

FONF EXPANSION/SABRE PARK BCP
TOWN OF NIAGARA, NEW YORK

Periodic Review Report

Certification Period: 2015 through 2017

NYSDEC BCP Number: C932162

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1.0 INTRODUCTION

1.1 General

This Periodic Review Report was prepared in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved November 15, 2014 Site Management Plan (SMP) and Section 6.3 of NYSDEC Division of Environmental Remediation (DER)-10. The certification period is December 19, 2014 through December 31, 2017 (herein referred to as the "Certification Period"). A periodic review of all institutional controls and engineering controls (IC/ECs) and a site evaluation are required for fulfillment of the remedial action at the Fashion Outlet of Niagara Falls (FONF) Expansion/Sabre Park (hereafter referred to as the "Site") under the Brownfield Cleanup Program (BCP), which is administered by the NYSDEC. The site was accepted into the BCP in accordance with Brownfield Cleanup Agreement (BCA) Index #C932162-06-13, Site #C932162, executed on June 18, 2013.

In October 2014, the project had completed construction and fulfilled its requirements under the BCP. As part of the environmental remediation for the project, engineering controls (ECs) were implemented to prevent human exposure to subsurface impacts left in-place. Those controls included a site-wide cap consisting of asphalt paved parking, concrete structures and sidewalks, clay-lined stormwater ponds, and clean cover in landscaped areas.. Locations and details of the engineering controls are provided in Figure 2. A certificate of completion was issued by the NYSDEC on 19 December 2014.

1.2 Site Description

The Site is located in the Town of Niagara, New York and includes the ±34-acres former Sabre Park Mobile Home Community located at 1705 Factory Outlet Boulevard (a/k/a Fashion Outlet Boulevard, a/k/a Third Avenue Extension, a/k/a Connection Boulevard - Assessor's Parcel Number 160.08-1-2, 160.08-1-6 and 160.08-1-7), an approximate 10.35-acre parcel located on the southern portion of the larger approximately ±41.3-acre FONF property located at 1900 Military Road, (specifically, a portion of Assessor's Parcel Numbers 145.20-1-15), and a smaller parcel encompassing approximately 3.45-acres on the western side of the Site located at 1755 Factory Outlet Boulevard (a/k/a Fashion Outlet Boulevard, a/k/a Third Avenue Extension, a/k/a Connection Boulevard - Assessor's Parcel Number 160.08-1-1). The total footprint of the Site subject to the BCP is approximately 47.8-acres. The Site is bounded by Factory Outlet Boulevard/Route 190 to the west/northwest, the existing Fashion Outlets of Niagara Falls to the east, and National Grid power lines to the south. A Site Location Map is provided as Figure 1.

1.3 Summary of Remedial Investigation

Langan completed a Remedial Investigation (RI) of the site during July 2013 to characterize the nature and extent of contamination at the Site. The results of the RI are described in detail in the Remedial Investigation Report, dated 16 August 2013, prepared by Langan. The remedial investigation determined that the primary contaminants of concern include volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and chromium. These contaminants were detected in soil, groundwater, and soil vapor. The following is a summary of the RI findings:

Soil

PAHs were detected in 16 of 295 soil and fill samples at concentrations exceeding the commercial soil cleanup objectives (SCOs). PCBs were detected in 5 samples at concentrations (1.07 to 23.0 ppm) exceeding the commercial SCO of 1 ppm. Total chromium was detected in 20 samples at concentrations (1,500 to 6,560 ppm) exceeding the commercial SCO of 1,500 ppm, while hexavalent chromium exceeded the commercial SCO of 400 ppm in 2 samples (486 and 506 ppm). Slag was observed in the historic fill at many locations throughout the site, but did not exhibit radioactivity during the RI; however, approximately 258.5 tons of low level radioactive waste (LLRW) was encountered along the northeast corner of the Site during remedial excavation activities.

Groundwater

Total chromium was detected in four groundwater samples at concentrations (884 to 1,260 ppb) exceeding the groundwater standard of 50 ppb, while hexavalent chromium was detected in four samples at concentrations (818 to 1,230 ppb) exceeding the groundwater standard of 50 ppb. Chlorinated solvents were detected in one groundwater sample at concentrations exceeding groundwater standards. These compounds included (cis) 1,2-dichloroethylene (59 ppb; standard 5 ppb), trichloroethylene (19 ppb; standard 5 ppb) and vinyl chloride (13 ppb; standard 2 ppb). Groundwater pH ranged from 6.29 to 12.2. Contaminated overburden groundwater is not migrating from the site.

Soil Vapor

Chlorinated and petroleum related VOCs were detected in all three of the soil gas samples collected at the Site. VOCs detected in ambient air samples were generally lower than the soil gas samples.

1.4 Summary of Remedial Action

The Site was remediated in accordance with the remedy approved by the NYSDEC in the 9 October 2013 Interim Remedial Measures Work Plan (IRMWP) and 30 April 2014 Remedial Action Work Plan (RAWP). Based on the results of Langan's July 2013 RI, fill throughout the entire Site contained metals, VOCs, SVOCs, PCBs, pesticides, and herbicides at concentrations exceeding unrestricted residential SCOs, and the anticipated costs associated with additional excavation required to achieve a Track 1 cleanup were deemed to be uneconomical and unreasonable. Therefore, a Track 4 remedy was selected for the Site, and residual contaminated soil and water was left in place. Site-specific SCOs were developed for soil exceeding 6NYCRR Part 371 hazardous criteria and PCB-impacted soils that exceed 1 ppm at the surface and 10 ppm in the subsurface. A detailed account of the remedy is provided in the December 2014 Final Engineering Report (FER), and is summarized as follows:

- Excavation and off-site disposal of 164,627.17 tons of construction-related spoils exceeding the restricted commercial SCOs;
- Excavation and off-site disposal of two hot spot areas, including PCB-impacted soils with concentrations exceeding 10 mg/kg (716.6 tons), and chromium impacted soils with concentrations exceeding the RCRA Characteristically Hazardous Waste Criteria of 5 mg/L (682.1 tons);
- Excavation and disposal of approximately 258.5 tons of low-level radioactive waste (LLRW) encountered during installation of building utilities and interior piers in the northern portion of the FONF mall building pad.
- Transportation and off-site disposal of soil/fill material at permitted facilities in accordance with the RAWP, disposal facility requirements, and applicable laws and regulations for handling, transport, and disposal.
- Collection and permitted discharge of approximately 10,698,200 gallons of perched, contaminated groundwater and accumulated stormwater exceeding Part 703 GA criteria to the Niagara Falls Water Board (NFWB) wastewater treatment facility.
- Installation of vapor barriers with active sub-slab depressurization systems (SSDS) beneath the mall expansion building and occupied office building of the relocated Secure Storage facility;
- Construction of a site-wide soil cap/cover system consisting of the following to prevent human exposure to remaining contaminated soil/fill remaining at the Site:

- Placement of a minimum of 1 foot of certified clean soils meeting the Allowable Constituent Levels for Imported Fill or Soil for Commercial Uses (Appendix 5 of DER 10) over all landscaped areas;
- Placement of a combination of a minimum of 6 inches of certified clean clay and a minimum of 1 foot of certified clean soils meeting the Allowable Constituent Levels for Imported Fill or Soil for Commercial Uses (Appendix 5 of DER 10) at the stormwater detention ponds.
- Pavement with varying depths of subbase (4 inches to 12 inches) in the parking lots and drive aisles, and concrete building foundations under all buildings;
- Backfilling of remedial excavation areas to development grade with clean virgin quarried stone or clean fill meeting the requirements of NYSDEC Division of Environmental Remediation (DER) Draft DER-10 – Technical Guidance for Site Investigation and Remediation, Section 5.4, or virgin, native imported crushed stone.
- Execution and recording of Environmental Easements that cover the entire extent of the BCP property to restrict land use and manage the engineering controls to prevent exposure to contamination remaining at the Site
- Development and implementation of a SMP for long-term management of residual contamination as required by the Environmental Easements.

Remedial activities were completed at the Site on 12 November 2014, and a certificate of completion was issued by the NYSDEC on 19 December 2014.

1.5 Effectiveness of the Remedial Program

The remedial program was designed to both eliminate and mitigate environmental and potential human health exposure to adverse environmental conditions remaining in soil, groundwater, and soil vapor underlying the Site. The IC/ECs, as detailed in Section 2.1, for the Certification Period continue to meet the remedial objectives for the site.

1.6 Compliance

All IC/ECs have remained in place at the Site for the Certification Period and remain effective with the exception of the completed NYSDEC-approved activities that are discussed in detail in Sections 2.2, 2.3, and 4.2.1. A further discussion of the remedy compliance is included in Section 5.2.

1.7 Recommendations

No changes to the SMP are recommended at this time.

2.0 IC/EC PLAN COMPLIANCE REPORT

2.1 IC/EC Components

A summary of the IC/ECs implemented at the Site per the RAWP, FER, and SMP are as follows:

- Maintenance of an engineered cap/cover system to prevent human exposure to residual contaminated soils remaining under the Site. The cap/cover system is comprised of a minimum 3-inch thick asphalt cap at parking and private road areas, a 4-inch concrete cap at building slabs, a 5-inch concrete cap at sidewalks, a minimum 1-foot thick clean imported topsoil cover at all landscaped areas, and a combination of a minimum 6-inch thick clay cap and 1-foot thick clean imported topsoil cover at detention ponds.
- Installation and operation of two active sub-slab depressurization (SSD) systems beneath the two fulltime occupied buildings of the Site (the FONF mall expansion building and the Secure Storage office building).
- Execution of environmental easements with ICs to implement, maintain, and monitor the ECs at the Site; prevent future exposure to residual contamination by controlling disturbances of the subsurface contamination at the Site; and, limit the use and development of the Site to commercial uses only. The environmental easements for the Site were executed by the Department on 8 October 2014, and filed with the Niagara County Clerk on 30 October 2014. The County Recording Identifier number for this filing is 2014216492 (a copy of the environmental easement is provided in Appendix B).
- A SMP for long-term management of residual contamination as required by the Environmental Easements, which includes plans for IC/ECs, monitoring, operation and maintenance, and reporting.

Refer to Figure 2 for the locations of the ECs.

2.2 Summary of EC Intrusive Activities Completed During the Certification Period

During the Certification Period, intrusive activities of the EC cap/cover system were performed in accordance with the NYSDEC-approved SMP and Excavation Work Plan (EWP). As outlined in detail below, four notifications of future intrusive activities reports were provided to NYSDEC

at least 15 days prior to the start of any activity that was anticipated to encounter remaining contamination. The intrusive activities generally included the following:

- Storm Sewer Force Main, Drive Aisle, and Directional Sign Installation – The storm sewer system installed as part of the site-wide construction activities completed in December 2014 was installed as a temporary measures. As such, additional storm sewer excavation and installation activities were required to install a storm sewer force main and pump house along the northeastern portion of the Site. During this work, three drive aisles and three directional signs were also installed along the eastern portions of the Site.
- Pond 1A Interim Corrective Measures – A failure of the composite cap/cover system occurred at storm water detention Pond 1A in April 2015. Preventative measures were implemented in accordance with the SMP that successfully protected human health and the environment prior to the approval and implementation of a Corrective Measures Plan (CMP), which is discussed in detail in Section 2.3.
- Site-Wide Storm Sewer Redesign – Due to the removal of stormwater detention Pond 1A from the Site's stormwater management system (refer to Section 2.3), modification of the stormwater management system was necessary in order to compensate for the storage volume lost with the elimination of Pond 1A.
- Secure Storage Expansion – Intrusive activities completed in connection with the construction of two new storage units at the Secure Storage facility located on the southwestern portion of the Site.

Copies of the notification reports (dated 19 May 2015, 2 November 2015, 1 June 2017, 31 August 2017) are included as Appendix C and Figure 4 shows the location of the intrusive activities completed. The following sections provide a summary of the EC intrusive activities completed during the Certification Period.

2.2.1 Storm Sewer Force Main, Drive Aisle, and Directional Sign Installation

Langan submitted a Notification of Future Intrusive Activities to NYSDEC on 19 May 2015 to outline proposed construction activities to be conducted at the Site. The storm sewer system installed as part of the site-wide construction activities completed in December 2014 was installed as a temporary measures. As such, additional storm sewer excavation and installation activities were required. The construction activities included the excavation of trenches and the installation of a storm sewer force main and pump house along the northeastern portion of the Site, the installation of three drive aisles along the eastern portions of the Site, and the

excavation and installation of three directional signs. The notification letter is provided in Appendix C of this PRR.

Prior to commencement of the aforementioned activities, a waste classification sampling event was completed on 20 February 2015 within the proposed excavation locations. Laboratory analytical results and disposal facility approvals for this sampling event are provided in Attachment M of the notification letter, which can be found in Appendix C of this PRR. A description of the construction activities completed as part of this notification is provided below.

Storm Sewer Force Main Installation

The proposed storm sewer force main connects the on-site storm water detention ponds to the Military Road storm sewer system, which discharges at the Cayuga River. The storm sewer force main installation was completed between 21 May and 3 July 2015 and included the following elements:

- Excavation of an approximately 5 to 7-foot wide trench ranging from approximately 3 to 8 feet below grade surface (bgs) and the installation of approximately 1,800 linear feet of:
 - 6-inch diameter DR18 PVC force main piping,
 - 1-1/4-inch PVC-80 conduit for a high level water interlock,
 - 1-inch PVC-80 telephone conduit, and
 - 2-inch PVC-80 electrical conduit-.,
- Excavation of an approximately 3 to 4-foot wide trench ranging from approximately 3 to 6 feet bgs and approximately 550 feet in length, for the installation of MP PLT natural gas service by National Fuel.
- Installation of one wet well and force main pump at approximately 16 feet bgs and associated above grade pump house components.
- Installation of two 4-foot diameter air release valve manholes for the DR18 PVC force main piping.
- Installation of one 4-foot diameter force main connection manhole with high level water interlock.
- Installation of one 4-foot diameter stormwater inlet manhole.
- Excavation and off-site disposal of 1,171.93 tons of soil.

- Importation of 1,024.82 tons of certified clean material for backfilling.
- The off-site recycling of approximately 200 tons of asphalt.
- Installation of approximately 13,200 square feet of 3-inch thick asphalt pavement to repair the disturbed asphalt cap.
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

Drive Aisle Installation

The drive aisle installation connects the newly constructed FONF mall parking area to the adjacent retail property owned by the Benderson Development Company, LLC. Drive aisle installation included the excavation and removal of portions of an approximately eight foot high berm separating the two properties, subgrade prep, installation of asphalt pavement and curbing, and the installation of topsoil cover over disturbed landscaped areas. The installation of the drive aisles was completed between 1 and 23 June 2015 and included:

- Excavation and off-site disposal of 700 cubic yards of fill.
- Importation of approximately 200 cubic yards of certified clean material for backfilling.
- Installation of approximately 50 cubic yards of asphalt pavement to be used as a cap for the newly installed drive aisles.
- Importation of approximately 50 cubic yards of certified clean topsoil to be used as cover at the disturbed landscaped areas.
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

Directional Sign Installation

The directional sign installation included the excavation and installation of three signs throughout the drive aisles and parking areas at the Site. The signs direct traffic through the parking areas and signal entrances to the adjacent Benderson Development Co. LLC property. The installation of the three signs was completed between 1 and 23 June 2015 and included:

- Installation of three directional signs and their associated concrete bases.
- Importation of approximately 5 cubic yards of certified clean topsoil cover.
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

2.2.2 Pond 1A Interim Corrective Measures

A failure of the composite cap/cover system occurred at storm water detention Pond 1A in April 2015. Preventative measures were implemented in accordance with the SMP that successfully protected human health and the environment prior to the approval and implementation of a Corrective Measures Plan (CMP), which is discussed in detail in Section 2.3. Note that all activities are further detailed in a Correction Measures Completion Report (provided in Appendix E).

Breach Discovery and Preventative Measures

In April 2015, a breach of the engineered cap at stormwater detention Pond 1A was observed. This was evidenced by a floating liner within the forebay of Pond 1A, discolored pond water (yellow-green), and hexavalent chromium identified in the pond water via analytical testing at a concentration of 1.8 mg/l (testing completed on 9 April 2015, results received on 12 April 2015). The NYSDEC (Glenn May) was notified of the breach via e-mail on 16 April 2015.

Upon discovery of the breach, the following interim preventative measures were implemented to protect human health and the environment prior to the implementation of a remedy:

- Construction of a temporary chain link fence around the perimeter of Pond 1A to prevent access to the pond by the public.
- Temporary sealing of all influent and effluent piping at Pond 1A with inflatable pipe plugs, brick, and mortar.
- Stormwater flow collected from pavement areas adjacent to Pond 1A was redirected to Pond 1B, effectively shutting off any stormwater discharges into Pond 1A.

Pond 1A remained shut off from the Site's Stormwater system discharges until the remedy failure investigation (described below) could be implemented in June 2016. The prolonged period of time between the breach discovery and investigation was the result of significant design, planning, and local approvals required to modify the Site's stormwater system.

Remedy Failure Investigation

In June 2016, at the request of the Town of Niagara, Langan collected six water samples from the three stormwater detention ponds at the Site; one sample was collected from Pond 1A, two samples were collected from Pond 1B, and three samples were collected from Pond 2. Each of the samples were collected in laboratory-supplied containers and were submitted to York Analytical Laboratories, Inc. in Stratford, Connecticut, and analyzed for hexavalent

chromium via EPA Method 7196A. Laboratory analytical results did not detect hexavalent chromium above the laboratory reporting limit of 10 micrograms per liter (µg/L) in any of the stormwater samples collected. The laboratory data deliverable for these samples is provided as Attachment D of the Pond 1A Corrective Measures Completion Report, which can be found in Appendix E of this PRR.

On 26 July 2016, Macerich, Langan, and the remedial project team conducted an investigation of the engineered cap at stormwater detention Pond 1A. The investigation included the following:

- Dewatering and discharging of the overlying water within Pond 1A to the Niagara Falls Wastewater Treatment Plant under a Niagara Falls Water Board (NFWB) Wastewater Facilities Discharge Permit for an Industrial Commercial User (ICU) (Permit No. ICU-72 dated 23 June 2016);
- Removal of 1-foot thick topsoil cover overlying the 40-mil high-density polyethylene (HDPE) liner at Pond 1A;
- Cutting and removal of the HDPE liner and dewatering of the underlying water trapped below the HDPE liner;
- Inspection of the integrity of the clay liner within Pond 1A; and,
- The investigation and inspection of the Pond 1A forebay pipe outfall penetration, including:
 - Removal of the 40-mil HDPE liner and welded pipe collar connecting to the outfall pipe;
 - Inspection of the underlying clay liner;
 - Inspection of the clay key which plugs the outfall pipe trench; and,
 - The excavation of the outfall pipe trench to identify any trapped perched water within the trench upstream.
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

Following the investigation of the pond, the cause of the breach was determined to likely be the result of a number of factors including, but not limited to: rapid snow melt, rising water table, trapped water in fill during construction, a breach of a stormwater pipe collar, and the natural clay thinning out in the vicinity of Pond 1A.

Langan submitted a Notification of Future Intrusive Activities – Storm Sewer Upgrades, on 2 November 2015 to outline proposed interim corrective measures to be implemented at Pond

1A prior to the completion of a CMP. The interim corrective measures were completed between November and December 2015 and included the installation of storm sewer piping, the excavation and removal of existing storm sewer piping, and the excavation and adjustment of existing storm piping in the vicinity of Ponds 1A and 1B. The Notification of Future Intrusive Activities – Storm Sewer Upgrades letter is provided in Appendix C of this PRR. The interim corrective measures included the following tasks:

Onsite Storm Sewer Piping Repair

The storm sewer work diverted the existing sub-grade storm sewer piping from Pond 1A to Pond 1B, removing Pond 1A from the Site's storm sewer system. Stormwater diverted to Pond 1B now flows from Pond 1B to Pond 2 where a storm sewer force main pumps and discharges onsite storm water to the Military Road storm sewer system, which discharges to the Cayuga River. The storm sewer repair included the following elements:

- Excavation of an approximately 3 to 5-foot wide trench ranging in depth from approximately 5 to 7 feet bgs and the installation of approximately 225 feet of:
 - 30-inch SICPP storm sewer piping, and
 - 12-inch SICPP storm sewer piping (connecting newly installed Town of Niagara Right-Of-Way (ROW) piping to onsite storm sewer system as shown in Figure 3 and Attachment A of the notification letter found in Appendix C of this PPR),
- Excavation of an approximately 3 to 4-foot wide trench ranging in depth from approximately 3 to 6 feet bgs and the removal of approximately 35 feet of existing 12-inch SICPP storm sewer piping.
- Excavation of an approximately 3 to 5-foot wide trench ranging in depth from approximately 3 to 6 feet bgs and the adjustment of approximately 35 feet of existing 12-inch SICPP storm sewer piping (lowering pipe pitch by 0.3%).
- Excavation and off-site disposal of 668.58 tons of fill to the Modern Corporation disposal facility in Model City, New York.
- Installation of approximately 1,200 square feet of 3-inch thick asphalt pavement to repair the disturbed asphalt cap.
- The cutting and repair of an approximately 100 square foot section of the Pond 1B 40-mil HDPE textured geomembrane, and repair of the clay liner. The purpose of this would be to install new influent and effluent piping through the geomembrane and clay layer.
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

The storm sewer repair plans are provided as Attachment A of the notification letter found in Appendix C of this PRR.

Off-site Storm Sewer Piping Installation

The off-site storm sewer work connected the existing sub-grade storm sewer piping north of the Factory Outlet Boulevard Site entrance (off-site) to the existing sub-grade storm sewer piping south of the Factory Outlet Boulevard Site entrance (onsite). In addition to connecting the Factory Outlet Boulevard ROW storm sewer piping, two catch basins located at the Factory Outlet Boulevard Site entrance, which were previously connected to Pond 1A, now are diverted to the newly installed Factory Outlet Boulevard storm sewer pipe which flows south on Factory Outlet Boulevard. The storm sewer installation included the following elements:

- Excavation of an approximately 3 to 5-foot wide trench ranging in depth from approximately 4 to 7 feet bgs and the installation of approximately 225 feet of 30-inch CMP storm sewer piping.
- Excavation and off-site disposal of 329.89 tons of fill to the Modern Corporation disposal facility in Model City, New York.
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

Site/civil plans for the installation of the storm sewer piping are provided in Attachment A of the notification letter found in Appendix C of this PRR.

2.2.3 Site-Wide Storm Sewer Redesign

Due to the removal of stormwater detention Pond 1A from the Site's stormwater management system, modification of the stormwater management system was required to compensate for the storage volume lost with the elimination of Pond 1A. A Notification of Future Intrusive Activities – Storm Sewer Redesign to outline the site-wide storm sewer redesign to address the removal of storm water detention Pond 1A was submitted to the NYSDEC on 1 June 2017. All construction activities were completed in accordance with the NYSDEC-approved SMP, dated 15 November 2014. The Notification of Future Intrusive Activities – Storm Sewer Redesign is provided in Appendix C of this PRR. The following construction activities were completed at the Site between 8 August and 28 September 2017:

- Excavation of an approximately 4- to 15-foot wide trench ranging in depth from approximately 8 to 14 feet bgs to facilitate the installation of:

- Approximately 107 feet of 15-inch SICPP storm sewer piping to former Pond 1A (lowering pipe pitch by 1.23%),
 - Approximately 102 feet of 24-inch SICPP storm sewer piping to Pond 2 (lowering piping pitch by 0.4%),
 - Approximately 825 feet of 24-inch SICPP storm sewer piping adjacent and into the southern parking lot (lowering piping pitch by 0.4%), and;
 - Installation of five manhole structures.
- Excavation of an approximately 30- to 35-foot wide trench adjacent to Pond 2 to a depth of approximately 14 feet bgs and the installation of:
 - One water quality unit,
 - Four storm sewer manhole structures, and;
 - Approximately 42 feet of 24-inch SICPP storm sewer piping adjacent to Pond 2 to connect manhole structures to the water quality unit (lowering piping pitch by 0.4%).
- Excavation and off-site disposal of 4,778.74 tons of fill to the Modern Corporation disposal facility in Model City, New York.
- Importation of 3,330.77 tons of certified clean material for backfilling from the Lafarge Niagara Aggregate Plant in Niagara Falls, New York.
- Installation of approximately 6,300 square feet of 3-inch thick asphalt pavement to repair the disturbed asphalt cap.
- Abandonment of two existing storm sewer pipes by filling the pipes with flowable fill.
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

2.2.4 Secure Storage Expansion

Panamerican Environmental, Inc. (Panamerican) of Buffalo, New York submitted a Secure Storage – SMP Excavation Work Plan Notification Letter (dated 31 August 2017) and a SMP Excavation Work Plan (dated 6 September 2017) to the NYSDEC to outline intrusive activities associated with the construction of two storage units and associated utilities at the Secure Storage facility located on the southwestern portion of the Site. The Secure Storage – SMP Excavation Work Plan Notification letter and the SMP Excavation Work Plan are provided in Appendix C.

Following the completion of construction activities Panamerican submitted a SMP Excavation Work Plan Implementation Report dated November 2017 to the NYSDEC to outline the construction activities completed at the Site. The SMP Excavation Work Plan Implementation Report is provided in Appendix K. The following is a summary of the construction and remedial activities completed by Panamerican at the Site between 20 September and 10 November 2017:

- Excavation and stockpiling of the 1 foot topsoil cover located within the proposed construction area for future reuse at landscaped areas following completion of construction activities,
- Excavation and off-site recycling of approximately 28 cubic yards of the asphalt cap within the construction area to the Swift River Associated recycling facility in Tonawanda, New York,
- Excavation of trenches for the installation of approximately 266 feet of 12-inch SICPP storm sewer piping and four storm water catch basins.
- Excavated fill for the installation of utilities was limited so excess fill excavated was placed on the southern portion of the Site to raise grades prior to the placement of certified clean imported crushed stone,
- Construction of two concrete slab-on-grade storage units (one 6,000-square-foot structure and one 3,400-square-foot structure) on the southern portion of the Site,
- Placement of between 4 and 12-inch thick layer of certified clean virgin crushed stone sub-base below the asphalt parking and drive areas and the two proposed storage unit buildings,
- Replacement of the asphalt cap within asphalt paved parking and drive areas, and;
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

2.3 Pond 1A Final Corrective Measures Plan Implementation

Upon discovery of the EC breach in April 2015, Pond 1A remained shut off from the Site's Stormwater system discharges until the remedy failure investigation and remedy could be implemented. The prolonged period of time between the breach discovery and investigation was the result of significant design, planning, and local approvals required to modify the Site's stormwater system. A CMP, dated 13 January 2016 and revised 26 May 2016, was approved by NYSDEC on 20 June 2016. Implementation of the CMP was completed from 26 July through 19 August 2016. The Pond 1A CMP is provided in Appendix D of this PRR and the

NYSDEC CMP Approval Letter is provided in Appendix A of this PRR. All corrective measures were completed in accordance with the Site's EWP and the revised Stormwater Pollution Prevention Plan. From 26 July to 19 August 2016, the following corrective measures were completed at the Site (a corrective measures summary map is provided as Figure 3 of the CMP, which is provided in Appendix B of this PRR):

- Stored water within Pond 1A was sampled for approval prior to discharge to the Niagara Falls Wastewater Treatment Plant under a Niagara Falls Water Board (NFWB) Wastewater Facilities Discharge Permit for an Industrial Commercial User (ICU) (Permit No. ICU-72 dated 23 June 2016). Based on the acceptance limits provided in the NFWB discharge permit and the analytical results of water samples collected from Pond 1A, treatment was not required for the water prior to discharge. Approximately 173,900 gallons of water from Pond 1A was discharged to the Niagara Falls Wastewater Treatment Plant during the implementation of the corrective measures.
- Approximately 200 cubic yards of flowable fill from the Lafarge Niagara Aggregate Plant of Niagara Falls, NY (Lafarge) was pumped into the now-abandoned stormwater outfall pipes at Pond 1A;
- A total of 4,729 tons of certified clean virgin quarry stone was imported from Lafarge to backfill Pond 1A to 1-foot of final grade.
- Approximately 1,100 cubic yards of topsoil was imported to the Site for use as the 1-foot thick clean cover over the former location of Pond 1A. The topsoil was imported from A-1 Land Care, Inc. located at 1527 Ridge Road in Lewiston, New York. Prior to import and placement at the Site, Langan sampled the topsoil in accordance with the SMP, and the analytical results were included in a 10 August 2016 Importation of Topsoil request that was submitted to NYSDEC. As detailed in these requests, no constituents were detected in any samples collected at concentrations exceeding the Allowable Constituent Levels for Imported Fill or Soil for Commercial Uses (Appendix 5 of DER-10). NYSDEC approval for the use of this topsoil as part of the engineered cap/cover system is included in Attachment G of the CMP which is provided in Appendix B of this PRR.
- Full-time implementation of a CAMP to monitor particulates and VOCs during soil disturbance activities.

Implementation of storm-water pollution prevention measures were completed during the corrective measures in compliance with applicable laws and regulations. Excavation and off-site disposal of site soils was not necessary during completion of the CMP. Following completion of the corrective measures a Pond 1A Corrective Measures Completion Report (CMCR) was

prepared by Langan and submitted to NYSDEC on 8 June 2017. Following comments provided by NYSDEC, the Pond 1A CMCR was revised on 7 August 2017 and approved by NYSDEC on 20 June 2017. The Pond 1A CMCR is provided in Appendix E and the NYSDEC approval letter is provided in Appendix A.

2.4 Goal Status and Corrective Measures

With the exception of the completed activities discussed in Sections 2.2, 2.3, and 4.2.1, no deviations of the IC/ECs were observed during the Certification Period.

2.5 Conclusions and Recommendations

No modifications to the IC/ECs are proposed at this time.

3.0 MONITORING PLAN COMPLIANCE REPORT

3.1 Monitoring Plan Components

The components of the Monitoring Plan are as follows:

- Annual inspection of the cap/cover system;
- Annual inspection and pressure-field testing of the fulltime occupied building's SSDS; and,
- An annual site-wide inspection.

3.2 Summary of Monitoring Completed

3.2.1 Composite Cap/Cover System Inspections

Annual inspection of the composite cap/cover system was completed on 18 October 2016 and 8 August 2017. Conditions of the on-site building foundations/floor slabs, sidewalks, asphalt parking areas, clean cover landscaped areas, and clay lined detention ponds were inspected for quality and integrity. Damages and/or breaches to the composite cap/cover system were not identified during the annual inspections with the exception of the items discussed in Sections 2.2 and 2.3. The site-wide inspection reports are included as Appendix I.

3.2.2 SSDS Inspections and Pressure-Field Testing

Annual inspection and pressure-field testing of the SSDS were conducted on 18 October 2016. SSDS in the mall expansion building and occupied office building of the relocated Secure Storage facility were inspected to confirm they were operating per the manufacturers' specifications and the intended design criteria. Sub-slab pressure field testing was conducted utilizing a manometer on permanent monitoring points located throughout both building's concrete slab-on-grade flooring and the mall expansion building's exterior sidewalk monitoring locations to confirm that a negative pressure vacuum was present throughout both building's footprints as required by the SMP. Negative pressure readings from the monitoring points ranged from 0.005 to 0.104 inches of water. One exterior monitoring point was observed to be under positive pressure; however, it was determined the monitoring point was damaged and had been filled with water and debris. Based on the inspections and weekly observations of the system alarms by the site maintenance staff at the mall expansion building and the Secure Storage office building, all SSDS were operational, and within criteria, for the 2015 through 2017 certification years, with the exception of the completed activities mentioned in Section 4.2.1. The individual system inspection reports are included in Appendix H.

3.2.3 Annual Site-wide Inspection

During 18 October 2016 and 8 August 2017, the annual site-wide inspection was conducted per the requirements of the SMP. This consisted of spot inspections of all ECs including the cap/cover system and the SSD systems. All IC/EC components inspected were in compliance with the SMP, with the exception of the completed activities discussed in Sections 2.2, 2.3, and 4.2.1. The completed site-wide inspection forms are included as Appendix I.

3.3 Comparisons with Remedial Objectives

The objective of the on-going CMP implementation is to ensure the on-site ECs remain in-place and operational. The monitoring and inspection activities conducted in 2016 and 2017 indicate that ECs remain in-place and operational and that the remedial objectives continue to be met for the site.

3.4 Monitoring Deficiencies

Monitoring activities for the 2015 through 2017 Certification Period complied with the SMP Monitoring Plan and NYSDEC's requests, with the exception of the completed activities mentioned in Section 4.2.1. Pressure-field testing of the fulltime occupied building's SSDS identified a negative pressure vacuum present throughout both building's footprints as required by the SMP.

3.5 Conclusions and Recommendations

No changes to the SMP are recommended at this time.

4.0 O&M PLAN COMPLIANCE REPORT

4.1 O&M Plan Components

The components of the O&M Plan are as follows:

- Continuous operation and maintenance as necessary, of the SSDS.

4.2 Completed O&M Activities

4.2.1 SSD Systems

Based on inspection observations, the SSDS in the mall expansion building and occupied office building of the relocated Secure Storage facility operated continuously, per the manufacturers' specifications and the intended design criteria, for the 2015 through 2017 certification years, with the following exceptions:

Secure Storage Occupied Office Building System

Langan was notified in January 2016 that the Secure Storage office building SSDS water knockout tank had frozen over due to extreme weather conditions. To avoid any damage to the SSDS vacuum, the system was shut down temporarily for service. Langan completed repairs to the SSDS components including the removal of the water knockout tank and the installation of insulation on the above grade piping network. Repairs were completed on the Secure Storage office building SSDS on 20 February 2016; the Secure Storage office building SSDS has been operational since the repairs were completed.

Mall Expansion Building System

Langan was notified on 30 August 2016 that the mall expansion building SSDS western vacuum blower was not functioning properly. After an inspection of the blower it was determined an electrical surge had destroyed the turbine bearings of the blower. Langan immediately arranged for the purchase of a new blower and on 18 October 2016, Greater Niagara Mechanical of North Tonawanda, New York (GNM) removed and replaced the damaged blower under Langan supervision. The mall expansion building SSDS has been operational since the repairs were completed; however, continuing power surges have caused Langan and GNM to be onsite more frequently than expected to troubleshoot electrical problems associated with the blowers.

In addition to the periodic inspections needed to troubleshoot the electrical problems, general maintenance activities (e.g., lubrication, cleaning inlet filters) were conducted on both systems on

an as-needed basis. All work was conducted in accordance with the manufacturer's specifications and the SMP.

4.3 Evaluation of SSDS

4.3.1 SSDS

The primary objective of the SSDS is to create a negative pressure under the concrete slab-on-grade flooring and draw any adverse soil vapors to a vacuum blower system on the exterior of each building where such vapors are discharged to the atmosphere. Continuous operation of the SSDS indicates effective performance of these mitigation systems.

4.4 O&M Deficiencies

As outlined above, an apparent power surge at the Site caused the turbine bearings of the blower to seize in August 2016. And on 18 October 2016, GNM (under Langan's supervision) removed and replaced the damaged blower. Further, continuing power surges at the Site have caused Langan and GNM to be onsite more frequently than expected to troubleshoot electrical problems and vacuum stabilization issues associated with the blowers. Applicable maintenance, adjustments, and repairs to each system were promptly conducted as per manufacturer's recommendations.

4.5 Conclusions and Recommendations

Under nominal operating conditions, the SSDSs operate per their design and continuing general maintenance activities (e.g., lubrication, cleaning inlet filters) are conducted on both systems on an as-needed basis. However, continuing power surges at the Site have caused Langan and GNM to be onsite more frequently than expected to troubleshoot electrical problems and vacuum stabilization issues associated with the blowers and one of the blowers has already been destroyed and replaced as a result of one of the power surges. Weekly observations of the system alarms by the site maintenance staff at the mall expansion building and the Secure Storage office building is conducted to ensure operation of the systems. However, as a result of the ongoing power surges, Langan plans on submitting a work plan to NYSDEC that will outline a proposed monitoring plan to be implemented with the aim of converting the active SSD systems into passive systems. Pursuant to the SMP, the active SSD systems will not be discontinued unless prior written approval is granted by the NYSDEC.

5.0 OVERALL CONCLUSIONS AND RECOMMENDATIONS

5.1 SMP Compliance

Each component of the SMP, including the IC/EC Plan, Monitoring Plan, and O&M Plan, was in compliance for the 2015 through 2017 certification years, with the exception of the completed activities noted in Sections 2.2, 2.3, and 4.2.1.

5.2 Remedy Performance Evaluation

5.2.1 Composite Cap/Cover System

Conditions of the on-site building foundations, sidewalks, parking areas, private roads, landscaped areas, and clay lined ponds were inspected for quality and integrity on 18 October 2016 and 8 August 2017. The site-wide composite cap/cover system was confirmed to be intact, with the exception of the completed activities mentioned in Sections 2.2 and 2.3, and continues to be effective in protecting public health and the environment.

5.2.2 SSDS

Overall, the SSDSs are operating as specified and were effective in mitigating the exposure to potential adverse soil vapor concentrations under the site for the 2015 through 2017 certification years, with the exception of the temporary shutdowns mentioned in Section 4.2.1.

5.2.3 IC Components

All ICs were maintained during the 2015 through 2017 certification years, and the environmental easement on the site remains in place.

5.3 Future Submittals

Inspections/monitoring of the composite cover system and SSDS will continue on an annual basis. Forms and other information generated during regular monitoring events and inspections will be submitted at the time of the annual Periodic Review Report, as specified in the Reporting Plan of the NYSDEC-approved SMP. Further, as a result of the ongoing power surges at the Site, Langan plans on submitting a work plan to NYSDEC that will outline a proposed monitoring plan to be implemented with the aim of converting the active SSD systems into passive systems. Pursuant to the SMP, the active SSD systems will not be discontinued unless prior written approval is granted by the NYSDEC.

6.0 CERTIFICATION OF IC/ECS

6.1 IC/EC Certification Form

The completed IC/EC Certification Form is presented in Appendix J.

6.2 IC/EC Certification

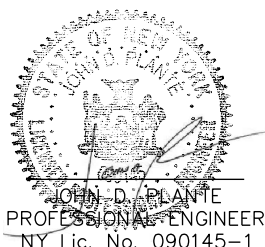
I, John Plante, am currently a registered professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the Fashion Outlets of Niagara Falls Expansion/Sabre Park Brownfield Cleanup Program site (NYSDEC BCA Site No. C932162).

I certify that the ICs/ECs are in place and effective and are performing as designed.

I certify that nothing has occurred that would impair the ability of the controls to protect the public health and environment and that nothing has occurred that would constitute a violation or failure to comply with any operation and maintenance plan for such controls.

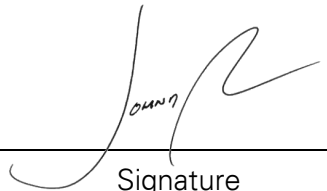
I certify that all use restrictions, institutional controls, engineering controls, and all operation and maintenance requirements applicable to the site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded. A site Management Plan has been submitted by the applicant for the continual and proper operation, maintenance, and monitoring of all engineering controls employed at the site, including the proper maintenance of all remaining systems, and that such plan has been approved by the Department.

I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.



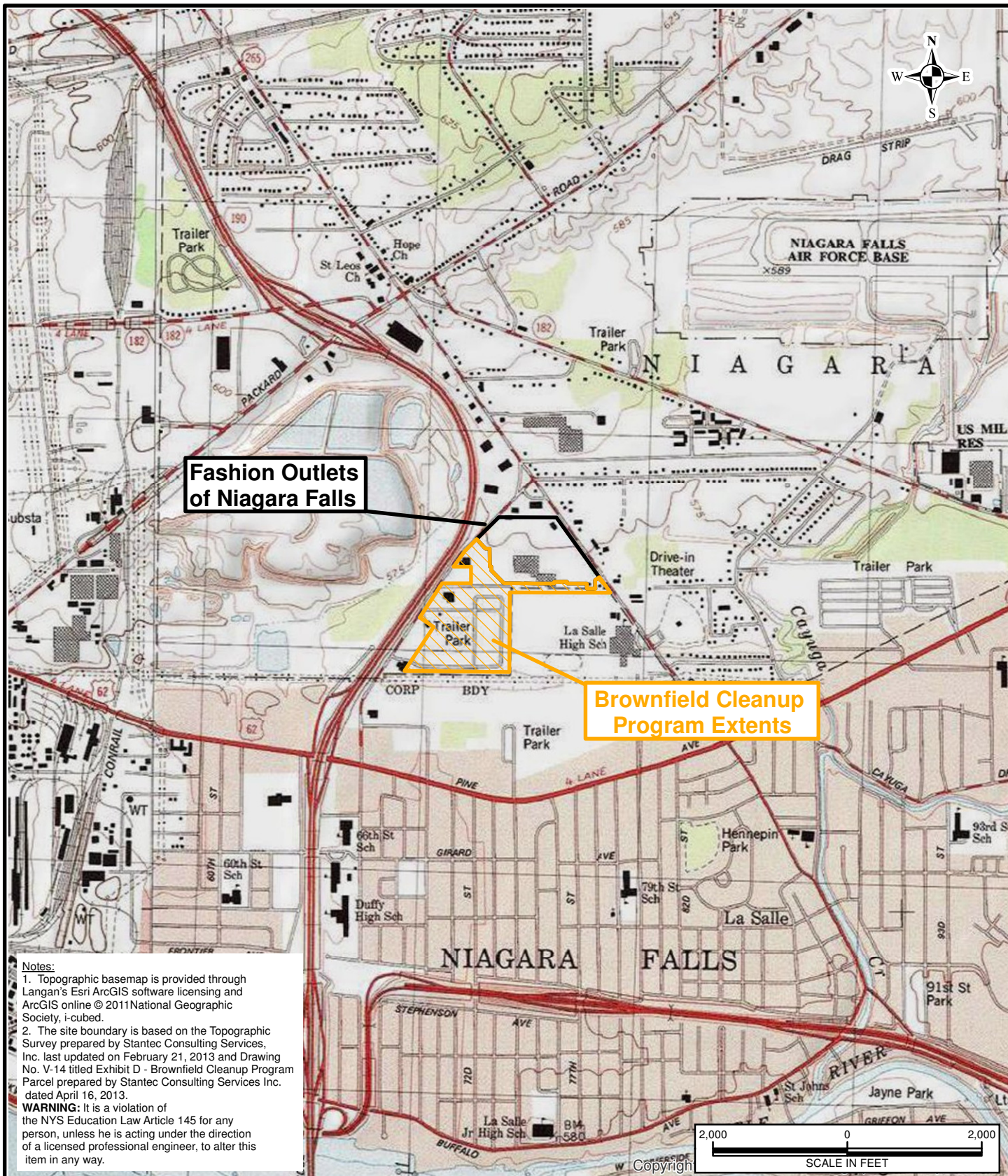
7/21/2020

Date


Signature

It is a violation of Article 130 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 130, New York State Education Law.

FIGURES



LANGAN

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Elmwood Park, NJ 07407-1338

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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying and
Landscape Architecture, D.P.C.
Langan International LLC
Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project

**FONF Expansion/
Sabre Park BCP**

TOWN OF NIAGARA

NIAGARA COUNTY

NEW YORK

Drawing Title

**SITE LOCATION
MAP**

Project No.

140091417

Date

JANUARY 2017

Scale

1" = 2000'

Drawn By

JPH

Submission Date

JANUARY 2017

Figure

1

SHEET 1 OF 4

- Fashion Outlets Of Niagara Falls Site Boundary
- Brownfield Cleanup Program Site Boundary
- Clay Lined (Minimum 6-inch Thick) Stormwater Detention Ponds with Topsoil Cover (Minimum 1-foot Thick) Above Normal Water Surface Elevation
- Landscaped Areas (Minimum 1-ft of Clean Cover)
- Asphalt Cap/Concrete Cap/Parking Area Islands Topsoil Cover (Minimum 1-foot Thick)
- Sub-Slab Depressurization System and Stego Wrap 20-mil Vapor Barrier



Project	FONF Expansion/ Sabre Park BCP TOWN OF NIAGARA	
	NIAGARA COUNTY	NEW YORK

Project No.	140091417	Figure 2
Date	JANUARY 2017	
Scale	1"= 100'	
Drawn By	JPH	
Submission Date	JANUARY 2017	
SHEET 2 OF 4		

Notes:

1. The site boundary is based on the Topographic Survey prepared by Stantec Consulting Services, Inc. last updated on February 21, 2013 and Drawing No. V-14 titled Exhibit D - Brownfield Cleanup Program Parcel prepared by Stantec Consulting Services Inc. dated April 16, 2013.

2. The basement was provided by Stantec Consulting Services, Inc. on August 27, 2014 and is identified as Drawing CS-100 - Overall Site Plan.

3. This plan should be reviewed as a color copy as the locations are color coordinated.

WARNING: This is a violation of the NYC Financial Law Article 145 for any person, unless he is acting under the direction of a licensed professional engineer, to alter this item in any way.

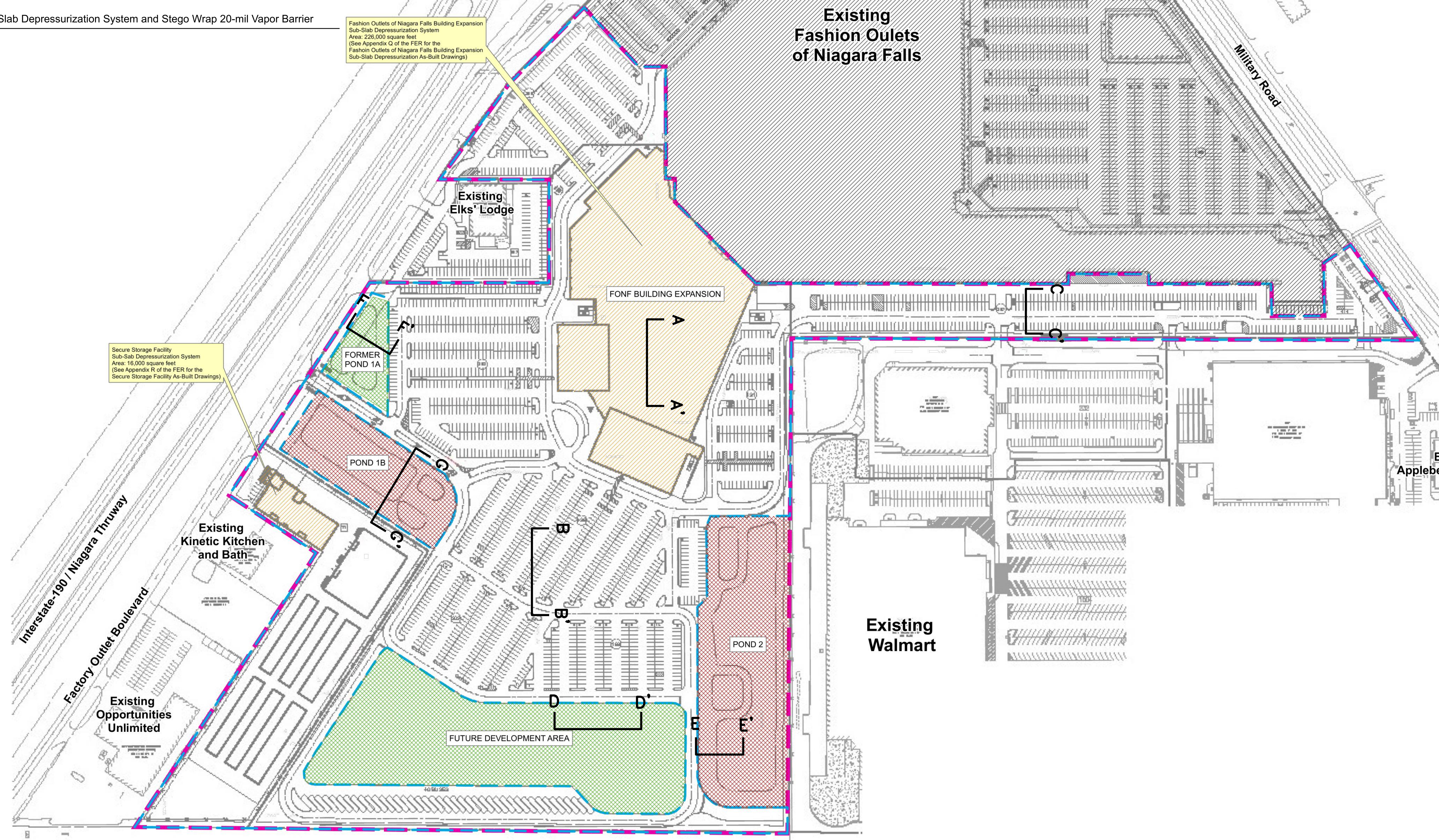
3. This plan should be reviewed as a color copy as the locations are color coordinated.

Legend

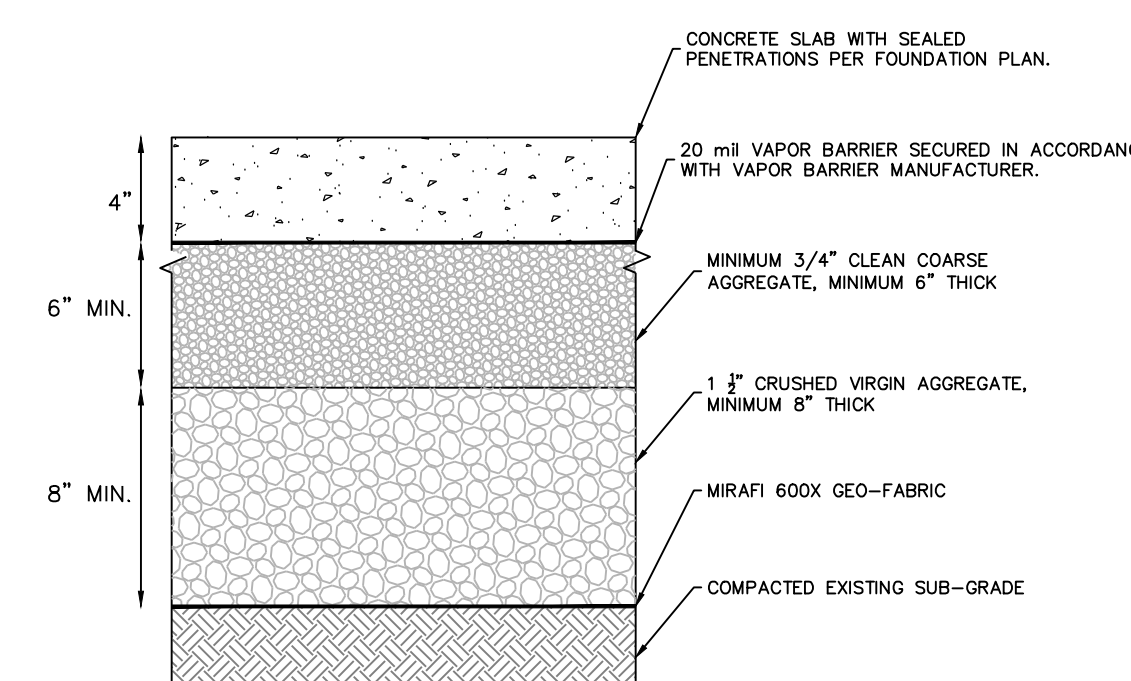
- Fashion Outlets Of Niagara Falls Site Boundary
- Brownfield Cleanup Program Site Boundary
- Clay Lined (Minimum 6-inch Thick) Stormwater Detention Ponds with Topsoil Cover (Minimum 1-foot Thick) Above Normal Water Surface Elevation
- Landscaped Areas (Minimum 1-ft of Clean Cover)
- Asphalt Cap/Concrete Cap/Parking Area Islands Topsoil Cover (Minimum 1-foot Thick)
- Sub-Slab Depressurization System and Stego Wrap 20-mil Vapor Barrier

Fashion Outlets of Niagara Falls Building Expansion Sub-Slab Depressurization System Area: 228,000 square feet (See Appendix Q of the FER for the Fashion Outlets of Niagara Falls Building Expansion Sub-Slab Depressurization As-Built Drawings)

Secure Storage Facility Sub-Slab Depressurization System Area: 16,000 square feet (See Appendix R of the FER for the Secure Storage Facility As-Built Drawings)

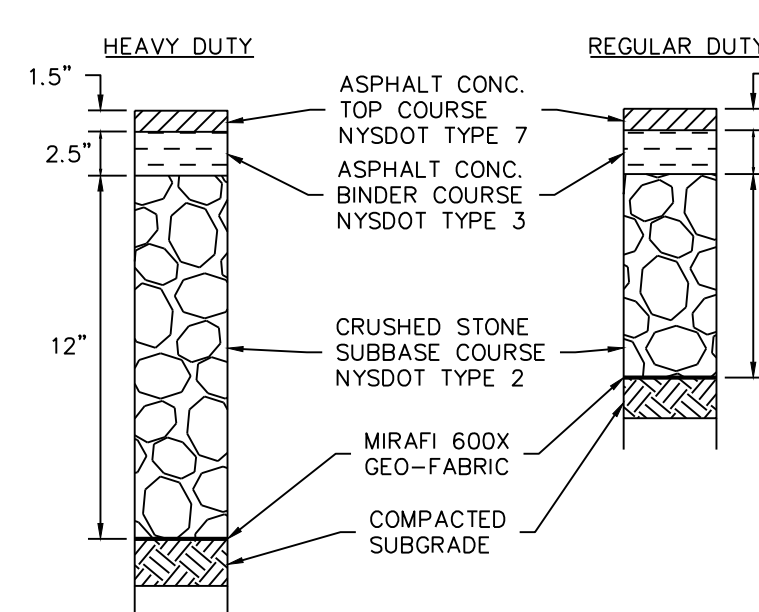


REMEDIAL CAP/COVER CROSS SECTION LOCATION PLAN



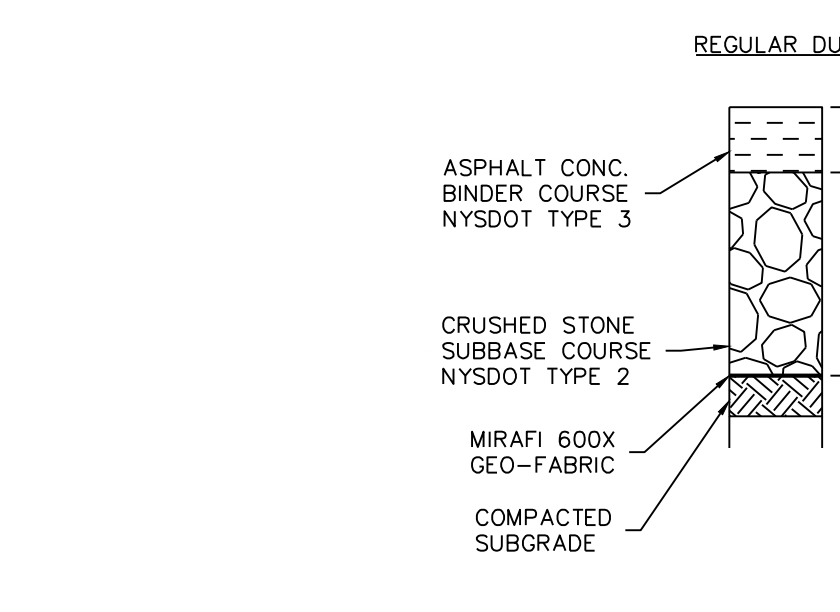
NOTES:
1. THE VAPOR BARRIER SHALL BE REPAIRED AND MAINTAINED IN ACCORDANCE

CROSS SECTION A - A'
BUILDING FOUNDATION CONCRETE CAP
N.T.S.



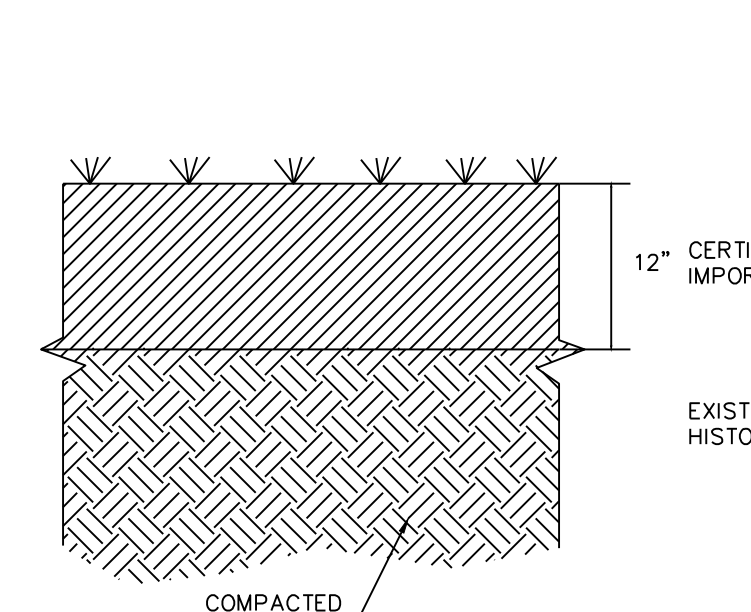
NOTES:
1. PAVEMENT SECTION DETAIL PROVIDED BY STANTEC ON 17 OCTOBER 2013.

CROSS SECTION B - B'
PARKING AREA ASPHALT CAP
N.T.S.



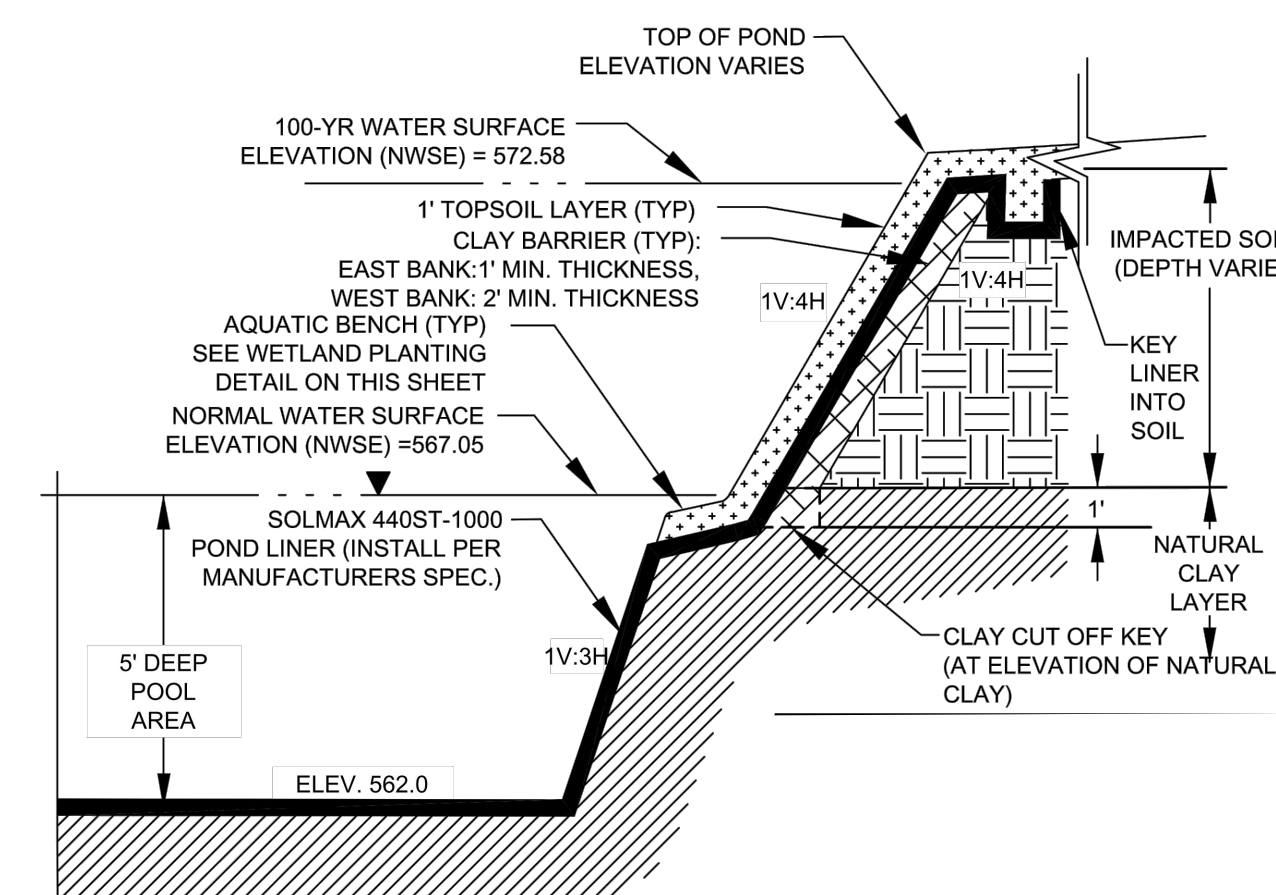
NOTES:
1. PAVEMENT SECTION DETAIL PROVIDED BY STANTEC ON 17 OCTOBER 2013.

CROSS SECTION C - C'
EASTERN PARKING AREA ASPHALT CAP
N.T.S.

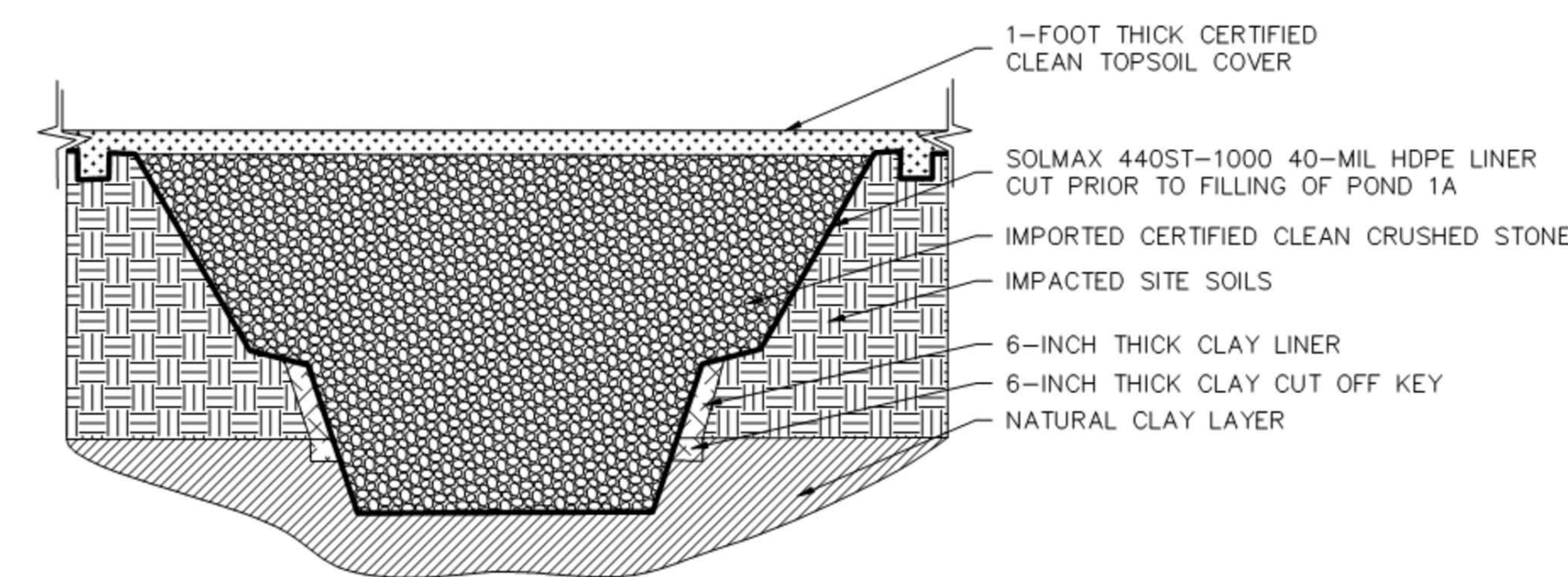


NOTES:
1. LANDSCAPED AREA TOPSOIL COVER DETAIL PROVIDED BY STANTEC ON 17 OCTOBER 2013.

CROSS SECTION D - D'
LANDSCAPED AREA CLEAN FILL COVER
N.T.S.



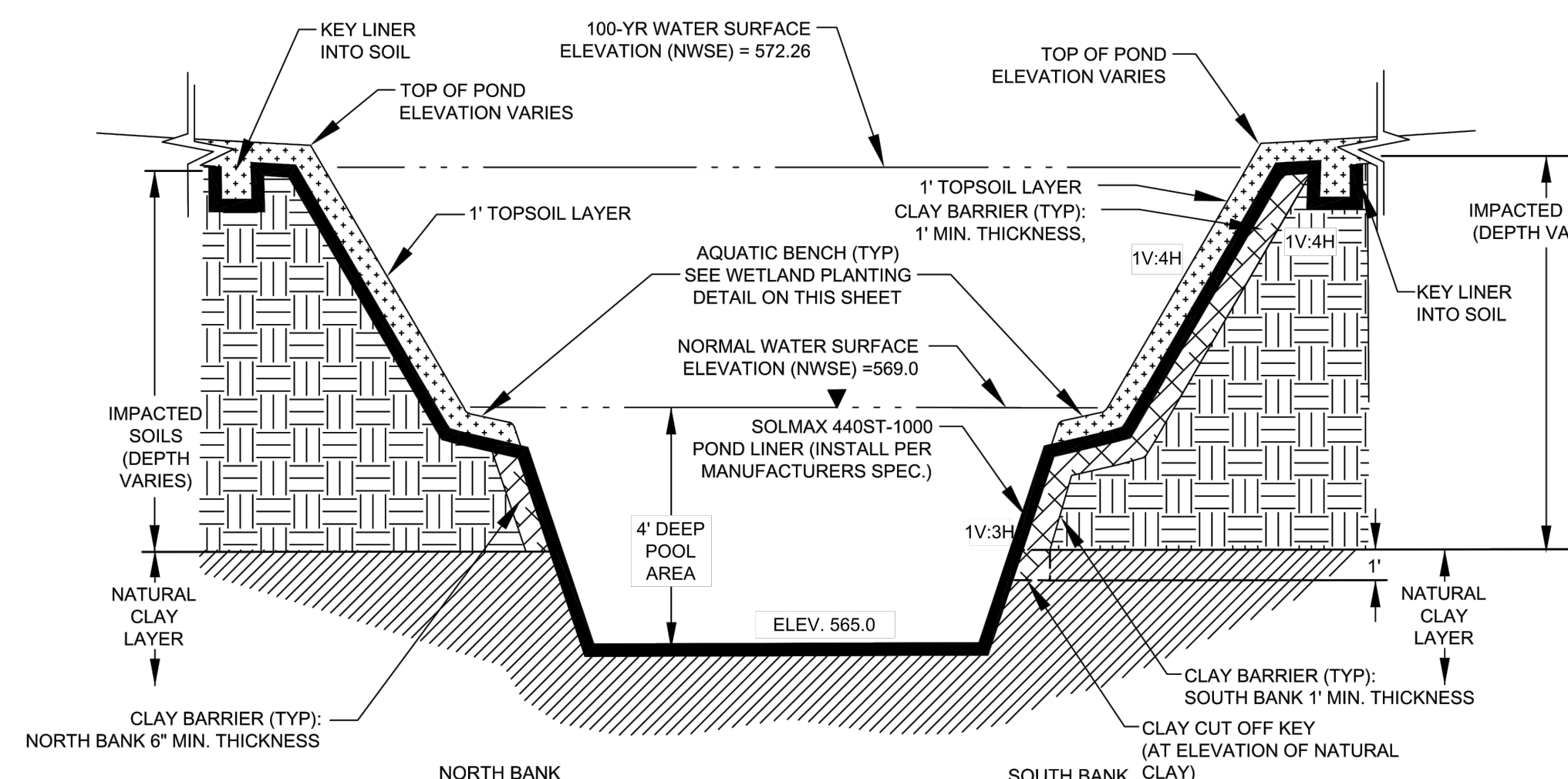
CROSS SECTION E - E'
POND 2 STORMWATER DETENTION BASIN CLAY LINER CAP
N.T.S.



CROSS SECTION F - F'
POND 1A STORMWATER DETENTION BASIN CLAY LINER CAP
N.T.S.

GENERAL NOTES

- THE SITE BOUNDARY IS BASED ON THE TOPOGRAPHICAL SURVEY PREPARED BY STANTEC CONSULTING SERVICES, INC. LAST REVISED ON 21 MAY 2014 AND IDENTIFIED AS DRAWING NO. GI-905 TITLED FASHION OUTLETS OF NIAGARA FALLS BCP ENVIRONMENTAL EASEMENT PLAN PREPARED BY STANTEC CONSULTING SERVICES, INC. DATED 27 MAY 2014.
- BUILDING FOUNDATION CONCRETE CAP SECTIONS WERE COMPILED FROM BOTH THE LANGAN SUB SLAB DEPRESSURIZATION SYSTEM DESIGN FOUND IN APPENDIX K OF THE REMEDIAL ACTION WORK PLAN AND FOUNDATION DRAWING PROVIDED BY RTKL ASSOCIATES INC. (RTKL) ON 25 JULY 2014.
- LANDSCAPED AREA TOPSOIL COVER DETAIL PROVIDED BY STANTEC ON 17 OCTOBER 2013.
- POND LINING CROSS SECTIONS PROVIDED BY STANTEC ON 18 SEPTEMBER 2014.
- EXISTING SITE SOIL COMPACTION, CLAY SOIL COMPACTION, AND ALL SUB-BASE COMPACTION WILL MEET THE REQUIREMENTS OUTLINED IN BARRON AND ASSOCIATES, P.C. (BARRON) GEOTECHNICAL REPORT DATED 31 JANUARY 2012.
- ASPHALT DENSITIES AND CONCRETE COMPRESSIVE STRENGTH WILL MEET THE REQUIREMENTS OUTLINED IN STANTEC'S CONSTRUCTION SPECIFICATIONS.
- ALL IMPORTED STONE SUB-BASE AND TOPSOIL WILL BE TESTED AND CERTIFIED IN ACCORDANCE WITH SECTION 5.4 OF NYSDEC'S DER-10 TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION DOCUMENT.
- THE FASHION OUTLETS OF NIAGARA FALLS EXPANSION BUILDING AND THE SECURE STORAGE FACILITY SUB-SLAB DEPRESSURIZATION SYSTEM AS-BUILT DRAWINGS CAN BE FOUND IN APPENDIX AND APPENDIX R RESPECTIVELY OF THE FINAL ENGINEERING REPORT.



CROSS SECTION G - G'
POND 1B STORMWATER DETENTION BASIN CLAY LINER CAP
N.T.S.

LANGAN

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Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project
**FONF Expansion/
Sabre Park BCP**

TOWN OF NIAGARA

CNIAGARA COUNTY

Drawing Title

**REMEDIAL
CAP/COVER CROSS
SECTIONS**

Project No.

140091417

Date

JANUARY 2017

Scale

N.T.S.

Drawn By

JPH

Reviewed By

RJW

Submission Date

JANUARY 2017

Drawing No.

3

SHEET 3 OF 4

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

