31
A. Duty to Comply.....	31
B. Continuation of the Expired General Permit.....	31
C. Enforcement.....	31
D. Need to Halt or Reduce Activity Not a Defense.....	31
E. Duty to Mitigate .....	32
F. Duty to Provide Information.....	32
G. Other Information .....	32
H. Signatory Requirements.....	32
I. Property Rights.....	34
J. Severability.....	34
K. Requirement to Obtain Coverage Under an Alternative Permit.....	34
L. Proper Operation and Maintenance .....	35
M. Inspection and Entry .....	35
N. Permit Actions .....	36
O. Definitions .....	36
P. Re-Opener Clause .....	36

Q. Penalties for Falsification of Forms and Reports.....	36
R. Other Permits.....	36
APPENDIX A.....	37
APPENDIX B.....	44
APPENDIX C.....	46
APPENDIX D.....	52
APPENDIX E.....	53
APPENDIX F.....	55

---

(Part I)

## Part I. PERMIT COVERAGE AND LIMITATIONS

### A. Permit Application

This permit authorizes stormwater *discharges to surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State*.
3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

### B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharges* authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge of pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the Stormwater Pollution Prevention Plan (“SWPPP”) the reason(s) for the deviation or alternative design and provide information

(Part I.B.1)

which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

- (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*;
- (ii) Control stormwater *discharges* to *minimize* channel and streambank erosion and scour in the immediate vicinity of the *discharge* points;
- (iii) *Minimize* the amount of soil exposed during *construction activity*;
- (iv) *Minimize* the disturbance of *steep slopes*;
- (v) *Minimize* sediment *discharges* from the site;
- (vi) Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharges*, unless *infeasible*;
- (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted; and
- (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover.

b. **Soil Stabilization.** In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering.** *Discharges* from dewatering activities, including *discharges*

(Part I.B.1.c)

from dewatering of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures.** Design, install, implement, and maintain effective pollution prevention measures to *minimize the discharge of pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

- (i) *Minimize the discharge of pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;
- (ii) *Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater.* Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge of pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and
- (iii) Prevent the *discharge of pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited Discharges.** The following *discharges* are prohibited:

- (i) Wastewater from washout of concrete;
- (ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
- (iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;
- (iv) Soaps or solvents used in vehicle and equipment washing; and
- (v) Toxic or hazardous substances from a spill or other release.

f. **Surface Outlets.** When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion

(Part I.B.1.f)

at or below the outlet does not occur.

### **C. Post-construction Stormwater Management Practice Requirements**

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices (“SMPs”) are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

#### **a. Sizing Criteria for New Development**

- (i) Runoff Reduction Volume (“RRv”): Reduce the total Water Quality Volume (“WQv”) by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.
- (ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

**In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual.** The remaining portion of the total WQv



(Part I.C.2.a.ii)

that cannot be reduced shall be treated by application of standard SMPs.

- (iii) Channel Protection Volume (“Cpv”): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
  - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
  - (2) The site *discharges* directly to tidal waters, or fifth order or larger streams.
- (iv) Overbank Flood Control Criteria (“Qp”): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that overbank control is not required.
- (v) Extreme Flood Control Criteria (“Qf”): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that overbank control is not required.

**b. Sizing Criteria for New Development in Enhanced Phosphorus Removal Watershed**

- (i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be calculated in accordance with the criteria in Section 10.3 of the Design Manual.
- (ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or

(Part I.C.2.b.ii)

standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

**In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual.** The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

- (iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
  - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
  - (2) The site *discharges* directly to tidal waters, or fifth order or larger streams.
- (iv) Overbank Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that overbank control is not required.
- (v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
  - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
  - (2) A downstream analysis reveals that overbank control is not required.

**c. Sizing Criteria for Redevelopment Activity**

(Part I.C.2.c.i)

- (i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.
- (1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
  - (2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
  - (3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
  - (4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

- (ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.
- (iii) Overbank Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(Part I.C.2.c.iv)

- (iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

**d. Sizing Criteria for Combination of Redevelopment Activity and New Development**

Construction projects that include both *New Development* and *Redevelopment Activity* shall provide post-construction stormwater management controls that meet the *sizing criteria* calculated as an aggregate of the *Sizing Criteria* in Part I.C.2.a. or b. of this permit for the *New Development* portion of the project and Part I.C.2.c of this permit for *Redevelopment Activity* portion of the project.

**D. Maintaining Water Quality**

The Department expects that compliance with the conditions of this permit will control *discharges* necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;
2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and
3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharges* authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharges* authorized by this permit are causing or contributing to a violation of *water quality standards*, or

(Part I.D)

if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

#### **E. Eligibility Under This General Permit**

1. This permit may authorize all *discharges* of stormwater from *construction activity to surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.
2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharges* from *construction activities*.
3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater *discharges* may be authorized by this permit: *discharges* from firefighting activities; fire hydrant flushings; waters to which cleansers or other components have not been added that are used to wash vehicles or control dust in accordance with the SWPPP, routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; uncontaminated *groundwater* or spring water; uncontaminated *discharges* from construction site de-watering operations; and foundation or footing drains where flows are not contaminated with process materials such as solvents. For those entities required to obtain coverage under this permit, and who *discharge* as noted in this paragraph, and with the exception of flows from firefighting activities, these *discharges* must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.
4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

#### **F. Activities Which Are Ineligible for Coverage Under This General Permit**

All of the following are **not** authorized by this permit:

(Part I.F)

1. *Discharges after construction activities* have been completed and the site has undergone *final stabilization*;
2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;
3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;
4. *Construction activities* or *discharges from construction activities* that may adversely affect an endangered or threatened species unless the *owner or operator* has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.C.2 of this permit.
5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;
6. *Construction activities* for residential, commercial and institutional projects:
  - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
  - b. Which disturb one or more acres of land with no existing *impervious cover*; and
  - c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.
7. *Construction activities* for linear transportation projects and linear utility projects:
  - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
  - b. Which disturb two or more acres of land with no existing *impervious cover*; and
  - c. Which are undertaken on land with a Soil Slope Phase that is identified as an E or F, or the map unit name is inclusive of 25% or greater slope, on the USDA Soil Survey for the County where the disturbance will occur.

(Part I.F.8)

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.C.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:
- a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.
    - 1-5 acres of disturbance - 20 feet
    - 5-20 acres of disturbance - 50 feet
    - 20+ acres of disturbance - 100 feet, or
  - b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
    - (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
    - (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
    - (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
    - (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or
  - c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
    - (i) No Affect
    - (ii) No Adverse Affect

(Part I.F.8.c.iii)

(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharges from construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

## Part II. OBTAINING PERMIT COVERAGE

### A. Notice of Intent (NOI) Submittal

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed NOI form to the Department in order to be authorized to *discharge* under this permit. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (<http://www.dec.ny.gov/>). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address.

**NOTICE OF INTENT  
NYS DEC, Bureau of Water Permits  
625 Broadway, 4<sup>th</sup> Floor  
Albany, New York 12233-3505**

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the "MS4 SWPPP Acceptance" form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department. An *owner or operator* shall use either the electronic (eNOI) or paper version of the NOI.

The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the address in Part II.A.1.



(Part II.A.2)

The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.E. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4*.

3. The *owner or operator* shall have the SWPPP preparer sign the “SWPPP Preparer Certification” statement on the NOI prior to submitting the form to the Department.
4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

**B. Permit Authorization**

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.
2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:
  - a. project review pursuant to the State Environmental Quality Review Act (“SEQRA”) have been satisfied, when SEQRA is applicable. See the Department’s website (<http://www.dec.ny.gov/>) for more information,
  - b. where required, all necessary Department permits subject to the *Uniform Procedures Act (“UPA”)* (see 6 NYCRR Part 621) have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators of construction activities* that are required to obtain *UPA* permits must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,
  - c. the final SWPPP has been prepared, and
  - d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.
3. An *owner or operator* that has satisfied the requirements of Part II.B.2 above

(Part II.B.3)

will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

- a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:
  - (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or
  - (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;
  - (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.
- b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:
  - (i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed “MS4 SWPPP Acceptance” form, or
  - (ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed “MS4 SWPPP Acceptance” form.

4. The Department may suspend or deny an *owner’s or operator’s* coverage

(Part II.B.4)

under this permit if the Department determines that the SWPPP does not meet the permit requirements. In accordance with statute, regulation, and the terms and conditions of this permit, the Department may deny coverage under this permit and require submittal of an application for an individual SPDES permit based on a review of the NOI or other information pursuant to Part II.

5. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.B. of this permit.

### **C. General Requirements For Owners or Operators With Permit Coverage**

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (“NOT”) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.
2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-15-002), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, and all documentation necessary to demonstrate eligibility with this permit at the construction site until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.
3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:
  - a. The *owner or operator* shall

(Part II.C.3.a)

have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

- b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.
  - c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
  - d. The *owner or operator* shall install any additional site specific practices needed to protect water quality.
  - e. The *owner or operator* shall include the requirements above in their SWPPP.
4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.
  5. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the *regulated, traditional land use control MS4* in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice

(Part II.D)

#### **D. Permit Coverage for Discharges Authorized Under GP-0-10-001**

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-10-001), an *owner or operator* of a *construction activity* with coverage under GP-0-10-001, as of the effective date of GP-0-15-002, shall be authorized to *discharge* in accordance with GP-0-15-002, unless otherwise notified by the Department.

An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-15-002.

#### **E. Change of *Owner or Operator***

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.A.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or operator* was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

(Part III)

## Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

### A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.
2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.
3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.
4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP:
  - a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;
  - b. whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the *discharge* of *pollutants*; and
  - c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department or other regulatory authority.
5. The Department may notify the *owner or operator* at any time that the

(Part III.A.5)

SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.C.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the

(Part III.A.6)

*trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the construction site. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

## **B. Required SWPPP Contents**

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:
  - a. Background information about the scope of the project, including the location, type and size of project;
  - b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge(s)*;
  - c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);
  - d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other



(Part III.B.1.d)

activity at the site that results in soil disturbance;

- e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;
- f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;
- g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;
- h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;
- i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;
- j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;
- k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the construction site; and
- l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design

(Part III.B.1.I)

and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

The post-construction stormwater management practice component of the SWPPP shall include the following:

- a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;
- b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;
- c. A Stormwater Modeling and Analysis Report that includes:
  - (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;
  - (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;
  - (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;
  - (iv) Summary table, with supporting calculations, which demonstrates

(Part III.B.2.c.iv)

that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

- (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and
  - (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;
- d. Soil testing results and locations (test pits, borings);
  - e. Infiltration test results, when required; and
  - f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.
3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria*, Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

### **C. Required SWPPP Components by Project Type**

Unless otherwise notified by the Department, *owners or operators of construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators of the construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

(Part IV)

## **Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS**

### **A. General Construction Site Inspection and Maintenance Requirements**

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.
2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York, or protect the public health and safety and/or the environment.

### **B. Contractor Maintenance Inspection Requirements**

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.
2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.
3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

### **C. Qualified Inspector Inspection Requirements**

(Part IV.C)

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:
  - a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
  - b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
  - c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and
  - d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:
  - a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.
  - b. For construction sites where soil disturbance activities are on-going and

(Part IV.C.2.b)

the *owner or operator* has received authorization in accordance with Part II.C.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

- c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.
- d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization*, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “*Final Stabilization*” and “*Post-Construction Stormwater Management Practice*” certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.A.1 of this permit.
- e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall

(Part IV.C.2.e)

be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization*, all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of *discharge* from the construction site.
4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:
  - a. Date and time of inspection;
  - b. Name and title of person(s) performing inspection;
  - c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
  - d. A description of the condition of the runoff at all points of *discharge* from the construction site. This shall include identification of any *discharges* of sediment from the construction site. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
  - e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;
  - f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;
  - g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
  - h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

(Part IV.C.4.i)

- i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
  - j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);
  - k. Identification and status of all corrective actions that were required by previous inspection; and
  - l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.
  6. All inspection reports shall be signed by the *qualified inspector*. Pursuant to Part II.C.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

## **Part V. TERMINATION OF PERMIT COVERAGE**

### **A. Termination of Permit Coverage**

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.A.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.



(Part V.A.2)

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:
  - a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;
  - b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;
  - c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.E. of this permit.
  - d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.
3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the “*Final Stabilization*” and “*Post-Construction Stormwater Management Practice certification statements*” on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.
4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the “*MS4 Acceptance*” statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector’s* final site inspection certification(s) required in Part V.A.3. of this permit.

(Part V.A.5)

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:
  - a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,
  - b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),
  - c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,
  - d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

## **Part VI. REPORTING AND RETENTION OF RECORDS**

### **A. Record Retention**

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

### **B. Addresses**

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.A.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

(Part VII)

## **Part VII. STANDARD PERMIT CONDITIONS**

### **A. Duty to Comply**

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

### **B. Continuation of the Expired General Permit**

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

### **C. Enforcement**

Failure of the *owner or operator*, its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to \$37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

### **D. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

(Part VII.E)

### **E. Duty to Mitigate**

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

### **F. Duty to Provide Information**

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

### **G. Other Information**

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit, or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

### **H. Signatory Requirements**

1. All NOIs and NOTs shall be signed as follows:
  - a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    - (i) a president, secretary, treasurer, or vice-president of the

(Part VII.H.1.a.i)

corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

- (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

- (i) the chief executive officer of the agency, or

- (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

(Part VII.H.2.b)

individual or any individual occupying a named position) and,

- c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.
3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.
4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person.

It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

#### **I. Property Rights**

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

#### **J. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

#### **K. Requirement to Obtain Coverage Under an Alternative Permit**

1. The Department may require any *owner or operator* authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any *discharger* authorized by a general permit to apply for an individual SPDES permit, it shall notify the *discharger* in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from *owner or operator* receipt of the notification letter, whereby the authorization to

(Part VII.K.1)

*discharge* under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge(s)*, the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

#### **L. Proper Operation and Maintenance**

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

#### **M. Inspection and Entry**

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a construction site which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and
3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.
4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

(Part VII.N)

**N. Permit Actions**

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

**O. Definitions**

Definitions of key terms are included in Appendix A of this permit.

**P. Re-Opener Clause**

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with *construction activity* covered by this permit, the *owner or operator* of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.
2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

**Q. Penalties for Falsification of Forms and Reports**

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

**R. Other Permits**

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.



## APPENDIX A

### Definitions

**Alter Hydrology from Pre to Post-Development Conditions** - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

**Combined Sewer** - means a sewer that is designed to collect and convey both “sewage” and “stormwater”.

**Commence (Commencement of) Construction Activities** - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for “*Construction Activity(ies)*” also.

**Construction Activity(ies)** - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

**Direct Discharge (to a specific surface waterbody)** - means that runoff flows from a construction site by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a construction site to a separate storm sewer system and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

**Discharge(s)** - means any addition of any pollutant to waters of the State through an outlet or point source.

**Environmental Conservation Law (ECL)** - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

**Equivalent (Equivalence)** – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

**Final Stabilization** - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied

on all disturbed areas that are not covered by permanent structures, concrete or pavement.

**General SPDES permit** - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

**Groundwater(s)** - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

**Historic Property** – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

**Impervious Area (Cover)** - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

**Infeasible** – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

**Larger Common Plan of Development or Sale** - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

**Minimize** – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

**Municipal Separate Storm Sewer (MS4)** - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,

ditches, man-made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;
- (ii) Designed or used for collecting or conveying stormwater;
- (iii) Which is not a *combined sewer*; and
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

**National Pollutant Discharge Elimination System (NPDES)** - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

**New Development** – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

**NOI Acknowledgment Letter** - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

**Owner or Operator** - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

**Performance Criteria** – means the design criteria listed under the “Required Elements” sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf ) in Part I.C.2. of the permit.

**Pollutant** - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

**Qualified Inspector** - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

**Qualified Professional** - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York..

**Redevelopment Activity(ies)** – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

**Regulated, Traditional Land Use Control MS4** - means a city, town or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

**Routine Maintenance Activity** - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Stream bank restoration projects (does not include the placement of spoil material),
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that makes the transition between the road shoulder and the ditch or embankment,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or embankment,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

**Site limitations** – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

**Sizing Criteria** – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), Overbank Flood (Qp), and Extreme Flood (Qf).

**State Pollutant Discharge Elimination System (SPDES)** - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

**Steep Slope** – means land area with a Soil Slope Phase that is identified as an E or F, or

the map unit name is inclusive of 25% or greater slope, on the United States Department of Agriculture (“USDA”) Soil Survey for the County where the disturbance will occur.

**Surface Waters of the State** - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

**Temporarily Ceased** – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

**Temporary Stabilization** - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

**Total Maximum Daily Loads (TMDLs)** - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for point source discharges, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

**Trained Contractor** - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

**Uniform Procedures Act (UPA) Permit** - means a permit required under 6 NYCRR Part

621 of the Environmental Conservation Law (ECL), Article 70.

**Water Quality Standard** - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

## APPENDIX B

### Required SWPPP Components by Project Type

**Table 1**  
**CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP**  
**THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS**

**The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:**

- Single family home not located in one of the watersheds listed in Appendix C or not directly discharging to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other agricultural building, silo, stock yard or pen.

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Bike paths and trails
- Sidewalk construction projects that are not part of a road/ highway construction or reconstruction project
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields), excluding projects that *alter hydrology from pre to post development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of less than five acres and construction activities that include the construction or reconstruction of impervious area

**The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:**

- All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.



**Table 2**  
**CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES**  
**POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES**

**The following construction activities that involve soil disturbances of one (1) or more acres of land:**

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other agricultural building(e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional, includes hospitals, prisons, schools and colleges
- Industrial facilities, includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's and water treatment plants
- Office complexes
- Sports complexes
- Racetracks, includes racetracks with earthen (dirt) surface
- Road construction or reconstruction
- Parking lot construction or reconstruction
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover*, and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

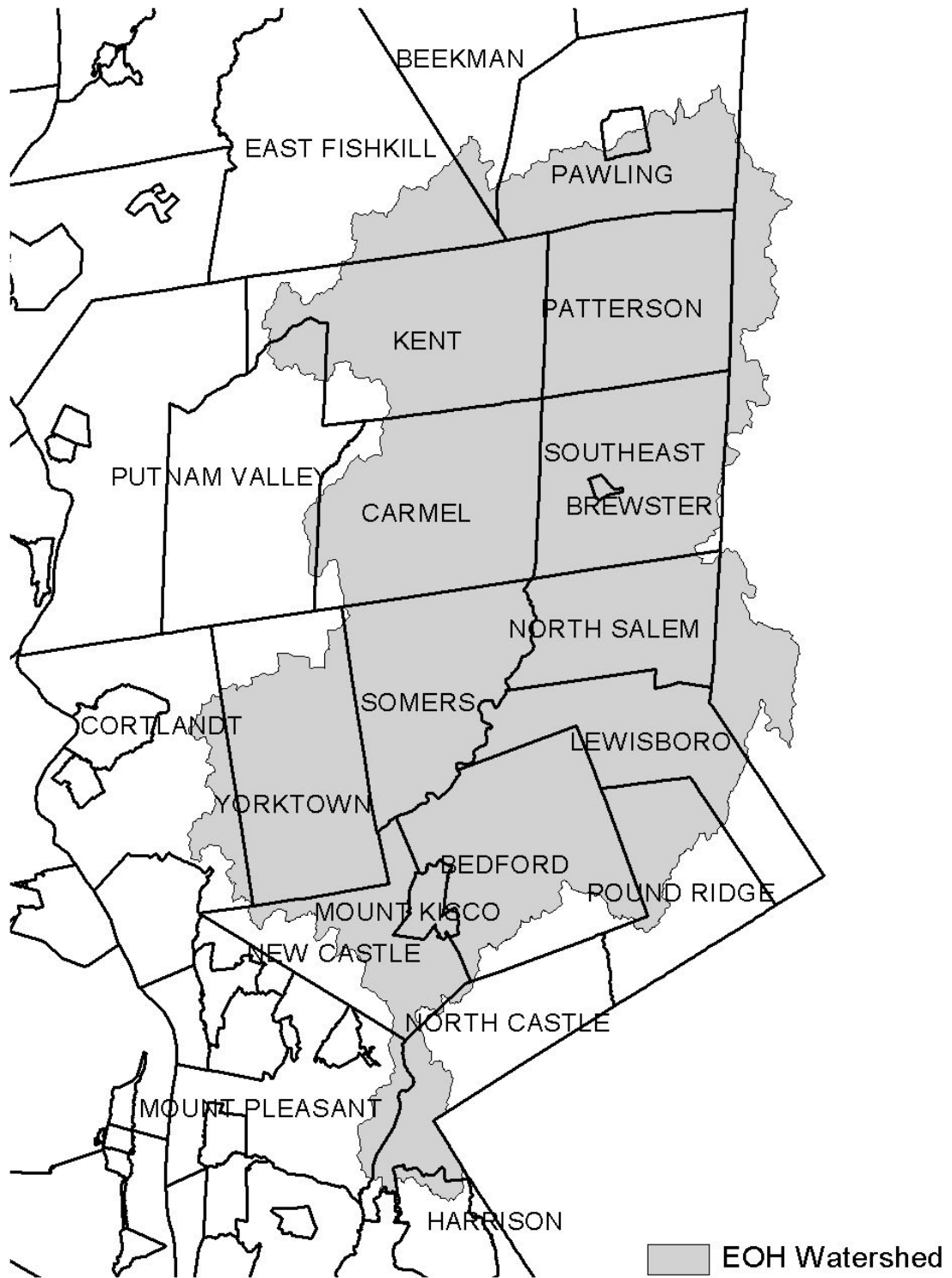
## APPENDIX C

### Watersheds Where Enhanced Phosphorus Removal Standards Are Required

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual (“Design Manual”).

- Entire New York City Watershed located east of the Hudson River - Figure 1
- Onondaga Lake Watershed - Figure 2
- Greenwood Lake Watershed - Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

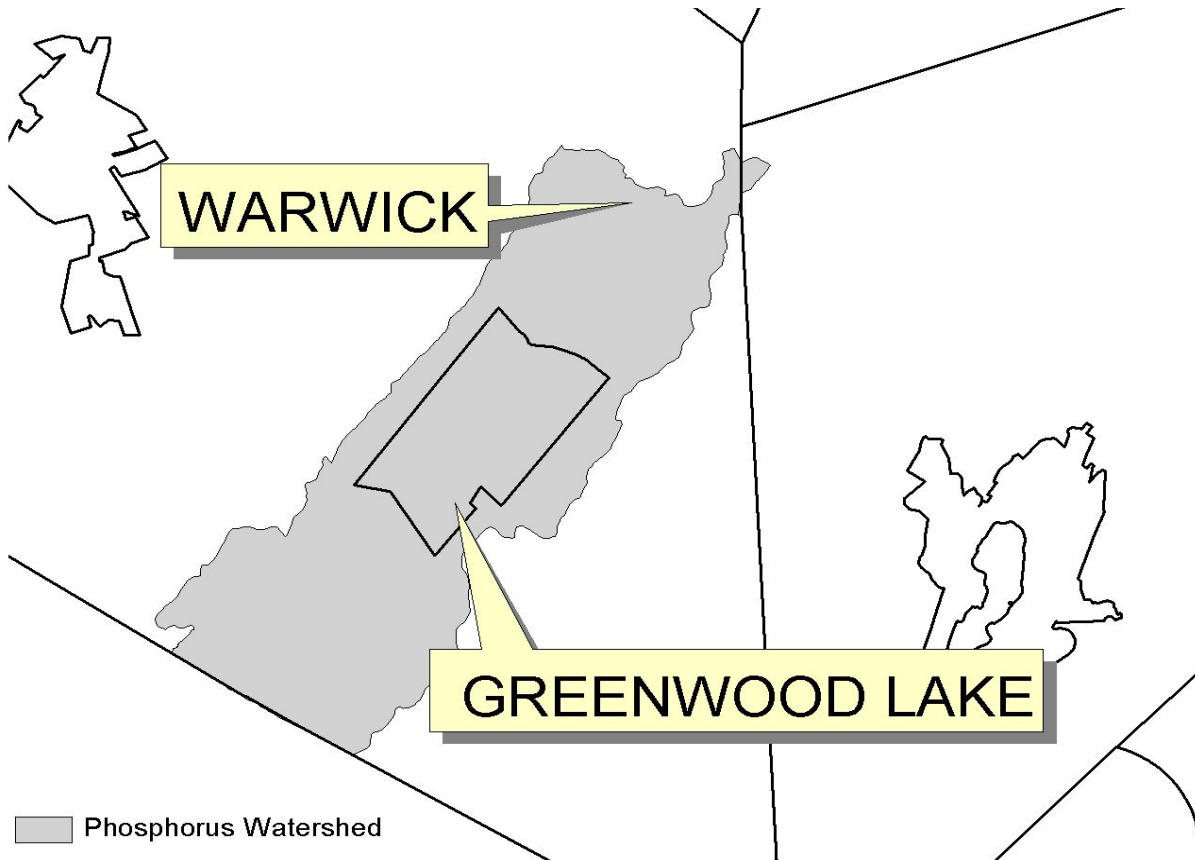
**Figure 1 - New York City Watershed East of the Hudson**



**Figure 2 - Onondaga Lake Watershed**



**Figure 3 - Greenwood Lake Watershed**



**Figure 4 - Oscawana Lake Watershed**

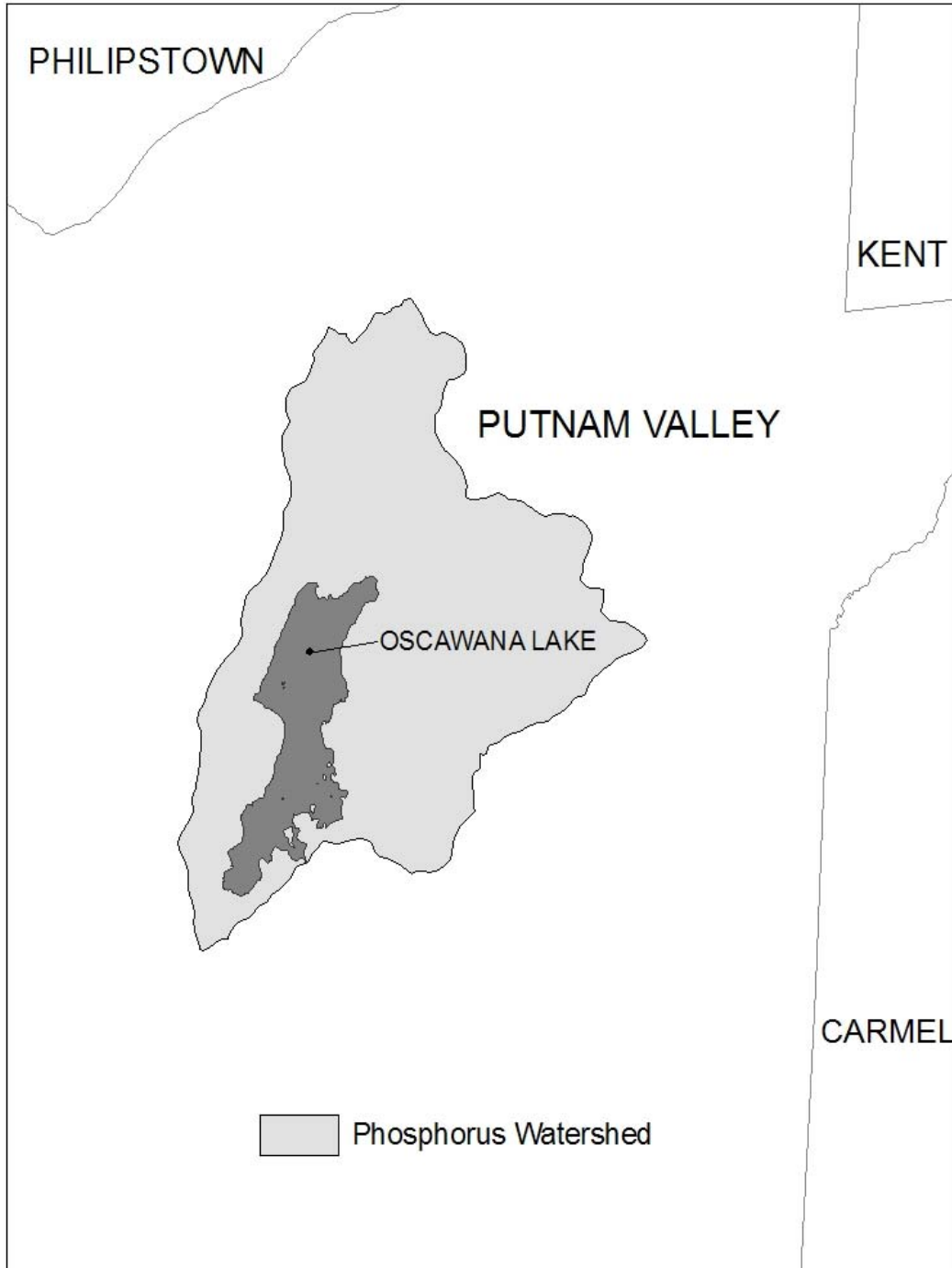
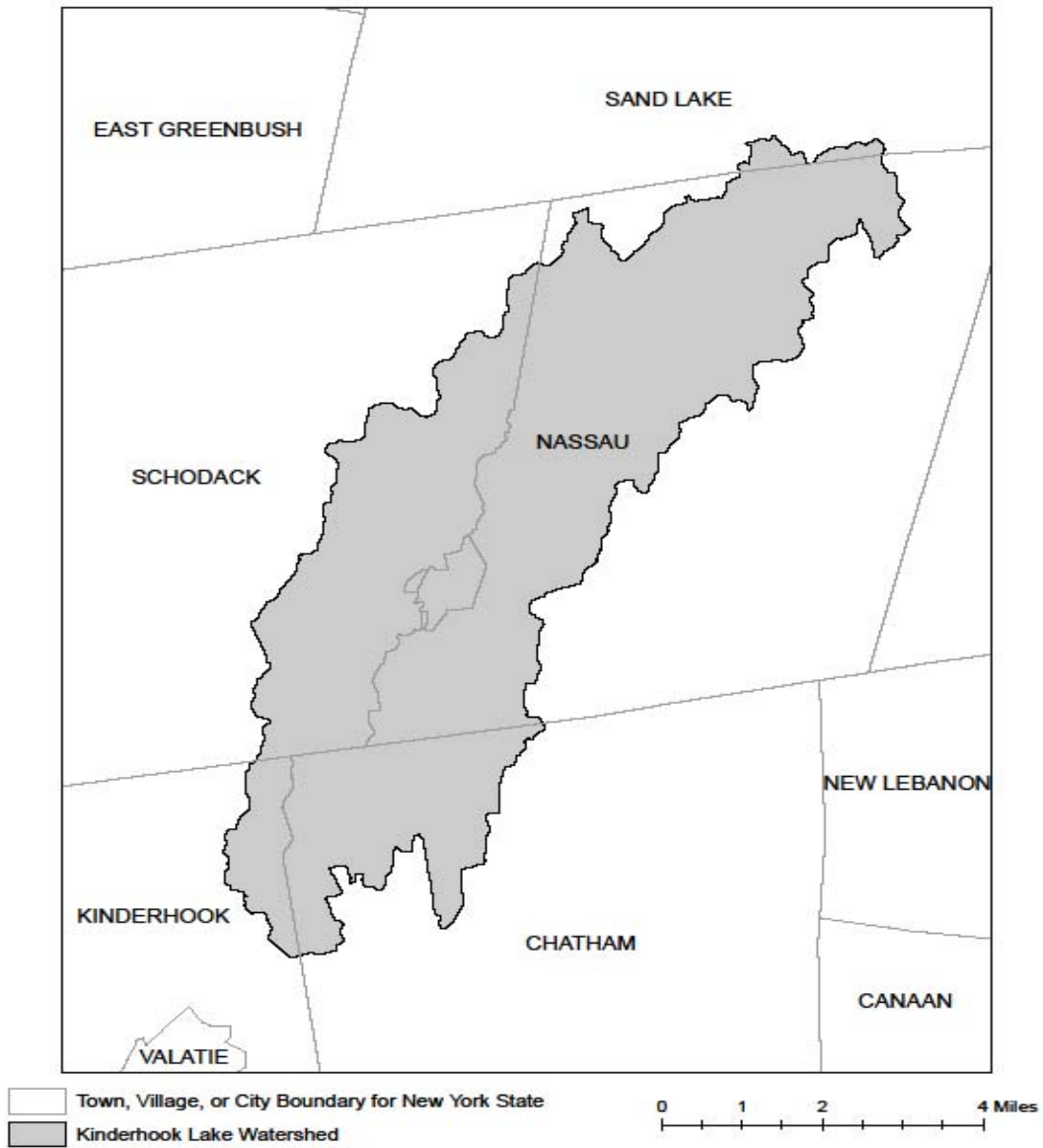


Figure 5: Kinderhook Lake Watershed



## APPENDIX D

**Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.**

Entire New York City Watershed that is located east of the Hudson River - See Figure 1 in Appendix C



## APPENDIX E

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015.

COUNTY	WATERBODY	COUNTY	WATERBODY
Albany	Ann Lee (Shakers) Pond, Stump Pond	Greene	Sleepy Hollow Lake
Albany	Basic Creek Reservoir	Herkimer	Steele Creek tribs
Allegheny	Amity Lake, Saunders Pond	Kings	Hendrix Creek
Bronx	Van Cortlandt Lake	Lewis	Mill Creek/South Branch and tribs
Broome	Whitney Point Lake/Reservoir	Livingston	Conesus Lake
Broome	Fly Pond, Deer Lake	Livingston	Jaycox Creek and tribs
Broome	Minor Tribs to Lower Susquehanna (north)	Livingston	Mill Creek and minor tribs
Cattaraugus	Allegheny River/Reservoir	Livingston	Bradner Creek and tribs
Cattaraugus	Case Lake	Livingston	Christie Creek and tribs
Cattaraugus	Linlyco/Club Pond	Monroe	Lake Ontario Shoreline, Western
Cayuga	Duck Lake	Monroe	Mill Creek/Blue Pond Outlet and tribs
Chautauqua	Chautauqua Lake, North	Monroe	Rochester Embayment - East
Chautauqua	Chautauqua Lake, South	Monroe	Rochester Embayment - West
Chautauqua	Bear Lake	Monroe	Unnamed Trib to Honeoye Creek
Chautauqua	Chadakoin River and tribs	Monroe	Genesee River, Lower, Main Stem
Chautauqua	Lower Cassadaga Lake	Monroe	Genesee River, Middle, Main Stem
Chautauqua	Middle Cassadaga Lake	Monroe	Black Creek, Lower, and minor tribs
Chautauqua	Findley Lake	Monroe	Buck Pond
Clinton	Great Chazy River, Lower, Main Stem	Monroe	Long Pond
Columbia	Kinderhook Lake	Monroe	Cranberry Pond
Columbia	Robinson Pond	Monroe	Mill Creek and tribs
Dutchess	Hillside Lake	Monroe	Shipbuilders Creek and tribs
Dutchess	Wappinger Lakes	Monroe	Minor tribs to Irondequoit Bay
Dutchess	Fall Kill and tribs	Monroe	Thomas Creek/White Brook and tribs
Erie	Green Lake	Nassau	Glen Cove Creek, Lower, and tribs
Erie	Scajaquada Creek, Lower, and tribs	Nassau	LI Tribs (fresh) to East Bay
Erie	Scajaquada Creek, Middle, and tribs	Nassau	East Meadow Brook, Upper, and tribs
Erie	Scajaquada Creek, Upper, and tribs	Nassau	Hempstead Bay
Erie	Rush Creek and tribs	Nassau	Hempstead Lake
Erie	Ellicott Creek, Lower, and tribs	Nassau	Grant Park Pond
Erie	Beeman Creek and tribs	Nassau	Beaver Lake
Erie	Murder Creek, Lower, and tribs	Nassau	Camaans Pond
Erie	South Branch Smoke Cr, Lower, and tribs	Nassau	Halls Pond
Erie	Little Sister Creek, Lower, and tribs	Nassau	LI Tidal Tribs to Hempstead Bay
Essex	Lake George (primary county: Warren)	Nassau	Massapequa Creek and tribs
Genesee	Black Creek, Upper, and minor tribs	Nassau	Reynolds Channel, east
Genesee	Tonawanda Creek, Middle, Main Stem	Nassau	Reynolds Channel, west
Genesee	Oak Orchard Creek, Upper, and tribs	Nassau	Silver Lake, Lofts Pond
Genesee	Bowen Brook and tribs	Nassau	Woodmere Channel
Genesee	Bigelow Creek and tribs	Niagara	Hyde Park Lake
Genesee	Black Creek, Middle, and minor tribs	Niagara	Lake Ontario Shoreline, Western
Genesee	LeRoy Reservoir	Niagara	Bergholtz Creek and tribs
Greene	Schoharie Reservoir	Oneida	Ballou, Nail Creeks
		Onondaga	Ley Creek and tribs
		Onondaga	Onondaga Creek, Lower and tribs

## APPENDIX E

### List of 303(d) segments impaired by pollutants related to construction activity, cont'd.

COUNTY	WATERBODY	COUNTY	WATERBODY
Onondaga	Onondaga Creek, Middle and tribs	Suffolk	Great South Bay, West
Onondaga	Onondaga Creek, Upp, and minor tribs	Suffolk	Mill and Seven Ponds
Onondaga	Harbor Brook, Lower, and tribs	Suffolk	Moriches Bay, East
Onondaga	Ninemile Creek, Lower, and tribs	Suffolk	Moriches Bay, West
Onondaga	Minor tribs to Onondaga Lake	Suffolk	Quantuck Bay
Onondaga	Onondaga Creek, Lower, and tribs	Suffolk	Shinnecock Bay (and Inlet)
Ontario	Honeoye Lake	Sullivan	Bodine, Montgomery Lakes
Ontario	Hemlock Lake Outlet and minor tribs	Sullivan	Davies Lake
Ontario	Great Brook and minor tribs	Sullivan	Pleasure Lake
Orange	Monhagen Brook and tribs	Sullivan	Swan Lake
Orange	Orange Lake	Tompkins	Cayuga Lake, Southern End
Orleans	Lake Ontario Shoreline, Western	Tompkins	Owasco Inlet, Upper, and tribs
Oswego	Pleasant Lake	Ulster	Ashokan Reservoir
Oswego	Lake Neatahwanta	Ulster	Esopus Creek, Upper, and minor tribs
Putnam	Oscawana Lake	Ulster	Esopus Creek, Lower, Main Stem
Putnam	Palmer Lake	Ulster	Esopus Creek, Middle, and minor tribs
Putnam	Lake Carmel	Warren	Lake George
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Warren	Tribs to L.George, Village of L George
Queens	Bergen Basin	Warren	Huddle/Finkle Brooks and tribs
Queens	Shellbank Basin	Warren	Indian Brook and tribs
Rensselaer	Nassau Lake	Warren	Hague Brook and tribs
Rensselaer	Snyders Lake	Washington	Tribs to L.George, East Shr Lk George
Richmond	Grasmere, Arbutus and Wolfes Lakes	Washington	Cossayuna Lake
Rockland	Congers Lake, Swartout Lake	Washington	Wood Cr/Champlain Canal, minor tribs
Rockland	Rockland Lake	Wayne	Port Bay
Saratoga	Ballston Lake	Wayne	Marbletown Creek and tribs
Saratoga	Round Lake	Westchester	Lake Katonah
Saratoga	Dwaas Kill and tribs	Westchester	Lake Mohegan
Saratoga	Tribs to Lake Lonely	Westchester	Lake Shenorock
Saratoga	Lake Lonely	Westchester	Reservoir No.1 (Lake Isle)
Schenectady	Collins Lake	Westchester	Saw Mill River, Middle, and tribs
Schenectady	Duane Lake	Westchester	Silver Lake
Schenectady	Mariaville Lake	Westchester	Teatown Lake
Schoharie	Engleville Pond	Westchester	Truesdale Lake
Schoharie	Summit Lake	Westchester	Wallace Pond
Schuyler	Cayuta Lake	Westchester	Peach Lake
St. Lawrence	Fish Creek and minor tribs	Westchester	Mamaroneck River, Lower
St. Lawrence	Black Lake Outlet/Black Lake	Westchester	Mamaroneck River, Upp, and tribs
Steuben	Lake Salubria	Westchester	Sheldrake River and tribs
Steuben	Smith Pond	Westchester	Blind Brook, Lower
Suffolk	Millers Pond	Westchester	Blind Brook, Upper, and tribs
Suffolk	Mattituck (Marratooka) Pond	Westchester	Lake Lincolndale
Suffolk	Tidal tribs to West Moriches Bay	Westchester	Lake Meahaugh
Suffolk	Canaan Lake	Wyoming	Java Lake
Suffolk	Lake Ronkonkoma	Wyoming	Silver Lake
Suffolk	Beaverdam Creek and tribs		
Suffolk	Big/Little Fresh Ponds		
Suffolk	Fresh Pond		
Suffolk	Great South Bay, East		
Suffolk	Great South Bay, Middle		

Note: The list above identifies those waters from the final New York State "2014 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", dated January 2015, that are impaired by silt, sediment or nutrients.

**APPENDIX F**

**LIST OF NYS DEC REGIONAL OFFICES**

<b><u>Region</u></b>	<b><u>COVERING THE FOLLOWING COUNTIES:</u></b>	<b><u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u></b>	<b><u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u></b>
<b>1</b>	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
<b>2</b>	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
<b>3</b>	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	100 HILLSIDE AVENUE, SUITE 1W WHITE PLAINS, NY 10603 TEL. (914) 428 - 2505
<b>4</b>	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1150 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
<b>5</b>	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, Po Box 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
<b>6</b>	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
<b>7</b>	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
<b>8</b>	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROAD AVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
<b>9</b>	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVE. BUFFALO, NY 14203-2999 TEL. (716) 851-7070

WSI GROUP  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

STORM WATER PERMIT CERTIFICATION STATEMENT

Each Contractor and Subcontractor identified in the Storm Water Pollution Prevention Plan (SWPPP) shall certify that they understand the permit conditions and their responsibilities. Every Contractor and Subcontractor performing an activity that involves soil disturbance shall sign and submit this certification statement to Engineer prior to performing the Work. This certification statement shall be signed by an owner, principal, president, secretary, or treasurer of the firm.

---

I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that Owner must comply with the terms and conditions of the most current version of NYSDEC's SPDES General Permit for Storm Water Discharges from Construction Activity (SPDES General Permit), and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect, or inaccurate information is a violation of the referenced permit and the laws of the State of New York, and could subject me to criminal, civil, and/or administrative proceedings.

Firm: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Name (Print): \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

WSI GROUP  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

STORM WATER INSPECTION REPORT

Date and Time of Inspection: \_\_\_\_\_

Qualified Inspector (Name, Title, and Affiliation): \_\_\_\_\_

Weather Conditions: \_\_\_\_\_

Soil Conditions: \_\_\_\_\_

Describe disturbed areas at time of inspection: \_\_\_\_\_

---

---

---

---

---

Describe areas stabilized (temporary or final) since previous inspection: \_\_\_\_\_

---

---

---

---

---

ATTACH SITE PLAN SHOWING APPROXIMATE LIMITS OF DISTURBED AND NEWLY-STABILIZED AREAS

Describe repairs, maintenance, or corrective actions implemented since previous inspection: \_\_\_\_\_

---

---

---

---

---

ATTACH PHOTOGRAPHS OF AREAS OR ITEMS INSTALLED, REPAIRED, OR REPLACED

### Maintaining Water Quality

Yes No NA

- Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
- Is there residue from oil and floating substances, visible oil film, or globules or grease?
- All disturbance is within the limits of the approved plans?
- Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

### Housekeeping

Yes No NA

#### 1. General Site Conditions:

- Is construction site litter and debris appropriately managed?
- Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
- Is construction impacting the adjacent property?
- Is dust adequately controlled?

#### 2. Temporary Stream Crossing:

- Maximum diameter pipes necessary to span creek without dredging are installed?
- Installed non-woven geotextile fabric beneath approaches?
- Is fill composed of aggregate (no earth or soil)?
- Rock on approaches is clean enough to remove mud from vehicles and prevent sediment from entering stream during high flow?

### Run-Off Control Practices

Yes No NA

#### 1. Excavation Dewatering:

- Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan?
- Clean water from upstream pool is being pumped to the downstream pool?
- Sediment laden water from work area is being discharged to a silt-trapping device?
- Constructed upstream berm with 1-foot minimum freeboard?

#### 2. Level Spreader:

- Installed per plan?
- Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow?
- Flow sheets out of level spreader without erosion on downstream edge?

#### 3. Interceptor Dikes and Swales:

- Installed per plan with minimum side slopes of 2H:1V or flatter?
- Stabilized by geotextile fabric, seed, or mulch with no erosion occurring?
- Sediment-laden run-off directed to sediment trapping structure?

#### 4. Stone Check Dam:

- Is channel stable (flow is not eroding soil underneath or around the structure)?
- Check dam is in good condition (rocks in place and no permanent pools behind the structure)?
- Has accumulated sediment been removed?

#### 5. Rock Outlet Protection:

- Installed per plan?
- Installed concurrently with pipe installation?

### Soil Stabilization

Yes No NA

#### 1. Topsoil and Spoil Stockpiles:

- Stockpiles are stabilized with vegetation and/or mulch?
- Sediment control is installed at the toe of the slope?

#### 2. Revegetation:

- Temporary seed and mulch have been applied to idle areas?
- Six inches minimum of topsoil has been applied under permanent seeding?

**Sediment Control Practices**

Yes No NA

1. Stabilized Construction Entrance:

- Stone is clean enough to effectively remove mud from vehicles?
- Installed per standards and specifications?
- Does all traffic use the stabilized entrance to enter and leave construction site?
- Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence:

Sediment accumulation is \_\_\_% of design capacity.

- Installed on contour, 10 feet from toe of slope (not across conveyance channels)?
- Joints constructed by wrapping the two ends together for continuous support?
- Fabric buried six inches minimum below grade?
- Posts are stable, fabric is tight and without rips or frayed areas?

3. Storm Drain Inlet Protection (Use for Stone and Block; Filter Fabric; Curb; or Excavated Practices)

Sediment accumulation \_\_\_% of design capacity.

- Installed concrete blocks lengthwise so open ends face outward, not upward?
- Placed wire screen between No. 3 crushed stone and concrete blocks?
- Drainage area is one acre or less?
- Excavated area is 900 cubic feet?
- Excavated side slopes are 2H:1V?
- 2"x4" frame is constructed and structurally sound?
- Three-foot maximum spacing between posts?
- Fabric is embedded one to 1.5 feet below ground and secured to frame/posts with staples at maximum eight-inch spacing?
- Posts are stable, fabric is tight and without rips or frayed areas?

4. Temporary Sediment Trap:

Sediment accumulation is \_\_\_% of design capacity.

- Outlet structure is constructed per the approved plan or drawing?
- Geotextile fabric has been placed beneath rock fill?

5. Temporary Sediment Basin:

Sediment accumulation is \_\_\_% of design capacity.

- Basin and outlet structure constructed per the approved plan?
- Basin side slopes are stabilized with seed and mulch?
- Drainage structure flushed and basin surface restored upon removal of sediment basin facility?

Describe any repairs, maintenance, or corrective actions required to correct observed deficiencies: \_\_\_\_\_

---



---



---



---



---



---



---



---



---



---



---

ATTACH PHOTOGRAPHS OF DEFICIENT AREAS OR ITEMS OBSERVED DURING THE INSPECTION

Qualified Inspector's Certification:

I certify under penalty of Law that this document and all attachments were prepared under my direction or supervision in accordance with a system to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein may be punishable by Law.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



SECTION 01 51 05  
TEMPORARY UTILITIES

PART 1 – GENERAL

1.01 DESCRIPTION

A. Scope:

1. Providing all temporary utilities required for the Project.
  - a. Making all arrangements with utility service companies for temporary services and obtain required permits and approvals for temporary utilities.
  - b. Paying all utility service costs, including cost of electricity, water, fuel, and other utility services required for the Work.
  - c. Continuously maintaining adequate utilities for all purposes during the Project, until removal of temporary utilities and temporary facilities. At a minimum, providing and maintaining temporary utilities through Substantial Completion and removal of temporary field offices and sheds.
  - d. Should Owner occupy part of the Project prior to Substantial Completion of the entire Work, cost of utilities consumed via temporary utilities serving the portion occupied by Owner will be shared proportionately between Owner and Contractor as mutually agreed to by the parties.
  - e. Maintaining, including cleaning, temporary utilities and continuously providing consumables as required.
  - f. Ensuring that temporary utilities shall be adequate for personnel using the Site and requirements of the Project.
  - g. Providing temporary utilities in compliance with Laws and Regulations and, when applicable, requirements of utility owners.

B. Provide the following temporary utilities:

1. Electricity.
2. Lighting.
3. Telephone and communications.
4. Heating, ventilating, and temporary enclosures.
5. Water.
6. Fire protection.

1.02 REFERENCE STANDARDS

A. The following standards are referenced in this Section:

1. NFPA 10, Standard for Portable Fire Extinguishers.
2. NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.03 REQUIREMENTS FOR TEMPORARY UTILITIES

A. Electrical:

1. Provide temporary electrical service required for the Work, including continuous power for temporary field offices and sheds. Provide temporary outlets with circuit breaker protection and ground fault protection.

- B. Lighting:
  1. Minimum lighting shall be five foot-candles for open areas and 10 foot-candles for stairs and shops. Provide minimum of one, 300-watt lamp every 15 feet in indoor Work areas.
  
- C. Telephone and Communications:
  1. Provide temporary telephone and communications required for Contractor's operations at the Site and for summoning emergency medical assistance.
  
- D. Heating, Ventilating, and Enclosures:
  1. Provide sufficient temporary heating, ventilating, and enclosures to ensure safe working conditions and prevent damage to existing facilities and the Work.
  2. Except where otherwise specified, temporary heating shall maintain temperature of the area served between 50 degrees F and maximum design temperature of building or facility and its contents.
  3. Maintain temperature of areas occupied by Owner's personnel or electronic equipment, including offices and rooms containing computers between 65 degrees F and 80 degrees F with relative humidity less than 75 percent.
  4. Required temperature range for storage areas and certain elements of the Work, including preparation of materials and surfaces, installation or application, and curing as applicable, shall be in accordance with the Contract Documents for the associated Work and the Supplier's recommended temperature range for storage, application, or installation, as appropriate.
  5. Provide temporary ventilation sufficient to prevent accumulation in construction areas and areas occupied by Owner of hazardous and nuisance levels or concentrations of dust and particulates, mist, fumes or vapors, odors, and gases associated with construction.
  6. Provide temporary enclosures and partitions required to maintain required temperature and humidity.
  
- E. Water:
  1. Provide temporary water facilities including piping, valves, meters (if not provided by owner of existing waterline), backflow preventers, pressure regulators, and other appurtenances. Provide freeze-protection as required.
  2. Provide water for temporary sanitary facilities, field offices, Site maintenance and cleaning and, when applicable, disinfecting and testing of systems.
  3. Continuously maintain adequate water flow and pressure for all purposes during the Project, until removal of temporary water system.
  
- F. Fire Protection:
  1. Provide temporary fire protection, including portable fire extinguishers rated not less than 2A or 5B in accordance with NFPA 10, Portable Fire Extinguishers.

## PART 2 – PRODUCTS

### 2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment for temporary systems may be new or used but shall be adequate for purposes intended and shall not create unsafe conditions and shall comply with Laws and Regulations.
  
- B. Provide required materials, equipment, and facilities, including piping, wiring, and controls.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. Install temporary utilities in neat, orderly, manner, and make structurally, mechanically, and electrically sound throughout.
- B. Location of Temporary Utilities:
  - 1. Locate temporary systems for proper function and service.
  - 2. Do not allow temporary systems to interfere with or provide hazards or nuisances to the Work under this and other contracts, movement of personnel, traffic areas, materials handling, hoisting systems, storage areas, finishes, and work of utility companies.
  - 3. Do not install temporary utilities on the ground, with the exception of temporary extension cords, hoses, and similar systems in place for short durations.
- C. Modify and extend temporary systems as required by progress of the Work.

### 3.02 USE

- A. Maintain temporary systems to provide safe, continuous service as required.
- B. Properly supervise operation of temporary systems:
  - 1. Enforce compliance with Laws and Regulations.
  - 2. Enforce safe practices.
  - 3. Prevent abuse of services.
  - 4. Prevent nuisances and hazards caused by temporary systems and their use.
  - 5. Prevent damage to finishes.
  - 6. Ensure that temporary systems and equipment do not interrupt continuous progress of construction.
- C. At end of each work day, check temporary systems and verify that sufficient consumables are available to maintain operation until work is resumed at the Site. Provide additional consumables if the supply on hand is insufficient.

### 3.03 REMOVAL

- A. Completely remove temporary utilities, facilities, equipment, and materials when no longer required. Repair damage caused by temporary systems and their removal and restore the Site to condition required by the Contract Documents. If restoration of damaged areas is not specified, restore to pre-construction condition.
- B. Where temporary utilities are disconnected from existing utility, provide suitable, water-tight or gas-tight (as applicable) cap or blind flange, as applicable, on service line, in accordance with requirements of utility owner.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

TEMPORARY UTILITIES  
01 51 05 - 4  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

## SECTION 01 51 41

### TEMPORARY PUMPING

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing labor, materials, tools, equipment and incidentals shown, specified, and required for temporary pumping and handling of fluids during the Work, including both bypass pumping and pumping for treatment through the temporary water treatment system.
2. Designing and providing temporary pumping systems, including plugs, bulkheads, and line stops as required; pumps; piping, supports, and valves; temporary instrumentation and control system; fuel and electricity as required; personnel; and appurtenances.
3. Conforming to Laws and Regulations and requirements of authorities having jurisdiction. System shall be suitable for its service and operating environment.
4. Paying costs associated with repairing damage to property, including cleaning costs, caused by undersized or inadequate temporary pumping system.
5. Providing fuel (and/or electricity) as required for temporary pumping systems. Secondary containment for fuel tanks shall be in accordance with Laws and Regulations.
6. Designing the temporary pumping systems so that it discharges properly and does not leak.
7. Obtaining the Engineer's acceptance of each temporary pumping system. Temporary pumping systems for which the Engineer's acceptance is not obtained in advance will not be eligible for payment.

###### B. Coordination:

1. Review installation procedures under other Sections and coordinate Work that must be performed with or before Work specified in this Section.
2. Provide written notification delivered to occupants of each property affected by temporary pumping. Provide written notices thirty days, seven days, and one day prior to starting temporary pumping. Include estimated start and end days and times that permanent pipe or conduit will be out of service and instructions (if any) for property owners during the outage.

###### C. Related Sections:

1. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials
2. Section 31 23 18 – Water Handling and Treatment

##### 1.02 QUALITY ASSURANCE

###### A. Qualifications:

1. Temporary pumping system Supplier shall have at least five years of experience providing temporary pumping systems and shall submit documentation of furnishing at least five temporary pumping systems on other projects similar in size and service to the temporary pumping system required for the Project.
2. Obtain the temporary pumping system components from a single Supplier who shall be responsible for providing a complete system.

##### 1.03 SUBMITTALS

- A. Timing: Furnish submittals for the temporary pumping system to the Engineer at least 15 days prior to delivery of temporary pumping system to the Site.
- B. Informational Submittals:
  1. Schedule: Provide schedule for temporary pumping for each work area. Include dates of mobilizing, testing, starting and ending dates of temporary pumping, and demobilizing each temporary pumping system in each work area. Update and resubmit schedule as required.
  2. Temporary Pumping System:
    - a. Manufacturer's data and specifications on each type and size of pump proposed and its capacity, including pump curves. Provide manufacturer's data and specifications for generators and other equipment required for temporary pumping system.
    - b. Technical information and specifications on noise controls for noise-generating equipment.
    - c. Technical data on temporary piping, pipe joints, valves, pipe supports, controls, flow meter, secondary containment for fuel tanks, and other information pertinent to the temporary pumping system.
    - d. Layout Drawings:
      - 1) Sketches showing proposed layout of temporary pumping system, including locations of temporary plugs, bulkheads, and line stops, suction and discharge locations, location of the pumps and associated piping and valves, and source of power for temporary pumping system. Sketches shall be scale drawings acceptable to the Engineer and shall include site plans like those in the Contract Documents.
      - 2) Details of system suction and discharge locations. Discharge details shall include measures to protect the receiving structure and dissipate energy.
      - 3) Sketches and information on other types of protection proposed for temporary piping.
    - e. System curve of flow plotted against total dynamic head, and calculations that substantiate the proposed temporary pumping system, including comparison of net positive suction head required and net positive suction head available.
    - f. Temporary Plugs and Bulkheads: Manufacturer's literature and fabrication drawings showing type of plug, bulkhead or line stop as applicable, materials, and hydrostatic head the plug, bulkhead, or line stop is designed to withstand.
    - g. Narrative on temporary pumping system operation, including who will operate system, staffing, planned frequency of fueling, contingency plan in event of pump failure, and statement of existing systems that may be affected during operation of temporary pumping system.
  3. Qualifications Statements: Qualifications of temporary pumping system Supplier.

The Engineer's acceptance of temporary pumping submittals does not relieve the Contractor from responsibility of the temporary pumping system in accordance with the Contract Documents.

## PART 2 – PRODUCTS

### 2.01 TEMPORARY PUMPING SYSTEM

- A. General:
  1. Temporary pumping and piping system shall be sized for flows as follows:
    - a. Base flow: 0.01 gallons per minute (gpm).
    - b. Storm event flow: a minimum of 2,500 gpm.

- c. At a minimum, provide backup pumps (i.e., on-site) to maintain 100% contingency of anticipated flows. Secondary pumps shall be used in the event the flows are greater than anticipated.
    - d. Contractor may elect to provide additional capacity at no additional cost to the Owner.
  - 2. System components shall be suitable for continuous operation with the fluid pumped.
  - 3. Noise controls shall be provided for temporary pumping system. Noise emissions from temporary pumping system shall conform to Laws and Regulations and shall not exceed 70 db at a distance of thirty feet from noise source.
  - 4. Temporary pumping system shall be diesel-powered or electric powered. Diesel powered temporary pumping system shall include fuel tanks sized for at least twenty-four hours of uninterrupted operation at system's operating capacity and means to automatically notify the Contractor upon low fuel level. Coordinate all electric powered temporary pumping system infrastructure support with local utility company, as necessary, to maintain continuous operation of pumping system.
- B. Instrumentation and Controls:
  - 1. Provide controls for temporary pumping system to maintain suction structure liquid level that does not result in flow backups and that does not adversely affect the Owner's system and private property.
  - 2. Auto-dialer: RACO (Alarm Agent RTU H03172) or equal.
- C. Temporary Piping System:
  - 1. Hoses in good condition and suitable for system pressures may be used where accepted by the Engineer.
  - 2. Use steel, ductile iron, high density polyethylene, or other piping material accepted by the Engineer and suitable for system operating pressures. Aluminum piping and PVC piping not mechanically restrained are not allowed. Hoses can be used only for short sections upon acceptance by the Engineer.
  - 3. Piping system shall have watertight joints of the following types: fused joints, restrained couplings, flanged coupling adapters, quick-connects by Camlok or equal, flanged joints, grooved and shouldered end-type couplings, and other watertight joints accepted by the Engineer.
  - 4. Size discharge piping for maximum flow velocity of 10 feet per second.
  - 5. Provide check valves or pump control valves as required.
  - 6. Provide air valves on discharge piping as required. Air valves shall expel air upon pipe filling and admit air upon pipe dewatering and release small amounts of entrained air during operation. Air valves shall be suitable for service with the pumped fluid.
  - 7. Discharge from temporary pumping system shall not adversely affect collection system structures, pipe or conduits, Owner's operations, private property, and shall not result in flow backups, flooding, or damage. Provide energy dissipating measures at discharge point as required.
- D. Temporary Plugs and Bulkheads:
  - 1. Acceptable temporary plugs and bulkheads include inflatable plugs, inflatable dams specifically designed for such service, brick bulkheads, timber bulkheads, sandbags, and other bulkhead methods suitable for the service.
  - 2. Each plug and temporary bulkhead shall be suitable for the maximum pressure encountered.

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. General:
1. Provide written notification delivered to owners and occupant of each property affected by temporary pumping.
  2. Temporary piping shall be located off of roads, driveways, and sidewalks. Piping shall not be located in environmentally sensitive areas such as wetlands.
  3. Where shown or indicated in the Contract Documents, bury temporary piping that would otherwise inhibit access to buildings, streets, and driveways. In paved areas, provide temporary surfacing, sufficient for AASHTO H-20 wheel loads over buried temporary piping.
  4. Verify that entire temporary pumping system is ready for operation before commencing temporary pumping and before installing any plugs or bulkheads. Verify that controls are properly connected and functional.

### 3.02 TEMPORARY PUMPING

- A. Temporary pumping system shall operate continuously. In the event of equipment failure, immediately make repairs or replace equipment. Provide spare parts and redundant units as necessary for continuous operation.
- B. Provide personnel to monitor, operate, and maintain temporary pumping system during working hours or during rain events of 0.5 inches or greater when the system is in service. At all other times, the system shall be monitored using an auto-dialer. If the water level rises above the normal operating range, Contractor personnel shall be immediately notified via auto-dialer.
- C. Provide auto-dialer (or similar alarm) to provide notification if bypass pumps are not operational (e.g., unexpected shutdown).
- D. In the event water accumulates in the working area due to complications with the temporary pumping system, collect and treat the water per Section 31 23 18 – Water Handling and Treatment or other means proposed by the Contractor and approved by the Engineer.
- E. If temporary pumping system is not capable of handling storm (or other) flow events, remove temporary plugs and/or bulkheads, as necessary to prevent off-site flooding.

### 3.03 DEMOBILIZATION

- A. Upon Conclusion of Temporary Pumping:
1. Remove plugs, bulkheads, and line stops in manner that allows flow to slowly return to normal, without surging, surcharging, or causing adverse effects on existing system.
  2. Flush out temporary pumping system with clean water discharged to an appropriate location.
  3. Remove temporary pumping system and appurtenances from the Site.

END OF SECTION



## SECTION 01 52 13

### FIELD OFFICES AND SHEDS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing and maintaining field offices for Contractor and Owner/Engineer/ NYSDEC use with at least the minimum facilities specified.
2. Providing required storage and work sheds.
3. Providing complete and fully functional field offices within 14 days after date on which the Contract Times commence running.
4. Paying for required permits and utilities. Field offices and sheds shall comply with Laws and Regulations.

###### B. Related Sections:

1. Section 01 51 00 – Temporary Utilities
2. Section 01 52 16 – First-Aid Facilities

##### 1.02 SUBMITTALS

###### A. Action Submittals:

1. Field Office Submittal: Submit, as a single submittal, the following:
  - a. Site plan indicating proposed location of field offices, parking for field offices, facilities related to the field offices, and material of both field office's parking and sidewalk or walkway to field offices.
  - b. Information on proposed field office size, construction, exterior appearance, interior finishes, and field office security measures.
  - c. Proposed layout of field office interior, showing location of offices, common areas, restroom, closet, other areas specified (if any), with dimensions indicated for each.
  - d. Proposed type of Internet service; name of proposed Internet service provider; and product data and technical information on equipment (if any) required for Internet service.
  - e. Office Equipment: Product data and technical information for copier, fax (if any), telephones, and other office equipment.

#### PART 2 – PRODUCTS

##### 2.01 FIELD OFFICE (THREE TRAILERS)

###### A. The field office trailers shall:

1. Consist of a weather-tight, insulated Mobile Office manufactured by ModSpace (or equivalent) and provide a minimum of 400 square feet of floor space (with a 10-foot minimum width) and shall be partitioned to provide three separate office spaces (one of which will serve as a shared common area). A minimum of two outside doors will be required. A sign reading "All Site Visitors Must Sign-In Here" shall be affixed to the trailer exterior of the Contractor's trailer.
2. Be equipped with windows with insect screen and operable sash. Provide each window with lock and exterior security bars approved by the Engineer.
3. Be equipped with two doors for ingress and egress, each with landing, stairs, and railing conforming to building codes at the site.

- a. Landing and stairs shall be metal, pressure-treated wood, fiberglass, or concrete, and have slip-resistant walking surfaces.
  - b. Railing shall be metal, wood, or fiberglass.
  - c. Doors shall be secure and lockable, and each furnished with suitable, lockable security bar by MasterLock or equal.
  - d. Furnish to Engineer and NYSDEC two identical sets each of keys suitable for operating all keyed locks, including ingress/egress door locks, security bars for doors, window locks, closets, and office furnishings.
- B. Provide and maintain, in accordance with all applicable codes and regulations, the fire protection system (e.g., fire extinguishers, sprinklers, etc.) and electric, heating, and cooling services for the office trailers.

## 2.02 FIELD OFFICE UTILITIES

- A. Comply with Section 01 51 00 – Temporary Utilities.
- B. Provide the following for each field office:
- 1. Electrical System and Lighting:
    - a. Electric service as required, including paying all costs.
    - b. Interior lighting of 50 foot-candles at desktop height.
    - c. Minimum of eight 120-volt, wall-mounted, duplex convenience electrical receptacles.
    - d. Exterior, wall-mounted, 250-watt lighting at each entrance.
  - 2. Heating, Ventilating, and Air Conditioning:
    - a. Automatic heating to maintain indoor temperature of at least 65 degrees F in cold weather.
    - b. Automatic cooling to maintain indoor temperature no warmer than 75 degrees F in warm weather.
    - c. Furnish all fuel and pay all utility costs.
  - 3. Telephone Service:
    - a. Private telephone service, including payment of installation, monthly, and service costs.
    - b. Provide four telephone lines, two for voice and two for fax service (four lines total), each with separate telephone number assigned by the telephone company.
    - c. Pay for unlimited local and long-distance service for duration of the Project.
  - 4. Internet Service:
    - a. Obtain and pay for Internet service, with unlimited (untimed) Internet access, until removal of field office trailers.
    - b. Provide fiber-optic or cable connection with appropriate modem and appurtenances, and dual-band Wireless-N router.
    - c. Minimum Speed: Up to 15 megabits per second download, up to 1 megabit per second upload.
    - d. Set up system and appurtenances required and verify functionality in each field office space.
- C. Should actions of utility companies delay the complete set up of field offices, Contractor shall provide temporary electricity, heat, telephone, and internet service as required at no additional cost to Owner.

## 2.03 FIELD OFFICE FURNISHINGS AND EQUIPMENT

- A. Provide the following furnishings and equipment for each field office:

FIELD OFFICES AND SHEDS  
 01 52 13 – 2  
 REVISION NO. 00  
 DATE ISSUED: 8/20/18

WSI GROUP  
 100% REMEDIAL DESIGN  
 WASTE STREAM, INC. SITE  
 VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

1. Desks: Four five-drawer desks, each five feet long by 2.5 feet wide with at least one file drawer per desk suitable for storing 8.5-inch by 11-inch documents.
  2. Desk Chairs: Four new or used (in good condition) five-point, high backed, cushioned swivel chairs.
  3. Other Chairs: Ten metal folding chairs without arm rests.
  4. Tables:
    - a. Two new or used (in good condition) portable folding tables, each eight feet long by 2.5 feet wide.
    - b. Two new or used (in good condition) portable folding tables, each six feet long by 2.5 feet wide.
  5. Plan rack(s) to hold a minimum of eight sets of the Drawings.
  6. Two four-drawer, legal size, fire-proof file cabinets with locks.
  7. Four polyethylene waste baskets, each with minimum capacity of seven gallons.
  8. Suitable doormat at each exterior ingress/egress door.
  9. One tack board, approximately three feet long by 2.5 feet wide, with thumbtacks.
  10. One white board for use with dry markers, approximately six feet long by four feet wide, with marker holding tray, installed by Contractor at location selected by Engineer in the field. Furnish supply of colored markers and eraser for the white board.
  11. Fire extinguisher with associated signage, and smoke detector, in accordance with Laws and Regulations. At a minimum, provide two wall-mounted fire extinguishers and one battery-operated, ceiling-mounted smoke detector. Comply with fire protection requirements of Section 01 51 00 – Temporary Utilities.
  12. One first-aid station. Comply with Section 01 52 16 – First Aid Facilities.
  13. Two electric clocks.
  14. One electric coffee maker with ten-cup capacity or larger.
  15. One microwave oven with minimum capacity of 0.9 cubic foot.
  16. Two refrigerators, each with minimum capacity of 2.5 cubic feet.
  17. Bottled water with electric cooler dispenser for five-gallon bottles, with cup dispenser.
  18. Multifunction Printer:
    - a. Two new or used (in good condition) machines with the following functions:
      - 1) Photocopying.
      - 2) Network printing.
      - 3) Scanning to produce PDF and JPG files.
      - 4) E-mail.
      - 5) Fax via telephone line.
    - b. Products and Manufacturers: Provide one of the following:
      - 1) Xerox WorkCentre Pro 7345
      - 2) Canon imageRUNNER C3380
      - 3) Toshiba eSTUDIO3510C
      - 4) Brother MFC-j430w
      - 5) Or equal
    - c. Provide necessary cables and appurtenances to enable all functions specified in this Section, including scan-and-email and printing from field office computers.
  19. Telephone System:
    - a. Telephone System Features:
      - 1) Provide two cordless telephones, each with hands-free speaker, speed dialing with minimum of 16 programmable numbers, volume control, LCD display, and buttons for hold and mute.
      - 2) Set up and verify operation of each telephone set.
    - b. Provide two digital telephone answering machines.
- B. Provide two-way portable radios and charging units for Engineer, and key Contractor personnel (e.g., superintendent, foreman, etc.).

## 2.04 STORAGE AND WORK SHEDS

- A. Provide storage and work sheds sized, furnished, and equipped to accommodate personnel, materials, and equipment involved in the Work, including temporary utility services and facilities required for environmental controls sufficient for personnel, materials, and equipment.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

- A. Install field offices and related facilities in accordance with Laws and Regulations.
- B. Install materials and equipment, including pre-fabricated structures, in accordance with manufacturer's instructions.

### 3.02 CLEANING, MAINTENANCE, AND SUPPLIES

- A. Provide the following maintenance services:
  - 1. Immediately repair malfunctioning, damaged, leaking, or defective field offices, sheds, site improvements, systems, and equipment.
  - 2. Provide all supplies and pay for maintenance on copiers.
  - 3. Promptly provide snow removal for field offices, including parking areas, walkways, and stairs and landings.
  - 4. Provide continuous maintenance and janitorial service of field offices and sanitary facilities. Clean field offices at least once per week.
  - 5. Properly dispose of trash as needed, at least twice per week. Dispose of other waste, if any, as required, to avoid creation of nuisances.
- B. Provide the following consumables as needed:
  - 1. Light bulbs for interior and exterior lights.
  - 2. Toner or ink cartridges for multifunction printers, as required.
  - 3. Paper supplies for multifunction printers.
  - 4. Dry markers in six colors and white board eraser set.
  - 5. Bottled water suitable for water dispensers and disposable cups.
  - 6. Coffee supplies, including disposable cups, filters, coffee, sugar, creamer, and stir-sticks.
  - 7. Soap, paper towels, cleansers, sanitary supplies, and janitorial implements, including broom.
  - 8. Batteries for smoke detector and other battery-powered items furnished by Contractor.
  - 9. Replace fire extinguishers upon expiration.

### 3.03 REMOVAL

- A. Do not remove field offices and sheds until after Substantial Completion.
- B. Remove field offices and sheds and restore areas upon removal and prior to final inspection.

END OF SECTION

## SECTION 01 52 16

### FIRST-AID FACILITIES

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Scope:
  - 1. Providing first-aid facilities during the Project, including.
    - a. Paying all costs for first-aid facilities, including installation, maintenance, and removal.
    - b. Maintaining first-aid facilities, including cleaning. Keeping first-aid facilities continuously supplied with consumables.
    - c. Facilities shall be adequate for personnel using the Site and requirements of the Project.
    - d. Provide facilities in compliance with Laws and Regulations.
- B. Related Sections
  - 1. 01 35 29 – Contractor’s Health and Safety Plan

##### 1.02 REFERENCE STANDARDS

- A. The following standards are referenced in this Section:
  - 1. ANSI Z308.1, Minimum Requirements for Workplace First Aid Kits and Supplies.
  - 2. ANSI Z358.1, Emergency Eye Wash and Shower Equipment.

##### 1.03 REQUIREMENTS FOR FIRST-AID FACILITIES

- A. Provide temporary first-aid stations at or immediately adjacent to the Site’s major work areas, and inside the temporary field office. Locations of first-aid stations shall be determined by Contractor’s safety representative. At a minimum, first-aid stations provided shall include:
  - 1. One first-aid kit complying with ANSI Z308.1.
  - 2. One eyewash station complying with ANSI Z358.1.
- B. Provide list of emergency telephone numbers at each hardwired telephone at the Site. List shall be in accordance with the list of emergency contact information required in Section 01 35 29 – Contractor’s Health and Safety Plan.
- C. When Work is in progress, provide at the Site at least one person trained in first-aid and cardiopulmonary resuscitation (CPR). First-aid- and CPR-trained personnel shall possess valid certificate indicating that they have successfully completed a first-aid and CPR training course by the American Red Cross or similar entity.

#### PART 2 – PRODUCTS (NOT USED)

#### PART 3 – EXECUTION

##### 3.01 INSTALLATION

- A. Locate temporary first-aid facilities as specified in Article 1.03 of this Section.

3.02 USE

- A. Properly supervise temporary first-aid facilities.
- B. Properly dispose of wastes.
- C. Check temporary first-aid stations not less than weekly and verify that sufficient consumables are available. Provide additional consumables if the supply on hand is insufficient.

3.03 REMOVAL

- A. Completely remove temporary first-aid facilities and materials when no longer required. Repair damage caused by temporary first-aid facilities and their removal and restore the Site to condition required by the Contract Documents. If restoration of damaged areas is not specified, restore to pre-construction condition.

END OF SECTION

## SECTION 01 52 19

### SANITARY FACILITIES

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing all temporary sanitary facilities required for the Project.
  - a. Making all arrangements with temporary sanitary facility companies for temporary sanitary services and obtain required permits and approvals for temporary sanitary services.
  - b. Paying all temporary sanitary facility service costs, including cost of electricity, water, fuel, and other utility services required for the Work.
  - c. Continuously maintaining, including cleaning, adequate temporary sanitary facilities for all purposes during the Project, until removal of temporary sanitary facilities. At minimum, provide and maintain temporary sanitary facilities through Substantial Completion and removal of temporary field offices and sheds. Provide consumables as required.
  - d. Providing temporary sanitary facilities in compliance with Laws and Regulations and, when applicable, requirements of utility owners.

##### 1.02 REQUIREMENTS FOR TEMPORARY SANITARY FACILITIES

- A. Provide suitably-enclosed chemical or self-contained toilets and suitable temporary washing facilities for employees and visitors to the Site. Location of temporary toilets shall be acceptable to Owner.
- B. Provide supply of potable drinking water and related facilities and consumables for all personnel using the Site.

#### PART 2 – PRODUCTS

##### 2.01 MATERIALS AND EQUIPMENT

- A. Materials and equipment for temporary sanitary facilities may be new or used but shall be adequate for purposes intended and shall not create unsafe conditions and shall comply with Laws and Regulations.
- B. Provide required materials, equipment, and facilities, including piping, wiring, and controls.

#### PART 3– EXECUTION

##### 3.01 INSTALLATION

- A. Install temporary sanitary facilities in neat, orderly, manner, and make structurally, mechanically, and electrically sound throughout.
- B. Location of Temporary Sanitary Facilities:
  1. Locate temporary sanitary facilities for proper function and service.

2. Temporary sanitary facilities shall not interfere with or provide hazards or nuisances to: The Work under this and other contracts, movement of personnel, traffic areas, materials handling, hoisting systems, storage areas, finishes, or work of utility companies.
- C. Modify and extend temporary sanitary facilities as required by progress of the Work.

### 3.02 USE

- A. Maintain sanitary facilities to provide safe, continuous service as required.
- B. Properly supervise operation of sanitary facilities:
1. Enforce compliance with Laws and Regulations.
  2. Enforce safe practices.
  3. Prevent abuse of services.
  4. Prevent nuisances and hazards caused by temporary sanitary facilities and their use.
  5. Prevent damage to finishes.
  6. Ensure that temporary sanitary facilities do not interrupt continuous progress of construction.
- C. At the end of each work day, check sanitary facilities and verify that sufficient consumables are available to maintain operation until work is resumed at the Site. Provide additional consumables if the supply on hand is insufficient.

### 3.03 REMOVAL

- A. Completely remove temporary sanitary facilities and materials when no longer required. Repair damage caused by temporary sanitary facilities and their removal and restore the Site to condition required by the Contract Documents; if restoration of damaged areas is not specified, restore to preconstruction condition.

END OF SECTION



## SECTION 01 53 53

### TEMPORARY WATER TREATMENT SYSTEM

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Contractor shall satisfy themselves of existing site conditions and potential influent water conditions in order to satisfy the requirements herein.
2. Providing all labor, materials, equipment, and incidentals required to furnish, install, test, and place into satisfactory operation, a temporary water treatment system. Include the material, equipment and incidentals required to: collect, store, convey, treat, and discharge all liquids generated during performance of the Work including, but not be limited to, the following:
  - a. Rainfall runoff that accumulates in excavation or containment areas.
  - b. Direct precipitation in excavation or containment areas.
  - c. Water generated from dewatering activities.
  - d. Water generated from decontamination activities.
  - e. Groundwater/surface water encountered during remedial activities.
  - f. Other water generated during remedial activities that may be considered impacted or as directed by the Engineer.
3. Providing all labor, materials, equipment, and incidentals required to provide power, and to operate and maintain the temporary water treatment system.
4. Selecting the components for the temporary water treatment system, that at a minimum, meets the performance standards, and operational intent established herein.
5. Submitting the proposed temporary water treatment system design with proposed components to the Engineer as described in Article 1.04.

B. Coordination: Review installation procedures under this and other Sections and coordinate the installation of items that must be installed with, or before the temporary water treatment system.

###### C. Related Sections:

1. Section 02 51 00 – Decontamination
2. Section 31 23 18 – Water Handling and Treatment

##### 1.02 REFERENCES

###### A. Standards referenced in this Section are listed below:

1. American Society of Mechanical Engineers, (ASME).
2. American Society for Testing and Materials, (ASTM).
3. U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA) (Safety and Health Standards 29 CFR 1910/1926).

##### 1.03 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Equipment manufacturers shall have a minimum of five years' experience producing substantially similar equipment and shall be able to show evidence of at least five installations in satisfactory operation for at least five years.

- B. Contractor's Qualifications: Contractor shall have a minimum of ten years' experience with identifying treatment components, assembling water treatment systems, operating and maintaining water treatment systems and successfully complying with discharge requirements in New York State, including sites impacted with PCBs.
- C. Treatment System Operators: Treatment system operators shall have a minimum of ten years' experience operating, monitoring and maintaining water treatment systems in New York State. Contractor shall at minimum identify a primary and a secondary water treatment system operator for the project.
- D. Component Compatibility: All components shall be specifically constructed for the specified service conditions and shall be integrated into the overall assembly by Contractor.

#### 1.04 SUBMITTALS

- A. Action Submittals: Submit the following:
  - 1. Piping and Instrumentation Diagram and specifications for all proposed temporary water treatment system components.
  - 2. Shop Drawings: Complete layout and installation drawings for the equipment showing mounting details, dimensions, fitting locations, materials of construction, containment details, etc. Submit manufacturer's literature, catalog cuts, and specifications for major equipment, and for all appurtenances (piping, valves, instrumentation, etc.) showing performance data, electrical wiring and control diagrams, installation and operation Instructions, and applicable certifications.
  - 3. Operation and Maintenance Manual: Complete Operation and Maintenance Manual, including, but not limited to the following (as applicable): description of operation, start-up and testing procedures; normal (daily) operational procedures; normal and emergency shut down procedures; alarm responses; maintenance data and schedules; daily log sheet; equipment manufacturer's manuals; sampling plan and schedule; manufacturer's recommended spare parts inventory; and calibration and alignment information.
  - 4. Provide the following information on a daily basis to the Engineer:
    - a. Volume of water treated
    - b. Daily log sheets
    - c. Analytical results received (if any)
    - d. Identification of upset events and corrective measures taken

#### 1.05 DELIVERY, STORAGE AND HANDLING

- A. Packing, Shipping, Handling and Unloading: Deliver materials to the Site to ensure uninterrupted progress of the Work.
- B. Storage and Protection: Store materials to permit easy access for inspection and identification. Keep all material off the ground, using pallets, platforms, or other supports. Protect steel members and packaged materials from corrosion and deterioration.
- C. Acceptance at Site: All boxes, crates and packages shall be inspected by Contractor upon delivery to the Site. Contractor shall notify Engineer, in writing, if any loss or damage exists to equipment or components. Replace loss and repair damage to new condition in accordance with manufacturer's instructions.

## PART 2 – PRODUCTS

### 2.01 EQUIPMENT PERFORMANCE

#### A. General:

1. Design the temporary water treatment system to treat collected liquids at a maximum flow rate of 150 gallons per minute (gpm).
2. Design the temporary water treatment system to operate in “batch mode” during start-up and “continuous discharge” mode once compliance has been demonstrated.
3. If the Contractor does not intend to have continuous on-site operation of the temporary treatment system, necessary instrumentation, controls, alarms, or telemetry will be required to respond to potential alarm conditions that could cause a non-compliance of effluent or downstream water quality.
4. Winterize the system as needed to protect equipment, pipes, and other components from damage during periods of freezing weather.
5. Locate and operate the water treatment system within the Project Work Limits on a level and appropriate base to support the temporary water treatment system equipment when full and operational. Base construction to be determined by the Contractor.
6. Operate the temporary water treatment system within portable pre-fabricated spill containment berms appropriate for the treatment system equipment (e.g., Rain for Rent Spillguard portable berms (or equivalent)) to collect miscellaneous water that may leak/leave the treatment system prior to treatment (e.g., due to leaks in hoses or pipe connections). Any water that accumulates within the containment berms shall be collected and treated by the water treatment system. Non-contact water in the lined staging area may be removed and discharged without treatment unless system leaks or other conditions are observed that would render the water “contact water”.
7. Size pre-fabricated spill containment berms to be capable of containing a minimum of 110% of one effluent storage tank (approximately 21,000 gallons), and a one-year, 24-hour storm event of approximately 2 inches. Management of water will be to satisfaction of the Engineer.
8. The water treatment system shall be surrounded by orange construction fence.

### 2.02 CONCEPTUAL EQUIPMENT

#### A. Temporary Water Treatment System Components

1. The Contractor shall select the components of the temporary water treatment system to meet the downstream discharge requirements of the SPDES equivalent discharge permit. Conceptual treatment components are anticipated to include:
  - a. Influent flow equalization; primary settling; and oil-water separation
  - b. Clarification
  - c. Primary filtration
  - d. Liquid-phase adsorption treatment
  - e. Polishing filtration
  - f. Effluent equalization
  - g. Associated piping, hosing, valves, meters, appurtenances and spare parts as deemed necessary to maintain continuous operation of the treatment system when necessary

## PART 3– EXECUTION

### 3.01 GENERAL

- A. Install, operate, and maintain temporary water treatment system in accordance with the Contract Documents, approved submittals, and manufacturer's instructions and requirements; and so as to not exceed the substantive requirements for water discharge limitations (to be determined based on permit requirements obtained prior to remedial construction).
- B. Provide dedicated water treatment system operator to monitor and operate the treatment system as specified herein.

### 3.02 TESTING AND STARTUP ACTIVITIES

- A. Perform temporary water treatment system startup, testing, and troubleshooting activities prior to initiating full scale (normal) operations. Conduct startup and testing activities in accordance with equipment manufacturer's recommendations and as indicated in Contractor-prepared O&M Manual which has been reviewed by Engineer.
- B. Treat a minimum of 20,000 gallons of water collected from the first proposed excavation area (i.e., water that has been in contact with soil to be disturbed). During the startup test, operate the temporary water treatment system at the 150 gpm peak flow rate until the entire 20,000-gallon batch is treated. Continuously monitor and record readings (every 30 minutes minimum) from all pressure gauges, flow meters, and other installed instrumentation necessary to demonstrate that the system is operating as designed, including backwash, by-pass, and recycle functions, to the satisfaction of Engineer.
- C. The Contractor will collect start-up testing water samples following treatment of approximately 10,000 gallons, 15,000 gallons and 20,000 gallons of water. Retain the entire 20,000 gallons of treated water in the effluent storage tank(s) until analytical results indicate that water may be discharge. The Contractor will submit samples collected during start-up for laboratory testing based on the parameter list presented in the following table:

**TABLE 01 53 53-B  
START-UP TESTING REQUIREMENTS**

<b>Parameter – USEPA Method No.</b>	<b>Influent/Effluent</b>	<b>Mid-Process</b>
Polychlorinated Biphenyls (PCBs) - 608	Yes	Yes
Volatile Organic Compounds (VOCs) - 624	Yes	Yes
benzene		
ethylbenzene		
toluene		
xylene (total)		
vinyl chloride	Yes	Yes
Semi-Volatile Organic Compounds (SVOCs) - 625		
benz(a)anthracene		
benzo(a)pyrene		
benzo(b)fluoranthene		
chrysene		
ideno(1,2,3-cd)pyrene		
anthracene		
dibenz[a,h]anthracene		
fluoranthene		
phenanthrene		
1,2-dichloroethane		
bis(2-ethylhexyl)phthalate		
naphthalene		
Metals – 200.7 (total)	Yes	Yes
copper		
lead		
mercury	Yes	Yes
Total Suspended Solids (TSS) - 160.2	Yes	Yes

**Notes:**

Collect mid-process samples downstream of the primary filtration, adsorption treatment, and polishing filtration. If the treatment train is divided into parallel streams, collect samples from each parallel stream. Collect samples during general startup testing of the system and during normal operations. Some or all of these mid-process locations may be eliminated as operating experience is gained.

- D. Contractor will retreat water and may be directed by the Engineer to treat additional water to demonstrate the ability of the treatment system to meet discharge criterion.

**3.03 EXCAVATION DEWATERING**

- A. Provide all labor, materials, and equipment to remove accumulations of groundwater, direct precipitation, or run-off that inhibit excavation activities, compromise the integrity of the excavation, or when directed by the Engineer or Owner.
- B. Transport or convey the water to the temporary water treatment system for processing.

**3.04 COLLECTION OF LIQUIDS**

- A. Refer to Section 31 23 18 – Water Handling and Treatment.

- B. Collect and transfer liquid that requires treatment to the temporary water treatment system. Collect water in an area-specific manner that prohibits the spillage, leakage, or other release of liquid.
- C. Maintain timely and accurate records concerning the volumes and areas from which accumulated liquids are removed and transported to the temporary water treatment system.
- D. Decontaminate equipment utilized to collect/handle accumulated liquids, including pumps, tanks, and tanker trucks, as appropriate and in accordance with Section 02 51 00 – Decontamination, prior to removal from the Site.

3.05 SYSTEM MONITORING

A. WATER QUALITY TESTING

1. Collect temporary water treatment system water quality sampling during normal operations in accordance with the frequency required by the SPDES equivalent discharge permit. Samples will be submitted for laboratory analysis for the parameters in Table 01 53 53-B and are anticipated to require meeting the following discharge limits (actual discharge limits will be dictated by the SPDES equivalent permit):

Parameter – USEPA Method No.	Discharge Limit <sup>1</sup> (ug/L)
Polychlorinated Biphenyls (PCBs) - 608	0.20
Volatile Organic Compounds (VOCs) - 624	
benzene	1
ethylbenzene	4.5
toluene	5
xylene (total)	5
vinyl chloride	2
Semi-Volatile Organic Compounds (SVOCs) - 625	
	Yes
benz(a)anthracene	0.05
benzo(a)pyrene	0.09
benzo(b)fluoranthene	0.07
chrysene	0.6
ideno(1,2,3-cd)pyrene	0.2
anthracene	3.8
dibenz[a,h]anthracene	0.1
fluoranthene	50
phenanthrene	1.5
1,2-dichloroethane	0.6
bis(2-ethylhexyl)phthalate	8
naphthalene	10
Metals – 200.7 (total)	
	Yes
copper	4.8
lead	4
mercury	0.05
Total Suspended Solids (TSS) - 160.2	10

**Note:**

1. Actual discharge limits will be dictated in the SPDES Equivalent Permit to be obtained for discharging treated water.

## B. ROUTINE MONITORING

1. The Contractor shall initially manually operate and control the temporary water treatment system through a series of valves, visual reading gauges, and pump controls as necessary to accommodate system operation. Provide an experienced on-site operator during temporary water treatment system operation. The operator shall not have other duties that interfere with the manual operation of the temporary water treatment system while the system is operating. The Contractor may elect to add/implement additional controls and alarms approved by Engineer to eliminate (or reduce) the need for a dedicated on-site system operator as operating experience is gained.
2. The Contractor-prepared O&M manual shall describe the routine activities to be conducted at least once per shift by the temporary water treatment system operator. Activities should be in accordance with equipment manufacturer's requirements and recommendations. Those activities shall include, but not be limited, to the following:
  - a. Verifying that valves are positioned properly, to fill and drain the tanks as applicable.
  - b. Visually inspecting piping, hoses, and valves noting damage, leakage, or other defects.
  - c. Visually inspecting storage tanks noting water levels, damage, leakage, corrosion, or other defects. Gauge and record the sediment thickness in the bottom of the tank when tanks are emptied. If sediment is observed to be 4 inches deep, or if directed by Engineer, clean the tank. Treat all liquids resulting from cleaning activities using the temporary water treatment system and collect solids for subsequent disposal.
  - d. Visually inspecting pumps and equipment noting excessive noise or vibration, damage, leakage, corrosion, or other defects.
  - e. Obtaining readings from temporary water treatment system pressure gauges associated with the different treatment processes within the treatment train(s). Pressure gauge readings shall be utilized to determine when a backwash event or filter replacement is required, or a particular treatment unit is not functioning properly.
  - f. Obtaining readings from the system flow meter totalizer to monitor system flow rate, totalized flow to date, and daily flow total.
  - g. Visually inspecting containment liner noting damage, standing water, or other issues.
  - h. Collecting, at a minimum once per day, water quality field data consisting of turbidity and pH measurements to provide indications of system performance. As operating experience is gained and following approval of Engineer, Contractor may reduce the frequency of the monitoring. Samples shall be collected in the individual treatment trains at the following locations:
    - 1) Influent flow equalization/primary settling/oil-water separation
    - 2) Upstream of clarification
    - 3) Upstream of primary filtration
    - 4) Upstream of adsorption treatment
    - 5) Downstream of adsorption treatment
    - 6) Downstream of polishing filtration
  - i. Document the above information on the daily log sheet.

## 3.06 CORRECTIVE ACTIONS

- A. At the direction of Owner or Engineer, take corrective actions necessary to maintain specified treatment system performance in the event of an upset condition and/or operating conditions that result in non-compliant effluent water quality. During corrective actions, the Contractor may be required by Owner or Engineer to mobilize additional effluent storage tanks, improved equipment, and/or repeat start-up and testing procedures as specified herein. If Contractor fails to make these corrections, or if the improved equipment fails to meet specified requirements, Owner, notwithstanding having made partial payment for work and materials which have entered into the manufacture of said equipment, may reject said equipment and order the Contractor to remove it from the premises at the Contractor's expense. Correction

of the water treatment system and water management to facilitate timely and compliant completion of the project is solely the responsibility of the Contractor at no additional cost to the Owner.

### 3.07 DOCUMENTATION

- A. Maintain a daily operations log (i.e., tabulated results) recording the process variables listed in Article 1.04. Also document in the daily log all temporary water treatment system O&M activities. Maintain the daily log onsite and make available to Engineer on demand.

END OF SECTION



## SECTION 01 55 13

### TEMPORARY ACCESS ROADS AND PARKING AREAS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing temporary construction roads (as needed), walks, parking areas, and appurtenances required during the Project for use by Contractor, other contractors employed on the Project, Owner, Engineer and emergency vehicles.
2. Maintaining temporary roads and parking areas to be fully passable to vehicles in all weather conditions.

###### B. Related Sections:

1. Section 01 57 05 – Temporary Controls
2. Section 31 05 16 – Aggregates for Earthwork

###### C. Use of Existing Access Roads:

1. Prevent interference with traffic on existing roads and parking areas. Contractor shall, at all times, keep access roads and entrances serving the Site clear and available to Owner, Engineer, emergency vehicles, and other contractors. Do not use access roads or Site entrances for parking or storage of materials or equipment.
2. Indemnify and hold harmless Owner and Engineer from expenses caused by Contractor's operations over existing roads and parking areas.
3. Schedule deliveries to minimize use of driveways and Site entrances.

##### 1.02 SITE ACCESS

###### A. Site Access:

1. Comply with public roadway requirements for weight and height.

##### 1.03 CONTRACTOR PARKING

A. Park in area(s) proposed by the Contractor and approved by the Engineer.

B. Park construction vehicles and equipment in work areas off of permanent roads and parking areas, in areas of the Site designated (and approved by the Engineer) for Contractor staging.

#### PART 2 – PRODUCTS

##### 2.01 MATERIALS

A. Materials for temporary roads and parking areas shall comply with the Contract Documents.

B. Traffic controls shall comply with requirements of authorities having jurisdiction.

## SECTION 01 58 13

### TEMPORARY PROJECT SIGNAGE

#### PART 1 – GENERAL

##### 1.01 SUMMARY

- A. Scope:
1. Furnish and install temporary signage as specified in this Section for Project identification and construction site information.
  2. Temporary signs include:
    - a. Project identification signs.
    - b. Project contact signs.
    - c. Danger signs.
    - d. Security signs.
  3. Do not display any other temporary signs, other than those specified, without prior approval of Owner.
  4. Maintain temporary signs until Substantial Completion, or as otherwise directed by Owner.

##### 1.02 SUBMITTALS

- A. Action Submittals:
1. Shop Drawings: Submit Shop Drawings showing layout, text, font, character size, colors, graphics or logos (if any), materials of construction, and dimensions of each temporary sign, and the proposed locations and orientations of temporary signs at the Site.

#### PART 2 – PRODUCTS

##### 2.01 MATERIALS AND CONSTRUCTION

- A. Project Identification Signs:
1. Project identification signs, including layout, fonts, logos, and colors, shall be as specified in the NYSDEC guidance document included with this Section.
  2. Location: Mounted on fencing at the site entrance.
  3. Text Inserts: Text inserts shall be centered horizontally on sign board in the specified locations.
    - a. Program Name: "STATE SUPERFUND PROJECT".
    - b. Site Name: "WASTE-STREAM, INC. SITE".
    - c. Site Number: "SITE NO. 645022".
    - d. NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
    - e. Governor: "GOVERNOR ANDREW M. CUOMO". (*or current*)
    - f. Commissioner: "COMMISSIONER BASIL SEGGOS". (*or current*)
    - g. Municipal Executive: "RON TISCHLER, MAYOR". (*or current*)
    - h. Tag Line: "TRANSFORM THE PAST...BUILD FOR THE FUTURE"
  4. Background Color: White.
  5. Text Height: 1.5 inches, minimum.
  6. Printing: Digital or screen printing with ultraviolet-resistant inks.
  7. Sign Board:
    - a. Material: medium density plywood with resin coating on both sides or aluminum composite, minimum thickness of three millimeters.

- b. Minimum Dimensions: 96 inches wide by 48 inches high.
  - 8. Supports and Bracing: Provide supports and bracing as required to adequately support and brace signs for the duration of the Project.
  - 9. Obtain Engineer approval before releasing for manufacture.
- B. Project Contact Signs:
  - 1. Location: Mounted on fencing at west site entrance next to Project identification sign.
  - 2. Text: Text shall be centered vertically and horizontally on sign board, and shall read as follows:
    - a. Line 1: "PROJECT CONTACTS".
    - b. Line 2: "NYSDEC FIELD OFFICE: XXX-XXX-XXXX". Include actual telephone number assigned to NYSDEC field office on this line.
    - c. Line 3: "NYSDEC PROJECT MANAGER: Peter S. Ouderkirk: 315-785-2523".
    - d. Line 4: "NYSDOH PROJECT MANAGER: Ms. Renata Ockerby, 518-402-7880".
    - e. Line 5: "WSI Group PROJECT MANAGERS: Mr. Russel Anderson, 603-290-5846 or Mr. Brian Stearns, 315-428-5731.
  - 3. Background Color: White.
  - 4. Text Color: Black.
  - 5. Text Height: 1.5 inches, minimum.
  - 6. Printing: Digital or screen printing with ultraviolet-resistant inks.
  - 7. Sign Board:
    - a. Material: Aluminum composite, minimum thickness of three millimeters.
    - b. Minimum Dimensions: 96 inches wide by 48 inches high.
  - 8. Supports and Bracing: Provide supports and bracing as required to adequately support and brace signs for the duration of the Project.
  - 9. Obtain Engineer approval before releasing for manufacture.
- C. Danger Signs:
  - 1. Location: Mounted on fencing at intervals of 100 linear and on either side of temporary site security gate (two signs per gate).
  - 2. Text: "DANGER" in upper panel and "CONSTRUCTION AREA AUTHORIZED PERSONNEL ONLY" in lower panel.
  - 3. Background Color: Red upper panel, black outline along border, and white lower panel.
  - 4. Text Color: White in upper panel and black in lower panel.
  - 5. Printing: Digital or screen printing with ultraviolet-resistant inks.
  - 6. Sign Board:
    - a. Material: Treated polyethylene, thickness of 0.055 inch.
    - b. Minimum Dimensions: 14 inches wide by 10 inches high.
  - 7. Supports and Bracing: Provide supports and bracing as required to adequately support and brace signs for the duration of the Project.
- D. Security Signs:
  - 1. Location: Mounted on fencing on each side of temporary Site security gate entrance (two signs per Site entrance) and at entrances of each field office trailer (one sign per trailer entrance).
  - 2. Text: "SECURITY NOTICE" in upper panel and "ALL VISITORS MUST SIGN-IN AT THE FIELD OFFICE" in lower panel.
  - 3. Background Color: Yellow upper panel, black outline along border, and white lower panel.
  - 4. Text Color: Black for upper and lower panels.
  - 5. Printing: Digital or screen printing with ultraviolet-resistant inks.
  - 6. Sign Board:
    - a. Material: Treated polyethylene, thickness of 0.055 inch.
    - b. Minimum Dimensions: 20 inches wide by 14 inches high.

7. Supports and Bracing: Provide supports and bracing as required to adequately support and brace signs for the duration of the Project.

### PART 3 – EXECUTION

#### 3.01 INSTALLATION, MAINTENANCE, AND REMOVAL

- A. Installation:
  1. Install temporary signs within 14 days of Engineer's approval of the submittal required by this Section.
  2. Obtain Owner and Engineer approval of installation locations before installing temporary signs.
- B. Maintenance:
  1. Maintain temporary signage so that signs are clean, legible, and upright. Cut grass, weeds, and other plants so that temporary signs are not covered or obscured.
  2. Repair or replace damaged temporary signs. Relocate signs as required by progress of the Project.
- C. Remove temporary signs upon Substantial Completion, or as otherwise directed by the Engineer.

#### 3.02 ATTACHMENTS

- A. The attachment listed below, which follows after the "End of Section" designation, is part of this Specification Section:
  1. Attachment A: Signs for Remedial Programs (two pages).

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

TEMPORARY PROJECT SIGNAGE  
01 58 13 - 4  
REVISION NO. 00  
DATE ISSUED: 3/29/18

WSI GROUP  
90% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

## SECTION 01045

### PROJECT IDENTIFICATION AND SIGNS

#### PART 1 GENERAL

The sign shall be 4-ft high × 8-ft wide, and constructed of 3/4- to 1-in. medium density overlay plywood, with a resin coating on both sides. The edges shall be framed with a snap trim edge cap consisting of an aluminum channel with a polyvinyl coating. An aluminum sign of equal size may also be used. The sign's background shall be painted with white exterior oil base sign enamel. The second, third, fourth, and eighth lines will have green letters. The first, fifth, sixth, and seventh lines will have blue letters. The DEPARTMENT logo will be painted as noted. All adhesives are solvent resistant.

#### 1.1 REFERENCES

- 1.1.1 Lumber Standard: American Softwood Lumber Standard; U.S. Department of Commerce Product Standard PS20.
- 1.1.2 Softwood Plywood Standard: Construction and Industrial; U.S. Department of Commercial Product Standard PS1.

#### 1.2 QUALITY ASSURANCE

- 1.2.1 Painter's Qualifications: All paint shall be applied by a professional sign painter.

#### PART 2 PRODUCTS

#### 2.1 MATERIALS

- 2.1.1 Aluminum blanks will be covered with vinyl sheeting to achieve background color, logo will be silk screened on vinyl surface.
- 2.1.2 Framing: Snap trim edge cap of polyvinyl coated aluminum channel.
- 2.1.3 Paint
  - 2.1.3.1 Background Enamel: Exterior, alkyd, glass enamel with primer as recommended by finish coat manufacturer.
  - 2.1.3.2 Lettering and Striping Enamel: Exterior, long oil, alkyd; high gloss enamel manufactured for lettering signs.

#### 2.1.4 Colors

2.1.4.1 DEPARTMENT logo: Pantone® Matching System (PMS) Color Chart 301 Blue  
PMS 355 Green

2.1.4.2 Text: PMS 301 Blue  
PMS 355 Green

2.1.5 Type: Caslon 540. Center each line with small caps and initial caps. See Figure 01580-1 (Project Sign)

#### 2.2 FABRICATION

2.2.1 Paint both sides and all edges of signs with two coats of primer and one coat of background enamel.

2.2.2 Paint lettering and striping with two coats of lettering enamel.

2.2.3 Do not apply succeeding coat until previous coat has completely dried.

2.2.4 Apply even coats of uniform thickness without brush marks, runs, or lap marks.

2.2.5 Lettering and striping shall be uniform with sharp, neat profiles.

#### PART 3 EXECUTION

##### 3.1 INSTALLATION

3.1.1 Install signs within two weeks of Notice to Proceed.

3.1.2 Install signs where directed by ENGINEER.

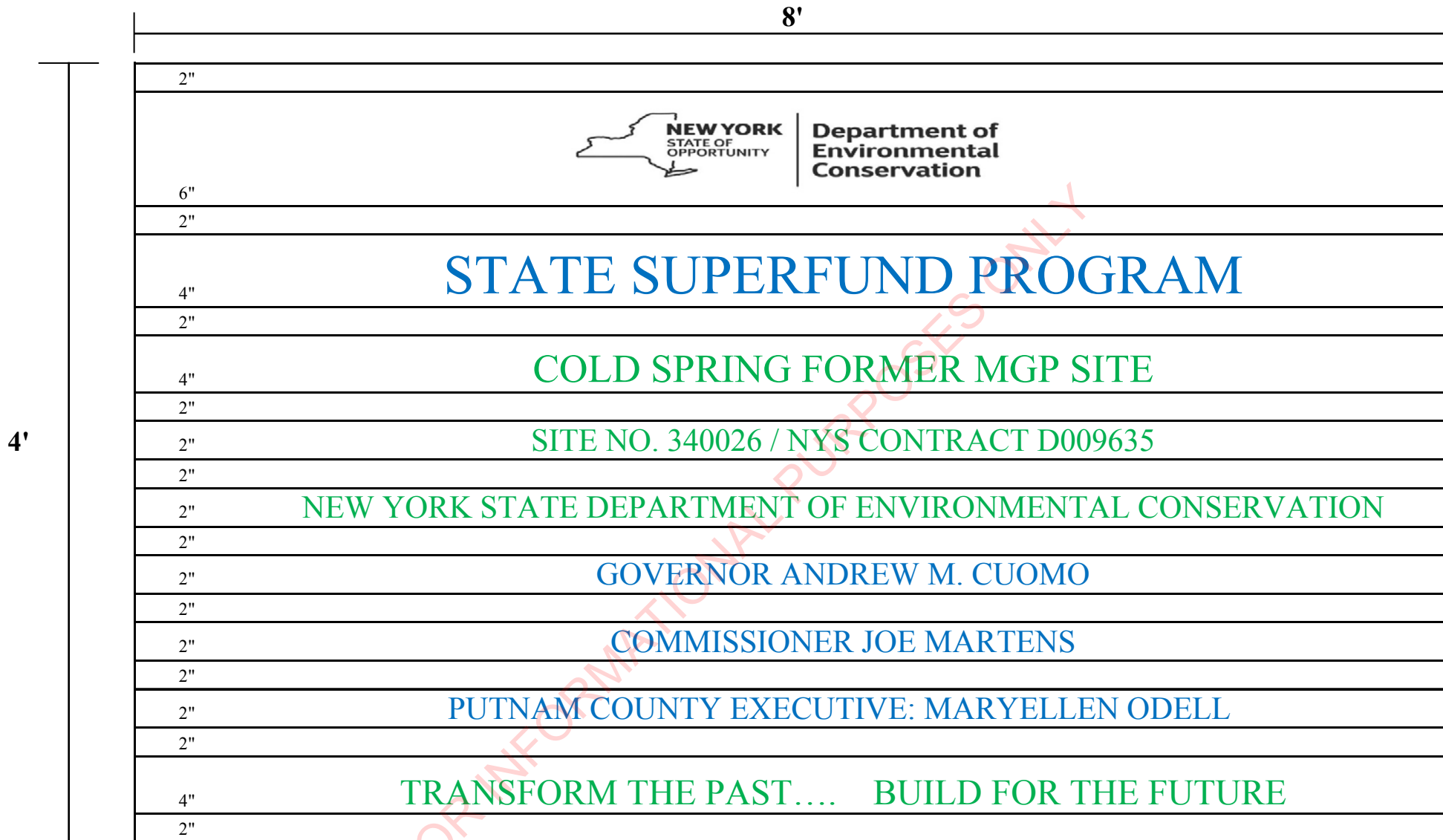
3.1.3 Fasten sign, in a level position, securely to security wall. The center of the sign should be located approximately 6-7 ft from ground level.

##### 3.2 MAINTENANCE AND REMOVAL

3.2.1 Maintain the signs plumb and level for the duration of the work.

3.2.2 When directed, at the completion of the project, remove the signs.

\*END OF SECTION\*



**FIGURE 01045-1**  
**PROJECT SIGN**



THIS PAGE INTENTIONALLY LEFT BLANK

## PART 3 – EXECUTION

### 3.01 TEMPORARY ROADS AND PARKING AREAS

- A. Temporary Roads and Parking in Areas Different from Permanent Pavement:
1. Provide temporary roads (as necessary) and parking areas adequate to support and withstand traffic loads during the Project. Locate temporary roads and parking areas in areas conducive to facilitate the remedial construction activities and approved by the Engineer.
  2. Provide reasonably level, graded, well-drained subgrade of satisfactory soil material, compacted to at least 95 percent of maximum dry density in the upper six inches.
  3. Provide geotextile or geogrid where required to support loads and provide separation between subgrade and subbase materials.
  4. Provide a minimum -inch layer of Type “F” Run-of-Crusher stone (Section 31 05 16 – Aggregates for Earthwork), roller-compacted to level, smooth, dense surface. Subbase for temporary roads and areas traveled by construction vehicles shall be adequate for loads and traffic served.
  5. Install Construction Entrance/Exit Pads at all access points from temporary roads and asphalt pavement as detailed in the design drawings.
  6. Install Stabilized Construction Entrance as detailed in the design drawings.

### 3.02 TRAFFIC CONTROLS

- A. Traffic Controls:
1. Provide temporary traffic controls at intersections of temporary roads, including intersections with other temporary roads, intersections with public roads, and intersections with permanent access roads at the Site.
  2. Provide warning signs on permanent roads and drives and provide “STOP” signs for traffic on temporary roads where required and at entrances to permanent pavement.
  3. Comply with requirements of authorities having jurisdiction.

### 3.03 MAINTENANCE OF ROADS

- A. General:
1. Maintain temporary roads and parking to continuously provide access for construction vehicles and trucks, Owner vehicles, deliveries for Owner, emergency vehicles, and parking areas for Owner’s personnel.
  2. Public roads shall be passable at all times unless a road closure is allowed in writing by authority having jurisdiction.
  3. When granular material of temporary roads and parking without hard surfacing become intermixed with soil, or when temporary roads otherwise create a nuisance, remove intermixed granular-and-soil material and replace with clean aggregate.
  4. Remove snow and ice from temporary roads and parking areas.
- B. Cleaning and Dust Control:
1. Cleaning: Clean paved surfaces over which construction vehicles travel. Perform cleaning by mechanical sweeping a minimum of once per week or more frequently, as directed by Owner. Clean the following surfaces:
    - a. Roads within limits of the Project.
    - b. Permanent roads at the Site, between the Site entrance and the work areas, between the Site entrance and construction parking and staging areas.
    - c. Public roads that require sweeping and cleaning due to construction operations.
  2. Dust Control:

- a. Control dust resulting from construction activities to prevent nuisances at the Site and in nearby areas.
  - b. Apply water or use other methods subject to Engineer's acceptance that will minimize airborne dust. Do not use water when water will cause hazardous or objectionable conditions such as ice, mud, ponds, and pollution.
  - c. Provide dust control that is non-polluting and does not contribute to tracking-out of dirt and dust onto pavement. Re-apply dust control treatment as required.
  - d. Comply with Section 01 57 05 – Temporary Controls.
- C. Protection of Underground Facilities: Provide temporary, heavy-duty steel roadway plates to protect existing, manholes, hand holes, valve boxes, vaults, and other underground facilities near to or visible at the ground surface.

### 3.04 REMOVALS AND RESTORATION

A. Removals:

1. Remove temporary roads, walks, and parking areas unless otherwise indicated in the Contract Documents. Return areas of temporary roads, walks, and parking to pre-construction condition unless otherwise required by the Contract Documents. Remove temporary gates, fencing, and traffic controls associated with temporary roads and parking areas.

B. Restoration:

1. Repair or replace paving, curbs, gutters, and sidewalks affected by temporary roads and parking, and restore to required conditions in accordance with authorities having jurisdiction.
2. Restore to pre-construction conditions existing roads, walks, and parking areas damaged by Contractor, subject to approval of the owner of affected roads, walks, and parking areas.

END OF SECTION

THIS PAGE LEFT BLANK INTENTIONALLY

TEMPORARY ACCESS ROADS AND PARKING AREAS  
01 55 13 - 4  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK  
ARCADIS of New York, Inc.

## SECTION 01 57 05

### TEMPORARY CONTROLS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing and maintaining methods, equipment, materials, and temporary construction as required to control environmental conditions at the Site and adjacent areas.
2. Maintaining temporary controls until no longer required.
3. Temporary controls include, but are not limited to, the following:
  - a. Erosion and sediment controls.
  - b. Control of surface water, including storm water run-on and run-off.
  - c. Dust controls.
  - d. Pollution controls.
  - e. Noise controls.

###### B. Related Sections:

1. Section 01 34 43.13 – Environmental Procedures for Hazardous Materials
2. Section 01 35 49 – Community Air Monitoring Plan
3. Section 01 41 26 – Storm Water Pollution Prevention Plan and Permit
4. Section 01 74 05 – Cleaning
5. Section 31 05 19.13 – Geotextiles for Earthwork
6. Section 31 11 00 – Clearing and Grubbing
7. Section 31 23 00 – Excavation and Fill

##### 1.02 REFERENCE STANDARDS

###### A. The following standards are referenced in this Section:

1. NYSDEC New York State Standards and Specifications for Erosion and Sediment Control

##### 1.03 QUALITY ASSURANCE

###### A. Regulatory Requirements:

1. Comply with applicable provisions and recommendations of the following:
  - a. NYSDEC New York State Standards and Specifications for Erosion and Sediment Control.
  - b. NYSDOT Standard Specifications and Standard Sheets.

##### 1.04 SUBMITTALS

###### A. Action Submittals:

1. Product Data: Submit manufacturer's product data, specifications, and installation instructions for the following:
  - a. Reinforced silt fencing.
  - b. Erosion control mats or netting, and staples or anchoring stakes.

## PART 2 – PRODUCTS

### 2.01 EROSION AND SEDIMENT CONTROLS

- A. General:
1. Materials used for erosion and sediment controls shall be in accordance with the applicable regulatory requirements indicated in Article 1.03 of this Section, unless otherwise shown or indicated in the Contract Documents.
- B. Reinforced Silt Fencing:
1. Filter Fabric:
    - a. Material: Geotextile shall comply with NYSDEC New York State Standards and Specifications for Erosion and Sediment Control standard and specifications for silt fence.
    - b. Height: Three feet, minimum.
  2. Fence Support Posts:
    - a. Material: Hardwood or steel posts may be used.
      - 1) Hardwood posts shall be at least 1.25 inches by 1.25 inches in cross section.
      - 2) Steel posts shall be "T" or "U" shape in cross section with a minimum weight of 1.0 pound per linear foot.
    - b. Length: Four feet, minimum.
  3. Wire Reinforcing: Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening or as approved.
  4. Fabric fasteners shall be heavy-duty staples, wire ties, or other fastener compatible with support post material.
- C. Stabilized Construction Access:
1. Crushed stone shall be a clean, durable, matrix of sharp-angled fragments ranging in size from 1 to 4 inches.
  2. Geotextile shall comply with NYSDEC New York State Standards and Specifications for Erosion and Sediment Control standard and specifications for stabilized construction access use.
- D. Temporary Erosion Control Mat:
1. Material- Extended-Term Biodegradable Double-Net Straw/Coconut Blanket (C125BN manufactured by North American Green.

### 2.02 POLLUTION CONTROLS

- A. Provide spill kits and oil-absorbent pads, rolls, and booms as required to contain spills, should they occur, and prevent the potential migration of pollutants in accordance with all applicable Laws and Regulations. Spill kits shall be located within active remediation areas and dispersed around the site near equipment and petroleum storage areas.

### 2.03 DUST CONTROLS

- A. Water: Clean, potable.
- B. Provide pressure washers, portable tanks, hoses, and other equipment required for the storage and application of water.
- C. Other manufactured suppression products proposed by the Contractor and approved by the Engineer.

TEMPORARY CONTROLS  
01 57 05 – 2  
REVISION NO. 00  
DATE ISSUED: 8/20/2018

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.

## PART 3 – EXECUTION

### 3.01 EROSION AND SEDIMENT CONTROL

#### A. Installation and Maintenance – General:

1. General:
  - a. Provide erosion and sediment controls as shown and indicated on the Design Drawings and elsewhere in the Contract Documents. Provide erosion and sediment controls as the Work progresses into previously undisturbed areas.
  - b. Install erosion and sediment controls shall be in accordance with the applicable regulatory requirements indicated in Article 1.03 of this Section, unless otherwise shown or indicated in the Contract Documents.
  - c. Use necessary methods to successfully control erosion and sedimentation, including ecology-oriented construction practices, vegetative measures, and mechanical controls. Use best management practices in accordance with Laws and Regulations, and regulatory requirements indicated in Article 1.03 of this Section, to control erosion and sedimentation during the Project.
  - d. Plan and execute construction, disturbances of soils and soil cover, and earthwork by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas, to prevent erosion and sedimentation. Provide temporary measures for controlling erosion and sedimentation, as indicated in the Contract Documents and as required for the Project.
  - e. Regulate drainage and control erosion and sedimentation in areas that are cleared for storage of materials or equipment, or for temporary facilities.
  - f. Provide erosion and sediment controls, including stabilization of soils, at the end of each work day.
2. Coordination:
  - a. Coordinate erosion and sediment controls with this Section's requirements on water control and with Section 01 41 26 – Storm Water Pollution Prevention Plan and Permit.
  - b. Coordinate temporary erosion and sediment controls with construction of permanent drainage facilities and other Work to the extent necessary for economical, effective, and continuous erosion and sediment control.
3. Provide all erosion and sediment control measures required by the Contract Documents for the areas where soil or soil cover will be disturbed before commencing activities that will disturb soil or soil cover at the Site.
4. Implement construction procedures associated with, or that may affect, erosion and sediment control to ensure minimum damage to the environment during construction.
5. Vegetation Removal:
  - a. Remove only those shrubs, grasses, and other vegetation that must be removed for construction. Protect remaining vegetation.
6. Access Roads and Parking Areas: When possible, locate and construct access roads and temporary roads to avoid adverse effects on the environment. Provisions shall be made to regulate drainage, avoid erosion and sedimentation, and minimize damage to vegetation.
7. Earthwork and Temporary Controls:
  - a. Perform excavation, fill, and related operations in accordance with Section 31 23 00 – Excavation and Fill.
  - b. Control erosion to minimize transport of silt from the Site into existing waterways and surface waters. Such measures shall include, but are not limited to, using berms, silt fencing, gravel or crushed stone, slope drains, and other methods. Apply such temporary measures to erodible materials exposed by activities associated with the remedial construction.
  - c. Hold to a minimum the areas of bare soil exposed at one time.

- d. In performing earthwork, eliminate depressions that could serve as mosquito pools.
  - e. Provide special care in areas with steep slopes. Minimize vegetation disturbance to maintain soil stability.
8. Inspection and Maintenance:
- a. Periodically inspect areas of earthwork and areas where soil or soil cover are disturbed to identify evidence of the start of erosion and sedimentation; apply corrective measures as required to control erosion and sedimentation. Continue inspections and corrective measures until soils are permanently stabilized and permanent vegetation has been established.
  - b. Inspect erosion and sediment controls prior to conducting any intrusive activities. During Work, erosion and sediment controls shall be inspected at least once every seven days until restoration is complete.
  - c. Repair or replace damaged erosion and sediment controls within one day of becoming aware of such damage.
  - d. Periodically remove silt and sediment that has accumulated in or behind sediment and erosion controls. Properly dispose of silt and sediment.
9. Duration of Erosion and Sediment Controls:
- a. Maintain erosion and sediment controls in effective working condition until the associated drainage area has been permanently stabilized.
  - b. Maintain erosion and sediment controls until the Site is restored and site improvements including landscaping, if any, are complete with underlying soils permanently stabilized.
10. Work Stoppage: Provide additional temporary controls necessary to prevent environmental damage to the Site and adjacent areas if the Work is temporarily stopped or suspended for any reason.
11. Failure to Provide Adequate Controls: In the event Contractor repeatedly fails to satisfactorily control erosion and siltation, Owner reserves the right to employ outside assistance or to use Owner's own forces for erosion and sediment control. Cost of such work, plus engineering and inspection costs, will be deducted from monies due to Contractor.

**B. Reinforced Silt Fencing:**

- 1. Install and maintain silt fencing in a vertical plane, at the location(s) shown or indicated on the Design Drawings.
- 2. Locations of Reinforced Silt Fencing:
  - a. Where possible, install silt fencing along contour lines so that each given run of fencing is at the same elevation.
  - b. On slopes, install silt fencing at intervals that do not exceed the maximum lengths indicated in Table 01 57 05-A.

**TABLE 01 57 05-A  
MAXIMUM LENGTH OF UPGRADIENT SLOPE BETWEEN RUNS**

<b>Slope</b>	<b>Upgradient Slope Length (feet)</b>
< 2%	N/A
2 – 10%	250
10 – 20%	150
20 – 33%	80
33 – 50%	70
> 50%	30

- c. Provide silt fencing around the perimeter of each stockpile of topsoil, general fill material, and excavated material. Install silt fencing before expected precipitation and maintain until stockpile is removed.
- d. Do not install silt fencing at the following types of locations:

TEMPORARY CONTROLS  
01 57 05 – 4  
REVISION NO. 00  
DATE ISSUED: 8/20/2018

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.



- 1) Area of concentrated storm water flows such as ditches, swales, or channels.
  - 2) Where rock or rocky soils prevent full and uniform anchoring of silt fencing.
  - 3) Across upstream or discharge ends of storm water piping or culverts.
3. Installation:
    - a. Securely fasten filter fabric to each support post in no less than four locations. Spacing between support posts shall not exceed 10 feet (center to center).
    - b. When two sections of filter fabric abut each other, fold over edges and overlap by minimum of six inches and securely fasten to wire mesh.
    - c. Embed posts in the ground to the depth necessary for proper controls, but not less than 16 inches below ground surface.
    - d. Extend filter fabric a minimum of six inches below ground and a minimum of 16 inches above ground.
    - e. Bury filter fabric at bottom of silt fence in a trench, in a "J" configuration, to a depth of six inches below grade.
    - f. Remove sediment accumulated at silt fencing as required. Repair and reinstall silt fencing as required.
  4. Maintenance:
    - a. Conduct routine inspection at least once every seven days until final restoration.
    - b. Remove accumulated sediment when depth reaches one-half the effective height of the sediment control.
    - c. Repair and reinstall silt fencing as required.
    - d. Do not allow formation of concentrated storm water flows on slopes above silt fencing unless so shown or indicated in the Contract Documents. If unauthorized concentrated storm water flows occur, stabilize the slope via earthmoving and other stabilization measures as required to prevent flow of concentrated storm water flows toward silt fencing.
- C. Protection of Storm Water Drainage Inlets and Catch Basins:
1. Protect each drainage inlet and catch basin that has the potential to receive storm water run-off from exposed soils.
  2. Install inlet filter bags inside of drainage inlet or catch basin in accordance with manufacturer's instructions. Secure inlet filter bag with the structure's grate or by other acceptable means.
  3. Inlet filter bags shall not pose any obstruction above the elevation of the drainage inlet or catch basin grate requiring barricades or flashers.
  4. When removing silt and sediment from inlet filter bag, do not dump filter bag's contents into the drainage inlet or catch basin.
  5. Remove silt and sediment from inlet filter bag, or replace inlet filter bag, when inlet filter bag is not more than half full.
- D. Stabilized Construction Access and Construction Entrance and Exit Pads:
1. Where shown on the Drawings, and where construction vehicles will regularly transit to paved surfaces from unstabilized surfaces or temporary access roads, provide a temporary construction entrance/construction entrance/exit pad.
  2. Contractor vehicles shall use temporary construction entrances.
  3. Provide temporary construction accesses of the width, length, and thickness shown or indicated on the Drawings. When not shown or indicated on the Drawings, temporary construction entrance shall be not less than 50 feet long, by 12 feet wide, by six inches thick. Slope of entrance shall not exceed 12 percent.
  4. Place Construction Entrance/Exit Pads at transitions to/from temporary access roads from/to paved areas.
  5. Construction Entrance/Exit Pads shall be no less than 50 feet long, by 15 feet wide, by 6 inches thick. See design drawings for additional details.
  6. Installation:

- a. Ensure that subgrade under temporary construction entrance is suitably dense for the intended purpose. Suitably prepare subgrade as required for temporary construction entrance.
  - b. Place a layer of geotextile fabric on the subgrade, installed in accordance with geotextile manufacturer's recommendations and in accordance with Section 31 05 19.13 - Geotextiles for Earthwork.
  - c. Provide crushed stone on installed geotextile. Grade crushed stone for passage of vehicles.
7. Maintenance:
- a. Maintain temporary construction entrance at not less than the minimum required thickness. Add crushed stone as required to maintain thickness.
  - b. When upper layer of temporary construction entrance becomes impacted with soil, remove the contaminated material and replace with clean crushed stone.
  - c. Using water to wash down temporary construction entrance or paved areas onto which soil material has been tracked is prohibited.

E. Temporary Erosion Control Mat

- 1. Where shown on the Drawings, at the top of slope of the consolidation area and for slope protection.

### 3.02 SURFACE WATER CONTROL

A. General:

- 1. Provide methods to control surface water to prevent damage to the Work, the Site, and adjoining properties.
- 2. Control fill, grading, and ditching to direct surface water away from disturbed areas, excavations, pits, tunnels, and other construction areas, and to direct drainage to proper run-off courses to prevent erosion, damage, or nuisance.

B. Equipment and Facilities for Surface Water Control:

- 1. Provide, operate, and maintain equipment and facilities of adequate size to control surface water.

C. Discharge and Disposal:

- 1. Dispose of surface water in a manner to prevent flooding, erosion, and other damage to any and all parts of the Site and adjoining areas, and that complies with Laws and Regulations.

### 3.03 DUST CONTROL

A. General:

- 1. Provide means, methods, and facilities required to control dust generated during the Work.
- 2. Proactively employ dust controls during the Work, and evaluate and modify construction techniques and site management practices, as necessary and appropriate, to:
  - a. Prevent exceedances of the community air monitoring action levels specified in Section 01 35 49 – Community Air Monitoring Plan.
  - b. Suspend work if means, methods, and facilities are unsuccessful in controlling Site-related odors, vapors, and dust as specified in this Section, based on visual observations or the results of community air monitoring, until appropriate corrective actions are taken by Contractor to remedy the situation to Owner's satisfaction. Owner will not be liable for any expense or delay resulting from Contractor's failure to control Site-related odors, vapors, and dust in accordance with this Section.

- B. Construction Techniques and Site Management Practices:
  1. Excavate, backfill, load, handle, and unload excavated materials and clean fill materials, in manner that minimizes the generation of airborne dust.
  2. Transport excavated materials and clean fill materials in properly covered vehicles.
  3. Restrict vehicle speeds on temporary access roads and active haul routes.
  4. Cover shallow excavations and stockpiles of clean fill materials with polyethylene liners before extended work breaks and at the end of each work day. Anchor liners to resist wind forces; slope to prevent accumulation of water.
  5. Hold to a minimum the areas of bare soil exposed at one time.
  6. Comply with progress cleaning requirements of Section 01 74 05 – Cleaning.

### 3.04 POLLUTION CONTROL

- A. General:
  1. Provide means, methods, and facilities required to prevent contamination of soil, water, and atmosphere caused by discharge of noxious substances from construction operations.
  2. Utilize construction equipment that complies with Laws and Regulations.
  3. Comply with Section 01 35 43.13 – Environmental Procedures for Hazardous Materials.
- B. Spills and Contamination:
  1. Provide equipment, materials, and personnel to perform emergency measures required to contain and clean up spills, and to remove soils and liquids contaminated by spills.
  2. Provide spill kits, including oil-absorbent pads, socks, and booms, at or immediately adjacent to the Site's major work areas and equipment storage and fueling areas.
  3. Immediately notify Owner or Engineer of all spills, regardless of material, volume, or circumstances involved.
  4. Excavate contaminated material and properly dispose of offsite and replace with suitable compacted fill and topsoil or other suitable materials to restore pre-spill condition or better.
- C. Protection of Surface Waters:
  1. Implement special measures to prevent harmful substances from entering surface waters. Prevent disposal of wastes, effluents, chemicals, and other such substances in or adjacent to surface waters and open drainage routes, in sanitary sewers, or in storm sewers.
- D. Atmospheric Pollutants:
  1. Provide systems for controlling atmospheric pollutants related to the Work.
  2. Prevent toxic concentrations of chemicals and vapors.
  3. Prevent harmful dispersal of pollutants into atmosphere.
- E. Solid Waste:
  1. Provide systems for controlling and managing solid waste related to the Work.
  2. Prevent solid waste from becoming airborne, and from discharging to surface waters and drainage routes.
  3. Properly handle and dispose of solid waste.

### 3.05 NOISE CONTROL

- A. Minimize noise emissions from Contractor vehicles, equipment, and operations to the greatest degree practicable. Provide mufflers, silencers, and sound barriers when necessary, or as directed by Owner or Engineer.

B. Noise levels shall comply with all applicable Laws and Regulations, including OSHA requirements and local ordinances.

C. Do not allow noise emissions to interfere with the Work of Owner or others.

### 3.06 PROHIBITED CONSTRUCTION PROCEDURES

- A. Prohibited construction procedures include, but are not limited to, the following:
1. Dumping or disposing of spoil material, cleared vegetation, debris, or other waste material in any surface waters, drainage ways, or other unauthorized locations.
  2. Indiscriminate, arbitrary, or capricious operation of equipment in any surface waters, drainage ways, or other unauthorized locations.
  3. Pumping of silt-laden water from trenches or other excavations to any surface waters, drainage ways, sewers, or other unauthorized locations.
  4. Damaging vegetation beyond the extent necessary for construction.

### 3.07 REMOVAL OF TEMPORARY CONTROLS

- A. Remove temporary controls only when directed by Owner or Engineer.

END OF SECTION

SECTION 01 62 00  
PRODUCT OPTIONS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Scope:
1. This Section includes:
    - a. Contractor's options for selecting products.
    - b. Requirements for consideration of "or-equal" products.

1.02 TERMINOLOGY

- A. The following words or terms are not defined but, when used in this Section, have the following meaning:
1. "Products" includes materials, equipment, machinery, components, fixtures, systems, and other goods incorporated in the Work. Products do not include machinery and equipment used for preparing, fabricating, conveying, erecting, or installing the Work. Products include Owner-furnished goods incorporated in the Work where use of such goods is specifically required in the Contract Documents.

1.03 PRODUCT OPTIONS

- A. For products specified only by reference standard or description, without reference to Supplier, provide products meeting that standard, by a Supplier or from a source that complies with the Contract Documents.
- B. For products specified by naming one or more products or Suppliers, provide the named products that comply with the Contract Documents, unless an "or-equal" or substitute product is approved by Engineer.
- C. For products specified by naming one or more products or Suppliers and the term, "or equal", when Contractor proposes a product or Supplier as an "or equal", submit to Engineer a request for approval of an "or-equal" product or Supplier.
- D. For products specified by naming only one product or manufacturer and followed by words indicating that no substitution is allowed, there is no option and no substitution will be allowed.

1.04 "OR-EQUAL" PRODUCTS

- A. For proposed products not named in the Contract Documents and considered as an "or equal", Contractor shall request in writing Engineer's approval of the "or equal". Request for approval of an "or-equal" product shall accompany the Shop Drawing or product data submittal for the proposed product and shall include:
1. Contractor's request that the proposed product be considered as an "or equal", accompanied by Contractor's certifications.

2. Documentation adequate to show that proposed product:
  - a. Does not require extensive revisions to the Contract Documents.
  - b. Is consistent with the Contract Documents.
  - c. Will produce results and performance required in the Contract Documents.
  - d. Is compatible with other portions of the Work.
3. Detailed comparison of significant qualities of proposed product with the products and manufacturers named in the Contract Documents. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements shown or indicated.
4. Evidence that proposed product manufacturer will furnish warranty equal to or better than specified, if any.
5. List of similar installations for completed projects with project names and addresses, and names and address of design professionals and owners, if requested.
6. Samples, if requested.
7. Other information requested by Engineer.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

## SECTION 01 65 00

### PRODUCT DELIVERY REQUIREMENTS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. General requirements for preparing for shipping, delivering, and handling materials and equipment.
2. Make all arrangements for transporting, delivering, and handling of materials and equipment required for prosecution and completion of the Work.
3. Move stored materials and equipment when required without additional compensation and without changes to the Contract Times.

###### B. Related Sections

1. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials

##### 1.02 SUBMITTALS

- ###### A. Refer to individual Sections for submittal requirements relative to delivering and handling materials and equipment.

##### 1.03 PREPARING FOR SHIPMENT

- ###### A. When practical, factory-assemble materials and equipment. Match mark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with strippable, protective coating.
- ###### B. Package materials and equipment to facilitate handling, and protect materials and equipment from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate the associated purchase order number, bill of lading number, contents by name, Owner's contract name and number, Contractor name, equipment number, and approximate weight. Include complete packing lists and bills of materials with each shipment.
- ###### C. Protect materials and equipment from exposure to the elements and keep thoroughly dry and dust-free at all times. Protect painted surfaces against impact, abrasion, discoloration, and other damage. Lubricate bearings and other items requiring lubrication in accordance with manufacturer's instructions.
- ###### D. Keep Engineer informed of delivery of all materials and equipment to be incorporated in the Work.
- ###### E. Do not ship materials and equipment until:
1. Related Shop Drawings, Samples, and other submittals have been reviewed or accepted (as applicable) by Engineer, including, but not necessarily limited to, all Action Submittals associated with the materials and equipment being delivered.
  2. Manufacturer's instructions for handling, storing, and installing the associated materials and equipment have been submitted to and accepted by Engineer in accordance with the Specifications.

3. Results of source quality control testing (factory testing), when required by the Contract Documents for the associated materials or equipment, have been reviewed and accepted by the Engineer.
4. Facilities required for handling materials and equipment in accordance with manufacturer's instructions are in place and available.
5. Required storage facilities have been provided.

#### 1.04 DELIVERY

##### A. Scheduling and Timing of Deliveries:

1. Arrange deliveries of materials and equipment in accordance with the accepted Progress Schedule and in ample time to facilitate inspection prior to installation.
2. Schedule deliveries to minimize space required for and duration of storage of materials and equipment at the Site or delivery location, as applicable.
3. Coordinate deliveries to avoid conflicting with the Work and conditions at the Site, and to accommodate the following:
  - a. Work of other Contractors and Owner.
  - b. Storage space limitations.
  - c. Availability of equipment and personnel for handling materials and equipment.
  - d. Owner's use of premises.
4. Deliver materials and equipment to the Site during regular working hours.
5. Deliver materials and equipment to avoid delaying the Work and the Project, including work of other Contractors, as applicable. Deliver anchor system materials, including anchor bolts to be embedded in concrete or masonry, in ample time to avoid delaying the Work.

##### B. Deliveries:

1. Shipments shall be delivered with Contractor's name, Subcontractor's name (if applicable), Site name, Project name, and contract designation clearly marked.
2. Site may be listed as the "ship to" or "delivery" address; but Owner shall not be listed as recipient of shipment unless otherwise directed in writing by Engineer.
3. Provide Contractor's telephone number to shipper; do not provide Owner's telephone number.
4. Arrange for deliveries while Contractor's personnel are at the Site. Contractor shall receive and coordinate shipments upon delivery. Shipments delivered to the Site when Contractor is not present will be refused by Owner, and Contractor shall be responsible for the associated delays and additional costs, if incurred.
5. Comply with Section 01 35 43.13 – Environmental Procedures for Hazardous Materials.

##### C. Containers and Marking:

1. Have materials and equipment delivered in manufacturer's original, unopened, labeled containers.
2. Clearly mark partial deliveries of component parts of materials and equipment to identify materials and equipment, to allow easy accumulation of parts, and to facilitate assembly.

##### D. Inspection of Deliveries:

1. Immediately upon delivery, inspect shipment to verify that:
  - a. Materials and equipment comply with the Contract Documents and reviewed or accepted (as applicable) submittals.
  - b. Quantities are correct.
  - c. Materials and equipment are undamaged.
  - d. Containers and packages are intact and labels are legible.
  - e. Materials and equipment are properly protected.



2. Promptly remove damaged materials and equipment from the Site and expedite delivery of new, undamaged materials and equipment, and remedy incomplete or lost materials and equipment to furnish materials and equipment in accordance with the Contract Documents, to avoid delaying progress of the Work.
3. Advise Engineer in writing when damaged, incomplete, or defective materials and equipment are delivered, and advise Engineer of the associated impact on the Progress Schedule.

#### 1.05 HANDLING OF MATERIALS AND EQUIPMENT

- A. Provide equipment and personnel necessary to handle materials and equipment, including those furnished by Owner, by methods that prevent soiling or damaging materials, equipment, and packaging.
- B. Provide additional protection during handling as necessary to prevent scraping, marring, and otherwise damaging materials, equipment, and surrounding surfaces.
- C. Handle materials and equipment by methods that prevent bending and overstressing.
- D. Lift heavy components only at designated lifting points.
- E. Handle materials and equipment in safe manner and as recommended by the manufacturer to prevent damage. Do not drop, roll, or skid materials and equipment off delivery vehicles or at other times during handling. Hand-carry or use suitable handling equipment.

#### PART 2 – PRODUCTS (NOT USED)

#### PART 3 – EXECUTION (NOT USED)

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

PRODUCT DELIVERY REQUIREMENTS  
01 65 00 - 4  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

## SECTION 01 66 00

### PRODUCT STORAGE AND HANDLING REQUIREMENTS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Scope:
  - 1. Storing and protecting materials and equipment.
- B. Related Sections
  - 1. Section 01 65 00 – Product Delivery Requirements
  - 2. Section 01 35 43.13 – Environmental Procedures for Hazardous Materials

##### 1.02 STORAGE

- A. Store and protect materials and equipment in accordance with manufacturer's recommendations and the Contract Documents.
- B. Make all arrangements and provisions necessary for, and pay all costs for, storing materials and equipment. Place excavated materials, construction equipment, and materials and equipment to be incorporated into the Work in a manner that avoids injuring the Work and existing facilities and property, and so that free access is maintained at all times to all parts of the Work and to public utility installations in vicinity of the Work. Store materials and equipment neatly and compactly in locations that cause minimum inconvenience to Owner, other Contractors, public travel, and owners, tenants, and occupants of adjoining property. Arrange storage in manner to allow easy access for inspection.
- C. Store materials and equipment in areas shown or indicated in the Contract Documents, or as approved by Owner or Engineer.
- D. Store materials and equipment that will become Owner's property to facilitate their inspection and preserve the quality of the Work, including proper protection against damage by freezing, moisture, and high temperatures with ambient temperatures as high as 90 degrees F. Store in indoor, climate-controlled storage areas all materials and equipment subject to damage by moisture, humidity, heat, cold, and other elements, unless otherwise acceptable to Owner.
- E. Contractor shall be fully responsible for loss or damage (including theft) to stored materials and equipment.
- F. Do not open manufacturer's containers until time of installation, unless recommended by the manufacturer or otherwise specified in the Contract Documents.
- G. Do not store materials or equipment in structures being constructed unless approved by Engineer in writing.
- H. Do not use lawns or other private property for storage without written permission of the owner or other person in possession or control of such premises.

### 1.03 PROTECTION

- A. Equipment to be incorporated into the Work shall be boxed, crated, or otherwise completely enclosed and protected during shipping, handling, and storage, in accordance with Section 01 65 00 – Product Delivery Requirements.
- B. Store all materials and equipment off the ground (or floor) on raised supports such as skids or pallets.
- C. Protect painted surfaces against impact, abrasion, discoloration, and other damage. Painted equipment surfaces that are damaged or marred shall be repainted in their entirety in accordance with equipment manufacturer and paint manufacturer requirements, to the satisfaction of Engineer.
- D. Protect electrical equipment, controls, and instrumentation against moisture, water damage, heat, cold, and dust. Space heaters provided in equipment shall be connected and operating at all times until equipment is placed in operation and permanently connected.

### 1.04 UNCOVERED STORAGE

- A. The following types of materials may be stored outdoors without cover on supports so there is no contact with the ground:
  - 1. Reinforcing steel.
  - 2. Pre-cast concrete materials.
  - 3. Structural steel.
  - 4. Metal stairs.
  - 5. Handrails and railings.
  - 6. Grating.
  - 7. Checker plate.
  - 8. Metal access hatches.
  - 9. Castings.
  - 10. Fiberglass products.
  - 11. Rigid electrical conduit.
  - 12. Piping, except polyvinyl chloride (PVC) or chlorinated PVC (CPVC) pipe.

### 1.05 COVERED STORAGE

- A. The following materials and equipment may be stored outdoors on supports and completely covered with covering impervious to water:
  - 1. Grout and mortar materials.
  - 2. Masonry units.
  - 3. Rough lumber.
  - 4. Soil materials and granular materials such as aggregate.
  - 5. PVC and CPVC pipe.
  - 6. Filter media.
- B. Tie down covers with rope or anchor with sandbags, and slope covering to prevent accumulation of water.
- C. Store loose soil materials and granular materials, with covering impervious to water, in well-drained area or on solid surfaces to prevent mixing with foreign matter. Place, grade, and shape stockpiles for proper drainage.

## 1.06 FULLY-PROTECTED STORAGE

- A. Store all material and equipment not named in Articles 1.04 and 1.05 of this Section on supports in buildings or trailers that have concrete or wooden flooring, roof, and fully-closed walls on all sides. Covering with visquine plastic sheeting or similar material in space without floor, roof, and walls is not acceptable. Comply with the following:
1. Provide heated storage for materials and equipment that could be damaged by low temperatures or freezing.
  2. Provide air-conditioned storage for materials and equipment that could be damaged by high temperatures.
  3. Protect mechanical and electrical equipment from being contaminated by dust, dirt, and moisture.
  4. Maintain humidity at levels recommended by manufacturers for electrical and electronic equipment.

## 1.07 HAZARDOUS PRODUCTS

- A. Prevent contamination of personnel, storage area, and the Site. Comply with Laws and Regulations, manufacturer's instructions, and Section 01 35 43.13 – Environmental Procedures for Hazardous Materials.

## 1.08 MAINTENANCE OF STORAGE

- A. Periodically inspect stored materials and equipment to on a scheduled basis to ensure that:
1. Condition and status of storage facilities is adequate to provide required storage conditions.
  2. Required environmental conditions are maintained on a continuing basis.
  3. Materials and equipment exposed to elements are not adversely affected.

## 1.09 RECORDS

- A. Keep up-to-date account of materials and equipment in storage to facilitate preparation of Applications for Payment, if the Contract Documents provide for payment for materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing.

## PART 2 – PRODUCTS (NOT USED)

## PART 3 – EXECUTION (NOT USED)

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

PRODUCT STORAGE AND HANDLING REQUIREMENTS  
01 66 00 - 4  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

SECTION 01 71 23  
FIELD ENGINEERING

PART 1 – GENERAL

1.01 DESCRIPTION

A. Scope:

1. Providing field engineering services and professional services of the types indicated for the Project, including:
  - a. Developing and making all detail surveys and measurements required for construction, including slope stakes, batter boards, and all other working lines, elevations, and cut sheets.
  - b. Providing materials required for benchmarks, control points, batter boards, grade stakes, and other items.
  - c. Keeping a transit, theodolite, or total station (theodolite with electronic distance measurement device), leveling instrument, and related implements such as survey rods and other measurement devices, at the Site at all times, and having a skilled instrument person available when necessary for laying out the Work.
  - d. Being solely responsible for all locations, dimensions, and levels. No data other than Change Order, Work Change Directive, or Field Order shall justify departure from dimensions and levels required by the Contract Documents.
  - e. Rectifying all Work improperly installed because of not maintaining, not protecting, or removing without authorization established reference points, stakes, marks, and monuments.
  - f. Providing such facilities and assistance necessary for the Engineer to check lines and grade points placed by Contractor. Do not perform excavation or backfilling Work until all cross-sectioning necessary for determining payment quantities for Unit Price Work have been completed and accepted by Engineer.

B. Related Sections

1. Section 01 78 39 – Project Record Documents

1.02 QUALITY ASSURANCE

A. Qualifications:

1. Surveyor:
  - a. Employ or retain the services of a surveyor with experience and capability of performing surveying and layout tasks required in the Contract Documents and as required for the Work. Surveyor shall be a professional land surveyor licensed and registered in the State of New York.
  - b. Responsibilities include, but are not necessarily limited to, the following:
    - 1) Providing required surveying equipment, including transit or theodolite, level, stakes, global positioning system (GPS) equipment, and other surveying accessories.
    - 2) Establishing required lines and grades for performing all excavating, filling, compacting, and grading, and for constructing all facilities, structures, pipelines, and site improvements.
    - 3) Supporting the Engineer to lay out verification sample locations in the field.
    - 4) Preparing and maintaining professional-quality, accurate, well organized, legible notes of all measurements and calculations made while surveying and laying out the Work.

- 5) Performing such surveys and computations necessary to determine quantities of Work performed, placed, or installed.
- 6) Performing such surveys necessary to record actual construction, including demolition, excavation, backfilling, and restoration operations, as well as locations and elevations of verification samples.
- 7) Prior to backfilling operations, surveying, locating, and recording on a copy of the Contract Documents accurate representation of buried Work and Underground Facilities encountered.
- 8) Preparing certified survey drawings in accordance with Section 01 78 39 – Project Record Documents.
- 9) Complying with requirements of the Contract Documents relative to surveying and related Work.

### 1.03 SUBMITTALS

#### A. Informational Submittals:

1. Procedure Submittals: Submit surveying plan for conducting all survey Work not less than 10 days prior to starting survey Work.
2. Survey Field Books:
  - a. Submit example of proposed survey field books to be maintained by Contractor's surveyor. Example shall have sufficient information and detail, including example calculations and notes, to demonstrate that field books will be organized and maintained in a professional manner, complying with the Contract Documents.
  - b. Submit original field books within two days after completing survey Work.
3. Qualifications Statements:
  - a. Submit name and address of firm and resumes of each professional land surveyor and crew chief conducting the survey Work. Submit at least 10 days prior to beginning survey Work. During the Project, submit resume for each new registered land surveyor and crew chief employed or retained by Contractor at least 10 days prior to starting on the survey Work.
4. Certificates:
  - a. When requested by Engineer, submit certificate signed by professional surveyor certifying that elevations and locations of the Work comply with the Contract Documents. Explain all deviations, if any.
5. Pre-Construction Photolog as described in Article 3.01.
6. Post-Construction Photolog as described in Article 3.01.

### 1.04 RECORDS

- #### A. Maintain at the Site a complete and accurate log of control and survey Work as it progresses.
1. Survey data shall be in accordance with recognized professional surveying standards, Laws and Regulations, and prevailing standards of practice in the locality where the Site is located. Original field notes, computations, and other surveying data shall be recorded by Contractor's surveyor in Contractor-furnished hard-bound field books and shall be signed and sealed by Contractor's surveyor. Completeness and accuracy of survey Work, and completeness and accuracy of survey records, including field books, shall be responsibility of Contractor. Failure to organize and maintain survey records in an appropriate manner that allows reasonable and independent verification of calculations, and to allow identification of elevations, dimensions, and grades of the Work, shall be cause for rejecting the survey records, including field books.
  2. Illegible notes or data, and erasures on any page of field books, are unacceptable. Do not submit copied notes or data. Corrections by ruling or lining out errors will be unacceptable unless initialed by the surveyor. Violation of these requirements may require re-surveying the data questioned by Engineer.



## PART 2 – PRODUCTS (NOT USED)

## PART 3 – EXECUTION

### 3.01 SURVEYING

- A. Verification of Conditions: Verify Site conditions before starting Work. Promptly notify Engineer of any discrepancies with the potential to affect the Work.
- B. Reference Points:
  - 1. Owner's established reference points damaged or destroyed by Contractor will be re-established by Owner at Contractor's expense.
  - 2. From Owner-established reference points, establish lines, grades, and elevations necessary to control the Work. Obtain measurements required for executing the Work to tolerances specified in the Contract Documents.
  - 3. Establish, place, and replace as required, such additional stakes, markers, and other reference points necessary for control, intermediate checks, and guidance of construction operations.
- C. Coordinate System and Reference Datums: Comply with the following:
  - 1. Coordinate System: New York State Plane Coordinate System of 1983, East Zone.
  - 2. Reference Datums:
    - a. Horizontal: North American Datum of 1983.
    - b. Vertical: North American Vertical Datum of 1988.
- D. Surveys to Determine Quantities for Payment:
  - 1. For each Application for Payment, perform such surveys and computations necessary to determine quantities of Work performed, placed, or installed. Perform surveys necessary for Engineer to determine final quantities of Work performed or in place.
  - 2. Notify Engineer at least 24 hours before performing survey services for determining quantities. Unless waived in writing by Engineer, perform quantity surveys in presence of Engineer.
- E. Surveys to Record Actual Construction: Perform such surveys necessary to record actual construction including, but not limited to, the following:
  - 1. Horizontal and vertical limits of excavation.
  - 2. Horizontal and vertical location of existing Underground Facilities and surface structures demolished, realigned, or abandoned in-place.
  - 3. Horizontal and vertical limits of fill for each material classification.
  - 4. Subgrade and final grade topography.
  - 5. Horizontal and vertical location of buildings, foundations, and walls.
  - 6. Horizontal location of exposed piping and utilities, poles, exposed wires, posts, signs, markers, curbs, fencing, gates, guard rails, guard cables, and other facilities visible at or above ground surface.
  - 7. Horizontal limits of lawns, pavements, roads, walks, drives, and other surface improvements.
  - 8. Horizontal and vertical location of monitoring wells, including ground surface elevation, outer casing elevation, and inner casing elevation.
- F. Construction Surveying: Comply with the following:
  - 1. Conduct topographic surveys on a 10- by 10-foot grid or wherever the elevation changes more than 1 foot. Survey shall document location of grade breaks and edges of removal areas as appropriate.

2. Pre-Construction Survey: Perform a pre-construction survey consisting of the following:
    - a. Topographic survey covering the limits of the area that will be disturbed to facilitate remedial construction to establish pre-existing lines and grades to support restoration.
    - b. Photograph the general work area to be disturbed as well as any structures or features near the project work limits to document pre-construction conditions.
    - c. Prepare a photolog of the pre-construction conditions.
  3. In-Construction Surveys: Perform the following in-construction surveys:
    - a. Post removal survey following soil/sediment excavation
    - b. As necessary to confirm the design elevations and slopes
    - c. Following placement of interim fill and soil cover materials
  4. Post-Construction Survey: Perform a post-construction survey consisting of the following:
    - a. Elevations and topography of the disturbed/restored area.
    - b. Photograph the restored work area as well as structures or features near the project work limits at the approximate same locations the pre-construction photographs were taken.
    - c. Prepare photolog like pre-construction survey.
  5. Perform post-removal and post-construction surveys using the same control points and survey requirements as the pre-construction survey. Additional locations shall also be surveyed as necessary to document location of grade breaks, edges of removal areas, and other significant features.
- G. Accuracy:
1. Establish Contractor's temporary survey reference points for Contractor's use to at least second-order accuracy (i.e., 1:10,000). Construction staking used as a guide for the Work shall be set at least third-order accuracy (i.e., 1:5000). Basis on which such orders are established shall provide the following absolute margin for error:
    - a. Horizontal accuracy of easement staking shall be plus or minus 0.1 foot.
    - b. Accuracy of other staking shall be plus or minus 0.04 foot horizontally and plus or minus 0.02 foot vertically.
  2. Survey calculations shall include an error analysis sufficient to demonstrate required accuracy.

END OF SECTION

## SECTION 01 71 33

### PROTECTION OF WORK AND PROPERTY

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Taking all precautions, providing all programs, and taking all actions necessary to protect the Work and all public and private property and facilities from damage as specified in this Section.
2. Preventing damage, injury, or loss, by:
  - a. Storing materials, supplies, and equipment in an orderly, safe manner that does not unduly interfere with the progress of the Work or work of other Contractors or utility companies.
  - b. Providing suitable storage facilities for materials and equipment subject to damage or degradation by exposure to weather, theft, breakage, or other cause.
  - c. Placing upon the Work or any part thereof only loads consistent with the safety and integrity of that portion of the Work and existing construction.
  - d. Frequently removing and disposing of refuse, rubbish, scrap materials, and debris caused by Contractor's operations so that, at all times, the Site is safe, orderly, and workmanlike in appearance.
  - e. Providing temporary barricades and guard rails around openings, scaffolding, temporary stairs and ramps, excavations, elevated walkways, and other hazardous areas.
3. Do not, except after written consent from proper parties, enter or occupy privately-owned land with personnel, tools, materials, or equipment, except on lands and easements provided by Owner. Contractor shall not seek out such written consent unless specifically authorized by Owner to do so.
4. Preserve public and private property and facilities on and adjacent to the Site. Direct or indirect damage done by, or on account of, any act, omission, neglect, or misconduct by Contractor in executing the Work, shall be restored by Contractor, at its expense to condition equal to that existing before damage was done.

###### B. Related Sections

1. Section 02 41 00 – Demolition
2. Section 31 11 00 – Clearing and Grubbing
3. Section 31 23 00 – Excavation and Fill

#### PART 2 – PRODUCTS (NOT USED)

#### PART 3 – EXECUTION

##### 3.01 BARRICADES AND WARNING SIGNALS

###### A. General:

1. Where the Work is performed on or adjacent to roadway, access road, right-of-way, or public place:
  - a. Provide barricades, fences, lights, warning signs, danger signals, watchmen, and take other precautionary measures for protecting persons, property, and the Work.

- b. Paint barricades to be visible at night.
  - c. From sunset to sunrise, furnish and maintain at least one light at each barricade.
  - d. Erect sufficient barricades to keep vehicles from being driven on or into Work under construction.
  - e. Furnish watchmen in sufficient numbers to protect the Work.
2. Provide temporary barricades to protect personnel and property for Work not in or adjacent to vehicular travel areas, including indoor work, in accordance with Laws and Regulations.
  3. Maintain temporary barricades, signs, lights, and provide watchmen until the Work is accepted in accordance with the Contract Documents.

### 3.02 TREE AND PLANT PROTECTION

#### A. General:

1. Protect existing trees, shrubs, and plants on or adjacent to the Site, shown or designated to remain in place, against unnecessary cutting, breaking, or skinning of trunk, branches, bark, and roots.
2. Do not store materials or equipment, or park construction equipment and vehicles, within the foliage drip line.
3. In areas subject to traffic, provide temporary fencing or barricades to protect trees and plants.
4. Cover exposed roots with burlap, which shall be kept continuously wet. Cover exposed roots with earth as soon as possible. Protect root systems from mechanical damage and damage by erosion, flooding, run-off, and noxious materials in solution.
5. If branches or trunks are damaged, prune branches immediately and protect cut or damaged areas with emulsified asphalt compounded specifically for horticultural use, in manner acceptable to Engineer.
6. When directed by Engineer, remove and dispose of damaged trees and plants that die or suffer permanent injury, and replace at Contractor's expense damaged trees or plants with specimens of equal or better quality.

#### B. Coordinate Work in this Article 3.02 with Section 31 11 00 – Clearing and Grubbing.

### 3.03 PROTECTION OF EXISTING STRUCTURES

#### A. Underground Facilities:

1. Underground Facilities known to Owner and Engineer, except water, gas, sewer, electric, and communications services to individual buildings and properties, are shown on the Design Drawings. Information shown for Underground Facilities is the best available to Owner and Engineer but is not guaranteed to be correct or complete.
2. Utility Mark-Out:
  - a. Clearly delineate areas of demolition, trenching, excavation, or other subsurface Work at the Site.
  - b. Provide required notification to local one-call notification system (Dig Safely New York) at least two working days, but not more than 10 working days, before planned start of demolition, trenching, excavation, or other subsurface Work.
  - c. Walk the Site and review utility markings before proceeding with demolition, trenching, excavation, or other subsurface Work.
  - d. Protect and preserve staking, markings, or other designations until no longer required for proper and safe Work at or near Underground Facilities.
3. Explore ahead of demolition, trenching, excavation, or other subsurface Work, and uncover obstructing Underground Facilities sufficiently to determine their location, to prevent damage to Underground Facilities, and to prevent service interruption to building or parcels served by Underground Facilities. Immediately notify Owner, Engineer, and

the owner if Contractor damages an Underground Facility, or the material surrounding or supporting the same. Restore damaged facility and restore it to original condition, in accordance with requirements of the owner of the damaged facility. Such repair or restoration Work shall be performed at no additional cost to Owner.

- a. Undertake such emergency response actions as may be required.
  - b. Collect, containerize, characterize, and properly dispose of any oils or pollutants released from the damaged facility.
  - c. Provide provisions for alternate or temporary service until damaged facility is repaired.
  - d. Provide assistance to the owner of the damaged facility during repairs unless authorized by the facility's owner to undertake such repairs directly.
4. Necessary changes in the location of the Work may be directed by Engineer to avoid Underground Facilities not shown or indicated on the Contract Documents.
  5. If permanent relocation of an existing Underground Facilities is required and is not otherwise shown or indicated in the Contract Documents, Engineer will direct Contractor in writing to perform the Work. Contract modification procedures and payment for such Work shall be in accordance with the Contract Documents When the relocation Work results in a change in the Contract Price, Contract Times.
- B. Surface Structures:
1. Surface structures are existing buildings, retaining walls, other structures, and other facilities at or above ground surface, including their foundations or any extension below ground surface. Surface structures include, but are not limited to, buildings, tanks, walls, bridges, roads, dams, channels, open drainage, exposed piping and utilities, poles, exposed wires, posts, signs, markers, curbs, walks, fencing, and other facilities visible at or above ground surface.
  2. Replace and restore to their original condition existing surface facilities, including but not limited to guard rails, posts, guard cables, signs, poles, markers, curbs, and fencing, that are damaged or temporarily removed to facilitate the Work at Contractor's expense.
- C. Protection of Underground Facilities and Surface Structures:
1. Sustain in their places and protect from direct or indirect injury all Underground Facilities and surface structures located within or adjacent to the limits of the Work. Such sustaining and supporting shall be done carefully and as required by the party owning or controlling such facility or structure. Before proceeding with the Work of sustaining and supporting such facility or structure, Contractor shall satisfy Engineer that methods and procedures to be used have been approved by party owning same.
  2. Contractor shall bear all risks attending the presence or proximity of all Underground Facilities and surface structures within or adjacent to the limits of the Work, in accordance with the Contract Documents. Contractor shall be responsible for damage and expense for direct or indirect injury caused by its Work to facilities and structures. Contractor shall repair immediately and completely damage caused by its Work, to the satisfaction of the owner of damaged facility or structure.
  3. Comply with 16 NYCRR 753 (Protection of Underground Facilities) and other Laws and Regulations regarding the protection of Underground Facilities.
- D. Coordinate Work in this Article 3.03 with Sections 02 41 00 – Demolition and 31 23 00 – Excavation and Fill.

3.04 PROTECTION OF INSTALLED MATERIALS, EQUIPMENT, AND LANDSCAPING

- A. Protect installed materials and equipment to prevent damage from subsequent operations. Remove protection facilities when no longer needed prior to completion of the Work.
- B. Control traffic to prevent damage to equipment, materials, and surfaces.
- C. Provide coverings to protect materials and equipment from damage.

END OF SECTION

## SECTION 01 74 05

### CLEANING

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Executing cleaning during the Project, at completion of the Work, and as required by this Section.
2. Maintaining in a clean manner the Site, the Work, and areas adjacent to or affected by the Work.

###### B. Related Sections

1. Section 01 57 05 – Temporary Controls

##### 1.02 REFERENCE STANDARDS

###### A. The following standards are referenced in this Section:

1. NFPA 241, Safeguarding Construction, Alteration, and Demolition Operations.

##### 1.03 PROGRESS CLEANING

###### A. General: Clean the Site, work areas, and other areas occupied by Contractor at least weekly. Dispose of materials in accordance with the following:

1. Comply with NFPA 241 for removing combustible waste materials and debris.
2. Do not hold non-combustible materials at the Site more than three days if the temperature is expected to rise above 80 degrees F. When temperature is less than 80 degrees F, dispose of non-combustible materials within seven days of their generation.
3. Provide suitable containers for storage of waste materials and debris.
4. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately.

###### B. Site:

1. Keep outdoor, dust-generating areas wetted down or otherwise control dust emissions in accordance with Section 01 57 05 – Temporary Controls.
2. Brush-sweep at least weekly, roadways and paved areas at the Site that are used by construction vehicles or otherwise affected by construction activities.

###### C. Work Areas:

1. Clean areas where the Work is in progress to a level of cleanliness necessary for proper execution of the Work.
2. Remove liquid spills promptly and immediately report spills to Owner and Engineer, and authorities having jurisdiction.
3. Where dust would impair proper execution of the Work, broom-clean or vacuum entire work area, as appropriate.
4. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

###### D. Installed Work: Keep installed Work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of material or equipment installed, using only cleaning agents and methods specifically recommended by material or equipment manufacturer. If manufacturer does not recommend specific cleaning agents or methods,

use cleaning agents and methods that are not hazardous to health and property and that will not damage exposed surfaces.

- E. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration until Substantial Completion.
- F. Waste Disposal:
  - 1. Properly dispose of waste materials, surplus materials, debris, and rubbish off the Site.
  - 2. Do not burn or bury rubbish and waste materials at the Site.
  - 3. Do not discharge volatile or hazardous substances, such as mineral spirits, oil, or paint thinner, into storm sewers or sanitary sewers.
  - 4. Do not discharge wastes into surface waters or drainage routes.
  - 5. Contractor shall be solely responsible for complying with Laws and Regulations regarding storing, transporting, and disposing of waste.
- G. During handling and installation of materials and equipment, clean and protect construction in progress and adjoining materials and equipment already in place. Apply protective covering where required for protection from damage or deterioration, until Substantial Completion.
- H. Clean completed construction as frequently as necessary throughout the construction period.

#### 1.04 CLOSEOUT CLEANING

- A. Complete the following prior to requesting inspection for Substantial Completion:
  - 1. Clean and remove from the Site rubbish, waste material, debris, and other foreign substances.
  - 2. Sweep paved areas broom-clean. Remove petrochemical spills, stains, and other foreign deposits.
  - 3. Hose-clean sidewalks and loading areas.
  - 4. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  - 5. Leave surface waterways, drainage routes, storm sewers, and gutters open and clean.
  - 6. Repair pavement, roads, sod, and other areas affected by construction operations and restore to specified condition. If condition is not specified, restore to pre-construction condition.
  - 7. Clean exposed exterior and interior hard-surfaced finishes to dirt-free condition, free of spatter, grease, stains, fingerprints, films, and similar foreign substances.
  - 8. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, and similar spaces.
  - 9. Remove non-permanent tags and labels.
  - 10. Leave the Site clean, and in neat, orderly condition, satisfactory to Owner and Engineer.

#### PART 2 – PRODUCTS (NOT USED)

#### PART 3 – EXECUTION (NOT USED)

END OF SECTION



## SECTION 01 74 19

### CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Scope:
1. This Section includes administrative and procedural requirements for:
    - a. Recycling non-hazardous, uncontaminated demolition and construction waste.
    - b. Disposing of non-hazardous, uncontaminated demolition and construction waste.
- B. Coordination:
1. Coordinate recycling and disposing of waste as specified under this and other Sections.
- C. Related Sections:
1. Section 01 31 13 – Project Coordination
  2. Section 02 41 00 – Demolition
  3. Section 02 61 05 – Removal and Disposal of Contaminated Material
  4. Section 31 11 00 – Clearing and Grubbing
  5. Section 31 23 00 – Excavation and Fill
- D. Performance Requirements:
1. Practice efficient waste management in using materials in the Work.
  2. Employ reasonable means to divert demolition and construction waste from landfills and incinerators. Facilitate recycling of materials, including the following:
    - a. Demolition Waste:
      - 1) Concrete.
      - 2) Concrete reinforcing steel.
      - 3) Brick.
      - 4) Concrete masonry units.
      - 5) Structural steel and miscellaneous steel and metal.
    - b. Construction Waste:
      - 1) Packaging:
        - a) Paper.
        - b) Cardboard and boxes.
        - c) Pallets and wood crates.
  3. Dispose of demolition and construction waste only at Owner-approved facilities.

##### 1.02 TERMINOLOGY

- A. The following words or terms are not defined but, when used in this Section, have the following meaning:
1. “Construction waste” is building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
  2. “Demolition waste” is building and site improvement materials resulting from demolition or selective demolition operations.
  3. “Disposal” is removal to an off-site location of demolition and construction waste and subsequent sale, recycling, reuse, or placement in an Owner-approved landfill or incinerator facility conforming to Laws and Regulations and acceptable to authorities having jurisdiction.

4. "Recycle" is recovery of demolition waste or construction waste for subsequent processing in preparation for reuse.
5. "Recycle and reuse" is recovery of demolition waste or construction waste and subsequent processing and reuse in the Work.
6. "Site Clearing Waste" is above-grade trees, shrubs, and brush that are not in direct contact with impacted material.

### 1.03 QUALITY ASSURANCE

#### A. Regulatory Requirements:

1. Comply with hauling and disposal Laws and Regulations of authorities having jurisdiction.

### 1.04 SUBMITTALS

#### A. Informational Submittals:

1. Waste Management Plan: Submit acceptable plan for managing demolition and construction waste within 14 days of the date the Contract Times commence running, and before removing any waste from the Site. Include the following:
  - a. For materials that will be recycled and reused in the Work, procedures and equipment for preparing recycled materials before incorporating them into the Work.
  - b. Procedures for separating each type of recyclable waste, including sizes of containers, container labeling, and designated location at the Site where materials will be separated and stored.
  - c. List of local, Owner-approved disposal facilities that will be used for demolition and construction waste. Include name, address, and telephone number of each recycling or processing facility, landfill, and incinerator facility. Identify type of waste to be disposed of at each facility.
2. Waste Profiles:
  - a. Preliminary Waste Profiles: Obtain a waste profile from the proposed disposal facility. The Engineer shall prepare and submit waste profile, listing Owner's name and address of the Site as generator of waste, for each landfill and incinerator facility. Owner will sign and return each acceptable waste profile to Contractor.
  - b. Final Waste Profiles: Submit counter-signed waste profile and proof of acceptance of waste for each landfill and incinerator facility.
3. Disposal Records:
  - a. Recycling and Processing Facility Records: Submit counter-signed manifests, weight tickets, receipts, and invoices on a monthly basis throughout the Project, and concurrent with each Application for Payment.
  - b. Landfill and Incinerator Facility Records: Submit counter-manifests, weight tickets, receipts, and invoices on a monthly basis throughout the Project, and concurrent with each Application for Payment.

### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Recyclable Waste: On a daily basis, remove all recyclable materials from the work area in acceptable containers.
- B. Provide separate collection containers as required by recycling haulers and to prevent contamination of materials, including protection from the elements as applicable.
- C. Replace loaded containers with empty containers as demand requires, at least weekly.
- D. Handling: Deposit recyclable materials in containers in clean (no mud, adhesives, solvents, or petroleum or coal tar contamination), debris-free condition.

- E. If contamination chemically combines with materials so that materials cannot be cleaned, do not deposit into recycle containers.
- F. Environmental Requirements: Transport recyclable waste materials from the work area to recycling containers, and carefully deposit in containers in manner to minimize noise and dust. Close the covers of container immediately after materials are deposited. Do not place recyclable waste materials on the ground adjacent to container.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 WASTE MANAGEMENT

- A. Provide handling, containers, storage, signage, transportation, and other items required to manage wastes during the Project.
- B. Site Access and Temporary Controls:
  - 1. Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent facilities.
    - a. Designate and label specific areas of the Site necessary for separating materials to be recycled or reused.
    - b. Provide temporary controls in accordance with the Contract Documents.
- C. Shipping Documents: The Engineer shall prepare a non-hazardous waste manifest for each shipment of demolition and construction waste. Owner or an authorized agent will review and sign each manifest as generator of waste.

3.02 RECYCLING WASTE

- A. General:
  - 1. Recycle paper and beverage containers used by Contractor's personnel, Subcontractors, and Suppliers.
  - 2. Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at the Site to the maximum extent practical.
    - a. Provide appropriately marked containers or bins for controlling recyclable waste until recyclable materials are removed from the Site. Post list of acceptable and unacceptable materials at each container and bin. Inspect containers and bins for contamination and remove contaminated materials if found.
    - b. Before removing from the Site, prepare and process recyclable waste as required by recycling or processing facility.
    - c. Stockpile processed materials at the Site without intermixing with other materials. Place, grade, and shape stockpiles to drain water. Cover to prevent dust and blowing debris.
    - d. Stockpile materials away from the construction area. Do not store within drip line of trees.
    - e. Remove recyclable waste from the Site and from Owner's property and transport to Owner-approved recycling or processing facility.
- B. Recycling and Reuse of Demolition Waste:
  - 1. Concrete:
    - a. Remove reinforcement and other metals from concrete and sort with other metals.

- b. Transport all concrete removed from the on-site areas designated in the Contract Documents off-site for disposal, unless otherwise approved by Engineer.
  - 2. Masonry:
    - a. Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
    - b. Transported all removed masonry off-site for disposal, unless otherwise approved by Engineer.
- C. Recycling Demolition Waste:
  - 1. Metals:
    - a. Separate metals by type.
    - b. Stack structural steel according to size, type of member, and length.
    - c. Remove and dispose of bolts, nuts, washers, and other rough hardware.
  - 2. Electrical Devices: Separate switches, receptacles, meters, circuit breakers, and other devices by type and protect from the elements.
- D. Recycling Construction Waste:
  - 1. Packaging:
    - a. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store at dry location.
    - b. Pallets: Require that goods delivered on pallets have the pallets removed from Site, to the extent possible. For pallets that remain at the Site, break down pallets into component wood pieces. Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, and treated wood materials.
    - c. Crates: Break down crates into component wood pieces. Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, and treated wood materials.

### 3.03 DISPOSAL OF WASTE

- A. General: Except for items or materials to be recycled or recycled and reused, remove from the Site and properly dispose of waste at Owner-approved facility such as permitted landfill, or other method acceptable to Owner and authorities having jurisdiction.
  - 1. Except as otherwise specified, remove from the Site all waste and debris from the Work as it accumulates. Upon completion of the Work, remove materials, equipment, waste, and debris and leave the Site clean, neat, and orderly. Comply with the Contract Documents regarding cleaning and removal of trash, debris, and waste.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials at the Site.

END OF SECTION

## SECTION 01 77 19

### CLOSEOUT PROCEDURES

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Provisions of this section apply to the procedural requirements for closeout of Work executed by the Contractor.

###### B. Related Sections:

1. Section 01 29 76 – Progress Payment Procedures
2. Section 01 78 39 – Project Record Documents

##### 1.02 SUBMITTALS

- A. Provide all documentation pertaining to all components of the executed Work and requiring inspection prior to submitting an application for Final Certification Inspection including, but not limited to, tables showing actual excavated and backfilled volumes, Construction Drawings, certified survey data, executed warranties, certified weigh slips from the disposal facility, maintenance agreements, inspection certificates and similar required documentation for specific units of Work.
- B. Truck volume counts and measurement summary. Following completion of construction and as a pre-requisite for Final Certification Inspection provide the Engineer with final truck volume counts and measurement summary tables. Provide supporting data that was used to develop the measurement summary tables.
- C. Prepare and submit Closeout Documents in accordance with Section 01 78 39 – Project Record Documents.

##### 1.03 INSPECTION PROCEDURES

###### A. Substantial Completion:

1. Preliminary Procedures: Prior to requesting an inspection for Substantial Completion, the Contractor shall complete the following:
  - a. Prepare a list of items to be completed and corrected, including the value of the items on the list, and the reasons why the items are not completed. Submit the list to the Engineer.
  - b. Advise the Engineer, in writing, of pending insurance changeover requirements, if applicable.
  - c. Terminate and remove temporary facilities, including mockups, construction tools, and similar elements from the Site, as necessary.
  - d. Complete grading, restoration, and final cleaning.

2. Inspection: Submit a written request for inspection for Substantial Completion. Upon receipt of the request, the Engineer will proceed with the inspection or notify the Contractor of unfulfilled requirements. The Engineer will prepare the Certificate of Substantial Completion after inspection or will notify the Contractor of items, either on Contractor's list or additional items identified by the Engineer, that must be completed or corrected before the Certificate of Substantial Completion will be issued. Any outstanding items required for Substantial Completion at this time will be documented as the formal punch-list for Substantial Completion:
    - a. Re-inspection: Request re-inspection when the punch-list is completed or corrected.
    - b. Results of completed inspection will form the basis of requirements for Final Completion.
- B. Final Acceptance:
1. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
    - a. Submit a Request for Payment accordance with the procedures specified in Section 01 29 76 – Progress Payment Procedures.
    - b. Submit a Certification for the Engineer stating that all items, actions, and requirements of the punch-list have been completed, corrected, satisfied, or otherwise resolved.
  2. Inspection: Submit a written request for final inspection for acceptance. The Engineer will prepare a Recommendation of Final Payment after inspection or will notify the Contractor of work that must be completed or corrected before the Certificate will be issued.

## PART 2 – PRODUCTS (NOT USED)

## PART 3 – EXECUTION

### 3.01 FINAL CLEANING

- A. At the time of project closeout, clean and restore the Work area to its pre- construction condition. Complete the following operations before requesting the Engineer's inspection for certification of substantial completion:
1. Remove non-permanent protection and labels.
  2. Remove debris.
  3. Inspect Project Work Limits.

END OF SECTION

## SECTION 01 78 39

### PROJECT RECORD DOCUMENTS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Contractor shall maintain and submit to Engineer record documents in accordance with the General Conditions, Supplementary Conditions, and this Section.

##### 1.02 SUBMITTALS

###### A. Closeout Submittals:

1. Record Documents: Submit in accordance with Article 1.04 of this Section.

##### 1.03 MAINTENANCE OF RECORD DOCUMENTS

###### A. Maintain in Contractor's field office, in clean, dry, legible condition, complete sets of the following record documents:

1. Drawings, Specifications, and Addenda.
2. Shop Drawings, Samples, and other Contractor submittals, including records of test results, reviewed or accepted, as applicable, by Engineer.
3. Change Orders, Work Change Directives, Field Orders, photographic documentation, survey data, permits, and all other documents pertinent to the Work.

###### B. Provide files and racks for proper storage and easy access to record documents. File record documents in accordance with the edition of the Construction Specifications Institute's "MasterFormat" used for organizing the Project Manual, unless otherwise accepted by Engineer.

###### C. Make record documents available for inspection upon request of Owner, Construction Manager, or Engineer.

###### D. Do not use record documents for purpose other than serving as Project record. Do not remove record documents from Contractor's field office without Engineer's approval.

##### 1.04 SUBMITTAL OF RECORD DOCUMENTS

###### A. Prior to readiness for final payment, submit to Engineer one copy of the following record documents:

1. Drawings.
2. Specifications and Addenda.

###### B. Submit record documents with transmittal letter on Contractor letterhead complying with letter of transmittal requirements in Section 01 33 00 (Submittal Procedures).

###### C. Record documents submittal shall include certification, with original signature of an official authorized to execute legal agreements on behalf of Contractor, reading as follows:

*“[Insert Contractor’s corporate name] has maintained and submitted record documentation in accordance with the General Conditions, Supplementary Conditions, Specification Section 01 78 39, and other elements of Contract Documents, for the National Grid, Phase 2 Remedial Action, Ilion (East Street) Former MGP Site, Village of Ilion, Herkimer County, New York. We certify that each record document submitted is complete, accurate, and legible relative to the Work performed under our Contract, and that the record documents comply with the requirements of the Contract Documents.*

*[Provide signature, print name, print signing party’s corporate title, and date]”*

## 1.05 RECORDING CHANGES

### A. General:

1. At the start of the Project, label each record document to be submitted as “PROJECT RECORD” using legible, printed letters. Letters on record copy of the Drawings shall be two inches high.
2. Keep record documents current. Make entries on record documents within two working days of receipt of information required to record the change.
3. Do not permanently conceal the Work until required information has been recorded.
4. Accuracy of record documents shall be such that future searches for items shown on the record documents may rely reasonably on information obtained from Engineer-accepted record documents.
5. Marking of Entries:
  - a. Use erasable, colored pencils (not ink or indelible pencil) for marking changes, revisions, additions, and deletions to record documents.
  - b. Clearly describe the change by graphic line and make notations as required. Use straight-edge to mark straight lines. Writing shall be legible and sufficiently dark to allow scanning of record documents into legible electronic files.
  - c. Date all entries on record documents.
  - d. Call attention to changes by drawing a “cloud” around the change(s) indicated.
  - e. Mark initial revisions in red. In the event of overlapping changes, use different colors for subsequent changes.

### B. Drawings:

1. Record changes on a copy of the Drawings. Submittal of Contractor-originated or -produced drawings as a substitute for recording changes on the Drawings is unacceptable.
2. Record changes on plans, sections, schematics, and details as required for clarity, making reference dimensions and elevations (to Project datum) for complete record documentation.
3. Record actual construction, including:
  - a. Horizontal and vertical location of existing Underground Facilities and surface structures demolished, realigned, or abandoned in-place, referenced to permanent surface improvements. For each Underground Facility or surface structure, provide dimensions to at least two permanent, visible surface improvements.
  - b. Horizontal and vertical limits of excavation.
  - c. Horizontal and vertical location of new Underground Facilities referenced to permanent surface improvements. For each Underground Facility, including pipe fittings, provide dimensions to at least two permanent, visible surface improvements.
  - d. Location of exposed utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
  - e. Changes in structural and architectural elements of the Work, including changes in reinforcing.
  - f. Field changes of dimensions, arrangements, and details.



- g. Changes made in accordance with Change Orders, Work Change Directives, and Field Orders.
  - h. Changes in details on the Contract Drawings. Submit additional details prepared by Contractor when required to document changes.
4. Supplemental Drawings:
- a. In some cases, drawings produced during construction by Engineer or Contractor supplement the Drawings and shall be included with record documents submitted by Contractor. Supplemental record drawings shall include the following:
    - 1) Drawings provided with Change Orders, Work Change Directives, and Field Orders.
    - 2) Drawings that cannot be incorporated into the Drawings due to space limitations.
    - 3) Certified survey drawings, in accordance with Article 1.06 of this Section.
  - b. Supplemental drawings provided with record drawings shall be integrated with the Drawings and include necessary cross-references between drawings. Supplemental record drawings shall be on sheets the same size as the Drawings.
  - c. When supplemental drawings developed by Contractor using computer-aided drafting/design (CADD) software are to be included in record drawings, submit electronic files for such drawings in "DWG" format compatible with AutoDesk AutoCAD 2012 as part of record drawing submittal. Submit electronic files on compact disc labeled, "Supplemental Record Drawings", together with Contractor name, Project name, and Contract name and number.
- C. Specifications and Addenda:
- 1. Mark each Section to record:
    - a. Manufacturer, trade name, catalog number, and Supplier of each product and item of equipment actually provided.
    - b. Changes made by Addendum, Change Orders, Work Change Directives, and Field Orders.

## 1.06 CERTIFIED SURVEY DRAWINGS

- A. Prepare the following survey drawings:
- 1. Excavation plan, depicting the final horizontal and vertical limits of excavation for each excavation area, including subgrade spot elevations, topographic contours, and verification sample locations and elevations.
  - 2. Storm sewer plan and profile, depicting the horizontal and vertical location of new storm utility drainage piping, culverts, and manholes, including connections to existing piping and manholes.
  - 3. Final Site plan, depicting final (post-construction) Site conditions.
- B. Drawing Requirements:
- 1. General Content:
    - a. Property lines, easements, and rights-of-way.
    - b. Topographic contours at minimum one-foot intervals.
    - c. Horizontal and vertical location of buildings, foundations, and walls.
    - d. Horizontal location of exposed piping and utilities, poles, exposed wires, posts, signs, markers, curbs, fencing, gates, guard rails, guard cables, valves, hydrants, and other facilities visible at or above ground surface.
    - e. Horizontal limits of lawns, pavements, roads, walks, drives, riprap, and other surface improvements.
    - f. Horizontal and vertical location of wells, including ground surface elevation, outer casing elevation, and inner casing elevation.
    - g. Horizontal location, size (diameter), and species of trees and other plantings.
  - 2. Scale: One inch equals 20 feet.

3. Sheet Size: 34 inches wide by 22 inches high.

C. Certification:

1. Each survey drawing shall be signed and sealed by a professional land surveyor licensed and registered in the State of New York.

1.07 ELECTRONIC FILES FURNISHED BY ENGINEER

A. CADD files will be furnished by Engineer upon the following conditions:

1. Contractor shall submit to Engineer a letter on Contractor letterhead requesting CADD files and providing specific definition(s) or description(s) of how files will be used, and specific description of benefits to Owner if the request is granted.
2. Contractor shall execute Engineer's standard agreement for release of electronic files and shall abide by all provisions of the agreement for release of electronic files.
3. Layering system incorporated in CADD files shall be maintained as transmitted by Engineer. CADD files transmitted by Engineer containing cross-referenced files shall not be bound by Contractor. Drawing cross-references and paths shall be maintained. If Contractor alters layers or cross-reference files, Contractor shall restore all layers and cross-references prior to submitting record documents to Engineer.
4. Contractor shall submit record drawings to Engineer in same CADD format that files were furnished to Contractor.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

## SECTION 02 41 00

### DEMOLITION

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing all labor, materials, equipment, and incidentals as shown, specified, and required for demolition, removal, and disposal/recycle/reclamation work.  
The work under this Section applies to demolition and removal of existing materials and equipment as shown or indicated in the Contract Documents. The Work includes but is not necessarily limited to demolition of on-site concrete slabs, the on-site transfer area to facilitate site restoration, storm sewer components as needed to install the new storm sewer system.
2. Demolitions and removals specified under other Sections shall comply with requirements of this Section.
3. Performing demolition Work within areas shown or indicated.
4. Paying all fees associated with transporting and disposing of materials and equipment resulting from demolition.

###### B. Coordination:

1. Review procedures under this and other Sections and coordinate Work that must be performed with or before demolitions and removals.

###### C. Related Sections:

1. Section 01 57 05 – Temporary Controls
2. Section 01 74 05 – Cleaning
3. Section 01 74 19 – Construction Waste Management and Disposal
4. Section 02 51 00 – Decontamination
5. Section 02 61 05 – Removal and Disposal of Contaminated Material
6. Section 31 11 00 – Clearing and Grubbing
7. Section 31 23 00 – Excavation and Fill

##### 1.02 REFERENCE STANDARDS

###### A. The following standards are referenced in this Section.

1. NFPA 51, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work.

##### 1.03 QUALITY ASSURANCE

###### A. Regulatory Requirements:

1. Laws and Regulations applying to the Work under this Section include, but are not limited to, the following:
  - a. 29 CFR 1910.251 through 29 CFR 1910.255, Subpart Q – Welding, Cutting, and Brazing.
  - b. 29 CFR 1926.350 through 29 CFR 1926.354, Subpart J – Welding and Cutting.
  - c. 29 CFR 1926.850 through 29 CFR 1926.860, Subpart T – Demolition.
  - d. 12 NYCRR 23-1.25, Welding and Flame Cutting Operations.
  - e. 12 NYCRR 23-3.1 through 12 NYCRR 23-3.3, Subpart 23-3 – Demolition Operations.
  - f. 16 NYCRR 753, Protection of Underground Utilities.
2. Obtain required permits and approvals for demolition, removal, and disposal Work.

3. Comply with requirements of authorities having jurisdiction.

#### 1.04 SUBMITTALS

##### A. Informational Submittals:

1. Demolition and Removal Plan: Submit acceptable plan for demolition and removal Work not less than 21 days prior to starting demolition Work. Include the following:
  - a. Plan for coordinating shut-offs, locating, capping, temporary services, and continuing utility services.
  - b. Other proposed procedures as applicable.
  - c. List of proposed equipment for demolition and removal Work.
  - d. Planned sequence of demolition operations, including coordination with excavation and restoration Work.
  - e. Detailed schedule of demolition Work in accordance with the accepted Progress Schedule.
2. Qualifications Statements: Submit name and qualifications of entity performing electrical removals, including copy of licenses required by authorities having jurisdiction.
3. Notification of Intended Demolition Start: Submit in accordance with Paragraph 3.01.A of this Section.

#### PART 2 – PRODUCTS (NOT USED)

#### PART 3 – EXECUTION

##### 3.01 PREPARATION

##### A. Notification:

1. At least 48 hours prior to commencing demolition or removal Work, notify Owner and Engineer in writing of planned start of demolition Work. Do not start removals without permission of Engineer.

##### B. Protection of Surrounding Areas and Facilities:

1. Perform demolition and removal Work in manner that prevents damage and injury to property, structures, occupants, the public, and facilities. Do not interfere with use of, and free and safe access to and from, structures and properties.
2. Conduct the Work with minimum interference to vehicular and pedestrian traffic. Closing or obstructing of roads, drives, sidewalks, and passageways adjacent to the Work is not allowed unless indicated otherwise in the Contract Documents.
3. Provide temporary barriers, lighting, sidewalks, sheds, and other necessary protection.
4. Protect construction and facilities indicated to remain against damage and soiling during demolition Work. Repair damage at Contractor's expense.

##### C. Existing Utilities: Comply with the following:

1. Should uncharted or incorrectly charted Underground Facilities be encountered, cooperate with utility owners in keeping adjacent services and facilities in operation.
2. Before proceeding with demolition, locate; identify; drain, purge, or de-energize; and disconnect, seal, or cap as required all utilities serving the structure being demolished.
3. Coordinate and pay for shutdown of utility services with assistance from the Owner as required relative to contacting utility owners.

### 3.02 DEMOLITION – GENERAL

- A. Locate construction equipment used for demolition Work and remove demolished materials and equipment to avoid imposing excessive loading on facilities and Underground Facilities.
- B. Pollution Controls:
  - 1. Use water sprinkling, temporary enclosures, and other suitable methods to limit emissions of dust and dirt to lowest practical level. Comply with Section 01 57 05 – Temporary Controls and Laws and Regulations.
  - 2. Do not use water when water may create hazardous or objectionable conditions such as icing, flooding, or pollution.
  - 3. Clean adjacent structures, facilities, properties, and improvements of dust, dirt, and debris caused by demolition Work, in accordance with Section 01 74 05 – Cleaning.
- C. Explosives: Use of explosives is prohibited.
- D. Hot Work: Comply with NFPA 51 and Laws and Regulations.
  - 1. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
  - 2. Maintain adequate ventilation when using cutting torches.
- E. Structure Demolition:
  - 1. Unless otherwise approved by Engineer, proceed with demolition from top down. Complete demolition Work above each tier before disturbing supporting members of lower levels.
  - 2. Demolish concrete and masonry in small sections.
  - 3. Remove structural framing members and lower to ground using hoists, cranes, or other suitable methods. Do not throw or drop to the ground.
  - 4. Break up and remove foundations and slabs-on-grade unless otherwise shown or indicated as remaining in place.
  - 5. Break up and remove below-grade construction, including basements, foundation walls, slabs, and footings, to below final excavation elevations shown or indicated, unless otherwise directed by Engineer. Upon completing such removals, measure, survey, and record portions of below-grade construction, if any, that remain in place.
- F. Demolition of Site Improvements:
  - 1. Pavement, Sidewalks, Curbs, and Gutters: Demolition of asphalt or concrete pavement, sidewalks, curbs, and gutters, as applicable, shall terminate at saw-cut edges. Edges shall be linear and have a vertical cut face.
  - 2. Fencing, Guardrails, and Bollards: Remove to the limits shown or indicated. Completely remove below-grade posts and concrete.
  - 3. Manholes, Vaults, Chambers, and Handholes: Remove to the limits shown or indicated.
  - 4. Underground Facilities Other than Manholes, Vaults, Chambers, and Handholes:
    - a. Before proceeding with demolition, locate; identify; drain, purge, or de-energize; and make safe for removal and capping all Underground Facilities being demolished. Collect, containerize, and properly dispose of chemicals, gases, or other dangerous materials recovered from Underground Facilities.
    - b. Remove Underground Facilities to the extent shown or indicated. Where extent is not shown or indicated, extent of removal shall be 24 inches (horizontally) outside of excavations and six inches below subgrade elevations shown or indicated.
    - c. Unless otherwise shown or indicated, cap ends of piping to remain in accordance with Article 3.04 of this Section.

- d. Upon completing removals, measure, survey, and record portions of Underground Facilities, if any, that remain.

### 3.03 STRUCTURAL REMOVALS

- A. Remove structures to the appropriate limits to facilitate soil/sediment excavation and/or restoration as shown or indicated in the Contract Documents, unless otherwise directed by Engineer. Removals beyond limits shown or indicated shall be at Contractor's expense.
- B. Recycling and Reuse of Demolished Materials:
  1. All concrete and masonry materials, reinforcing steel, structural metals, miscellaneous metals, wire mesh, and other items contained in or upon the structures to be demolished shall be removed, transported, and disposed of away from the Site, unless otherwise approved by Engineer. Comply with Sections 01 74 19 – Construction Waste Management, and Disposal and 31 23 00 – Excavation and Fill.

### 3.04 MECHANICAL REMOVALS

- A. Mechanical demolition and removal Work includes dismantling and removing the existing storm sewer piping and appurtenances as shown, indicated, and required for completion of the Work. Mechanical removals include cutting and capping as required prior to filling with controlled low-strength material (CLSM).
- B. Demolition and Removals of Piping and Similar Items:
  1. Before proceeding with demolition, drain or purge piping and make safe for removal and capping.
  2. Remove to the approximate extent shown or indicated existing storm sewer piping. Provide caps or plugs on ends of remaining piping.
  3. Caps, Closures, Blind Flanges, and Plugs:
    - a. Provide closure pieces, where shown or required to complete the Work.
    - b. Where used in this Section, the term "cap" means the appropriate type closure for the piping being closed, including caps, blind flanges, plugs, and other closures.
    - c. Caps shall be compatible with the piping to which the cap is attached, fluid-tight and gas-tight, and appropriate for the fluid conveyed in the pipe.
    - d. Unless otherwise shown or indicated, caps shall be mechanically fastened, fused, or welded to pipe. Plug piping with means other than specified in this Section only when so shown or indicated in the Contract Documents or when allowed by Engineer.
  4. When Underground Facilities are altered or removed, properly cut and cap piping left in place, unless otherwise shown or indicated.

### 3.05 DISPOSAL OF DEMOLISHED MATERIALS

- A. Except for items or materials to be recycled and reused, remove from the Site all debris, waste, rubbish, and material resulting from demolition operations and equipment used in demolition Work. Comply with Sections 01 74 05 – Cleaning, 01 74 19 – Construction Waste Management and Disposal, and 02 61 05 – Removal and Disposal of Contaminated Material.
- B. Transportation and Disposal:
  1. Non-Hazardous Material: Properly transport and dispose of non-hazardous demolition debris at an appropriate, Owner-approved facility in accordance with Laws and Regulations. Non-hazardous material does not contain Asbestos, PCBs, Petroleum, Hazardous Waste, Radioactive Material, or other material designated as hazardous in Laws and Regulations.

DEMOLITION  
02 41 00 – 4  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.

2. Hazardous Material: When handling and disposal of hazardous materials is included in the Work, properly transport and dispose of hazardous materials in accordance with Laws and Regulations and the Contract Documents.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

DEMOLITION  
02 41 00 – 6  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.



SECTION 02 51 00  
DECONTAMINATION

PART 1 – GENERAL

1.01 DESCRIPTION

A. Scope:

1. Furnishing all materials, equipment, and labor necessary to construct and maintain decontamination areas and decontaminate vehicles, equipment, and personnel.
2. Constructing and maintaining decontamination areas.
3. Decontaminating all vehicles, equipment, and personnel that come into contact with excavated or impacted materials at the site.

B. Related Sections:

1. Section 02 61 05 – Removal and Disposal of Contaminated Material
2. Section 31 23 00 – Excavation and Fill
3. Waste Management Plan (WMP)

1.02 APPLICABLE CODES, STANDARDS, AND SPECIFICATIONS

A. Qualifications:

1. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (October 1985), as prepared by the National Institute of Occupational Safety and Health (NIOSH), Occupational Safety and Health Administration (OSHA), United States Coast Guard (USCG), and United States Environmental Protection Agency (USEPA).

1.03 SUBMITTALS

- A. Safety Data Sheets (SDS) for all cleaning/decontamination solutions shall be included in the Contractor's Health and Safety Plan. SDS forms must be provided for review by the Owner and the Engineer prior to being brought on site.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Clean/decontaminate all equipment brought to the site (as necessary and/or as directed by the Owner/Engineer).
- B. Decontaminate all construction vehicles leaving the site to prevent the tracking of soil off-site (including vehicles transporting clean fill to the site). Visually inspect and decontaminate vehicles and equipment that come into contact with excavated or impacted materials (to the satisfaction of the Owner, Engineer, and/or New York State Department of Environmental Conservation) within the equipment decontamination area prior to handling backfill material or leaving the site. Promptly remove and dispose of any visible soils or other debris promptly and in a manner consistent with the excavated materials.

- C. Take precautions to limit contact between the vehicle/equipment, personnel performing the decontamination activities, and any decontamination liquids that may accumulate in the decontamination area. Use personal protective equipment, including disposable clothing for personnel engaged in decontamination activities, as required by the Contractor's Health and Safety Plan (HASP).
- D. Collect, handle/manage wash water, solids, and other materials generated during decontamination activities in accordance with the WMP and Section 31 23 00 – Removal and Disposal of Contaminated Material. Remove accumulated liquids on a periodic basis so as to not exceed the capacity of the decontamination area.

### 3.02 DECONTAMINATION AREAS

- A. Construct and maintain decontamination area(s) to accommodate all loads, vehicles, equipment, and migration scenarios.
- B. Construct the decontamination area at the locations shown on the Design Drawings. Alternative locations within the Project Work Limits shall be approved by the Owner/Engineer prior to construction.
- C. Construct vehicle/equipment decontamination areas as specified on the Design Drawings. The Engineer will review/approve alternate decontamination area configuration/construction prior to construction.
- D. Construct and maintain appropriately-sized decontamination areas for personnel. Locate personnel decontamination areas within the contamination reduction zone and include those facilities necessary to decontaminate personnel upon exiting the work area (exclusion zone), in accordance with the Contractor's HASP, and in accordance with local, state, and federal laws and regulations. At a minimum, personnel decontamination areas shall include hand/face wash, boot wash, and run-on/run-off controls.

END OF SECTION

## SECTION 02 61 05

### REMOVAL AND DISPOSAL OF CONTAMINATED MATERIAL

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing all labor, materials, equipment, and incidentals as specified and required for the removal and disposal of contaminated material from the site.
2. Handling, segregating, dewatering, temporarily storing (as necessary), loading, transporting, and disposing of contaminated material at appropriate, Owner-selected or Owner-approved facilities in accordance with applicable Laws and Regulations.
3. Paying all fees (unless otherwise paid by the Owner) associated with transporting and disposing contaminated material. Any fees to be paid by the Owner will be identified in the bid documents.

###### B. Related Sections:

1. Section 01 41 26 – SWPPP and Permit
2. Section 01 53 53 – Temporary Water Treatment System
3. Section 01 74 05 – Cleaning
4. Section 01 74 19 – Construction Waste Management and Disposal
5. Section 02 51 00 – Decontamination
6. Section 02 61 15 – Sediment Removal and Handling
7. Section 31 11 00 – Clearing and Grubbing
8. Section 31 23 00 – Excavation and Fill
9. Section 31 23 18 – Water Handling and Treatment
10. Community and Environmental Response Plan (CERP)

###### C. Coordination:

1. Coordinate disposing of waste as specified under this and other Sections.

##### 1.02 REFERENCE STANDARDS

###### A. Terminology:

1. The following words or terms are not defined but, when used in this Section, have the following meaning:
  - a. "Construction wastewater" is water used for working or resulting from dewatering or decontamination operations.
  - b. "Contaminated material" is material containing visual staining or site-related contaminants of concern. Examples of potential contaminated material include, but are not limited to, the following:
    - 1) Site-Grubbing wastes.
    - 2) Construction wastewater.
    - 3) Demolition waste.
    - 4) Excavation waste.
  - c. "Demolition waste" is building and site improvement materials resulting from demolition or selective demolition operations.
  - d. "Disposal" is removal to an off-site location of contaminated material and subsequent recycling, reuse, or disposal in an Owner-approved or Owner-selected landfill conforming to Laws and Regulations and acceptable to authorities having jurisdiction.

- e. "Excavation waste" is earth; sand; clay; gravel; hardpan; soft, weathered, or decomposed rock; debris; sediment; and other materials removed from within the excavation limits.
- f. "Recycle" is recovery of demolition waste or construction waste for subsequent processing in preparation for reuse.
- g. "Site-Grubbing Waste" is below grade portions of trees, shrubs, brush or other non-earthen materials that are in direct contact with potentially impacted material.

B. Reference Standards:

- 1. The following standards are referenced in this Section:
  - a. ASTM D5199, Standard Test Method for Measuring the Nominal Thickness of Geosynthetics.
  - b. ASTM D5261, Standard Test Method for Measuring Mass per Unit Area of Geotextiles.
  - c. GRI GM17, Standard Specification for Test Methods, Test Properties and Testing Frequency for Linear Low-Density Polyethylene (LLDPE) Smooth and Textured Geomembranes.
  - d. GRI GT12, Standard Specification for Test Methods and Properties for Nonwoven Geotextiles Used as Protection (or Cushioning) Materials.
  - e. USEPA SW-846 Method 9095, Paint Filter Liquids Test.

1.03 QUALITY ASSURANCE

A. Regulatory Requirements:

- 1. Laws and Regulations applying to the Work under this Section include, but are not limited to, the following:
  - a. 29 CFR 1910, Occupational Safety and Health Standards.
  - b. 29 CFR 1926, Safety and Health Regulations for Construction.
  - c. 40 CFR 261.3, 264, and 265, Resource Conservation and Recovery Act (RCRA).
  - d. 49 CFR 171.8, Transportation, Definitions and Abbreviations.
  - e. 6 NYCRR 364, Waste Transporter Permits.
  - f. 6 NYCRR 370, Hazardous Waste Management System – General.
  - g. 6 NYCRR 371, Identification and Listing of Hazardous Wastes.
  - h. 6 NYCRR 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities.
  - i. 6 NYCRR 373, Hazardous Waste Management Facilities.
  - j. 6 NYCRR 375, Environmental Remediation Programs.
  - k. 6 NYCRR 376, Land Disposal Restrictions.
  - l. USDOT Regulations
  - m. NYSDOT Regulations
  - n. 40 CFR 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.
- 2. Comply with applicable provisions and recommendations of the following:
  - a. DER-10, Technical Guidance for Site Investigation and Remediation.
  - b. NYSDOT Standard Specifications and Standard Sheets.
- 3. Obtain required permits and approvals for excavation and fill Work, including work permits from right-of-way owners.
- 4. Comply with requirements of authorities having jurisdiction.

1.04 SUBMITTALS

A. Action Submittals:

- 1. Product Data: Submit manufacturer's product data for proposed soil drying agent (boiler ash sourced by Owner).

2. Waste profiles and manifests/waste shipping papers. Submit to Engineer/Owner for review prior to transporting waste materials off-site.
- B. Informational Submittals:
1. Waste Transporter Permits: Submit copy of valid NYSDEC waste transporter permit for each transporter hauling contaminated material.
  2. Maintain (throughout the Project) a written record of the operation and maintenance activities associated with the water management system. Such information shall be tabulated, updated daily, and submitted on a weekly basis to the Owner for review. At a minimum, include the following information (for each day):
    - a. Volume of water treated.
    - b. Type and frequency of monitoring and maintenance activities (if any).
    - c. Other information relevant to the operation, monitoring, and maintenance of the water management system.
  3. Waste profiles for all materials transported for off-site treatment or disposal.
  4. Chain of Custody records.
  5. Disposal Records: Submit for each disposal facility on a monthly basis throughout the Project, and concurrent with each Application for Payment:
    - a. Counter-signed manifests/bills of lading
    - b. Weight tickets
    - c. Receipt
    - d. Invoices
    - e. Certificates of disposal

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver bulk soil drying agent (conditioned/moistened boiler ash) and store the drying agent under polyethylene sheeting until needed for solidification activities.

### PART 2 – PRODUCTS

#### 2.01 MATERIALS

- A. Soil/Sediment Drying Agent: Provide boiler ash sourced by the Owner as the preferred solidification agent. Refer to Section 02 61 15 – Sediment Removal and Handling for additional information on the boiler ash and other drying agents.
- B. Influent/Effluent Holding Tanks (Frac Tanks): Refer to Section 01 53 53 – Temporary Water Treatment System.

### PART 3– EXECUTION

#### 3.01 WASTE CHARACTERIZATION

- A. General:
  1. Segregate waste streams as required by waste transporters and disposal facilities. Crush excavated rock and debris, as necessary, to render material suitable for disposal.
- B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent facilities.
  1. Designate and label specific areas of the site necessary for separating and storing wastes.

2. Provide temporary controls in accordance with the Contract Documents.
- C. Waste Characterization:
1. Contractor shall determine the waste characterization requirements (i.e., analyses and frequencies) for the selected disposal facility for each waste stream.
  2. Collect waste characterization samples under the observation of the Engineer including:
    - a. Identifying and subcontracting with a certified analytical laboratory.
    - b. Obtaining appropriate glassware.
    - c. Collecting and submitting the sample for analysis.
    - d. Coordinating with the laboratory and paying for laboratory testing.
  3. Prepare waste profiles for each waste stream for review and approval by selected disposal facility.

### 3.02 DEWATERING OF EXCAVATED SOILS

- A. Dewater excavated soils and sediments as necessary to pass Paint Filter testing procedures (USEPA SW-846 Method 9095) before leaving the site, as well as comply with additional moisture requirements from treatment and disposal facilities.
- B. Dewatering may include one or more of the following:
1. Active dewatering of soil/sediment before or during excavation in accordance with Section 31 23 18 – Water Handling and Treatment.
  2. Blending of dry soil/sediment excavated from above the water table with wet soils excavated from below the water table.
  3. Stockpiling excavated soil/sediment within the removal limits on a temporary basis to allow for gravity dewatering.
  4. Use of approved soil/sediment drying agent to amend excavated soil/sediment. Unless otherwise directed by Owner, excavated soil/sediment shall be amended with no more than five percent soil drying agent by weight.
- C. Bulk shipments of the approved drying agent shall be covered with polyethylene sheeting prior to use.

Refer to Section 02 61 15 – Sediment Removal and Handling for additional information.

### 3.03 DEBRIS PROCESSING AND SEGREGATION

- A. Segregate waste streams as required by Contractor's waste transportation and disposal Subcontractors.
1. Segregate soil from not suitable for off-site disposal or on-site consolidation.
  2. Segregate soil, sediment, brick, concrete, metal, and other debris from woody Site-Grubbing Waste to the extent practicable.
- B. Crush/downsize excavated rock and debris, as necessary in accordance with Article 3.05 of this Section, to render material suitable for off-site treatment/disposal.

### 3.04 TEMPORARY STORAGE OF CONTAMINATED MATERIAL

- A. General:
1. Provide temporary staging areas adequate to support and withstand traffic loads during the Project. Locate temporary staging areas on Owner's property.
  2. Store waste materials destined for off-site disposal in locations approved by the Owner so as not to endanger the work, and so that easy access may be had at all times to all

- parts of the work area. Maintain stored materials neatly piled and trimmed for stability and to facilitate covering with polyethylene sheeting.
3. Construct staging area on a generally level surface with the closest part of the staging area no closer than 15 feet from any delineated wetland area.
  4. Provide safe and adequate vehicle/equipment access to and egress from excavations.
  5. Take necessary precautions to permit access at all times to fire hydrants, fire alarm boxes, driveways, and other points where access may involve the safety and welfare of the general public. Maintain site access for utility personnel at all times.
  6. Install safety fence or other measures to restrict access to staging areas.
- B. Materials for Recycling/Reclamation
1. Recover steel (if encountered) for recycling by the Owner. Remove concrete from steel (e.g., rebar) to the extent practicable and stock pile steel on-site. Refer to Section 01 74 19 – Construction Waste Management and Disposal.
  2. The Engineer is responsible for coordinating with the Owner to recycle recovered steel.
- C. Excavated Soil, Sediment, and Debris:
1. It may be necessary to store excavated soils on-site on a temporary basis to accommodate one or more of the following:
    - a. Construction sequencing
    - b. Disposal facility scheduling issues
    - c. Soil dewatering requirements
    - d. Waste characterization sampling for disposal
  2. Only stockpile excavated soil/sediment within the limits of excavation, in a properly constructed material staging area or in the Consolidation Area (after the material has been appropriately stabilized).
    - a. Neatly pile and trim stockpiles.
    - b. Securely cover stockpiles at all times, during both working and non-working hours, except when waste is actively being added or removed, with minimum 10-mil polyethylene sheeting (or acceptable alternative). Properly anchor sheeting to prevent uplift due to wind conditions and install to minimize the ponding of precipitation. Use of soil to anchor covers will not be acceptable.
    - c. Based on site conditions, the Owner may elect to limit the maximum allowable stockpile size. Limitations to stockpile size shall not result in any additional cost to the Owner.
    - d. Inspect stockpiles daily (at a minimum) and immediately correct any noted deficiencies to the satisfaction of the Owner/Engineer.
    - e. On-site and off-site soil/sediment removed from excavation areas with PCB concentrations equal to or greater than 50 milligrams per kilogram (mg/kg) (TSCA-regulated, New York State hazardous waste) will require off-site disposal.
    - f. Transfer materials with PCB concentrations equal to or greater than 50 mg/kg to a separate lined material staging area or direct loaded into waste transport containers for off-site transportation and disposal.
    - g. Place soil/sediment removed from on-site and off-site excavation areas with PCB, metals, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs) impacts exceeding the site cleanup levels but less than 50 mg/kg for PCBs in the on-site consolidation area in accordance with this Remedial Design or temporarily place in a material staging area separate from the TSCA-regulated material to allow for dewatering and solidification prior to placement in the consolidation area. This material can also be temporarily staged within the removal limits as indicated in Section 3.02. Refer to Section 02 61 15 – Sediment Removal and Handling for additional dewatering and solidification information.
  3. Transport temporary stockpiles off-site for disposal within 7 days of placement unless a longer duration is approved by the Owner/Engineer.

- D. Construction Wastewater: Remove water that comes into contact with soil exceeding the site soil clean-up levels for on-site treatment prior to discharging in accordance with Section 31 23 18 – Water Handling and Treatment. Also refer to Sections 01 53 53 – Temporary Water Treatment System and Section 01 41 26 – SWPPP and Permit.
1. Remove water that accumulates within excavation areas. Take precautions to minimize the amount of solids present in the water extracted from the excavation area, (e.g., constructing a sump and keeping the intake of the pump off the bottom and away from the sidewalls of the area being dewatered). The sump shall consist of one of or a combination of the following methods:
    - a. A sump backfilled with washed gravel.
    - b. A perforated vessel (i.e., a corrugated metal pipe or drum), wrapped with a non-woven geotextile fabric and/or filled with gravel.
    - c. Straw bales/silt fences around the area where surface water/groundwater is being pumped.
  2. Collect, extract, and convey all water generated during the Project to the on-site Influent Holding Tanks for storage. Separately handle water that is pumped from an excavation or staging area with material impacted with PCBs greater than or equal to 50 mg/kg, where possible, to minimize TSCA-regulated sediment disposal as a result of the tank decontamination activities.
  3. Treat and discharge project-related water in accordance with Section 31 23 18 – Water Handling and Treatment.
  4. Coordinate and monitor the water treatment system operations with respect to potential impacts and disruptions to the overall Project implementation. Do not under any circumstances discharge any Project-related water to any location without the prior consent of the Engineer.
  5. Continuously monitor the removal system and at no time leave the treatment system operating without qualified attending personnel present at the site.

### 3.05 LOADING, TRANSPORTATION, AND DISPOSAL

- A. Transport TSCA-regulated material in vehicles with current New York State Waste Transporter Permits pursuant to 6 NYCRR Part 364. Submit Waste Transporter Permits to the Engineer before Contractor mobilization and maintain current copies of those permits on-site for the duration of the Project.
- B. Fully-line all vehicles transporting TSCA-regulated material with minimum 6-mil polyethylene sheeting, an equivalent material, or otherwise water-tight. Transport vehicles shall be equipped with functioning tailgate locks and non-mesh (solid), waterproof tarpaulins.
- C. Load contaminated material in a manner as to avoid contamination of their exteriors, including tires (e.g., loaded with 10-mil polyethylene sheeting draped over the side of the truck).
- D. Prepare a manifest (hazardous or non-hazardous as appropriate) for each load of waste material to be transported off-site for treatment/disposal. Each manifest will be reviewed and signed by the Owner (as the Generator) or an authorized agent. The Engineer shall maintain counter-signed waste manifests and facility disposal receipts (indicating the actual quantity of waste received at the treatment/disposal facility) on-site in the project file.
- E. Ensure that the disposal facility distributes fully executed hazardous waste manifests to the NYSDEC Division of Environmental Remediation Manifest Section (and States that require the form) and the Owner postmarked within 10 calendar days of the waste receipt date for each waste shipment per NYSDEC requirements. NYSDEC's Contractor shall also submit "generator" copies of hazardous waste manifests to the NYSDEC (and States that require the

REMOVAL AND DISPOSAL OF CONTAMINATED MATERIALS  
 02 61 05 – 6  
 REVISION NO. 00  
 DATE ISSUED: 8/20/18

WSI GROUP  
 100% REMEDIAL DESIGN  
 WASTE STREAM, INC. SITE  
 VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.



- form) on behalf of the Owner within 5 business days of waste load-out. NYSDEC's Contractor shall ensure that fully-executed manifests and weight tickets for non-hazardous waste are provided to the Owner and the Engineer within 10 business days following disposal of each waste shipment.
- F. Provide the Owner and the Engineer with certificates of disposal and weight tickets that accompany each manifest for hazardous waste shipment within 10 business days following receipt from the disposal facility.
  - G. The Engineer will prepare a waste tracking log for off-site disposal that indicates, at a minimum, the following information regarding each truck load:
    - 1. Load number (sequential).
    - 2. Uniform Hazardous Waste Manifest Number or Bill of Lading Number.
    - 3. Transporters name
    - 4. Truck ID number (tractor or trailer number).
    - 5. Estimated tare weight.
    - 6. Material type (nonhazardous, hazardous, debris).
    - 7. Destination.
  - H. Inspect vehicles before leaving the site. Clean vehicles of visible soil or debris within temporary decontamination area in accordance with Section 02 51 00 – Decontamination.
  - I. Keep all streets, sidewalks, and pavements clean and free from dirt, mud, stone, and other hauled materials. Comply with Section 01 74 05 – Cleaning.
  - J. Vehicles transporting contaminated material shall follow approved haul routes as specified in CERP.

END OF SECTION

THIS PAGE LEFT BLANK INTENTIONALLY

REMOVAL AND DISPOSAL OF CONTAMINATED MATERIALS  
02 61 05 - 8  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.

## SECTION 02 61 15

### SEDIMENT REMOVAL AND HANDLING

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing all labor, materials, equipment, and incidentals as specified to perform sediment removal and handling described in the Design Drawings, including:
  - a. Transporting and segregating excavated sediment to material staging area(s).
  - b. Dewatering and managing excavated sediment and soil (where saturated) within material staging areas.
  - c. General handling and managing removed sediment within the Work Area for either placement in the consolidation area or for off-site disposal.
  - d. Mixing solidifying/drying agent with excavated soil and sediment for placement in the consolidation area or to facilitate transportation for off-site disposal.
  - e. Placing solidified sediment within the on-site consolidation area.

###### B. Coordination:

1. Coordinate removal of sediments as specified under this Section.
2. Coordinate proper solidification of sediments and soils and placement of solidified materials in the consolidation area.
3. Coordinate proper off-site disposal of sediments containing PCBs at concentrations greater than or equal to 50 mg/kg.

###### C. Related Sections:

1. Section 01 35 49 – Community Air Monitoring Plan
2. Section 01 41 26 – Storm Water Pollution Prevention and Permit
3. Section 01 57 05 – Temporary Controls
4. Section 01 74 19 – Construction Waste Management
5. Section 02 41 00 – Demolition
6. Section 02 61 05 – Removal and Disposal of Contaminated Materials
7. Section 31 11 00 – Clearing and Grubbing
8. Section 31 23 18 – Water Handling and Treatment

##### 1.02 REFERENCES

###### A. Terminology:

1. The following words or terms are not defined, but when used in this Section, have the following meaning:
  - a. “Construction wastewater” is water resulting from dewatering or decontamination operations.
  - b. “Contaminated material” is material containing PCBs or any other Site-related contaminants of concern. Examples of potential contaminated material include, but are not limited to, the following:
    - 1) Site-Grubbing Waste.
    - 2) Construction wastewater, including storm water and run-on that contacts impacted soils/sediments.
    - 3) Excavation waste.
    - 4) Sediment mixing spoils.

- c. "Demolition waste" is building and site improvement materials resulting from demolition or abandonment.
- d. "Disposal" is removal to an off-site location of contaminated material and subsequent recycling, reuse, or disposal in an Owner-approved landfill or incinerator conforming to Laws and Regulations and acceptable to authorities having jurisdiction.
- e. "Excavation waste" is earth; sand; clay; gravel; hardpan; soft, weathered, or decomposed rock; debris; sediment; and other materials removed from within the excavation limits. that does not comply with requirements for fill or is in excess of the quantity required for fill.
- f. "Recycle" is recovery of demolition waste or construction waste for subsequent processing in preparation for reuse.
- g. "Site-Grubbing Waste" is below grade portions of trees, shrubs, brush or other non-earthen materials that are in direct contact with potentially impacted material.

B. Reference Standards:

- 1. The following standards are referenced in this Section:
  - a. ASTM D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lb/ft<sup>3</sup> [600 kN-m/m<sup>3</sup>]).
  - b. ASTM D1633 – Standard Test Method for Unconfined Compressive Strength (UCS) of Molded Soil – Cement Cylinders.
  - c. ASTM D6938, Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
  - d. ASTM C150 – Standard Specification for Portland Cement.
  - e. USEPA SW-846 Method 9095, Paint Filter Liquids Test.

1.03 QUALITY ASSURANCE

A. Applicable Codes, Standard, and Specifications:

- 1. Laws and Regulations applying to the Work under this Section include, but are not limited to, the following:
  - a. 29 CFR 1910, Occupational Safety and Health Standards.
  - b. 29 CFR 1926, Safety and Health Regulations for Construction.
  - c. 40 CFR 261.3, 264, and 265, Resource Conservation and Recovery Act (RCRA).
  - d. 49 CFR 171.8, Transportation, Definitions and Abbreviations.
  - e. 6 NYCRR 364, Waste Transporter Permits.
  - f. 6 NYCRR 370, Hazardous Waste Management System – General.
  - g. 6 NYCRR 371, Identification and Listing of Hazardous Wastes.
  - h. 6 NYCRR 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities.
  - i. 6 NYCRR 373, Hazardous Waste Management Facilities.
  - j. 6 NYCRR 375, Environmental Remediation Programs.
  - k. NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation.
  - l. 40 CFR 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions.
- 2. Comply with applicable provisions and recommendations of the following:
  - a. NYSDOT Standard Specifications.
- 3. Recommendations of the National Institute of Occupational Safety and Health (NIOSH).
- 4. Applicable guidelines of the New York State Department of Health (NYSDOH).
- 5. Obtain required permits and approvals for excavation and fill Work, including work permits from right-of-way owners.
- 6. Comply with requirements of authorities having jurisdiction.
- 7. Whenever there is a conflict or overlap of the above reference, the most stringent provision shall be applicable.

## 1.04 SUBMITTALS

### A. Action Submittals:

1. Sediment Handling and Dewatering Plan, which will include material management and drying/solidification means and methods for review and approval by the Engineer. The information shall include, but is not limited to, the following:
  - a. Sequencing plan describing how soils and sediments will be removed and stockpiled in the material staging area. Plan shall include drawings showing the anticipated foot print, height, and slopes of the stockpiles.
  - b. Description and approach to maximize dewatering of sediments while minimizing the addition of stabilization agents including the removal and handling of the breached beaver dam materials.
  - c. Description, number, and type of trucks (water tight) or other vehicles to be used for on-site material transport, including debris from point of removal to the material staging areas. Description shall include method to water-tight containment and covering utilized to safely transport materials from removal areas to staging areas.
  - d. Description of construction methodology and locations for the material staging areas and access roads. The description will include methods to be employed to prevent tracking and cross-contamination of non-impacted areas or between TSCA-regulated and non-TSCA-regulated areas.
  - e. Illustration of the Contractor's approach for sediment remediation and restoration shown on the Design Drawings. Illustration will include the following minimum information:
    - 1) Limits of clearing (which will not extend beyond the limits of clearing identified by the Engineer).
    - 2) Location(s), configuration(s), and orientation(s) of material handling/staging areas and access roads.
    - 3) Location(s) and types of sediment and erosion controls.
    - 4) Location(s) and types of storm water management systems.
    - 5) Location of temporary water treatment system.
    - 6) Methods to be employed to limit/manage storm water run-on.
    - 7) Project sequencing for sediment removal and restoration and how the above items change (if at all) as the project advances.
    - 8) Additional information requested by the Engineer to understand the Contractor's approach.
  - f. Procedures for the tracking/labeling of sediment excavation progression, determining/verifying location coordinates and depths including global positioning system (GPS) or physical measurement equipment/methods.
  - g. Results of any material solidification testing performed showing successful performance for strength per this Section, including (but not limited to) name, source, and safety data sheet for solidification agent (if a material different than that presented herein is proposed).
  - h. Equipment, methods, layout, and location for processing and dewatering sediment, including mixing solidification or drying agent (e.g., Owner-supplied ash, Portland cement or other approved solidification/drying agent) with sediment and soil prior to consolidation or loading for off-site disposal.
  - i. Equipment, methods, layout, and stockpiling sequence for staging, solidification/drying, and stockpiling materials in the consolidation area, including a direction of flow and sequencing.
  - j. Storage location and method for applying solidification/drying agent and odor controls.
  - k. Description of all necessary containment systems for material staging.
  - l. Description of all necessary measures and materials for covering stockpiles and limiting exposure of material to inclement weather.

- m. Description of the stockpile cover installation sequence to ensure efficient covering of the stockpile. Include details of cover installation methods, erosion protection features where cover sheds water outside of material staging area, methodology for moving ponded water off the cover, ballasting plan to prevent uplift due to high winds, and material specifications of the proposed cover.
- n. Equipment for placement and compaction of solidified materials in consolidation area.

B. Informational Submittals:

- 1. Solidification Performance and Placement Monitoring: Submit laboratory test reports for field quality control testing performed in accordance with Article 3.08 of this Section.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

A. Solidification/Drying Agent:

- 1. Boiler ash sourced by the Owner is the preferred solidification/drying agent.
- 2. Provide alternate solidification/drying agents in sufficient quantities to reduce water content of sediment and saturated soils requiring off-site disposal.
- 3. Alternate solidification/drying agent or alternate mix design may include Portland cement, cement kiln dust, lime kiln dust, non-biodegradable sorbent containing no more than 50 percent reactive (free) calcium oxide (CaO) and magnesium oxide (MgO) by weight, or other product acceptable by the Engineer prior to acquisition, shipment to site, and use. Test alternate materials at the Contractor's cost to show conformance with required moisture and strength properties. Such data shall be provided to the Engineer for review and approval prior to import or use of such materials at the site.

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. Install temporary facilities (e.g., access roads, berms, etc.) as necessary to facilitate wetland dewatering and sediment excavation/backfilling. Do not install temporary facilities (e.g., access roads, staging areas, etc.) within the limits of delineated wetlands that do not require excavation. Install access roads to support the remedial activities, while minimizing disturbance and clearing.
- B. Generally complete excavation and backfilling from upstream to downstream. Limit excavation area size such that storm water and surface water/groundwater can be properly managed.
- C. Following completion of excavation, maintain dewatered conditions to facilitate verification sampling by the Engineer. Maintain dewatered conditions and do not restore excavated area until receipt of approval to proceed from the Engineer.
- D. Do not track equipment over native material or access roads following excavation. If tracking is observed, the Contractor shall immediately address the tracking to the satisfaction of the Engineer.
- E. Separately stage and solidify sediment containing PCBs at concentrations greater than or equal to 50 mg/kg.

- F. Following excavation/material handling of sediment containing PCBs at concentrations greater than or equal to 50 mg/kg, decontaminate all equipment that contacted sediment prior to handling other material.

### 3.02 WASTE CHARACTERIZATION

- A. General:
  - 1. Segregate waste streams as required by waste transporters and disposal facilities.
- B. Waste Characterization:
  - 1. Refer to Section 02 61 05 – Removal and Disposal of Contaminated Material for additional information.

### 3.03 PREPARATION

- A. Erosion and Sediment Control:
  - 1. Provide temporary erosion and sediment controls in accordance with Section 01 57 05 – Temporary Controls
  - 2. Comply with Section 01 41 26 – Storm Water Pollution Prevention and Permit
- B. Dust Control:
  - 1. Provide dust controls in accordance with Section 01 57 05 – Temporary Controls
  - 2. Comply with Section 01 35 49 – Community Air Monitoring Plan
- C. Site Preparation:
  - 1. Comply with Section 31 11 00 – Clearing and Grubbing
  - 2. Comply with Section 02 41 00 – Demolition

### 3.04 SEDIMENT REMOVAL

- A. Provide adequate vehicle/equipment access and egress to the sediment removal areas to facilitate the removal of materials to the horizontal and vertical limits identified within the Technical Specifications and/or on the Design Drawings or as directed by the Engineer.
- B. Perform sediment removal activities using suitable excavation equipment (i.e., excavator, backhoe, etc.). Perform sediment removal under dewatered conditions. Utilize ditches, temporary constructed berms, pumping, etc. to facilitate dewatering. For specifications regarding collection, storage, treatment and disposal of dewatered liquids see Section 31 23 18 – Water Handling and Treatment.
- C. Excavate sediments to the horizontal and vertical limits at locations shown on the Design Drawings or as directed by the Engineer. Confirm the limits in accordance with Section 01 71 23 – Field Engineering.
- D. The Engineer will collect verification sediment samples at the limits of sediment removal areas. Remove additional sediment beyond the limits indicated on the Design Drawings as necessary and directed by the Engineer.

### 3.05 TEMPORARY STORAGE

- A. Temporarily store excavated sediment in accordance with Section 02 61 05 – Removal and Disposal of Contaminated Material.

### 3.06 ADDITION OF SOLIDIFICATION AND DRYING AGENTS

- A. General:
  1. Provide required solidification and drying agents in sufficient quantities as specified, without delay.
  2. Provide a means for accurate measurement and documentation for verifying that the appropriate quantities of solidification and drying agents are maintained.
  3. Thoroughly mix the agents and sediment/soil as required to achieve a homogeneous mixture.
  
- B. Sediments Requiring Off-Site Disposal:
  1. Gravity dewater and blend drier excavated sediments and soils as the primary methods of reducing free water from excavated sediment that will be transported off-site for disposal. Do not use drying reagents without prior approval by the Engineer to meet moisture content requirements. Do not blend material with PCB concentrations greater than or equal to 50 mg/kg with any other material.
  2. Determine the actual amount of solidification agent needed for drying of sediments requiring off-site disposal.
  3. Place and mix the appropriate quantities of drying reagent in such a manner as to achieve thorough mixing with excavated material, as needed to reduce water content until the material passes the paint filter testing procedures.
  
- C. Materials Solidified for Placement in Consolidation Area:
  1. Thoroughly mix boiler ash at an assumed dosage of 5% by weight.
  2. Collect samples of solidified material prior to placement of solidified materials at a frequency of one sample per 6,000 cy and test the samples for moisture content (ASTM D2216) and Standard Proctor (ASTM D698). The Engineer may require additional samples be collected for testing due to variability in the solidified materials.
  3. Verify that solidified materials, when, placed in the consolidation area have a minimum unconfined compressive strength (UCS) of 6.25 pounds per square inch (~900 pounds per square foot).
  4. Re-mix materials that do not meet the required performance criteria indicated in this Section, including utilizing additional reagents, at no additional cost to the Owner. Resample and test materials that are re-mixed in accordance with this Section.

### 3.07 PLACEMENT OF SOLIDIFIED MATERIALS IN CONSOLIDATION AREA

- A. Place solidified materials in the limits of the consolidation area shown on the Design Drawings within three days of blending with the solidification agents.
- B. Take all necessary precautions to minimize disturbances of any completed areas when placing and compacting solidified materials.
- C. Place solidified materials to the grades shown on the Design Drawings in a manner that promotes drainage and minimizes ponding surface water.
- D. Place solidified materials in layers not exceeding 12 inches in depth measured prior to compaction. Place solidified materials in a manner ensuring uniform thickness. Compact each layer to obtain at least 90 percent of maximum dry density as determined by ASTM D698 using no less than two complete coverages of the compactor. One complete coverage is defined as the condition reached when all portions of the lift have been directly contacted by the compactor's compacting surface.
- E. Perform compaction with low ground-pressure equipment suitable for the type of material placed and capable of meeting the specified density.



- F. Do not place solidified materials when standing water is present on surface of the area where materials will be placed. Do not place or compact solidified materials in a frozen condition or on top of frozen material.
- G. If required strength or densities are not obtained because of improper control of placement or compaction procedures, or because of inadequate or improperly-functioning compaction equipment, Contractor shall perform all work required to meet the required densities.

3.08 LOADING, TRANSPORTATION, AND OFF-SITE DISPOSAL

- A. Refer to Section 02 61 05 – Removal and Disposal of Contaminated Material) for loading, transportation, and off-site disposal requirements.

3.09 CONSOLIDATION AREA SOLIDIFICATION PERFORMANCE AND PLACEMENT MONITORING

- A. Laboratory Strength Testing of Solidified Materials:
  1. Collect confirmation samples from the consolidation area using an in-situ sampler and test the samples for compressive strength (ASTM D1633). Each set of samples shall consist of four (4) 3-inch by 6-inch sample specimens (cylinders) of solidified material obtained from a lift of solidified material in the consolidation area. Complete sampling and testing for the first two lifts of solidified materials placed in the consolidation area. Thereafter, collect samples at a frequency of one every 6,000 cubic yards. Conduct UCS testing of the samples within 2 days of placement.
  2. Prepare and cure samples in accordance with ASTM C31. Send the core samples to a qualified QA/QC laboratory for testing at the Contractor's expense.
  3. Should strength testing indicate UCS below that specified above in Article 3.06 C, suspend placement of solidified materials and modify the mix design or placement procedures. Results of additional testing that is necessary to further verify material placement, may be requested by the Engineer prior to resuming placement of solidified material in the consolidation area.
- B. On-Site Placement Testing:
  1. Perform field moisture content and density tests in accordance with ASTM D6938 to verify that 90% of the maximum dry density as determined by ASTM D698 (see Article 3.06 C) has been obtained. Perform one test per 1,000 square feet on every compacted lift.
  2. Submit test results, certified by testing laboratory, to Engineer within 24 hours of completion of test.
  3. If field testing indicates compaction below specified density, conduct additional compaction at Contractor's expense until lifts are acceptable. Costs for retesting of consolidated materials that did not originally comply with specified density shall be paid by the Contractor.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SEDIMENT REMOVAL AND HANDLING  
02 61 15 - 8  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

## SECTION 31 05 16

### AGGREGATES FOR EARTHWORK

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Furnishing temporary and permanent fill materials from off-site sources as specified in this Section for backfilling excavations, restoration of surfaces, and other purposes required by the Contract Documents.
2. Off-Site fill materials consist of:
  - a. Wetland Topsoil
  - b. Vegetated Top Soil
  - c. General Fill
  - d. Clay
  - e. Type 2 Crushed Stone
  - f. Type F Run-of-Crusher Stone
  - g. Granular Fill
  - h. Dense Graded Aggregate
  - i. Type 2 Riprap
  - j. Cross Vane Boulder
  - k. Channel Stone
  - l. Controlled low-strength material\

###### B. Related sections

1. Section 31 23 00 – Excavation and Fill
2. Section 32 72 00 – Wetland Restoration
3. Section 32 91 19.13 – Topsoil Placement and Grading

##### 1.02 DEFINITIONS

- A. "Foundation" includes dense-graded aggregate placed as a firm base for structures, asphalt/concrete pavement, or other soils and materials.

##### 1.03 REFERENCES

###### A. Reference Standards:

1. The following standards are referenced in this Section:
  - a. ASTM C117, Standard Test Method for Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing.
  - b. ASTM C136, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  - c. ASTM D422, Standard Test Method for Particle-Size Analysis of Soils.
  - d. ASTM D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft<sup>3</sup> [600 kN-m/m<sup>3</sup>]).
  - e. ASTM D4318, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
  - f. ASTM E329, Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.
  - g. USEPA SW-846 Method 6010, Inductively Coupled Plasma-Atomic Emission Spectrometry.

- h. USEPA SW-846 Method 7471, Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique).
- i. USEPA SW-846 Method 8081, Organochlorine Pesticides by Gas Chromatography.
- j. USEPA SW-846 Method 8082, Polychlorinated Biphenyls (PCBs) by Gas Chromatography.
- k. USEPA SW-846 Method 8151, Chlorinated Herbicides by GC Using Methylation or Pentafluorobenzoylation Derivatization.
- l. USEPA SW-846 Method 8260, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS).
- m. USEPA SW-846 Method 8270, Semi-volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS).
- n. USEPA SW-846 Method 9012, Total and Amenable Cyanide (Automated Colorimetric, with Off-Line Distillation).

#### 1.04 QUALITY ASSURANCE

##### A. Qualifications:

1. Engineer's Testing Laboratory: The engineer will retain the services of an independent testing laboratory to perform quality assurance testing required in this Section. Testing laboratory shall comply with ASTM E329, and shall be experienced in the types of testing required.
2. Off-Site Fill Sources: Source of off-site general fill shall be a NYSDEC-permitted mine, pit, or quarry, and shall be approved by NYSDOT for furnishing aggregates for NYSDOT projects.

##### B. Regulatory Requirements:

1. Comply with applicable provisions and recommendations of the following:
  - a. NYSDEC Technical Guidance for Site Investigation and Evaluation (DER-10).

#### 1.05 SUBMITTALS

- A. Submit background information for each proposed borrow pit to the Engineer for review as part of the borrow pit's initial screening for acceptance. At a minimum, background information shall include the following:
  1. Submit Supplier name, source address, copy of NYSDEC mining permit, and proof of NYSDOT approval, as required, for each proposed source of off-site fill material.
  2. The names, contact information, and relationship of persons involved with the borrow site preparation and transport of the fill from the borrow site to the receiving site.
  3. A description of the borrow site including use history.
  4. Identification of specific areas within the borrow site on a scaled site plan where material will be obtained for use at the project site.
  5. Identification of specific areas within the borrow site on a scaled site plan where samples for analytical and geotechnical testing will be obtained.
  6. A description of sampling methodology to be used to obtain geotechnical and analytical samples.
  7. The results of geotechnical testing previously performed and description of the geotechnical properties of the fill material and indication that the material meets the projects' geotechnical specifications.
- B. Submit 50-pound samples of each fill material from the borrow pits proposed to supply the required quantity of granular materials. Submit the samples to the Engineer no less than four weeks prior to the anticipated placement of any granular materials.

- C. The Engineer will collect and submit one sample per 1,000 in-place cubic yards of material imported to the site for each type of fill material for chemical analyses using applicable SW-846 Methods to confirm compliance with 6 NYCRR Part 375-6.7(d) and the restricted residential or the protection of groundwater soil cleanup objectives depicted on Table 375-6.8 (b).
- D. Delivery Tickets: Submit copy of delivery ticket for each load of off-site material delivered to the Site. Each delivery ticket shall indicate Supplier name and source address, project name, contract number, date, material type, NYSDOT item number when applicable, and quantity delivered.
- E. Controlled Low-Strength Material (CLSM)
  - 1. Description of Contractor's proposed CLSM mixture design, including sources and proportions of CLSM ingredients.
  - 2. CLSM producer's certification that the mixture design will achieve the strength specified in this section.
  - 3. Contractor's proposed method of placement for CLSM.
  - 4. Bills of lading for the transport and delivery of imported fill materials to the site (documenting that the materials were obtained from NYSDEC-approved sources).
  - 5. Certified batch reports for CLSM delivered to the site (documenting that the CLSM was prepared in accordance with the approved mixture design). Submit to the Engineer a batch report for each load of CLSM delivered to the site upon arrival.

1.06 DELIVERY

- A. Notify the Engineer one (1) week in advance of delivery of all granular materials.

PART 2 – MATERIALS

2.01 GRANULAR MATERIALS

- A. Wetland Topsoil
  - 1. See gradation in Section 32 91 19.13 – Topsoil Placement and Grading.
- B. Vegetated Topsoil
  - 1. See requirements in Section 32 91 19.13 – Topsoil Placement and Grading.
- C. General Fill
  - 1. Material shall be free of: rock and gravel larger than four inches in any dimension, debris, waste, frozen materials, organic material, and other deleterious matter having a gradation in accordance with the following.

Sieve Size	Percent Passing
4-inch (100 mm)	100
No. 200	5-15

D. Type 2 Crushed Stone

1. The stone shall meet the gradation requirements set forth by the New York Department of Transportation, for Type 2 Crushed Stone (NYSDOT Material Designation 703-0202).

<b>Sieve Size</b>	<b>Percent Passing</b>
1 ½-inch	100
1-inch	90-100
½-inch	0-15

2. The Contractor may propose alternative stone size to the Engineer for approval if cost and/or availability require such an alternate material, or if additional benefit to the Owner is achieved through the use of approved alternate size.

E. Type "F" Run-of-Crusher Stone

1. Stone shall consist of hard durable limestone, or approved equal, having the following gradation by weight:

<b>Sieve Size</b>	<b>Percent Passing</b>
1 ½-inch	100
1-inch	95-100
½-inch	65-80
¼-inch	40-60
No. 200	0-10

F. Granular Fill

1. The granular fill material shall meet the modified gradation requirements set forth by Construction and Material Specifications for AASHTO M43; No. 6 aggregate as given below and as determined by ASTM C-136:

<b>Sieve Size</b>	<b>Percent Passing</b>
1 inch	100
¾ inch	90-100
½ inch	20-55
⅜ inch	0-15
No. 4	0-5

2. The Contractor may propose alternative granular fill size to the Engineer for approval if cost and/or availability require such an alternate material, or if additional benefit to the Owner is achieved through the use of approved alternate size.

G. Dense-Graded Aggregate

1. The dense-graded aggregate shall meet the gradation requirements set forth by the New York Department of Transportation for Type "2" subbase satisfying the physical requirements stated below.

<b>Sieve Size</b>	<b>Percent Passing</b>
2-inch	100
¾ inch	25-60
No. 40	5-40
No. 200	0-10

2. The Contractor may propose alternative dense-graded aggregate size to the Engineer for approval if cost and/or availability require such an alternate material, or if additional benefit to the Owner is achieved through the use of approved alternate size.

H. Type 2 Riprap

1. Stone used for riprap shall be hard; durable; angular in shape; resistant to weathering and to water action; free from overburden, spoil, shale and organic material; and shall meet the gradation requirements for the type specified. Neither breadth nor thickness of a single stone should be less than one-third its length. Shale and stone with shale seams are not acceptable.
2. Riprap shall have the following approximate gradation:

<b>Size Designation</b>	<b>Stone Size</b>
Dmax	9 inches
D50	6 inches
Dmin	4 inches

I. Cross Vane Boulder

1. Stone used for boulder shall be hard; durable; round in shape; resistant to weathering and to water action; free from overburden, spoil, shale and organic material; and shall meet the gradation requirements for the type specified. Neither breadth nor thickness of a single stone should be less than one-third its length. Shale and stone with shale seams are not acceptable.
2. Boulder shall have the following approximate gradation:

<b>Size Designation</b>	<b>Stone Size</b>
Dmax	18 inches
D50	12 inches
Dmin	8 inches

J. Channel Stone

1. Channel Stone shall be hard; durable; round in shape; resistant to weathering and to water action; free from overburden, spoil, shale and organic material; and shall meet the gradation requirements for the type specified. Neither breadth nor thickness of a single stone should be less than one-third its length. Shale and stone with shale seams are not acceptable.
2. Stone shall have the following approximate gradation:

<b>Size Designation</b>	<b>Stone Size</b>
Dmax	9 inches
D50	6 inches
Dmin	4 inches

K. CLSM

1. Type I or II Portland Cement conforming to the chemical and physical requirements of those respective types as specified in AASHTO M 85.
2. Clean (potable) water free from oil, salts, acid, strong alkalis, vegetable matter, and other impurities that would have an adverse effect on the quality of the CLSM.
3. Aggregates shall have the following gradation by weight:

<b>Sieve Size</b>	<b>Percent Passing</b>
No. 10	100
No. 200	0-20

4. Mix CLSM ingredients to produce a uniform product with a flow of 4 to 8 inches prior to placement (as determined by ASTM D6103) and capable of achieving a 28-day unconfined compressive strength between 50 and 150 psi.

5. Ready mixed concrete supplier should proportion CLSM ingredients based on field experience and/or laboratory trial mixtures to produce a cohesive and non-segregating mixture meeting the specified properties.

L. Clay

1. Clay to be utilized in compacted clay collars shall be Classified as ML, MH, CL, or CH by ASTM D2487.
2. Clay shall have a minimum plasticity index of 10 or greater.
3. Re-compacted permeability shall not exceed  $1 \times 10^{-5}$  cm/sec.

2.02 SOURCE QUALITY CONTROL

- A. Off-Site Materials: Engineer will collect samples and coordinate and pay for laboratory testing of Contractor-supplied proposed off-site materials to verify compliance with the Contract Documents.
1. Geotechnical Testing: Engineer will collect one representative sample of each of Contractor's off-site materials for the following:
    - a. Gradation in accordance with ASTM D422.
  2. Additional Geotechnical Testing: Engineer will also submit samples of the General Fill and Type "F" Run-of-Crusher Stone for the following:
    - a. Moisture/density relationship in accordance with ASTM D698.
    - b. Atterberg limits in accordance with ASTM D4318.
  3. Chemical Testing: Chemical testing will be performed on each proposed off-site fill material with greater than 10 percent by weight passing the No. 80 sieve, as determined by gradation testing performed in accordance with Paragraph 2.02.A.1 of this Section.
    - a. Engineer will collect a combination of discrete and composite samples of each off-site fill material in accordance with Subdivision 5.4(e) and Table 5.4(e)10 of DER-10.
    - b. Each discrete sample will be tested for VOCs in accordance with USEPA SW-846 Method 8260.
    - c. Each composite sample will be tested for the following:
      - 1) SVOCs in accordance with USEPA SW-846 Method 8270.
      - 2) PCBs in accordance with USEPA SW-846 Method 8082.
      - 3) Pesticides in accordance with USEPA SW-846 Method 8081.
      - 4) Herbicides in accordance with USEPA SW-846 Method 8151.
      - 5) Total metals in accordance with USEPA SW-846 Methods 6010.
      - 6) Total mercury in accordance with USEPA SW-846 Methods 7471.
      - 7) Total cyanide in accordance with USEPA SW-846 Method 9012.
  4. Engineer will report results of each test to Contractor.
  5. If testing results indicate that a proposed off-site fill material does not comply with the Contract Documents, Contractor shall identify and propose a new off-site source of the specified material.
    - a. Submit required information for proposed off-site fill source and Supplier in accordance with Article 1.05 of this Section.
    - b. Engineer will collect samples and coordinate laboratory testing in accordance with this Paragraph 2.02.A.
- B. Do not ship off-site fill materials to the Site until proposed materials, sources, and Suppliers are accepted by Engineer.



## PART 3 – EXECUTION

### 3.01 GRANULAR MATERIAL PLACEMENT

- A. Backfill placement requirements are presented in Section 31 23 00 – Excavation and Fill.

### 3.02 CLSM PLACEMENT

- A. Batch and deliver CLSM in accordance with AASHTO M 157.
- B. CLSM may be transported in open haul units provided the material is placed within 30 minutes of the end of mixing. Use a rotating drum unit capable of 2 to 6 rotations per minute to transport CLSM that cannot be placed within 30 minutes after the end of mixing.
- C. Place CLSM at a uniform rate using methods identified by the Contractor and approved by the Engineer.
- D. Do not place CLSM on frozen ground. Do not place CLSM at an ambient temperature below 35°F.

### 3.03 CRITERIA AND TOLERANCES

- A. A maximum 5 percent of all sieve analysis results for the granular fill and dense-graded aggregate are permitted outside the specified range. Dense-graded aggregate stone shall not contain particles greater than 2-inches and shall have a minimum 4 percent of particles less than the No. 200 sieve. The outliers are, however, not permitted to be concentrated in one area. The areal extent is at the discretion of the Engineer.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 31 05 19.13

GEOTEXTILES FOR EARTHWORK

PART 1 – GENERAL

1.01 DESCRIPTION

A. Scope:

1. Providing all labor, materials, tools, equipment, and services as shown, specified, and required to furnish and install geotextiles.

B. Related Sections:

1. Section 31 23 00 – Excavation and Fill

1.02 REFERENCE STANDARDS

A. The following standards are referenced in this Section:

1. AASHTO M 288, Standard Specification for Geotextile Specification for Highway Applications.

1.03 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: Geotextile manufacturer shall be a specialist in the manufacture of geotextile separation and stabilization fabrics and shall have produced and successfully installed a minimum of five million square feet.

1.04 SUBMITTALS

A. Prior to shipment of any geotextile materials, submit the following information on the geotextile production to the Engineer.

1. Lot and roll identification numbers for materials proposed for use on the project.
2. Quality control certificates that provide reference to the lot and roll identification numbers, sampling procedures, test methods and test results and other items such as:
  - a. Name of Manufacturer
  - b. Chemical Composition
  - c. Product Identification
  - d. Statement of Compliance
  - e. Signature of AuthorizationAll certificates shall be signed by a representative of the manufacturer.
3. Geotextile quality assurance tests from the manufacturer including:

<u>Test</u>	<u>Procedure</u>
Unit Weight	ASTM D-5261
Flow Rate	ASTM D-4491
Permittivity	ASTM D-4491
Trapezoidal Tear Strength	ASTM D-4533
Grab Elongation	ASTM D-4632
Apparent Opening Size	ASTM D-4751
CBR Puncture	ASTM D-6241

4. Unless otherwise specified, the quality assurance tests by the manufacturer shall be conducted at the frequency of one per lot or one per each 50,000 square feet. One lot is

defined as a group of consecutively numbered rolls or panels from the same manufacturing line and using raw materials from the same resin batch.

5. The geotextile manufacturer shall replace any rolls that are rejected for non-compliance with these Specifications.
6. If a sample fails to meet the quality control requirements, the manufacturer shall test each roll manufactured from the same resin batch or at the same time as the failing roll. Testing shall be at the manufacturer's expense and shall continue until a pattern of acceptable test results is established.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Each roll of geotextile delivered to the Site shall be labeled by the manufacturer identifying the manufacturer's name, product identification, lot number, roll number, and roll dimensions.
- B. Inspect all rolls and packages upon delivery to the Site to confirm that the materials have not been damaged due to improper transportation, handling, or storage. If the protective wrapping is damaged, or if damage to the roll is suspected, separate the roll from the lot for more detailed inspection.
- C. Notify Engineer if any loss or damage exists to geotextile. Replace loss and repair damage to new condition, in accordance with manufacturer's instructions.
- D. Protect geotextile from ultraviolet light exposure, precipitation or other inundation, mud, dirt, dust, puncture, cutting, or any other damaging or deleterious conditions. Ship and store geotextile rolls in relatively opaque and watertight wrappings.
- E. Place geotextile only after the required submittals have been received and reviewed by the Engineer.

### PART 2 – PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. GSE Environmental.
- B. TenCate Mirafi.
- C. U.S. Fabrics.
- D. Approved equal.

#### 2.02 MATERIALS

- A. Filter Fabric
  1. Filter Fabric geotextile for use as a demarcation layer shall be bright yellow or orange and have a minimum nominal weight of 6 ounces per square foot (e.g., Mirafi Delineation Nonwoven, or approved equivalent). Bright yellow or orange plastic mesh/construction fencing made of polypropylene or HDPE may also be used.
  2. Filter Fabric geotextile shall be of needle-punched construction and consist of long-chain polymeric fibers or filaments composed of polypropylene. The non-woven geotextile shall be chemically inert to naturally encountered chemicals, acids, and bases and resist biological degradation.

3. Filter Fabric geotextile shall be used as a separation layer between dissimilar material types as shown on the Drawings. The non-woven geotextile shall meet GRI GT13 specifications and have the following MARVs:

**TABLE 31 05 19.13-A  
REQUIREMENTS FOR FILTER FABRIC**

Property	ASTM Test Method	Units	MARV
Unit Weight	D5261	oz/yd <sup>2</sup>	6
Grab Tensile Strength	D4632	lb	175
Grab Tensile Elongation	D4632	%	75
Trapezoidal Tear Strength	D4533	lb	85
CBR Puncture Strength	D6241	lb	480
UV Resistance (at 500 hours)	D7238	%strength retained	70

**B. Non-Woven Geotextile**

1. Non-woven Geotextile for use as a separation layer shall be bright yellow have a minimum nominal weight of 10 ounces per square foot (e.g., Mirafi 160N, or approved equivalent). Bright yellow or orange plastic mesh/construction fencing made of polypropylene or HDPE may also be used.
2. Non-woven geotextile shall be of needle-punched construction and consist of long-chain polymeric fibers or filaments composed of polypropylene. The non-woven geotextile shall be chemically inert to naturally encountered chemicals, acids, and bases and resist biological degradation.
3. Non-woven geotextile shall be used as a separation layer between dissimilar material types as shown on the Drawings. The non-woven geotextile shall meet GRI GT13 specifications and have the following MARVs:

**TABLE 31 05 19.13-A  
REQUIREMENTS FOR NON-WOVEN GEOTEXTILE**

Property	ASTM Test Method	Units	MARV
Unit Weight	D5261	oz/yd <sup>2</sup>	10
Grab Tensile Strength	D4632	lb	260
Grab Tensile Elongation	D4632	%	50
Trapezoidal Tear Strength	D4533	lb	100
CBR Puncture Strength	D6241	lb	725
UV Resistance (at 500 hours)	D7238	%strength retained	70

**C. Woven Geotextile**

1. Woven geotextile shall be composed of high-tenacity polypropylene yarns woven into a stable network such that the yarns retain their relative position. The woven geotextile shall be chemically inert to naturally encountered chemicals, acids, and bases and resist biological degradation.
2. Woven geotextile shall be used as a stabilization layer between the compacted native soils and dense graded aggregate sub-base course in asphalt and concrete cap areas.
3. The woven geotextile shall meet AASHTO M 288-05 requirements for a Class 1 stabilization geotextile, consist of 95% weight polyethylene or polyester, and have the following MARVs:

**TABLE 31 05 19.13-B  
REQUIREMENTS FOR WOVEN GEOTEXTILE**

<b>Property</b>	<b>ASTM Test Method</b>	<b>Units</b>	<b>MARV</b>
Grab Tensile Strength	D4632	lb	315
Grab Tensile Elongation	D4632	%	15
Trapezoidal Tear Strength	D4533	lb	113
CBR Puncture	D6241	lb	900
Permittivity	D4491	sec <sup>-1</sup>	0.05
Flow Rate	D4491	gal/min/ft <sup>2</sup>	4
AOS	D4751	U.S. Sieve	40
UV Resistance (at 500 hours)	D4355	% strength retained	70

**D. Temporary Erosion Control Mat**

1. Temporary Erosion control mat shall be CN125BN produced by North American Green and approved equivalent and shall meet Type 4 specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17.
2. The mat shall be of consistent thickness with the infill evenly distributed over the entire area of the mat. The mat shall be covered on the top and bottom sides with 100% biodegradable woven natural organic fiber netting with a functional longevity up to 24-months.

**PART 3 – EXECUTION**

**3.01 INSPECTION**

- A. Examine the areas and conditions under which the Work will be performed and notify Engineer in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions are corrected in a manner acceptable to Engineer.

**3.02 PREPARATION**

- A. Excavate or fill subgrade, as required, to bring subgrade to elevations shown or indicated. Maintain all angles of repose. Confirm that subgrade is at proper elevations and that no further earthwork is required to bring the subgrade to proper elevations. Provide subgrade elevations that slope parallel to finished grade and in the direction shown on the Design Drawings.
- B. Remove all stones greater than two inches in any dimension, construction debris, trash, rubble, and all other extraneous materials from the subgrade.
- C. Notify Engineer that subgrade has been prepared and obtain Engineer's approval before installing geotextile.

**3.03 INSTALLATION**

- A. Place (roll out) geotextiles in the direction of most frequent vehicular travel.
- B. Overlap adjoining edges of geotextiles 18 inches.

GEOTEXTILES FOR EARTHWORK  
31 05 19 13 – 4  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.

- C. Weight geotextiles with sandbags or equivalent when required. Install sandbags (or equivalent) during placement and maintain until replaced with cover materials.
- D. During placement of geotextiles, take care not to entrap excessive dust, mud, or moisture in the geotextile stone, that could damage or cause clogging of the geotextile, or hamper subsequent seaming.
- E. Use proper tools to cut and size geotextiles; exercise care while cutting geotextiles.
- F. Do not expose geotextiles to precipitation prior to being installed, and do not expose geotextiles to direct sunlight for more than 15 days.

#### 3.04 GEOTEXTILE REPAIR

- A. Any holes or tears in the fabric shall be repaired as follows:
  - 1. On Slopes: Sew a fabric patch into place using a double sewn lock stitch (1/4 inch to 3/4 inch apart and no closer than one inch from any edge). Should any tear exceed 10 percent of the width of the roll, that roll shall be removed from the slope and replaced.
  - 2. Non-Slopes: Spot-seam a fabric patch in place with a minimum of 18 inches of overlap in all directions.

#### 3.05 PLACEMENT OF COVER MATERIALS

- A. Place all granular materials located on top of the geotextile in such a manner as to ensure:
  - 1. No damage of the geotextile or underlying layers;
  - 2. Minimal slippage between the geotextile and the underlying layers; and,
  - 3. No excess tensile stresses in the geotextile.
- B. Do not drive equipment directly on the geotextile.
- C. Utilize equipment exerting the lowest ground pressure practicable to place the granular materials to minimize the potential for damage to the geotextile. Under no circumstances shall the placement equipment exert more than 5 psi ground pressure.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

GEOTEXTILES FOR EARTHWORK  
31 05 19 13 – 6  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

Arcadis of New York, Inc.



## SECTION 31 05 19.16

### GEOMEMBRANES FOR EARTHWORK

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Furnishing and installing 40 mil textured high-density polyethylene (HDPE) geomembrane liner for material staging areas (if constructed), and decontamination areas as specified in this section and in accordance with the manufacturer's recommendations/specifications.
- B. Quality assurance (QA)/quality control (QC) testing of HDPE geomembrane liner as specified in this section and in accordance with the manufacturer's recommendations/ specifications.

##### 1.02 APPLICABLE CODES, STANDARDS, AND SPECIFICATIONS

- A. ASTM International (ASTM). The following ASTM specifications are referenced in this section and are to be considered part of this section:
  - 1. D792 - Standard Test Methods for Density and Specific Gravity (Relative Gravity) of Plastics by Displacement
  - 2. D1004 - Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting
  - 3. D1505 - Standard Test Method for Density of Plastics by the Density-Gradient Technique
  - 4. D1603 - Standard Test Method for Carbon Black Content in Olefin Plastics
  - 5. D3895 - Standard Test Method for Oxidative Induction Time of Polyolefins by Differential Scanning Calorimetry
  - 6. D4218 - Standard Test Method for Determination of Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique
  - 7. D4437 - Standard Practice for Non-destructive Testing (NDT) for Determining the Integrity of Seams Used in Joining Flexible Polymeric Sheet Geomembranes
  - 8. D4833 - Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products
  - 9. D5397 - Standard Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test
  - 10. D5596 - Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
  - 11. D5721 - Standard Practice for Air-Oven Aging of Polyolefin Geomembranes
  - 12. D5885 - Standard Test Method for Oxidative Induction Time of Polyolefin Geosynthetics by High Pressure Differential Scanning Calorimetry
  - 13. D5994 - Standard Test Method for Measuring Core Thickness of Textured Geomembrane
  - 14. D6693 - Standard Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembranes
  - 15. D7466 - Standard Test Method for Measuring the Asperity Height of Textured Geomembrane
- B. Geosynthetics Research Institute (GRI). The following GRI test methods are referenced in this section and are to be considered part of this section:
  - 1. GM11 Accelerated Weathering of Geomembranes using a Fluorescent UVA-Condensation Exposure Device
  - 2. GM13 Test Methods, Test Properties, and Testing Frequencies for High-Density Polyethylene (HDPE) Smooth and Textured Geomembranes

- C. Where reference is made to one of the above codes, standards, specifications, or publications, the revisions in effect at the time of bid shall apply.

### 1.03 SUBMITTALS

- A. Written certification that the minimum test values provided in Part 2.02 of this section are guaranteed by the manufacturer.
- B. Manufacturer's standard warranty for the geomembrane.
- C. Results of QC tests conducted by the manufacturer. QC test results shall include lot and roll identification numbers representative of the field-delivered material. At a minimum, results shall be submitted for:
  - 1. Thickness (ASTM D5994).
  - 2. Asperity Height (ASTM D7466).
  - 3. Density (ASTM D1505).
  - 4. Tensile Properties (ASTM D6693).
  - 5. Tear Resistance (ASTM D1004).
  - 6. Puncture Resistance (ASTM D4833).
  - 7. Stress Crack Resistance (ASTM D5397).
  - 8. Carbon Black Content (ASTM D1603).
  - 9. Carbon Black Dispersion (ASTM D5596).
  - 10. Oxidative Induction Time (OIT) (ASTM D3895 or D5885).
  - 11. Oven Aging at 85°C (ASTM D5721).
  - 12. Ultraviolet (UV) Resistance (GRI GM11).
- D. Contractor's written certification (provided prior to the installation of the geomembrane) that the field-delivered material has not been damaged due to improper transportation, handling, or storage.
- E. HDPE lot and roll number of field-delivered material.

## PART 2 – PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Solmax Geosynthetics.
- B. GSE Lining Technology, Inc.
- C. Poly-Flex, Inc.
- D. Approved equal.

### 2.02 MATERIALS

- A. HDPE Geomembrane
  - 1. HDPE geomembrane liner shall meet the following minimum test values:

**TABLE 31 05 19.16-A  
REQUIREMENTS FOR 40 mil HDPE**

Property	Test Method	Test Value
Thickness (min. avg.) • Lowest individual for 8 out of 10 values • Lowest individual for any of the 10 values	ASTM D5994	38 mil 36 mil 34 mil
Asperity Height (min. avg.) (See Note 1)	ASTM D7466	10 mil
Density (min. avg.)	ASTM D1505/D792	0.940 g/cm <sup>3</sup>
Tensile Properties (min. avg.) (See Note 2) • Yield Strength • Break Strength • Yield Elongation • Break Elongation	ASTM D6693 (Type IV)	84 lb/in 60 lb/in 12% 100%
Tear Resistance (min. avg.)	ASTM D1004	28 lb
Puncture Resistance (min. avg.)	ASTM D4833	60 lb
Stress Crack Resistance (See Note 3)	ASTM D5397	300 hrs
Carbon Black Content (range)	ASTM D1603 (See Note 4)	2.0 – 3.0%
Carbon Black Dispersion	ASTM D5596	See Note 5
OIT (min. avg.) (See Note 6) • Standard OIT or • High Pressure OIT	ASTM D3895  ASTM D5885	100 min.  400 min.
Oven Aging at 85°C (% retained after 90 days) (See Notes 6 and 7) • Standard OIT (min. avg.) or • High Pressure OIT (min. avg.)	ASTM D5721  ASTM D3895  ASTM D5885	55%  80%
UV Resistance (See Note 8) • Standard OIT (min. avg.) or • High Pressure OIT (min. avg.) – % retained after 1,600 hours (See Note 10)	GRI GM11  ASTM D3895  ASTM D5885	See Note 9  50%
<p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>Of 10 readings; 8 out of 10 must be ≥ 5 mils (see also Note 6).</li> <li>Machine direction (MD) and cross machine direction (XMD) average values should be on the basis of 5 test specimens each direction. Yield elongation is calculated using a gage length of 1.3 inches Break elongation is calculated using a gage length of 2.0 inches</li> <li>The notched constant tensile load (NCTL) test is not appropriate for testing geomembranes with textured or irregular rough surfaces. Test should be conducted on smooth edges of textured rolls or on smooth sheets made from the same formulation as being used for the textured sheet materials. The yield stress used to calculate the applied load for the NCTL test should be the manufacturer's mean value via manufacturer quality control testing.</li> <li>Other test methods, such as ASTM D4218 or microwave methods, are acceptable if an appropriate correlation to ASTM D1603 can be established.</li> <li>Carbon black dispersion (only near spherical agglomerates) for 10 different views: 9 in Categories 1 or 2 and 1 in Category 3</li> <li>The manufacturer has the option to select either one of the OIT methods listed to evaluate the antioxidant content of the geomembrane.</li> <li>It is also recommended to evaluate samples at 30 and 60 days to compare with the 90 day response.</li> <li>The condition of the test should be 20-hour UV cycle at 75°C followed by 4-hour condensation at 60°C.</li> </ol>		

**TABLE 31 05 19.16-A  
REQUIREMENTS FOR 40 mil HDPE**

Property	Test Method	Test Value
9. Not recommended as the high temperature of the Standard OIT test produces an unrealistic result for some of the antioxidants in the UV exposed samples.		
10. UV resistance is based on percent retained value regardless of the original High Pressure OIT value.		

2. The geomembrane shall be free of defects, such as holes or blisters, or any contamination by foreign matter.
3. QC testing shall be performed by an independent laboratory at the Contractor's expense. QC test results shall be submitted to the Engineer for review a minimum of two weeks prior to mobilizing the material to the site.

**B. Welding Material**

1. The resin used in the welding material must be identical to the liner material.
2. All welding materials shall be of a type recommended and supplied by the manufacturer and shall be delivered in the original sealed containers, each with an indelible label bearing the brand name, Manufacturer's mark number, and complete directions as to proper storage.

**2.03 DELIVERY, HANDLING, AND STORAGE**

- A. Each roll of geomembrane delivered to the Site shall be labeled by the manufacturer identifying the manufacturer's name, product identification, lot number, roll number, and roll dimensions.
- B. Inspect all rolls and packages upon delivery to the Site to confirm that the materials have not been damaged due to improper transportation, handling, or storage. If the protective wrapping is damaged, or if damage to the roll is suspected, separate the roll from the lot for more detailed inspection.
- C. Notify Engineer if any loss or damage exists to geomembrane. Replace loss and repair damage to new condition, in accordance with manufacturer's instructions.
- D. Place geomembrane only after the required submittals have been received and reviewed by the Engineer.

**2.04 WARRANTY**

- A. Provide a written warranty stating that the materials and workmanship provided are free from defects for the duration of the project.
- B. The written warranty shall provide for the complete repair or replacement of the liner material, including all incidental costs associated with the defect, at no cost to the Owner.
- C. All repairs or replacements shall be performed within a reasonable period of time, as determined by the Owner/Engineer.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

#### A. General Requirements

1. Placed, seam, and test the liner in accordance with the manufacturer's recommendations/specifications.
2. Install of geomembrane liner on geotextile-covered surfaces free from stones or other protruding objects.
3. Do not place liner on an area that has become softened by precipitation. Appropriate methods of moisture control are the responsibility of the Contractor.
4. Do not install liner on frozen soil material. Remove and replace such material with acceptable material.

All surfaces on which the liner is to be installed shall be acceptable to the Engineer at the time of installation.

#### B. Placement

1. Place geomembrane panels according to all instructions on the boxes or wrapping containing the material that describe the proper methods of unrolling the panels.
2. Do not deploy liner if weather conditions will preclude material seaming following deployment.
3. Visually inspect geomembrane during placement for uniformity, tears, punctures, blisters, or other damage or imperfections. Immediately repair and re-inspect any such damage or imperfections at the Contractor's expense.
4. No equipment used shall damage the liner by handling, trafficking, leakage of hydrocarbons, or other means.
5. No personnel working on the liner shall smoke, wear damaging shoes, or engage in other activities that could damage the liner.
6. Do not allow the prepared surface underlying the liner to deteriorate after acceptance. Maintain the surface up to the time of liner installation and until completion of the project.
7. Place adequate temporary loading and/or anchoring (e.g., sand bags), not likely to damage the liner, to prevent uplift by wind (in case of high winds, continuous loading is recommended along edges of panels to minimize risk of wind flow under the panels).
8. Minimize direct contact with the liner. Protect the liner in high-traffic areas using geotextiles, extra geomembrane, or other suitable materials.
9. Do not allow the method used to unroll or adjust the panels to cause excessive scratches or crimps in the liner or damage the supporting soil or underlying geotextile (where applicable).
10. The method used to place the panels shall minimize the potential for wrinkles (especially differential wrinkles between adjacent panels).
11. Repair any damage to the geomembrane panels or portions of the panels as a result of placement at the Contractor's expense. The Engineer will determine whether replacement or repair any panel or portions of panels is necessary.

### 3.02 SEAMING

- A. Utilize personnel who are qualified by experience or who successfully passing seaming tests to perform seaming operations.
- B. Generally, orient all seams whether field or factory, parallel to the line of slope, not across slope. At liner penetrations and corners, minimize the number of seams.

- C. Clean and prepare the area of the liner to be seamed in accordance with the manufacturer's specified procedures. Do not allow any abrading of the liner to extend more than 0.5 inch on either side of the weld. Take care to eliminate or minimize the number of wrinkles and "fish-mouths" resulting from seam orientation.
- D. Do not conduct field seaming when either the air or sheet temperature is below 32°F, when the sheet temperature exceeds 122°F, or when the air temperature is above 104°F. Conduct seaming directly behind a preheating device when the air or sheet temperatures are between 32°F and 40°F. In addition, do not conduct seaming when the liner material is wet from precipitation, dew, fog, etc., or when winds are in excess of 20 miles per hour.
- E. Do not perform seaming on frozen or excessively wet underlying surfaces.
- F. Seam overlaps beyond the weld must be large enough to perform destructive peel tests, but must not exceed 5 inches.
- G. Perform trial seams on excess liner material.
  - 1. Prior to the start of each seaming succession for each seaming crew, every 4 hours, after any significant change in weather conditions or liner temperature, or after any change in seaming equipment, fabricate a 1-foot by 3-foot seamed liner sample with the seam running down the 3-foot length in the center of the sample.
  - 2. Take four test specimens from each trial seam by cutting 1-inch by 12-inch strips perpendicular to the trial seam.
  - 3. Conduct shear tests on two of the test specimens shall be shear tested
  - 4. Conduct peel tests on the other two test specimens using a field tensometer, and recorded as pass (failure of liner material) or fail (failure of seam).
  - 5. Upon initial failure, a second trial seam shall be made; if both trial seams fail, then the seaming device and its operator shall not perform any seaming operations until the deficiencies are corrected and two successive passing trial seams are produced.
  - 6. Completed trial seam samples cannot be used as portions of a second sample and must be discarded.
- H. Where "fish-mouths" occur, cut, overlap, and make an overlap weld on the material. Where necessary, patching using the same liner material shall be welded to the geomembrane.
- I. Acceptable seaming methods include:
  - 7. Extrusion welding using extrudate with identical physical, chemical, and environmental properties.
  - 8. Hot-wedge welding using a proven fusion welder and master seamer.
- J. The seaming device shall not have any sharp edges that might damage the liner. Prevent "bulldozing" of self-propelled seaming devices (if used) into the underlying soil.
- K. Perform non-destructive seam testing on all field seams.
  - 1. Conduct non-destructive seam testing under the direct observation of the Engineer.
  - 2. Air pressure testing may be used if double-track hot-wedge welding has been used to seam the liner. Use approved equipment and the following procedures to perform non-destructive air pressure seam testing:
    - a. Seal both ends of the air channel separating the double-track hot-wedge welds.
    - b. Insert pressure needle into air channel and pressurize the air channel to 27 psi.
    - c. Monitor pressure gauge for 3 minutes and determine whether pressure is maintained without a loss of more than 2 psi.
    - d. If the pressure test fails, locate the leak and mark the area for repair.

3. Perform vacuum testing on all seams not tested using air pressure testing. Use an approved vacuum box and the following procedures to perform non-destructive vacuum testing:
  - a. Apply a soapy water mixture over the seam.
  - b. Place vacuum box over soapy seam and form a tight seal.
  - c. Create a vacuum by reducing the vacuum box pressure to 5 psi for 10 seconds.
  - d. Observe through the vacuum box window any bubbles.
  - e. Where bubbles are observed, mark seam for repair.
  - f. Move vacuum box further down seam, overlapping tested seam by 3 inches.
  - g. Where hot-wedge seaming has been performed, cut back the overlap to the weld.

### 3.03 LINER REPAIR

- A. Repair all imperfections, flaws, construction damage, and seam failures at no additional cost to the Owner.
- B. Acceptable repair methods include:
  1. Patching, to repair holes, tears, undispersed raw materials, and contamination by foreign matter.
  2. Grinding and re-welding, to repair small sections of extruded seams.
  3. Spot Welding or Seaming, to repair pinholes or other minor, localized flaws.
  4. Capping, to repair large lengths of failed seams.
  5. Topping, to repair areas of inadequate seams which have an exposed edge.
  6. Removing bad seams and replacing with a strip of new material welded into place.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

GEOMEMBRANES FOR EARTHWORK  
31 05 19 16 – 8  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK



## SECTION 31 11 00

### CLEARING AND GRUBBING

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing all labor, materials, equipment, and incidentals required to perform clearing and grubbing as specified in the Contract Documents.
2. Removing and disposing trees, shrubs, brush, logs, vegetation, rubbish, and other objectionable material.
3. Clearing and grubbing, as necessary, to facilitate remedial activities at the site.
4. Managing and disposing trees, shrubs, brush and logs that are in direct contact with impacted material, including all at or below grade materials and materials associated with the beaver dam in accordance with Section 02 61 05 – Removal and Disposal of Contaminated Material.
5. Managing trees, shrubs, brush and logs that are not in direct contact with impacted material in accordance with Section 01 74 19 – Construction Waste Management and Disposal.
6. Paying all fees associated with transporting and disposing debris resulting from clearing and grubbing.

###### B. Related Sections:

1. Section 01 41 26 – Storm Water Pollution Prevention Plan and Permit
2. Section 01 57 05 – Temporary Controls
3. Section 01 74 19 – Construction Waste Management and Disposal
4. Section 02 41 00 – Demolition
5. Section 02 61 05 – Removal and Disposal of Contaminated Material

##### 1.02 TERMINOLOGY

###### A. The following words or terms are not defined but, when used in this Section, have the following meaning:

1. "Site Clearing Waste" is above-grade trees, shrubs, and brush that are not in direct contact with impacted material.
2. "Site-Grubbing Waste" is below grade portions of trees, shrubs, brush or other non-earthen materials that are in direct contact with potentially impacted material.

##### 1.03 WARRANTY

- ###### A. Warrant that Work performed under this Section will not permanently damage trees, shrubs, turf, and plants designated to remain, or other adjacent work, facilities, or property. If damage resulting from Contractor's operations becomes evident during the correction period, Contractor shall replace damaged items and property at no additional cost to Owner.

#### PART 2 – PRODUCTS (NOT USED)

## PART 3 – EXECUTION

### 3.01 PREPARATION

#### A. Protection:

1. Protect existing site improvements, including streets, drives, underground facilities to remain (if any), and adjacent property and structures throughout the Work. Repair damage caused by Contractor to original condition or replace in kind, to satisfaction of Engineer, and at no additional cost to Owner.
2. Protect trees, shrubs, vegetation, and grass-covered areas to remain by providing temporary fencing, barricades, wrapping, or other methods shown, specified, or accepted by Engineer. Correct, at Contractor's expense, damage caused by Contractor outside the limits of clearing and grubbing Work.
3. Do not remove trees without the approval of Engineer, unless shown or indicated for removal on the Design Drawings.
4. Do not locate construction equipment, stored materials, or stockpiles within the drip line of trees and vegetation to remain.

#### B. Site Preparation:

1. Obtain, pay costs associated with, and comply with applicable permits, if any, required for clearing and grubbing Work.
2. Delineation of Clearing and Grubbing Limits:
  - a. Locate and clearly flag trees, vegetation, and other items to remain within the limits of clearing and grubbing.
  - b. Provide flagging to delineate limits of areas to be cleared or grubbed. Review at Site with Engineer before initiating clearing and grubbing Work.
  - c. Replace flagging that is lost, removed, or destroyed until clearing and grubbing Work is complete and Engineer allows removal of flagging.
3. Erosion and Sediment Controls:
  - a. Install applicable erosion and sediment controls before initiating clearing and grubbing Work.
  - b. Comply with Section 01 41 26 – Storm Water Pollution Prevention Plan and Permit, and erosion and sediment control requirements of Section 01 57 05 – Temporary Controls and the SWPPP.
  - c. Adjust, relocate, or install additional erosion and sediment controls as clearing and grubbing Work progresses to previously uncleared, ungrubbed areas of the Site.

### 3.02 CLEARING AND GRUBBING

- A. Remove all trees, shrubs, brush, logs, vegetation, rubbish, and other objectionable material within the remedial limits and support areas (i.e., soil/sediment removal areas, staging areas, access roads, consolidation areas, and as deemed necessary to complete the remedial construction). Blanket tree removal is prohibited. Where possible, during construction of site support areas, trees shall be cut flush with the ground and roots left in place. Remove stumps and roots from within soil/sediment excavation areas and within the consolidation area.
- B. Trees and shrubs to remain that have been damaged or require trimming shall be treated and repaired under the direction of a qualified arborist, or other professional with qualifications acceptable to Engineer. Replace trees and shrubs that are damaged beyond repair or that are removed, but were intended to remain, at no additional cost to Owner.
- C. Manage and stage above-grade trees, shrubs, and brush that are not in direct contact with impacted material for sizing and placement in areas selected by the Engineer on site. Areas to be selected will be outside of delineated wetland areas.

D. Removal of Site Improvements: Comply with Section 02 41 00 – Demolition.

3.03 DISPOSAL OF CLEARED AND GRUBBED MATERIALS

- A. Properly transport and dispose of cleared and grubbed materials at appropriate, Owner-approved facilities in accordance with Laws and Regulations.
1. Site-Clearing Wastes: Comply with Section 01 74 19 – Construction Waste Management and Disposal.
  2. Site-Grubbing Wastes: Comply with Section 02 61 05 – Removal and Disposal of Contaminated Material.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

CLEARING AND GRUBBING  
31 11 00 - 4  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

SECTION 31 23 00  
EXCAVATION AND FILL

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Scope:
1. Excavating materials to facilitate the Work as specified on the Design Drawings or as directed by the Engineer.
  2. Backfilling excavation with acceptable materials to the required lines and grades.
  3. Providing all materials, equipment, and labor necessary to complete the excavation and fill activities required by the Work.
- B. Coordination: Review procedures under this and other Sections and coordinate Work that must be performed with or before excavation and fill Work.
- C. Related Sections:
1. Section 01 35 49 – Community Air Monitoring Plan
  2. Section 01 41 26 – Storm Water Pollution Prevention Plan and Permit
  3. Section 01 53 53 – Temporary Water Treatment System
  4. Section 01 57 05 – Temporary Controls
  5. Section 01 71 23 – Field Engineering
  6. Section 01 71 33 – Protection of Work and Property
  7. Section 02 41 00 – Demolition
  8. Section 02 61 05 – Removal and Disposal of Contaminated Material
  9. Section 31 05 16 – Aggregates for Earthwork
  10. Section 31 11 00 – Clearing and Grubbing
  11. Section 31 23 18 – Water Handling and Treatment

1.02 REFERENCES

- A. Terminology:
1. The following words or terms are not defined but, when used in this Section, have the following meaning:
    - a. “Debris” means man-placed buried material including, but not limited to, brick, concrete, metal, wood, ash, cinders, and glass.
    - b. “Earth” means materials, such as sand, gravel, sediment, clay, loam, ashes, cinders, pavements, muck, roots, pieces of timber, soft or disintegrated rock, not requiring blasting, barring, or wedging from their original beds, and specifically excluding all ledge or bedrock and individual boulders, masonry, or debris larger than 0.5 cubic yard in volume.
    - c. “Backfill” means the refilling of excavated areas to the elevations indicated on the Design Drawings or as directed using specified materials for refilling of excavated areas; and the compacting of all materials used in filling or refilling by rolling, ramming, or as may be required and approved by the Owner.
- B. Reference Standards:
1. The following standards are referenced in this Section:
    - a. ASTM D6938, Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

- b. ASTM E329, Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.

### 1.03 QUALITY ASSURANCE

#### A. Qualifications:

1. Contractor's Testing Laboratory: Retain the services of an independent testing laboratory to perform field quality control testing required in this Section. Testing laboratory shall comply with ASTM E329, and shall be experienced in the types of testing required.
2. Off-Site Fill Sources: See gradation in Section 31 05 16 – Aggregates for Earthwork.

#### B. Regulatory Requirements:

1. Laws and Regulations applying to the Work under this Section include, but are not limited to, the following:
  - a. 29 CFR 1926.650 through 29 CFR 1926.652, Subpart P – Excavations.
  - b. 6 NYCRR 360, Solid Waste Management Facilities.
  - c. 6 NYCRR 375, Environmental Remediation Programs.
  - d. 12 NYCRR 23-4.1 through 12 NYCRR 23-4.5, Subpart 23-4 – Excavation Operations.
  - e. 16 NYCRR 753, Protection of Underground Utilities.
2. Comply with applicable provisions and recommendations of the following:
  - a. NYSDOT Standard Specifications and Standard Sheets.
3. Obtain required permits and approvals for excavation and fill Work, including work permits from right-of-way owners.

### 1.04 SUBMITTALS

- A. Excavation and Backfilling Plan: Submit acceptable plan for excavation, backfilling, and related Work not less than 10 days prior to starting excavation Work. Include the following:
  1. Plan for coordinating shut-offs, locating, capping, temporary services, and continuing utility services.
  2. Proposed excavation, dewatering, backfilling, and compaction procedures. Where different procedures or equipment will be used for different types of material or at different locations at the Site, indicate where each procedure and equipment item will be used.
  3. List of proposed equipment for excavation, dewatering, backfilling, and compaction Work.
  4. Planned sequence of excavation and backfilling operations.
  5. Detailed schedule of excavation and backfilling Work in accordance with the accepted Progress Schedule.
- B. Qualifications for the firm proposed for field nuclear density testing of granular materials.
- C. Field Quality Control Submittals: Submit laboratory test reports for field quality control testing performed in accordance with Article 3.10 of this Section.

### 1.05 SITE CONDITIONS

#### A. Subsurface Information:

1. The Contract Documents indicate information available relative to subsurface conditions at the site. Such information and data are not intended as a representation or warranty of continuity of conditions between soil borings or test pits, nor of groundwater levels at dates and times other than date and time when measured, nor that purpose of obtaining the information and data were appropriate for use by Contractor. Owner and Engineer will not be responsible for interpretations or conclusions drawn therefrom by Contractor.

2. Soil borings and other exploratory operations may be made by Contractor, at no additional cost to Owner. Coordinate Contractor-performed test borings and other exploratory operations with Owner and utility owners as appropriate. Perform such explorations without disrupting or otherwise adversely affecting operations of Owner or utility owners. Comply with Laws and Regulations relative to required notifications.
- B. Existing Structures:
1. The Contract Documents show or indicate certain structures and Underground Facilities adjacent to or within the limits of the Work. Such information was obtained from existing records and is not guaranteed to be correct or complete. Contractor shall explore ahead of demolition, trenching, excavation, or other subsurface Work to determine the exact location of all existing structures and Underground Facilities. Existing structures and Underground Facilities shall be supported and protected from damage by Contractor. Immediately repair and restore existing structures and Underground Facilities damaged by Contractor without additional cost to Owner.
  2. Movement or operation of construction equipment over Underground Facilities shall be at Contractor's sole risk and only after Contractor has prepared and submitted to Engineer and utility owners (as applicable), and received acceptance therefrom, a plan describing Contractor's analysis of the loads to be imparted and Contractor's proposed measures to protect structures and Underground Facilities during the Project.
  3. Coordinate with utility owners for shut off of services in active piping and conduits, and for testing, shut off of services, and draining, purging, or de-energizing where specified or required of piping and conduits of unknown status. When required by utility owner, Owner will assist Contractor with utility owner notifications. Completely remove buried piping and conduits indicated for removal and not otherwise indicated as being abandoned or to remain in place. Comply with Section 02 41 00 – Demolition for such removals.
  4. Do not interrupt existing utilities serving facilities occupied and used by Owner or others, except when such interruption is indicated in the Contract Documents or when allowed in writing by Engineer after acceptable temporary utility services are provided by Contractor for the affected structure or property.

## PART 2 – PRODUCTS

### 2.01 EXCAVATION EQUIPMENT

- A. Utilize typical earth moving equipment to facilitate completion of the work to the design limits. Soil removal and handling equipment shall include, but not be limited to excavators and loaders.

### 2.02 ODOR, VAPOR AND DUST CONTROL

- A. Requirement for odor, vapor and dust control are presented in Section 01 57 05 – Temporary Controls and the CAMP.

### 2.03 BACKFILL

- A. Fill materials shall meet the requirements of Section 31 05 16 – Aggregates for Earthwork.
- B. Use drum-type, power-driven, hand-guided vibratory compactor, or by hand-guided vibratory plate tamper to meet backfill compaction specifications. Propose in a written request to Owner, alternate compaction methods. Alternate compaction methods shall be reviewed and approved by the Owner and/or Engineer.

- C. Contractor is responsible for achieving the required compaction requirements.

### PART 3– EXECUTION

#### 3.01 MAINTENANCE AND PROTECTION OF UTILITIES

- A. Maintain and protect utilities in accordance with Section 01 71 33 – Protection of the Work and Property.

#### 3.02 INSPECTION

- A. Provide Engineer with sufficient notice and with means to examine areas and conditions under which excavating, filling, and grading Work will be performed. Engineer will advise Contractor in writing when Engineer is aware of conditions that may be detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions are corrected.

#### 3.03 PREPARATION

- A. Erosion and Sediment Control: Provide temporary erosion and sediment controls in accordance with Section 01 57 05 – Temporary Controls; and comply with Section 01 41 26 – Storm Water Pollution Prevention and Permit and the SWPPP (Appendix E).
- B. Odor, Vapor and Dust Control: Provide odor, vapor and dust controls in accordance with Section 01 57 05 – Temporary Controls, and comply with Section 01 35 49 – Community Air Monitoring Plan.
- C. Site Preparation:
  - 1. Comply with Section 02 41 00 – Demolition.
  - 2. Comply with Section 31 11 00 – Clearing and Grubbing.

#### 3.04 TEMPORARY BARRIERS:

- A. Provide temporary barrier surrounding excavations and excavation work areas to provide temporary protection to persons and property. Barrier shall have openings only at vehicular, equipment, and worker access points.
- B. Minimum Material Requirements for Temporary Barriers:
  - 1. Temporary barrier shall not be less snow fence-type fencing, four feet high.
  - 2. Fence shall be constructed of vertical hardwood slats measuring not less than 1.5 inches by 1/4 inch interwoven with strands of horizontal wire, or shall be of equivalent plastic construction.
  - 3. Posts:
    - a. Posts shall be steel, either “U”-, “Y”-, or “T”-shaped, or channel section.
    - b. Posts shall have a nominal weight of not less than 1/3-pound per linear foot, exclusive of the anchor.
    - c. Posts shall have tapered anchors weighing not less than 0.67 pound, each firmly attached by means of welding, riveting, or clamping.
    - d. Posts shall have corrugations, knobs, notches, or studs placed and constructed to engage a substantial number of fence line wire in the proper position.
  - 4. Provide each post with sufficient quantity of galvanized wire fasteners or clamps, of not less than 0.120 inch in diameter, for attaching fence wire to post.



### 3.05 TEST PITS

- A. General: In advance of the construction, excavate, make observations and measurements, and fill test pits to determine conditions or location of existing structures and Underground Facilities. Contractor will determine safest approach for verifying utilities to protect on-site workers, the public and the utility. Contractor methods for installing test pits may include mechanical methods, soft dig techniques (such as use of an air knife), or other methods. Perform all work required in connection with excavating, stockpiling, maintaining, sheeting, shoring, and filling test pits. Contractor shall be responsible for the definite location of each existing structure and Underground Facility involved within the areas of excavation for the Work. Exercise care during such location work to avoid damaging and disrupting the affected structure or Underground Facility. Repair, at Contractor's expense, damage caused during the Work to existing structures or Underground Facilities to remain.
- B. Payment for Test Pits: There shall be no separate payment for test pits.

### 3.06 DEWATERING

- A. General: Refer to Section 31 23 18 – Water Handling and Treatment
- B. Temporary Dewatering System: Refer to Section 01 53 53 – Temporary Water Treatment System
- C. Disposal of Water Removed by Dewatering System: Refer to Section 02 61 05 – Removal and Disposal of Contaminated Material

### 3.07 EXCAVATION

- A. Perform all excavation required to complete the Work as shown, specified, and required. Excavation shall include removing and handling of earth, sand, clay, gravel, hardpan, soft, weathered, or decomposed rock, sediment, pavements, rubbish, and other materials within the excavation limits.
- B. Maintain excavations in dry condition in accordance with Article 3.06 of this Section.
- C. Subgrades:
  - 1. Subgrades shall be firm and intact, dense, and thoroughly compacted and consolidated; shall be free of standing water and mud, muck, and other soft or unsuitable materials; and shall remain firm and intact under all construction operations. Subgrades that are otherwise solid but become soft or mucky on top due to construction operations shall be reinforced with general fill material.
  - 2. If, in Engineer's opinion, subgrade becomes softened or mucky because of construction delays, failure to dewater properly, or other cause within Contractor's control, the subgrade shall be excavated to firm material, trimmed, and backfilled with compacted general fill material at Contractor's expense. If, in the Engineer's opinion, additional excavation will not result in better subgrade conditions, the Contractor will work with the Engineer to establish an approach that will be acceptable. Such approaches may include the use of soil stabilization fabrics, an increased initial lift of backfill, use of controlled low strength material (CLSM), or other techniques.
- D. Disposal of Excavated Materials:
  - 1. Material removed from excavations shall be consolidated on-site or transported off-site for disposal, unless otherwise approved by Engineer.

2. Handling and disposal of waste material shall be in accordance with Laws and Regulations and Section 02 61 05 – Removal and Disposal of Contaminated Material.
- E. Unauthorized Excavation: All excavations outside the lines and grades shown or indicated and that are not approved by Engineer, together with removing and disposing of the excavated material and backfilling with suitable material, shall be at Contractor's expense. Fill unauthorized excavations with properly-compacted general fill material at Contractor's expense.

### 3.08 FILL AND COMPACTION

- A. Provide and compact all fill required for the finished grades as shown and as specified in this Section.
- B. Place fill in excavations as promptly as progress of the Work allows, but not until completing the following:
  1. Receiving approval from the Engineer, which will be based on the laboratory analytical results of post-excavation confirmation samples.
  2. Surveying and recording horizontal and vertical limits of excavation and verification sample locations and elevations.
  3. Inspecting, testing, approving, and recording horizontal and vertical locations of Underground Facilities.
  4. Complying with backfill submittal requirements and receiving approval of backfill materials from the Engineer.
  5. Removing trash and debris.
- C. Remove unacceptable fill material and replace with approved fill material in accordance with the Contract Documents.
- D. Placement – General:
  1. Place fill to the grades shown or indicated. Bring up evenly on all sides and fill around structures and underground facilities.
  2. Furnish and use equipment capable of adding measured amounts of water to the fill materials to bring fill materials to a condition within required moisture content range. Furnish and use equipment capable of dicing, aerating, and mixing the fill materials to ensure reasonable uniformity of moisture content throughout the fill materials, and to reduce moisture content of borrow materials by air drying, when necessary. When subgrade or lift of fill materials requires moisture-conditioning before compaction, fill material shall be sufficiently mixed or worked on the subgrade to ensure uniform moisture content throughout the lift of material to be compacted. Materials at moisture content in excess of specified limit shall be dried by aeration or stockpiled for drying.
  3. Compact fill material with equipment suitable for the type of fill material placed. Select and use equipment capable of providing the minimum density required in the Contract Documents. Furnish and use equipment capable of compacting in restricted areas next to structures and around piping and Underground Facilities. Effectiveness of the equipment selected by Contractor shall be tested at start of compacted fill Work by constructing a small section of fill within or adjacent to the area where fill will be placed. Record total number of coverages with selected compaction equipment and perform field moisture content and density tests to ensure that specified compaction of fill has been obtained. If tests on the test section of fill indicate that required compaction has not been obtained, do one or more of the following:
    - a. Increase the amount of coverages.
    - b. Decrease the lift thicknesses.
    - c. Use different compaction equipment.

4. Place fill materials in horizontal, loose lifts, not exceeding specified uncompacted thickness. Place fill in a manner ensuring uniform lift thickness after placing. Mechanically compact each lift, by not less than two complete coverages of the compactor. One coverage is defined as the conditions reached when all portions of the fill lift have been subjected to the direct contact of compactor's compacting surface. Compaction of fill materials by inundation with water is unacceptable.
5. Do not place fill materials when standing water is present on surface of the area where fill will be placed. Do not compact fill when standing water is present on the fill to be compacted. Do not place or compact fill in a frozen condition or on top of frozen material. Fill containing organic materials or other unacceptable material previously described shall be removed and replaced prior to compaction.
6. If required densities are not obtained because of improper control of placement or compaction procedures, or because of inadequate or improperly-functioning compaction equipment, Contractor shall perform all work required to provide the required densities. Such work shall include, at no additional cost to Owner, complete removal of unacceptable fill areas and replacement and re-compaction until acceptable fill is provided.
7. Repair, at Contractor's expense, observed or measured settlement. Make repairs and replacements as required within five days after being so advised by Engineer.

E. Compaction Density Requirements:

1. Compaction required for fills provided in this section shall be in accordance with Table 31 23 00-A of this Section. Moisten material or aerate the material as necessary to provide the moisture content that will facilitate obtaining the required compaction.

**TABLE 31 23 00-A  
MINIMUM DENSITY REQUIREMENTS**

Fill Material	Maximum Uncompacted Lift Thickness (inches)	Percent Compaction (ASTM D-1557)
General Fill		
More Than Five Feet Below Final Grade <sup>2</sup>	18	90
Less Than Five Feet Below Final Grade	12	90
Dense-Graded Aggregate	12	95
Granular Fill, Gravel and Sand	12	See Note 1
Clay	12	90

Notes:

1. Compact to a firm non-yielding condition using a minimum of three passes of suitable compaction equipment.
2. Does not apply to fill placed below structures.
2. Wet and thoroughly mix fill to achieve optimum moisture content plus-or-minus 2%.
3. Replace natural, undisturbed soils or compacted soil subsequently disturbed or removed by construction operations with materials compacted as indicated in Table 31 23 00-A of this Section.
4. Field quality control testing for density, to verify that specified density was obtained, shall be performed within the top five feet of the excavation.
5. When field quality control testing indicates unsatisfactory compaction, provide additional compaction necessary to obtain the specified compaction. Perform additional compaction Work at no additional cost to Owner until specified compaction is obtained. Such work includes complete removal of unacceptable (as determined by Engineer) fill areas and replacement and re-compaction until acceptable fill is provided in accordance with the Contract Documents.

- F. Replacement of Unacceptable Excavated Materials: In cases where over-excavation to replace unacceptable soil materials is required, backfill the excavation to required subgrade with general fill material and thoroughly compact in accordance with Paragraph 3.08.E and Table 31 23 00-G of this Section.
- G. CLSM Placement – Place CLSM in accordance with Section 31 05 16 – Aggregates for Earthwork

### 3.09 GRADING

- A. General:
  - 1. Uniformly grade areas within the limits of grading under this Section, including adjacent transition areas.
  - 2. Compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.
- B. Grading Outside Building: Grade areas adjacent to buildings to drain away from structures and to prevent ponding. Finish surfaces free of irregular surface changes, and comply with the following:
  - 1. Grassed Areas or Areas Covered with Gravel, Stone, Wood Chips, or Other Special Cover: Finish areas to receive topsoil or special cover to within not more than one inch above or below the required subgrade elevations.
- C. Compaction: After grading, compact subgrade surfaces to achieve required subgrade elevations and percentage of maximum density for each material classification.

### 3.10 FIELD QUALITY CONTROL

- A. Site Tests:
  - 1. Perform field moisture content and density tests in accordance with ASTM D6938 to verify that specified compaction of fill materials has been obtained. Comply with the following:
    - a. General Fill: Perform one test per 1,000 square feet on every compacted lift less than five feet below finished grade or at least one test per lift in each excavation
    - b. Dense Graded Aggregate: Perform test on a minimum of ½ of the drainage channel cross vanes
    - c. Clay: Perform one test on each anti-seep collar.
  - 2. Submit test results, certified by testing laboratory, to Engineer within 24 hours of completion of test.
  - 3. If testing laboratory reports or inspections indicate subgrade or fill compaction below specified density, remove unacceptable materials as necessary and replace with specified materials, and provide additional compaction at Contractor's expense until subgrades and fills are acceptable. Costs for retesting of subgrade or fill materials that did not originally comply with specified density shall be paid by Contractor.

END OF SECTION

## SECTION 31 23 18

### WATER HANDLING AND TREATMENT

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing all labor, materials, and equipment and executing all activities necessary to collect, treat, and discharge wastewaters generated during work performed under this contract requiring treatment. Liquids that must be collected and handled include, but are not limited to:
  - a. Water from within 6 inches of the sediment surface during initial dewatering. Unless visually impacted (e.g., sheen or sediment disturbance), water greater than 6 inches above the sediment surface may be directly discharged downstream of the Project Work Limits during initial dewatering only.
  - b. Rainfall runoff which accumulates in remediation areas to any depth.
  - c. Direct precipitation in soil/sediment removal areas to any depth.
  - d. Water generated from soil/sediment dewatering operations.
  - e. Water generated from equipment and personnel decontamination/cleaning activities.
  - f. Groundwater/surface water encountered during remediation activities.

###### B. Coordination:

1. Coordinate proper collection of waters as specified under this Section.
2. Coordinate proper storage of collected waters as specified under this Section.
3. Coordinate proper disposal of collected waters as specified under this Section.

###### C. Related Sections:

1. Section 01 53 53 – Temporary Water Treatment System
2. Section 02 61 15 – Sediment Removal and Handling

##### 1.02 QUALITY ASSURANCE

###### A. Applicable Codes, Standard, and Specifications:

1. Laws and Regulations applying to the Work under this Section include, but are not limited to, the following:
  - a. 29 CFR 1910, Occupational Safety and Health Standards.
  - b. 29 CFR 1926, Safety and Health Regulations for Construction.
  - c. 40 CFR 261.3, 264, and 265, Resource Conservation and Recovery Act (RCRA).
  - d. 6 NYCRR 750, State Pollutant Discharge Elimination System
  - e. 6 NYCRR 370, Hazardous Waste Management System – General.
  - f. 6 NYCRR 371, Identification and Listing of Hazardous Wastes.
  - g. 6 NYCRR 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities.
  - h. 6 NYCRR 373, Hazardous Waste Management Facilities.
  - i. 6 NYCRR 375, Environmental Remediation Programs.
2. Comply with applicable provisions and recommendations of the following:
  - a. NYSDOT Standard Specifications and Standard Sheets.
3. Recommendations of the National Institute of Occupational Safety and Health (NIOSH).
4. Applicable guidelines of the New York State Department of Health (NYSDOH).
5. Obtain required permits and approvals for excavation and fill work, including work permits from right-of-way owners.

6. Comply with requirements of authorities having jurisdiction.
7. Whenever there is a conflict or overlap of the above reference, the most stringent provision shall be applicable.

### 1.03 SUBMITTALS

- A. Action Submittals:
  1. Water treatment plan and specifications.
- B. Informational Submittals:
  1. Waste Handling and Disposal Plan.

## PART 2 – PRODUCTS

2.01 MATERIALS – Refer to Section 01 53 53 – Temporary Water Treatment System.

## PART 3 – EXECUTION

### 3.01 COLLECTION OF LIQUIDS

- A. Collected and containerize all liquids that require handling and treatment for subsequent treatment and representative sampling and analysis by the Contractor prior to discharge. The method(s) by which the water is collected shall be area-specific and shall be conducted in a manner that prohibits the spillage, leakage, or other release of water as collected.
- B. Maintain timely and accurate records concerning the volumes and areas from which accumulated liquids are removed.
- C. Properly clean all equipment utilized to collect and treat accumulated liquids prior to its removal from the Site. Transport sludge removed from tanks that handled water removed from excavation areas with polychlorinated biphenyl (PCB) concentrations greater than 50 ppm offsite for disposal as a Toxic Substances Control Act-regulated New York State hazardous waste.
- D. Minimize the amount of solids present in the water extracted from the removal areas, (e.g., constructing sumps and keeping the intake of the pump off the bottom and away from the sidewalls of the area being dewatered). The sump shall consist of one of or a combination of the following methods:
  1. A sump backfilled with washed gravel.
  2. A perforated vessel (i.e., a corrugated metal pipe or drum), wrapped with a non-woven geotextile fabric and/or filled with gravel.
  3. Straw bales/silt fences around the area where surface water/groundwater is being pumped.
- E. Wastewater management.
  1. Conduct initial sediment removal area dewatering via a pump suspended a minimum of 6 inches above the top of sediment. Unless visual impacts are observed (e.g., sheen or sediment disturbance), water removed from greater than 6 inches above the sediment may be pumped downstream of the removal area. Collect, handle, treat, and discharge visually impacted water and any water removed from a depth of less than 6 inches, as discussed in Part 3.03 of this Specification.

2. Collect and process rainfall runoff and direct precipitation that accumulates in remediation areas and as discussed in Part 3.03 of this Specification.
3. Collect and process water from soil/sediment dewatering that accumulates in the staging area as discussed in Part 3.03 of this Specification.
4. Collect and process water generated from equipment and personnel decontamination/cleaning activities as discussed in Part 3.03 of this Specification.
5. Collect and process groundwater that pools in the excavation areas during remediation activities as discussed in Part 3.03 of this Specification.

### 3.02 HANDLING AND STORAGE

- A. Store all liquids in DOT-approved containers at all times. Storage containers may be reused by the Contractor, unless directed otherwise by the Engineer. Under no circumstances are uncontaminated liquids to be placed in containers previously occupied with contaminated liquids.
- B. Clearly mark all storage containers to indicate the known or suspected contents, source area(s), and date(s) of generation.

### 3.03 TREATMENT AND DISPOSAL

- A. Sizing, rent, set up, maintain, clean, and disassemble a wastewater treatment system designed to treat wastewaters arising from the work.
  1. Locate the treatment system in an area acceptable to the Owner and the Engineer.
  2. The treatment system shall be a continuous process, as necessary. Conduct system monitoring in accordance with Section 01 53 53 – Temporary Water Treatment System.
- B. Contractor will be responsible for collecting and analyzing water treatment system samples. Assume a minimum 5-day turnaround period for receipt of all analytical results and provide adequate storage of treated water for this time period.
- C. Dispose of used media and other consumables associated with the operation of the treatment plant, including obtaining all necessary permits for transportation and disposal.

END OF SECTION

THIS PAGE LEFT BLANK INTENTIONALLY



## SECTION 32 31 13

### CHAIN-LINK FENCE AND GATES

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Contractor shall provide all labor, materials, tools, equipment, and incidentals as shown, specified, and required to furnish and install chain-link fencing and gates.
2. Extent of chain-link fencing and gates is shown or indicated on the Design Drawings.
3. Types of products required under this Section include the following:
  - a. Galvanized steel chain-link fabric.
  - b. Galvanized steel framework.
  - c. Auxiliary system components, gates, accessories, fasteners, and fittings.

###### B. Coordination:

1. Review installation procedures under this and other Sections and coordinate the installation of items that must be installed with or before chain-link fences and gates.

##### 1.02 REFERENCES

###### A. Terminology:

1. The following words or terms are not defined but, when used in this Section, have the following meaning:
  - a. “Knuckling” describes the type of selvage obtained by interlocking adjacent pairs of wire ends and then bending the wire ends back into a closed loop.
  - b. “Fencing” describes an assembly of metal components, including wire chain-link fabric fastened to top, bottom, and intermediate horizontal rails, and to vertical line posts, corner posts, and terminal posts. This assembly includes all auxiliary components, gates, fittings, fasteners, and other accessories, all with specified protective coatings.
2. Terminology used in this Section and not defined in this Article will be construed in accordance with the terminology used in ASTM F552 and CLFMI CLF-PM0610.

###### B. Reference Standards:

1. The following standards are referenced in this Section:
  - a. ASTM A53/A53M, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
  - b. ASTM A90/A90M, Standard Test Method for Weight (Mass) of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.
  - c. ASTM A153/A153M, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
  - d. ASTM A392, Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric.
  - e. ASTM A641/A641M, Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
  - f. ASTM A780/A780M, Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
  - g. ASTM A817, Standard Specification for Metallic-Coated Steel Wire for Chain-Link Fence Fabric and Marcellled Tension Wire.
  - h. ASTM A824, Standard Specification for Metallic-Coated Steel Marcellled Tension Wire for Use With Chain-Link Fence.

- i. ASTM B6, Standard Specification for Zinc.
- j. ASTM B221, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- k. ASTM F552, Standard Terminology Relating to Chain-Link Fencing.
- l. ASTM F567, Standard Practice for Installation of Chain-Link Fence.
- m. ASTM F626, Standard Specification for Fence Fittings.
- n. ASTM F900, Standard Specification for Industrial and Commercial Swing Gates.
- o. ASTM F1043, Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework.
- p. ASTM F1083, Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
- q. ASTM F1184, Standard Specification for Industrial and Commercial Horizontal Slide Gates.
- r. CLFMI CLF-PM0610, Product Manual.

### 1.03 QUALITY ASSURANCE

#### A. Qualifications:

- 1. Installer:
  - a. Engage a single installer skilled, trained, and with successful and documented experience in the installation of fencing, and who agrees to employ only tradesmen with specific skill and successful experience in the type of Work required.
  - b. Installer shall be acceptable to fencing manufacturer.

#### B. Component Supply and Compatibility:

- 1. Provide fencing as complete system with all gates, hardware, appurtenances, and other components produced by a single manufacturer, including custom erection accessories, fittings, clamps, and fastenings as required for complete system.

#### C. Regulatory Requirements:

- 1. Obtain required permits and approvals for the installation of chain-link fencing and gates.

### 1.04 SUBMITTALS

#### A. Action Submittals:

- 1. Shop Drawings:
  - a. Submit shop drawings of typical fence assembly, identifying all materials, dimensions, sizes, weights, and finishes of rails, posts, braces, supports, and other fencing components. Show fence heights and locations of gates. Show gate swing or other operation, hardware, and accessories. Include plans, elevations, and sections, with required installation and operating clearances, and details of post anchorage, attachments, and bracing.
  - b. Submit large-scale details for all connections and gate details.
  - c. Submit list of all hardware, fasteners, and accessories.
- 2. Product Data:
  - a. Submit copies of manufacturer's technical product information, and specifications for all fencing components.
  - b. Submit data substantiating that materials proposed comply with the following:
    - 1) Weight of zinc coating on wire and pipe fabrications, in compliance with ASTM A90/A90M.

- B. Informational Submittals:
  - 1. Certifications: Submit shipping list for materials used, endorsed with manufacturer's voucher, signed by authorized employee of manufacturer, certifying that material used in fencing complies with the Contract Documents and with the approved submittals.
  - 2. Manufacturer's Instructions: Submit manufacturer's installation instructions.
  - 3. Qualifications Statements: Submit name and address of fence installer.
- C. Closeout Submittals:
  - 1. Submit warranty documentation in accordance with Article 1.07 of this Section.
  - 2. Submit specified number of keys for locksets and padlocks.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original, unopened packaging with all factory-applied tags, labels, and other identifying information intact, legible, and accurately representing material on approved submittals.
- B. Storage:
  - 1. Store all materials under weather-proof cover, off the ground and away from other construction activities.
  - 2. Do not store material in a manner that would create a humidity chamber. Provide for free movement of air under protective cover and between components of the fencing.
- C. Handling: Handle material in manner that is in compliance with manufacturer's recommendations and that avoids damaging coatings.

#### 1.06 SITE CONDITIONS

- A. Obtain measurements at the Site to verify layout information and dimensions for fencing and gates in relation to reference points provided by Owner or indicated in the Contract Documents.

#### 1.07 WARRANTY

- A. General Warranty: The special warranties specified in this Article shall not deprive Owner of other rights or remedies Owner may otherwise have under the Contract Documents and shall be in addition to and run concurrent with other warranties made by Contractor under the Contract Documents.
- B. Special Warranties: Submit manufacturer's written 10-year warranty against rusting or corrosion of metal.

### PART 2 – PRODUCTS

#### 2.01 MATERIALS

- A. General:
  - 1. Pipe sizes specified are actual outside dimension.
  - 2. Wire gages shall conform to American Steel and Wire Company gage.
- B. Steel Wire:
  - 1. Chain-Link Fabric and Tension Wire: ASTM A817, Type II, Class 4.
  - 2. Tie Wires and Hog Rings: ASTM A641/A641M, Class 3 or A.

- C. Steel Pipe:
  - 1. ASTM F1083, Regular Grade, Standard Weight (Schedule 40).
- D. Square and Rectangular Aluminum Tube:
  - 1. ASTM B221.
- E. Concrete:
  - 1. Materials:
    - a. Portland Cement: ASTM C150/C150M, Type II.
    - b. Aggregates: ASTM C33/C33M, Class Designation 4S.
    - c. Water: Clean, potable.
    - d. Chemical Admixtures: Provide chemical admixtures in accordance with product manufacturer's published instructions. Admixtures shall be compatible with each other. Do not use calcium chloride or admixtures containing chloride ions. Use only admixtures that have been tested and approved in the mix design.
  - 2. Concrete Mix:
    - a. Normal Weight: 145 pounds per cubic foot.
    - b. Entrained Air: Six percent, plus-or-minus one percent.
    - c. Minimum Compressive Strength at 28 Days: 3,000 psi.
    - d. Maximum Water-Cement Ratio by Weight: 0.50.
    - e. Minimum Cement Content: 517 pounds per cubic yard.
    - f. Slump Limits: Proportion and design mix to result in concrete slump at point of placement of not less than one inch and not more than four inches.

2.02 FENCE FABRIC

- A. Steel Chain-Link Fabric: ASTM A392. Fabric shall be galvanized before weaving.
  - 1. Wire Size: Nine gage.
  - 2. Mesh Size: Two inches.
  - 3. Nominal Fabric Height: As shown or indicated.
  - 4. Selvage: Knuckled at top, twisted at bottom.
- B. Provide fence fabric imprinted with manufacturer's trade name, country of origin, core wire gage, and finished outside diameter gage.

2.03 FENCE FRAMEWORK

- A. Steel Fence Framework: ASTM F1043, Group IA. Provide posts and rails of the following minimum sizes:
  - 1. End, Corner, and Pull Posts: Provide posts of the minimum sizes indicated in Table 32 31 13-A:

**TABLE 32 31 13-A  
MINIMUM TERMINAL POST SIZE**

Nominal Fence Fabric Height	Post OD (inches)	Post Weight (pounds per linear foot)
Up to Six Feet	2.375	3.65
Over Six Feet to Eight Feet	2.875	5.79
Over Eight Feet to 10 Feet	3.500	7.58

- 2. Line Posts: Provide posts of the minimum sizes indicated in Table 32 31 13-B:

**TABLE 32 31 13-B  
MINIMUM LINE POST SIZE**

Nominal Fence Fabric Height	Post OD (inches)	Post Weight (pounds per linear foot)
Up to Six Feet	1.900	2.72
Over Six Feet to Eight Feet	2.375	3.65
Over Eight Feet to 10 Feet	2.875	5.79

3. Top Rail: 1.660-inch OD pipe weighing 2.27 pounds per linear foot. Furnish in manufacturer's longest lengths.
4. Brace Rail: 1.660-inch OD pipe weighing 2.27 pounds per linear foot.

2.04 GATES

A. Swing Gates: ASTM F900.

1. Gate Framework: ASTM F1043, Group IA. Provide framework of the minimum sizes indicated in Table 32 31 13-C:

**TABLE 32 31 13-C  
MINIMUM SWING GATE FRAME MEMBER SIZE**

Frame Member	Member OD (inches)	Member Weight (pounds per linear foot)
Nominal Gate Fabric Height Up to Six Feet:		
Perimeter Frame	1.660	1.83
Interior Bracing	1.660	1.83
Nominal Gate Fabric Height Over Six Feet:		
Perimeter Frame	1.900	2.28
Interior Bracing	1.660	1.83

2. Provide gate frames with intermediate horizontal rails. Provide additional horizontal and vertical members to ensure proper gate operation and for attachment of fabric, hardware, and accessories. Space so that frame members are not more than eight feet apart.
3. Gate Hardware: Gate hardware shall be of sufficient strength and durability to support the gate and repeated open-close cycles.
  - a. Gate Hinges: Provide non-lift-off-type hinges of galvanized pressed steel. Hinges shall permit the gate to swing a full 180 degrees inward.
  - b. Gate Latch: Provide forked-type latch of galvanized pressed steel to permit operation from either side of gate, with padlock eye as integral part of latch. Latch shall be capable of retaining gate in closed position and shall have provision for padlock.
4. Assemble gate frames by welding or with special malleable or pressed steel fittings and rivets for rigid connections. Use same fabric as provided for fence. Install fabric with tension bars at vertical edges. Attach tension bars to gate frame with tension bands spaced not more than 15 inches on centers. Attach hardware with rivets or by other means that will provide security against removal and breakage.
5. Gate Posts: ASTM F1043, Group IA. Provide posts of the minimum sizes indicated in Table 32 31 13-D:

**TABLE 32 31 13-D  
MINIMUM SWING GATE POST SIZE**

<b>Gate Leaf Width</b>	<b>Post OD (inches)</b>	<b>Post Weight (pounds per linear foot)</b>
Nominal Gate Fabric Height Up to Six Feet:		
Up to Four Feet	2.375	3.11
Over Four Feet to 10 Feet	2.875	4.64
Over 10 Feet to 18 Feet	4.000	8.65
Nominal Gate Fabric Height Over Six Feet:		
Up to Six Feet	2.875	4.64
Over Six Feet to 12 Feet	4.000	8.65
Over 12 Feet to 18 Feet	6.625	18.02
Over 18 Feet to 24 Feet	8.625	27.12

- B. Cantilever Slide Gates: ASTM F1184, Type II, Class 2 (NOT USED).
1. Gate Framework: ASTM B221. Fabricate gate perimeter frames of square or rectangular extruded aluminum-alloy tubing in accordance with manufacturer's design and based on gate opening and height. Top horizontal member shall be one-piece precision extruded structural section with integral enclosed track to accommodate truck assemblies. Provide additional vertical members to ensure proper gate operation and for attachment of fabric, hardware, and accessories. Space so that frame members are not more than eight feet apart.
  2. Gate Hardware: Gate hardware shall be of sufficient strength and durability to support the gate and repeated open-close cycles.
    - a. Provide manufacturer's internal truck assemblies, hanger brackets, guides, stays, bracing, and accessories as required. Internal truck assemblies shall be self-aligning, factory lubricated and sealed ball-bearing wheels. Each internal roller truck assembly shall be affixed to hanger bracket by means of a 5/8-inch diameter stainless steel bolt. Attachment of center bolt to truck body shall be by means of a swivel joint to ensure equivalent and consistent loading on all bearing wheels and internal track surfaces throughout the travel of the gate.
    - b. Gate latch shall be capable of retaining gate in closed position and shall have provision for padlock.
  3. Assemble gate frames by welding or with special malleable or pressed steel fittings and rivets for rigid connections. Use same fabric as provided for fence. Install fabric with stretcher bars at vertical edges. Bars may also be used at top and bottom edges. Attach stretchers to gate frame at not more than 15 inches on centers. Attach hardware with rivets or by other means that will provide security against removal and breakage.
  4. Install diagonal cross-bracing on gates consisting of adjustable-length truss rods provided with turnbuckles to ensure frame rigidity without sag or twist.
  5. Gate Posts: ASTM F1043, Group IA. Provide 4.00-inch OD pipe weighing not less than 6.56 pounds per linear foot.
- C. Padlocks: Provide each gate with heavy-duty bronze padlock and shackle chain as follows:
1. Product and Manufacturer: Provide one of the following:
    - a. No. 160DHM with 11/32-inch marine brass shackle by Master Lock Company.
    - b. Or equal.
  2. Provide three keys for each padlock. Where more than one gate is required for same enclosure, padlocks shall be keyed identically.

**2.05 AUXILIARY FENCING MATERIALS AND ACCESSORIES**

- A. Steel Tension Wire: ASTM A824, Type II, Class 4.
- B. Fittings: ASTM F626.

1. Post Caps: Galvanized pressed steel, designed to fit snugly over tubular posts and exclude moisture.
  - a. Provide one loop-type cap for each line post.
  - b. Provide one dome-type cap for each terminal post.
2. Rail and Brace Ends: Provide galvanized pressed steel rail and brace ends for each connection of brace or rail to terminal posts.
3. Top Rail Sleeves: Galvanized pressed steel or round steel tubing with minimum thickness of 0.051 inch and minimum length of six inches. Provide one sleeve for each length of rail.
4. Tie Wires and Clips:
  - a. Tie Wires: Nine-gage galvanized steel wire with Class 3 or A coating in accordance with ASTM A641/A641M.
  - b. Hog Rings: 12-gage galvanized steel wire with Class 3 or A coating in accordance with ASTM A641/A641M.
5. Tension and Brace Bands:
  - a. Tension Bands: Galvanized pressed steel with minimum thickness of 0.074 inch (14 gage) and minimum width of 3/4 inch.
  - b. Brace Bands: Galvanized pressed steel with minimum thickness of 0.105 inch (12 gage) and minimum width of 3/4 inch.
6. Tension Bars: Galvanized, merchant-quality steel in one-piece lengths equal to full height of fabric, with minimum cross-section of 3/16 inch by 3/4 inch. Provide one tension bar for each gate and end post, and two tension bars for each corner and pull post.
7. Truss Rod Assembly: Galvanized, merchant-quality steel rod with minimum diameter of 3/8 inch, complete with pressed steel tightener.

## 2.06 FINISHING

### A. Galvanized Finish:

1. Provide galvanized finish for all fencing components. Zinc for galvanizing shall be of High Grade or Special High Grade conforming to ASTM B6 with maximum aluminum content of 0.01 percent.
2. Galvanize metal using hot-dip process in accordance with the following:
  - a. Steel Wire:
    - 1) Chain-Link Fabric and Tension Wire: ASTM A817.
    - 2) Tie Wires and Hog Rings: ASTM A641/641M.
  - b. Steel Pipe: ASTM A53/A53M.
  - c. Fittings: ASTM F626.
  - d. Hardware and Accessories: ASTM A153/A153M.
3. Provide minimum weights of zinc as follows:
  - a. Steel Wire:
    - 1) Chain-Link Fabric and Tension Wire: 1.20 ounces of zinc per square foot of uncoated wire surface, as determined by ASTM A90/A90M.
    - 2) Tie Wires and Hog Rings: 0.90 ounce of zinc per square foot of uncoated wire surface, as determined by ASTM A90/A90M.
  - b. Steel Pipe: 1.80 ounces of zinc per square foot. Apply Type A coating both inside and outside according to ASTM F1043, as determined by ASTM A90/A90M.
  - c. Fittings: 1.20 ounces of zinc per square foot of surface area, as determined by ASTM A90/A90M.
  - d. Hardware and Accessories: Zinc weights in accordance with Table 1 of ASTM A153/A153M.

### B. Welded Joints:

1. Repair zinc coatings at welded joints by applying zinc-rich paint, as specified in ASTM A780/A780M.

## 2.07 SOURCE QUALITY CONTROL

- A. Fabrication Tolerances: Fabric, posts, rails, and other supports shall be straight or uniformly curved to provide the profiles shown, to dimensional tolerance of 1/16 inch in 10 feet without warp or rack in the finished Work.

## PART 3– EXECUTION

### 3.01 INSPECTION

- A. Examine the areas and conditions under which the Work will be erected and notify Engineer in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions are corrected in a manner acceptable to Engineer.

### 3.02 PREPARATION

- A. Confirm that areas to receive fencing are at proper elevations and that no further earthwork is required to bring the subgrade to proper elevations.
- B. Confirm that property lines and legal boundaries of Work are clearly established before initiating the installation of fencing.

### 3.03 INSTALLATION

- A. Comply with ASTM F567. Do not begin installation of fencing until final grading is completed.
- B. Post Locations:
  1. Space line posts equidistant at intervals not exceeding 10 feet on centers.
  2. Set terminal posts at the beginning and end of each continuous length of fence and at abrupt changes in vertical and horizontal alignments.
- C. Setting Posts:
  1. Posts shall be set in concrete footings, except as otherwise shown or specified.
  2. Excavate or drill holes of diameters and depths specified for post footings in firm, undisturbed or compacted soil.
    - a. End, Corner, Pull, and Line Posts: Provide post holes excavated or drilled approximately three inches deeper than bottom of post, with bottom of posts set not less than two feet below finished grade plus an additional three inches for each one-foot increase in fence height over four feet. Hole diameter shall be not less than four times the largest cross-section of post to be installed.
    - b. Gate Posts: Provide post holes excavated or drilled approximately six inches deeper than bottom of post. Hole diameter shall be not less than four times the largest cross-section of post to be installed.
      - 1) Swing Gates: Bottom of posts shall be set not less than two feet below finished grade plus an additional three inches for each one-foot increase in fence height over four feet.
      - 2) Cantilever Slide Gates: Bottom of posts shall be set not less than three feet below finished grade.



3. When solid rock or concrete is encountered at ground surface, drill into rock or concrete at least 12 inches for line posts and at least 18 inches for end, corner, pull, and gate posts. Hole diameter shall be a minimum of one inch greater than the largest cross-section of post to be installed.
4. If solid rock or concrete is below soil overburden, drill to full depth required, except penetration into rock or concrete need not exceed the minimum depths specified for rock or concrete encountered at ground surface.
5. Remove loose and foreign materials from sides and bottoms of holes, and moisten soil prior to placing concrete.
6. Center and align posts in holes three or six inches above bottom of excavation, as specified.
7. Place concrete around posts in continuous pour, and vibrate or tamp for consolidation. Check each post for vertical and top alignment, and hold in position during placement and finishing operations.
8. Extend concrete to two inches above ground surface, or to two inches below ground surface if cover of sod, bituminous asphalt paving, or other material is shown or indicated to conceal concrete. Crown to shed water away from posts.
9. Extend footings for gate posts to underside of bottom hinge. Set keeps, stops, sleeves, and other accessories into concrete as required.
10. Keep exposed concrete surfaces moist for at least seven days after placement, or cure with membrane curing materials, or other acceptable curing method.
11. Allow concrete to attain at least 75 percent of its minimum 28-day unconfined compressive strength, but in no case sooner than seven days after placement, before installing rails, tension wires, or chain-link fabric.
12. Do not stretch and tension fabric and wires, and do not hang gates, until concrete has attained its full design strength.
13. Provide caps on top of each post to exclude moisture and to receive top rail.

D. Rails and Braces:

1. Top Rails: Run rail continuously through post caps or extension arms, bending to radius for curved runs. Provide expansion couplings as recommended by fencing manufacturer to form continuous rail between terminal posts.
2. Brace Assemblies: Provide brace assemblies at end and gate posts, and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric. Diagonal bracing, consisting of adjustable-length truss rods, shall run from center of first line post to bottom of terminal post. Install brace assemblies so posts are plumb when diagonal rod is under proper tension.

E. Tension Wire:

1. Install tension wire within bottom six inches of chain-link fabric.
2. Stretch tension wire taut and free of sag, from end to end of each stretch of fence, and secure to terminal posts with brace bands.
3. Fasten tension wire to each line post with tie wire.

F. Chain-Link Fabric:

1. Install fabric on security side of fence, and anchor to framework so that fabric remains in tension after pulling force is released.
  - a. Fasten to terminal posts and gate posts with tension bars threaded through mesh and secured with tension bands at maximum intervals of 15 inches.
  - b. Fasten to line posts, gate frames, and rails with tie wires spaced at maximum intervals of 15 inches on posts and 24 inches on rails.
  - c. Fasten to tension wire with hog rings spaced at maximum intervals of 24 inches.
2. Leave approximately two inches between finished grade and bottom selvage, except where bottom of fabric extends into concrete.

3. Join roll of chain-link fabric by weaving a single picket into the ends of roll to form continuous mesh.

G. Gates:

1. Install gates plumb, level, and secure for full opening without interference.
2. Adjust hardware for smooth operation and lubricate where necessary.

- H. Tie Wires: Use "U"-shaped wires conforming to diameter of pipe. Clasp pipe and fabric firmly with ends twisted at least two full turns. Bend ends of wire to minimize hazard to persons and clothing.

- I. Fasteners: Install nuts for tension band and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

### 3.04 ADJUSTMENT AND CLEANING

- A. Repair coatings damaged in the shop or at the Site by recoating with manufacturer's recommended repair compound, applied in accordance with manufacturer's directions. Repair hot-dip galvanized coatings in accordance with ASTM A780/A780M.
- B. Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, and malfunction throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- C. Lubricate operating equipment and clean exposed surfaces.
- D. Repair and replace broken or bent components.

END OF SECTION

## SECTION 32 72 00

### WETLAND RESTORATION

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Scope:
  - 1. Seeding and plant introduction for wetland construction and restoration areas to reestablish emergent, scrub-shrub, and forested wetlands.
  - 2. Maintaining wetland areas.
- B. Coordination
  - 1. Review procedures under this and other Sections and coordinate Work that must be performed with or before wetland restoration Work.
- C. Related Sections
  - 1. Section 31 05 16 – Aggregates for Earthwork
  - 2. Section 31 23 00 – Excavation and Fill
  - 3. Section 32 91 19 – Topsoil Placement and Grading

##### 1.02 RELATED REQUIREMENTS

- A. Section 32 92 19 – Topsoil Placement and Grading applies to this section for plant establishment requirements, with additions and modifications herein.

##### 1.03 SUBMITTALS

- A. Qualifications Statement: Submit information described in paragraph 1.04B of Section 31 23 00 – Excavation and Fill.
- B. Certificates: Submit certificates from woody plant stock supplier for each group of woody plant stock required, stating botanical name, common name, origin, age, date of packaging, and name and address of supplier. Submit at least two weeks prior to planting. Bidder may propose alternatives based on plant availability.
- C. Submit drawing and details illustrating proposed deer and/or goose deterrent for protection of trees, and shrubs wetland plantings as determined necessary by contractor to support the 1-year survival guarantee.
- D. Maintenance Data: Submit proposed plan for any required for vegetative maintenance for a period of one year following planting to ensure survival requirements associated with specified trees, shrubs, and wetland plantings.

##### 1.04 REFERENCES

- A. Clean Water Act Section 404
- B. NYSDEC Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) (NYSDEC, 2010b).
- C. AMERICANHORT (AH). ANSI/ANLA Z60.1 (2004) American Standard for Nursery Stock

## 1.05 DEFINITIONS

- A. Wetlands - Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. Formal wetland boundaries as approved by USACE and NYSDEC will be included as part of Joint Permit Approval.

## 1.06 QUALIFICATIONS

- A. Planting Stock Supplier: Obtain planting stock only from established vendors capable of providing plant stocks in quantities and at quality levels adequate to complete the project. Plant vendors will be required to provide the data requested under Paragraph 1.02 C of this Section prior to the use of that stock.
- B. Installer: Company specializing in work of this Section with minimum 5 years of experience in planting and establishing wetland communities with documented references. Personnel used to perform the installation of plant materials shall also have occupational experience in wetland restoration projects.

## 1.07 DELIVERY, STORAGE, AND HANDLING

### A. Delivery

1. Deliver with branches tied and exposed branches covered with material which allows air circulation. Prevent damage to branches, trunks, root systems, and root balls and desiccation of leaves.
2. Deliver plants with durable waterproof labels in weather-resistant ink. Provide labels stating the correct botanical and common plant name and variety as applicable and size as specified in the list of required plants. Attach to plants, bundles, and containers of plants. Groups of plants may be labeled by tagging one plant. Labels shall be legible for a minimum of 60 days after delivery to the planting site.
3. Pre-condition all plugs, containerized plants, and root stocks which are to be placed in saturated or flooded soil conditions by holding them in a wet environment at the nursery prior to shipment to Site.

### B. Storage

1. Store and protect plants not planted on the day of arrival at the site as follows:
  - a. Shade and protect plants in outside storage areas from the wind and direct sunlight until planted.
  - b. Heel-in bare root plants.
  - c. Protect balled and bur-lapped plants from freezing or drying out by covering the balls or roots with moist burlap, sawdust, wood chips, shredded bark, peat moss, or other approved material. Provide covering which allows air circulation.
  - d. Keep plants in a moist condition until planted by watering with a fine mist spray.
  - e. Do not store plant material directly on concrete or bituminous surface
2. Store materials on site in enclosures or under protective covering in dry location. Store under cover out of direct sunlight. Do not store materials directly on ground. Plants can be stored on top of weed control fabric.

### C. Handling

1. Do not drop or dump plants from vehicles. Avoid damaging plants being moved from nursery or storage area to planting site. Handle all nursery grown plants carefully to avoid

damaging or breaking the earth ball or root structure. Do not handle plants by the trunk or stem. Remove damaged plants from the site.

D. Time Limitations

1. Except for container-grown plant material, the time limitation from digging to installing plant material shall be a maximum of 90 days.
2. Coordinate installation of planting materials during optimal planting seasons for each type of plant material required.
3. Plant all plants from April 1 to June 1, or from October 1 to November 15

1.08 GUARANTEE

- A. All plants shall be guaranteed for one year beginning on the date of inspection by the Contracting Officer to commence the plant establishment period. The Contractor is required to provide maintenance throughout this one-year period to address fluctuating weather, and precipitation, patterns.
- B. Remove and replace dead planting materials immediately unless required to plant in the succeeding planting season. At end of warranty period, replace planting materials that die or have 25 percent or more of their branches that die during the construction operations or the guarantee period.

1.09 LOCAL/REGIONAL MATERIALS REQUIREMENT

- A. Use plant materials grown in a similar climatic climate and within a 500-mile radius from the project site; if available from a minimum of three sources.

PART 2 – PRODUCTS AND PRODUCT HANDLING

2.01 PLANTS

- A. Furnish nursery stock in accordance with ANSI/ANLA Z60.1, except as otherwise specified or indicated. Furnish plants grown under climatic conditions similar to those in the locality of the project. Plants of the same specified size shall be of uniform size and character of growth. All plants shall comply with all Federal and State Laws requiring inspection for plant diseases and infestation.
- B. Well-branched, well-formed, sound, vigorous, healthy planting stock free from disease, sunscald, windburn, abrasion, and harmful insects or insect eggs and having a healthy, normal, and undamaged root system.
- C. Symmetrically developed and of uniform habit of growth, with straight boles or stems, and free from objectionable disfigurements.
- D. Well-developed symmetrical tops with typical spread of branches for each particular species or variety.
- E. Plant sizes should be consistent with specifications provided in Contract Drawings and approved Mitigation Plan. Minimum sizes measured after pruning and with branches in normal position, shall conform to measurements indicated, based on the average width or height of the plant for the species as specified in ANSI/ANLA Z60.1. Plants larger in size than specified may be provided with approval of the Contracting Officer. When larger plants are provided, increase the ball of earth or spread of roots in accordance with ANSI/ANLA Z60.1.

- F. Before shipment, root systems shall contain mycorrhizal fungi inoculum.
- G. Fertilizer for trees, plants, and shrubs shall be consistent with specifications herein or as recommended by plant supplier. Synthetic chemical fertilizers are not permitted. Fertilizers containing petrochemical additives or that have been treated with pesticides or herbicides are not permitted. The shrub and sapling species, plant types, sizes, and planting densities for the habitats to be restored are presented on the Design Drawings.
  - 1. Organic, plant tablets composed of tightly compressed fertilizer chips forming a tablet that is insoluble in water, is designed to provide a continuous release of nutrients for at least 24 months and contains the following minimum percentages, by weight, of plant food nutrients:
    - a. 20 percent available nitrogen
    - b. 10 percent available phosphorus
    - c. 5 percent available potassium
- H. Contractor shall recommend mulch plan for planted trees and shrubs, if supportive of 1-year guarantee. Free from noxious weeds, mold, pesticides, or other deleterious materials.
  - 1. Biobased content shall be a minimum of 100 percent. Wood cellulose fiber shall be processed to contain no growth or germination-inhibiting factors, dyed with non-toxic, biodegradable dye to an appropriate color to facilitate visual metering of materials application. Paper-based hydraulic mulch shall contain a minimum of 100 percent post-consumer recycled content. Wood-based hydraulic mulch shall contain a minimum of 100 percent recycled material.
  - 2. Recycled mulch may include compost, tree trimmings, or pine needles with a gradation that passes through a 2-1/2 by 2-1/2-inch screen. It shall be cleaned of all sticks a minimum 1 inch in diameter and plastic materials a minimum 3 inches length. The material shall be treated to retard the growth of mold and fungi.
- I. Store all plant stock in aboveground locations in non-construction areas approved by the Engineer if not transplanted directly to the wetlands. All plant stock shall have soil placed about roots sufficient to protect from desiccation and to provide nourishment during storage. Keep all plants stored in the field cool and sheltered from the drying effects of direct sunlight and prevailing winds prior to installation. Do not subject plants to freezing, drying, or warming. Supply adequate water for all plant stock in order to maintain it in a healthy and vigorous state suitable for transplanting.

## PART 3 – EXECUTION

### 3.01 EXTENT OF WORK

- A. Provide soil preparation, fertilizing, tree, shrub, groundcover, installation and a mulch topdressing of all newly graded finished earth surfaces, unless indicated otherwise, and at all areas inside or outside the limits of construction that are disturbed by the Contractor's operations. Procedures and materials will follow those specified on the Contract Drawings and the approved Mitigation Plan.
- B. Stake out approved plant material locations on the project site before digging plant pits or beds. The Contracting Officer reserves the right to adjust plant material locations to meet field conditions.

### 3.02 PLANT BED PREPARATION

- A. Verify location of underground utilities prior to excavation. Protect existing adjacent turf before excavations are made. Do not disturb topsoil and vegetation in areas outside those indicated on Contract Drawings. Measure depth of plant pits from finished grade. Depth of plant pit excavation shall be as indicated and provide proper relation between top of root ball and finished grade. Install plant material as specified in paragraph entitled "Plant Installation."

### 3.03 PLANT INSTALLATION

- A. Inspect the proposed wetland sites with the Engineer's Wetland Ecologist at least one week prior to the onset of field planting activities to review the condition of the site. The site condition is defined as an evaluation of soils, water levels, and grades of the site in terms of conditions which are appropriate for introduction of plantings. Do not proceed with the planting program in any wetland area until all necessary modifications and/or corrections are completed and approved by the Engineer's Wetland Ecologist. Notify the Engineer's Wetland Ecologist immediately if conditions are encountered that are detrimental to installation or plant growth or the safety of the planting crew.
- B. All planting will be performed under oversight from the Engineer's Wetland Ecologist or Engineer familiar with approved restoration design. The Engineer's Ecologist or Engineer reserves the right to adjust plant material locations to meet field conditions.
- C. Do not install plant life when the temperature may drop below 35 degrees F or rise above 90 degrees F.
- D. Excavate pits at least twice as large in diameter as the size of ball and a minimum of 6 inches below the depth of ball consistent with planting detail provided in Contractor Drawings.
- E. Move plant materials only by supporting the root ball or container. Set plants on hand compacted layer of prepared backfill soil mixture 6 inches thick and hold plumb in the center of the pit until soil has been tamped firmly around root ball. Set plant materials to elevation equal to surrounding finish grade. Replace plant material whose root balls are cracked or damaged either before or during the planting process.
- F. Place fertilizer planting tablets evenly spaced around the plant pits to the manufacturer's recommended depth.
- G. Apply granular fertilizer as a top coat prior to placing mulch layer and water thoroughly.
- H. Start watering areas planted as required by temperature and wind conditions. Apply water at a rate sufficient to ensure thorough wetting of soil to a depth of 12 inches.

### 3.04 RESTORATION AND CLEAN UP

- A. Repair disturbances upon completion of the restoration planting in accordance with Section 31 91 19.13 – Topsoil Placement and Seeding
- B. Regrade temporary disturbances to maintain proper drainage and as-built surface elevations and seeding to promote establishment of native vegetation.
- C. Excess and waste material shall be removed from the installed area and shall be disposed offsite at an approved landfill, recycling center, or composting center.

### 3.05 MAINTENANCE

- A. The Contractor is responsible for installing herbivory deterrent fencing or other passive devices suitable for preventing or minimizing herbivory over the restoration area. The 1-year guarantee includes mortality due to herbivory. A proposed herbivory plan is required (see Submittal subsection above).
- B. The Contractor is responsible for maintaining the planted and restored vegetation through the end of the first growing season. A proposed water schedule, including specification of a potable water source suitable for vegetation maintenance and details regarding any other planned maintenance, is required (see Submittal subsection above).
- C. Following the conclusion of the first growing season, the Contractor is required to prepare a site survey and report documenting achievement of plant survival goals. The Contractor is responsible to demonstrate that 95 percent of planted materials has survived or been replaced in order to consider the project successfully complete. The report must include a survey plan identifying the location and makeup of plant clusters.

END OF SECTION



## SECTION 32 91 19 13

### TOPSOIL PLACEMENT AND GRADING

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

- A. Work Specified
  - 1. Furnishing topsoil, fertilizer, seed, and mulch; preparing the sub-grade and the placing topsoil, fertilizer, seed, and mulch in upland areas.
  - 2. Conducting required maintenance until acceptance.
- B. Related Work Specified Elsewhere
  - 1. Section 01 57 05 – Temporary Controls
  - 2. Section 31 05 16 – Aggregates for Earthwork

##### 1.02 RELATED REQUIREMENTS

- A. Site restoration will be completed in accordance with the Contract Drawings to be approved by NYSDEC and USACE prior to any restoration construction activities.

##### 1.03 SUBMITTALS

- A. Submit the source location and associated data (including pH, organic content, gradation) for topsoil.
- B. Refer to Section 31 05 16 – Aggregates for Earthwork, for laboratory and analytical testing requirements.
- C. Seed Certificates: At least 14 days prior to seeding, submit certificates from seed vendors for each seed mixture required, stating botanical and common name, percentage by weight and percentages of purity, germination, and weed seed for each species.
- D. Mulch Information: At least 14 days prior to mulching, submit a description of the mulch material, the proposed mulching methods, and application rates.
- E. Fertilizer Information: At least 14 days prior to fertilizing, submit a description of the fertilizer material (including the chemical make-up), the proposed fertilizing methods, and application rates.
- F. Seeding Plan: provided suitable means to effectively seed restoration areas.

#### PART 2 – PRODUCTS

##### 2.01 SOURCE CONTROL

- A. The Engineer will collect samples and coordinate and pay for laboratory testing of Contractor's proposed wetland topsoil to verify compliance with the Contract Documents.

1. Geotechnical Testing: Obtain one representative sample of Contractor's proposed wetland topsoil and have it tested for gradation in accordance with ASTM D422 and ASTM D1140.
2. Chemical Testing: Obtain a combination of discrete and composite samples of the wetland topsoil material for chemical testing in accordance with Subdivision 5.4(e) and Table 5.4(e)10 of DER-10.
  - a. Discrete samples for VOCs in accordance with USEPA SW-846 Method 8260.
  - b. Composite samples for the following:
    - 1) SVOCs in accordance with USEPA SW-846 Method 8270.
    - 2) PCBs in accordance with USEPA SW-846 Method 8082.
    - 3) Pesticides in accordance with USEPA SW-846 Method 8081.
    - 4) Herbicides in accordance with USEPA SW-846 Method 8151.
    - 5) Total metals in accordance with USEPA SW-846 Methods 6010.
    - 6) Total mercury in accordance with USEPA SW-846 Methods 7471.
    - 7) Total cyanide in accordance with USEPA SW-846 Method 9012.
    - 8) Total Organic Content with AASHTO T 267-86
    - 9) pH

2.02 TOPSOIL – UPLAND

- A. Topsoil shall be a locally-available, fertile, friable soil of loamy character, obtained from well-drained arable land and reasonably free from subsoil, refuse, roots, heavy or stiff clay, large stones, coarse sand, sticks, brush, litter, and other deleterious substances. Vegetative matter other than brush or trees may be incorporated into topsoil.
- B. Composition – containing a minimum of 5 percent organic matter as determined by the topsoil composition tests of the Organic Carbon, 6A, Chemical Analysis Method described in DOA SSIR 42. Maximum particle size, 3/4 inch, with maximum 3 percent retained on 1/4-inch screen. The pH shall be tested in accordance with ASTM D4972. Topsoil shall be free of sticks, stones, roots, and other debris and objectionable materials. Other components shall conform to the following limits:

**TABLE 32 91 19.13-A  
UPLAND TOPSOIL COMPOSITION**

SILT	10 TO 30%
CLAY	0 TO 10%
SAND	70 TO 90%
PH	5 TO 7

- C. At least two representative samples shall be sent to an approved laboratory for physical, analytical, and soil fertility testing. The results of the soil fertility testing shall provide recommendations for lime and fertilizer application rates. The results for the texture and grain size should facilitate further refinements to the structural limits listed above.

2.03 TOPSOIL – WETLAND

- A. Topsoil shall be a locally-available, fertile, friable soil of loamy character, obtained from well-drained arable land and reasonably free from subsoil, refuse, roots, heavy or stiff clay, large stones, coarse sand, sticks, brush, litter, and other deleterious substances. Vegetative matter other than brush or trees may be incorporated into topsoil.
- B. Composition - containing a minimum of 12 percent organic matter as determined by the topsoil composition tests of the Organic Carbon, 6A, Chemical Analysis Method described in

DOA SSIR 42. Maximum particle size, 3/4 inch, with maximum 3 percent retained on 1/4-inch screen. The pH shall be tested in accordance with ASTM D4972. Topsoil shall be free of sticks, stones, roots, and other debris and objectionable materials. Other components shall conform to the following limits:

**TABLE 32 91 19.13-B  
WETLAND TOPSOIL COMPOSITION**

SILT	10 TO 30%
CLAY	0 TO 10%
SAND	70 TO 90%
pH	5 TO 7

- C. At least two representative samples shall be sent to an approved laboratory for physical, analytical, and soil fertility testing. The results of the soil fertility testing shall provide recommendations for lime and fertilizer application rates. The results for the texture and grain size should facilitate further refinements to the structural limits listed above.

2.04 SEED

- A. Provide seed of the latest season's crop delivered in original sealed packages, bearing producer's guaranteed analysis for percentages of mixtures, purity, germination, weedseed content, and inert material. Label in conformance with Federal Seed Act and applicable state seed laws. Wet, moldy, or otherwise damaged seed will be rejected.
- B. If necessary, a temporary, sterile cover crop can be applied and should be submitted for approval 15 days prior to seeding.
- C. Seed mixture by weight for the three specified native seed mixes are included below, and shall be seeded at a minimum rate of 25 lbs per acre:

**TABLE 32 91 19.13-C  
EMERGENT WETLAND SEED MIX**

Percent By Weight	Scientific Name	Common Name
25.0%	<i>Carex vulpinoidea</i>	Fox sedge
13.0%	<i>Carex lurida</i>	Lurid (shallow) sedge
11.5%	<i>Elymus riparius</i>	Riverbank wildrye
10.0%	<i>Carex lupulina</i>	Hop sedge
10.0%	<i>Carex scoparia</i>	Blunt broom sedge
5.0%	<i>Verbena hastata</i>	Blue vervain
5.0%	<i>Scirpus cyperinus</i>	Woolgrass
3.0%	<i>Cinna arundinacea</i>	Wood reedgrass
2.5%	<i>Juncus effusus</i>	Soft rush
2.0%	<i>Asclepias incarnata</i>	Swamp milkweed
2.0%	<i>Glyceria canadensis</i>	Rattlesnake grass
2.0%	<i>Onoclea sensibilis</i>	Sensitive fern
2.0%	<i>Eupatorium fistulosum</i>	Joe pye weed
2.0%	<i>Mimulus ringens</i>	Square stemmed monkeyflower
1.0%	<i>Aster novae-angliae</i>	New England aster
1.0%	<i>Helenium autumnale</i>	Common sneezeweed
1.0%	<i>Eupatorium perfoliatum</i>	Boneset
0.5%	<i>Alisma subcordatum</i>	Mud plantain (Water Plantain)
0.5%	<i>Aster puniceus</i>	Purplestem aster
0.5%	<i>Aster umbellatus</i>	Flat topped white aster
0.5%	<i>Ludwigia alternifolia</i>	Seedbox

**TABLE 32 91 19.13-D  
FORESTED WETLAND SEED MIX**

Percent By Weight	Scientific Name	Common Name
30.0%	<i>Panicum clandestinum</i>	Deertonuge
16.0%	<i>Sorghastrum nutans</i>	Indiangrass
15.0%	<i>Elymus riparius</i>	Riverbank wildrye
11.0%	<i>Andropogon gerardii</i>	Big bluestem
8.0%	<i>Panicum viratum</i>	Switchgrass
3.0%	<i>Chamaecrista fasciculata</i>	Partridge pea
3.0%	<i>Rudbeckia hastata</i>	Blackeyed susan
3.0%	<i>Verbena hastata</i>	Blue vervain
2.0%	<i>Aster novae-angliae</i>	New England Aster
2.0%	<i>Juncus effusus</i>	Soft Rush
2.0%	<i>Juncus tenuis</i>	Path rush
1.2%	<i>Asclepias incarnata</i>	Swamp milkweed
0.8%	<i>Eupatorium fistulosum</i>	Joe pye weed
0.8%	<i>Eupatorium perfoliatum</i>	Boneset
0.8%	<i>Vernonia noveboracensis</i>	New York ironweed
0.7%	<i>Helenium autumnale</i>	Common sneezeweed
0.5%	<i>Monarda fistulos</i>	Wild bergamont
0.2%	<i>Solidago patula</i>	Roughleaf goldenrod

**TABLE 32 91 19.13-E  
UPLAND SEED MIX**

Percent By Weight	Scientific Name	Common Name
18.0%	<i>Elymus virginicus</i>	Virginia wildrye
17.0%	<i>Schizachyrium scoparium</i>	Little bluestem
15.0%	<i>Festuca rubra</i>	Creeping red fescue
15.0%	<i>Andropogon gerardii</i>	Big bluestem
10.0%	<i>Sorghastrum nutans</i>	Indian grass
6.0%	<i>Chamaecrista fasciculata</i>	Partridge pea
6.0%	<i>Panicum virgatum</i>	Switch grass
3.0%	<i>Desmodium paniculatum</i>	Panicledleaf tick trefoil
3.0%	<i>Verbena hastata</i>	Blue vervain
2.5%	<i>Asclepias tuberosa</i>	Butterfly milkweed
1.0%	<i>Rudbeckia hirta</i>	Black eyed susan
1.0%	<i>Helenium autumnale</i>	Common sneezeweed
1.0%	<i>Aster pilosus</i>	Heath aster
1.0%	<i>Solidago juncea</i>	Early goldenrod
0.5%	<i>Agrostis perennans</i>	Upland bentgrass

D. Fertilizer shall be a standard-quality, commercial carrier of available plant food elements (a complete, prepared, and packaged material containing an appropriate ratio of nitrogen, phosphoric acid, and soluble potash, as recommended by the soil fertility tests). Fertilizer composition will be determined based upon soil fertility testing.

E. Each bag of fertilizer shall bear the manufacturer's guaranteed statement of analysis.

**2.05 MULCH**

A. Mulch shall be free from noxious weeds, mold, and other deleterious materials.

- B. If utilizing straw, stalks from oats, wheat, rye, barley, or rice. Furnish in air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Straw shall contain no fertile seed.
- C. If utilizing hay, air-dry condition and of proper consistency for placing with commercial mulch blowing equipment. Hay shall be sterile, containing no fertile seed.
- D. If utilizing wood cellulose fiber mulch, wood cellulose fiber mulch shall be manufactured from unadulterated wood that is not contaminated with paint, chemicals, shingles, plastics, or other foreign materials. Shall not be manufactured from or contain paper. Shall be manufactured so that wood fibers will remain uniformly suspended in water under agitation and will blend with seeds, fertilizer, and other additives to form a homogeneous slurry. Shall contain no growth or germination inhibiting factors. Shall contain a non-permanent green dye to facilitate inspection of the placement of the material. Shall include a tackifying agent to prevent displacement due to water and wind. Shall be capable of forming an absorptive mat that will allow moisture to percolate into the underlying soil.

## PART 3– EXECUTION

### 3.01 INSTALLATION

- A. The area to receive topsoil shall be graded such that the final top soiled surface will match the final grades shown on the Contract Drawings, or as otherwise directed by the Engineer (i.e., rough-graded surface prior to topsoil application should be lower than final design grade by an amount equal to the final thickness of topsoil to be placed).
- B. Grade the area to receive topsoil to a depth of not less than six inches below the proposed finished grades shown on the Contract Drawings or as directed by the Engineer.
  - 1. Remove all debris and inorganic material and loosen the surface for a depth of two inches prior to the placing of the topsoil.
  - 2. Do not place the topsoil until the sub-grade is in suitable condition and free of excessive moisture and frost.
- C. Prior to seed application, the topsoil surface shall be tilled to a depth of at least 2 inches by disking, harrowing, or other acceptable means if surface is uneven, glazed, or crusted. No seeding shall be done during windy weather. Seeding shall be done in two directions at right angles to each other. Sow seed evenly by hand or with an approved mechanical seeding device in the proportions and at the rate per unit area specified. The sown seed shall be covered with a straw mulch, if recommended, as specified herein.
- D. Native seeding should be completed between October and May. If construction timing does not allow, Contractor will submit a plan for a temporary cover crop until which time it is suitable to apply seed.
- E. Apply lime and fertilizer as recommended by the soil fertility test results and work as deeply as possible into soil.
- F. After the topsoil surface has been prepared, the seed mixture shall be uniformly applied to the prepared surface by appropriate means at the rate specified in this specification, or as otherwise recommended by the seed supplier for the seed mix being used.
  - 1. Seeding and mulching shall not be performed during windy weather (i.e., wind speeds that prevent uniform application of seed and mulch).
  - 2. The seed shall be incorporated into the uppermost ½-inch of soil by appropriate means.

3. Native seeds shall only be seeded during a season recommended by seed provider. If necessary, sterile annual species can be seeded separately to provide immediate cover.
- G. Straw mulch, if used, shall be spread to form a continuous blanket over the seed bed at an application rate of approximately 2 tons/acre. Excessive amounts or bunching of mulch will not be permitted.
1. Mulch shall be anchored by an acceptable method (e.g., pinning, crimping, tackifier).
  2. Unless otherwise specified, mulch shall be left in place and allowed to disintegrate.
- H. If hydroseeding is the selected method of planting, the following shall also apply:
1. Seeding and mulching shall be a one-step process in which seed, fertilizer, hydraulic mulch, and mulch adhesive (tackifier) are applied simultaneously in a homogeneous water slurry via hydraulic seeder/mulcher.
  2. Hydraulic Seeder/Mulcher: Apply seed, fertilizer, hydraulic mulch, and temporary cover adhesive using an acceptable hydraulic seeder/mulcher. The hydraulic seeder/mulcher shall be equipped with mechanical agitation equipment capable of mixing the materials into a homogeneous water slurry and maintaining the slurry in a homogeneous state while it is being applied. The discharge pumps and gun nozzles shall be capable of applying the materials uniformly in a spray pattern that neither concentrates the slurry nor erodes the soil.
  3. Volume Certification: Hydraulic seeding/mulching equipment shall have the tank volume certified by a plate affixed by the manufacturer and confirmed by the Engineer's on-site representative by means of measurements or tests prior to the commencement of work. This plate shall be affixed in plain view on the hydraulic seeder/mulcher and shall not be removed or altered. The plate shall certify tank volume only and shall not imply equipment conformance to other requirements of this Section.
  4. Application of Materials: Measure the quantity of each material to be charged into the hydraulic seeder/mulcher tank either by mass or by a system of mass-calibrated volume measurements acceptable to the Engineer. Add the materials to the tank while it is being loaded with water. Thoroughly mix the materials into a homogeneous slurry and distribute uniformly over the designated surface area via the hydraulic seeder/mulcher. Apply seed, fertilizer, and where applicable, hydraulic mulch adhesive within 90 minutes of being charged into the hydraulic seeder/mulcher tank. During loading of the hydraulic seeder/mulcher tank, add materials in the following sequence: seed, then fertilizer, then, where applicable, hydraulic mulch and adhesive.
  5. Hydroseeding should be performed in two directions to avoid shadowing and in such a manner that produces 100 percent ground coverage.
  6. Blend into existing adjacent grass areas to bond new growth to existing adjacent areas or to previous applications to form uniform surfaces.
- I. Seeded areas shall be watered as often as required to obtain germination and to obtain and maintain a satisfactory sod growth. Watering shall be performed in such a manner as to prevent washing out of seed.

### 3.02 MAINTENANCE

- A. Contractor is responsible for all necessary watering throughout the first year after planting.
- B. Contractor is responsible for achieving a minimum of 70 percent vegetative herbaceous cover within first year after planting.

- C. Contractor shall repair any areas of erosion and reseed (and re-fertilize, if necessary) any dead or dying areas of vegetation, as necessary, until complete coverage and satisfactory sod growth is achieved.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

TOPSOIL PLACEMENT AND GRADING  
32 91 19 13 – 8  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK



## SECTION 33 05 05

### BURIED PIPE INSTALLATION

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope:

1. Providing all labor, materials, equipment, and incidentals as shown, specified, and required to install and test all buried piping, fittings, and specials. The Work includes the following:
  - a. All types and sizes of buried piping, except where buried piping installations are specified under other Sections or other contracts.
  - b. Unless otherwise shown or specified, this Section includes all buried piping Work required, beginning at the outside face of structures or structure foundations, including piping beneath structures, and extending away from structures.
  - c. Work on or affecting existing buried piping.
  - d. Installing all jointing and gasket materials, specials, flexible couplings, mechanical couplings, harnessed and flanged adapters, sleeves, tie rods, cathodic protection, and other Work required for a complete, buried piping installation.
  - e. Installing supports, restraints, and thrust blocks.
  - f. Field quality control, including testing.
  - g. Cleaning.
  - h. Installing into piping systems valves, meters, and special items shown or specified in accordance with the Contract Documents and as required.

###### B. Related Sections:

1. Section 31 05 05 – Aggregates for Earthwork
2. Section 33 41 00 – Storm Utility Drainage Piping

###### C. Coordination:

1. Review installation procedures under this and other Sections and coordinate installation of specified items with or before buried piping Work.
2. Coordinate with Section 33 41 00 – Storm Utility Drainage Piping.

##### 1.02 REFERENCES

###### A. Standards referenced in this Section are:

1. ASTM D2321, Practice for Underground Installation of Thermoplastic Pipe for Sewers and other Gravity-Flow Applications.
2. ASTM D2774, Practice for Underground Installation of Thermoplastic Pressure Piping.
3. ASTM D4174, Practice for Cleaning, Flushing and Purification of Petroleum Fluid Hydraulic Systems.
4. ASTM F1417, Test Method for Installation Acceptance of Plastic Gravity Sewer Lines using Low-Pressure Air.
5. ASTM F2164, Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure.
6. AWWA M55, PE Pipe - Design and Installation.
7. ASCE 37, Design and Construction of Sanitary and Storm Sewers.

### 1.03 QUALITY ASSURANCE

#### A. Regulatory Requirements:

1. Comply with requirements and recommendations of authorities having jurisdiction over the Work.

### 1.04 SUBMITTALS

#### A. Action Submittals: Submit the following:

1. Shop Drawings:
  - a. Details of piping, specials, joints, harnessing and thrust blocks, and connections to piping, structures, equipment, and appurtenances.
2. Product Data:
  - a. Manufacturer's literature and specifications, as applicable, for products specified in this Section.
3. Testing Procedures:
  - a. Proposed testing procedures, methods, apparatus, and sequencing.

#### B. Informational Submittals: Submit the following:

1. Certificates:
  - a. Certificate signed by manufacturer of each product certifying that product conforms to applicable referenced standards.
2. Field Quality Control Submittals:
  - a. Results of each specified field quality control test.
3. Qualifications Statements:
  - a. Installer's qualifications.

#### C. Closeout Submittals: Submit the following:

1. Record Documentation:
  - a. Maintain accurate and up-to-date construction documents showing modifications made in the field, in accordance with approved submittals, and other Contract modifications relative to buried piping Work. Show actual surveyed location of all piping Work and appurtenances at same scale as the Drawings.
  - b. Show piping with elevations referenced to Project datum and dimensions from permanent structures. For each horizontal bend in piping, include dimensions to at least three permanent structures, when possible. For straight runs of piping provide offset dimensions as required to document piping location.
  - c. Include profile drawings with buried piping contract documents.

### 1.05 DELIVERY, STORAGE, AND HANDLING

#### A. Delivery:

1. Deliver materials to the Site to ensure uninterrupted progress of the Work.
2. Upon delivery, inspect pipe and appurtenances for cracking, gouging, chipping, denting, and other damage and immediately remove from Site and replace with acceptable material.

#### B. Storage:

1. Store materials to allow convenient access for inspection and identification.
2. Store material off ground using pallets, platforms, or other supports. Protect packaged materials from corrosion, deterioration, and deformation.

- C. Handling:
1. Handle pipe, fittings, specials, and accessories carefully in accordance with pipe manufacturer's recommendations. Do not drop or roll material off trucks. Do not drop, roll or skid piping.
  2. Avoid unnecessary handling of pipe.
  3. Keep pipe interiors free from dirt and foreign matter.
  4. Protect interior linings and exterior coatings of pipe and fittings from damage. Replace pipe and fittings with damaged lining regardless of cause of damage.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

- A. Piping materials are specified in the Buried Piping Schedule at end of this Section. Piping materials shall conform to Specifications for each type of pipe and piping appurtenances.
- B. General:
1. Pipe Markings:
    - a. Factory-mark each length of pipe and each fitting with designation conforming to those on approved laying schedules.
    - b. Manufacturer shall cast or paint on each length of pipe and each fitting pipe material, diameter, and pressure or thickness class.

### 2.02 BURIED PIPING IDENTIFICATION

- A. Detectable Underground Warning Tape for Non-Metallic Pipelines:
1. Tape shall be of inert, acid- and alkali-resistant, polyethylene, five mils thick, six inches wide, with aluminum backing, and have 15,000 psi tensile strength and 80 percent elongation capability. Tape shall be suitable for direct burial.
  2. Message shall read, "CAUTION [insert customized name of pipe service, i.e., "STORM SEWER", "SANITARY SEWER", "POTABLE WATER", or other appropriate service, as indicated in the Buried Pipe Schedule at the end of this Section] PIPE BURIED BELOW" with bold letters approximately two inches high. Messages shall be printed at maximum intervals of two feet.
  3. Manufacturer: Provide products of one of the following:
    - a. Brady Corporation
    - b. Seton Identification Products
    - c. Marking Services, Inc.
    - d. Or Design Engineer's Approved Equal.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. General:
1. Install piping as shown, specified, and as recommended by pipe and fittings manufacturer.
  2. In event of conflict between manufacturer's recommendations and the Contract Documents, request interpretation from Owner before proceeding.
  3. Engineer will observe excavations and stone support piles prior to laying pipe by Contractor. Notify Engineer in advance of excavating, pipe laying, and backfilling operations.

4. Minimum cover over buried piping shall be four feet, unless otherwise shown in Design Drawings or approved by Owner.
  5. Excavation in excess of that required or shown, and that is not authorized by Owner shall be filled at Contractor's expense with granular material furnished, placed, and compacted in accordance with Division 31.
  6. Comply with NFPA 24 for "Outside Protection", where applicable to water piping systems used for fire protection.
- B. Manufacturer's Installation Specialist:
1. Provide services of competent installation specialist of pipe manufacturer when pipe installation commences for:
    - a. HDPE pipe.
  2. Retain installation specialist at the Site for minimum of one day (eight hours per day at the Site) or until competency of pipe installation crew has been satisfactorily demonstrated.
- C. Separation of Sewers and Potable Water Piping:
1. Horizontal Separation:
    - a. Where possible, existing and proposed potable water mains and service lines, and sanitary, combined, and storm sewers shall be separated horizontally by clear distance of at least ten feet.
    - b. If local conditions preclude the specified clear horizontal separation, installation will be allowed if potable water main is in separate trench or on undistributed earth shelf on one side of sewer and with bottom of potable water main at least 18 inches above top of sewer.
    - c. Exception:
      - 1) Where it is not possible to provide minimum horizontal separation described above, construct potable water main of cement-lined ductile iron pipe with restrained push-on joint or restrained mechanical joint pipe complying with public water supply design standards of authority having jurisdiction. Hydrostatically test water main and sewer as specified in this Section prior to backfilling. Hydrostatic test pressure at crossing shall be at least 150 psi.
  2. Vertical Separation:
    - a. Provide minimum vertical distance of 18 inches between outside of potable water main and outside of sewer when sewer crosses over potable water main.
    - b. Center a section of potable water main pipe at least 17.5 feet long over sewer so that sewer joints are equidistant from potable water main joints.
    - c. Provide adequate structural support where potable water main crosses under sewer. At minimum, provide compacted select backfill for ten feet on each side of crossing.
- D. Plugs:
1. Temporarily plug installed pipe at end of each day of work or other interruption of pipe installation to prevent entry of animals, liquids, and persons into pipe, and entrance or insertion of deleterious materials into pipe.
  2. Fully secure and block plugs, caps, and bulkheads installed for testing to withstand specified test pressure.
  3. Where plugging is required for phasing of the Work or subsequent connection of piping, install watertight, permanent type plugs, caps, or bulkhead acceptable to Owner.
- E. Bedding Pipe: Bed pipe as specified and in accordance with details on the Drawings.
1. Trench excavation and backfill, and bedding materials shall conform to Division 31.
  2. Excavate trenches below bottom of pipe by amount shown and indicated in the Contract Documents.

F. Laying Pipe:

1. Conform to manufacturer's instructions and requirements of standards and manuals listed below, as applicable:
  - a. HDPE Pipe: ASTM D2321, ASTM D2774, ANSI/AWWA C605, AWWA M23, AWWA M45, AWWA, M55.
2. Install pipe accurately to line and grade shown and indicated in the Contract Documents, unless otherwise approved by Owner. Remove and reinstall pipes that are not installed correctly at no additional cost to Owner.
3. Slope piping uniformly between elevations shown.
4. Keep groundwater level in trench below bedding material. Do not lay pipe in water. Maintain dry trench conditions until jointing and backfilling are complete.
5. Deflections at joints shall not exceed 75 percent of amount allowed by pipe manufacturer.
6. Carefully examine pipe interior and completely remove all dirt, gravel, sand, debris, and other foreign material from pipe interior.
7. Fill pipe with water after installation to prevent floatation. Remove water after all applicable testing is approved, and backfill is placed and/or as approved by Owner.

G. Jointing Pipe:

1. HDPE Pipe Joints:
  - a. Butt Fusion Welded Joints:
    - 1) Install joints in accordance with manufacturer's instructions using hydraulic butt fusion machine or manual machine equipped with torque wrench. Equipment shall be able to achieve and maintain heating tool temperature range of 400 to 450 degrees F and an interface pressure of 60 to 90 psi.
    - 2) Clean interior and exterior of pipe and fitting ends with clean, dry, lint-free cloth.
    - 3) Align ends to be joined in the fusion machine without forcing ends into alignment. Adjust alignment as necessary and tighten clamps to prevent slippage.
    - 4) Place facing tool between ends to be joined and face them to provide clean, smooth, parallel mating surface. If stops are present, face ends down to the stops. Remove all shavings after facing without touching ends.
    - 5) Re-check alignment of ends and check for slippage against fusion pressure. There shall be no detectable gaps between ends. Align outside diameters.
    - 6) Heating tool shall maintain pipe manufacture's recommended temperature range. Place the tool between ends to be joined. Move ends against heating tool to achieve full contact. Hold ends against heating tool without force until the following melt bead size is formed:

Pipe Diameter (inches)	Required Melt Bead Size (inches)
2 to 4	1/8 to 3/16
4 to 12	3/16 to 1/4
12 to 24	1/4 to 7/16
24 to 54	7/16 to 9/16
> 54	9/16 to 11/16

- 7) Upon forming proper melt bead size, quickly separate ends and remove heating tool. Quickly inspect melted ends and bring ends together applying joining force recommended by manufacturer, using 60 to 90 psi interfacial pressure to form bead rolled over surface of pipe on both ends (i.e., a double bead).
- 8) Hold joining force against ends until joint is cool to the touch. Cooling period shall be 30 to 90 seconds per inch of pipe diameter. Heavier wall thicknesses may require longer cooling times as recommended by pipe manufacturer.
- 9) Upon completing joint, inspect to verify double bead has been formed, uniformly rounded and consistent in size all around joint. Remove faulty joints and re-joint.

- H. Backfilling:
  - 1. Conform to applicable requirements of Division 31.
  - 2. Place backfill after completing all quality assurance testing and Owner approval.
  - 3. Place backfill/bedding in accordance with Section 31 05 05 – Aggregates for Earthwork.
- I. Closures:
  - 1. Provide closure pieces shown or required to complete the Work.

### 3.02 TRACER TAPE INSTALLATION

- A. Detectable Underground Warning Tape for Non-Metallic Pipelines:
  - 1. Provide polyethylene tracer tape with aluminum backing for buried, non-metallic piping, which includes pipe that is HDPE.
  - 2. Provide magnetic tracer tape 12 to 18 inches below finished grade, above and parallel to buried pipe.
  - 3. For pipelines buried eight feet or greater below finished grade, provide second line of magnetic tracer tape 2.5 feet above crown of buried pipe, aligned along the pipe centerline.
  - 4. Tape shall be spread flat with message side up before backfilling.

### 3.03 WORK AFFECTING EXISTING PIPING

- A. Location of Existing Underground Facilities:
  - 1. Locations of existing Underground Facilities shown on the Drawings should be considered approximate.
  - 2. Determine the true location of existing Underground Facilities to which connections are to be made, crossed, and that could be disturbed, and determine location of Underground Facilities that could be disturbed during excavation and backfilling operations, or that may be affected by the Work.
- B. Taking Existing Pipelines and Underground Facilities Out of Service:
  - 1. Do not take pipelines or Underground Facilities out of service unless specifically approved by Owner.
  - 2. Notify Owner in writing prior to taking pipeline or Underground Facilities out of service. Shutdown notification shall be provided in advance of the shutdown.
- C. Work on Existing Pipelines or Underground Facilities:
  - 1. Cut or tap piping or Underground Facilities as shown or required with machines specifically designed for cutting or tapping pipelines or Underground Facilities, as applicable.
  - 2. Install temporary plugs to prevent entry of mud, dirt, water, and debris into pipe.
  - 3. Provide necessary adapters, sleeves, fittings, pipe, and appurtenances required to complete the Work.

### 3.04 FIELD QUALITY CONTROL

- A. General:
  - 1. Test all piping, except as exempted in the Buried Piping Schedule in this Section.
  - 2. When authorities having jurisdiction are to witness tests, notify Owner and authorities having jurisdiction in writing at least 48 hours in advance of testing.
  - 3. Conduct all tests in presence of Owner.
  - 4. Remove or protect pipeline-mounted devices that could be damaged by testing.
  - 5. Provide all apparatus and services required for testing, including:

- a. Test pumps, compressors, hoses, calibrated gages, meters, test containers, valves, fittings, and temporary pumping systems required to maintain Site operations.
  - b. Temporary bulkheads, bracing, blocking, and thrust restraints.
  - 6. Provide air if an air test is required, power if pumping is required, and gases if gases are required.
  - 7. Contractor shall provide means to convey fluid for hydrostatic testing into piping being tested. Contractor shall provide fluid for other materials to complete required testing.
  - 8. Repair observed leaks and repair pipe that fails to meet acceptance criteria. Retest after repair.
  - 9. Unless otherwise specified, testing shall include existing piping systems that connect with new piping system. Test existing pipe to nearest valve. Piping not installed by Contractor and that fails the test shall be repaired upon authorization of Owner. Unless otherwise included in the Work, repair of existing piping or Underground Facilities will be paid as extra Work.
- B. Test Schedule:
- 1. Refer to the Buried Piping Schedule in this Section for type of test required and required test pressure.
  - 2. Unless otherwise specified, required test pressures are at lowest elevation of pipeline segment being tested.
  - 3. For piping not listed in Buried Piping Schedule in this Section:
    - a. Hydrostatically test pipe that will convey liquid at a pressure greater than 5 psig.
    - b. Use exfiltration testing for other piping.
  - 4. Test Pressure:
    - a. Use test pressures listed in Buried Piping Schedule in this Section.
    - b. If test pressure is not listed in Buried Piping Schedule, or if test is required for piping not listed in the Buried Piping Schedule, test pressure will be determined by Engineer based on maximum anticipated sustained operating pressure and methods described in applicable ANSI/AWWA manual or standard that applies to the piping system.
- C. Hydrostatic Testing:
- 1. Test Preparation:
    - a. For thermoplastic pipe and fiberglass pipe, follow procedures described in Section 7 of ANSI/AWWA Standard C605.
    - b. For HDPE pipe, follow procedures described in ASTM F2164. Test duration, including time to pressurize, time for initial expansion, time at test pressure, and time to depressurize, shall not exceed eight hours. If re-testing of a test section or pipeline is required, at least eight hours shall elapse between tests.
    - c. For steel pipe, follow procedures described in ANSI/AWWA Manual M11. Wetting period is not required for pipe that is not cement-lined.
    - d. For other piping follow procedures described in ANSI/AWWA Manual M9, except that minimum wetting period required immediately prior to testing for asbestos cement pipe shall be 24 hours rather than the 48 hours prescribed for concrete pipe. Wetting period is not required for pipe that is not cement mortar-lined.
    - e. Prior to testing, ensure that adequate thrust protection is in place and joints are properly installed.
    - f. Piping for Hydraulic Fluid, Lube Oil, and Diesel Fuel: Hydrostatically test system using the fluid with which system will function permanently. Allowable leakage is zero. For fluid power systems, pipe manufacturer shall supervise installation and testing of system components, including field piping.
  - 2. Test Procedure:
    - a. Fill pipeline slowly to minimize air entrapment and surge pressures. Fill rate shall not exceed one foot of pipe length per second in pipe being tested.

- b. Expel air from pipe as required. Obtain approval of Design Engineer prior to tapping pipe for expelling air.
  - c. Examine exposed joints and valves, and make repairs to eliminate visible leakage.
  - d. After specified wetting period, add fluid as required to pressurize line to required test pressure. Maintain test pressure for a stabilization period of ten minutes before beginning test.
  - e. HDPE Pipe: After filling pipeline, gradually pressurize pipe to test pressure and maintain required test pressure for three hours for pipe to expand. During expansion, add fluid to maintain required test pressure. Begin timed test period after expansion period and other requirements are met.
  - f. Timed test period shall not begin until after pipe has been filled, exposed to required wetting period, air has been expelled, and pressure stabilized.
  - g. Timed Test Period: After stabilization period, maintain test pressure for at least two hours. During timed testing period, add fluid as required to maintain pressure within five psig of required test pressure. For HDPE pipe, after three-hour expansion phase, reduce test pressure by ten psig and do not add liquid. Test pressure shall then remain steady for one hour, indicating no leakage.
  - h. Pump from test container to maintain test pressure. Measure volume of fluid pumped from test container and record on test report. Record pressure at test pump at 15-minute intervals for duration of test.
3. Allowable Leakage Rates: Leakage is defined as the quantity of fluid supplied to pipe segment being tested to maintain pressure within five psi of test pressure during timed test period. Allowable leakage rates for piping are:
- a. No Leakage: Pipe with flanged, welded, fused, threaded, soldered, or brazed joints.
  - b. Rates based on formula or table in ANSI/AWWA Manual M41:
    - 1) Metal and fiberglass pipe joined with rubber gaskets as sealing members, including the following joint types:
      - a) Bell and spigot and push-on joints.
      - b) Mechanical joints.
      - c) Bolted sleeve type couplings.
      - d) Grooved and shouldered couplings.
  - c. Rates based on make-up allowance in ANSI/AWWA Manual M9:
    - 1) Prestressed concrete cylinder pipe and other types of concrete pipe joined with O-ring rubber gasket sealing members.
  - d. Rates based on formula or table in ANSI/AWWA C605:
    - 1) Plastic pipe joined with O-ring gasket sealing members.
  - e. Rates based on formula or table in ANSI/AWWA C603:
    - 1) Asbestos-cement pipe.

D. Exfiltration Testing:

- 1. Plug and bulkhead ends and lateral connections of pipe segment to be tested and admit fluid until the pipe is full. Admit fluid slowly to minimize air entrapment. Groundwater level shall be below the pipe during exfiltration test.
- 2. Before measuring leakage, allow fluid to wet pipe interior for the following period:
  - a. HDPE Pipe: Wetting period not required.
- 3. Maintain hydrostatic head during test to equal an elevation two feet above present and future maximum groundwater elevation at pipe segment tested. Design Engineer will determine test water surface elevation for each pipe segment.
- 4. Provide minimum hydrostatic head during test of two feet above crown of upstream end of pipe segment tested.
- 5. Add fluid from test container or from metered supply as required to maintain test water level within three inches of test head throughout the test.
- 6. Test duration shall be at least two hours.



7. Allowable Leakage Rates: Leakage is defined as the quantity of fluid that must be supplied to pipe segment tested to maintain hydrostatic head within three inches of test head during the test after pipe has been filled and exposed to required wetting period, plus quantity required to refill to original head at end of test. Allowable leakage rates for piping are:
  - a. No Leakage: Pipe with flanged, welded, fused, threaded, soldered, or brazed joints.

E. Vertical Deflection Test for HDPE Pipe:

1. Conduct vertical deflection test at least thirty days after backfill has been placed.
2. Manually pull pin-type vertical gauge mounted on sled through pipe. Gauge shall be manufactured by Quality Test Products, or equal. Set gauge so that sled will stop if vertical deflection of pipe exceeds five percent. Excavate and re-install piping that fails deflection test, and retest.
3. Contractor shall bypass storm sewer flows for duration of testing and inspection.

F. Examination of Welds:

1. Visually examine all welds.
2. If defect is detected, all welds shall be examined by liquid penetrant examination.
3. At conclusion of liquid penetrant examination, remove penetrant test materials by flushing, washing, or wiping clean with applicable solvents.

### 3.05 CLEANING

A. Cleaning, General: Clean pipe systems as follows:

1. Thoroughly clean all piping, including flushing with water, dry air, or inert gas as required, in manner approved by Design Engineer, prior to placing in service.
2. For piping that requires disinfection, swab each section and joint individually before installation with five percent sodium hypochlorite solution.

B. Disinfection:

1. Disinfect all potable and finished water piping including the fire line.

### 3.06 SCHEDULES

A. BURIED PIPING SCHEDULE

Service	Diameter (inch)	Material	Interior Lining	Exterior Coating	Pressure Class/ Thickness	Joint	Test
Storm Sewer	30	High Density Polyethylene	N/A	N/A	125 psi/ 1.765 in. min wall thickness	Butt Fusion Weld and Flanged	Exfiltration, Vertical Deflection Test, Examination of all Welds

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

BURIED PIPE INSTALLATION  
33 05 05 – 10  
REVISION NO. 01  
DATE ISSUED: 8.20.2018

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

ARCADIS of New York, Inc.

## SECTION 33 41 00

### STORM UTILITY DRAINAGE PIPING

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

###### A. Scope

1. Providing all labor, materials, equipment and incidentals as shown, specified and required to furnish, test, and place in satisfactory service the High Density Polyethylene (HDPE) pipe and fittings as shown.
2. The extent of HDPE pipe and fittings to be furnished is shown on the Design Drawings and presented in the piping schedules included in Specification Section 33 05 05 – Buried Pipe Installation.

###### B. Related Sections

1. Section 31 05 05 – Aggregates for Earthwork
2. Section 31 23 00 – Excavation and Fill
3. Section 33 05 05 – Buried Pipe Installation

##### 1.02 REFERENCES

###### A. Reference Standards

1. American Society for Testing and Materials (ASTM).
  - a. ASTM D 638, Test Method for Tensile Properties of Plastics.
  - b. ASTM D 696, Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics between - 30°C and 30°C with a Vitreous Silica Dilatometer.
  - c. ASTM D 746, Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
  - d. ASTM D 790, Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
  - e. ASTM D 1238, Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer.
  - f. ASTM D 1248, Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable.
  - g. ASTM D 1505, Test Method for Density of Plastics by the Density-Gradient Technique.
  - h. ASTM D 1525, Test Method for Vicat Softening Temperature of Plastics.
  - i. ASTM D 1598, Test Method for Time-to-Failure of Plastic Pipe under Constant Internal Pressure.
  - j. ASTM D 1693, Test Method for Environmental Stress-Cracking of Ethylene Plastics.
  - k. ASTM D2122 - Standard Method of Determining Dimensions of Thermoplastic Pipe and Fittings.
  - l. ASTM D 2240, Test Method for Rubber Property-Durometer Hardness.
  - m. ASTM D2412 - Standard Test Method for Determining External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
  - n. ASTM D 2657, Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings.
  - o. ASTM D 2837, Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products.
  - p. ASTM D 3035, Specification for Polyethylene (PE) Plastic Pipe (DR-PR), Based on Controlled Outside Diameter.

- q. ASTM D 3261, Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.
- r. ASTM D 3350, Specification for Polyethylene Plastics Pipe and Fittings Materials.
- s. ASTM F 412, Terminology Relating to Plastic Piping Systems.
- t. ASTM F 714, Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter.
- u. ASTM F 1248, Test Method for Determination of Environmental Stress Crack Resistance (ESCR) of Polyethylene Pipe.
- 2. American Water Works Association, (AWWA).
  - a. AWWA C906, Polyethylene (PE) Pressure Pipe and Fittings, 4-inch through 63-inch, for Water Distribution.
- 3. National Science Foundation, (NSF).
  - a. NSF 14, Plastics Piping Components and Related Materials.

### 1.03 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
  - 1. Manufacturer shall have a minimum of five years' experience producing substantially similar type materials and shall be able to show evidence of at least five installations in satisfactory operation for at least five years.
  - 2. HDPE pipe and fittings shall be the product of a single manufacturer.
  - 3. The HDPE pipe and fittings manufacturer shall have an established Quality Assurance Program responsible for inspecting incoming and outgoing materials.
  - 4. The HDPE pipe and fittings manufacturer shall have an established Quality Assurance program responsible for assuring the long-term performance of materials and products.
  - 5. The HDPE pipe and fitting manufacturer shall maintain permanent Quality Assurance/Quality Control (QA/QC) records.
- B. Installer's Qualifications:
  - 1. Engage a single installer regularly engaged in HDPE piping installation and with experience in the installation of the types of materials required; and who agrees to employ only tradesmen with specific skill and experience in this type of Work.
  - 2. Engage a single installer for the entire HDPE piping system with undivided responsibility for performance and other requirements.
- C. Component Supply and Compatibility:
  - 1. The HDPE pipe and fittings manufacturer shall review and approve or prepare all Shop Drawings and other submittals for all components furnished under this Section.
  - 2. All components shall be specifically constructed for the specified service conditions and shall be integrated into the overall assembly by the HDPE pipe and fittings manufacturer.
- D. Acceptable Manufacturers
  - 1. Performance Pipe, a division of Chevron Phillips Chemical Company, LLC.
  - 2. Or equal

### 1.04 SUBMITTALS

- A. Submit these with Shop Drawings required under Section 33 05 05 – Buried Pipe Installation.
- B. Action Submittals: Submit the following:
  - 1. Shop Drawings:
    - a. Details of piping system including location of supports, restraints, fittings, anchors, vents, low-point drains, termination assemblies and all accessories necessary for piping system.

- b. Pipe laying schedules.
  - 2. Product Data:
    - a. Details of construction, fabrication, and pipe materials.
    - b. Detailed procedures to be used in joining and installing piping system, including manufacturer's recommendations.
  - 3. Testing Plans, Procedures, and Testing Limitations:
    - a. Pipe testing procedures.
- C. Informational Submittals:
  - 1. Certificates:
    - a. Materials Certificates of Conformance: Submit certificates of conformance with Referenced Standards as required in Article 2.04, below.
    - b. Upon shipment, Contractor shall furnish the HDPE pipe manufacturer's Quality Assurance/Quality Control (QA/QC) certifications to verify that the materials supplied for the Project are in accordance with the requirements of this Section and a manufacturer's warranty covering materials and workmanship of the HDPE piping.
  - 2. Suppliers Instructions:
    - a. Detailed procedures to be used in joining and installing piping system, including manufacturer's recommendations.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Refer to Section 33 05 05 – Buried Pipe Installation.

1.06 WARRANTY

- A. The HDPE Pipe Manufacturer and Contractor shall furnish a standard written warranty against defects in materials and workmanship in accordance with ASTM D3350 and ASTM F714. Warranty conditions concerning limits of liability will be evaluated and shall be acceptable to the Owner.

PART 2 – PRODUCTS

2.01 SYSTEM PERFORMANCE

- A. HDPE piping system shall be specifically designed, constructed, and installed for the service intended and shall comply with the following service conditions.
- B. Design Criteria:

Location:	Storm Sewer
Nominal Pipe Size (in.):	30
Pressure Rating, (psi):	125
Min. Wall Thickness (in.):	1.765
Dimension Ratio:	17

PHYSICAL PROPERTIES

- C. Materials used for the manufacture of polyethylene pipe and fittings shall meet the following physical property requirements:

Property	Unit	Test Procedure	Value
Material Designation	-	PPI/ASTM	-
PPI Material Listing	-	PPI TR-4	PE 3408
Material Classification	-	ASTM D 1248	III C 5 P34
Cell Classification	-	ASTM D 3350	345434C or 355434C
Density	g/cm <sup>3</sup>	ASTM D 1505	>0.960
Melt Index (E)	g/10 min	ASTM D 1238	<0.8
Flexural Modulus	psi	ASTM D 790	>120,000
Tensile Strength	psi	ASTM D 638	<3,500
ESCR (C)	hours	ASTM D 1693	3,000 to 3,500
HDB	psi	ASTM D 2837	1,600 @ 23°C
UV Stabilizer (C)	percent carbon black	ASTM D 1603	2 to 3

- D. There shall be no evidence of splitting, cracking or breaking when the pipe is tested in accordance with Article 2.04, below.
- E. Ring Stiffness Constant (RSC) values for the pipe can be directly related to the pipe's class designation. (Nominal RSC of Class 40 pipe = 40, etc.). The minimum RSC is 90 percent of the nominal.
- F. The HDPE pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects. The pipe shall be as uniform as commercially practical in color, opacity, density and other physical properties.
- G. Clean rework or recycled material generated by the manufacturer's own production may be used as long as the pipe or fittings produced meet all the requirements of this Section.

2.02 PIPE AND FITTINGS

- A. Dimensions:
1. Pipe Dimensions: The nominal inside diameter of the pipe shall be true to the specified pipe size in accordance with AWWA C901 and AWWA C906. Standard laying lengths shall be 50 feet ± 2-inches.
  2. Fitting Dimensions: Fittings such as couplings, wyes, tees, adapters, etc. for use in laying pipe shall have standard dimensions that conform to ASTM D 3261.
- B. Pipe and fittings shall be produced from identical materials, meeting the requirements of this Section, by the same manufacturer. Special or custom fittings may be exempted from this requirement.
- C. Pipe and fittings shall be pressure rated to meet the service pressure requirements specified by Design Engineer. Whether molded or fabricated, fittings shall be fully pressure rated to at least the same service pressure rating as the pipe to which joining is intended.

- D. Molded fittings shall meet the requirements of ASTM D 3261 and this Section. At the point of fusion, the outside diameter and minimum wall thickness of fitting butt fusion outlets shall meet the diameter and wall thickness specifications of the mating system pipe. Fitting markings shall include a production code from which the location and date of manufacture can be determined. The manufacturer shall provide an explanation of the production codes used.
- E. Flanged fittings shall be IPS molded flange adapters with ductile iron backer rings. Flange adapter shall match DR of connecting pipe. Hardware shall be type 304 stainless steel.
- F. Marking:
  - 1. Each standard and random length of pipe and fitting in compliance with this standard shall be clearly marked with the following information.
    - a. ASTM or AWWA Standard Designation.
    - b. Pipe Size.
    - c. Class and Profile Number.
    - d. Production Code.
    - e. Standard Dimension Ratio (SDR).

2.03 SOURCE QUALITY CONTROL

- A. At a minimum, inspect incoming polyethylene materials for density in accordance with ASTM D 1505 and melt flow rate in accordance with ASTM D 1238. All incoming polyethylene materials shall be certified by the supplier. Certification shall be verified by Contractor and Owner. Incoming materials shall be approved by Manufacturer's Quality Assurance Program before processing into finished goods.

Test representative samples of polyethylene materials against the physical property requirements required herein. Each extrusion line and molding machine shall be qualified to produce pressure rated products by taking representative production samples and performing sustained pressure tests in accordance with ASTM D 1598.

- B. Quality Assurance test for representative pipe and fitting samples shall include:

Test	Standard	Pipe	Fittings
Sustained pressure at 176°F/725 psi hoop stress: ( $f_0 > 100$ h)	ASTM D 1598	Yes	Yes
Sustained pressure at 73°F/1,600 psi hoop stress: ( $f_0 > 1000$ h)	ASTM D 1598	Yes	Yes

- C. Inspection Requirements:
  - 1. Notification: The HDPE pipe and fitting manufacturer shall notify the Contractor in advance of the date, time, and place of the pipe testing in order that Contractor may be represented at the test.
  - 2. Access: The Owner and Engineer shall have free access to the inspection area of the manufacturer's plant. The manufacturer shall make available to the Owner and Engineer, without charge, all reasonable facilities for determining whether the pipe meets the requirements of this Section.

3. Certification: As the basis of the acceptance of the material, the manufacturer will furnish a certificate of conformance of these Specifications upon request. When prior agreement is being made in writing between Owner, Contractor and the manufacturer, the manufacturer will furnish other conformance certification in the form of affidavit of conformance, test results, or copies of test reports.
4. All outgoing materials shall be inspected for diameter, wall thickness, length, straightness, out-of-roundness, concentricity, toe-in, inside and outside surface finish, markings, and end cut. Manufacturer's Quality Control Program shall perform tests of density; melt flow rate, carbon content, and carbon dispersion. In addition, samples of the pipe provided shall be tested for hoop tensile strength and ductility by either quick burst in accordance with ASTM D 1599 or ring tensile strength in accordance with ASTM D 2290. Molded fittings shall be subject to x-ray inspection for voids, and tests for knit line strength. All fabricated fittings shall be inspected for fusion quality and alignment.

D. Physical Test Requirements:

1. Sampling: The selection of the sample of pipe shall be as agreed upon by the Engineer, Contractor and the manufacturer. In case of no prior agreement, any sample selected by the manufacturer shall be deemed adequate.
2. Sample size for flattening test will be one sample for each size and class of pipe for the Project.
3. Conditioning: Conditioning of samples prior to and during test shall be as agreed upon by the Engineer, Contractor and manufacturer. In case of no prior agreement, the conditioning procedure used by the manufacturer shall be deemed adequate.

E. Test Methods:

1. Flattening: Flatten three specimens of pipe, a minimum of 12-inches long, between parallel plates in a suitable press until the distance between the plates is 40 percent of the outside diameter of the pipe. The rate of loading shall be uniform and such that the compression is completed within two to five minutes. Remove the load and examine the specimens for splitting cracking or breaking.
2. Pipe Ring Stiffness Constant: Determine the pipe ring stiffness constant utilizing procedures similar to those outlined in ASTM D 2412. The stiffness of HDPE pipe is defined in terms of the load, applied between parallel plates, which causes one percent reduction of pipe diameter. Test specimens shall be a minimum of two pipe diameters or four feet in length, whichever is less.

## PART 3 – EXECUTION

### 3.01 FIELD QUALITY CONTROL

- A. Pipe may be rejected for failure to conform to these Specifications or following:
1. Fractures or cracks passing through pipe wall, except single crack not exceeding 2-inches in length at either end of pipe which could be cut off and discarded. Pipes within one shipment shall be rejected if defects exist in more than five percent of shipment or delivery.
  2. Cracks sufficient to impair strength, durability or serviceability of pipe.
  3. Defects indicating improper proportioning, mixing, and molding.
  4. Damaged ends, where such damage prevents making satisfactory joint.
  5. Gouges or scrapes exceeding ten percent of the specified wall thickness.
- B. Acceptance of fittings, stubs or other specifically fabricated pipe sections shall be based on visual inspection at Site and documentation of conformance to these Specifications.



C. Contractor to provide as-built of pipe end point and angle point coordinates and elevations prior to backfilling trench.

3.02 INSTALLATION

A. Refer to Section 33 05 05 – Buried Pipe Installation.

3.03 HYDROSTATIC TESTING

A. Refer to Section 33 05 05 – Buried Pipe Installation.

END OF SECTION

THIS PAGE INTENTIONALLY LEFT BLANK

STORM UTILITY DRAINAGE PIPING  
33 41 00 – 8  
REVISION NO. 00  
DATE ISSUED: 8/20/18

WSI GROUP  
100% REMEDIAL DESIGN  
WASTE STREAM, INC. SITE  
VILLAGE OF POTSDAM, ST. LAWRENCE COUNTY, NEW YORK

# APPENDIX C

## Community and Environmental Response Plan



Waste-Stream, Inc.

# COMMUNITY AND ENVIRONMENTAL RESPONSE PLAN

Waste-Stream, Inc. Site  
Site No. 6-45-022  
Potsdam, New York

August 2018



## COMMUNITY AND ENVIRONMENTAL RESPONSE PLAN

Waste-Stream, Inc. Site

Prepared for:

**WSI Group**

Prepared by:

Arcadis of New York, Inc.

One Lincoln Center

110 West Fayette Street

Suite 300

Syracuse

New York 13202

Tel 315 446 9120

Fax 315 449 0017

Our Ref.:

B0031006.0005

Date:

August 2018

*This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.*

## CONTENTS

1	Introduction .....	1
1.1	Site Location and Description .....	1
1.2	Summary of Remedial Construction Activities .....	2
1.3	Project Responsibilities .....	2
2	Site Monitoring .....	4
2.1	Community Air Monitoring .....	4
2.2	Noise Monitoring .....	4
3	Site Management and Controls .....	5
3.1	Site Security .....	5
3.2	Erosion and Sediment Controls .....	5
3.3	Waste Management .....	6
3.3.1	Solid Waste .....	6
3.3.2	Liquid Waste .....	6
3.4	Transportation Controls .....	6
3.5	Decontamination .....	6

## 1 INTRODUCTION

This Community and Environmental Response Plan (CERP) has been prepared to support the implementation of remedial activities at the Waste-Stream, Inc. Site (the site) located in Potsdam, New York (Site No. 6-45-022). Details related to the remedial activities are presented in the Final (100%) Remedial Design Report (100% RD Report).

This CERP has been prepared in accordance with 2010 New York State Department of Environmental Conservation (NYSDEC) DER-10: Technical Guidance for Site Investigation and Remediation (DER-10). The purpose of this CERP is to present a summary of the site monitoring and work practices to be conducted to address potential short-term impacts to the surrounding community and/or environmental resources during remedial construction. Additional details regarding site monitoring and work practices are presented in the 100% RD Report and the associated 100% RD Report appendices including, but not limited to:

- Design Drawings (Appendix A)
- Specifications (Appendix B)
- Community Air Monitoring Plan (CAMP) (Appendix D)
- Storm Water Pollution Prevention Plan (SWPPP) (Appendix E)
- Verification Sampling Plan (Appendix F)

Section 2 of this CERP includes a summary of the monitoring to be conducted during remedial construction activities and Section 3 describes site management and controls.

### 1.1 Site Location and Description

The WSI site consists of the former WSI property (i.e., upland scrapyard property), areas immediately adjacent to the former WSI property, wetlands located northeast of the property (referred to as the northern drainage area [NDA]), and a drainage swale that conveys storm water runoff from the former WSI property to the NDA. Localized areas near the drainage swale have been delineated as wetlands and are referred to a southern drainage area (SDA) Nos. 1, 2 and 3. Casella purchased an approximately 58-acre portion of the northern drainage area from Potsdam Hardwood, Inc. (Potsdam Hardwood) in 2011. Ownership of an approximately 14-acre portion of the NDA (i.e., northern most portion) was subsequently transferred to Lavalley Realty, Inc. and the remaining 44 acres was retained by Casella. Historically and for the purposes of this CERP, the scrapyard property is referred to as the “on-site” portion of the site while the land east of the scrapyard property (including the NDA) is referred to as the “off-site” portion of the site.

The approximately 29.2-acre former WSI property is located at 147 Maple Street (U.S. Route 11) in the Town and Village of Potsdam, St. Lawrence County, New York. The former WSI property is comprised of two parcels occupied by several structures, including a scale house, vehicle maintenance building, office building, storage barn, a solid waste transfer station and above ground fuel storage tank area, and

## COMMUNITY AND ENVIRONMENTAL RESPONSE PLAN

various outbuildings. Various scrap processing equipment (e.g., large hydraulic shear, tin press, car crusher, etc.) are also located at the property.

The WSI property is bordered to the north by an industrial facility and undeveloped land to the east, Route 11 to the south, and a lightly developed property to the west. In addition, the Corporation Line between the Town of Potsdam and the Village of Potsdam extends along the eastern property boundary, and an active railroad right-of-way extends across the southern portion of site.

### 1.2 Summary of Remedial Construction Activities

In general, the remedial activities to be performed at the site consist of:

- Excavating soil from on-site locations containing PCBs at concentrations greater than or equal to 50 milligrams per kilogram (mg/kg).
- Excavating soil from off-site areas containing PCBs at concentrations greater than 1 mg/kg, as well as metals (copper, lead, and mercury which were identified as constituents of concern in the ROD) and/or SVOCs at concentrations greater than the lower of the ecological resource or residential use soil cleanup objectives (SCOs).
- Excavating sediment from the SDAs, NDA, and drainage channel containing PCBs at concentrations greater than 1 mg/kg.
- Transporting material containing PCBs at concentrations greater than or equal to 50 mg/kg off-site for disposal.
- Consolidating material containing PCBs at concentrations less than 50 mg/kg and/or VOCs, SVOCs or metals on-site.
- Placing a soil cover over consolidated materials containing PCBs and/or VOCs, SVOCs or metals.

Additional details regarding the remedial activities are provided in the 100% RD Report.

### 1.3 Project Responsibilities

Responsibilities of the Owner, the Engineer, and the Contractor, as they relate to the implementation of this CERP, are presented below.

- Owner – primary responsibility is to coordinate with the Contractor and Engineer (as necessary) to implement the required work activities in conformance with the 100% RD Report. The Owner will be responsible for contracting with an Engineer and Contractor.
- Engineer – responsibility is to provide project management/oversight to observe and monitor implementation of the remedial construction activities. The Engineer will be responsible for performing community air monitoring in accordance with the site-specific CAMP. However, as indicated below, the Contractor will be responsible for implementing odor, dust and vapor controls to address community air monitoring exceedances, if necessary.
- Contractor – primary responsibility is to complete remedial construction activities as presented in the 100% RD Report. The Contractor will be responsible for verifying that community air monitoring is in



## COMMUNITY AND ENVIRONMENTAL RESPONSE PLAN

place prior to conducting intrusive site activities. The Contractor is also responsible for contracting with necessary analytical laboratories and collecting soil, sediment, water, and imported materials samples for analysis by the analytical laboratories. The Contractor will also be responsible for coordinating with waste disposal facilities to identify waste characterization requirements, conducting solid and liquid waste characterization sampling as required by the disposal facilities and contracting with the waste haulers and waste disposal facilities.

## 2 SITE MONITORING

This section presents a summary of the monitoring to be conducted during implementation of the remedial construction activities to evaluate potential short-term impacts to the surrounding community.

### 2.1 Community Air Monitoring

Community air monitoring will be conducted by the Engineer during all intrusive and material handling activities associated with the remedial construction activities (e.g., excavation, material loading, backfilling, etc.). Detailed requirements for air monitoring procedures are presented in the site-specific CAMP. Air monitoring procedures will be completed in accordance with the May 2010 New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan and generally consist of monitoring for volatile organic compounds (VOCs) and particulates at one upwind location (to establish site background conditions) and two downwind locations (to evaluate air quality leaving the site).

As presented in the CAMP and Specification Section 01 35 49 – Community Air Monitoring Plan, exceedances of VOC and/or particulate action levels will require emission controls and dust suppression measures. Control measures to be implemented by the Contractor are presented in Specification Section 01 57 05 – Temporary Controls and may potentially consist of:

- Water spray
- Polyethylene sheeting (e.g., for covering excavation faces, material stockpiles)
- Minimizing excavation surface area to be exposed at any given time

Additionally, the CAMP also includes community notification procedures to be conducted if air monitoring action levels continue to be exceeded after implementation of emission controls.

As a preventative measure, upon completion of a shift and prior to leaving the site at the end of a day, any open excavations will be backfilled to minimize potential odors, to the extent practical, or covered with polyethylene. During the work day, exposed areas may be tarped, foamed or temporarily covered, as required, to control odors.

### 2.2 Noise Monitoring

Prior to mobilization by the Contractor, the Engineer will conduct background noise monitoring using a Quest Q-500 dosimeter, Larson Davis 820 Noise Meter, or equivalent. Background monitoring shall be conducted at potential receptor locations between 7:00 am and 5:00 pm over a three-day period to establish ambient noise levels, including noise levels generated by local truck traffic.

The Engineer will periodically (e.g., semi-weekly or more frequently based on potential noise complaints) monitor noise levels when remedial construction activities are being conducted. If noise complaints are received, the Engineer will coordinate with the WSI Group to determine if noise levels are greater than background levels, and the Contractor may be required to employ additional noise reduction measures (e.g., noise dampening curtains, modified work sequence, etc.).

### 3 SITE MANAGEMENT AND CONTROLS

This section presents a summary of the site management practices and controls that will be utilized to minimize potential short-term impacts to the surrounding community during remedial construction activities.

#### 3.1 Site Security

Public access to the site will be restricted by locking vehicle access gates. Unauthorized personnel will not be permitted on the site. The Contractor shall post signs on the existing site fencing reading “DANGER” in upper panel and “CONSTRUCTION AREA AUTHORIZED PERSONNEL ONLY” in lower panel and a sign reading “SECURITY NOTICE” in upper panel and “ALL VISITORS MUST SIGN-IN AT THE FIELD OFFICE” in lower panel shall be affixed to the office trailer exterior.

#### 3.2 Erosion and Sediment Controls

Erosion and sediment control measures will be provided, installed, and maintained by the Contractor to prevent silting and muddying of existing drainage systems, streams, rivers, impoundments. Details regarding locations and type of controls are presented on the Design Drawings and in Specification Section 01 41 26 – SWPPP and Permit, Section 01 57 05 – Temporary Controls, and the project’s SWPPP included as Appendix E to the 100% RD Report.

Erosion and sediment control measures shall be installed and maintained in accordance with the latest edition of the New York State Standards and Specifications for Erosion and Sediment Control (NYSDEC, 2016) (or most recent). Erosion and sediment control measures will generally consist of a combination of silt fencing and swales installed at select locations adjacent to areas where soil disturbance is anticipated. At a minimum, the Engineer shall inspect erosion and sediment control measures daily and after storm events. Inspection results shall be summarized in weekly inspection reports. Report requirements are provided in Specification Section 01 41 26 – SWPPP and Permit.

In general, the Contractor shall take all precautions to prevent, or reduce to a minimum, any damage to surface water from pollution by debris, sediment, or other material, or from the manipulation of equipment and/or materials within or adjacent to existing and new drainage systems, creeks, streams, rivers, impoundments, or other water bodies. The Contractor is prohibited from the following:

- Allowing migration of impacted or contaminated storm water from construction work areas, excavations, decontamination zones or contaminated/dredge material stockpiles.
- Dumping of spoil material into any drainage way, any surface waters, or at unspecified locations.
- Pumping of silt-laden water from trenches or other excavations into any drainage way, surface waters, or at unspecified locations.
- Damaging vegetation beyond the extent necessary for remedial construction.
- Disposal of trees, brush, and other debris in any stream corridors, any drainage way, or at unspecified locations.

Following the completion of the remedial construction activities, the Contractor shall restore disturbed surfaces as indicated in the 100% RD Report, or as approved by the Engineer.

### 3.3 Waste Management

In general, waste materials generated during implementation of the remedial construction activities will be managed based on the results of the waste characterization sampling and in accordance with the WMP.

#### 3.3.1 Solid Waste

Final disposal and/or treatment of excavated material is anticipated to be as a Toxic Substances and Control Act (TSCA), New York State- (NYS-) regulated hazardous solid waste and on-site consolidation. Excavated debris will be disposed or recycled at an appropriate facility approved by the WSI Group.

#### 3.3.2 Liquid Waste

All construction related waters generated during the remedial construction activities (i.e., decontamination water, water removed excavation areas, water removed from material staging areas, dewatering water) will be collected, stored temporarily in 21,000-gallon frac tanks (to be provided by the Contractor) or approved equivalent waste liquids storage and handling strategy, and treated for on-site discharge in accordance with a State Pollutant Discharge Elimination System (SPDES) Permit Equivalent.

### 3.4 Transportation Controls

The use of the term “transporter” shall mean the transporter and the Contractor if/when the transporter is subcontracted to the Contractor. Materials subject to off-site disposal will be transported via truck to Model City in Niagara Falls, New York or the EQ Landfill in Belleville, Michigan. The preferred trucking route for transporting materials from the site, includes the following roadways:

- Turn right out of the site to head west on Route 11
- Follow signs for Route 81 via I-781
- Take Exit 25A to merge onto Route I-90 West

Alternative trucking routes shall be approved by NYSEG and/or the Engineer prior to use.

### 3.5 Decontamination

The Contractor will decontaminate (as necessary) all personnel and equipment that comes into contact with excavated materials in accordance with Specification Section 02 51 00 – Decontamination. At a minimum, the Contractor will decontaminate (to the satisfaction of the Owner/Engineer the project equipment (including, but not limited to, excavation equipment, trucks, pumps, and hand tools) that comes in contact with excavated materials prior to handling clean material and/or leaving the site. Any visible soils or other debris shall be promptly removed and disposed of in a manner consistent with the materials excavated.

## COMMUNITY AND ENVIRONMENTAL RESPONSE PLAN

The Contractor will conduct decontamination of personnel and equipment within the constructed decontamination area. The Contractor will perform decontamination activities until no visible soil, debris, or stains are present on the equipment surfaces (to the satisfaction of the Owner/Engineer, and/or NYSDEC).

# APPENDIX D

## Community Air Monitoring Plan




Waste-Stream, Inc.

# COMMUNITY AIR MONITORING PLAN

Waste Stream, Inc. Site  
Site No. 5-45-022  
Potsdam, New York

August 2018



## COMMUNITY AIR MONITORING PLAN

Waste Stream, Inc. Site  
Site No. 6-45-022  
Potsdam, New York

Prepared for:  
WSI Group

Prepared by:  
Arcadis of New York, Inc.  
One Lincoln Center  
110 West Fayette Street  
Suite 300  
Syracuse  
New York 13202  
Tel 315 446 9120  
Fax 315 449 0017

Our Ref.:  
B0031006.0005 #10

Date:  
August 2018

*This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.*



## CONTENTS

1	Introduction .....	1
1.1	Site Location and Description.....	1
1.2	Summary of Remedial Activities.....	2
2	Dust Control.....	3
3	Air Monitoring Procedures .....	4
3.1	Monitoring Location Selection and Deployment.....	4
3.2	Total Suspended Particulate Monitoring .....	4
3.3	Action Levels .....	5
3.3.1	Action Levels for VOCs.....	5
3.3.2	Action Levels for Particulates.....	5
3.4	Meteorological Monitoring .....	6
3.5	Instrument Calibration .....	6
4	Monitoring Schedule and Reporting .....	7
4.1	Monitoring Schedule.....	7
4.2	Reporting.....	7

## ATTACHMENTS

- 1 Generic Community Air Monitoring Plan
- 2 Vapor Emission Response Plan

## 1 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared to support the implementation of remedial activities at the Waste-Stream, Inc. (WSI) Site (the site) located in Potsdam, New York (Site No. 6-45-022). Details related to the remedial activities are presented in the Final (100%) Remedial Design (100% RD Report).

The purpose of this CAMP is to describe the monitoring activities that will be conducted by the Engineer to monitor for potential airborne releases of constituents of concern (COCs) during the implementation of remedial activities. This CAMP specifies the air emission action levels, air monitoring procedures, monitoring schedule and data collection and reporting to be performed during the implementation of remedial activities.

As indicated in Specification Section 01 35 49 – Community Air Monitoring Plan, the Engineer is responsible for providing all labor, materials and equipment necessary to implement the community air monitoring program specified herein. The Contractor is ultimately responsible for confirming that all corrective measures associated with the community air monitoring program (including the control of dust, vapors and odors) are conducted in accordance with this CAMP and Specification 01 57 05 – Temporary Controls.

### 1.1 Site Location and Description

The WSI site consists of the former WSI property (i.e., upland scrapyard property), areas immediately adjacent to the former WSI property, wetlands located northeast of the property (referred to as the northern drainage area [NDA]), and a drainage channel that conveys storm water runoff from the former WSI property to the NDA. Localized areas near the drainage channel have been delineated as wetlands and are referred to a southern drainage area (SDA) Nos. 1, 2 and 3. Casella purchased an approximately 58-acre portion of the NDA from Potsdam Hardwood, Inc. (Potsdam Hardwood) in 2011. Ownership of an approximately 14-acre portion of the NDA (i.e., northern most portion) was subsequently transferred to Lavalley Realty, Inc. and the remaining 44 acres was retained by Casella. Historically and for the purposes of this CERP, the scrapyard property is referred to as the “on-site” portion of the site while the land east of the scrapyard property (including the NDA) is referred to as the “off-site” portion of the site.

The approximately 29.2-acre former WSI property is located at 147 Maple Street (U.S. Route 11) in the Town and Village of Potsdam, St. Lawrence County, New York. The former WSI property is comprised of two parcels occupied by several structures, including a scale house, vehicle maintenance building, office building, storage barn, a solid waste transfer station and above ground fuel storage tank area, and various outbuildings. Various scrap processing equipment (e.g., large hydraulic shear, tin press, car crusher, etc.) are also located at the property.

The WSI property is bordered to the north by an industrial facility and undeveloped land to the east, Route 11 to the south, and a lightly developed property to the west. In addition, the Corporation Line between the Town of Potsdam and the Village of Potsdam extends along the eastern property boundary, and an active railroad right-of-way extends across the southern portion of site.

## 1.2 Summary of Remedial Activities

In general, the remedial activities to be performed at the site consist of:

- Excavating soil from on-site locations containing PCBs at concentrations greater than or equal to 50 milligrams per kilogram (mg/kg).
- Excavating soil from off-site areas containing PCBs at concentrations greater than 1 mg/kg, as well as metals (copper, lead, and mercury which were identified as constituents of concern in the ROD) and/or SVOCs at concentrations greater than the lower of the ecological resource or residential use soil cleanup objectives (SCOs).
- Excavating sediment from the SDAs, NDA, and drainage channel containing PCBs at concentrations greater than 1 mg/kg.
- Transporting material containing PCBs at concentrations greater than or equal to 50 mg/kg off-site for disposal.
- Consolidating material containing PCBs at concentrations less than 50 mg/kg and/or VOCs, SVOCs or metals on-site.
- Placing a soil cover over consolidated materials containing PCBs and/or VOCs, SVOCs or metals.

Additional details regarding the remedial activities are provided in the 100% RD Report.

## 2 DUST CONTROL

As defined in the New York State Department of Health (NYSDOH) Generic CAMP (included as Attachment 1), intrusive remedial activities to be performed at the site have the potential to generate localized impacts to air quality. Remedial components that have the potential to generate air emissions include, but may not be limited to, the following:

- Soil excavation.
- Material handling (e.g., separation of large debris from soils, manipulation of excavated materials to render them suitable for off-site treatment/disposal, stockpiling materials, loading materials for transport to the off-site treatment/ disposal facility).
- Backfilling.
- Other ancillary intrusive activities.

Dust emissions resulting from these activities will be controlled using a combination of the following:

- Water spray
- Polyethylene sheeting (e.g., for covering excavation faces, material stockpiles)
- Minimizing excavation surface area to be exposed at any given time

The following construction techniques and site management practices will be used during the project to control dust emissions:

- Excavating and backfilling, and loading, handling, and unloading excavated material and clean fill material, in a manner that minimizes the generation of airborne dust.
- Hauling excavated material and clean fill material in properly covered vehicles.
- Restricting vehicle speeds on temporary access roads and active haul routes.
- Covering shallow excavations and stockpiles of clean fill material with polyethylene liners (anchored appropriately to resist wind forces) before extended work breaks and at the end of each work day.
- Holding to a minimum the areas of bare soil exposed at one time and complying with other applicable erosion and sediment control requirements of Specification Section 01 57 05 – Temporary Controls.
- Complying with progress cleaning requirements of Specification Section 01 74 05 – Cleaning.

As required by Specification Section 01 57 05 – Temporary Controls, dust controls will be proactively employed by the Contractor during the work to prevent exceedances of the PM10 action levels specified in Specification Section 01 35 49 – Community Air Monitoring Plan and Section 3.4 of this CAMP to the extent practicable and to the satisfaction of WSI, the Engineer, NYSDEC, and NYSDOH.

### 3 AIR MONITORING PROCEDURES

The community air monitoring program is intended to be a discrete program that will be operated in conjunction with the Exclusion Zone (i.e., work zone) air monitoring. The Contractor will be responsible for conducting work zone air monitoring. The Engineer will conduct real-time community air monitoring throughout the remedial construction. Monitoring will be conducted at representative locations at the perimeter of the exclusion zone for total suspended particulates (particulates) and volatile organic compounds (VOCs). However, particulate monitoring will not be performed during precipitation events. Additional information regarding the monitoring locations, equipment, and action levels is presented below.

#### 3.1 Monitoring Location Selection and Deployment

Particulate and VOC monitoring station locations will be determined daily based on data from the on-site meteorological monitoring station and the nature of the anticipated remediation activities. An upwind location for particulate and VOC monitoring will be selected at the start of each workday. Two downwind locations (based on predominant wind direction) for particulate and VOC monitoring will also be selected. The particulate and VOC monitoring stations will be deployed each day before the start of work activities. If wind direction shifts radically during the workday and for an extended period of time, such that the upwind location and downwind locations no longer fall within acceptable guidelines ( $\pm 60^\circ$  compass change from the original wind direction), the monitoring stations will be relocated so that the upwind and downwind locations are maintained. Air monitoring location changes will be documented in a field logbook.

#### 3.2 Total Suspended Particulate Monitoring

Real-time monitoring for particulates will be conducted during remedial activities at the site. As required by the NYSDOH Generic CAMP, real-time airborne particulate monitoring will be conducted continuously during all intrusive and/or potential dust generating activities (e.g., installation of erosion and sediment control measures, excavation, backfilling, and material handling activities) using instrumentation equipped with electronic data-logging capabilities. A real-time particulate monitor (TSI 8530 DustTrak II or equivalent) will be used for particulate monitoring. All average concentrations (calculated for continuous 15-minute increments [e.g., 08:00 to 08:15, 08:15 to 08:30]) and any instantaneous readings taken to assess appropriate course of action will be recorded using an electronic data logger and/or in the field logbook.

Fugitive dust migration will be visually assessed during all work activities, and reasonable dust suppression techniques will be used during any site activities that may generate fugitive dust (Section 2).VOC Monitoring

Real-time monitoring for VOCs will be conducted during remedial activities at the site. As required by the NYSDOH Generic CAMP, real time VOC monitoring will be conducted continuously during all intrusive and/or potential dust generating activities (e.g., installation of erosion and sediment control measures, excavation, backfilling, and material handling activities) using instrumentation equipped with electronic data-logging capabilities. A real-time VOC monitor (RAE MiniRAE 3000 or equivalent) will be used for

## COMMUNITY AIR MONITORING PLAN

VOC monitoring. All average concentrations (calculated for continuous 15-minute increments [e.g., 08:00 to 08:15, 08:15 to 08:30]) and instantaneous readings taken to assess appropriate course of action will be recorded using an electronic data logger and/or in field logbook.

### 3.3 Action Levels

The action levels provided below are to be used to initiate corrective actions, if necessary, based on real-time monitoring. Each piece of monitoring equipment will have alarm capabilities (audible and/or visual) to indicate exceedances of the action levels specified below.

#### 3.3.1 Action Levels for VOCs

As outlined in the NYSDOH Generic CAMP (included as Attachment 1), if the ambient air concentration for total VOCs exceeds 5 parts per million (ppm) above background (i.e., upwind location) for the 15-minute average, work activities will be temporarily halted while monitoring continues. If the total VOCs concentrations readily decrease (through observation of instantaneous readings) below 5 ppm above background, then work activities can resume with continuous monitoring.

If the ambient air concentrations for total VOCs persist at levels in excess of 5 ppm above background but less than 25 ppm above background, work activities will be halted, the source of the elevated VOCs concentrations identified, corrective actions undertaken to reduce or abate the emissions, and air monitoring will be continued. Once these actions have been implemented, work activities can resume provided that one of the following two conditions are met:

- The 15-minute average VOCs concentrations remain below 5 ppm above background.
- The VOCs level 200 feet downwind of the monitoring location or half the distance to the nearest potential receptor or residential/commercial structure (whichever is less but in no case less than 20 feet) is below 5 ppm over background for the 15-minute average.

If the ambient air concentrations for total VOCs exceed 25 ppm above background, the work activities must cease, and emissions control measures must be implemented.

#### 3.3.2 Action Levels for Particulates

As required by NYSDOH Generic CAMP, as well as the Fugitive Dust and Particulate monitoring requirements (as presented in Attachment 2), if the average ambient air particulate concentration (calculated for continuous 15-minute increments as specified above) at any one (or more) of the downwind perimeter locations exceeds 100 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) above the average background concentration (calculated for continuous 15-minute increments as specified above), or if airborne dust is visually observed leaving the work area, then dust suppression measures will be implemented, and air monitoring will continue. Work activities may continue following the implementation of dust suppression measures provided that the average ambient air particulate concentration does not exceed 150  $\mu\text{g}/\text{m}^3$  above the average background concentration.

If, after implementation of dust suppression measures, the downwind average ambient air particulate concentration is greater than 150  $\mu\text{g}/\text{m}^3$  above the average background concentration, work activities must be stopped and re-evaluated. Work activities may resume only if dust suppression measures and

other corrective actions are successful in reducing the downwind average ambient air particulate concentration to less than 150 µg/m<sup>3</sup> above the average background concentration and if no visible dust is observed leaving the site. The particulate concentrations will be recorded in accordance with Section 3.3.

### **3.4 Meteorological Monitoring**

Meteorological monitoring will be conducted continuously at the site using a portable meteorological monitoring system. The meteorological monitoring system will be deployed at a location in accordance with siting criteria established by the United States Environmental Protection Agency and the NYSDEC for meteorological monitoring systems (Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV - Meteorological Measurements, as revised August 1989; and New York State Air Guide-19 – “Oversight of Private Air Monitoring Networks,” dated June 1989). Use of these guidelines enables the meteorological monitoring system to provide representative observations of the local meteorological conditions. A digital meteorological monitoring system (Lufft WS 500 or equivalent) will be used to collect the meteorological data. At a minimum, the meteorological monitoring system will monitor wind speed, wind direction, relative humidity and ambient temperature. The meteorological monitoring system will be equipped with electronic data-logging capabilities.

### **3.5 Instrument Calibration**

Calibration of the particulate and meteorological monitoring instrumentation will be conducted in accordance with each of the equipment manufacturer’s calibration and quality assurance requirements. The particulate monitors will be calibrated daily (at a minimum), and calibrations will be recorded in the field logbook.

## 4 MONITORING SCHEDULE AND REPORTING

The following subsections identify the monitoring schedule and data collection/ reporting requirements.

### 4.1 Monitoring Schedule

Air monitoring will be conducted prior to initiating the remedial action to establish adequate baseline data and until such time that significant material handling activities are complete (i.e., removal of stockpiled impacted materials for off-site transportation and treatment/disposal). As previously indicated, particulate and VOC monitoring will be performed during all intrusive and/or potential dust-generating activities (e.g., installation of erosion and sediment control measures, excavation, backfilling, material handling activities, etc.).

The frequency of air monitoring will be relative to the level of site work activities being conducted and may be adjusted as the work proceeds and in consideration of the monitoring results. Air monitoring for dust may be discontinued during periods of heavy precipitation that would otherwise result in unreliable data or damage to the monitoring equipment. Meteorological monitoring will be performed continuously during work activities.

### 4.2 Reporting

In accordance with DER-10, the Engineer will notify the project managers for NYSDEC and NYSDOH within two hours by telephone call or e-mail of any exceedances of the CAMP action levels and any corrective actions taken in response to the action level exceedances. An exceedance report will be generated and distributed to the project managers for NYSDEC and NYSDOH within 24 hours of the exceedance.

The Engineer will prepare a weekly (or more frequent if requested by NYSDEC and/or NYSDOH) summary of the 15-minute average community air monitoring results. The summary will also include, but not be limited to, a description of community air monitoring exceedances (if any), work activities associated with the exceedances, and corrective actions implemented to address the exceedance.

The time and outcome of each odor perimeter check will be documented in a daily log, specifically noting the presence or absence of odors and identifying the general location(s) along the perimeter where odors (if any) are noticed. These daily logs, as well as documentation of any odor complaints received from the public, will be included in the aforementioned weekly CAMP reports to be submitted NYSDEC/NYSDOH.

The weekly summary will be submitted in an electronic format to the project managers for NYSDEC, NYSDOH, National Grid, and Casella. A hard copy of the data will be maintained at the Engineer field office trailer.



# ATTACHMENT 1

## Generic Community Air Monitoring Plan









# ATTACHMENT 2

## Vapor Emission Response Plan







# APPENDIX E

## Storm Water Pollution Prevention Plan






Waste-Stream, Inc.

# STORM WATER POLLUTION PREVENTION PLAN

Waste-Stream, Inc. Site  
Site No. 6-45-022  
Potsdam, New York

August 2018



## STORM WATER POLLUTION PREVENTION PLAN

Waste-Stream, Inc. Site  
Site No. 6-45-022  
Potsdam, New York

Prepared for:  
WSI Group

Prepared by:  
Arcadis of New York, Inc.  
One Lincoln Center  
110 West Fayette Street  
Suite 300  
Syracuse  
New York 13202  
Tel 315 446 9120  
Fax 315 449 0017

Our Ref.:  
B0031006.0005

Date:  
August 2018

*This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.*

# STORM WATER POLLUTION PREVENTION PLAN

## CONTENTS

1	Introduction .....	1
1.1	Remedial Activities .....	1
1.2	Revisions .....	1
2	Site Background .....	3
2.1	Site Location and Description.....	3
2.2	Site Operational History .....	3
2.3	Surface Water Hydrology .....	3
3	Erosion and Sediment Controls.....	5
3.1	Remedial Design Components.....	5
3.2	Temporary Structural Measures.....	5
3.2.1	Silt Fencing and Straw Bale Dikes.....	5
3.2.2	Storm Drain Inlet Protection.....	5
3.2.3	Temporary Construction Entrance.....	5
3.2.4	Check Dams.....	6
3.2.5	Swales.....	6
3.2.6	Temporary Seeding.....	6
3.2.7	Permanent Seeding .....	6
3.3	Daily and Periodic Inspections .....	6
3.4	Site Restoration .....	7
3.5	Post-Construction Storm Water Management Controls.....	7
4	Construction Sequence .....	8
4.1	Phase 1 Site Preparation .....	8
4.2	Phase 1 .....	8
4.3	Phase 2 Site Preparation .....	9
4.4	Phase 2 .....	9
4.5	General Site Restoration .....	9
5	Pollution Prevention Practices.....	10
5.1	Remedial Design Components.....	10
5.2	Impacted Material Handling, Transportation, and Treatment/Disposal.....	10

# STORM WATER POLLUTION PREVENTION PLAN

5.2.1	Soil and Sediment .....	10
5.2.2	Construction-Related Water.....	11
5.3	Spill Prevention, Control, and Response .....	11
5.3.1	Spill Prevention .....	11
5.3.2	Spill Control and Response .....	12
5.4	Dust Controls.....	12
5.5	Good Housekeeping Practices.....	13
6	References .....	14

## APPENDIX

A	NRCS Soil Map	
---	---------------	--

## 1 INTRODUCTION

This Storm Water Pollution Prevention Plan (SWPPP) has been prepared to support the implementation of remedial activities at the Waste-Stream, Inc. (Waste-Stream) Site (the site) located in Potsdam, New York (Site No. 6-45-022).

This SWPPP summarizes the storm water management practices that will be implemented during the remedial construction activities to control potential impacts to site-related storm water run-off. This SWPPP has been prepared in accordance with the substantive requirements of the New York State Department of Environmental Conservation's (NYSDEC's) SPDES General Permit for Storm Water Discharges from Construction Activity (SPDES General Permit) (included as an attachment to Specification Section 01 41 26 – SWPPP and Permit).

### 1.1 Remedial Activities

As described in the Final (100%) Remedial Design Report (100% RD Report), the remedial activities to be performed at the site generally consist of:

- Excavating soil from on-site locations containing PCBs at concentrations greater than or equal to 50 milligrams per kilogram (mg/kg).
- Excavating soil from off-site areas containing PCBs at concentrations greater than 1 mg/kg, as well as metals (copper, lead, and mercury which were identified as constituents of concern in the ROD) and/or SVOCs at concentrations greater than the lower of the ecological resource or residential use soil cleanup objectives (SCOs).
- Excavating sediment from the SDAs, NDA, and drainage channel containing PCBs at concentrations greater than 1 mg/kg.
- Transporting material containing PCBs at concentrations greater than or equal to 50 mg/kg off-site for disposal.
- Consolidating material containing PCBs at concentrations less than 50 mg/kg and/or VOCs, SVOCs or metals on-site.
- Placing a soil cover over consolidated materials containing PCBs and/or VOCs, SVOCs or metals.

Additional details regarding the remedial activities are provided in the 100% RD Report.

### 1.2 Revisions

This SWPPP will be kept current so that, at all times, this plan accurately documents the erosion and sediment control practices that are being used or will be used during construction. At a minimum, this SWPPP will be amended:

- Whenever the current provisions prove to be ineffective in minimizing pollutants in storm water discharges from the site.

## STORM WATER POLLUTION PREVENTION PLAN

- Whenever there is a change in design, construction, operation, or maintenance at the site that has or could have an effect on the discharge of pollutants.
- To address issues or deficiencies identified during an inspection by the Contractor's qualified inspector, NYSDEC, or other regulatory authority having jurisdiction.

## 2 SITE BACKGROUND

This section provides general information regarding the pre-remediation conditions at the site.

### 2.1 Site Location and Description

The WSI site consists of the former WSI property (i.e., upland scrapyard property), areas immediately adjacent to the former WSI property, wetlands located northeast of the property (referred to as the northern drainage area), and a drainage swale that conveys storm water runoff from the former WSI property to the northern drainage area. In 2011, Casella purchased an approximately 58-acre portion of the northern drainage area from Potsdam Hardwood, Inc. (Potsdam Hardwood). Ownership of an approximately 14-acre portion of the northern drainage area (i.e., northern most portion) was transferred to Lavalley Realty, Inc. and the remaining 44 acres was retained by Casella. The current extent of Casella-owned property is shown on Figure 1 of the 100% RD Report. Historically, the scrapyard property is referred to as the “on-site” portion of the site while the land east of the scrapyard property (including the northern drainage area) is referred to as the “off-site” portion of the site.

The approximately 29.2-acre former WSI property is located at 147 Maple Street (U.S. Route 11) in the Town and Village of Potsdam, St. Lawrence County, New York. The former WSI property is comprised of two parcels currently occupied by several structures, including a scale house, vehicle maintenance building, office building, storage barn, a solid waste transfer station and above ground fuel storage tank area, and various outbuildings. Various scrap processing equipment (e.g., large hydraulic shear, tin press, car crusher, etc.) are also located at the former WSI property. Existing above grade structures are anticipated to be demolished and removed prior to remedial construction.

The site is bordered to the north by an industrial facility and undeveloped land to the east, Route 11 to the south, and a lightly developed property to the west. In addition, the Corporation Line between the Town of Potsdam and the Village of Potsdam extends along the eastern property boundary, and an active railroad right-of-way extends across the southern portion of site. A Natural Resources Conservation Service (NRCS) soil map is included in Appendix A of this plan.

### 2.2 Site Operational History

The site is the location of metal recycling and scrap yard business that has operated since approximately 1957. The facility initially operated as Chet Bisnett, Inc., until the company merged with B&C Carting in 1987. The resulting company was renamed Waste-Stream Management, Inc. (WSMI). WSMI was subsequently renamed WSI and has operated the site from 1987 until the present. In 1998, WSI became a wholly owned subsidiary of Casella Waste Systems, Inc. Refer to the 100% RD Report for additional site operational history.

### 2.3 Surface Water Hydrology

Surface topography in the vicinity of the site is relatively flat, with elevations ranging from approximately 427 feet to 439 feet above mean sea level. Storm water from the property is conveyed from the former WSI property to adjacent low-lying areas via the drainage swale and sheet flow. Three drainage areas in the southwest-central portion of the site, referred to as southern drainage areas SDA-1 through SDA-3,

## STORM WATER POLLUTION PREVENTION PLAN

are the primary surface water features present at the site. SDA-2 and SDA-3 receive surface drainage from most of the central and southwest portions of the site. SDA-2 also receives drainage from areas located hydraulically upgradient (west) from the former WSI property.

Surface water from SDA-2 and SDA-3 is conveyed through a subsurface drainage pipe that extends from west to east beneath the southern portion of the former WSI property. The pipe discharges to a drainage swale that conveys water to the NDA, located approximately 450 feet northeast of the former WSI property. At the location where drainage from SDA-2 flows into the pipe, the drainage pipe consists of a 32-inch diameter corrugated metal pipe. At some point along the pipe (prior to discharging into the drainage swale), the pipe diameter increases to 36-inches. The drainage pipe was reportedly installed at some point after 1975 within (or along the approximate path of) an open drainage ditch that previously conveyed surface drainage across the site. As observed during the pre-design investigation, the drainage pipe consists of sections of corrugated metal pipe and smooth metal pipe. This pipe will be moved and replaced as part of the remedial construction.



### 3 EROSION AND SEDIMENT CONTROLS

This section presents the means and methods for erosion and sediment control to be utilized as part of remedial construction activities.

#### 3.1 Remedial Design Components

Erosion and sediment controls will be installed, inspected, and maintained by the Contractor in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (NYS Standards and Specifications) (NYSDEC 2005) and the relevant Design Drawings and Specifications of the 100% RD Report.

As site conditions allow, temporary erosion and sediment controls will be installed before initiating any ground-disturbing activities, and additional erosion and sediment controls will be installed during construction (as needed) to achieve the storm water management objectives of this SWPPP and in general accordance with the requirements of the SPDES General Permit.

#### 3.2 Temporary Structural Measures

This section presents the temporary structural measures to be utilized for erosion and sediment control as part of remedial construction activities.

##### 3.2.1 Silt Fencing and Straw Bale Dikes

Reinforced silt fencing will be used to reduce or otherwise control the potential off-site migration of suspended sediments in storm water run-off and will be installed before any existing soils or vegetation are disturbed at the site. Reinforced silt fencing (where used) will be installed and maintained by the Contractor in accordance with Section 5A of the NYS Standards and Specifications, Specification Section 01 57 05 – Temporary Controls, and the Design Drawings.

##### 3.2.2 Storm Drain Inlet Protection

Storm drain inlet protection will be installed inside of each drainage inlet or catch basin that has the potential to receive storm water runoff from exposed soils to prevent heavily sediment laden water from entering the storm drain system through inlets. Storm drain inlet protection will be installed and maintained by the Contractor in accordance with Section 5A of the NYS Standards and Specifications, Specification Section 01 57 05 – Temporary Controls, and the Design Drawings.

##### 3.2.3 Temporary Construction Entrance

Temporary construction entrances will be installed where construction vehicles regularly enter/exit the site to reduce or eliminate the tracking of sediment onto public rights-of-way or streets. Temporary construction entrances will be installed and maintained by the Contractor in accordance with Section 5A of the NYS Standards and Specifications, Specification Section 01 57 05 – Temporary Controls, and the Design Drawings.

### **3.2.4 Check Dams**

Check dams will be installed to reduce erosion in the swales by restricting the velocity of flow in the channel. Check dams will be installed and maintained by the Contractor in accordance with Section 5A of the NYS Standards and Specifications.

### **3.2.5 Swales**

Swales will be installed to divert flows from entering a disturbed area by intercepting and diverting the runoff to a stabilized outlet. Swales will be installed and maintained by the Contractor in accordance with Section 5A of the NYS Standards and Specifications.

### **3.2.6 Temporary Seeding**

Temporary seeding will be applied to provide a temporary protective cover on disturbed areas when construction activities have temporarily ceased, such as when preparing for winter shutdown, or to provide cover when permanent seed growth is delayed due to mid-summer heat or drought. In areas where soil disturbance activity has temporarily ceased, temporary seeding must be initiated by the end of the next business day and completed within 14 days from the date the current soil disturbance activity ceased. Runoff control measures (e.g., reinforced silt fence) will be installed, as needed, prior to seeding to reduce the potential for erosion of the newly seeded area. Temporary seeding will be installed and maintained by the Contractor in accordance with Section 3 of the NYS Standards and Specifications, Specification Section 32 91 19 – Topsoil Placement and Grading, and the Design Drawings.

### **3.2.7 Permanent Seeding**

Permanent seeding will be applied to provide a protective cover following achievement of final grades or during a long-term dormancy period (e.g., longer than 1 year). In areas where soil disturbance activity has permanently ceased, permanent seeding must be initiated by the end of the next business day and completed within 14 days from the date the current soil disturbance activity ceased. Runoff control measures will be installed, as needed, prior to seeding to reduce the potential for erosion of the newly seeded area. Permanent seeding will be installed and maintained by the Contractor in accordance with Section 3 of the NYS Standards and Specifications, Specification Section 32 91 19 – Topsoil Placement and Grading, and the Design Drawings.

## **3.3 Daily and Periodic Inspections**

Erosion and sediment control measures being implemented within the active work area will be inspected daily by the Contractor to ensure that they are being maintained in effective operating conditions at all times. For temporary work stoppages greater than two weeks in duration (e.g., winter shut-downs, etc.), the daily inspections may be ceased if temporary stabilization measures have been applied to all disturbed surfaces, and if approved by Casella, the Engineer, and NYSDEC. Contractor personnel responsible for daily inspections will meet the requirements of a “trained contractor”, as defined in Appendix A of the SPDES General Permit.

## STORM WATER POLLUTION PREVENTION PLAN

Erosion and sediment controls will also be inspected by the Contractor once every seven calendar days (at a minimum) and after wet weather events to verify and document their continued effectiveness and integrity. For temporary work stoppages greater than two weeks in duration (e.g., winter shut-downs, etc.), the inspection frequency may be reduced to once every 30 calendar days if temporary stabilization measures have been applied to all disturbed surfaces, and if approved by Casella, the Engineer, and NYSDEC. Contractor personnel responsible for periodic inspections will meet the requirements of a “qualified inspector”, as defined in Appendix A of the SPDES General Permit. The results of each inspection, including any corrective actions to be taken, will be documented using the Storm Water Inspection Report form included in Specification Section 01 41 26 – SWPPP and Permit.

Any deficiencies identified during an inspection, and any maintenance activities or corrective actions required to address those deficiencies, will be communicated to the Engineer immediately upon discovery. Maintenance and corrective actions will be initiated within one business day and will be completed prior to the next scheduled weekly inspection. If site conditions prevent the maintenance activities or corrective actions from being completed before the next scheduled inspection, such conditions will be documented in the Storm Water Inspection Report, and the maintenance activities/corrective actions will be completed as soon as site conditions permit.

Erosion and sediment controls will be inspected and maintained by the Contractor for the duration of the remedial construction activities, and until such time as all disturbed or open-soil areas at the site have achieved “final stabilization”, as defined in Appendix A of the SPDES General Permit.

### **3.4 Site Restoration**

Soil/sediment excavation areas will be backfilled and restored to final grades and conditions specified on the Design Drawings. The on-site consolidation area, as well as a majority of the on-site area, will be covered with a vegetated soil cover as specified on the Design Drawings.

A final inspection will be performed to verify that all restoration areas have achieved final stabilization. If the restoration areas are not sufficiently stabilized, corrective actions will be taken by the Contractor and a second final site inspection will be performed. Upon acceptance of the final site stabilization, the Contractor will remove any temporary erosion and sediment controls (e.g., reinforced silt fencing, construction entrance, etc.) that are no longer needed.

### **3.5 Post-Construction Storm Water Management Controls**

Due to the nature of the work being performed (i.e., removal of impacted material under an NYSDEC-approved 100% RD Report; and restoration of a significant portion of the site from gravel to a vegetated condition to mitigate increases in runoff), post-construction water quality and quantity controls have not been provided.

## 4 CONSTRUCTION SEQUENCE

The purpose of this section is to outline the general sequence of activities that will be conducted prior to, during, and following the site remediation with regard to implementation of erosion and sediment control measures identified in this SWPPP and in accordance with the requirements of the SPDES General Permit. Specific construction activity sequencing will be determined in coordination with the selected Contractor. The sequence of activities related to installation, maintenance and removal of erosion and sediment controls will generally include the following items described below.

### 4.1 Phase 1 Site Preparation

- Mobilize crew, facilities, equipment, and materials required to complete the work.
- Install temporary construction entrances and equipment and personnel decontamination pads, soil staging areas, and water treatment system staging area where located on the Design Drawings.
- Prior to starting any earth disturbance activities, the Contractor will notify the New York One Call System, Inc. at 1.800.524.7603. The Contractor will coordinate with Casella to ensure all utilities have been identified on-site.
- Mark or fence for protection wetland boundaries and other environmentally sensitive areas.
- Prior to performing excavation, install reinforced silt fence at the locations identified on the Design Drawings.
- Conduct an assessment of the site prior to initial earth disturbance activities to ensure the erosion and sediment controls have been installed correctly and are functional.

### 4.2 Phase 1

- Excavate and backfill “on-site” and “off-site” soil removal areas.
- Construct the base layer for the on-site consolidation area for the anticipated soil generated as part of the Phase 1 construction activities.
- Place excavated soil in the consolidation area and constructing a soil cover over the consolidated material.
- Place soil cover over Phase 1 consolidated material.
- Construct select portions of the “on-site” cover (areas that will not be impacted by the Phase 2 construction activities).
- Remove select portions of the “on-site” storm water culvert and filling the remainder with controlled low strength material/flowable fill.
- Construct the new storm water management features.
- Construct temporary site covers.

### 4.3 Phase 2 Site Preparation

- Install temporary equipment decontamination pad, soil staging areas, and water treatment system staging area.
- Prior to performing excavation, install reinforced silt fence, swales, and check dams at the locations identified on the Design Drawings.
- Conduct a site assessment prior to initial earth disturbance activities to ensure the erosion and sediment controls have been installed correctly and are functional.

### 4.4 Phase 2

- Excavate sediment from the SDAs.
- Restore the SDA wetlands.
- Remove the beaver dam that transects the NDA (north to south).
- Excavate sediment from the “off-site” portion of the drainage channel and the NDA.
- Construct additional base layer for the “on-site” consolidation area for placement of the sediment for the Phase 2 construction activities.
- Place excavated sediment in the “on-site” consolidation area.
- Restore “on-site” areas remaining from Phase 1 (if applicable), the SDAs, the “off-site” drainage swale, and the NDA wetlands.
- Construct the final consolidation area and upland soil cover.

### 4.5 General Site Restoration

- Install topsoil and apply permanent seed, fertilizer, and mulch to remaining disturbed areas as indicated in the Specifications and on the Design Drawings.
- Remove temporary erosion and sediment control measures (e.g., reinforced silt fencing, swales, check dams, turbidity curtains, construction entrances), once the site has been stabilized by a uniform, perennial vegetative cover with a density of 80 percent.
- Immediately stabilize areas (if any) disturbed during the removal of the temporary erosion and sediment control measures.
- Upon completion of all construction activity, final stabilization (as defined in Appendix A of the SPDES General Permit) of all areas of disturbance, and removal of all temporary, structural erosion and sediment control measures, the Contractor will perform a final site inspection.
- Demobilize crew, facilities, equipment, and materials from the site.

## 5 POLLUTION PREVENTION PRACTICES

This section summarizes the prevention practices that will be implemented by the Contractor to control impacted materials, spills, and construction debris from becoming a pollutant source of pollutants in site-related storm water run-off.

### 5.1 Remedial Design Components

Pollution prevention measures will comply with the relevant Specifications and the Design Drawings of the 100% RD Report.

### 5.2 Impacted Material Handling, Transportation, and Treatment/Disposal

This section presents the handling, transportation, and treatment/disposal methods to be implemented for impacted material as part of remedial construction activities.

#### 5.2.1 Soil and Sediment

Soil and sediment will be excavated to the horizontal and vertical limits depicted on the Design Drawings. Excavated soil and sediment consolidated on-site will be covered with a soil cover. Excavated soil and sediment containing PCBs at concentrations greater than or equal to 50 mg/kg will be direct-loaded (when possible, or temporary staged on-site for stabilization) into properly-licensed and permitted vehicles (pursuant to Title 6, Part 364 of the New York Codes, Rules, and Regulations [6 NYCRR Part 364]), and will be transported to appropriate off-site treatment/disposal facilities in accordance with applicable laws and regulations. The sediment will be mixed with a drying agent, as necessary and prior to transport, to meet the requirements of the off-site treatment/disposal facilities. Transport vehicles will be water-tight and/or fully-lined with polyethylene liners (or equivalent) and will be equipped with functioning tailgate locks and non-mesh (solid), waterproof tarpaulins.

Excavated soils/sediment will be dewatered/stabilized by the Contractor as necessary to (at a minimum) pass Paint Filter testing procedures (EPA SW-846 Method 9095) and be deemed satisfactory by the Engineer before leaving the site. The Contractor's means and methods of dewatering/stabilization will conform to the requirements of Specification Section 02 61 05 – Removal and Disposal of Contaminated Material. Those requirements include prohibiting the use of quick lime, lime kiln dust, or other lime-based stabilizing agents containing more than 50% calcium and/or magnesium oxide.

In certain instances, excavated soils/sediment may be stockpiled on a temporary basis within the limits of the excavation areas or at a dedicated material staging area. Temporary stockpiles will be covered at all times (during both working and non-working hours) with minimum 10-mil polyethylene liners when not in use. Liners will be properly anchored to prevent uplift due to wind conditions and will be installed to minimize the ponding of precipitation.

Before leaving the site, transport vehicles will be staged and inspected, and will be cleaned of any visible soil/sediment within a temporary decontamination area (constructed as shown on the Design Drawings), if

## STORM WATER POLLUTION PREVENTION PLAN

necessary. Upon leaving the site, transport vehicles will follow approved haul routes as specified in the Community and Environmental Response Plan (CERP).

### 5.2.2 Construction-Related Water

Construction-related water generated during the dewatering of excavation areas will be collected and conveyed to holding (frac-type) tanks for temporary storage. Holding tanks will be staged on-site within a pre-fabricated containment area to capture any wastewater that may leak or spill from the tanks.

Construction-related water will be treated via a temporary on-site water treatment and discharged to surface water in accordance with a SPDES Permit Equivalent. Otherwise, construction-related water will be transported from the site to an appropriate off-site disposal facility in properly-licensed and permitted tanker trucks (pursuant to 6 NYCRR Part 364).

Before leaving the site, transport vehicles will be staged and inspected, and will be cleaned of any visible soil/sediment within a temporary decontamination area (constructed as shown on the Design Drawings), if necessary. Upon leaving the site, transport vehicles will follow approved haul routes as specified in the CERP.

## 5.3 Spill Prevention, Control, and Response

As required by Specification Section 01 35 29 – Contractor's Health and Safety Plan, the Contractor will prepare a site-specific Health and Safety Plan (HASP) that addresses spill prevention and control, and response to spills and other site emergencies during the remedial construction activities. The HASP will include evacuation procedures for site personnel, directions and a figure showing the route to the local hospital, and a contact list with telephone numbers for local and state emergency responders (e.g., police, ambulance, fire, poison control, etc.).

### 5.3.1 Spill Prevention

The Contractor's spill prevention practices will include, at a minimum, the following:

- Performing regular inspections of construction vehicles, equipment, and portable fuel tanks to check for leaks.
- Performing routine maintenance on construction vehicles and equipment in accordance with the manufacturer's specifications.
- Promptly repairing or replacing damaged or defective construction vehicles and equipment.
- Storing on-site fuel tanks within a secondary containment area or providing alternate secondary containment (e.g., double-walled fuel tanks, containment dikes, etc.).
- Re-fueling vehicles on level ground within a designated area away from steep slopes and storm water run-off conveyance features (e.g., ditches/diversions, storm sewers, etc.).
- Attending to construction vehicles and equipment while re-fueling.
- Turning off internal combustion engines before re-fueling with a flammable liquid.
- Replacing the cap on vehicle fuel tanks before starting the engine.

## STORM WATER POLLUTION PREVENTION PLAN

- Securing/locking fuel pump dispensers when not in use to avoid accidental fuel release.
- Storing construction vehicles and equipment away from site hazards and sensitive resources, to the extent practicable.

### 5.3.2 Spill Control and Response

The Contractor will maintain on-site sufficient fire extinguishers, spill kits, and oil-absorbent pads, rolls, and booms as required to contain spills (should they occur) and prevent the potential migration of pollutants beyond the work area. In the event of a spill, the Contractor will immediately notify Casella and the Engineer and implement the following response measures:

1. **Stop/Isolate Source:** As conditions allow, the Contractor will attempt to stop or isolate the source of the spill by closing valves and/or shutting down affected vehicles or equipment.
2. **Containment:** If the spilled material is floating on a water surface, spill-absorbent pads/booms will be placed across the path of the floating spill. If the spilled material sinks below the water surface, a dam, weir, or other containment method will be used to stop the flow of the spilled material. If the spill occurs on land, a containment unit will be constructed to stop the flow of the spilled material and sorbents will be applied as necessary.
3. **Clean-Up:** Spills in water will be recovered using pumps and sorbents as necessary until the spilled material is recovered and no sheen or other evidence of the spill is observed on the water surface. Spills on land will be recovered using pumps, sorbents, and heavy equipment, as necessary until the spilled material is recovered. Construction vehicles and equipment used in the clean-up, or otherwise affected by the spill will also be cleaned/decontaminated.
4. **Collection, Storage, and Disposal:** Impacted materials, sorbents, and other wastes will be collected and stored in New York State Department of Transportation- (NYSDOT-) approved containers. The containers will be labeled with the waste type and date of accumulation and will be transported off-site for disposal at a permitted facility in accordance with all applicable laws and regulations.
5. **Post-Spill Maintenance:** Following the clean-up of the spill, the Contractor will verify that all impacted materials, vehicles, and equipment have either been transported off-site for disposal, or decontaminated, as appropriate. The vehicle or piece of equipment that may have caused the spill will also be repaired. If the vehicle or piece of equipment cannot be repaired, it will be removed from the site and replaced.

Spill notifications and reporting to the necessary agencies will be coordinated by Casella and/or the Engineer. Appropriate emergency response groups, including the local fire department, NYSDEC, and National Response Center, will be contacted immediately if the spill or material release has impacted soil, groundwater, or surface water, or is beyond the capabilities of on-site personnel to control using the methods described above.

### 5.4 Dust Controls

Dust controls will be used to prevent surface and air movement of dust from disturbed or open-soil areas that may cause off-site damage, health hazards, and traffic safety problems. Dust controls will be



## STORM WATER POLLUTION PREVENTION PLAN

proactively employed by the Contractor in accordance with Specification Section 01 57 05 – Temporary Controls, and may include one or more of the following practices:

- Excavating, loading, handling, and backfill materials in a manner that minimizes the generation of dust.
- Removing soil and debris from temporary access roads and active haul routes.
- Wetting down temporary access roads and active haul routes.
- Hauling excavated materials and clean backfill materials in properly tarped/covered transport vehicles.
- Restricting vehicle speeds on temporary access roads and active haul routes.
- Covering excavations and temporary stockpiles with 10-mil polyethylene liners (anchored appropriately to resist wind forces) before extended work breaks and at the end of each work day.

### 5.5 Good Housekeeping Practices

Good housekeeping practices will be used to reduce the potential for construction materials entering site-related storm water run-off. The Contractor will maintain the site in a neat and orderly condition throughout the remedial construction activities in accordance with Specification Section 01 74 05 – Cleaning. This will include the: 1) routine collection and disposal of trash, rubbish, and sanitary wastes; 2) proper storage of construction materials and equipment at the site; and 3) routine cleaning of public rights-of-way, streets, and sidewalks.

## 6 REFERENCES

NRCS, 2012. Soils information downloaded on November 6, 2014 from NRCS Web Soil Survey 2.0 National Cooperative Soil Survey website: <http://websoilsurvey.nrcs.usda.gov/app>.

NYSDEC, 2005. New York Standards and Specifications for Erosion and Sediment Control. August 2005.

# APPENDIX A

NRCS Soil Map



# Custom Soil Resource Report for **St. Lawrence County, New York**



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

# Contents

---

<b>Preface</b> .....	2
<b>How Soil Surveys Are Made</b> .....	5
<b>Soil Map</b> .....	7
Soil Map.....	8
Legend.....	9
Map Unit Legend.....	10
Map Unit Descriptions.....	10
St. Lawrence County, New York.....	13
Ak—Adjidaumo silty clay.....	13
Bo—Borosaprists and Fluvaquents, frequently flooded.....	14
CvA—Croghan loamy fine sand, 0 to 3 percent slopes.....	16
Dd—Deford loamy fine sand.....	17
Dr—Dorval muck.....	19
KaB—Kalurah fine sandy loam, 3 to 8 percent slopes.....	20
KbB—Kalurah and Pyrities soils, 0 to 8 percent slopes, very stony.....	22
MaA—Malone loam, 0 to 3 percent slopes.....	24
MbB—Malone loam, 0 to 8 percent slopes, very stony.....	25
Mn—Munuscong mucky fine sandy loam.....	26
Ru—Runeberg loam, very stony.....	28
Ue—Udorthents, loamy.....	29
Un—Udorthents, refuse substratum.....	30
<b>References</b> .....	32

# **How Soil Surveys Are Made**

---

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the



## Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

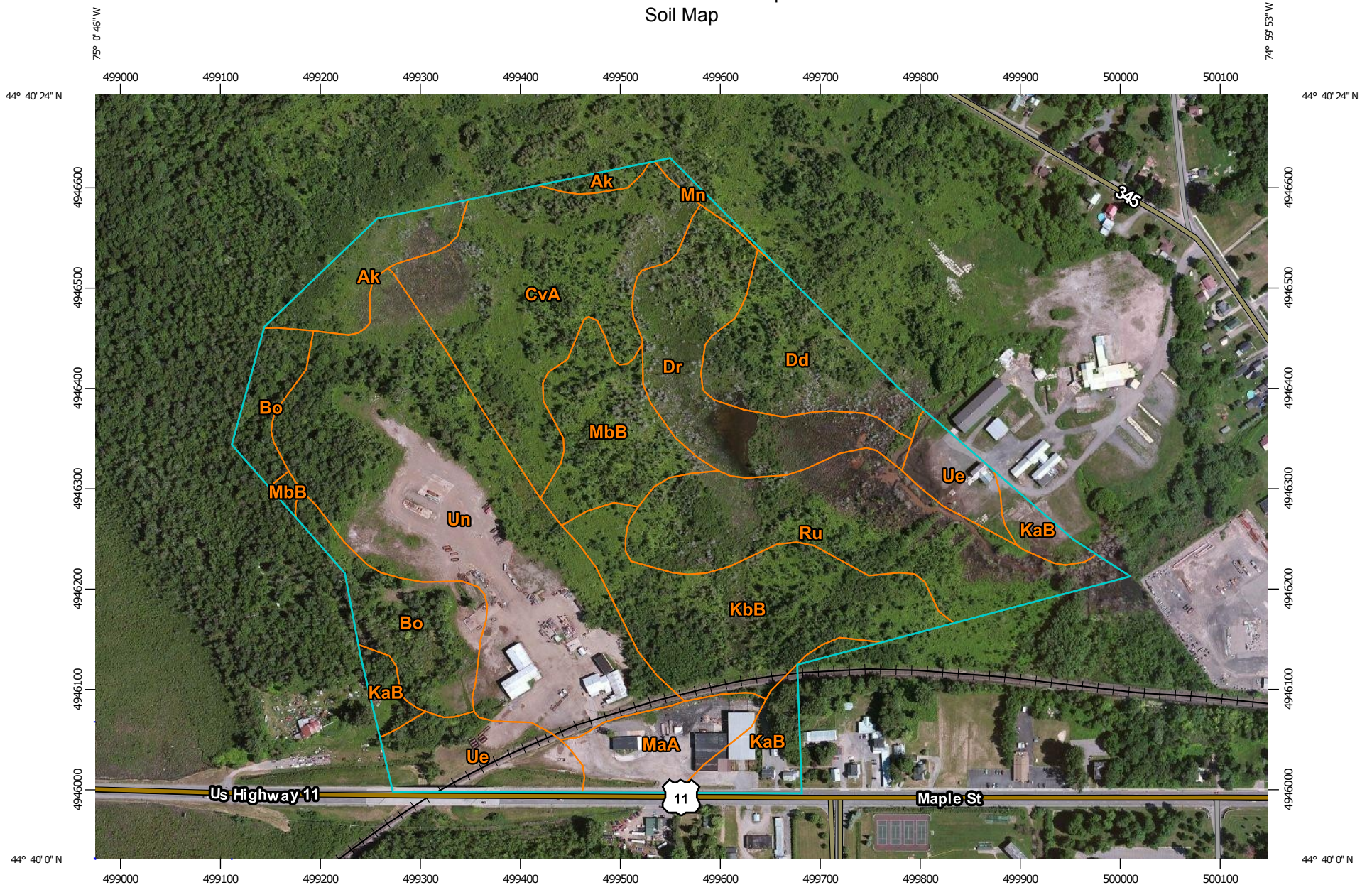
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

---


The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map




### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**





 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. Lawrence County, New York  
 Survey Area Data: Version 13, Sep 16, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 16, 2011—Oct 28, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

St. Lawrence County, New York (NY089)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ak	Adjidaumo silty clay	2.9	3.4%
Bo	Borosaprists and Fluvaquents, frequently flooded	5.6	6.6%
CvA	Croghan loamy fine sand, 0 to 3 percent slopes	11.2	13.2%
Dd	Deford loamy fine sand	4.8	5.7%
Dr	Dorval muck	6.7	7.9%
KaB	Kalurah fine sandy loam, 3 to 8 percent slopes	3.6	4.3%
KbB	Kalurah and Pyrities soils, 0 to 8 percent slopes, very stony	8.7	10.2%
MaA	Malone loam, 0 to 3 percent slopes	3.0	3.6%
MbB	Malone loam, 0 to 8 percent slopes, very stony	4.6	5.4%
Mn	Munuscong mucky fine sandy loam	0.3	0.4%
Ru	Runeberg loam, very stony	9.7	11.3%
Ue	Udorthents, loamy	4.9	5.8%
Un	Udorthents, refuse substratum	19.0	22.3%
<b>Totals for Area of Interest</b>		<b>85.2</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called

noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

## Custom Soil Resource Report

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## St. Lawrence County, New York

### Ak—Adjidaumo silty clay

#### Map Unit Setting

*National map unit symbol:* 9ww1

*Elevation:* 150 to 600 feet

*Mean annual precipitation:* 33 to 40 inches

*Mean annual air temperature:* 41 to 45 degrees F

*Frost-free period:* 100 to 145 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Adjidaumo, silty clay, and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Adjidaumo, Silty Clay

##### Setting

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Clayey and silty glaciomarine or glaciolacustrine deposits

##### Typical profile

*H1 - 0 to 8 inches:* silty clay

*H2 - 8 to 27 inches:* clay

*H3 - 27 to 72 inches:* clay

##### Properties and qualities

*Slope:* 0 to 2 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately high (0.00 to 0.20 in/hr)

*Depth to water table:* About 0 to 6 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 5 percent

*Available water storage in profile:* Moderate (about 8.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* C/D

#### Minor Components

##### Dorval

*Percent of map unit:* 3 percent

*Landform:* Bogs, marshes, swamps



## Custom Soil Resource Report

### **Swanton**

*Percent of map unit: 3 percent*

### **Heuvelton**

*Percent of map unit: 3 percent*

### **Unnamed soils**

*Percent of map unit: 3 percent*

### **Malone**

*Percent of map unit: 2 percent*

### **Hogansburg**

*Percent of map unit: 2 percent*

### **Matoon**

*Percent of map unit: 2 percent*

### **Swanton**

*Percent of map unit: 1 percent*

*Landform: Depressions*

### **Grenville**

*Percent of map unit: 1 percent*

## **Bo—Borosaprists and Fluvaquents, frequently flooded**

### **Map Unit Setting**

*National map unit symbol: 9wwb*

*Elevation: 300 to 1,800 feet*

*Mean annual precipitation: 33 to 40 inches*

*Mean annual air temperature: 41 to 45 degrees F*

*Frost-free period: 100 to 145 days*

*Farmland classification: Not prime farmland*

### **Map Unit Composition**

*Borosaprists, frequently flooded, and similar soils: 50 percent*

*Fluvaquents, frequently flooded, and similar soils: 30 percent*

*Minor components: 20 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Borosaprists, Frequently Flooded**

#### **Setting**

*Landform: Marshes, swamps*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Talf*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

#### **Typical profile**

*H1 - 0 to 30 inches: muck*

*H2 - 30 to 72 inches: sandy loam*

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 0 to 1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.20 to 5.95 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water storage in profile:* Very high (about 16.5 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydrologic Soil Group:* A/D

## Description of Fluvaquents, Frequently Flooded

### Setting

*Landform:* Flood plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Dip  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Alluvium with highly variable texture

### Typical profile

*H1 - 0 to 10 inches:* silt loam  
*H2 - 10 to 72 inches:* very gravelly sand

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to very high (0.06 to 19.98 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* Frequent  
*Frequency of ponding:* Occasional  
*Calcium carbonate, maximum in profile:* 5 percent  
*Available water storage in profile:* Moderate (about 7.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 5w  
*Hydrologic Soil Group:* A/D

## Minor Components

### Udifulvents

*Percent of map unit:* 5 percent

### Adjidaumo

*Percent of map unit:* 5 percent  
*Landform:* Depressions

### Unnamed soils

*Percent of map unit:* 5 percent

**Redwater**

*Percent of map unit: 5 percent*

**CvA—Croghan loamy fine sand, 0 to 3 percent slopes**

**Map Unit Setting**

*National map unit symbol: 9wwq*

*Elevation: 150 to 1,200 feet*

*Mean annual precipitation: 33 to 40 inches*

*Mean annual air temperature: 41 to 45 degrees F*

*Frost-free period: 100 to 145 days*

*Farmland classification: Farmland of statewide importance*

**Map Unit Composition**

*Croghan, loamy fine sand, and similar soils: 80 percent*

*Minor components: 20 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Croghan, Loamy Fine Sand**

**Setting**

*Landform: Outwash plains, deltas, terraces*

*Landform position (two-dimensional): Summit*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Concave*

*Across-slope shape: Convex*

*Parent material: Sandy glaciofluvial or deltaic deposits derived mainly from crystalline rock and/or sandstone*

**Typical profile**

*H1 - 0 to 10 inches: loamy fine sand*

*H2 - 10 to 44 inches: fine sand*

*H3 - 44 to 72 inches: fine sand*

**Properties and qualities**

*Slope: 0 to 3 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Moderately well drained*

*Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)*

*Depth to water table: About 18 to 24 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Available water storage in profile: Low (about 3.2 inches)*

**Interpretive groups**

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 2w*

*Hydrologic Soil Group: A/D*

**Minor Components**

**Unnamed soils**

*Percent of map unit: 4 percent*

**Naumburg**

*Percent of map unit: 3 percent*

**Adams**

*Percent of map unit: 3 percent*

**Fahey**

*Percent of map unit: 2 percent*

**Naumburg**

*Percent of map unit: 2 percent*

*Landform: Depressions*

**Flackville**

*Percent of map unit: 2 percent*

**Searsport**

*Percent of map unit: 2 percent*

*Landform: Swamps, marshes*

**Kalurah**

*Percent of map unit: 1 percent*

**Hogansburg**

*Percent of map unit: 1 percent*

**Dd—Deford loamy fine sand**

**Map Unit Setting**

*National map unit symbol: 9wwv*

*Elevation: 600 to 1,000 feet*

*Mean annual precipitation: 33 to 40 inches*

*Mean annual air temperature: 41 to 45 degrees F*

*Frost-free period: 100 to 145 days*

*Farmland classification: Farmland of statewide importance*

**Map Unit Composition**

*Deford, loamy fine sand, and similar soils: 80 percent*

*Minor components: 20 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Deford, Loamy Fine Sand**

**Setting**

*Landform: Depressions*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Concave*

## Custom Soil Resource Report

*Across-slope shape:* Concave  
*Parent material:* Sandy glaciofluvial deposits

### Typical profile

*Ap - 0 to 8 inches:* loamy fine sand  
*Bg - 8 to 24 inches:* loamy fine sand  
*C - 24 to 72 inches:* fine sand

### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 5 percent  
*Available water storage in profile:* Low (about 3.4 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* A/D

### Minor Components

#### Dorval

*Percent of map unit:* 5 percent  
*Landform:* Bogs, marshes, swamps

#### Runeberg

*Percent of map unit:* 3 percent  
*Landform:* Depressions

#### Mino

*Percent of map unit:* 3 percent

#### Stockholm

*Percent of map unit:* 3 percent

#### Swanton

*Percent of map unit:* 2 percent

#### Swanton

*Percent of map unit:* 2 percent  
*Landform:* Depressions

#### Hogansburg

*Percent of map unit:* 2 percent

## **Dr—Dorval muck**

### **Map Unit Setting**

*National map unit symbol:* 9wx0  
*Elevation:* 200 to 9,000 feet  
*Mean annual precipitation:* 33 to 40 inches  
*Mean annual air temperature:* 41 to 45 degrees F  
*Frost-free period:* 100 to 145 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Dorval, muck, and similar soils:* 75 percent  
*Minor components:* 25 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Dorval, Muck**

#### **Setting**

*Landform:* Marshes, swamps  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Organic material over silty and clayey glaciolacustrine deposits or glaciomarine deposits

#### **Typical profile**

*H1 - 0 to 31 inches:* muck  
*H2 - 31 to 72 inches:* silty clay

#### **Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water storage in profile:* High (about 11.5 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 5w  
*Hydrologic Soil Group:* D

### **Minor Components**

#### **Insula**

*Percent of map unit:* 5 percent

## Custom Soil Resource Report

### **Carbondale**

*Percent of map unit: 5 percent*  
*Landform: Swamps, marshes, bogs*

### **Adjidaumo**

*Percent of map unit: 5 percent*  
*Landform: Depressions*

### **Borosaprists**

*Percent of map unit: 3 percent*  
*Landform: Marshes, swamps*

### **Grenville**

*Percent of map unit: 2 percent*

### **Fluvaquents**

*Percent of map unit: 2 percent*  
*Landform: Flood plains*

### **Unnamed soils**

*Percent of map unit: 2 percent*

### **Pyrities**

*Percent of map unit: 1 percent*

## **KaB—Kalurah fine sandy loam, 3 to 8 percent slopes**

### **Map Unit Setting**

*National map unit symbol: 9wxw*  
*Elevation: 300 to 900 feet*  
*Mean annual precipitation: 33 to 40 inches*  
*Mean annual air temperature: 41 to 45 degrees F*  
*Frost-free period: 100 to 145 days*  
*Farmland classification: All areas are prime farmland*

### **Map Unit Composition**

*Kalurah, fine sandy loam, and similar soils: 80 percent*  
*Minor components: 20 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Kalurah, Fine Sandy Loam**

#### **Setting**

*Landform: Hills, ridges*  
*Landform position (two-dimensional): Summit*  
*Landform position (three-dimensional): Crest*  
*Down-slope shape: Concave*  
*Across-slope shape: Convex*  
*Parent material: Calcareous loamy till derived mainly from limestone, dolomite, and sandstone*

## Custom Soil Resource Report

### Typical profile

*H1 - 0 to 11 inches:* fine sandy loam

*H2 - 11 to 47 inches:* gravelly fine sandy loam

*H3 - 47 to 72 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Moderately well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)

*Depth to water table:* About 18 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 5 percent

*Available water storage in profile:* Moderate (about 7.8 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* C/D

### Minor Components

#### Malone

*Percent of map unit:* 5 percent

#### Pyrities

*Percent of map unit:* 4 percent

#### Nehasne

*Percent of map unit:* 3 percent

#### Summerville

*Percent of map unit:* 2 percent

#### Runeberg

*Percent of map unit:* 2 percent

*Landform:* Depressions

#### Waddington

*Percent of map unit:* 1 percent

#### Unnamed soils, rock outcrop

*Percent of map unit:* 1 percent

#### Insula

*Percent of map unit:* 1 percent

#### Adams

*Percent of map unit:* 1 percent



## **KbB—Kalurah and Pyrities soils, 0 to 8 percent slopes, very stony**

### **Map Unit Setting**

*National map unit symbol:* 9wxx  
*Elevation:* 250 to 1,000 feet  
*Mean annual precipitation:* 33 to 40 inches  
*Mean annual air temperature:* 41 to 45 degrees F  
*Frost-free period:* 100 to 145 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Kalurah, very stony, and similar soils:* 55 percent  
*Pyrities, very stony, and similar soils:* 30 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Kalurah, Very Stony**

#### **Setting**

*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Crest  
*Down-slope shape:* Concave  
*Across-slope shape:* Convex  
*Parent material:* Calcareous loamy till derived mainly from limestone, dolomite, and sandstone

#### **Typical profile**

*H1 - 0 to 11 inches:* fine sandy loam  
*H2 - 11 to 47 inches:* gravelly fine sandy loam  
*H3 - 47 to 72 inches:* gravelly fine sandy loam

#### **Properties and qualities**

*Slope:* 0 to 8 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 18 to 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 5 percent  
*Available water storage in profile:* Moderate (about 7.8 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C/D

## Description of Pyrities, Very Stony

### Setting

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy till with a significant component of limestone

### Typical profile

*H1 - 0 to 8 inches:* fine sandy loam

*H2 - 8 to 40 inches:* fine sandy loam

*H3 - 40 to 72 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 0 to 8 percent

*Percent of area covered with surface fragments:* 1.6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 5 percent

*Available water storage in profile:* Moderate (about 6.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* B

## Minor Components

### Malone

*Percent of map unit:* 5 percent

### Summerville

*Percent of map unit:* 2 percent

### Runeberg

*Percent of map unit:* 2 percent

*Landform:* Depressions

### Nehasne

*Percent of map unit:* 2 percent

### Insula

*Percent of map unit:* 1 percent

### Adams

*Percent of map unit:* 1 percent

### Waddington

*Percent of map unit:* 1 percent

### Unnamed soils

*Percent of map unit:* 1 percent

## MaA—Malone loam, 0 to 3 percent slopes

### Map Unit Setting

*National map unit symbol:* 9wy3  
*Elevation:* 1,800 to 2,200 feet  
*Mean annual precipitation:* 33 to 40 inches  
*Mean annual air temperature:* 41 to 45 degrees F  
*Frost-free period:* 100 to 145 days  
*Farmland classification:* Prime farmland if drained

### Map Unit Composition

*Malone, loam, and similar soils:* 80 percent  
*Minor components:* 20 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Malone, Loam

#### Setting

*Landform:* Till plains, drumlinoid ridges, hills  
*Landform position (two-dimensional):* Footslope, summit  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Loamy dense till derived mainly from limestone, dolomite, sandstone, and gneiss in varying amounts

#### Typical profile

*H1 - 0 to 10 inches:* loam  
*H2 - 10 to 25 inches:* gravelly fine sandy loam  
*C - 25 to 72 inches:* gravelly sandy loam

#### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 10 percent  
*Available water storage in profile:* Moderate (about 6.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* C/D

**Minor Components**

**Runeberg**

*Percent of map unit: 5 percent*  
*Landform: Depressions*

**Ogdensburg**

*Percent of map unit: 5 percent*

**Hogansburg**

*Percent of map unit: 5 percent*

**Hannawa**

*Percent of map unit: 2 percent*  
*Landform: Depressions*

**Kalurah**

*Percent of map unit: 2 percent*

**Unnamed soils**

*Percent of map unit: 1 percent*

**MbB—Malone loam, 0 to 8 percent slopes, very stony**

**Map Unit Setting**

*National map unit symbol: 9wy5*  
*Elevation: 300 to 800 feet*  
*Mean annual precipitation: 33 to 40 inches*  
*Mean annual air temperature: 41 to 45 degrees F*  
*Frost-free period: 100 to 145 days*  
*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Malone, very stony, and similar soils: 80 percent*  
*Minor components: 20 percent*  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Malone, Very Stony**

**Setting**

*Landform: Till plains, drumlinoid ridges, hills*  
*Landform position (two-dimensional): Footslope, summit*  
*Landform position (three-dimensional): Base slope*  
*Down-slope shape: Concave*  
*Across-slope shape: Linear*  
*Parent material: Loamy dense till derived mainly from limestone, dolomite, sandstone, and gneiss in varying amounts*

**Typical profile**

*H1 - 0 to 10 inches: loam*  
*H2 - 10 to 25 inches: gravelly fine sandy loam*  
*C - 25 to 72 inches: gravelly sandy loam*

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 0 to 8 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum in profile:* 10 percent  
*Available water storage in profile:* Moderate (about 6.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* C/D

### Minor Components

#### Hogansburg

*Percent of map unit:* 5 percent

#### Runeberg

*Percent of map unit:* 5 percent  
*Landform:* Depressions

#### Ogdensburg

*Percent of map unit:* 5 percent

#### Kalurah

*Percent of map unit:* 2 percent

#### Hannawa

*Percent of map unit:* 2 percent  
*Landform:* Depressions

#### Unnamed soils

*Percent of map unit:* 1 percent

## Mn—Munuscong mucky fine sandy loam

### Map Unit Setting

*National map unit symbol:* 9wyc  
*Elevation:* 600 to 800 feet  
*Mean annual precipitation:* 33 to 40 inches  
*Mean annual air temperature:* 41 to 45 degrees F  
*Frost-free period:* 100 to 145 days  
*Farmland classification:* Not prime farmland

### Map Unit Composition

*Munuscong, mucky fine sandy loam, and similar soils:* 80 percent

## Custom Soil Resource Report

*Minor components: 20 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Munuscong, Mucky Fine Sandy Loam**

#### **Setting**

*Landform: Depressions*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

*Parent material: Loamy glaciofluvial deposits over calcareous, silty and clayey glaciolacustrine or glaciomarine deposits*

#### **Typical profile**

*H1 - 0 to 8 inches: mucky fine sandy loam*

*H2 - 8 to 26 inches: fine sandy loam*

*H3 - 26 to 98 inches: silty clay*

#### **Properties and qualities**

*Slope: 0 to 2 percent*

*Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification*

*Natural drainage class: Very poorly drained*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)*

*Depth to water table: About 0 inches*

*Frequency of flooding: None*

*Frequency of ponding: Frequent*

*Calcium carbonate, maximum in profile: 10 percent*

*Available water storage in profile: Low (about 3.8 inches)*

#### **Interpretive groups**

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 5w*

*Hydrologic Soil Group: C/D*

### **Minor Components**

#### **Mino**

*Percent of map unit: 4 percent*

#### **Swanton**

*Percent of map unit: 3 percent*

#### **Adjidaumo**

*Percent of map unit: 3 percent*

*Landform: Depressions*

#### **Naumburg**

*Percent of map unit: 2 percent*

#### **Elmwood**

*Percent of map unit: 2 percent*

#### **Pyrities**

*Percent of map unit: 2 percent*

#### **Searsport**

*Percent of map unit: 2 percent*

## Custom Soil Resource Report

*Landform:* Marshes, swamps

### **Swanton**

*Percent of map unit:* 1 percent

*Landform:* Depressions

### **Naumburg**

*Percent of map unit:* 1 percent

*Landform:* Depressions

## **Ru—Runeberg loam, very stony**

### **Map Unit Setting**

*National map unit symbol:* 9wzj

*Elevation:* 200 to 800 feet

*Mean annual precipitation:* 33 to 40 inches

*Mean annual air temperature:* 41 to 45 degrees F

*Frost-free period:* 100 to 145 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Runeberg, loam, very stony, and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Runeberg, Loam, Very Stony**

#### **Setting**

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Calcareous loamy till

#### **Typical profile**

*H1 - 0 to 10 inches:* loam

*H2 - 10 to 24 inches:* sandy loam

*H3 - 24 to 72 inches:* sandy loam

#### **Properties and qualities**

*Slope:* 0 to 2 percent

*Percent of area covered with surface fragments:* 1.6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Poorly drained

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.57 in/hr)

*Depth to water table:* About 6 to 12 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 10 percent

## Custom Soil Resource Report

*Available water storage in profile:* Moderate (about 7.5 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* C/D

### **Minor Components**

#### **Malone**

*Percent of map unit:* 5 percent

#### **Dorval**

*Percent of map unit:* 3 percent

*Landform:* Marshes, bogs, swamps

#### **Adjidaumo**

*Percent of map unit:* 3 percent

*Landform:* Depressions

#### **Kalurah**

*Percent of map unit:* 2 percent

#### **Unnamed soils**

*Percent of map unit:* 2 percent

#### **Wegatchie**

*Percent of map unit:* 2 percent

*Landform:* Depressions

#### **Pyrities**

*Percent of map unit:* 1 percent

#### **Deford**

*Percent of map unit:* 1 percent

*Landform:* Depressions

#### **Naumburg**

*Percent of map unit:* 1 percent

*Landform:* Depressions

## **Ue—Udorthents, loamy**

### **Map Unit Setting**

*National map unit symbol:* 9x03

*Mean annual precipitation:* 33 to 40 inches

*Mean annual air temperature:* 41 to 45 degrees F

*Frost-free period:* 100 to 145 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Udorthents, loamy, and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*



**Description of Udorthents, Loamy**

**Typical profile**

*H1 - 0 to 4 inches: loam*  
*H2 - 4 to 72 inches: channery loam*

**Properties and qualities**

*Slope: 0 to 25 percent*  
*Depth to restrictive feature: More than 80 inches*  
*Natural drainage class: Well drained*  
*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)*  
*Depth to water table: About 24 to 72 inches*  
*Frequency of flooding: None*  
*Frequency of ponding: None*  
*Calcium carbonate, maximum in profile: 10 percent*  
*Available water storage in profile: Low (about 5.5 inches)*

**Interpretive groups**

*Land capability classification (irrigated): None specified*  
*Land capability classification (nonirrigated): 6s*  
*Hydrologic Soil Group: C*

**Minor Components**

**Hogansburg**

*Percent of map unit: 4 percent*

**Udorthents, clayey**

*Percent of map unit: 4 percent*

**Udipsamments**

*Percent of map unit: 3 percent*

**Muskellunge**

*Percent of map unit: 3 percent*

**Grenville**

*Percent of map unit: 3 percent*

**Swanton**

*Percent of map unit: 2 percent*

**Swanton**

*Percent of map unit: 1 percent*  
*Landform: Depressions*

**Un—Udorthents, refuse substratum**

**Map Unit Setting**

*National map unit symbol: 9x07*  
*Mean annual precipitation: 33 to 40 inches*  
*Mean annual air temperature: 41 to 45 degrees F*

## Custom Soil Resource Report

*Frost-free period:* 100 to 145 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Udorthents, refuse substratum, and similar soils:* 80 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Udorthents, Refuse Substratum

#### Typical profile

*H1 - 0 to 6 inches:* loam

*H2 - 6 to 72 inches:* variable

#### Properties and qualities

*Slope:* 0 to 5 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to very high  
(0.00 to 19.98 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum in profile:* 10 percent

*Available water storage in profile:* Very low (about 0.5 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* C

### Minor Components

#### Grenville

*Percent of map unit:* 5 percent

#### Pyrities

*Percent of map unit:* 4 percent

#### Adams

*Percent of map unit:* 4 percent

#### Muskellunge

*Percent of map unit:* 2 percent

#### Unnamed soils

*Percent of map unit:* 2 percent

#### Swanton

*Percent of map unit:* 2 percent

#### Swanton

*Percent of map unit:* 1 percent

*Landform:* Depressions

# References

---

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

# APPENDIX F


## Verification Sampling Plan



# VERIFICATION SAMPLING PLAN

Waste-Stream, Inc. Site  
Potsdam, New York  
Site No. 6-45-022

August 2018

A large orange geometric graphic consisting of a triangle and a rectangle. The triangle is on the right side, pointing upwards, and the rectangle is on the left side, pointing downwards. They meet at a horizontal line that spans the width of the page. A thin white diagonal line runs from the bottom-left corner of the triangle to the top-right corner.

## VERIFICATION SAMPLING PLAN

Prepared for:  
Waste-Stream, Inc.

Prepared by:  
Arcadis of New York, Inc.  
One Lincoln Center  
110 West Fayette Street  
Suite 300  
Syracuse  
New York 13202  
Tel 315 446 9120  
Fax 315 449 0017

Our Ref.:  
B0031006.0005 #10

Date:  
August 2018

*This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law. Any dissemination, distribution or copying of this document is strictly prohibited.*

## CONTENTS

1	INTRODUCTION.....	1
1.1	Background Information.....	1
1.2	Summary of Remedial Activities .....	2
2	VERIFICATION SAMPLING .....	3
2.1	Soil Verification Sampling .....	3
2.1.1	Soil Sample Layout and Frequency .....	3
2.1.2	Soil Sample Analysis and Cleanup Criteria.....	3
2.2	Sediment Verification Sampling.....	4
2.2.1	Sediment Sample Layout and Frequency .....	5
2.2.2	Sediment Sample Analysis and Cleanup Criteria .....	5
3	SAMPLE COLLECTION METHODOLOGY .....	7
3.1	Sample Collection Procedures .....	7
3.2	Equipment Decontamination Procedures .....	7
3.3	Packing, Handling, and Shipping Procedures .....	8
4	LABORATORY REQUIREMENTS .....	9
4.1	Parameter Requirements.....	9
4.2	Quality Control Frequencies .....	10
4.3	Reporting Requirements.....	11
5	REFERENCES.....	12

## TABLES

Table 1. Verification Soil Sampling Summary

Table 2. Verification Sediment Sampling Summary

Table 3. Soil Cleanup Objectives

Table 4. Sediment Cleanup Objectives



## VERIFICATION SAMPLING PLAN

### FIGURES

Figure 1. Verification Soil Sampling Locations (North)

Figure 2. Verification Soil Sampling Locations (South)

Figure 3. Verification NDA Sediment Sampling Locations

Figure 4. Verification Swale and SDA Sediment Sampling Locations

## 1 INTRODUCTION

This *Verification Sampling Plan* (VSP) has been prepared to support the implementation of remedial activities to address impacted soil and sediment at the Waste-Stream, Inc. (WSI) Site (the site) located in Potsdam, New York (Site No. 6-45-022). Details related to the remedial activities are presented in the Final (100%) Remedial Design (100% RD Report).

This VSP contains field procedures and sample collection methods to be used to confirm that the excavations have achieved the remedial objectives. This VSP has been developed in general accordance with the Self-Implementing Cleanup and Disposal Notification (the Notification) dated February 19, 2018 (Arcadis 2018) and subsequent correspondence leading to United States Environmental Protection Agency (USEPA) approval of the Notification.

Detailed information describing the site location, operational history, and previously completed investigations and associated results are presented in the 100% RD Report. Summaries of relevant background information and the proposed remedial activities are presented below, followed by the verification sampling procedures and collection methodology.

### 1.1 Background Information

The WSI site consists of several parcels that have historically been referred to as the on-site and off-site areas for the purposes of this project. The on-site area consists of the property formally known as the WSI scrapyard property. The property includes upland areas and the wetlands located in the southern portion of the property (referred to as Southern Drainage Areas SDA-2 and SDA-3). The off-site area consists of an undeveloped property to the east of the on-site area (comprised of upland areas, the wetlands referred to as the North Drainage Area [NDA]) and a drainage channel that conveys storm water from the on-site area to the NDA. The off-site area also includes a CSX Transportation, Inc. property to the south of the scrapyard property that includes SDA-1.

The former WSI scrapyard property is the location of a metal recycling and scrapyard business that has operated since approximately 1957. Site activities reportedly included tin press operations, metal shearing, car crushing, and scrap metal processing. The facility reportedly processed electrical transformers that contained polychlorinated biphenyl- (PCB-) containing dielectric fluids (i.e., mineral oil). The transformers were reportedly drained for subsequent recycling/wire recovery. Throughout the history of site operations, several aboveground and underground storage tanks (ASTs and USTs, respectively) have been in service at the facility.

Based on the results of the completed investigations, PCBs are the primary constituent of concern (COC) in surface and subsurface soil and sediment at the site. Additional COCs include volatile organic compounds (VOCs) (in groundwater), semi-volatile organic compounds (SVOCs) (primarily polynuclear aromatic hydrocarbons [PAHs]) and inorganic constituents (copper, lead, and mercury).

## 1.2 Summary of Remedial Activities

As presented in the 100% RD Report, and in accordance with the New York State Department of Environmental Conservation (NYSDEC) June 2011 Record of Decision (ROD) (NYSDEC 2011), remedial activities will generally include the following:

- Excavating soil from on-site locations containing PCBs at concentrations greater than or equal to 50 milligrams per kilogram (mg/kg).
- Excavating soil from off-site areas containing PCBs at concentrations greater than 1 mg/kg, as well as metals (copper, lead, and mercury which were identified as constituents of concern in the ROD) and/or SVOCs at concentrations greater than the lower of the ecological resource or residential use soil cleanup objectives (SCOs).
- Excavating sediment from the SDAs, NDA, and drainage channel containing PCBs at concentrations greater than 1 mg/kg.
- Transporting material containing PCBs at concentrations greater than or equal to 50 mg/kg off-site for disposal.
- Consolidating material containing PCBs at concentrations less than 50 mg/kg and/or VOCs, SVOCs or metals on-site.
- Placing a soil cover over consolidated materials containing PCBs and/or VOCs, SVOCs or metals at concentrations above criteria as outlined in this VSP.

## 2 VERIFICATION SAMPLING

Verification sampling will be completed at soil and sediment removal area horizontal and vertical limits to confirm that the requirements of the NYSDEC ROD have been achieved. Verification samples will be collected by the Engineer, with assistance from the Contractor. The verification sampling approach for each of these areas is described in the following sections.

### 2.1 Soil Verification Sampling

Soil verification sampling will be completed as described in the following subsections.

#### 2.1.1 Soil Sample Layout and Frequency

The number of sidewall and bottom samples will (at minimum) meet the requirements of NYSDEC's DER-Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10). Below is a summary of the verification sampling program to define the horizontal and vertical soil excavation limits:

- **Horizontal Limits:** A combination of post-excavation and pre-excavation samples will be used to confirm the horizontal limits of each soil removal area meet soil cleanup objectives, with a minimum of one half of the required number of horizontal samples collected post-excavation from the side walls at each removal area. Sidewall samples will be at a frequency of one sample for approximately every 30 linear feet. Consistent with DER-10, post-excavation sidewall samples will be collected from the bottom of the sidewall.
- **Vertical Limits:** The vertical extent of excavation will be confirmed by post-excavation samples collected from the bottom of the excavation. Bottom samples will be collected at a frequency of one sample for every approximately 625 square feet (25' x 25' grid spacing) of excavation bottom.

Proposed verification soil sampling locations are shown on attached Figures 1 and 2 and a soil sampling summary is presented as Table 1.

#### 2.1.2 Soil Sample Analysis and Cleanup Criteria

Soil verification sampling is summarized in Table 1 and Table 3. Verification soil sample analyses and cleanup criteria comparison are as follows:

- **At on-site removal areas:**
  - Each verification soil sample will be analyzed for PCBs. Analytical results will be compared to the 50 mg/kg on-site soil removal criteria.
  - Verification soil samples will also be analyzed for VOCs in removal areas where VOCs were detected in Remedial Investigation samples at concentrations greater than NYSDEC Part 375 Protection of Groundwater SCOs.
- **At off-site removal areas:**

## VERIFICATION SAMPLING PLAN

- Verification soil samples will only be analyzed for the COCs (i.e., PCBs, inorganics, SVOCs) that are the basis for the soil excavation at the given area. Analytical results will be compared to the 1 mg/kg PCB off-site soil removal criteria or the lower of the ecological resource or residential use SCOs for inorganics and/or SVOCs (as applicable).
- Verification soil samples will also be analyzed for VOCs in removal areas where VOCs were detected in Remedial Investigation samples at concentrations greater than NYSDEC Part 375 Protection of Groundwater SCOs.

If verification sample analytical results indicate that soil cleanup criteria have not been achieved, additional soil excavation will be completed as follows:

- For excavation bottoms, the approximately 625 square feet (or less, depending on removal area size and number of samples) associated with the sample containing the exceedance will be excavated an additional 6-inches to 1 foot, or as directed by the Engineer. Following soil removal, an additional excavation bottom sample will be collected. This process will be repeated until the soil cleanup criteria have been achieved.
- For excavation sidewalls:
  - If one sample is collected per sidewall (i.e., the individual sidewall length is less than 30 feet), the entire excavation will be extended by up to 10 feet (or as directed by the Engineer) at the given sidewall or extended to the next soil sampling location where previously collected samples meet the cleanup criteria. Following soil removal, an additional excavation sidewall sample will be collected unless the excavation is advanced to a previous sample location (e.g., an RI, PDI or SI sampling location) that meets the cleanup criteria. This process will be repeated until the soil cleanup criteria have been achieved.
  - If multiple samples are collected per sidewall (i.e., the individual sidewall length is greater than 30 feet), the approximately 30 feet of sidewall associated with the sample containing the exceedance will be extended by up to 10 feet (or as directed by the Engineer) or extended to the next soil sampling location where previously collected samples meet the cleanup criteria (whichever is closer). Following soil removal, an additional excavation sidewall sample will be collected unless the excavation is advanced to a previous sample location that meets the cleanup criteria. This process will be repeated until the soil cleanup criteria have been achieved.
  - If the extended horizontal removal limits expand the excavation bottom by more than 625 square feet, an additional excavation bottom sample will be collected from the extended areas (for each additional 625 square feet), as described above.

Soil excavation area 1-29 extends into the CSX right-of-way along the southern portion of the scrapyard property. If initial verification sample analytical results indicate that additional excavation is required, removal activities will only continue in manner such that the excavation does not occur within the railroad live load zone of influence. If additional excavation is not feasible, the collected verification samples will serve as documentation of the remaining impacts (i.e., documentation samples).

## 2.2 Sediment Verification Sampling

Sediment verification sampling will be completed as described in the following subsections.

## VERIFICATION SAMPLING PLAN

### 2.2.1 Sediment Sample Layout and Frequency

Sediment removal areas generally consist of the following:

- Southern drainage areas SDA-1, SDA-2 and SDA-3;
- The channel that conveys water from the scrapyard toward the east to the NDA; and
- The NDA

Southern drainage areas SDA-1 and SDA-2 and the channel are smaller (i.e. in perimeter and area), while SDA-3 and the NDA have larger perimeters and areas. The number of proposed verification sediment sidewall and bottom samples for SDA-1 and SDA-2 is consistent with DER-10. A reduced sampling frequency is proposed for SDA-3 and the NDA consistent with sample frequencies used on other USEPA/NYSDEC-led sites and is consistent with the frequency discussed with the USEPA. Below is a summary of the verification sampling program to define the horizontal and vertical excavation limits for the sediment areas:

- SDA-1, SDA-2 and the channel extending from the former scrapyard down to the NDA:
  - Horizontal Limits: A combination of post-excavation and pre-excavation samples will be used to confirm the horizontal limits of each sediment removal area to meet the cleanup objectives. A minimum of one half of the required number of samples will be collected post-excavation from the side walls in each sediment removal area. Sidewall samples will be at a frequency of 1 sample for approximately every 30 linear feet. Consistent with DER-10, post-excavation sidewall samples will be collected from the bottom of the sidewall.
  - Vertical Limits: The vertical extent of excavation will be confirmed by post-excavation samples collected from the bottom of the excavation. Bottom samples will be collected at a frequency of one sample for every approximately 625 square feet (25' x 25' grid spacing) of excavation bottom.
- SDA-3 and the NDA:
  - Horizontal Limits: A combination of post-excavation and pre-excavation samples will be used to confirm the horizontal limits of each sediment removal area to meet the cleanup objectives. A minimum of one half of the samples collected post-excavation from the side walls in each sediment removal area. Sidewall samples will be at a frequency of 1 sample every approximately 50 linear feet. Consistent with DER-10, post-excavation sidewall samples will be collected from the bottom of the sidewall.
  - Vertical Limits: The vertical extent of excavation will be confirmed by post-excavation samples collected from the bottom of the excavation. Bottom samples will be collected at a frequency of one sample from every approximately 2,500 square feet (50' x 50' grid spacing) of excavation bottom.

Proposed verification soil sampling locations are shown on attached Figures 3 and 4 and a sediment sampling summary is presented as Table 2.

### 2.2.2 Sediment Sample Analysis and Cleanup Criteria

Sediment verification sampling is summarized in Table 2 and Table 4. As indicated in the 100% RD Report, SVOCs or inorganics concentrations exceeding sediment screening values were collocated with

## VERIFICATION SAMPLING PLAN

sampling locations containing elevated concentrations of PCBs. Therefore, sediment verification samples will be analyzed for PCBs only. If sediment verification sample analytical results indicate that sediment cleanup criteria have not been achieved (i.e., sediment contains PCBs at concentrations greater than 1 mg/kg), additional sediment excavation will be completed as follows:

- For excavation bottoms, the approximately 625 (or 2,500) square feet (or less, depending on removal area size and number of samples) associated with the sample containing the exceedance will be excavated an additional 1 foot. Following sediment removal, an additional excavation bottom sample will be collected. This process will be repeated until the sediment cleanup criteria have been achieved.
- For excavation sidewalls:
  - If one sample is collected per sidewall (i.e., the individual sidewall length is less than 30 [or 50] feet), the entire excavation will be extended by 10 feet at the given sidewall or extended to the next sediment sampling location where previously collected samples meet the cleanup criteria (whichever is closer). Following sediment removal, an additional excavation sidewall sample will be collected. This process will be repeated until the sediment cleanup criteria has been achieved.
  - If multiple samples are collected per sidewall (i.e., the individual sidewall length is greater than 30 [or 50] feet), the approximately 30 (or 50) feet of sidewall associated with the sample containing the exceedance will be extended by 10 feet or extended to the next sediment sampling location where previously collected samples meet the cleanup criteria (whichever is closer). Following sediment removal, an additional excavation sidewall sample will be collected. This process will be repeated until the sediment cleanup criteria has been achieved.
  - If the extended horizontal removal limits expand the excavation bottom by more than 625 (or 2,500) square feet, an additional excavation bottom sample will be collected from the extended areas (for each additional 625 [or 2,500] square feet), as described above.

Note that sediment excavation area 2-26 is located within the CSX right-of-way along the southern portion of the scrapyard property. Similar to soil verification sampling, if initial sediment verification sample analytical results indicate that additional excavation is required, removal activities will only continue in manner such that the excavation does not occur within the railroad live load zone of influence. If additional excavation is not feasible, the collected verification samples will serve as documentation of the remaining impacts (i.e., documentation samples).

### 3 SAMPLE COLLECTION METHODOLOGY

Procedures for verification sample collection and analysis are presented in the following sections.

#### 3.1 Sample Collection Procedures

Verification samples will be collected following the procedures described below:

1. Don personal protective equipment (PPE), as required by the Health and Safety Plan (HASP).
2. Identify sample locations and note locations in field notebook.
3. For excavation areas that are less than 4 feet in depth and are determined to be safe for entry by a competent person, verification samples will be collected directly by using a dedicated or pre-cleaned stainless-steel sampling scoop.
4. For excavation areas that cannot be entered (greater than 4 feet in depth or based on the judgement of a competent person), use an excavator bucket to collect verification samples. Collect a soil sample from the excavator bucket using a dedicated or pre-cleaned stainless-steel scoop. Collect the soil sample from the center of the bucket and do not allow the sample to contact the surface of the excavator.
5. Screen the soil with a PID. Record PID reading in field book. Visually characterize the soil for presence of stains, odors, or other characteristics that could indicate that the soil is impacted.
6. Obtain one discrete sample and place it into an appropriate sample container(s) provided by the analytical laboratory.
7. Fill out sample labels and affix the labels on the containers. Label sample labels with the following information: project number and site; unique sample identification; analysis required (e.g., total PCBs); date and time sampled; sample type (grab); and preservative (if applicable). Secure the label with clear tape and label the sample bottle caps with the sample ID.
8. Place the sample containers on ice in a transportation cooler.
9. Discard gloves and decontaminate the stainless-steel scoop (in accordance with Section 3.2 below).
10. Handle, pack, and ship the samples with appropriate chain-of-custody, as described below.

#### 3.2 Equipment Decontamination Procedures

Prior to every sample collection, all non-dedicated sampling equipment (if used) will be washed with potable water and a detergent (such as Alconox). The sampling equipment will then be rinsed with potable water, followed by a rinse step using 10% hexane, and finally a distilled water rinse. Decontamination may take place at the sampling location as long as all liquids are contained in pails, buckets, etc. Between rinses, equipment will be placed on polyethylene sheets or aluminum foil, if necessary. At no time will washed equipment be placed directly on the ground. Equipment will either be used immediately or wrapped in plastic or aluminum foil for storage or transportation from the designated decontamination area to the sampling location.

Equipment decontamination rinsate (if used) will be containerized for future off-site disposal. Decontamination fluids containing Alconox and hexane (if used) will not be discharged to the on-site waste water treatment system.



### 3.3 Packing, Handling, and Shipping Procedures

Sample packaging and shipment procedures are designed so that the samples will arrive at the laboratory, with the chain-of-custody, intact. The filled, labeled, and sealed containers will be placed in a cooler on ice and carefully packed to eliminate the possibility of container breakage. Samples will be packaged following the procedures outlined below:

1. Securely affix the sample label to the container with clear packing tape.
2. Check the cap on the sample container to confirm that it is properly sealed.
3. Wrap the sample container cap with clear packing tape to prevent the label from becoming loose.
4. Complete the chain-of-custody form with the required sampling information and confirm that the recorded information matches the sample labels. NOTE: If the designated sampler relinquishes the samples to other sampling or field personnel for packing or other purposes, the sampler will complete the chain-of-custody prior to this transfer. The appropriate personnel will sign and date the chain-of-custody form to document the sample custody transfer.
5. Wrap glass sample containers in bubble wrap or other cushioning material.
6. Place 1 to 2 inches of cushioning material at the bottom of the cooler.
7. Place the sealed sample containers into the cooler.
8. Place ice in plastic bags, seal the bags, and place the bags loosely in the cooler.
9. Fill the remaining space in the cooler with cushioning material.
10. Place chain-of-custody forms in a plastic bag and seal. Tape the forms to the inside of the cooler lid.
11. Close the lid of the cooler and secure with duct tape.
12. Wrap strapping tape (or equivalent) around both ends of the cooler at least twice.
13. Mark the cooler on the outside with the shipping address and return address, affix "Fragile" labels, and draw (or affix) arrows indicating "this side up." Cover the labels with clear plastic tape. If the samples are being delivered directly to the laboratory or will be picked up by the lab's courier service, this step is eliminated.
14. Place a signed custody seal over the sample cooler lid.

Samples will be packaged by the field personnel and transported as low-concentration environmental samples. The samples will be hand delivered or delivered by an express carrier within 48 hours of the time of collection. Shipments will be accompanied by the chain-of-custody form identifying the contents. The original form will accompany the shipment; copies will be retained by the sampler for the sampling office records. If the samples are sent by common carrier, a bill of lading will be used. Receipts or bills of lading will be retained as part of the permanent project documentation. Commercial carriers are not required to sign off on the chain-of-custody form as long as the forms are sealed inside the sample cooler, and the custody seals remain intact.

## 4 LABORATORY REQUIREMENTS

Laboratory analytical requirements presented in the following subsections include a general summary of requirements, specifics related to each sample medium that may be analyzed, and details of the analytical methods to be used for this project.

### 4.1 Parameter Requirements

The analytical methods to be used during the investigation activities will be USEPA SW-846, USEPA Methods for Chemical Analysis of Water and Waste and Standard Methods for Water and Wastewater methods with NYSDEC ASP Revision 2005, QA/QC requirements, and Category B reporting deliverables. Parameters to be analyzed under each of the constituents described above, with the laboratory quantitation limits, are presented in Table 3.

## VERIFICATION SAMPLING PLAN

**Table 3. Parameters, Methods, and Reporting Limits**

Analyte	CAS Number	Laboratory MDL	Laboratory RL
<b>PCBs (SW-846 Method 8082) (ug/kg)</b>			
Arcolor-1016	12674-11-2	15	33
Arcolor-1221	11104-28-2	20	33
Arcolor-1232	11141-16-5	16	33
Arcolor-1242	53469-21-9	16	33
Arcolor-1248	12672-29-6	15	33
Arcolor-1254	11097-69-1	24	33
Arcolor-1260	11096-82-5	17	33
Total Arcolors	--	24	33
<b>Inorganics (SW-846 Method 6010 [copper and lead], 7140 [mercury]) (mg/kg)</b>			
Copper	7440-50-8	0.56	2.5
Lead	7439-92-1	0.17	1.0
Mercury	7439-97-6	0.0097	0.033
<b>VOCs (SW-846 Method 8260) (ug/kg)</b>			
Benzene	71-43-2	0.25	0.5
Toluene	108-88-3	0.24	5
Ethylbenzene	100-41-4	0.18	2
Xylenes	1330-20-7	0.2	2
<b>SVOCs (8270) (ug/kg)</b>			
Benzo(a)anthracene	56-55-3	13	100
Benzo(a)pyrene	50-32-8	11	100
Benzo(b)fluoranthene	205-99-2	13	100
Benzo(k)fluoranthene	207-08-9	15	100
Chrysene	218-01-9	12	100
Dibenzo(a,h)anthracene	53-70-3	12	100
Indeno(1,2,3-cd)pyrene	193-39-5	11	100

**Notes:**

1. The MDL and RL are updated periodically by the laboratory (to be selected) and the current limits at the time of analysis will be reported.
2. Concentrations detected less than the RL but greater than the MDL must be reported with the appropriate qualifier.
3. The target reporting limits are based on wet weight. Actual reporting limits will vary based on sample weight and moisture content.

## 4.2 Quality Control Frequencies

Samples will be organized into sample delivery groups (SDGs) by the laboratory. An SDG may contain up to 20 field samples (field duplicates, trip blanks, and rinse blanks are considered field samples for the purposes of SDG assignment). All field samples assigned to a single SDG shall be received by the laboratory over a maximum of 7 calendar days, and must be processed through the laboratory (preparation, analysis, and reporting) as a group. Every SDG must include a minimum of one site-specific matrix/matrix spike duplicate (MS/MSD) pair, which shall be received by the laboratory at the start of the SDG assignment. MS/MSD pairs will be analyzed at a 5% frequency.

## VERIFICATION SAMPLING PLAN

Field duplicates will be analyzed at a 5% frequency (every 20 samples) for the chemical constituents. If non-disposable sampling equipment is used, rinse blanks will be prepared and submitted for analysis at a frequency of 1 per day (when sample equipment cleaning occurs) or once for every 20 samples collected, whichever is less.

### **4.3 Reporting Requirements**

Analytical results will be provided by the laboratory in a digital format. As indicated above, the data for all analyses will include all supporting documentation necessary to provide a Category B package. The documentation will include, but is not limited to, all raw data required to recalculate any result, including: printouts; chromatograms; and quantitation reports. The report also will include standards used in calibration and calculation of analytical results; sample extraction, digestion, and other preparation logs; standard preparation logs; instrument run logs; and moisture content calculations.

## 5 REFERENCES

Arcadis, 2018. Self-Implementing Disposal Notification. Prepared for the WSI Group, Potsdam, New York. February 5, 2018.

NYSDEC, 2010. DER-10, Technical Guidance for Site Investigation and Remediation, May 2010.

NYSDEC, 2011. Record of Decision, WSI site, Potsdam, St. Lawrence County, Site Number 6-45-022, June 2011.

# TABLES



**Table 1**  
**Soil Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis				
					PCBs	VOCs <sup>6</sup>	SVOCs <sup>7</sup>	Metals <sup>8</sup>	
<b>Area 1-1</b>									
SB-340 (1-3') PCBs - 127 ppm	3	Sidewall	1-1-SW1	2.5-3	X				
			1-1-SW2		X				
			1-1-SW3		X				
			1-1-SW4		X				
		Bottom	SB-501	1-3	SB-503	X			
			SB-506		X				
			1-1-EB1		3-3.5	X			
			1-1-EB2			X			
			1-1-EB3			X			
1-1-EB4	X								
<b>Area 1-2</b>									
SB-225 (0-1') PCBs - 102 ppm  SB-229 (0-1') PCBs - 55 ppm	1	Sidewall	1-2-SW1	0-0.5	X				
			1-2-SW2		X				
			1-2-SW3		x				
			1-2-SW4		x				
			1-2-SW5		x				
			SB-232	0-0.5	X				
		Bottom	SB-524	0-1	SB-525	X			
			1-2-EB1		1-1.5	X			
			1-2-EB2	X					
			1-2-EB3	X					
			1-2-EB4	X					
1-2-EB5	X								
1-2-EB6	X								
<b>Area 1-3</b>									
SB-221 (1-3') PCBs - 140 ppm	3	Sidewall	1-3-SW1	2.5-3	X				
			1-3-SW2		X				
			SB-507	1-3	X				
			SB-508		X				
			SB-509		X				
		SB-510	X						
Bottom	1-3-EB1	3-3.5	X						
<b>Area 1-4</b>									
SB-222 (0-2') PCBs - 71.6 ppm	2	Sidewall	1-4-SW1	1.5-2	X				
			1-4-SW2		X				
			1-4-SW3		X				
			1-4-SW4		X				
			SB-514	1-3	X				
		SB-515	X						
		Bottom	1-4-EB1	2-2.5	X				
			1-4-EB2		X				
1-4-EB3	X								
<b>Area 1-5</b>									
TP-207 (1-3') PCBs - 156 ppm  TP-207 (3-5') PCBs - 77 ppm	5	Sidewall	1-5-SW1	4.5-5	X				
			1-5-SW2		X				
			1-5-SW3		X				
			SB-539	1-3	X				
			SB-543	3-5	X				
				1-3	X				
		Bottom	3-5	X					
			1-5-EB1	5-5.5	X				
1-5-EB2	X								

**Table 1**  
**Soil Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis			
					PCBs	VOCs <sup>6</sup>	SVOCs <sup>7</sup>	Metals <sup>8</sup>
<b>Area 1-6</b>								
SB-239 (0-1') PCBs - 99 ppm	1	Sidewall	1-6-SW1	0-0.5	X			
			1-6-SW2		X			
			1-6-SW3		X			
			1-6-SW4		X			
			S-131	0-0.5	X			
			SS-213		X			
		SB-236	0-1	X				
		SB-526	0-1	X				
		Bottom	1-6-EB1	1-1.5	X			
			1-6-EB2		X			
1-6-EB3	X							
1-6-EB4	X							
<b>Area 1-7</b>								
SB-253 (1-3') PCBs - 4,400 ppm	3	Sidewall	1-7-SW1	2.5-3	X			
			1-7-SW2		X			
			SB-532	1-3	X			
			SB-533		X			
		SB-535	X					
		Bottom	1-7-EB1	3-3.5	X			
1-7-EB2	X							
<b>Area 1-8</b>								
S-123 (0-0.5') PCBs - 5.2 ppm	1	Sidewall	1-8-SW1	0-0.5	X			
			1-8-SW2		X			
			1-8-SW3		X			
			1-8-SW4		X			
			SB-420	0-1	X			
			SB-422		X			
		Bottom	1-8-EB1	1-1.5	X			
			1-8-EB2		X			
			1-8-EB3		X			
			1-8-EB4		X			
1-8-EB5		X						
1-8-EB6		X						
<b>Area 1-9</b>								
SB-346 (0-1') PCBs - 1.62 ppm	1	Sidewall	1-9-SW1	0-0.5	X			
			1-9-SW2		X			
			1-9-SW3		X			
			1-9-SW4		X			
			1-9-SW5		X			
			1-9-SW6		X			
		SB-418	0-1	X				
		Bottom	1-9-EB1	1-1.5	X			
			1-9-EB2		X			
			1-9-EB3		X			
1-9-EB4	X							
1-9-EB5		X						
<b>Area 1-10</b>								
SB-347 (0-1') PCBs - 25.9 ppm  SS-202 (0-1') PCBs - 24.8 ppm  SS-202 (0-0.5') Copper, Lead, Mercury	1	Sidewall	1-10-SW1	0-0.5	X			X
			1-10-SW2		X			X
			1-10-SW3		X			X
			1-10-SW4		X			X
			1-10-SW5		X			X
		Bottom	1-10-EB1	1-1.5	X			X
			1-10-EB2		X			X
			1-10-EB3		X			X



**Table 1**  
**Soil Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis					
					PCBs	VOCs <sup>6</sup>	SVOCs <sup>7</sup>	Metals <sup>8</sup>		
<b>Area 1-11</b>										
SB-349 (0-1') PCBs - 1 ppm  SB-416 (0-1') PCBs - 1.4 ppm Mercury - 0.20 ppm  SB-415 (0-1') Copper - 60.1 ppm SVOCs	1	Sidewall	1-11-SW1	0-0.5	X		X	X		
			1-11-SW2		X		X	X		
			1-11-SW3		X		X	X		
			1-11-SW4		X		X	X		
			1-11-SW5		X		X	X		
			1-11-SW6		X		X	X		
			1-11-SW7		X		X	X		
		SB-429	0-1	X	X	X	X			
		SB-430		X	X	X	X			
		Bottom	1-11-EB1	1-1.5	X	X	X	X		
			1-11-EB2		X		X	X		
			1-11-EB3		X		X	X		
			1-11-EB4		X		X	X		
			1-11-EB5		X		X	X		
			1-11-EB6		X		X	X		
			1-11-EB7		X		X	X		
			1-11-EB8		X		X	X		
1-11-EB9	X				X	X				
1-11-EB10	X				X	X				
<b>Area 1-12</b>										
SB-257 (0-1') PCBs - 97 ppm  SB-258 (0-1') PCBs - 406 ppm	1	Sidewall	1-12-SW1	0-0.5	X					
			1-12-SW2		X					
			1-12-SW3		X					
			SB-256	0-0.5	X					
			SB-553		X					
		SB-557	0-0.5	X						
		SB-560		X						
		Bottom	1-12-EB1	1-1.5	X					
			1-12-EB2		X					
1-12-EB3	X									
1-12-EB4	X									
<b>Area 1-13</b>										
SB-259 (1-3') PCBs - 53 ppm	3	Sidewall	1-13-SW1	2.5-3	X					
			1-13-SW2		X					
			SB-545	1-3	X					
			SB-546		X					
			SB-547		X					
			SB-548		X					
		Bottom	1-13-EB1	3-3.5	X					
<b>Area 1-14</b>										
SB-260 (0-1') PCBs - 117 ppm	1	Sidewall	1-14-SW1	0-0.5	X					
			1-14-SW2		X					
			1-14-SW3		X					
			SB-577	0-1	X					
			SB-578		X					
		Bottom	1-14-EB1	1-1.5	X					
			1-14-EB2		X					
1-14-EB3	X									
<b>Area 1-15</b>										
SB-262 (0-1') PCBs - 303 ppm  SB-262 (1-3') PCBs - 56.5 ppm	3	Sidewall	1-15-SW1	2.5-3	X					
			1-15-SW2		X					
			1-15-SW3		X					
			SB-568	0-1	X					
			SB-569		1-3	X				
			Bottom	1-15-EB1	3-3.5	0-1	X			
				1-15-EB2		1-3	X			

**Table 1**  
**Soil Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis				
					PCBs	VOCs <sup>6</sup>	SVOCs <sup>7</sup>	Metals <sup>8</sup>	
<b>Area 1-16</b>									
MW-206 (4-6') PCBs - 61.4 ppm	6	Sidewall	1-16-SW1	5.5-6	X				
			1-16-SW2		X				
			SB-561	3-5	X				
			SB-562	5-7	X				
				3-5	X				
			SB-563	5-7	X				
				3-5	X				
		SB-564	3-5	X					
Bottom	1-16-EB1	6-6.5	X						
<b>Area 1-17</b>									
SB-266 (0-1') PCBs - 163 ppm	1	Sidewall	1-17-SW1	0-0.5	X				
			1-17-SW2		X				
			SB-581	0-1	X				
			SB-582		X				
		Bottom	SB-644		X				
			1-17-EB1	1-1.5	X				
1-17-EB2		X							
<b>Area 1-18</b>									
SB-414 (0-1') PCBs - 12.2 ppm, SVOCs, Metals	3	Sidewall	1-18-SW1	2.5-3	X		X	X	
			1-18-SW2		X		X	X	
			1-18-SW3		X		X	X	
		Bottom	1-18-EB1	3-3.5	X		X	X	
			1-18-EB2		X		X	X	
<b>Area 1-19</b>									
TP-223 (4-4.5) PCBs - 61.3 ppm	5	Sidewall	1-19-SW1	4.5-5	X				
			SB-585	3-5	X				
			SB-587		X				
		Bottom	SB-588		X				
1-19-EB1	5-5.5	X							
<b>Area 1-20</b>									
SB-413 (0-1') Copper - 72.6 ppm  SB-413 (0-1') Lead - 64 ppm	1	Sidewall	1-20-SW1	0-0.5				X	
			1-20-SW2					X	
		Bottom	1-20-EB1	1-1.5					X
			1-20-EB2					X	
			1-20-EB3					X	
			1-20-EB4					X	
			1-20-EB5					X	
			1-20-EB6					X	
1-20-EB7				X					
<b>Area 1-21</b>									
SB-411 (0-1') SB-412 (0-1') SB-413 (0-1') SB-432 (0-1') Copper, Lead, and/or Mercury	1	Sidewall	1-21-SW1	0-0.5				X	
			1-21-SW2					X	
			1-21-SW3					X	
			1-21-SW4					X	
			1-21-SW5					X	
			1-21-SW6					X	
		Bottom	SB-433	0-1				X	
			1-21-EB1	1-1.5				X	
			1-21-EB2					X	
			1-21-EB3					X	
			1-21-EB4					X	
			1-21-EB5					X	
			1-21-EB6					X	
			1-21-EB7					X	
1-21-EB8					X				
1-21-EB9				X					
1-21-EB10				X					
1-21-EB11				X					

**Table 1**  
**Soil Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis				
					PCBs	VOCs <sup>6</sup>	SVOCs <sup>7</sup>	Metals <sup>8</sup>	
<b>Area 1-22</b>									
SB-298 (4-6'; 6-8'); SB-299 (4-6') BTEX  SB-411 (0-1') Copper - 52.9 ppm  SB-411 (0-1') Mercury - 2.80 ppm	6	Sidewall	1-22-SW1	5.5-6				X	
			1-22-SW2					X	
			1-22-SW3					X	
			1-22-SW4					X	
			1-22-SW5					X	
			1-22-SW6					X	
			1-22-SW7					X	
			1-22-SW8					X	
		Bottom	1-22-EB1	6-6.5					X
			1-22-EB2					X	
			1-22-EB3			X		X	
			1-22-EB4					X	
			1-22-EB5			X		X	
			1-22-EB6					X	
			1-22-EB7					X	
			1-22-EB8					X	
<b>Area 1-23</b>									
SB-281 (0-1') PCBs - 97 ppm	1	Sidewall	1-23-SW1	0-0.5	X				
			1-23-SW2		X				
			1-23-SW3		X				
			SB-599		0-1	X			
		SB-600	X						
		SB-603	X						
		1-23-EB1	1-1.5	X					
		1-23-EB2		X					
1-23-EB3	X								
<b>Area 1-24</b>									
MW-204 (0-1') PCBs - 59 ppm	1	Sidewall	1-24-SW1	0-0.5	X				
			1-24-SW2		X				
			1-24-SW3		X				
			SB-591		0-1	X			
			SB-592			X			
			SB-593			X			
		SB-598	X						
		Bottom	1-24-EB1	1-1.5	X				
1-24-EB2	X								
<b>Area 1-25</b>									
S-114 (0.5-1') PCBs - 57 ppm S-114 (0-2') PCBs - 954 ppm S-114 (2-4') PCBs - 59 ppm	5	Sidewall	1-25-SW1	4.5-5	X				
			1-25-SW2	4.5-5	X				
			SB-606	1-3	X				
				3-5	X				
			SB-607	1-3	X				
				3-5	X				
				1-3	X				
			SB-608	1-3	X				
		3-5		X					
Bottom	1-25-EB1	5-5.5	X						
<b>Area 1-26</b>									
SB-317 (1-3') PCBs - 75 ppm	3	Sidewall	1-26-SW1	2.5-3	X				
			1-26-SW2		X				
			SB-609		1-3	X			
			SB-610			X			
			SB-611			X			
		Bottom	1-26-EB1	3-3.5	X				
			1-26-EB2		X				

**Table 1**  
**Soil Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis			
					PCBs	VOCs <sup>6</sup>	SVOCs <sup>7</sup>	Metals <sup>8</sup>
<b>Area 1-27</b>								
SB-323 (0-1') PCBs - 96 ppm	1	Sidewall	1-27-SW1	0-0.5	X			
			SB-614	0-1	X			
			SB-615		X			
			SB-616		X			
		SB-617	X					
Bottom	1-27-EB1	1-1.5	X					
<b>Area 1-28</b>								
SB-311 (0-1') PCBs - 150 ppm  SB-315 (0-1') PCBs - 123 ppm	1	Sidewall	1-28-SW1	0-0.5	X			
			1-28-SW2		X			
			1-28-SW3		X			
			1-28-SW4		X			
			1-28-SW5		X			
			1-28-SW6	X				
			SB-310	0-1	X			
			SB-314		X			
			SB-620	0-1	X			
			SB-636		X			
		SB-638	X					
		Bottom	1-28-EB1	1-1.5	X			
			1-28-EB2		X			
			1-28-EB3		X			
			1-28-EB4		X			
			1-28-EB5		X			
			1-28-EB6		X			
			1-28-EB7		X			
			1-28-EB8		X			
			1-28-EB9		X			
1-28-EB10	X							
1-28-EB11	X							
1-28-EB12	X							
<b>Area 1-29</b>								
SB-439 (0-1') PCBs - 75 ppm	1	Sidewall	1-29-SW1	0-0.5	X			
			1-29-SW2		X			
		Bottom	1-29-EB1	1-1.5	X			

**Notes:**

- Previously collected samples will be used as sidewall verification samples, as applicable.
- Gray shading indicates Remedial Investigation soil sample (2003).
- Yellow shading indicates Pre-Design Investigation soil sample (2014/2015).
- Pink shading indicates Supplemental Investigation soil sample (2017).
- Perimeter lengths not inclusive of common cell boundaries or boundaries against property line.
- Analyze for the following VOCs:
  - Area 1-22: Benzene, Toluene, Ethylbenzene, and Xylenes.
- Analyze for the following SVOCs:
  - Area 1-11: Benzo(b)fluoranthene; Dibenzo(a,h)anthracene, and Indeno(1,2,3-cd)pyrene
  - Area 1-18: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene
- Analyze for the following metals:
  - Area 1-10: Copper, Lead, Mercury
  - Area 1-11: Copper, Mercury
  - Area 1-18: Copper, Lead, Mercury
  - Area 1-20: Copper, Lead
  - Area 1-21: Copper, Lead, Mercury
  - Area 1-22: Copper, Mercury

**Table 2**  
**Sediment Verification Sampling Summary**

Waste Stream, Inc. Site - Potsdam, New York

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis
					PCBs
<b>Area 2-1</b>					
SED-261 (0-0.5') PCBs - 4.9 ppm  SED-261 (0.5-1.5') PCBs - 5.5 ppm  SED-265 (0-0.5') PCBs - 43 ppm  SED-265 (0.5-1.5') PCBs - 11 ppm  SED-266 (0-0.5') PCBs - 24 ppm  SED-266 (0.5-1.5') PCBs - 1.2 ppm	2	Sidewall	2-1-SW1	1.5-2	X
			2-1-SW2		X
			2-1-SW3		X
			2-1-SW4	X	
			SED-326	0-0.5	X
			SED-327		X
		SED-328	X		
		Bottom	2-1-EB1	2-2.5	X
			2-1-EB2		X
			2-1-EB3		X
			2-1-EB4		X
			2-1-EB5		X
			2-1-EB6		X
2-1-EB7	X				
2-1-EB8	X				
2-1-EB9	X				
2-1-EB10	X				
2-1-EB11	X				
2-1-EB12	X				
2-1-EB13	X				
<b>Area 2-2</b>					
SED-268 (0-0.5') PCBs - 190 ppm  SED-268 (0.5-1.5') PCBs - 6.2 ppm	2	Bottom	2-2-EB1	2-2.5	X
<b>Area 2-3</b>					
SED-269 (0-0.5') PCBs - 11 ppm  SED-270 (0-0.5') PCBs - 9.3 ppm	1	Sidewall	2-3-SW1	0-0.5	X
			2-3-SW2		X
			2-3-SW3		X
			2-3-SW4		X
			2-3-SW5		X
			2-3-SW6		X
			2-3-SW7		X
			SED-328	0-0.5	X
			SED-333		X
			SED-334		X
		SED-276	0-0.5	X	
		Bottom	2-3-EB1	1-1.5	X
			2-3-EB2		X
			2-3-EB3		X
			2-3-EB4		X
			2-3-EB5		X
2-3-EB6	X				
2-3-EB7	X				
2-3-EB8	X				
2-3-EB9	X				
2-3-EB10	X				

**Table 2**  
**Sediment Verification Sampling Summary**

Waste Stream, Inc. Site - Potsdam, New York

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis
					PCBs
<b>Area 2-4</b>					
SED-251 (0-0.5') PCBs - 0.334 ppm	2	Sidewall	2-4-SW1	1.5-2	X
			2-4-SW2		X
			2-4-SW3		X
			2-4-SW4		X
			SED-337	0-0.5	X
			SED-341		X
			SED-344		X
			SED-251	0-0.5	X
			Bottom	2-4-EB1	2-2.5
		2-4-EB2		X	
		2-4-EB3		X	
		2-4-EB4		X	
		2-4-EB5		X	
		2-4-EB6	X		
2-4-EB7	X				
2-4-EB8	X				
2-4-EB9	X				
<b>Area 2-5</b>					
SED-279 (0-0.5') PCBs - 69 J ppm	2	Bottom	2-5-EB1	2-2.5	X
SED-279 (0.5-1.5') PCBs - 27.6 J			2-5-EB2		X

**Table 2**  
Sediment Verification Sampling Summary

Waste Stream, Inc. Site - Potsdam, New York

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	
					PCBs	
<b>Area 2-6</b>						
SED-114 (0-0.5') PCBs - 8.2 ppm	1	Sidewall	2-6-SW1	0-0.5	X	
			2-6-SW2		X	
			2-6-SW3		X	
SED-117 (0-0.5') PCBs - 2.26 ppm			2-6-SW4		X	
			2-6-SW5		X	
			2-6-SW6		X	
SED-119 (0-0.5') PCBs - 5.3 ppm			2-6-SW7		X	
			2-6-SW8		X	
			2-6-SW9		X	
SED-207 (0-0.5') PCBs - 19 ppm			2-6-SW10		X	
		SED-318	0-0.5	X		
		SED-319		X		
		SED-323		X		
SED-210 (0-0.5') PCBs - 6.84 ppm		SED-324		X		
		SED-325		X		
SED-211 (0-0.5') PCBs - 8.5 ppm		Bottom		2-6-EB1	1-1.5	X
				2-6-EB2		X
				2-6-EB3		X
				2-6-EB4		X
SED-212 (0-0.5') PCBs - 22.8 ppm				2-6-EB5		X
				2-6-EB6		X
				2-6-EB7		X
SED-214 (0-0.5') PCBs - 0.99 ppm				2-6-EB8		X
				2-6-EB9		X
				2-6-EB10		X
SED-257 (0-0.5') PCBs - 17.8 ppm				2-6-EB11		X
				2-6-EB12		X
				2-6-EB13		X
				2-6-EB14		X
SED-260 (0-0.5') PCBs - 2.0 ppm				2-6-EB15		X
				2-6-EB16		X
SED-262 (0-0.5') PCBs - 1.5 ppm	2-6-EB17			X		
	2-6-EB18			X		
	2-6-EB19			X		
SED-264 (0-0.5') PCBs - 10.0 ppm	2-6-EB20			X		
	2-6-EB21	X				
	2-6-EB22	X				
	2-6-EB23	X				
	2-6-EB24	X				
SED-267 (0-0.5') PCBs - 1.3 ppm	2-6-EB25	X				
	2-6-EB26	X				
	2-6-EB27	X				
	2-6-EB28	X				
	2-6-EB29	X				
	2-6-EB30	X				
SED-281 (0-0.5') PCBs - 29.1 J ppm	2-6-EB31	X				

**Table 2**  
Sediment Verification Sampling Summary

Waste Stream, Inc. Site - Potsdam, New York

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis
					PCBs
<b>Area 2-7</b>					
SED-204 (0-0.5') PCBs - 91.8 ppm	1	Bottom	2-7-EB1	1-1.5	X
SED-205 (0-0.5') PCBs - 86.6 ppm			2-7-EB2		X
SED-205 (0.5-1') PCBs - 1.72 ppm					
SED-259 (0-0.5') PCBs - 60 ppm					
<b>Area 2-8</b>					
SED-206 (0-0.5') PCBs - 6.38 ppm	2	Bottom	2-8-EB1	2-2.5	X
SED-206 (0.5-1.5') PCBs - 15 ppm					
<b>Area 2-9</b>					
SED-113 (0-0.5') PCBs - 9.5 ppm	4	Bottom	2-9-EB1	4-4.5	X
<b>Area 2-10</b>					
SED-202 (0-0.5') PCBs - 41 ppm  SED-203 (0-0.5') PCBs - 1.66 ppm	1	Sidewall	2-10-SW1	0-0.5	X
			2-10-SW2		X
			2-10-SW3		X
			2-10-SW4		X
		SED-310	0-0.5	X	
		SED-311		X	
		SED-312		X	
		Bottom	2-10-EB1	1-1.5	X
			2-10-EB2		X
			2-10-EB3		X
			2-10-EB4		X
2-10-EB5	X				
2-10-EB6	X				
<b>Area 2-11</b>					
SED-316 (0-0.5') PCBs - 18.5 ppm	2	Bottom	2-11-EB1	2-2.5	X
SED-316 (0.5-2') PCBs - 28.4 ppm			2-11-EB2		X
<b>Area 2-12</b>					
SED-200 (0-0.5') PCBs - 57 ppm	1	Bottom	2-12-EB1	1-1.5	X
<b>Area 2-13</b>					
SED-201 (0-0.5') PCBs - 340 ppm	2	Bottom	2-13-EB1	2-2.5	X
SED-201 (0.5-1') PCBs - 22 ppm					



**Table 2**  
**Sediment Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis
					PCBs
<b>Area 2-14</b>					
SED-216 (0-0.5') PCBs - 14 ppm  SED-216 (0.5-1') PCBs - 200 ppm  SED-217 (0-0.5') PCBs - 6.10 ppm  SED-217 (0.5-1') PCBs - 9.26 ppm  SED-218 (0-0.5') PCBs - 7.80 ppm  SED-248 (0-0.5') PCBs - 6.97 ppm  SED-249 (0-0.5') PCBs - 4.86 ppm  SED-249 (0.5-0.7') PCBs - 10.9 ppm	2	Sidewall	2-14-SW1	1.5-2	X
			2-14-SW2		X
			2-14-SW3		X
			2-14-SW4		X
			2-14-SW5		X
			2-14-SW6		X
			2-14-SW7		X
			2-14-SW8		X
			2-14-SW9		X
			2-14-SW10		X
			2-14-SW11		X
			2-14-SW12		X
SED-348	0-0.5	X			
SED-350	0-0.5	X			
	0.5-2	X			
SED-216A	0-0.5	X			
SED-250 (0-0.5') PCBs - 7.5 ppm  SED-250 (0.5-1') PCBs - 20.0 ppm		Bottom	2-14-EB1	2-2.5	X
			2-14-EB2		X
			2-14-EB3		X
			2-14-EB4		X
			2-14-EB5		X
<b>Area 2-15</b>					
SED-2-16B (6-10") PCBs - 200 ppm  SED-2-16C (6-16") PCBs - 99 ppm	2	Bottom	2-15-EB1	2-2.5	X
<b>Area 2-16</b>					
SED-111 (0-0.5') PCBs - 3.12 ppm  SED-219 (0-0.5') PCBs - 57.6 ppm	3	Sidewall	2-16-SW1	2.5-3	X
			2-16-SW2		X
		Bottom	SED-425	0-0.5	X
			SED-426		X
		2-16-EB1	3-3.5	X	
<b>Area 2-17</b>					
SED-308 (0.5-2') PCBs - 1.26 ppm  SED-308 (2-3') PCBs - 1.39 ppm	3	Sidewall	2-17-SW1	2.5-3	X
			2-17-SW2		X
		Bottom	SED-419	0.5-2	X
			2-17-EB1		3-3.5

**Table 2**  
**Sediment Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis
					PCBs
<b>Area 2-18</b>					
SED-220A (0-0.5') PCBs - 48 ppm  SED-220A (0.5-1') PCBs - 35.9 ppm	2	Sidewall	2-18-SW1	1.5-2	X
			2-18-SW2		X
			2-18-SW3		X
		Bottom	SED-421	0.5-2	X
			2-18-EB1	2-2.5	X
			2-18-EB2		X
2-18-EB3	X				
<b>Area 2-19</b>					
SED-122 NA	2	Sidewall	2-19-SW1	1.5-2	X
			2-19-SW2		X
			SED-416	0-1	X
				1-2	X
		Bottom	2-19-EB1	2-2.5	X
			2-19-EB2		X
<b>Area 2-20</b>					
SED-123 NA	2	Sidewall	2-20-SW1	1.5-2	X
			2-20-SW2		X
			2-20-SW3		X
			SED-409	0-0.5	X
				0.5-2	X
			SED-410	0-0.5	X
				0.5-2	X
			SED-222B	0-0.5	X
			SED-221C	0-0.5	X
			Bottom	2-20-EB1	2-2.5
		2-20-EB2		X	
		2-20-EB3		X	
		2-20-EB4		X	
		2-20-EB5	X		

**Table 2**  
**Sediment Verification Sampling Summary**

Waste Stream, Inc. Site - Potsdam, New York

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis
					PCBs
<b>Area 2-21</b>					
SED-131 (0-0.5') PCBs - 4.8 ppm  SED-132 (0-0.5') PCBs - 6.9 ppm  SED-239 (0-0.5') PCBs - 1.79 ppm  SED-240 (0-0.5') PCBs - 4.50 ppm  SED-241 (0-0.5') PCBs - 6.30 ppm  SED-244 (0-0.5') PCBs - 17.5 ppm  SED-245 (0-0.5') PCBs - 25 ppm  SED-245 (0.5-1') PCBs - 3.68 ppm  SED-246 (0-0.5') PCBs - 9.4 ppm  SED-247 (0-0.5') PCBs - 31.0 ppm	1	Sidewall	2-21-SW1	0-0.5	X
			2-21-SW2		X
			2-21-SW3		X
			2-21-SW4		X
			2-21-SW5		X
			2-21-SW6		X
			2-21-SW7		X
			2-21-SW8		X
			2-21-SW9		X
			2-21-SW10		X
			2-21-SW11		X
		SED-235	0-0.5	X	
			0.5-1.5	X	
		SED-243	0-0.5	X	
			0.5-1.5	X	
SED-246 (0-0.5') PCBs - 9.4 ppm  SED-247 (0-0.5') PCBs - 31.0 ppm		Bottom	2-21-EB1	1-1.5	X
			2-21-EB2		X
			2-21-EB3		X
			2-21-EB4		X
			2-21-EB5		X
<b>Area 2-22</b>					
SED-130 (0-0.5') PCBs - 1.8 ppm  SED-236 (0-0.5') PCBs - 47.8 ppm  SED-236 (0.5-1.5') PCBs - 4.60 ppm	4	Bottom	2-22-EB1	4-4.5	X
<b>Area 2-23</b>					
SED-133 (0-0.5') PCBs - 7.5 ppm	1	Sidewall	2-23-SW1	0-0.5	X
		Bottom	2-23-EB1	1-1.5	X

**Table 2**  
**Sediment Verification Sampling Summary**

Waste Stream, Inc. Site - Potsdam, New York

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis
					PCBs
<b>Area 2-24</b>					
SED-229 (0-0.5') PCBs - 3.70 ppm	2	Sidewall	2-24-SW1	1.5-2	X
SED-229 (0.5-1.5') PCBs - 3.30 ppm			2-24-SW2	1.5-2	X
SED-230 (0-0.5') PCBs - 15.1 ppm		Bottom	2-24-EB1	2-2.5	X
SED-230 (0.5-1.5') PCBs - 2.7 ppm			2-24-EB2		X
SED-234 (0-0.5') PCBs - 3.70 ppm					
SED-234 (0.5-1.5') PCBs - 1.25 ppm					
<b>Area 2-25</b>					
SED-129 (0-0.5') PCBs - 8.4 ppm  SED-231 (0-0.5') PCBs - 6.6 ppm	1	Sidewall	2-25-SW1	0-0.5	X
			2-25-SW2		X
			2-25-SW3		X
			2-25-SW4		X
			2-25-SW5		X
			2-25-SW6		X
			2-25-SW7		X
			2-25-SW8		X
			2-25-SW9		X
		Bottom	2-25-EB1	1-1.5	X
			2-25-EB2		X
			2-25-EB3		X
			2-25-EB4		X
			2-25-EB5		X

**Table 2**  
**Sediment Verification Sampling Summary**

**Waste Stream, Inc. Site - Potsdam, New York**

Parent Sample ID Sample Depth (ft) Impacts	Excavation Depth (ft)	Verification Sample Type	Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis
					PCBs
<b>Area 2-26</b>					
SED-227 (0-0.5') PCBs - 3.7 ppm	2	Sidewall	2-26-SW1	1.5-2	X
			2-26-SW2		X
			2-26-SW3		X
			2-26-SW4		X
			2-26-SW5		X
			2-26-SW6		X
			2-26-SW7		X
			2-26-SW8		X
			2-26-SW9		X
			2-26-SW10		X
			2-26-SW11		X
			2-26-SW12		X
			2-26-SW13		X
			2-26-SW14		X
		Bottom	2-26-EB1	2-2.5	X
			2-26-EB2		X
			2-26-EB3		X
			2-26-EB4		X
			2-26-EB5		X
		2-26-EB6	X		
2-26-EB7	X				
2-26-EB8	X				
2-26-EB9	X				
<b>Area 2-27</b>					
SED-223 (0-0.5') PCBs - 37.4 ppm  SED-223 (0.5-1') PCBs - 40.4 ppm	2	Sidewall	2-27-SW1	1.5-2	X
			2-27-SW2		X
			2-27-SW3		X
			2-27-SW4		X
			2-27-SW5		X
			2-27-SW6		X
		Bottom	SED-306	0-1	X
				0.5-2	X
				2-4	X
			2-27-EB1	2-2.5	X
			2-27-EB2		X

**Notes:**

1. Previously collected samples will be used as sidewall verification samples, as applicable.
2. Gray shading indicates Remedial Investigation soil sample (2003).
3. Yellow shading indicates Pre-Design Investigation soil sample (2014/2015).
4. Pink shading indicates Supplemental Investigation soil sample (2017).
5. Perimeter lengths not inclusive of common cell boundaries or boundaries against property line.
6. Interior sidewall samples (e.g., 2-6-SW2) will not be collected if interior non-excavation areas are removed during remedial construction.

**Table 3**  
**Soil Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective	Analysis	Cleanup Objective	Analysis	Cleanup Objective
		PCBs	40 CFR Part 761	SVOCs <sup>2</sup>	NYCRR Part 375 Restricted Use SCOs	Metals <sup>3</sup>	NYCRR Part 375 Restricted Use SCOs for Protection of Ecological Resources
<b>Area 1-1</b>							
1-1-SW1	2.5-3	X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-1-SW2							
1-1-SW3							
1-1-SW4							
1-1-EB1	3-3.5						
1-1-EB2							
1-1-EB3							
1-1-EB4							
<b>Area 1-2</b>							
1-2-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-2-SW2							
1-2-SW3							
1-2-SW4							
1-2-SW5							
1-2-EB1	1-1.5						
1-2-EB2							
1-2-EB3							
1-2-EB4							
1-2-EB5							
1-2-EB6							
<b>Area 1-3</b>							
1-3-SW1	2.5-3	X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-3-SW2							
1-3-EB1	3-3.5						
<b>Area 1-4</b>							
1-4-SW1	1.5-2	X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-4-SW2							
1-4-SW3							
1-4-SW4							
1-4-EB1	2-2.5						
1-4-EB2							
1-4-EB3							
<b>Area 1-5</b>							
1-5-SW1	4.5-5	X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-5-SW2							
1-5-SW3							
1-5-EB1	5-5.5						
1-5-EB2							
<b>Area 1-6</b>							
1-6-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-6-SW2							
1-6-SW3							
1-6-SW4							
1-6-EB1	1-1.5						
1-6-EB2							
1-6-EB3							
1-6-EB4							
<b>Area 1-7</b>							
1-7-SW1	2.5-3	X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-7-SW2							
1-7-EB1	3-3.5						
1-7-EB2							

**Table 3**  
**Soil Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective	Analysis	Cleanup Objective	Analysis	Cleanup Objective						
		PCBs	40 CFR Part 761	SVOCs <sup>2</sup>	NYCRR Part 375 Restricted Use SCOs	Metals <sup>3</sup>	NYCRR Part 375 Restricted Use SCOs for Protection of Ecological Resources						
<b>Area 1-8</b>													
1-8-SW1	0-0.5	X	PCBs: >1 ppm	--	N/A	--	N/A						
1-8-SW2													
1-8-SW3													
1-8-SW4													
1-8-EB1													
1-8-EB2													
1-8-EB3													
1-8-EB4													
1-8-EB5													
1-8-EB6													
<b>Area 1-9</b>													
1-9-SW1	0-0.5	X	PCBs: >1 ppm	--	N/A	--	N/A						
1-9-SW2													
1-9-SW3													
1-9-SW4													
1-9-SW5													
1-9-SW6													
1-9-EB1													
1-9-EB2													
1-9-EB3													
1-9-EB4													
1-9-EB5													
<b>Area 1-10</b>													
1-10-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	X	Copper: 50 ppm Lead: 63 ppm Mercury: 0.18 ppm						
1-10-SW2													
1-10-SW3													
1-10-SW4													
1-10-SW5													
1-10-EB1													
1-10-EB2													
1-10-EB3													
<b>Area 1-11</b>													
1-11-SW1	0-0.5							X	PCBs: ≥50 ppm	X	Benzo(b)fluoranthene: 1.0 ppm Dibenzo(a,h)anthracene: 0.33 ppm Indeno(1,2,3-cd)pyrene: 0.5 ppm	X	Copper: 50 ppm Mercury: 0.18 ppm
1-11-SW2													
1-11-SW3													
1-11-SW4													
1-11-SW5													
1-11-SW6													
1-11-SW7													
1-11-EB1													
1-11-EB2													
1-11-EB3													
1-11-EB4													
1-11-EB5													
1-11-EB6													
1-11-EB7													
1-11-EB8													
1-11-EB9													
1-11-EB10													

**Table 3**  
**Soil Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective	Analysis	Cleanup Objective	Analysis	Cleanup Objective						
		PCBs	40 CFR Part 761	SVOCs <sup>2</sup>	NYCRR Part 375 Restricted Use SCOs	Metals <sup>3</sup>	NYCRR Part 375 Restricted Use SCOs for Protection of Ecological Resources						
<b>Area 1-12</b>													
1-12-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-12-SW2													
1-12-SW3													
1-12-EB1	1-1.5												
1-12-EB2													
1-12-EB3													
1-12-EB4													
<b>Area 1-13</b>													
1-13-SW1	2.5-3	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-13-SW2													
1-13-EB1	3-3.5												
<b>Area 1-14</b>													
1-14-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-14-SW2													
1-14-SW3													
1-14-EB1	1-1.5												
1-14-EB2													
1-14-EB3													
<b>Area 1-15</b>													
1-15-SW1	2.5-3	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-15-SW2													
1-15-SW3													
1-15-EB1	3-3.5												
1-15-EB2													
<b>Area 1-16</b>													
1-16-SW1	5.5-6	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-16-SW2													
1-16-EB1	6-6.5												
<b>Area 1-17</b>													
1-17-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-17-SW2													
1-17-EB1	1-1.5												
1-17-EB2													
<b>Area 1-18</b>													
1-18-SW1	2.5-3							X	PCBs: >1 ppm	X	Benzo(a)anthracene: 1.0 ppm Benzo(a)pyrene: 1.0 ppm Benzo(b)fluoranthene: 1.0 ppm Benzo(k)fluoranthene:	X	Copper: 50 ppm Lead: 63 ppm Mercury: 0.18 ppm
1-18-SW2													
1-18-SW3													
1-18-EB1	3-3.5												
1-18-EB2													
<b>Area 1-19</b>													
1-19-SW1	4.5-5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-19-EB1	5-5.5												
<b>Area 1-20</b>													
1-20-SW1	0-0.5	--	N/A	--	N/A	X	Copper: 50 ppm Lead: 63 ppm						
1-20-SW2													
1-20-EB1	1-1.5												
1-20-EB2													
1-20-EB3													
1-20-EB4													
1-20-EB5													
1-20-EB6													
1-20-EB7													



**Table 3**  
**Soil Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective	Analysis	Cleanup Objective	Analysis	Cleanup Objective						
		PCBs	40 CFR Part 761	SVOCs <sup>2</sup>	NYCRR Part 375 Restricted Use SCOs	Metals <sup>3</sup>	NYCRR Part 375 Restricted Use SCOs for Protection of Ecological Resources						
<b>Area 1-21</b>													
1-21-SW1	0-0.5	--	N/A	--	N/A	X	Copper: 50 ppm Lead: 63 ppm Mercury: 0.18 ppm						
1-21-SW2													
1-21-SW3													
1-21-SW4													
1-21-SW5													
1-21-SW6													
1-21-EB1	1-1.5												
1-21-EB2													
1-21-EB3													
1-21-EB4													
1-21-EB5													
1-21-EB6													
1-21-EB7													
1-21-EB8													
1-21-EB9													
1-21-EB10													
1-21-EB11													
<b>Area 1-22</b>													
1-22-SW1	5.5-6	--	N/A	--	N/A	X	Copper: 50 ppm Mercury: 0.18 ppm						
1-22-SW2													
1-22-SW3													
1-22-SW4													
1-22-SW5													
1-22-SW6													
1-22-SW7													
1-22-SW8													
1-22-EB1	6-6.5												
1-22-EB2													
1-22-EB3													
1-22-EB4													
1-22-EB5													
1-22-EB6													
1-22-EB7													
1-22-EB8													
<b>Area 1-23</b>													
1-23-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-23-SW2													
1-23-SW3													
1-23-EB1	1-1.5												
1-23-EB2													
1-23-EB3													
<b>Area 1-24</b>													
1-24-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-24-SW2													
1-24-SW3													
1-24-EB1	1-1.5												
1-24-EB2													
<b>Area 1-25</b>													
1-25-SW1	4.5-5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-25-SW2													
1-25-EB1													
<b>Area 1-26</b>													
1-26-SW1	2.5-3	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-26-SW2													
1-26-EB1	3-3.5												
1-26-EB2													
<b>Area 1-27</b>													
1-27-SW1	0-0.5							X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-27-EB1													

**Table 3**  
**Soil Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective	Analysis	Cleanup Objective	Analysis	Cleanup Objective						
		PCBs	40 CFR Part 761	SVOCs <sup>2</sup>	NYCRR Part 375 Restricted Use SCOs	Metals <sup>3</sup>	NYCRR Part 375 Restricted Use SCOs for Protection of Ecological Resources						
<b>Area 1-28</b>													
1-28-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-28-SW2													
1-28-SW3													
1-28-SW4													
1-28-SW5													
1-28-SW6													
1-28-EB1	1-1.5							X	PCBs: ≥50 ppm	--	N/A	--	N/A
1-28-EB2													
1-28-EB3													
1-28-EB4													
1-28-EB5													
1-28-EB6													
1-28-EB7													
1-28-EB8													
1-28-EB9													
1-28-EB10													
1-28-EB11													
1-28-EB12													
<b>Area 1-29</b>													
1-29-SW1	0-0.5	X	PCBs: ≥50 ppm	--	N/A	--	N/A						
1-29-SW2													
1-29-EB1													

**Notes:**

- All Soil Verification Samples listed above will be collected and analyzed for either PCBs in accordance with 40 CFR Part 761, Metals and/or SVOCs in accordance with NYCRR Part 375 Restricted Use SCOs for Protection of Ecological Resources, as indicated.
- Analyze for the following SVOCs:
  - Area 1-11: Benzo(b)fluoranthene; Dibenzo(a,h)anthracene, and Indeno(1,2,3-cd)pyrene
  - Area 1-18: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene
- Analyze for the following metals:
  - Area 1-10: Copper, Lead, Mercury
  - Area 1-11: Copper, Mercury
  - Area 1-18: Copper, Lead, Mercury
  - Area 1-20: Copper, Lead
  - Area 1-21: Copper, Lead, Mercury
  - Area 1-22: Copper, Mercury
- X = Sample(s) to be taken
- = No sample(s) to be taken
- N/A = Not Applicable

**Table 4**  
**Sediment Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective
		PCBs	40 CFR Part 761
<b>Area 2-1</b>			
2-1-SW1	1.5-2	X	PCBs: >1 ppm
2-1-SW2			
2-1-SW3			
2-1-SW4			
2-1-EB1	2-2.5		
2-1-EB2			
2-1-EB3			
2-1-EB4			
2-1-EB5			
2-1-EB6			
2-1-EB7			
2-1-EB8			
2-1-EB9			
2-1-EB10			
2-1-EB11			
2-1-EB12			
2-1-EB13			
<b>Area 2-2</b>			
2-2-EB1	2-2.5	X	PCBs: >1 ppm
<b>Area 2-3</b>			
2-3-SW1	0-0.5	X	PCBs: >1 ppm
2-3-SW2			
2-3-SW3			
2-3-SW4			
2-3-SW5			
2-3-SW6			
2-3-SW7			
2-3-EB1	1-1.5		
2-3-EB2			
2-3-EB3			
2-3-EB4			
2-3-EB5			
2-3-EB6			
2-3-EB7			
2-3-EB8			
2-3-EB9			
2-3-EB10			
<b>Area 2-4</b>			
2-4-SW1	1.5-2	X	PCBs: >1 ppm
2-4-SW2			
2-4-SW3			
2-4-SW4			
2-4-EB1	2-2.5		
2-4-EB2			
2-4-EB3			
2-4-EB4			
2-4-EB5			
2-4-EB6			
2-4-EB7			
2-4-EB8			
2-4-EB9			
<b>Area 2-5</b>			
2-5-EB1	2-2.5	X	PCBs: >1 ppm
2-5-EB2			

**Table 4**  
**Sediment Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective		
		PCBs	40 CFR Part 761		
<b>Area 2-6</b>					
2-6-SW1	0-0.5	X	PCBs: >1 ppm		
2-6-SW2					
2-6-SW3					
2-6-SW4					
2-6-SW5					
2-6-SW6					
2-6-SW7					
2-6-SW8					
2-6-SW9					
2-6-SW10					
2-6-EB1	1-1.5			X	PCBs: >1 ppm
2-6-EB2					
2-6-EB3					
2-6-EB4					
2-6-EB5					
2-6-EB6					
2-6-EB7					
2-6-EB8					
2-6-EB9					
2-6-EB10					
2-6-EB11					
2-6-EB12					
2-6-EB13					
2-6-EB14					
2-6-EB15					
2-6-EB16					
2-6-EB17					
2-6-EB18					
2-6-EB19					
2-6-EB20					
2-6-EB21					
2-6-EB22					
2-6-EB23					
2-6-EB24					
2-6-EB25					
2-6-EB26					
2-6-EB27					
2-6-EB28					
2-6-EB29					
2-6-EB30					
2-6-EB31					
<b>Area 2-7</b>					
2-7-EB1	1-1.5	X	PCBs: >1 ppm		
2-7-EB2					
<b>Area 2-8</b>					
2-8-EB1	2-2.5	X	PCBs: >1 ppm		
<b>Area 2-9</b>					
2-9-EB1	4-4.5	X	PCBs: >1 ppm		

**Table 4**  
**Sediment Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective	
		PCBs	40 CFR Part 761	
<b>Area 2-10</b>				
2-10-SW1	0-0.5	X	PCBs: >1 ppm	
2-10-SW2				
2-10-SW3				
2-10-SW4				
2-10-EB1	1-1.5			
2-10-EB2				
2-10-EB3				
2-10-EB4				
2-10-EB5				
2-10-EB6				
<b>Area 2-11</b>				
2-11-EB1	2-2.5	X	PCBs: >1 ppm	
2-11-EB2				
<b>Area 2-12</b>				
2-12-EB1	1-1.5	X	PCBs: >1 ppm	
<b>Area 2-13</b>				
2-13-EB1	2-2.5	X	PCBs: >1 ppm	
<b>Area 2-14</b>				
2-14-SW1	1.5-2	X	PCBs: >1 ppm	
2-14-SW2				
2-14-SW3				
2-14-SW4				
2-14-SW5				
2-14-SW6				
2-14-SW1				
2-14-SW2				
2-14-SW3				
2-14-SW4				
2-14-SW5				
2-14-SW6				
2-14-EB1				2-2.5
2-14-EB2				
2-14-EB3				
2-14-EB4				
2-14-EB5				
<b>Area 2-15</b>				
2-15-EB1	2-2.5	X	PCBs: >1 ppm	
<b>Area 2-16</b>				
2-16-SW1	2.5-3	X	PCBs: >1 ppm	
2-16-SW2				
2-16-EB1	3-3.5			
<b>Area 2-17</b>				
2-17-SW1	2.5-3	X	PCBs: >1 ppm	
2-17-SW2				
2-17-EB1	3-3.5			
<b>Area 2-18</b>				
2-18-SW1	1.5-2	X	PCBs: >1 ppm	
2-18-SW2				
2-18-SW3				
2-18-EB1	2-2.5			
2-18-EB2				
2-18-EB3				
<b>Area 2-19</b>				
2-19-SW1	1.5-2	X	PCBs: >1 ppm	
2-19-SW2				
2-19-EB1	2-2.5			
2-19-EB2				

**Table 4**  
**Sediment Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective
		PCBs	40 CFR Part 761
<b>Area 2-20</b>			
2-20-SW1	1.5-2	X	PCBs: >1 ppm
2-20-SW2			
2-20-SW3			
2-20-EB1	2-2.5		
2-20-EB2			
2-20-EB3			
2-20-EB4			
2-20-EB5			
<b>Area 2-21</b>			
2-21-SW1	0.5-1	X	PCBs: >1 ppm
2-21-SW2			
2-21-SW3			
2-21-SW4			
2-21-SW5			
2-21-SW6			
2-21-SW7			
2-21-SW8			
2-21-SW9			
2-21-SW10			
2-21-SW11			
2-21-EB1	1-1.5		
2-21-EB2			
2-21-EB3			
2-21-EB4			
2-21-EB5			
<b>Area 2-22</b>			
2-22-EB1	4-4.5	X	PCBs: >1 ppm
<b>Area 2-23</b>			
2-23-SW1	0-0.5	X	PCBs: >1 ppm
2-23-EB1	1-1.5		
<b>Area 2-24</b>			
2-24-SW1	1.5-2	X	PCBs: >1 ppm
2-24-SW2			
2-24-EB1	2-2.5		
2-24-EB2			
<b>Area 2-25</b>			
2-25-SW1	0-0.5	X	PCBs: >1 ppm
2-25-SW2			
2-25-SW3			
2-25-SW4			
2-25-SW5			
2-25-SW6			
2-25-SW7			
2-25-SW8			
2-25-SW9			
2-25-EB1	1-1.5		
2-25-EB2			
2-25-EB3			
2-25-EB4			
2-25-EB5			

**Table 4**  
**Sediment Cleanup Objectives**

**Waste Stream, Inc. Site - Potsdam, New York**

Verification Sample ID <sup>1</sup>	Verification Sampling Depth (ft)	Analysis	Cleanup Objective
		PCBs	40 CFR Part 761
<b>Area 2-26</b>			
2-26-SW1	1.5-2	X	PCBs: >1 ppm
2-26-SW2			
2-26-SW3			
2-26-SW4			
2-26-SW5			
2-26-SW6			
2-26-SW7			
2-26-SW8			
2-26-SW9			
2-26-SW10			
2-26-SW11			
2-26-SW12			
2-26-SW13			
2-26-SW14			
2-26-EB1	2-2.5		
2-26-EB2			
2-26-EB3			
2-26-EB4			
2-26-EB5			
2-26-EB6			
2-26-EB7			
2-26-EB8			
2-26-EB9			
<b>Area 2-27</b>			
2-27-SW1	1.5-2	X	PCBs: >1 ppm
2-27-SW2			
2-27-SW3			
2-27-SW4			
2-27-SW5			
2-27-SW6			
2-27-EB1	2-2.5		
2-27-EB2			

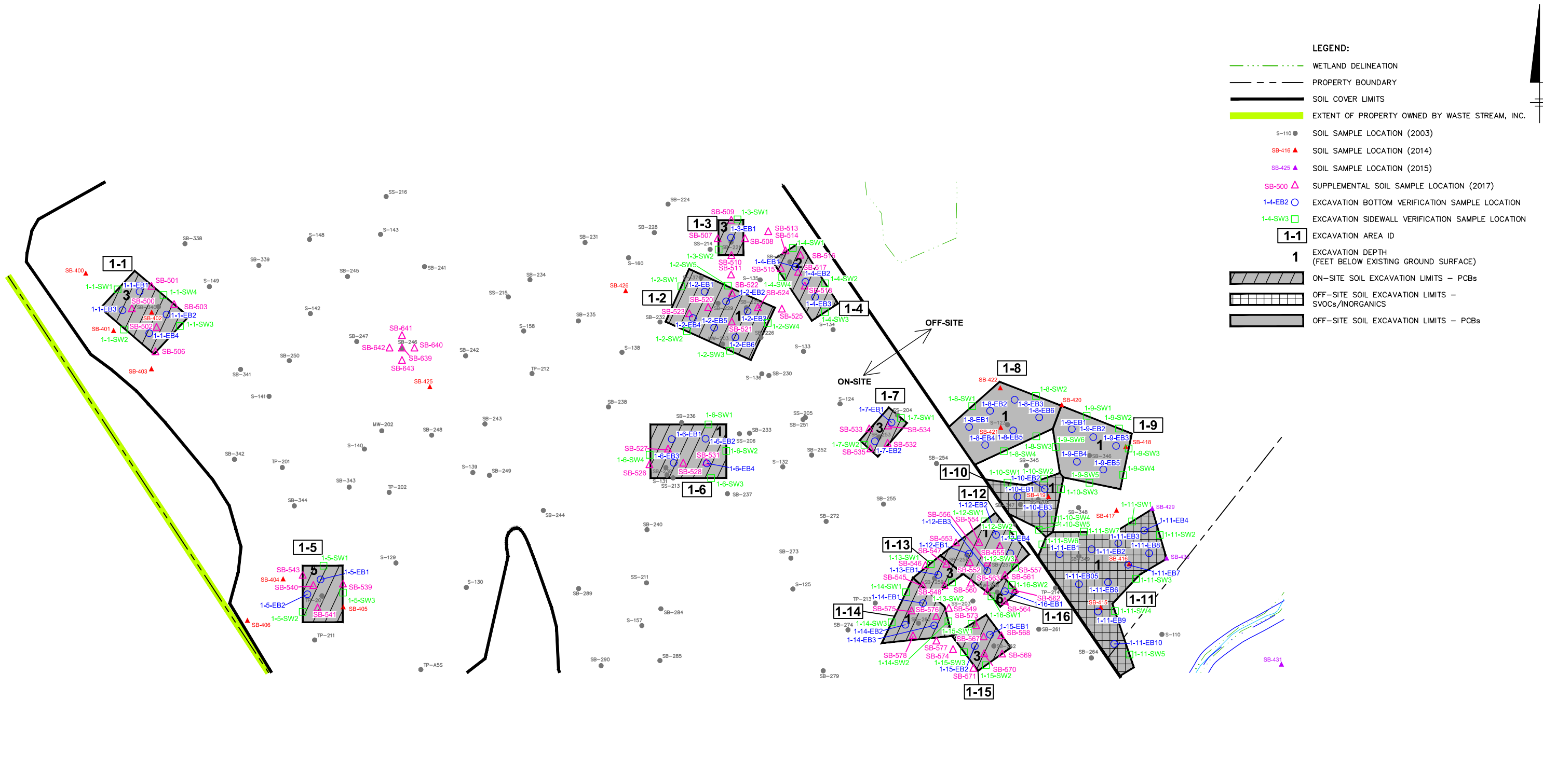
**Notes:**

1. All Sediment Verification Samples listed above will be collected and analyzed for PCBs in accordance with 40 CFR Part 761, as indicated.
2. X = Sample(s) to be taken

# FIGURES







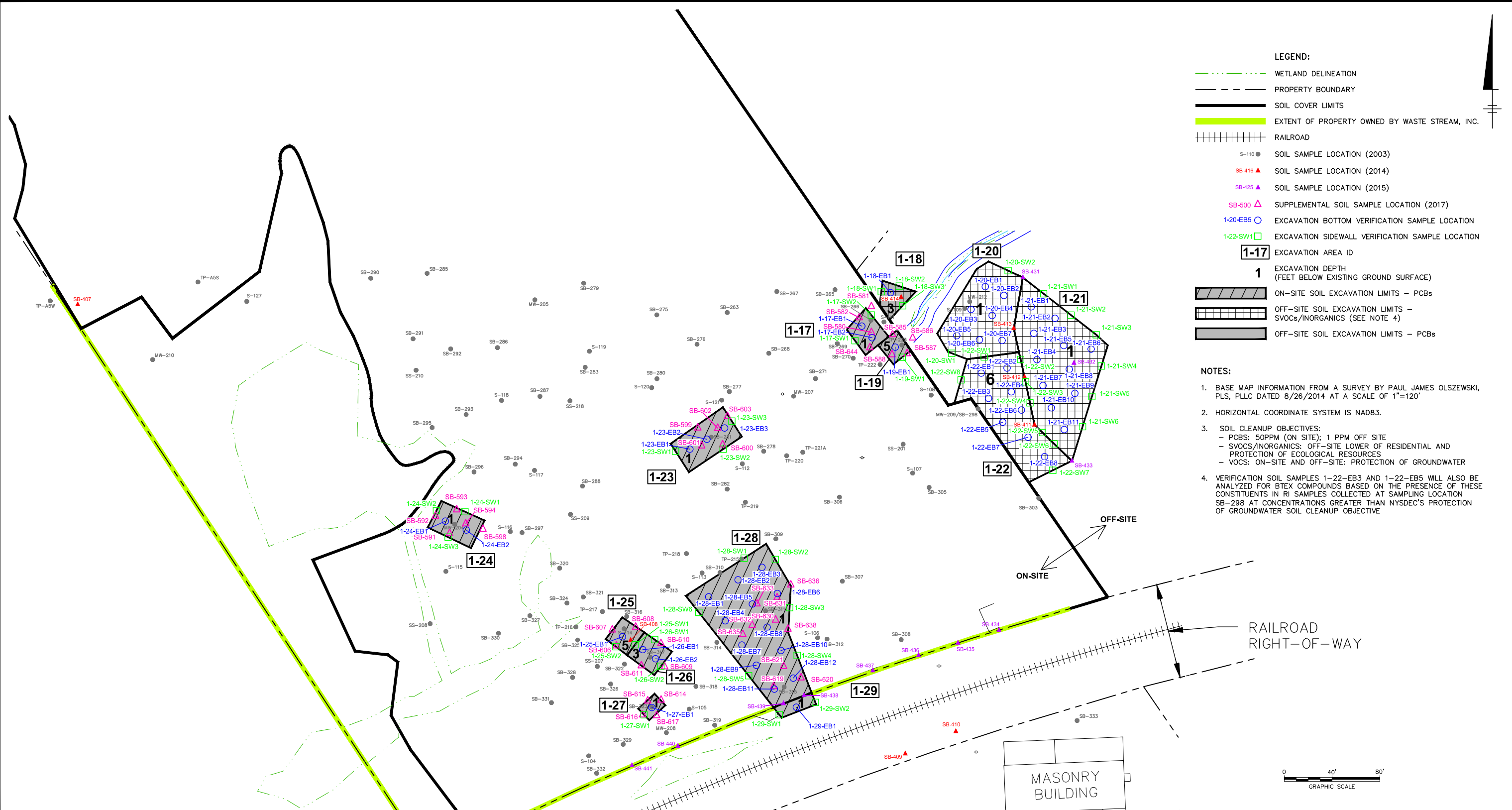
- NOTES:**
- BASE MAP INFORMATION FROM A SURVEY BY PAUL JAMES OLSZEWSKI, PLS, PLLC DATED 8/26/2014 AT A SCALE OF 1"=120'
  - HORIZONTAL COORDINATE SYSTEM IS NAD83.
  - SOIL CLEANUP OBJECTIVES:
    - PCBS: 50PPM (ON SITE); 1 PPM OFF SITE
    - SVOCs/INORGANICS: OFF-SITE LOWER OF RESIDENTIAL AND PROTECTION OF ECOLOGICAL RESOURCES
    - VOCS: ON-SITE AND OFF-SITE: PROTECTION OF GROUNDWATER

WASTE STREAM, INC. SITE  
 POTSDAM, NEW YORK  
**VERIFICATION SAMPLING PLAN**

**VERIFICATION SOIL SAMPLING  
 LOCATIONS - NORTH**

**ARCADIS** *Design & Consultancy for natural and built assets*

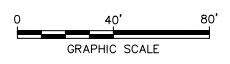
FIGURE 1



**LEGEND:**

- WETLAND DELINEATION
- PROPERTY BOUNDARY
- SOIL COVER LIMITS
- EXTENT OF PROPERTY OWNED BY WASTE STREAM, INC.
- RAILROAD
- S-110 ● SOIL SAMPLE LOCATION (2003)
- SB-416 ▲ SOIL SAMPLE LOCATION (2014)
- SB-425 ▲ SOIL SAMPLE LOCATION (2015)
- SB-500 ▲ SUPPLEMENTAL SOIL SAMPLE LOCATION (2017)
- 1-20-EB5 ○ EXCAVATION BOTTOM VERIFICATION SAMPLE LOCATION
- 1-22-SW1 □ EXCAVATION SIDEWALL VERIFICATION SAMPLE LOCATION
- 1-17 EXCAVATION AREA ID
- 1 EXCAVATION DEPTH (FEET BELOW EXISTING GROUND SURFACE)
- ON-SITE SOIL EXCAVATION LIMITS - PCBs
- OFF-SITE SOIL EXCAVATION LIMITS - SVOCs/INORGANICS (SEE NOTE 4)
- OFF-SITE SOIL EXCAVATION LIMITS - PCBs

- NOTES:**
- BASE MAP INFORMATION FROM A SURVEY BY PAUL JAMES OLSZEWSKI, PLS, PLLC DATED 8/26/2014 AT A SCALE OF 1"=120'
  - HORIZONTAL COORDINATE SYSTEM IS NAD83.
  - SOIL CLEANUP OBJECTIVES:
    - PCBs: 50PPM (ON SITE); 1 PPM OFF SITE
    - SVOCs/INORGANICS: OFF-SITE LOWER OF RESIDENTIAL AND PROTECTION OF ECOLOGICAL RESOURCES
    - VOCs: ON-SITE AND OFF-SITE: PROTECTION OF GROUNDWATER
  - VERIFICATION SOIL SAMPLES 1-22-EB3 AND 1-22-EB5 WILL ALSO BE ANALYZED FOR BTEX COMPOUNDS BASED ON THE PRESENCE OF THESE CONSTITUENTS IN RI SAMPLES COLLECTED AT SAMPLING LOCATION SB-298 AT CONCENTRATIONS GREATER THAN NYSDEC'S PROTECTION OF GROUNDWATER SOIL CLEANUP OBJECTIVE



WASTE STREAM, INC. SITE  
 POTSDAM, NEW YORK  
**VERIFICATION SAMPLING PLAN**

---

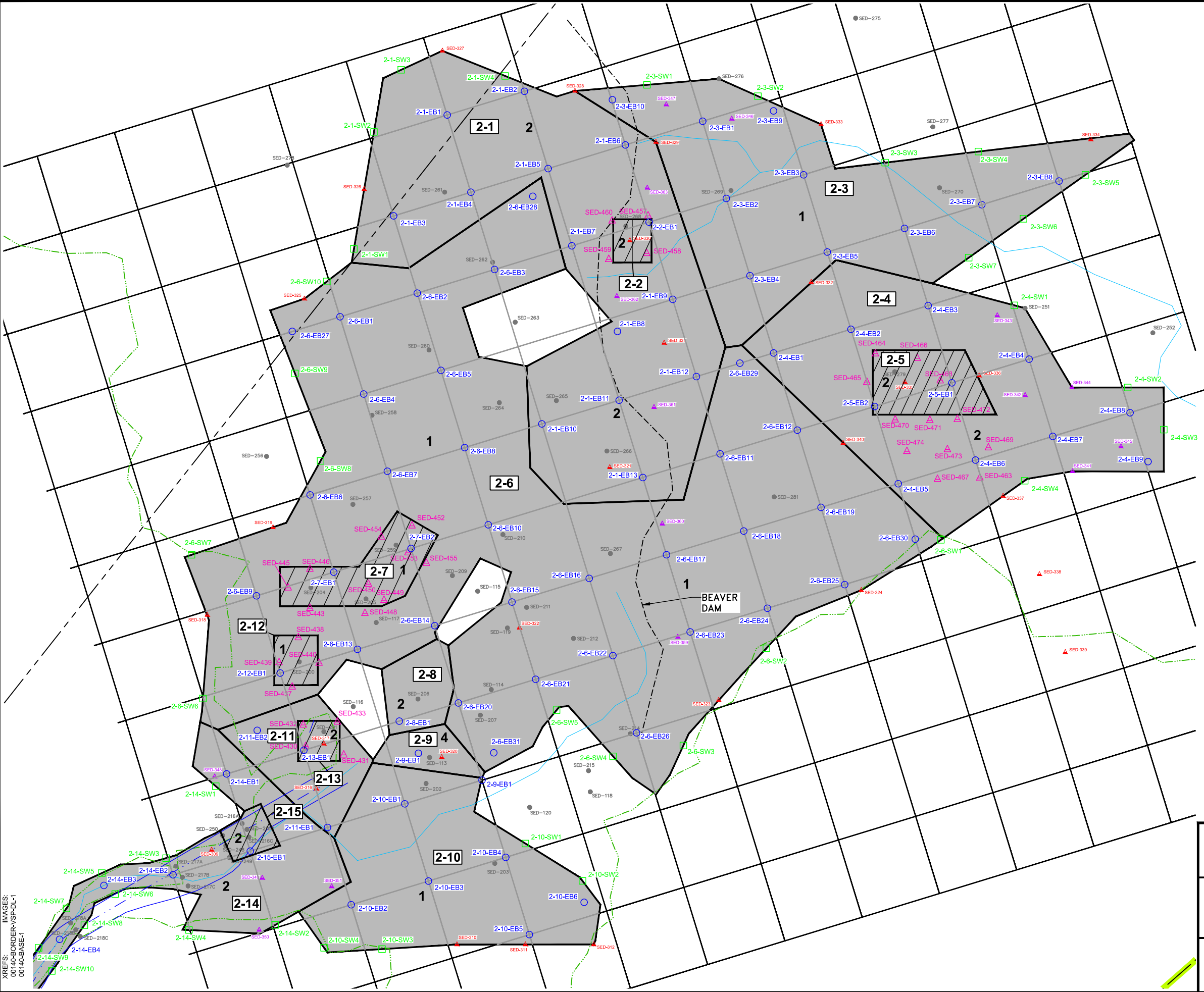
**VERIFICATION SOIL SAMPLING  
 LOCATIONS - SOUTH**

---

**ARCADIS** Design & Consultancy  
for natural and built assets

FIGURE  
**2**

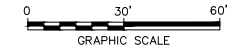
GROUP: INDV DR: DMW, RALLEN, G. STOWELL, PM: J. BRIEN, TR: A. FAZARANO, LVR: ON=\*, OFF=REF  
 C:\Users\stowell\OneDrive - ARCADIS\BIM 360 Docs\NATIONAL GRID\WIS\ Potsdam former Scrap Yard\2018\B0031006.0005\01-40-VERIFY-SOIL-SAMP-LOC-3-1.dwg LAYOUT: 3 SAVED: 7/25/2018 11:22 AM ACADVER: 21.05 (LMS TECH) PAGES: 21.05 (LMS TECH) PAGES: 21.05 (LMS TECH) PAGES: 21.05 (LMS TECH) PAGES: 21.05 (LMS TECH)  
 PLOT: FULLCTB PLOTTED: 7/25/2018 11:26 AM BY: STOWELL, GARY  
 XREFS: IMAGES: 00140-BORDER-VSP-DL-1 00140-BASE-1



**LEGEND:**

- WETLAND DELINEATION
- PROPERTY BOUNDARY
- EXTENT OF PROPERTY OWNED BY WASTE STREAM, INC.
- APPROXIMATE CENTERLINE OF DRAINAGE SWALE
- ||||| RAILROAD
- BEAVER DAM (APPROXIMATE)
- EXISTING UTILITY POLE
- S-110 ● SEDIMENT SAMPLE LOCATION (2003)
- SED-332 ▲ SEDIMENT SAMPLE LOCATION (2014)
- SED-350 ▲ SEDIMENT SAMPLE LOCATION (2015)
- SED-400 ▲ SUPPLEMENTAL SEDIMENT SAMPLE LOCATION (2017)
- 2-1-EB1 ○ EXCAVATION BOTTOM VERIFICATION SAMPLE LOCATION
- 2-6-SW5 □ EXCAVATION SIDEWALL VERIFICATION SAMPLE LOCATION
- 2-1 EXCAVATION AREA ID
- 1** EXCAVATION DEPTH (FEET BELOW EXISTING GROUND SURFACE)
- SEDIMENT EXCAVATION LIMITS
- SEDIMENT EXCAVATION LIMITS (HATCHING INDICATES THAT SEDIMENT CONTAINS PCBs AT CONCENTRATIONS >50 PPM)

- NOTES:**
1. BASE MAP INFORMATION FROM A SURVEY BY PAUL JAMES OLSZEWSKI, PLS, PLLC DATED 8/26/2014 AT A SCALE OF 1"=120'
  2. HORIZONTAL COORDINATE SYSTEM IS NAD83.
  3. VERIFICATION SAMPLES WILL NOT BE COLLECTED WITHIN AREAS WHERE SEDIMENT EXCAVATION/REMOVAL DOES NOT OCCUR (I.E., ENCLOSED WHITE AREAS ON PLAN).
  4. SEDIMENT CLEANUP OBJECTIVES:
    - PCBs: 1 PPM



WASTE STREAM, INC. SITE  
 POTSDAM, NEW YORK  
**VERIFICATION SAMPLING PLAN**

---

**VERIFICATION NDA SEDIMENT  
 SAMPLING LOCATIONS**

---

**ARCADIS** Design & Consultancy  
for natural and built assets

FIGURE  
**3**

