Niagara Frontier Transportation Authority

Port-GreenBelt Shoreline Improvement Project
Erie County, New York
Final Engineering Report
NYSDEC Site Number: B-00149-9



August 2011

Prepared for:

Niagara Frontier Transportation Authority
Metropolitan Transportation Center
181 Ellicott Street, Buffalo, New York 14203

Prepared by:

URS
77 Goodell Street, Buffalo, New York 14203
(716) 856-5636

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ERIE, COUNTY, NEW YORK

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CERTIFICATIONS

Roles and Responsibilities

The Port-Greenbelt Shoreline Improvement Project described in this Final Engineering Report was a remedial action implemented by the Niagara Frontier Transportation Authority (NFTA). The engineering design, preparation of construction documents, submittal review and review and comment on Contractor's Request For Information (RFIs) was the responsibility of URS Corporation – New York (URS).

Oversight and management services during the majority of the construction were provided by C&S Engineers (C&S). As such, there is a dual certification for this project.

Also, NFTA, pursuant to ECL 71-3605, created and recorded an environmental easement that included use restrictions, Institutional Controls, Engineering Controls, and/or operation and maintenance requirements applicable to the Site, (copy included herein). It is URS's understanding that NFTA notified all affected local governments, as defined in ECL 71-3603, and that such easement has been recorded at the Erie County Clerk's Office.

URS Corporation – New York Certification

For the Port-Greenbelt Shoreline Improvement Project URS was retained by NFTA to: provide engineering design; prepare construction documents: provide input on the Contractor's RFI and perform review of Contractor's submittal, while, NFTA, under separate contract procured C&S, to provide Construction Management.

I, Robert E. Murphy, am a Vice President of URS Corporation - New York (URS) in the Buffalo, New York Office. I am currently a registered professional engineer licensed by the State of New York. I certify that the Remedial Design was implemented and that, as supported by the separate C&S certifications, that construction activities were completed in substantial conformance with the New York State Department of Environmental Conservation (Department) - approved Remedial Design.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Design and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established in for the remedy.

I certify that the use restrictions, Institutional Controls, Engineering Controls, and/or 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.

I certify that a Site Management Plan has been submitted (under separate cover) for the continual and proper operation, maintenance, and monitoring of Engineering Controls employed at the Site, and that such plan has been approved by the Department.

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

The certification does not extend to work on this project performed under separate contracts/agencies (e.g. NYSDOT Route 5 Improvements) or for which URS was not engaged to perform.

065031	12/14/11	Robert E. Murphy
NYS Professional Engineer #	Date	Signature

C&S Engineers, Inc Certification

I am the Buffalo Office Manager of C&S Engineers, Inc. and currently registered as a professional engineer licensed by the State of New York. C&S was retained by the Niagara Frontier Transportation Authority (NFTA) to perform certain construction monitoring activities for the Port-Greenbelt Shoreline Improvement Project (NFTA No. 12PL0202). For those project activities for which C&S was engaged and present on site, C&S certifies that the construction activities were completed in substantial conformance with the Construction Documents as modified by approved changes authorized by the Owner, Engineer and agencies having jurisdiction.

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

The certification does not extend to work at the site performed under separate contracts/agencies (e.g. NYSDOT Route 5 Improvements) or for which C&S was not present or engaged to monitor.

056555 — NYS Professional Engineer #

3/24/11 — Date

Signature

Lowell B Dewey, P.E.
Regional Office Manager
C&S Engineers, Inc.

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LIST OF ACRONYMS

AMSL	above mean sea level
AOC	area of concern
AST	above ground storage tank
bgs	below ground surface
CAMP	Community Air Monitoring Plan
CDF	Confined Disposal Facility
CFR	Code of Federal Regulations
cm/sec	centimeters per second
COI	constituents of interest
cPAH	carcinogenic Polynuclear Aromatic Hydrocarbon
CQA	construction quality assurance
DER-10	Draft Technical Guidance for Site Investigation and Remediation
EC	Engineering Control
EPA	Environmental Protection Agency
FER	Final Engineering Report
gpm	gallons per minute
HASP	Health and Safety Plan
IC	Institutional Control
IRM	Interim Remedial Measure
µg/l	micrograms per liter
µg/kg	micrograms per kilogram
mg/l	milligrams per liter
mg/kg	milligrams per kilogram
NFTA	Niagara Frontier Transportation Authority
NYCRR	New York Code Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOT	New York State Department of Transportation
OSHA	Occupational Safety and Health Administration
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl

LIST OF ACRONYMS – Con't

PPE	personal protective equipment
RA	Remedial Action
RAO	Remedial Action Objective
RAR	Remedial Action Report
RAS	Remedial Action Selection report
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
ROD	Record Of Decision
SAC	State Assistance Contract
SCG	standards, criteria and guidance
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SPCC	Spill Prevention, Control and Countermeasures
SVOC	Semi-Volatile Organic Compound
TAGM	Technical and Administrative Guidance Memorandum
TCLP	toxicity characteristic leaching procedure
TOC	total organic carbon
TOGS	Technical and Operational Guidance Series
URS	URS Corporation – New York
USACOE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	volatile organic compound

1.0 BACKGROUND AND SITE DESCRIPTION

1.1 General

The Niagara Frontier Transportation Authority entered into a State Assistance Contract (SAC), with the New York State Department of Environmental Conservation (NYSDEC) on September 24, 2004, to investigate and remediate an approximately 16-acre property located in Buffalo, New York. The property was remediated to commercial use standards, and will be used as a 'greenbelt' to provide public access to the waterfront.

The site is located in the County of Erie, New York and is comprised of the following City of Buffalo Tax Map parcels: 121.12-1-3; 122.09-1-1; 122.13-1-1; 122.13-1-2; and, 122.17-1-1.

The Greenbelt consists of 15.83 acres, and is contained within a larger 164.68 acre parcel owned by NFTA. The Greenbelt constitutes "Phase I" of the remedial activities planned for the overall parcel. The remaining portions of the parcel will be remediated in subsequent phases of development. As such, it was determined in consultation with the NYSDEC that an ALTA Survey should be performed to delineate the boundaries of both parcels to facilitate future remediation/development efforts. These are fully described in Appendix A: Survey Map, Metes and Bounds.

The NYSDEC Template for Final Engineering Reports was utilized to the extent practicable and applicable in preparing this FER. An electronic copy of this FER with all supporting documentation is included as Appendix B.

1.2 Site Description and History

The Buffalo Outer Harbor Brownfield Site is located in the City of Buffalo in Erie County, New York approximately one (1) mile south of downtown Buffalo, and is bordered to the west by an embayment of Lake Erie known as the Buffalo Outer Harbor and to the east by Fuhrmann Boulevard and State Route 5 (Figure 1). The Buffalo Ship Canal and the Buffalo River are located approximately 500 feet and 2,000 feet, respectively, to the east of the site.

The Outer Harbor property consists of approximately 165 acres and is currently owned by the NFTA, which acquired it from the U.S. Army Corps of Engineers (USACOE) in the 1950s. The Bell Slip divides the property into a north and south area.

The majority of the Buffalo Outer Harbor property was created as a result of land reclamation and filling activities that began in 1874 and continued for more than 100 years. The exact materials used to fill this area are not fully known, but consist primarily of dredged materials from the Buffalo Outer Harbor shipping channel (2,100,000 cy), construction fill (930,000 cy), and lesser amounts of concrete, stone, slag, furnace casting sands, soil and other miscellaneous materials.

Based on results of preliminary site assessments and disposal history, the entire site was listed by the NYSDEC as a Class 2 Inactive Hazardous Waste Disposal Site. The NYSDEC subsequently completed a remedial investigation/feasibility study (RI/FS) to more fully identify conditions at the site. With the exception of the radio tower area, (located in the extreme southern portion of the NFTA parcel), the remaining areas of the Outer Harbor, though sporadically contaminated with hazardous substances, did not meet the threshold of containing consequential amounts of hazardous waste to remain on the state site registry. In June 2001, the NFTA submitted a Remedial Alternatives Report (RAR) in support of a Brownfield Remediation Application for redevelopment of a portion of the Outer Harbor Property located along the Lake Erie shoreline. The project was identified as the Port-Greenbelt Shoreline Improvement Project ("Greenbelt").

In March 2002, an Environmental Record of Decision (ROD) was issued by NYSDEC outlining remedial activities to be implemented during the first Phase of site development. The ROD was subsequently amended (May 2004 Explanation of Significant Differences) to extend the Greenbelt southward from the Bell Slip to the Terminal B facility. As indicated in the ROD, the remedy for the Site includes:

- Placement of a twelve inch thick soil cover on top of a geotextile fabric over the entire area of the Greenbelt (above the top of revetment slope).
- Stabilization of the shoreline including bulkhead renovation to prevent erosion of fill material and protection of the soil cover.

- Implementation of the remedial measures to address potential exposures to site contaminants for various possible future land uses presented in the ROD (Table #3, Land-use/Remedial Plan Matrix).
- A Deed Restriction to insure the integrity of the remedy and to restrict inappropriate future Site use.

On September 24, 2004, the NFTA entered into a State Assistance Contract with the NYSDEC to implement the remedy outlined in the ROD.

1.3 Description of the Project

The Port- Greenbelt Shoreline Improvement Project encompasses an area adjacent to the shoreline called the "Greenbelt", as well as an access corridor from Fuhrmann Boulevard to the north end of the Greenbelt (See Appendix A – DWG 3). The Greenbelt consists of approximately 4,300 linear feet of Lake Erie shoreline and 2,300 linear feet of inner shoreline around an inlet known as the "Bell Slip". The Greenbelt begins approximately 75 feet south of the former Pier Restaurant seawall, continues south, goes around the Bell Slip, and ends at Terminal B. Except for around the Bell Slip, the width of the Greenbelt is 150 feet from the USACOE Harbor Line. Around the Bell Slip the Greenbelt width is 75 feet from the top of existing bank (at the time of the design – June 2006). Refer to Drawings C-100 through C-108 in Appendix C for the "Record" site plans.

1.4 Purpose of the Final Engineering Report

The purpose of the FER is to provide a description of the remedial design, a summary of remedial construction activities and quantities, and identification of changes made during construction from the NYSDEC-approved remedial design.

2.0 SUMMARY OF SITE REMEDY

2.1 Remedial Action Objectives

As indicated in the ROD, the proposed future use for the Buffalo Outer Harbor Brownfield Site is a mix of residential, commercial and recreational development. Phase I of the development is the creation of a waterfront promenade (i.e. greenbelt) along the shoreline to allow public access to the waterfront. To achieve the future intended site usage, the environmental issues identified during the Remedial Investigation, needed to be addressed. Consequently, the following Remedial Action Objectives (RAOs) were identified in the ROD.

2.1.1 Soil RAOs

RAOs for Public Health Protection

- Reduce, control, or eliminate to the extent practicable the contamination present within the soils onsite;
- Prevent ingestion/direct contact with contaminated soil; and,
- Eliminate the potential for inhalation of vapors or airborne particles.

RAOs for Environmental Protection

- Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated soils onsite;
- Prevent migration of contaminants that would result in groundwater contamination; and,
- Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

2.2 Description of Selected Remedy

The site was remediated in accordance with the remedy selected by the NYSDEC in the ROD, issued March 26, 2002 and later amended (May 2004 Explanation of Significant Differences).

The factors considered during the selection of the remedy are those listed in 6NYCRR 375-1.8. The following are the components of the selected remedy:

1. Containment of contaminated soils within the Greenbelt area. This includes:

    - Construction and maintenance of a soil cover system over the entire Greenbelt area to prevent human exposure to remaining contaminated soil/fill remaining at the site. The cover system consists of installation of geotextile fabric and a 12-inch soil layer and construction of a 13-foot wide asphalt pedestrian/bicycle trail; and,

    - Stabilization of the shoreline to minimize erosion of fill material and to protect the soil cover. This includes removal of existing shore protection, onsite crushing and reuse of the concrete and stone rubble and, installation of a new shoreline revetment.

2. Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to contamination remaining at the site. (Whereas a deed restriction was required by the ROD, it was later discussed and agreed with the Department that an Environmental Easement would be executed and filed for the Site.)

3. Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement. The SMP includes plans for:

    - Institutional and Engineering Controls

    - monitoring

    - operation and maintenance

    - reporting

4. Periodic certification of the institutional and engineering controls listed above.

In addition to the components of the remedy identified in the ROD, the NYSDEC indicated that they also considered habitat enhancement an important and integral component of

this project. Consequently, the installation of terrestrial and aquatic habitats was incoporated in the design.

3.0 INTERIM REMEDIAL MEASURES, OPERABLE UNITS AND REMEDIAL CONTRACTS

The remedy for this site was performed as a single project, and no interim remedial measures, operable units or separate construction contracts were performed.

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved Construction Documents for the Port-Greenbelt Shoreline Improvement project (June 2006). The following sections provide a description of the key players involved and their roles; a summary of the construction Work Plans; a discussion of the various construction elements; identification of sources of material; a summary of contaminated materials removed and the associated disposal sites; the soil cover system; engineering and institutional controls employed at the site; and deviations from the construction documents that occurred during the construction.

4.1 Government Agencies, Engineering Consultants, Contractors, Subcontractors, and Suppliers

The following is a list of consultants, contractors, subcontractors, suppliers and agencies that were involved with this project and a brief description of their roles. A Project Organization Chart is included as Figure 2.

4.1.1 Government Agencies

- Niagara Frontier Transportation Authority (NFTA), 181 Ellicott Street, Buffalo, NY 14203 is the owner of the site and the secondary funding source..
- New York State Department of Environmental Conservation (NYSDEC), 270 Michigan Avenue, Buffalo, New York 14203-2999. Provided regulatory review and primary funding through the State Assistance Contract (SAC).
- United States Army Corps of Engineers (USACOE), 1776 Niagara Street, Buffalo, New York 14207-3199. Provided Nationwide Permits #27 and #38, and permit for disposal of contaminated materials at the CDF.

4.1.2 Engineering Consultants

- URS Corporation – New York (URS) was the project designer and Engineer of Record. Prepared the construction documents, provided submittal review and approval, and addressed Requests for Information (RFIs) from the Contractor during construction.
- C&S Engineers, Inc. (C&S), 90 Broadway, Buffalo, New York 14203 provided Construction Management (CM) services during construction. They provided onsite inspectors and engineers, prepared daily construction documentation, tracked quantities of materials, reviewed payment requests, and held routine project progress meetings.
- TVGA Consultants, Inc. (TVGA), 1000 Maple Road, Elma, New York 14059-9530 (Subcontractor to C&S) – provided onsite inspection services during construction.
- Watts Engineers, PE, PC (Watts), 3826 Main Street, Buffalo, New York 14226 (Subcontractor to C&S) – provided onsite inspection services during construction.

4.1.3 Contractors

- Man O'Trees, Inc. (MO'T), 1500 Union Road, West Seneca, NY 14224 served as the General Contractor for the remedial construction.

4.1.4 Subcontractors

- Eastwood Contracting – performed clearing and grubbing activities
- Great Lakes Environmental, Inc – prepared HASP and performed onsite air monitoring.
- SJB Services, Inc. – provided drilling services to decommission existing monitoring wells located within the Greenbelt Area.
- Allen Marine Services, Inc. – provided underwater inspection and video services.
- Oneida Trucking – provided trucking services for transporting stone materials from quarry in Lockport to the site, and moving shoreline rubble material to stockpiles, and transporting 'wet materials' and 'dry materials' unsuitable for re-use onsite to the USACOE CDF Facility for disposal.

- Filtrex– provided materials and installed "FiterSoxx" around the shoreline of the Bell Slip.
- Dig-It – provided trucking services for transporting stone products from quarry in Lockport to the site.

4.1.5 Suppliers

- LaFarge – provided bedding stone, armor stone, and other stone products required for the project.
- Buffalo Crushed Stone – provided 'clean' fill materials and asphalt.
- Curriers Road Farms - (Supplier to MO'T) - provided topsoil
- City of Niagara Falls - provided mulch materials
- Town of Amherst– provided compost materials

4.2 Governing Documents

The primary governing documents for this project were the Construction Bid Documents. They provided overall direction and details for construction of the remedial action. Additionally, various Work Plans were required by the Construction Documents. These Work Plans were prepared by the contractor, then reviewed by the Design Engineer to confirm that they were in compliance with the Construction Documents. The individual plans prepared by the contractor are summarized below. Copies of these plans are contained in Appendix D.

4.2.1 Site Specific Health & Safety Plan (HASP)

The Health and Safety Plan (HASP) was prepared in compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA. The work performed under this Remedial Action was conducted in accordance with the HASP Contractor Submittal No 030.

4.2.2 Construction Quality Assurance Plan (CQAP)

The Construction Quality Assurance Plan (CQAP) provided a description of the observation and testing activities that were used to monitor construction quality and confirm that remedial construction was in conformance with the remediation objectives and the construction documents. Contractor Submittal No. 050.

4.2.3 Soil Management Plan (SMP)

The Soil Management Plan (SMP) outlined the procedures for managing contaminated soils encountered onsite during construction. The SMP also provided guidance for testing of fill materials proposed for use onsite. The SMP was adhered to for managing the soil excavation and handling onsite. Contractor Submittal No 056.

4.2.4 Storm-Water Pollution Prevention Plan (SWPPP)

The site-specific Storm Water Pollution Prevention Plan outlined the erosion and sediment controls to be implemented for remedial construction. The SWPP complied with the requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control. Contractor Submittal No 052.

4.2.5 Community Air Monitoring Plan (CAMP)

The requirements for Community Air Monitoring were included in the Contractor's HASP. Real-time air monitoring for particulate levels was conducted at the perimeter of the site during intrusive activities. Contractor Submittal No 030.

4.2.6 Contractor's Site Operations Plan (SOP)

The Site Operations Plan (SOP) detailed the proposed means and methods to be utilized to perform each of the required construction activities. The types of equipment to be used, the methods of construction and the scheduling of activities also were included in the plan. Contractor Submittal No 005.

4.2.7 USACOE CDF Operations Plan

The USACOE CDF Operations Plan outlined the methods and procedures for transporting and disposing contaminated materials in the USACOE Confined Disposal Facility (CDF). These materials included all 'wet' materials excavated from below the Ordinary High Water Level (i.e. elevation 573.56) and those 'dry' materials excavated above elevation 573.56 that were not suitable for re-use onsite. Contractor Submittal No 053.

4.2.8 Erosion and Sediment Control Plan

The Erosion and Sediment (E&S) Control Plan outlined the means by which the Contractor proposed to control and minimize the release of sediment from the work area (Greenbelt) to the inland areas or into Lake Erie. Specific information included:

- Specific sequencing of construction operations and installation of control measures.
- Specific locations and alignments of erosion control and other proposed features.
- Specific products to be used.

Contractor Submittal No 063.

4.2.9 Dust Control Plan

The Dust Control Plan outlined the methods and procedures to minimize the creation of dust onsite and proposed mitigation measures to control the dust, as necessary. Contractor Submittal No 015

4.2.10 Excavation Work Plan

The Excavation Work Plan outlined the methods, procedures and equipment to be utilized in excavating concrete rubble and debris along the shoreline and the "wet" and "dry" materials in the revetment area. Contractor Submittal No 043.

4.2.11 Stone Management Control Plan

This plan was prepared by Lafarge Corporation in accordance with the Construction Documents and outlined the methods and procedures utilized by Lafarge in quarrying and processing the Armor Stone, Bedding Stone and other stone products for the project. The Plan identified the blasting operations, quality control, testing and analysis, stockpiling and delivery procedures. Contractor Submittal No 039.

4.2.12 Community Participation

Prior to the start of construction, the NYSDEC prepared a Fact Sheet describing the RA and distributed it to the surrounding community. Additionally, a Public information session was held May 11, 2006 at Erie Community College downtown campus to discuss the project and answer questions.

4.3 Remedial Program Elements

A pre-construction meeting was held with NYSDEC and all contractors on October 10, 2006.

4.3.1 Permits

NFTA submitted applications for USACOE Nationwide Permit No. 38 (NWP38) and No. 27 (NWP 27) prior to the start of work.

Additionally, the Contractor prepared the necessary documents and obtained a permit to allow disposal of contaminated soils from the site in the USACOE Confined Disposal Facility.

Copies of the permits are provided in Appendix E.

4.3.2 Site Preparation

Prior to the start of remedial activities the following items were completed:

- Site Access: The first work activity was to secure the site from direct vehicle access, and to the extent practicable from unhindered and unlimited access by the public. This was accomplished by installing concrete barriers across the access roadways to the site, and the installation of warning signs. Access to the Site during construction was primarily provided off Fuhrmann Blvd. adjacent to the east end of the Bell Slip and the existing parking lot. However, the Site also was accessed via the gate near the north end of the NFTA property and via the dirt road off the paved entrance road to Terminal A/B facilities (south of Bell Slip).
- Project Signs: Two NYSDEC-approved project signs were installed for the project. One was placed in the vicinity of the Bell Slip and the other was placed at the north end, near the Michigan Avenue Slip and the former Pier Restaurant. Both signs remained in place during all phases of the Remedial Action.
- Mobilization; The Contractor initiated mobilization activities on December 13, 2006. This consisted of hauling bedding stone and armor stone from LaFarge's quarry in Lockport, NY and stockpiling it in the open areas at the north end of the Greenbelt. A temporary office trailer was set up in the vicinity of the former Pier restaurant. The following equipment was mobilized to the site, on an as-needed basis.

  - CAT D6R/D5N Dozer
  - CAT 245 Backhoe
  - CAT 330 Backhoe w/Long Stick

- CAT 325 Backhoe
- CAT 315 Backhoe w/Grapple
- CAT 730 Trucks
- Barge
    - Large Platform (for CAT 330)
    - Small Platform (for Surveyor)
- portable concrete crusher
- hydro-axe
- tree chipper
- stump grinder

- Clearing and Grubbing: Prior to the start of clearing operations, the Contractor and C&S/NFTA walked the limits of the Greenbelt area to mark trees that were to remain. The Contractor subsequently removed all trees, brush, and other aboveground vegetation and surficial debris, other than shoreline rubble, to the limits shown on the Contract Drawings. This activity was subcontracted to Eastwood Contracting. The equipment utilized to perform the clearing and grubbing included a hydro-axe (for clearing of vegetation 6" diameter and smaller), chainsaws, a tree chipper, and a stump grinder.

  Trees and brush within the greenbelt area were cut flush with the existing ground surface or, where applicable, to the depth of stripping, whichever was deeper. Trees, roots, stumps, and brush greater than six inches (6 in.) diameter within the trail limits were chipped and their root systems grubbed to the greater of depth of excavations or 6 inches below grade. Cleared trees and brush material, as well as rubbish, scrap, debris and miscellaneous other structures not considered plant material were removed from the project site and disposed at Waste Management's Chaffee, New York facility.

- Building Demolition (Former Pier Restaurant): The former Pier Restaurant was demolished by others under a separate contract with the NFTA. The small Storage Building located near the Pier Restaurant was utilized during the project by the Contractor for equipment and materials storage. When the building was no longer required, it was demolished by the Contractor with the demo debris being disposed offsite.

4.3.3 Erosion and Sedimentation Controls

In accordance with the specifications and the Erosion and Sediment Control Plan, the Contractor sequenced the excavation of the shoreline and the subsequent placement of the revetment materials so that no more than 100 feet of disturbed shoreline (that which has been fully or partially excavated) was exposed (uncovered by the full thickness of the revetment) at any time. Additionally, the work was sequenced so that no disturbed portion of the shoreline were exposed for more than 3 calendar days.

The contractor installed turbidity curtains prior to any activities along the shoreline and/or in the water. The turbidity curtain consisted of a nylon fabric based membrane with a PVC coating, approximately 250 feet long by 20 feet deep. The curtain was tied off to the large barge platform and draped into the water (approx. 15 foot depth). The smaller barge platform was used to extend the curtain about 150 feet along the shoreline to cover the active work zone. Sandbags attached to the curtain were used to hold it on the Lake bottom. The curtain was relocated, as necessary, as the work progressed along the shoreline.

Additionally, E&S controls were established around soil stockpiles, and other areas where soil excavation, grading or other intrusive activities were to be performed to control sediment runoff.

4.3.4 Excavation

Excavation of concrete and rubble, wet excavation/dredged materials, and debris and unsuitable materials was restricted by the contract documents in three ways. First, a restriction was placed on the length of disturbed shoreline that could be exposed at any time to 100-feet. Secondly, sequencing of work had to prevent exposure of any portion of the shoreline to 3-calendar days or less. Thirdly, work within the water (specifically in the Bell Slip) was prohibited between April 13 and July 2, 2007, due to the spawning, nursery, and feeding activities of indigenous fish species.

Excavation activities were initiated on December 18, 2006, at the northern contract boundary of the shoreline and proceeded southerly. Prior to the start of excavation, the contractor constructed a temporary road/shelf along the length of the harbor shoreline from which to excavate soil/fill and place the revetment stone. Excavation activities on this project included the following types:

1. Removal and processing of concrete and stone rubble from the shoreline.
2. Removal of soil and fill above elevation 573.56 (i.e. "dry materials"), to the grades indicated on the contract drawings.
3. Dredging of materials from below elevation 573.56 (i.e. "wet/dredged materials"), transportation to and placement within the USACOE disposal facility.
4. Removal and disposal of debris and materials unsuitable for re-use on the site.

Each type of excavation is discussed below. Typical cross-sections depicting the existing and final conditions are presented in Record Drawings RV-100 through RV-103 in Appendix C.

Concrete and Stone Rubble

Along the existing shoreline there were various types of rubble used for shore protection, both above and below the water surface,. This rubble consisted primarily of reinforced concrete, with lesser amounts of brick and mortar, and large pieces of granite and marble from demolished buildings. As required by the Construction Documents, the Contractor removed all of this material, as well as the existing concrete pads situated near the old Pier restaurant and the Bell Slip inlet, before beginning construction of the new revetment. The concrete was crushed on site for reuse

in this project

The concrete and stone rubble removed from the shoreline were segregated into "hard fill" (i.e., materials that are resistant to erosion) and "other fill". The materials were segregated during the excavation process when practicable, by selectively removing the concrete, stone and other resistant materials. Otherwise the material was stockpiled onsite and sorted prior to crushing. The "hard fill" was crushed onsite using a portable crushing unit, to generate sub-base material (2.5-inch maximum size measured in longest dimension) for use in constructing the asphalt bicycle/pedestrian trail and the aquatic shelves in the Bell Slip. The crushed concrete/stone was stockpiled onsite until it was utilized in the trail and/or aquatic shelve construction. The surplus crushed concrete was purchased by the NYSDOT for use in reconstruction of Fuhrmann Blvd and removed from the site. The reinforcing steel was separated from the concrete and recycled offsite at Gerdau Ameristeel. The remainder of the existing shore protection rubble (i.e. "Other Fill") were disposed of off-site at Waste Management's Chaffee, New York facility

Additionally, during excavation, a large number of white marble slabs/blocks were encountered along the shoreline. The marble was segregated and stockpiled in the northeast corner of the site for future use by NFTA, or others.

The Contractor also salvaged four (4) concrete slabs having side dimensions ranging from roughly six feet to eight feet for placement in the Bell Slip as fish habitat "lunkers".

The excavation was performed from onshore utilizing a long-stick backhoe fitted with a grappling bucket. The excavated material was loaded into trucks, hauled, and deposited on-site into temporary stockpiles away from the shoreline. Erosion and sediment control measures were installed as outlined in the Erosion and Sediment Control Plan.

A total of 56,073 tons of material were excavated. Of this amount, 51,308 tons of stone and concrete were crushed onsite. 26,715 tons were used as sub-base under the asphalt bicycle/pedestrian trail, 258 tons was used for the aquatic shelves, and 24,335 tons were used as onsite fill outside the trail. The remaining 4,765 tons were stockpiled and purchased by NYSDOT for use on the Fuhrmann Blvd reconstruction project. The quantities are summarized

in Table 1. Hard copies of the bills of lading/weigh tickets are contained in Appendix F.

Soil/fill Materials Above the Lake Erie Ordinary High Water Level (OHWL)

Following removal of the concrete and stone rubble from the shoreline, the existing subgrade was surveyed and the limits of dry excavation were staked out in the field for construction and payment purposes. The materials from above the OHWL (i.e., Elev. 573.56 feet, NAVD 1988) as indicated on the contract drawings were considered "dry". As required by the Construction Documents the Contractor excavated in such a manner as to maintain the material in its 'dry' condition (i.e., above the water surface). These materials consisted of dredged materials from the Buffalo Outer Harbor shipping channel, construction fill, foundry sands and other materials. The excavated material was disposed within the limits of the Greenbelt and graded to the lines and grades shown on the construction drawings. Stones, concrete, stumps, wood or other materials greater than 12 inches in thickness were removed and recycled (i.e., concrete) or disposed offsite at a Waste Management's Chaffee, New York facility.

Excavation of dry material was performed utilizing backhoes of various sizes. The excavated material was loaded into trucks, hauled, and deposited on-site within the fill areas of the Greenbelt or into a temporary stockpile away from the shoreline. The stockpiled materials subsequently were placed within the fill areas of the Greenbelt and graded to the lines and grades indicated on the construction drawings. Erosion and sediment control measures were installed as outlined in the Erosion and Sediment Control Plan.

A total of 51,296 tons of material were excavated and reused onsite. The quantities are summarized in Table 1. Hard copies of the bills of lading/weigh tickets are contained in Appendix F.

Soil/Fill From Below the Lake Erie Ordinary High Water Level

Once the overlying dry materials had been removed, the contractor excavated the materials from below the OHWL (i.e., below Elev. 573.56 feet) to the lines and grades shown on the construction drawings utilizing excavators positioned both on-shore and off-shore on barges. The "wet excavation/dredged materials" consisted of dredged materials from the Buffalo Outer Harbor shipping channel, construction fill, foundry sands and other materials. These materials were transported to, and disposed in, the USACOE CDF (Figure 1). NFTA obtained the necessary approvals from the USACOE to allow all the soil/fill from below the OHWL to be disposed in this facility (Appendix D). The work was performed in accordance with the CDF Operations Plan (Appendix E).

This Plan described the specific disposal operations at the CDF. This plan also focused on the handling of the soils from below the OHWL, operation of the floating plant at the CDF and the use of land-based equipment. The principal concern of the USACOE was the use of proper safeguards to prevent the spillage of excavated/dredged materials back into navigable waters. The Contractor also was required to provide land-based equipment (i.e., bulldozer) onsite at the CDF to redistribute the deposited excavated materials.

The southern edge of the CDF (i.e. the land access point) is a seagull nesting ground. There is a restriction against placing any materials in the CDF during the seagull nesting period (i.e. April 15 through June 30). Consequently, the wet excavation/dredged materials excavated during this during this period were temporarily stockpiled onsite, then reloaded into triaxle trucks and hauled to the CDF for disposal starting on July 7, 2007

Prior to commencement of the wet excavation/dredge material excavation, erosion controls were installed as outlined in the Erosion and Sediment Control Plan. These included in-water silt curtains and silt fence installed around the perimeter of the stockpile locations. The location of the temporary stockpiles is shown on Figure 3.

The wet excavation/dredge material was removed utilizing an excavator equipped with a long-

stick capable of reaching approximately 70-feet. The bucket was retrofitted with long teeth spaced approximately 12-inches apart. Prior to excavation, the dredge material to be removed was "raked" with these teeth to allow the removal of stone and other materials larger than 12-inches that were restricted from entering the USACOE CDF disposal facility. The material removed by raking was primarily rock or rubble, and was managed accordingly. Once the "raking" was completed, the wet excavation/dredge material was excavated utilizing the long stick excavator. The excavator was positioned along the shoreline or offshore on the large barge, as necessary. The barge was maneuvered into the required position, then temporarily anchored in place using two steel H-beam spuds dropped down into the Lake bottom. Grade control was managed by use of grade stakes above the water surface, and by shooting with a leveling instrument and a pole for locations below the water surface.

The excavated material was placed into trucks and hauled to temporary staging areas along the shoreline to allow the excess water to drain out. The drained material was then transported by trucks, across the property managed by TurnKey Environmental Restoration LLC, and disposed in the USACOE CDF disposal facility. A low ground pressure dozer was utilized as necessary at the USACOE facility to grade the excavation materials. For more information on operations conducted at the USACOE disposal facility, see the CDF Operations Plan (Appendix E).

A total of 94,496 tons of wet/dredged material were excavated and disposed at the USACOE CDF. The quantities are summarized in Table 1. Hard copies of the bills of lading/weigh tickets are contained in Appendix F.

Debris and Unsuitable Materials

Excavation of debris and unsuitable materials occurred in isolated, small quantities during the removal of other types of excavation. The methods and equipment utilized to remove this type of excavation was the same as the methods and equipment being utilized at the time the debris and unsuitable materials were encountered. The debris and unsuitable materials excavated were temporarily stockpiled on the site and later reloaded, hauled, and disposed of off-site. Proper erosion and sediment control were installed around the stockpiles as required, and as detailed in the Erosion and Sediment Control Plan (Appendix D).

A total of 535 tons of debris and unsuitable material consisting primarily of steel beams, rebar, and pig iron ingots, were collected and disposed offsite at Gerdau Ameristeel, 776 Ohio Street, Buffalo, NY for recycling. The quantities are summarized in Table 1. Hard copies of the bills of lading/weigh tickets are contained in Appendix F.

4.3.5 Stone Revetment Shoreline Protection

The contractor placed bedding and armor stone on the entire lakeward length of the harbor shoreline as shown on the record drawings (Appendix C).

The stone revetment materials (i.e. the bedding stone and the armor stone), were supplied by the LaFarge Corporation quarry in Lockport, NY. The materials were processed at the quarry, then hauled to the site and stockpiled until needed. For additional information regarding the means and methods of processing the stone, and the quality control of the quarry operation, please see the Stone Management Control Plan (Appendix D).

The revetment materials were placed from the land side of the shoreline. Erosion and sediment control measures were installed as outlined in the Erosion and Sediment Control Plan (Appendix D).

Following excavation of the various components of the shoreline, the subgrade was surveyed for record drawings and payment quantities. The subgrade subsequently was covered with the non-woven geotextile. Three rolls of geotextile were sewn together in a warehouse to create 45-foot wide panels. These panels were positioned on the shoreline and the loose edge anchored. An overlap of at least 3 feet was maintained with previously installed panels. The geotextile was then unrolled several feet such that the panel could be positioned on the barge. The barge was then moved away from the shoreline, unrolling the geotextile as it moved. As the geotextile unrolled, bedding stone was placed with the excavator to hold the geotextile to the slope. Due to the large quantities of the geotextile occurring below the water surface, the seams of the geotextile fabric were overlapped a minimum of three-feet. A total of 79,137 sy of Geotextile was installed. Following deployment of the geotextile, bedding stone was installed in a thin layer to secure the geotextile.

The remaining bedding stone was installed utilizing the long-stick backhoe, to allow placement of the bedding stone from the bucket with a drop of no more than 1-foot. This was done to protect the underlying geotextile.. The bedding stone was placed to a thickness of 1.8-feet in one operation as specified within the contract drawings. The sequencing of the placement of the stone was from the bottom of the shoreline slope upward toward the top of slope, thereby maximizing interlocking of the stone and minimizing voids. A total of 50,713 cy of bedding stone was installed.

Following installation of the bedding stone within the designated work area, the armor stone was installed. The stones were placed individually using the long-stick backhoe and the grappling bucket. The stone was taken directly from trucks hauling the stone to the site, or from stockpiles staged near the top of slope. A loader or another backhoe were utilized to unload and transport the stone to the work site. The sequencing of the placement of the stone was from the bottom of the shoreline slope upward toward the top of slope, thereby maximizing interlocking of stone and minimizing voids. Placement of the armor stone from the bucket occurred with a drop of no more than 1-foot, to prevent a large impact force from displacing the underlying materials. A total of 61,783 cy of armor stone was installed.

4.3.6 Bell Slip

Pre-Construction Design Changes

As indicated on the construction drawings, processed (crushed or whole) shoreline rubble (stone and/or concrete) was to be placed in underwater locations in the Bell Slip adjacent to the shore as shown on the Contract Drawings to create an aquatic shelf for fish, serving as a spawning ground, nursery, feeding site and an underwater refuge. To create the shelves, the Contractor was to use crushed concrete shoreline rubble having a maximum size of 2'x2' and a minimum size of 1'x1'.

Additionally, the Contractor was to use concrete slabs approximately six feet to eight feet (6 ft to 8 ft) in length on each side salvaged as part of the shoreline rubble removal. The concrete slabs were to be placed on top of the aquatic shelves to form a "roof" over small rubble to enhance fish habitat.

On March 14th, 2007, a meeting was held at the request of the NYSDEC to review the design elements of the Bell Slip. The attendees of this meeting included representatives of the NYSDEC Region 9, the Niagara Frontier Transportation Authority (NFTA) and URS Corporation (URS). Of specific concern to the NYSDEC was inclusion of the large aquatic shelves planned for the Bell Slip.

Since completion of the original design, the NYSDEC had collected data on the abundance of young-of-year muskellunge populations in the Buffalo Harbor. These surveys confirmed that the Bell Slip is an important habitat for young muskellunge. Thus, it was considered very important to minimize impacts on existing aquatic habitat (primarily submergent aquatic plants such as Vallisneria americana), while attempting to increase aquatic habitat diversity through this project. As such, several changes to the design were suggested by the NYSDEC Biologist, Michael Wilkenson, and agreed to by the NFTA and URS.

In summary, the design revisions included:

- Removing three of the five aquatic shelves;
- Reducing the size of the remaining aquatic shelves;
- Providing a different type of shoreline treatment, in an area formerly containing an aquatic shelf, that is smaller and closer to shore than an aquatic shelf;
- Reviewing plantings along the shoreline to make certain that the shoreline will be stable during establishment of the plant root systems;
- Adding a small finger shaped water feature just east of the mouth of the Bell Slip on the south shore to provide additional fish habitat; and,
- Providing locations for filling of revetment voids to encourage naturally occurring plant life within the revetment.

These changes were included in the construction and are reflected on Drawing LP-105 (Appendix C).

Sloughing and Erosion Repair

By October 2007, the contractor had completed placement of soils on the slopes and construction of aquatic shelves in the Bell Slip but not the plantings. Work was halted at this time with planting work rescheduled to the spring of 2008. The subsequent winter weather caused soil located near the water's edge to slough and/or erode into the waters. The most notable event occurred during January 2008 when a very heavy wind event (i.e. 60+ mph winds) and a strong storm surge occurred that raised the lake water levels in the vicinity of the Bell Slip by as much as 11 feet. The sloughing/erosion resulted in the loss of soil, to varying degrees, around the entire perimeter of the Bell Slip. In general, the soil was removed in a zone ranging from 10 feet to as much as 30 feet wide, starting at the shoreline.

URS was tasked with developing a corrective action design to address the sloughing/erosion problem. URS was instructed to comply with the original design intent, which was to establish as natural a habitat as possible, by avoiding unnatural structural elements, to the extent practicable, while meeting the other project objectives.

During the design phase NYSDEC stressed that their preference was to avoid the use of stone revetments within the limits of the Bell Slip and maximize the usage of plantings both as erosion control and to provide natural habitat. It was frankly discussed, and understood by all parties that in spite of everyone's best efforts, given the severe conditions of Lake Erie, some future scouring/erosion could re-occur if the repair options were restricted to meet the stated design intent of avoiding the use of stone revetment.

As a compromise between the preference for avoiding heavy stone revetment materials, and the necessity of addressing the harsh scour/erosion conditions, the selected approach incorporated a plantable, 18-inch diameter synthetic woven sock filled with compost, crushed stone, and topsoil placed and anchored on the existing grade at the water's edge. The slope area behind the sock was backfilled with 2-inch minus gravel material.. The slope over the stone was

covered with a layer of compost and fiber erosion-control mats anchored into the underlying shoreline materials. The compost contained a seed mix with numerous fast-growing grasses and wild flowers. Live plantings of various tree species also were placed in selected locations along the slopes. A detailed description of the design is presented in, "Design Memorandum – Bell Slip Sloughing/Erosion Repair" February 2008 (Appendix G). A typical cross-section of the design is shown on Drawing ES-102 in the Design Memorandum. Construction of the repair was completed by the Contractor during the period of June 16 to June 25, 2008.

Subsequently, during the winter of 2008 – 2009 (i.e. December and January), several heavy windstorms again resulted in storm surges of several feet and strong wave action in the Bell Slip. Several areas of the slopes within the Slip were eroded. In some areas it was evident that the plantings, fiber mat, anchors and gravel backfill placed during the summer were damaged or completely destroyed. A preliminary assessment performed by NFTA personnel identified four areas totaling approximately 800 lineal feet, where the erosion extended down to the underlying stone/rubble (i.e. existing shoreline rubble) with an exposed soil scarp at the top of the exposed slope. The remaining areas totaling approximately 1,200 lineal feet, were essentially intact as constructed, with a developing vegetative cover, and only showed some localized erosion, mainly within the first few feet adjacent to the shoreline. Photographs of the conditions in the Bell Slip in September, 2009 are contained in the, "Design Analysis Report – Bell Slip Phase I – Corrective Action For Bank Stabilization", September 2009 (Appendix H).

Based on discussions between NFTA, URS and the NYSDEC, it was agreed that a more "substantial" form of erosion control would appear to be necessary to protect the Bell Slip from future storm events than what was incorporated in the initial repair design. The NYSDEC concurred that some type of stone revetment would most likely be required, as part of the solution.

In order to obtain input and ideas for potential corrective action approaches that might be applicable to the Bell Slip, a meeting was held on August 11, 2009 with all interested parties, including Dave Derrick, a stream bank stabilization expert with the USACOE. It was concluded that the Corrective Action would be implemented in two phases.

The work performed during each phase is described below:

Phase I – Corrective Action

The primary objectives of the Phase I Corrective Action were to:

- Stabilize the exposed soil scarps in the four eroded areas to prevent further erosion and siltation of the Muskellunge spawning area/water in general. (This needed to be accomplished during the 2009 construction season.)
- Provide habitat for birds, with exception of geese. Not for mammals, reptiles, etc.
- Maximize use of natural materials (i.e. no synthetics or concrete).
- Maximize corrective action within existing funds remaining.
- Minimize detailed design activities so that a maximum amount of the remaining funds would be available for construction

As previously indicated, there were four areas, totaling approximately 800 lineal feet, with exposed soil scarps that needed to be addressed.

In accordance with the design outlined in, "Design Analysis Report – Bell Slip Phase I – Corrective Action for Bank Stabilization", September 2009, these areas were stabilized by use of heavy armor stone combined with a filter system/media to provide sufficient weight to stabilize the toe of the soil slope and minimize soil erosion and migration through the armor stone. A shallow 'bench' was excavated adjacent to the scarp. A natural fiber erosion control mat was installed on the back slope of the excavation. The fabric was extended from the top of the exposed scarp, down the slope and about 2 – 3 feet across the floor of the excavated bench. One or two rows of armor stone were placed on the bench, adjacent to the scarp. A 'chinking' mixture comprised of well graded cobbles, gravel, and sand was installed in the void spaces between the larger armor stones.

Plantings consisting of a row of willow stakes installed at the back of the bench between the armor stone and excavated surface, was incorporated to provide some additional habitat and erosion control.

The detailed design is presented in Appendix H. Construction of the Phase I Corrective

Action was completed during the period of October 5 to November 4, 2009. Oversight of these activities was provided by NFTA personnel. A total of 1,500 tons of armor stone, 540 tons of bedding stone and 1,600 willow stakes were installed. Photographs of the completed construction are contained in Appendix F.

Phase II – Corrective Action

During the winter/spring 2009 – 2010, the applicability of other potential corrective actions that utilize various planting schemes combined with stone revetment materials were evaluated for the remaining exposed slope areas. The proposed alternatives to be tested and evaluated were developed in consultation with the NFTA and NYSDEC. In general, the following elements, either individually or in various combinations were to be incorporated: willow walls and/or grids; terraced slopes; and, armor stone revetment with stone/topsoil chinking mixture. It was agreed that a total of 250 feet of shoreline would be addressed. This was based on the available construction budget remaining after completion of the Phase I work, and discussions with the Contractor.

The selected alternative consisted of installation of a stone wedge positioned at the water's edge; excavation of two trenches parallel to the shoreline and additional trenches oriented perpendicular to the shoreline to create an intersecting grid. The trenches were, planted with upland/sandbar willow stakes and Nannyberry and backfilled with a stone/topsoil mixture. The open areas between the planting trenches were backfilled with two feet of a mixture of crushed stone and topsoil, wrapped with Coir fabric.

A copy of the design, "Bell Slip Corrective Actions for Bank Stabilization – Phase II", April 2010 in included is Appendix H. Construction of the Phase II Corrective Action was completed during the period of April 28 to May 4, 2010. Oversight of these activities was provided by NFTA personnel. This work was performed on a Lump Sum basis. Consequently, the quantities of individual items used in the construction were not tracked. It is estimated based on the design and field observations that approximately 100 tons of bedding stone, 280 tons of stone/soil mixture, and 750 willow stakes were installed. Photographs of the completed construction are contained in Appendix F. It is to be noted that within a week of completion,

another severe storm occurred and a majority of the willow stakes were lost and the soil/stone mix was moved out of place.

4.3.7 Landscaping and Habitat Enhancement

Greenbelt

Terrestrial habitat enhancement was provided by plantings along the Greenbelt area, between the pedestrian/bicycle trail and the top of the revetment. This included pockets of upland shrubs and herbaceous plantings. The shrubs were selected to provide habitat for birds, and visual interest along the shoreline, while maintaining sight lines where possible. Gaps were left between the shrub pockets to allow access to water areas. Native grasses and wildflowers were planted around the bike path in areas where shrubs were not planted to provide cover, some habitat value, diverse color and diverse shapes.

Canadian geese prefer a low-cut environment so that they can see their predators. Consequently, widespread use of low-cut grass, was avoided to discourage large concentrations of geese. More natural materials were utilized over most of the Greenbelt, with low-cut grass only being used in localized areas to encourage access to the water and picnic/viewing areas.

The completed layout of plantings installed in the Greenbelt are shown on Drawings LP-100 – 104 and 106 -110 in Appendix C. A total of 62 trees, 618 shrubs and 171 live whips were installed.

Bell Slip

The Bell Slip covers approximately 8 acres of shallow embayment within the property. This area opens to the lake. The design concept for the Bell Slip included a deep pool to provide some open water habitat, a floating-leaved marsh located near the center of the area, a shallow

emergent marsh, and pockets of shrub wetlands. The general idea was to provide a gradation from upland habitat to wetland and open water.

During construction, the plantings in the water portion of the Bell Slip were installed in general accordance with the Landscape Planting Plan (Drawing LP-105 – Appendix C). However, as discussed in Section 4.2.6, the Bell Slip was subjected to a series of storm events over the winters of 2007 – 2008 and 2008 - 2009 that resulted in sloughing and erosion of a large portion of the slopes. Repairs were designed and implemented in both instances.

As a result of the redesigns of the slope protection in the Bell Slip, the planting scheme has been revised as shown on the drawings in the two design reports (Appendices G and H).

At present, the upper portions of the slopes in the Bell Slip are vegetated with natural grasses and wildflowers. Occasional small trees are scattered throughout this area. Willow stakes also were planted along the interface between the armor stone installed in the Phase I Corrective Action and the soil scarp. These stakes have taken root and appear to be growing well. Some additional willow stakes were installed during the Phase II Corrective Action on the lower portions of the slope (i.e. between the soil scarps and the shoreline). These were mostly eroded out during subsequent storm events, with the exception of a dozen or so stakes on the northern shore of the Bell Slip. These stakes appear to be growing well.

The lower portions of the slopes are presently devoid of any soil and/or vegetative cover and consist primarily of exposed gravel and cobbles/rubble.

4.3.8 CAMP Results

Community air monitoring was performed throughout the project during days when intrusive activities were being performed.. The monitoring consisted of perimeter air monitoring using a Photionization Detector (PID), a real-time aerosol particulate monitor, a general particulate monitor, and a quad-gas meter. Additionally, two of the general particulate monitors (worn by the workers) were selected each week and submitted for analysis. For the most part, there were no exceedances of applicable air quality standards during the project. However, there

were occasional, short term exceedances that were quickly mitigated by halting construction temporarily or by the use of dust control measures (e.g. water truck).

Copies of all field data sheets relating to the CAMP are provided in electronic format in Appendix F.

4.3.9 Reporting

On-site, independent Environmental Inspectors were provided by NFTA and/or C&S, throughout the project to document the work, evaluate the materials utilized, and verify compliance with the contract documents. Throughout the construction, the observers prepared daily field reports. These reports documented the activities performed, equipment and manpower onsite, screening and/or testing results, weather conditions, progress, changes or variances from the contract documents and, quantities of materials. Project Progress meetings were held bi-weekly, or more frequently, as needed during critical portions of the project. All daily and project meeting reports are included in electronic Format in Appendix F.

As required by Section 01380 of the specifications, underwater videos were to be taken to document construction of the revetment. Consequently, on February 1 and 2, 2007, prior to the start of wet excavated/dredged material excavation, divers from Allen Marine Services conducted test dives from station 0+00 to 29+00 to see if it would be feasible to use underwater video equipment. Unfortunately, the turbidity of the water in the Outer Harbor was such that it was almost impossible to see any detail of the shoreline debris underwater, unless the camera was within a few inches of the object being viewed. It was subsequently discussed and agreed between NYSDEC and NFTA that the underwater video would not produce usable documentation of the revetment construction, and was therefore eliminated.

Record drawings were prepared by the Contractor and are included in Appendix C.

The digital photo log required by the Construction Documents is included in electronic format in Appendix F.

4.4 Contaminated Materials Removal

Contaminated soils managed during the project consisted of the dry materials (i.e. materials from above the OHWL) and wet excavation/dredged materials (i.e. materials from below the OHWL) excavated during the revetment construction portion of the project. .

As discussed in Section 4.2.4 above, the dry materials suitable for reuse were placed in the Greenbelt area and graded to the lines and grades shown on the construction drawings. The wet excavation/dredge materials and the unsuitable dry materials were transported to, and disposed in, the USACOE CDF.

As indicated previously, the soil/fill materials in the excavation areas was previously sampled and analyzed. The analytical data, which is contained in the RI report and summarized in Tables 2 through 8, was adequate to characterize the materials for disposal.

A total of 94,496 tons of contaminated material was transported and disposed in the USACOE CDF. The quantities are summarized in Table 1. Hard copies of the bills of lading/weigh tickets are available at the NFTA offices

4.5 Remedial Performance/Documentation Sampling

No verification samples were required to be collected as part of this project. Contaminated soils remaining on site were previously characterized during the RI. The results of that sampling are summarized in Tables 2 through 8.

4.6 Imported Materials

Imported fill materials consisted of the following:

4.6.1 Armor Stone

A total of 61,344 tons of Armor stone was supplied by LaFarge Quarry in Lockport, NY. This material initially was inspected at the quarry and approved by a Geologist from URS. The

contractor subsequently prepared the necessary Submittal # 054 for review and approval. This material was utilized as the upper layer of the shoreline revetment. Additionally, some of the armor stone was utilized in the Bell slip to minimize future soil sloughing/erosion with resultant scarp formation, and to form transition zones between the shoreline revetment and the natural slopes of the Bell Slip embayment. The Bell Slip is discussed in Section 4.3.6.

Because the material came from a virgin source, no analytical testing was required or performed.

4.6.2 Bedding Stone

A total of 50,712 tons of Bedding stone was supplied by LaFarge Quarry in Lockport, NY. This material also was inspected at the quarry and approved by a Geologist from URS. The contractor subsequently prepared the necessary Submittal # 054 for review and approval. material was utilized as the 'bedding' layer for the armor stone placed in the shoreline revetment. Additionally, some of the bedding stone was utilized in the Bell slip to minimize future soil sloughing/erosion with resultant scarp formation. This is discussed in Section 4.3.6.

Because the material came from a virgin source, no analytical testing was required or performed.

4.6.3 'Clean' Fill Material

Off-site 'clean' fill material was imported from Buffalo Crushed Stone's Wehrle Quarry in Lancaster, New York for use in the 8-inch layer of the soil cover. This material consists of overburden materials excavated at the quarry prior to excavation of the underlying rock materials. Buffalo Crushed Stone is a recognized supplier of 'clean' fill materials. Consequently, no analytical testing was performed. A total of 17,628 cy of 'clean' fill material was imported. The quantities are summarized in Table 1. Copies of the bills of lading/weigh tickets are contained in Appendix F. Contractor Submittal #67.

4.6.4 Topsoil

Topsoil was obtained from Curriers Road Farms in Arcade, NY, a recognized commercial supplier of topsoil and consequently was considered "clean" for purposes of use on site. A certification indicating that the soil/rock is virgin material and originated from locations having no evidence of disposal or release of hazardous, toxic or radioactive substances, wastes or petroleum products was obtained from the supplier. Contractor Submittal # 072.

A total of 5,150 cy of topsoil was obtained and utilized in the soil cover in the Greenbelt, on the slopes in the Bell Slip and in the Filter sock around the shoreline of the Bell Slip. The quantities are summarized in Table 1. Copies of the weigh tickets are contained in Appendix F.

4.6.5 Compost/Mulch

To improve the quality of the topsoil, compost was used as an amendment. Initially, mulch material was obtained from the City of Niagara Falls yard waste disposal facility located in the Corporation Yard off Porter Road in Niagara Falls, NY. This material consisted primarily of chipped tree branches combined with minor amounts of shredded leaves. Two samples of the mulch material were collected from stockpiles on the Greenbelt site and submitted for analysis. The analytical results indicated that the material met the contract requirements and was suitable for use at the site. A copy of the analytical results is contained in Appendix I. Inspection of the mulch stockpiles at the Niagara Falls Corporation Yard by URS indicated there was insufficient suitable material available for completion of the project. Consequently, another source had to be identified.

Subsequently, samples of composted mulch were obtained from the Lardon Construction Corp. located at 202 Lake Avenue in Blasdell, New York and submitted for analysis. The sample results (Appendix I) indicated that the material met the contract requirements and was suitable for use at the site. A total of 1,614 cy of compost material was utilized as an amendment to the topsoil for the soil cover throughout the Greenbelt area.

Additionally, compost was obtained from the Town of Amherst Compost Facility located at 560 Smith Street in East Amherst, New York 14051 for use as a portion of the fill material for

the 'filter sock' placed around the shoreline of the Bell Slip and as backfill on the slopes in the Bell slip (Section 4.3.6). Analytical data was provided by the Town and is contained in Appendix I. The sample results indicated that the material met the contract requirements and was suitable for use at the site.

The site locations where backfill was used at the site are shown in the record drawings (Appendix C).

4.7 Contamination Remaining at the Site

4.7.1 Existing Site Conditions

In accordance with the ROD, the only contaminated soils removed from the site consisted of the wet excavation/dredged materials that were excavated from the Greenbelt area and disposed in the USACOE CDF. The other contaminated soils (i.e. the "dry materials) that were excavated as part of the shoreline revetment construction were reused onsite to raise the grades, as necessary, in the Greenbelt prior to installation of the protective soil cover. The other contaminated soils identified within the limits of the Greenbelt during the RI, were not disturbed, and consequently, still remain onsite.

4.7.2 Nature and Extent of Contamination

A detailed description of the site investigations and the nature and extent of contaminants for the overall Brownfield site is presented in Section 4 of the ROD. However, for purposes of this project, the existing RI data was reviewed to identify specific borings and samples that were located within the limits of the Greenbelt project. As shown on Drawings C-100 through C-108 in Appendix J, 32 of the borings installed during the RI were specifically located within the Greenbelt area. These borings were used to both provide stratigraphic and geotechnical data and to allow collection of samples for analytical testing. A total of 25 subsurface soil samples were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds SVOCs, pesticides, polychlorinated biphenyls (PCBs) and target analyte list (TAL) metals. Additionally, surface soil samples were collected on a 100' X 100' grid over the entire Outer Harbor Site. Approximately 25 of these are located within, or immediately adjacent to, the

Greenbelt Area. These samples also were analyzed for SVOCs, Pesticides/herbicides, PCBs and TAL metals. The results of these analyses are presented in Tables 2 through 8, and summarized below.

Surface Soils

As indicated in Tables 2 to 5, SVOCs consisting primarily of polycyclic aromatic hydrocarbons/carcinogenic polycyclic aromatic hydrocarbons (PAHs/cPAHs) and metals were detected in all of 25 surface soil samples. Additionally, PCBs were detected in 8 of the 25 samples. However, only 3 samples exhibited concentrations of cPAHs that slightly exceeded the screening criteria of 10 mg/kg. None of the samples exceeded the PCB screening criteria of 1.0 mg/kg, and only three samples exceeded the criteria for copper, lead and zinc (only one compound in each sample).

Subsurface Soils

As shown in Tables 6 to 8, no VOCs were detected in any of the samples. Additionally, only 2 of the 12 shallow subsurface soil samples collected from 0 – 8 feet exceeded the screening criteria for cPAHs (up to 18.4 mg/kg with a screening level of 10 mg/kg). Three of the deeper samples collected from the 10 – 27 foot interval also exhibited elevated levels of cPAHs (up to 38.2 mg/kg). Elevated levels of metals, including arsenic, copper, lead and zinc were detected in 9 of the 16 samples. The highest concentrations were generally found in SB-55 in the sample from 2- -22 feet which contained lead up to 1,190 mg/kg.

Since contaminated soil remains beneath the site after completion of the Remedial Action, Institutional and Engineering Controls are required to protect human health and the environment. These Engineering and Institutional Controls (ECs/ICs) are described in the following sections. Long-term management of these EC/ICs and residual contamination will be performed under the Site Management Plan (SMP) approved by the NYSDEC.

4.8 Soil Cover System

4.8.1 Soil Cover

Exposure to remaining contamination in soil/fill is prevented by a soil cover system. This cover system is comprised of a minimum of 12 inches of clean soil and/or an asphalt bicycle/pedestrian trail. The record drawings in Appendix C show the locations and cross sections for each remedial cover type used on the site. An Excavation Work Plan, is provided in Appendix C of the SMP. This Plan outlines the procedures required in the event the cover system and/or underlying residual contamination are disturbed.

Surface coverage over the entire Greenbelt was required by the ROD to eliminate the potential for human contact with the existing onsite contaminated fill material. The existing subgrade surface was below design elevations, and therefore required filling. Consequently, initial filling operations were conducted to achieve the design elevation required for installation of the woven geotextile. The dry material excavated from the shoreline was re-used as fill within this initial filling layer to the extent practicable. Fill materials were placed in 6-inch maximum lifts and compacted using crawler-type equipment such as dozers, sheeps foot rollers and smooth-drum rollers. Upon reaching the geotextile elevation with the filling operation, the surface was covered with the woven geotextile. The seams of the geotextile were overlapped a minimum of one-foot. The second fill layer was comprised of an 8-inch thick compacted, clean fill material imported from Buffalo Crushed Stone Wehrle Quarry (overburden material). The means and methods of placing the fill were the same as for the initial filling layer.

The third and final layer consisted of a 4-inch thick layer of amended topsoil. Initially, the topsoil was spread in a four-inch thick layer. A thin layer of compost/mulch was then spread over the topsoil and mixed in using standard tilling equipment pulled by a tractor. The tilling was continued until the topsoil and compost/mulch were thoroughly mixed. Any large pieces of wood/branches exposed at the surface were hand picked and disposed. The topsoil was obtained from Curriers Road Farms. A total of 5,150 cubic yards of topsoil was imported. The compost and mulch materials were obtained from the Town of Amherst and the City of Niagara Falls, respectively. A total of 1,614 cubic yards of compost/mulch were imported.

4.8.2 Asphalt Pedestrian/Bicycle Trail

The project included a 13-feet wide asphalt pedestrian/bicycle trail installed within the finished

Greenbelt area. This trail was built upon the woven geotextile installed during filling operations of the Greenbelt area. Following the geotextile installation, an 8.5-inch thick layer of the crushed and processed concrete rubble was installed in one operation over the geotextile. The crushed material was spread with a dozer, and compacted using a smooth drum roller. The finished width of the crushed material was a minimum of 6-inches wider along both edges than the proposed asphalt trial.

The crushed material was topped with 2.5-inches of Type 3 asphalt binder course and a finish surface of 1-inch of Type 6 asphalt top course supplied from LaFarge's Lockport Plant and/or Buffalo Crushed Stone's Plant on Barton Road. The asphalt layers were installed using an automated paving machine, and compacted using double drum asphalt rollers. The project also included a parking area at the entrance to the Greenbelt area, and graphic signs to inform the public of the trail location.

Typical cross-sections are presented on drawing DT-100 in Appendix C.

4.9 Other Engineering Controls

The remedy for the site did not require the construction of any engineering control systems other than the soil cover discussed above in Section 4.7.

Procedures for monitoring, and maintaining the soil cover system are provided in the Operation and Maintenance Plan in Section 4 of the Site Management Plan (SMP). The Monitoring Plan also addresses inspection procedures that must occur after a severe weather condition has taken place that may affect on-site ECs.

4.10 Institutional Controls

The site remedy requires that an environmental easement be placed on the property to (1) implement, maintain and monitor the Engineering Controls; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the development of the site to public passive recreation uses only.

The environmental easement for the site was executed by the Department on November 18, 2011, and filed with the Erie County Clerk on December 1, 2011. The County Recording Identifier number for this filing is Liber 11212 Page 9031. A copy of the easement and proof of filing is provided in Appendix J.

4.11 Deviations from the Remedial Action Work Plan

4.11.1 Bedding Stone

Based upon conversations URS had with the Contractor, the Contractor's stone supplier, and the NFTA, there were two issues raised by the Contractor related to the originally specified bedding stone. First, production of the stone was difficult and time-consuming because of the non-mechanized methods required for production. Second, the required production methods resulted in very angular stones with sharp edges and corners. The Contractor was concerned that the resultant angularity of the bedding stone might tear the geotextile fabric during construction or in the future.

The Contractor proposed to provide a bedding stone material different than that specified in the Contract Documents under Item 02487-2. This substitution changed the size, gradation and weight of the stone. The proposed substitution was a modified version of Fine stone filling, Item 620.02, as specified in Section 620 of the New York State Department of Transportation Standard Specifications for Construction and Materials, January 2, 2002. The other requirements for the originally specified bedding stone and Specification Section 02487 still applied.

URS agreed that production of the required bedding stone would be more difficult due to the non-mechanized methods that would have to be used. However, URS also noted that the increased production difficulty did not relieve the Contractor of his obligation to provide the specified stone and/or warrant a change in the stone specification. Additionally, the Contractor's concern over possible tearing of the geotextile due to the angularity of the stone could not be fully discounted. However, URS believed that with careful field placement of the bedding stone that this was an unlikely occurrence. Consequently, URS concluded that, substitution for both above-listed reasons would be solely for the convenience of the Contractor, and was therefore not approvable on this basis alone.

During evaluation of the Contractor's proposal it was noted that the originally specified bedding stone was designed using the USACOE 1984 Shoreline Protection Manual, which was the most current design guidance available at the time of design. Since completion of the design and bidding of this project, the USACOE formally issued the "Costal Engineering Manual". This new guidance allowed for the use of finer stone gradation in the revetment bedding layers. Based on this new USACOE guidance, it appeared that use of smaller stone than what was originally specified for the revetment bedding layer would not reduce the stability of the overall structure.

Consequently, URS agreed to allow a smaller stone mix to be substituted for the Bedding Stone. However, it was recommended by URS' that stone meeting the gradation for NYSDOT Light stone filling (NYSDOT Item 620.03) as described in the NYSDOT Standard Specifications be used rather than the fine gradation proposed by the Contractor. In addition, the specific gravity requirement of 2.65 to 2.74 in the Contract Specifications remained. This stone could be readily produced by the quarry using standard mechanical means and methods. The Contractor subsequently agreed to provide the stone recommended by URS.

Due to this substitution, greater care was required for proper placement of the bedding stone. The wider gradation range and smaller particle sizes of the substitute bedding stone increased the tendency of the stone to segregate during its underwater placement as compared to the originally specified bedding stone with the generally larger, more uniform gradation. Without careful placement, the smaller particles of the substitute bedding stone could settle to the top of the bedding stone layer, leading to a loss of bedding stone out through the voids of the armor stone layer, and the unacceptable settling and movement of the armor stone layer.

As a result of this substitution, there was a reduction in cost for the smaller stone, and the Contractor provide the NFTA with a credit to the original bid amount.

4.11.2 Bell Slip Design Revisions

Following completion of the design, the NFTA and NYSDEC requested that certain design changes be made to the upland and underwater design plans to improve the existing habitat within the Bell Slip.

Listed below are the specific changes that were made within the Bell Slip.

The aquatic shelf located near Station 33+00 of the pedestrian trail on the north side of the Bell Slip was reduced to approximately 100 feet in length and moved to the west near the revetment limit.

The aquatic shelf located near Station 36+00 was removed from the design.

The aquatic shelf proposed near the existing concrete boat launch slated for removal was removed and replaced with a deposited soil mound having a size about 1/3 of the aquatic shelf.

The aquatic shelf located near Station 50+00 of the pedestrian trail was significantly reduced in size and moved closer to the shoreline.

The aquatic shelf located near Station 54+00 of was eliminated.

Revetment Habitat

Four to five locations along the revetment, approximately 30 feet long, were selected for filling revetment voids with sand or gravel to promote naturally occurring plant establishment. No plantings were specified for these locations.

Regrading of the Bell Slip to more stable slopes also was performed during construction. Several areas, particularly along the northern and southern sides of the Bell Slip, exhibited slopes as steep as 2:1, particularly in the upper portions of the slope. Prior to construction, these areas were cut down and regraded to approximately 3:1 or 4:1 slopes to allow placement of the soil and vegetative cover as outlined in the specifications and shown on the drawings.

Additional plantings were added to increase wetland fringe areas.

Planting Protection

In order to provide protection for the new plantings from geese damage, URS designed

temporary 'goose' fences that were installed by the Contractor in the water along the shoreline. These fences were intended to prevent, or discourage, the geese from coming ashore and eating the young plants.

4.11.3 USACOE Confined Disposal Facility

The southern edge of the CDF (i.e. the land access point) is a seagull nesting ground. There is a restriction against placing any materials in the CDF during the seagull nesting period (i.e. April 15 through June 30). Consequently, the wet excavation/dredged materials excavated during this period were temporarily stockpiled onsite, then reloaded into triaxle trucks and hauled to the CDF for disposal starting on July 7, 2007.

4.11.4 Final Site Inspection and Project Acceptance

A final inspection of the project was conducted on July 21, 2010. This inspection was attended by representatives of:

- NYSDEC
- NFTA
- URS
- C&S
- Man O'Trees

Based on the inspection, it was determined that the Work, including Change Order Work and Punchlist items, had been completed in accordance with the requirements of the Contract Documents and the NFTA accepted the Work. No further Work is required. A copy of the Acceptance letter is contained in Appendix L.

4.12 Cost Summary

A construction cost summary is provided in Appendix L. The summary provides a description of the work activities, schedule of values, actual work/quantities supplied, and change orders approved during the project.

TABLES

TABLE 1

NFTA - OUTER HARBOR

GREENBELT SHORELINE IMPROVEMENT PROJECT

SUMMARY TABLE OF MATERIAL QUANTITIES & DISPOSITIONS

ITEM NO.	DESCRIPTION OF WORK	QUANTITY	UNITS	DESCRIPTION OF DISPOSITION
01151-1	Survey & Stakeout	1	LS	N/A
01500-1	Field Office Equipment & Furnishings	1	LS	N/A
02050-1	Removal of Shoreline Rubble	44,077.15	TN	Excavated From On-Site
02050-2	Processing of Shoreline Rubble	44,077.15	TN	Processed and Stockpiled On-Site
02050-3	Disposal of Unsuitable Rubble & Debris	684.62	TN	Disposed off-site , Recycled Steel
02110-1	Site Clearing	17	AC	Vegetation & Stumps ground & disposed in landfill
02120-1	Erosion & Sediment Control	1	LS	N/A
02210-1	Off-Site Fill (Clean)	17,628.00	CY	Imported material from off-site used as 8" of soil cap
02210-2	On-Site Fill (Dry Excavated Material Reused)	27,238.99	CY	Excavated material onsite; used as fill material
02210-3	Site Grading	63,504.00	SY	N/A
02225-1	Excavation & Embankment (Dry Material)	14,801.85	CY	Excavated on-site material, reused under other items
02225-2	Excavation (Wet Material)	60,574.24	CY	Material Excavated On-Site Below Ordinary High Water Elevation Disposed Off-Site at USACOE CDF
02225-3	Excavation of Concrete & Asphalt Pavement	936.66	CY	Excavated existing concrete & asphalt pavement
02250-1	Placement of Crushed Rubble for Aquatic Shelf	144	CY	Placed on-site processed rubble in Bell Slip
02250-2	Placement of Concrete Slabs for Lunkers	4	EA	Placed on-site concrete slabs in Bell Slip
02375-1	Geotextile Fabric Type 1	37,671.59	SY	Imported from off-site
02375-2	Geotextile Fabric Type 2	63,504	SY	Imported from off-site
02460-1	Utility Poles	15	EA	Imported from off-site
02487-1	Armor Stone	61,333.56	TN	Imported from off-site & placed on revetment section
02487-2	Bedding Stone	50,712.68	TN	Imported from off-site & placed on revetment section
02875-1	Graphic Trail Sign (allowance)	2	EA	Imported from off-site
02940-1	Planting - Aquatic Plants	2,454	EA	Imported from off-site
02940-2	Planting - Wetland Plants	4,363	EA	Imported from off-site
05501-1	RCRA Hazardous Waste Transp.& Contain.	0	TN	N/A - Not Required
304-1	Reuse of Crushed Rubble Material	2,340	CY	Reused rubble material used as trail subbase stone
05304.12M	Subbase Crse Ty 2 w/Recycle Conc Material	0	CY	N/A
08520.5014M	Saw-Cutting Pavement	228	LF	N/A
607.3103M	Chain-Link Fence, 8 ft High	330	LF	Imported from off-site
607.4066M	Fence Gate, Dbl Leaf, 20-ft Opening	1	EA	Imported from off-site
10607.62M	Removing Chainlink Fence	275	LF	Existing fence disposed in landfill
608.020101M	Asphalt Concrete Bicycle Paths	2,340.55	TN	Imported Asphalt from Off-Site
610.0203M	Establishing Native Grasses	270	LB	Imported from off-site & seeded in grass areas along trail
610.0301M	Establishing Wildflower Meadow Mix	20	LB	Imported from off-site & seeded in grass areas along trail
610.0302M	Establishing Wetland Mix	3	LB	Imported from off-site & planted in Bell Slip
610.0303M	Establishing Wildflower Accent Mix	8	LB	Imported from off-site
611.0201M	Trees	62	EA	Imported from off-site
611.0202M	Live Whips	171	EA	Imported from off-site & planted in Bell Slip
611.0401M	Shrubs	618	EA	Imported from off-site & planted throughout the project
613.010101M	Topsoil	5,150	CY	Imported from off-site and spread throughout project
613.010102M	Applying Soil Amendment	1,614	CY	Imported from off-site and spread throughout project
615.03M	Watering Vegetation	37,080	GAL	Pumped water ffrom Lake Erie to water vegetation
05615.75	Timber Bollards	0	EA	N/A

TABLE 1

NFTA - OUTER HARBOR

GREENBELT SHORELINE IMPROVEMENT PROJECT

SUMMARY TABLE OF MATERIAL QUANTITIES & DISPOSITIONS

ITEM NO.	DESCRIPTION OF WORK	QUANTITY	UNITS	DESCRIPTION OF DISPOSITION
619.17M	Temporary Concrete Barrier	150	LF	Delivered from off-site and installed permanently per NFTA
623.11M	Crushed Gravel (In-place measure)	47	CY	Imported from off-site and placed in temporary drive to park. Lot
623.12M	Crushed Stone (In-place measure)	780.88	CY	Imported from off-site and placed on trail subbase stone
640.10M	White Paint Reflec. Pavement Stripes	0	LF	N/A
640.13M	White Paint Reflec. Pavement Symbols	0	EA	N/A
645.7102M	Ground Mounted Sign Panels,R,P,M,W	8	SF	Imported from off-site & erected along trail
645.73M	Ground Mounted Sign Panels, G,I	5	SF	Imported from off-site & erected along trail
645.81M	Type A Sign Posts	4	EA	Imported from off-site & erected along trail
699.0401M	Mobilization Phase 1 & 2	1	LS	Brought construction equipment from off-site
PCO #001	Bedding Stone Revision	20,000.00	TON	N/A (cost reduction to use NYSDOT Item)
PCO # 002	Tecumseh CDF Site Access Agreement	1	LS	N/A
PCO #003	Site Building/Facility Use and Demolition	1	LS	Demolition of existing steel building & recycled steel offsite
PCO #013	Concrete Moorings	3	EA	Removal of existing moorings, concrete & steel recycled
PCO #015	Segregation	1	LS	N/A
PCO #017	Bedding Stone Revision	30,712.68	TON	N/A (cost reduction to use NYSDOT Item)
PCO # 016	Stockpiling/Handling/Processing Wet Excavated Material	1	LS	N/A
PCO # 019	Extension of Contract Time Completion	1	LS	N/A
PCO # 020	12" Storm Sewer and Yard Drains	1	LS	Imported material from off-site & installed east of Bell Slip
PCO # 023	Revetment Habitat	1	LS	Imported material from off-site & placed in armor stone voids
PCO # 024	Installation and Removal of Goose Fence	1	LS	Imported material & installed along water in Bell Slip
PCO # 026	Silt Fence Installation Around Perimeter of Bell	1	LS	Imported material & installed along water in Bell Slip
PCO # 027	Armor Stone Placement along Eastern Shore of	1	LS	Imported material placed along eastern shore of Bell Slip
PCO # 030	Resetting Two Groups of Utility Poles in Bell Slip	1	LS	N/A Reset poles previously installed
PCO # 031	Additional Erosion Protection on Bell Slip Embank	1	LS	Imported material from off-site and installed on Bell Slip embank.
PCO #032	Off-Site Fill Material (50-50 Blend)	3,012.43	TON	Imported material from off-site & placed in Bell Slip
PCO# 033	Remove Existing Debris in Vicinity of Bell Slip	1	LS	Disposed of unsuitable debris in landfill (no recycling)
PCO # 034	Installation of Armor Stone in Bell Slip	1	LS	Imported material from off-site and installed on Bell Slip embank.
PCO #035	Additional Coconut Erosion Control Matt	1	LS	Imported material from off-site and installed on Bell Slip embank.
PCO #036	Relocation of Jersey Barriers	1	LS	Relocation of previously delivered jersey barriers
PCO #037	Relocation of NYSDEC Project Signs	1	LS	Relocation of previously installed project sign
PCO #038	Relocation of Armor Stone	1	LS	Relocation of previously delivered armor stone
PCO #039	Additional Cost for Asphalt Trail Subgrade Materia	1	LS	On-Site processed rubble reused in trail subbase
PCO #040	Furnish and Install Concrete Benches/Trash Cans	1	LS	Material imported from off-site and placed along trail
PCO #041	Phase I - Corrective Action at Bell Slip	1	LS	Material imported from off-site and placed in Bell Slip
PCO #042	Phase II - Corrective Action at Bell Slip	1	LS	Material imported from off-site and placed in Bell Slip

TABLE 2
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
VOLATILE ORGANICS

SAMPLE IDENTIFICATION	SS - 70 A
DATE OF COLLECTION	9/1/1994
DILUTION FACTOR	1
PERCENT SOLIDS	82
VOLATILE ORGANICS	(ug/kg)
Chloromethane	U
Bromomethane	U
Vinyl Chloride	U
Chloroethane	U
Methylene Chloride	9 JB
Acetone	U
Carbon Disulfide	U
1,1-Dichloroethene	U
1,1-Dichloroethane	U
1,2-Dichloroethane (total)	U
Chloroform	U
1,2-Dichloroethane	U
2-Butanone	U
1,1,1-Trichioroethane	U
Carbon Tetrachloride	U
Bromodichloromethane	U
1,2-Dichloropropane	U
cis-1,3-Dichloropropene	U
Trichloroethene	U
Dibromochloromethane	U
1,1,2-Trichioroethane	U
Benzene	U
Trans-1,3-Dichloropropene	U
Bromoform	U
4-Methyl-2-Pentanone	U
2-Hexanone	U
Tetrachioroethene	U
1,1 ,2,2-Tetrachloroethane	U
Toluene	U
Chlorobenzene	U
Ethylbenzene	U
Styrene	U
Total Xylenes	U
TOTAL VOCs	0

QUALIFIERS

U: Compound analyzed but not detected

B: Compound found in blank as well as the sample

J: Compound found at a concentration below the detection limit

TABLE 3
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANICS

SAMPLE IDENTIFICATION	SS-1Z	SS-2Z	SS-11Z	SS -12 Z	SS - 20 Z	SS - 21 Z	SS - 30 Z RE	SS - 31 Z	SS - 40 Z	SS - 41 Z RE	SS - 49 Z	SS - 50 Z
DATE OF COLLECTION	9/16/1994	09115/94	9/15/1994	9/14/1994	9/14/1994	09/14194	9/13/1994	9/13/1994	9/12/1994	9/12/1994	9/8/1994	9/8/1994
DILUTION FACTOR	2	2	2	2	2	1	1	1	1	1	1	1
PERCENT SOLIDS	95	94	94	94	87	85	83	74	90	97	90	94
SEMIVOLATILE ORGANIC	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(uglkg)	(uglkg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	53 J	U	U	U	U	U
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	U	U	U	U
2-Chlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
1.4-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
2-Methylphenol	U	U	U	U	U	U	U	U	U	U	U	U
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	U	U	U	U
4-Methylphenol	U	U	U	U	U	U	U	U	U	U	U	U
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	U	U	U	U
Hexachloroethane	U	U	U	U	U	U	U	U	U	U	U	U
Nitrobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Isophorone	U	U	U	U	U	U	U	U	U	U	U	U
2-Nitrophenol	U	U	U	U	U	U	U	U	U	U	U	U
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	U	U	U	U
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Naphthalene	75 J	U	82 J	140 J	110 J	71 J	150 JB	U	U	35 JB	U	U
4-Chloroaniline	U	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadiene	U	U	U	U	U	U	U	U	U	U	U	U
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene	U	U	83 J	140 J	96 J	44 J	67 J	U	U	U	U	U
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	U	U	U	U
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloronaphthalene	U	U	U	U	U	U	U	U	U	U	U	U
2-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U	U
Dimethylphthalate	U	U	U	U	U	U	U	U	160 J	U	U	U
Acenaphthylene	U	U	U	210 J	140 J	U	47 J	120 J	U	42 J	U	U
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U	U
3-Nitroantline	U	U	U	U	U	U	U	U	U	U	U	U
Acenaphthene	U	U	U	180 J	81 J	U	41 J	U	U	U	U	U
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	U	U	U	U
4-Nitrophenol	U	U	U	U	U	U	U	U	U	U	U	U

TABLE 3 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANICS

SAMPLE IDENTIFICATION	SS -1 Z	SS - 2 Z	SS - 11 Z	SS -12 Z	SS - 20 Z	SS - 21 Z	SS - 30 Z RE	SS - 31 Z	SS - 40 Z	SS - 41 Z RE	SS - 49 Z	SS - 50 Z
DATE OF COLLECTION	9/16/1994	9/15/1994	9/15/1994	9/14/1994	9/14/1994	09/14194	9/13/1994	9/13/1994	9/12/1994	9/12/1994	9/8/1994	9/8/1994
DILUTION FACTOR	2	2	2	2	2	1	1	1	1	1	1	1
PERCENT SOLIDS	95	94	94	94	87	85	83	74	90	97	90	94
SEMIVOLATILE ORGANIC	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dibenzofuran	U	U	U	140 J	85 J	U	56 J	U	U	U	U	U
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U	U
Diethylphthalate	U	U	U	U	U	U	U	U	590	U	180 J	U
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	U	U	U	U
Fluorene	U	U	88 J	260 J	140 J	U	84 J	U	U	U	U	U
4-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	U	U	U	U
N-Nitrosodiphenylamine	U	U	U	U	U	U			U	U	U	U
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
Phenanthrene	520 J	270 J	750	1600	1100	480	530	560	200 J	390	72 J	39 J
Anthracene	100 J	U	130 J	380 J	230 J	72 J	120 J	140 J	49 J	79 J	U	U
Carbazole	U	U	U	110 J	U	U	U	U	U	U	U	U
Di-n-butylphthalate	77 J	U	U	U	U	U	U	U	U	U	280 J	300 J
Fluoranthene	890	570 J	1000	2300	1800	1000	670	1100	350 J	700	150 J	76 J
Pyrene	710	470 J	930	2100	1600	660	500	870	340 J	650	140 J	73 J
Butylbenzylphthalate	U	U	U	U	U	U	U	U	U	U	U	U
3-3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	U	U	U	U
Benzo (a) anthracene	550 J	300 J	450 J	1100	880	460	290 J	540	170 J	360	79 J	44 J
Chrysene	610 J	300 J	510 J	1000	950	510	320 J	620	220 J	430	96 J	49 J
bis(2-Ethythexyl)phthalate	75 J	U	110 J	110 J	110 J	43 J	140 J	320 J	92 J	220 J	190 J	170 J
Di-n-octylphthalate	U	U	U	U	U	U	U	U	U	U	U	U
Benzo(b)flouranthene	580 J	300 J	590 J	1200	810	370 J	290 J	720	230 J	460	75 J	50 J
Benzo(k)flouranthene	560 J	210 J	560 J	1300	830	360 J	250 J	510	260 J	520	70 J	38 J
Benzo(a)pyrene	610 J	240 J	430 J	1100	830	320 J	260 J	570	180 J	360	61 J	38 J
Indeno(1,2,3-cd)pyrene	300 J	140 J	150 J	360 J	330 J	220 J	81 J	240 J	58 J	130 J	37 J	U
Dibenz(a,h)anthracene	120 J	U	U	U	U	U	U	U	U	U	U	U
Benzo(g,h,i)perylene	260 J	140 J	98 J	260 J	270 J	190 J	54 J	170 J	38 J	85 J	U	U
TOTAL PAHs	5885	2940	5768	13490	10101	4713	3687	6160	2095	4241	780	407
TOTAL CARCINOGEN PAHs	3330	1490	2690	6060	4630	2240	1491	3200	1118	2260	418	219
TOTAL SVOCs	6037	2940	5961	13990	10392	4800	4003	6480	2937	4461	1430	877

QUALIFIERS

U: Compound analyzed but not detected

B: Compound found in blank as well as the sample

J: Compound found at a concentration below the detection limit

U*: Result qualified as non-detect based on validation criteria

TABLE 3 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANICS

SAMPLE IDENTIFICATION	SS - 59 Z	SS - 60 Z	SS - 67 Z	SS - 68 Z	SS - 69 Z	SS - 70 Z	SS - 75 Z DL	SS - 76 Z	SS - 77 Z	SS - 78 Z	SS - 79 Z	SS - 92 Z
DATE OF COLLECTION	9/7/1994	9/1/1994	8/29/1994	9/1/1994	9/1/1994	9/1/1994	9/6/1994	9/6/1994	9/2/1994	9/2/1994	8/31/1994	9/7/1994
DILUTION FACTOR	2	1	2	1	2	1	4	2	1	1	25	2
PERCENT SOLIDS	94	85	79	82	82	83	83	87	83	84	82	86
SEMIVOLATILE ORGANIC	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	U	U	U	U
2-Chlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
1.4-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
2-Methylphenol	U	U	U	U	U	U	U	U	U	U	U	U
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	U	U	U	U
4-Methylphenol	U	U	U	U	U	U	U	U	U	U	U	U
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	U	U	U	U
Hexachloroethane	U	U	U	U	U	U	U	U	U	U	U	U
Nitrobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Isophorone	U	U	U	U	U	U	U	U	U	U	U	U
2-Nitrophenol	U	U	U	U	U	U	U	U	U	U	U	U
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	U	U	U	U
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Naphthalene	U	U	150 J	60 J	U	74 J	U	130 JE	U	70 J	4600 J	U
4-Chloroaniline	U	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadiene	U	U	U	U	U	U	U	U	U	U	U	U
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene	U	U	170 J	U	U	U	U	U	U	44 J	1700 J	96 J
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	U	U	U	U
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
2-Chloronaphthalene	U	U	U	U	U	U	U	U	U	U	U	U
2-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U	U
Dimethylphthalate	U	U	U	U	U	U	U	U	U	U	U	U
Acenaphthylene	U	U	U	U	U	41 J	U	U	U	65 J	U	140 J
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U	U
3-Nitroantline	U	U	U	U	U	U	U	U	U	U	U	U
Acenaphthene	U	52 J	260 J	99 J	U	96 J	380 JD	180 JE	58 J	190 J	5500 J	130 J
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	U	U	U	U
4-Nitrophenol	U	U	U	U	U	U	U	U	U	U*	U	U

TABLE 3 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANICS

SAMPLE IDENTIFICATION	SS - 59 Z	SS - 60 Z	SS - 67 Z	SS - 68 Z	SS - 69 Z	SS - 70 Z	SS - 75 Z DL	SS - 76 Z	SS - 77 Z	SS - 78 Z	SS - 79 Z	SS - 92 Z
DATE OF COLLECTION	9/7/1994	9/1/1994	8/29/1994	9/1/1994	9/1/1994	9/1/1994	9/6/1994	9/6/1994	9/2/1994	9/2/1994	8/31/1994	9/7/1994
DILUTION FACTOR	2	1	2	1	2	1	4	2	1	1	25	2
PERCENT SOLIDS	94	85	79	82	82	83	83	87	83	84	82	86
SEMIVOLATILE ORGANIC	(ug/kg)	(ug/kg)	(ug/kgy	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dibenzofuran	U	U	280 J	54 J	U	71 J	200 JD	120 JE	U	110 J	3000 J	130 J
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U	U
Diethylphthalate	U	U	U	U	U	U	U	U	U	U	U	U
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	U	U	U	U
Fluorene	80 J	58 J	420 J	73 J	U	97 J	360 JD	U	83 J	240 J	5200 J	200 J
4-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	U	U	U	U
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	U	U	U	U
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobenzene	U	U	U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	U	U	U	U	U	U	U	U	U	U	U	U
Phenanthrene	780	640	2600	770	670 J	990	2900 D	1800 E	540	1200	23000	2200
Anthracene	130 J	120 J	600 J	170 J	140 J	190 J	590 JD	360 JE	130 J	350 J	5800 J	400 J
Carbazole	U	U	190 J	U	U	52 J	230 JD	U	47 J	96 J	2300 J	U
Di-n-butylphthalate	U	U	U*	U	U	U	U	U	U	U	U	U
Fluoranthene	1500	900	2700	1300	1400	1400	4600 D	3600 E	880	1900	25000	3200
Pyrene	890	740	2300	1000	1200	1100	3700 D	2800 E	850	1500	19000	2600
Butylbenzylphthalate	U	U	U	U	U	U	U	U	U	U	U	U
3-3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	U	U	U	U
Benzo (a) anthracene	760	360 J	1400	570	660 J	580	2300 D	1100 E	420	880	12000	1700
Chrysene	800	360 J	1400	570	720 J	590	2400 D	1000 E	470	820	12000	1600
bis(2-Ethythexyl)phthalate	190 J	100 J	480 J	180 J	230 J	190 J	320 JD	160 JE	190 JB	U	U	830
Di-n-octylphthalate	U	U	U	U	U	U	U	U	U	U	U	U
Benzo(b)flouranthene	550 J	340 J	1500	610	860	590	2600 D	1000 E	550	1200	9700 J	1300
Benzo(k)flouranthene	560 J	280 J	1600	540	750 J	540	2000 D	1200 E	450	1100	14000	1200
Benzo(a)pyrene	260 J	320 J	1200	570	790 J	580	2000 D	1100 E	420	880	10000 J	800
Indeno(1,2,3-cd)pyrene	190 J	160 J	360 J	200 J	290 J	210 J	900 JD	360 JE	100 J	260 J	U	500 J
Dibenz(a,h)anthracene	110 J	70 J	U	84 J	120 J	94 J	U	170 JE	U	U	U	220 J
Benzo(g,h,i)perylene	U	160 J	200 J	180 J	290 J	210 J	670 JD	300 JE	60 J	150 J	1400 J	U
TOTAL PAHs	6610	4560	16690	6796	7890	7382	25400	15100	5011	10805	147200	16190
TOTAL CARCINOGEN PAHs	3230	1890	7460	3144	4190	3184	12200	5930	2410	5140	57700	7320
TOTAL SVOCs	6800	4660	17810	7030	8120	7695	26150	15380	5248	11055	154200	17246

QUALIFIERS

U: Compound analyzed but not detected

B: Compound found in blank as well as the sample

J: Compound found at a concentration below the detection limit

U*: Result qualified as non-detect based on validation criteria

TABLE 3 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANICS

SAMPLE IDENTIFICATION	SS - 93 Z
DATE OF COLLECTION	9/9/1994
DILUTION FACTOR	5
PERCENT SOLIDS	92
SEMIVOLATILE ORGANIC	(ug/kg)
Phenol	U
bis(2-Chloroethyl)ether	U
2-Chlorophenol	U
1,3-Dichlorobenzene	U
1.4-Dichlorobenzene	U
1,2-Dichlorobenzene	U
2-Methylphenol	U
2,2'-oxybis(1-chloropropane)	U
4-Methylphenol	U
N-Nitroso-di-n-propylamine	U
Hexachloroethane	U
Nitrobenzene	U
Isophorone	U
2-Nitrophenol	U
2,4-Dimethylphenol	U
bis(2-Chloroethoxy)methane	U
2,4-Dichlorophenol	U
1,2,4-Trichlorobenzene	U
Naphthalene	U
4-Chloroaniline	U
Hexachlorobutadiene	U
4-Chloro-3-methylphenol	U
2-Methylnaphthalene	270 J
Hexachlorocyclopentadiene	U
2,4,6-Trichlorophenol	U
2,4,5-Trichlorophenol	U
2-Chloronaphthalene	U
2-Nitroaniline	U
Dimethylphthalate	U
Acenaphthylene	U
2,6-Dinitrotoluene	U
3-Nitroantline	U
Acenaphthene	540 J
2,4-Dinitrophenol	U
4-Nitrophenol	U

TABLE 3 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
SEMIVOLATILE ORGANICS

SAMPLE IDENTIFICATION	SS - 93 Z
DATE OF COLLECTION	9/9/1994
DILUTION FACTOR	5
PERCENT SOLIDS	92
SEMIVOLATILE ORGANIC	(ug/kg)
Dibenzofuran	270 J
2,4-Dinitrotoluene	U
Diethylphthalate	U
4-Chlorophenyl-phenylether	U
Fluorene	540 J
4-Nitroaniline	U
4,6-Dinitro-2-methylphenol	U
N-Nitrosodiphenylamine	U
4-Bromophenyl-phenylether	U
Hexachlorobenzene	U
Pentachlorophenol	U
Phenanthrene	4600
Anthracene	910 J
Carbazole	280 J
Di-n-butylphthalate	420 J
Fluoranthene	7000
Pyrene	5900
Butylbenzylphthalate	U
3-3'-Dichlorobenzidine	U
Benzo (a) anthracene	3600
Chrysene	3900
bis(2-Ethythexyl)phthalate	680 J
Di-n-octylphthalate	U
Benzo(b)flouranthene	3000
Benzo(k)flouranthene	2800
Benzo(a)pyrene	3000
Indeno(1,2,3-cd)pyrene	1600 J
Dibenz(a,h)anthracene	730 J
Benzo(g,h,i)perylene	1400 J
TOTAL PAHs	39520
TOTAL CARCINOGEN PAHs	18630
TOTAL SVOCs	41440

QUALIFIERS

U: Compound analyzed but not detected

B: Compound found in blank as well as the sample

J: Compound found at a concentration below the detection limit

U*: Result qualified as non-detect based on validation criteria

TABLE 4
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
PESTICIDES/PCBs

SAMPLE IDENTIFICATION	SS -1 Z	SS - 2 Z	SS -11 Z	SS -12 Z	SS - 20 Z	SS - 21 Z	SS - 30 Z	SS - 31 Z	SS-40Z	SS - 41 Z	SS - 49 Z	SS - 50 Z
DATE OF COLLECTION	9/16/1994	9/15/1994	9/15/1994	9/14/1994	9/14/1994	9/14/1994	9/13/1994	9/13/1994	9/12/1994	Sep-94	9/8/1994	9/8/1994
DILUTION FACTOR	3	1	1	1	1	1	1	1	1	1	1	1
PERCENT SOLIDS	95	94	94	94	87	85	83	74	90	97	90	94
PESTICIDE/PCBs	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(uglkg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
alpha-BHC	U	U	U	U	U	U	U	U	U	U	U	U
beta-BHC	U	U	U	U	U	U	U	U	U	U	U	U
delta-BHC	U	U	U	U	U	U	U	U	U	U	U	U
gamma-BHC (Lindane)	U	U	U	U	U	U	U	U	U	U	U	U
Heptachlor	U	U	U	U	U	U	U	U	U	U	U	U
Aldrin	U	U	U	U	U	U	U	U	U	U	U	U
Heptachlor epoxide	U	U	U	U	U	U	U	U	U	U	U	U
Endosulfan I	U	U	U	U	U	U	U	U	U	U	U	U
Dieldrin	U	U	U	U	U	U	U	23 P	U	6.4	U	U
4,4'-DDE	U	U	3.7 Y	U	U	U	U	U	U	U	U	U
Endrin	U	U	U	U	U	U	U	5.7	U	U	U	U
Endosulfan II	U	U	U	U	U	U	U	U	U	U	U	U
4,4-DDD	U	U	U	U	U	U	U	13	U	U	U	U
Endosulfan sulfate	U	U	U	U	U	U	U	U	U	U	U	U
4,4'-DDT	U	U	7.1 R	4 R	5.60 Y	U	U	11 R	U	U	U	U
Methoxychlor	U	U	U	U	U	U	U	U	U	U	U	U
Endrin ketone	U	U	U	U	U	U	U	U	U	U	U	U
Endrin aldehyde	U	4.8 R	U	5 R	4.00 R	4.90 R	U	U	U	4.3 R	6.2 R	5.7
alpha-Chlordane	U	U	U	U	U	U	U	2.6 R	U	U	U	U
gamma-Chlordane	U	U	U	U	U	U	U	U	U	U	U	U
Toxaphene	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1016	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U	U	U	U
Arocor-1248	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	35 J	U	U	U	U	U	U	U	U	U	U
Arodor-1260	110	U	72 P	46	52.00	U	U	U	U	U	UM	U
TOTAL PCBs	110	35	72	46	52.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

QUALIFIERS

U: Compound analyzed for but not detected
B: Compound found in blank as well as sample
J: Compound found at a concentration below the detection limit
P: Greater than 25% difference between the two GC columns, result estimated
Y: Presence of these pesticide components are suspect, due to aroclor
C: Confirmed by GC/MS
D: Result taken from secondary dilution analysis
R: Result rejected based on validation criteria
M: Maybe present based on validation criteria
E: Result qualified as estimated based on validation criteria

TABLE 4 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
PESTICIDES/PCBs

SAMPLE IDENTIFICATION	SS - 59 Z DL	SS - 60 Z	SS - 67 Z	SS-68Z	SS-69Z	SS - 70 Z	SS - 75 Z	SS - 76 Z	SS -T7 Z	SS - 78 Z	SS - 79 Z	SS - 92 Z
DATE OF COLLECTION	9/7/1994	9/1/1994	8/29/1994	9/1/1994	9/1/1994	9/1/1994	9/6/1994	9/6/1994	9/2/1994	9/2/1994	8/31/1994	9/7/1994
DILUTION FACTOR	50	5	2	1	5	5	2	3	1	6	5	2
PERCENT SOLIDS	94	85	79	82	82	83	83	87	83	84	80	86
PESTICIDE/PCBs	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
alpha-BHC	U	U	U	U	U	U	U	U	U	U	U	U
beta-BHC	U	U	U	U	U	U	U	U	U	U	U	U
delta-BHC	U	U	U	U	U	U	U	U	U	U	U	U
gamma-BHC (Lindane)	U	U	U	U	U	U	U	U	U	U	U	U
Heptachlor	U	U	U	U	U	U	U	U	U	U	10 R	U
Aldrin	U	U	U	U	U	U	U	U	U	U	U	U
Heptachlor epoxide	U	U	U	U	U	U	U	U	U	U	U	U
Endosulfan I	U	U	U	U	U	U	U	U	U	U	U	U
Dieldrin	U	U	U	U	U	U	U	U	U	U	U	U
4,4'-DDE	U	U	U	U	U	16 J	U	U	U	U	U	U
Endrin	U	U	U	U	U	U	7.5 J	U	3.7 Y	U	U	U
Endosulfan II	U	U	U	U	U	U	U	U	U	U	U	U
4,4-DDD	U	u	U	U	U	U	U	U	U	U	U	U
Endosulfan sulfate	U	U	U	U	U	U	U	U	U	U	U	7.7 R
4,4'-DDT	360 DE	U	U	U	U	54	U	U	4.7 Y	U	U	20 R
Methoxychlor	U	U	U	U	U	U	U	U	U	U	U	U
Endrin ketone	U	U	U	U	U	U	9.8 P	U	U	U	U	U
Endrin aldehyde	U	U	U	U	U	U	19 R .	12 P	17 R	U	76 R	92 R
alpha-Chlordane	260 DPE	U	U	U	U	U	U	U	U	U	U	U
gamma-Chlordane	250 DPE	U	U	U	U	U	U	U	U	U	U	U
Toxaphene	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1016	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U	U	U	U
Arocor-1248	U	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	U	U	U	U	U	U	U	U	U	U	100 E
Arodor-1260	U	U	U	U	83 JP	U	U	U	U	U	U	U
TOTAL PCBs	0.00	0.00	0.00	0.00	83.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00

QUALIFIERS

U: Compound analyzed for but not detected
B: Compound found in blank as well as sample
J: Compound found at a concentration below the detection limit
P: Greater than 25% difference between the two GC columns, result estimated
Y: Presence of these pesticide components are suspect, due to aroclor
C: Confirmed by GC/MS
D: Result taken from secondary dilution analysis
R: Result rejected based on validation criteria
M: Maybe present based on validation criteria
E: Result qualified as estimated based on validation criteria

TABLE 4 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
PESTICIDES/PCBs

SAMPLE IDENTIFICATION	SS-93Z
DATE OF COLLECTION	9/9/1994
DILUTION FACTOR	2
PERCENT SOLIDS	92
PESTICIDE/PCBs	(ug/kg)
alpha-BHC	U
beta-BHC	U
delta-BHC	U
gamma-BHC (Lindane)	U
Heptachlor	U
Aldrin	U
Heptachlor epoxide	U
Endosulfan I	U
Dieldrin	14 PY
4,4'-DDE	U
Endrin	U
Endosulfan II	7.7 PY
4,4-DDD	U
Endosulfan sulfate	U
4,4'-DDT	U
Methoxychlor	U
Endrin ketone	U
Endrin aldehyde	22 R
alpha-Chlordane	U
gamma-Chlordane	U
Toxaphene	U
Aroclor-1016	U
Aroclor-1221	U
Aroclor-1232	U
Aroclor-1242	U
Arocor-1248	U
Aroclor-1254	U
Arodor-1260	200
TOTAL PCBs	200.00

QUALIFIERS

U: Compound analyzed for but not detected
B: Compound found in blank as well as sample
J: Compound found at a concentration below the detection limit
P: Greater than 25% difference between the two GC columns, result estimated
Y: Presence of these pesticide components are suspect, due to aroclor
C: Confirmed by GC/MS
D: Result taken from secondary dilution analysis
R: Result rejected based on validation criteria
M: Maybe present based on validation criteria
E: Result qualified as estimated based on validation criteria

TABLE 5
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
INORGANIC CONSTITUENTS

SAMPLE IDENTIFICATION	SS - 1 Z	SS - 2 Z	SS - 11 Z	SS - 12 Z	SS - 20 Z	SS - 21 Z	SS - 30 Z	SS - 31 Z	SS - 40 Z	SS - 41 Z	SS - 49 Z
DATE OF COLLECTION	9/16/1994	9/15/1994	9/15/1994	9/14/1994	9/14/1994	9/14/1994	9/13/1994	9/13/1994	9/12/1994	9/12/1994	9/8/1994
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1	1
PERCENT SOLIDS	94.7	94.5	94	94.1	87.2	84.8	83.4	74.5	90.2	97.4	90.0
INORGANIC CONSTITUENTS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aluminum	6910	20800	4300	7030	12300	12800	20100	13600	4010	2570	2320
Antimony	U	UE	9.7 BE	8.6 BE	UE	UE	U	9.5 B	U	U	U
Arsenic	3.9	3.6 BE	3.2 E	3.6 E	6.1 E	3.9 E	4.4	5.9	3.9	3.8	2.8
Barium	69.5	209	51.2	105	141	104	154	176	42.6	35.7 B	26.5 B
Beryllium	U	5.4	1.1	0.99	2.2	3.3	5.6	3.5	0.87 B	U	U
Cadmium	U	U	1.3	0.58 B	1.1	0.6 B	0.49 B	1.2 B	1.1	0.60 B	0.56 B
Calcium	36200	11400	83900	109000	113000	135000	171000	82100	38400	30400	25300
Chromium	9.2	14.6 E	12.6 E	11 E	15.5 E	10.7 E	10.0	24.7	14.5	6.6	6.9
Cobalt	6.8 B	U	5.7 B	6.2 B	6.9 B	U	U	U	5.6 B	U	U
Copper	16.8	16.9 R	55 R	24.1 R	42.3 R	56.1 R	13.5 R	75.7 R	38.4 R	23.4 R	31.2 R
Iron	13800	11800	27500	12100	14200	13400	9400	17400	18500	8580	6230
Lead	122	815 E	90.7 E	108 E	235 E	129 E	93.2 R	203 R	75.9 R	61.6 R	477 E
Magnesium	14500	25600	13600	13700	21000	20200	21300	20100	7820	6870	9790
Manganese	398	1250	305	313	643	709	1080	1250	458	227	162
Mercury	0.16	U	0.11	0.15	0.23	0.17	0.13	0.22	U	U	U
Nickel	12.8	12.7	10.2	12.4	9.7	U	U	10	U	U	U
Potassium	1870	1850	652 B	1280	1310	865 B	1240	1380	762 B	486 B	387 B
Selenium	U	UE	UE	UE	UE	UE	U	U	U	U	U
Silver	U	UE	UE	UE	UE	UE	U	U	U	U	U
Sodium	U	1080	U	U	841 B	810 B	1370	U	U	U	U
Thallium	U	U	U	U	U	U	U	U	U	U	U
Vanadium	22.7	16.8	17.3	17.2	18.6	11.2	12.4	19.2	19.9	9.6 B	7.1 B
Zinc	118	77.7 R	76.7 R	108 R	201 R	99 R	59.0	193	108	83.4	91.3
Cyanide	0.64	2.3	U	U	U	1.2	4.8 E	UE	11.3 E	UE	UR

QUALIFIERS

U: Compound analyzed for but not detected

B: Compound concentration is less than the CRDL but greater than the IDL

R: Result rejected based on validation criteria

E: Result qualified as estimated based on validation criteria

TABLE 5 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
INORGANIC CONSTITUENTS

SAMPLE IDENTIFICATION	SS - 50 Z	SS - 59 Z	SS - 60 Z	SS - 67 Z	SS - 68 Z	SS - 69 Z	SS - 70 Z	SS - 75 Z	SS - 76 Z	SS - 77 Z	SS - 78 Z
DATE OF COLLECTION	9/8/1994	9/7/1994	9/1/1994	8/29/1994	9/1/1994	9/1/1994	9/1/1994	9/6/1994	9/6/1994	9/2/1994	9/2/1994
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1	1
PERCENT SOLIDS	94.3	94.3	85.1	78.8	82.1	82.5	82.7	83.4	86.6	82.7	83.6
INORGANIC CONSTITUENTS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aluminum	2190	3010	6720	15200	4880	7170	5400	6120 E	16100 E	15400 E	17600 E
Antimony	U	U	U	U	U	U	U	8.6 BE	UE	UE	UE
Arsenic	1.3 B	2.0 E	4.7	9.2	4.6	7.3	6.7	5.8 E	4.8 E	3.3 E	3.3 E
Barium	14.1 B	32.6 B	68.2 E	186	70.3	71.0 E	93.0 E	108	178	140	213
Beryllium	U	U	U	2.7	U	U	U	0.94 B	1.7	1.9	2.2
Cadmium	U	UE	1.0 BE	2.4	U	0.90 BE	0.91 BE	0.79 BE	0.87 BE	UE	UE
Calcium	45000	29500	29000	45900	41100	80300	144000	37400	69200	84200	85200
Chromium	6.2	6.3	11.7	24.7	9.3	13.5	9.6	25.5	20.9	14.6	17.6
Cobalt	U	U	5.5 B	U	U	5.9 B	U	U	10.7 B	5.4 B	U
Copper	8.9 R	9.2	16.5	128 E	50.5	27.4	30.3	456 E	46.7 E	22.3 E	19.5 E
Iron	5750	7370	25500	31700	12800	15400	10300	11300 E	21100 E	14600 E	14200 E
Lead	11.9	34.3	70.3	189	177	75.9	193	120	133	58.6	65.2
Magnesium	19800	8420	8190	5100	7430	31500	60400	8230	17000	19500	16600
Manganese	182	193 E	455	1010	323	398	489	357 E	900 E	1400 E	2870 E
Mercury	U	0.15	0.37	0.23	0.31	0.27	0.20	0.28	0.37	0.15	0.18
Nickel	U	U	12.9	20.1	14.3	18.2	16.8	15.5 E	20.6 E	13.6 E	UE
Potassium	660 B	327 B	1250	975 B	643 B	1090	657 B	1060	2640	2440	2490
Selenium	U	UE	U	U	U	U	U	U	U	U	UE
Silver	U	UE	U	U	U	U	U	U	U	U	UE
Sodium	U	U	U	U	U	U	U	U	U	U	U
Thallium	U	U	U	U	U	U	U	U	U	U	U
Vanadium	8.3 B	9.6	18.4	22.6	11.5 B	21.2	12.1	14.7	31.0	24.1	25.7
Zinc	54.9	56.2	97.8	522	185	115	127	253	161	81.4	69.4
Cyanide	UR	UR	UR	1.6 R	UR	UR	UR	UR	UR	UR	UR

QUALIFIERS

U: Compound analyzed for but not detected

B: Compound concentration is less than the CRDL but greater than the IDL

R: Result rejected based on validation criteria

E: Result qualified as estimated based on validation criteria

TABLE 5 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SURFACE SOIL SAMPLING RESULTS
INORGANIC CONSTITUENTS

SAMPLE IDENTIFICATION	SS - 79 Z	SS - 92 Z	SS - 93 Z
DATE OF COLLECTION	8/31/1994	9/7/1994	9/9/1994
DILUTION FACTOR	1	1	1
PERCENT SOLIDS	80.4	85.9	91.7
INORGANIC CONSTITUENTS	(mg/kg)	(mg/kg)	(mg/kg)
Aluminum	6340 E	6890	7300
Antimony	14.1 E	U	U
Arsenic	4.6 E	4.7 E	6.5
Barium	86.7	103	100
Beryllium	1.0 B	U	1.0 B
Cadmium	0.67 BE	UE	1.3
Calcium	65800	56700	52700
Chromium	8.3	19.1	13.7
Cobalt	U	5.6 B	7.2 B
Copper	24.8 E	37.0	49.2 R
Iron	9600 E	12400	21700
Lead	79.7	160	139 E
Magnesium	20500	10400	10100
Manganese	704 E	656 E	666
Mercury	0.30	0.38	0.15
Nickel	UE	17.1	10.7
Potassium	753 B	973 B	1020 B
Selenium	UE	UE	U
Silver	UE	UE	U
Sodium	U	U	U
Thallium	U	U	U
Vanadium	14.0	14.5	17.3
Zinc	93.4	153	149
Cyanide	UR	UR	UR

QUALIFIERS

U: Compound analyzed for but not detected

B: Compound concentration is less than the CRDL but greater than the IDL

R: Result rejected based on validation criteria

E: Result qualified as estimated based on validation criteria

TABLE 6
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
SEMI VOLATILE ORGANICS

SAMPLE IDENTIFICATION	SB-24Z	SB-24L	SB-29Z	SB- 34Z	SB-34E	SB-35Z	SB-35E	SB - 36 Z	SB - 36 G	SB - 37 Z	SB-37 H
SAMPLE DEPTH	0-8'	22 - 24'	0-8'	0-8'	8-10'	0-8'	8-10'	0-8'	12-14'	0-8'	14- 16'
DATE OF COLLECTION	9/7/1994	9/7/1994	9/8/1994	9/9/1994	9/9/1994	8/16/1994	8/16/1994	8/18/1994	8/18/1994	9/1/1994	9/1/1994
DILUTION FACTOR	5	1	1	1	1	4	1	10	1	1	1
PERCENT SOLIDS	92	80	89	93	90	93	93	92	80	93	80
SEMIVOLATILE ORGANIC	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	96 J	U	U	U	U	U	U	U	U
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	U	U	U
2-Chlorophenol	U	U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U
2-Methylphenol	U	U	U	U	U	U	U	U	U	U	U
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	U	U	U
4-Methylphenol	U	U	U	U	U	U	U	U	U	U	U
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	U	U	U	U	U
Hexachloroethane	U	U	U	U	U	U	U	U	U	U	U
Nitrobenzene	U	U	U	U	U	U	U	U	U	U	U
Isophorone	U	U	U	U	U	U	U	U	U	U	U
2-Nitrophenol	U	U	U	U	U	U	U	U	U	U	U
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	U	U	U
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	U	U	U
Naphthalene	390 JE	140 J	120 J	U	U	U	U	U	66 J	U	U
4-Chioroaniline	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadlene	U	U	U	U	U	U	U	U	U	U	U
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene	230 JE	U	95 J	U	U	U	U	U	U	U	U
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	U	U	U
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	U	U	U
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	U	U	U
2-Chloronaphthalene	U	U	U	U	U	U	U	U	U	U	U
2-NItroanlline	U	U	U	U	U	U	U	U	U	U	U
Dimethylphthalate	U	U	U	U	U	U.	U	U	U	U	U
Acenaphthylene	380 JE	94 J	44 J	U	U	U	U	U	U	43 J	U
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U
3-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U
Acenaphthene	500 JE	220 J	140 J	U	U	U	60 J	U	U	U	U
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	U	U	U
4-Nitrophenol	U	U	U	U	U	U	U	U	U	U	U

TABLE 6 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
SEMI VOLATILE ORGANICS

SAMPLE IDENTIFICATION	SB-24Z	SB-24L	SB-29Z	SB- 34Z	SB-34E	SB-35Z	SB-35E	SB - 36 Z	SB - 36 G	SB - 37 Z	SB-37 H
SAMPLE DEPTH	0-8'	22 - 24'	0-8'	0-8'	8-10'	0-8'	8-10'	0-8'	12-14'	0-8'	14- 16'
DATE OF COLLECTION	9/7/1994	9/7/1994	9/8/1994	9/9/1994	9/9/1994	8/16/1994	8/16/1994	8/18/1994	8/18/1994	9/1/1994	9/1/1994
DILUTION FACTOR	5	1	1	1	1	4	1	10	1	1	1
PERCENT SOLIDS	92	80	89	93	90	93	93	92	80	93	80
SEMIVOLATILE ORGANIC	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dibenzofuran	U	51 J	110 J	U	U	U	U	U	U	U	U
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U
Diethylphthalate	U	U	48 J	U	U	U	U	U	U	U	U
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	U	U	U
Fluorene	570 JE	85 J	200 J	U	U	U	U	U	U	U	U
4-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	U	U	U
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	U	U	U
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobenzene	U	U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	U	U	U	U	U	U	U	U	U	U	U
Phenanthrene	7100 E	420	1600	280 J	110 J	1300 J	120 J	750 J	93 J	160 J	150 J
Anthracene	1100 JE	190 J	270 J	63 J	U	500 J	54 J	U	50 J	47 J	45 J
Carbazole	250 JE	U	84 J	J	U	U	U	U	U	U	U
Di-n-butylphthalate	U	U	370 J	J	U	U	84 J	U	U	U	U
Fluoranthene	12000 E	800	1900	540	250 J	4000	170 J	1400 J	210 J	460	240 J
Pyrene	8000 E	970	1400	480	210 J	6900	140 J	1500 J	370 J	380	200 J
Butylbenzylphthalate	U	U	U	U	U	U	U	U	U	U	U
3-3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	U	U	U
Benzo (a) anthracene	3400 E	410 J	860	270 J	120 J	3300	62 J	740 J	140 J	210 J	120 J
Chrysene	2800 E	440	1000	300 J	150 J	3900	96 J	840 J	190 J	230 J	120 J
bls(2-Ethylhexyl)phthalate	U	52 J	80 J	U	U	170 J	U	U	U	42 J	U
Dl-n-octylphthalate	U	U	U	U	U	U	U	U	U	U	U
Benzo(b)flouranthene	3800 E	390 J	780	U	U	U	U	U	U	U	130 J
Benzo(k)flouranthene	3400 E	380 J	630	190 J	90 J	2200	49 J	520 J	91 J	220 J	100 J
Benzo(a)pyrene	3300 E	390 J	670	190 J	82 J	3200	48 J	530 J	130 J	210 J	130 J
Indeno(1,2,3-cd)pyrene	1200 JE	190 J	430	75 J	60 J	900 J	U	U	U	82 J	55 J
Dibenz(a,h)anthracene	460 JE	U	190 J	U	U	370 J	U	U	U	U	U
Benzo(g,h,i)perylene	890 JE	130 J	380	58 J	55 J	670	U	U	U	69 J	51 J
TOTAL PAHs	49290	5249	10614	2716	1227	29140	855	6680	1480	2371	1341
TOTAL CARCINOGEN PAHs	18360	2200	4560	1295	602	15770	311	3030	691	212	655
TOTAL SVOCs	49770	5352	11497	2716	1227	29310	939	6680	1480	2413	1341

QUALIFIERS

J: Compound found at a concentration below the detection limit

U: Compound analyzed for but not detected

B: Compound found in method blank as well as sample

E: Data qualified as estimated based on validation criteria

D: Result from diluted run

U*: Data qualified as non-detect based on validation criteria

TABLE 6 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
SEMI VOLATILE ORGANICS

SAMPLE IDENTIFICATION	SB - 43 Z	SB - 43 L	SB - 44 Z RE	SB - 44 K	SB - 52 Z	SB - 52 F	SB - 53 Z	SB - 53 H	SB - 54 Z	SB - 54 I	SB - 55 Z
SAMPLE DEPTH	0-8'	22- 24'	0-8'	20-27	0-8	10-12'	0-8'	14-16'	0-8'	16-18'	0-8'
DATE OF COLLECTION	9/12/1994	9/12/1994	9/12/1994	9/12/1994	8/18/1994	8/18/1994	8/22/1994	8/22/1994	8/18/1994	8/18/1994	8/23/1994
DILUTION FACTOR	1	1	1	4	1	1	1	1	1	10	1
PERCENT SOLIDS	84	73	82	82	85	87	89	79	83	73	84
SEMIVOLATILE ORGANIC	(ug/kg)	ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroethyl)ether	U	U	U	U	U	U	U	U	U	U	U
2-Chlorophenol	U	U	U	U	U	U	U	U	U	U	U
1,3-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U
1,4-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U
1,2-Dichlorobenzene	U	U	U	U	U	U	U	U	U	U	U
2-Methylphenol	U	U	U	U	U	U	U	U	U	U	U
2,2'-oxybis(1-chloropropane)	U	U	U	U	U	U	U	U	U	U	U
4-Methylphenol	U	U	U	U	U	U	U	U	U	U	U
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	340 J	U	U	U	U
Hexachloroethane	U	U	U	U	U	U	U	U	U	U	U
Nitrobenzene	U	U	U	U	U	U	U	U	U	U	U
Isophorone	U	U	U	U	U	U	U	U	U	U	U
2-Nitrophenol	U	U	U	U	U	U	U	U	U	U	U
2,4-Dimethylphenol	U	U	U	U	U	U	U	U	U	U	U
bis(2-Chloroethoxy)methane	U	U	U	U	U	U	U	U	U	U	U
2,4-Dichlorophenol	U	U	U	U	U	U	U	U	U	U	U
1,2,4-Trichlorobenzene	U	U	U	U	U	U	U	U	U	U	U
Naphthalene	U*	U	U*	U*	72 J	U	39 J	62 J	U	5000	87 J
4-Chioroaniline	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadlene	U	U	U	U	U	U	U	U	U	U	U
4-Chloro-3-methylphenol	U	U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene	150 J	U	54 J	U	U	U	U	U	U	1900 J	U
Hexachlorocyclopentadiene	U	U	U	U	U	U	U	U	U	U	U
2,4,6-Trichlorophenol	U	U	U	U	U	U	U	U	U	U	U
2,4,5-Trichlorophenol	U	U	U	U	U	U	U	U	U	U	U
2-Chloronaphthalene	U	U	U	U	U	U	U	U	U	U	U
2-NItroanllne	U	U	U	U	U	U	U	U	U	U	U
Dimethylphthalate	U	U	U	U	U	U	U	U	U	U	U
Acenaphthylene	U	U	58 J	U	U	U	U	U	U	560 J	U
2,6-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U
3-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U
Acenaphthene	510 J	U	88 J	U	U	U	U	U	U	790 J	U
2,4-Dinitrophenol	U	U	U	U	U	U	U	U	U	U	U
4-Nitrophenol	U	U	U	U		U	U	U	U	U	U

TABLE 6 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
SEMI VOLATILE ORGANICS

SAMPLE IDENTIFICATION	SB - 43 Z	SB - 43 L	SB - 44 Z RE	SB - 44 K	SB - 52 Z	SB - 52 F	SB - 53 Z	SB - 53 H	SB - 54 Z	SB - 54 I	SB - 55 Z
SAMPLE DEPTH	0-8'	22- 24'	0-8'	20-27	0-8	10-12'	0-8'	14-16'	0-8'	16-18'	0-8'
DATE OF COLLECTION	9/12/1994	9/12/1994	9/12/1994	9/12/1994	8/18/1994	8/18/1994	8/22/1994	8/22/1994	8/18/1994	8/18/1994	8/23/1994
DILUTION FACTOR	1	1	1	4	1	1	1	1	1	10	1
PERCENT SOLIDS	84	73	82	82	85	87	89	79	83	73	84
SEMIVOLATILE ORGANIC	(ug/kg)	ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Dibenzofuran	310 J	U	53 J	U	U	U	U	U	U	790 J	U
2,4-Dinitrotoluene	U	U	U	U	U	U	U	U	U	U	U
Diethylphthalate	U	U	130 J	U	87 J	U	U	U	U	U	U
4-Chlorophenyl-phenylether	U	U	U	U	U	U	U	U	U	U	U
Fluorene	610 J	U	92 J	200 J	43 J	U	U	U	U	1900 J	41 J
4-Nitroaniline	U	U	U	U	U	U	U	U	U	U	U
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	U	U	U	U	U
N-Nitrosodiphenylamine	U	U	U	U	U	U	U	U	U	U	U
4-Bromophenyl-phenylether	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobenzene	U	U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	U	U	U	U	U	U	U	U	U	U	U
Phenanthrene	2900	540 J	560	1200 J	240 J	U	260 J	140 J	180 J	13000	300 J
Anthracene	700 J	U	160 J	280 J	72 J	U	48 J	56 J	U	3800 J	89 J
Carbazole	290 J	U	U	U	U	U	U	U	U	U	U
Di-n-butylphthalate	U	U	U	U	U	U	U	U	U	U	77 J
Fluoranthene	3900	U	700	1700	280 J	U	310 J	300 J	250 J	12000	760
Pyrene	3100	U	1100	1300 J	560	U	450	430	460	16000	870
Butylbenzylphthalate	U	U	U	U	U	U	U	U	76 J	U	U
3-3'-Dichlorobenzidine	U	U	U	U	U	U	U	U	U	U	U
Benzo (a) anthracene	2000	U	400 J	700 J	220 J	U	160 J	150 J	120 J	7100	370 J
Chrysene	1900	U	360 J	810 J	260 J	U	220 J	190 J	160 J	7300	470
bls(2-Ethylhexyl)phthalate	U	U	130 J	670 J	53 J	U	95 J	U	48 J	U	110 J
Dl-n-octylphthalate	U	U	U	U	U	U	U	U	U	U	U
Benzo(b)flouranthene	2000	U	350 J	610 J	150 J	U	180 J	160 J	110 J	6100	420
Benzo(k)flouranthene	2400	U	570	940 J	180 J	U	96 J	78 J	68 J	3700 J	290 J
Benzo(a)pyrene	1700	U	320 J	660 J	200 J	U	160 J	150 J	94 J	5700	390 J
Indeno(1,2,3-cd)pyrene	510 J	U	97 J	380 J	U	U	U	U	U	3500 J	270 J
Dibenz(a,h)anthracene	U	U	U	U	U	U	U	U	U	960 J	U
Benzo(g,h,i)perylene	360 J	U	76 J	340 J	U	U	U	U	U	2800 J	230 J
TOTAL PAHs	22590	540	4931	9120	2277	0	1923	1716	1442	90210	4587
TOTAL CARCINOGEN PAHs	10510	0	2097	4100	1010	0	816	728	552	34360	2210
TOTAL SVOCs	23340	540	5298	9790	2417	0	2358	1716	1566	92900	4774

QUALIFIERS

J: Compound found at a concentration below the detection limit

U: Compound analyzed for but not detected

B: Compound found in method blank as well as sample

E: Data qualified as estimated based on validation criteria

D: Result from diluted run

U*: Data qualified as non-detect based on validation criteria

TABLE 6 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
SEMI VOLATILE ORGANICS

SAMPLE IDENTIFICATION	SB - 55 K	SB - 56 Z	SB - 56 J DL	SB - 70 Z	SB - 70 H
SAMPLE DEPTH	20-27'	0-8'	18-20'	0-8'	14-16'
DATE OF COLLECTION	8/23/1994	8/23/1994	8/23/1994	9/19/1994	9/19/1994
DILUTION FACTOR	10	1	8	2	1
PERCENT SOLIDS	66	89	71	72	79
SEMIVOLATILE ORGANIC	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Phenol	U	U	U	U	U
bis(2-Chloroethyl)ether	U	U	U	U	U
2-Chlorophenol	U	U	U	U	U
1,3-Dichlorobenzene	U	U	U	U	U
1,4-Dichlorobenzene	U	U	U	U	U
1,2-Dichlorobenzene	U	U	U	U	U
2-Methylphenol	U	U	U	U	U
2,2'-oxybis(1-chloropropane)	U	U	U	U	U
4-Methylphenol	600 J	U	U	U	U
N-Nitroso-di-n-propylamine	U	U	U	U	U
Hexachloroethane	U	U	U	U	U
Nitrobenzene	U	U	U	U	U
Isophorone	U	U	U	U	U
2-Nitrophenol	U	U	U	U	U
2,4-Dimethylphenol	U	U	U	U	U
bis(2-Chloroethoxy)methane	U	U	U	U	U
2,4-Dichlorophenol	U	U	U	U	U
1,2,4-Trichlorobenzene	U	U	U	U	U
Naphthalene	1400 J	U	880 JD	210 J	72 J
4-Chioroaniline	U	U	U	U	U
Hexachlorobutadlene	U	U	U	U	U
4-Chloro-3-methylphenol	U	U	U	U	U
2-Methylnaphthalene	1900 J	U	410 JD	U	U
Hexachlorocyclopentadiene	U	U	U	U	U
2,4,6-Trichlorophenol	U	U	U	U	U
2,4,5-Trichlorophenol	U	U	U	U	U
2-Chloronaphthalene	U	U	U	U	U
2-Nltroanlline	U	U	U	U	U
Dimethylphthalate	U	U	U	U	U
Acenaphthylene	620 J	42 J	U	160 J	U
2,6-Dinitrotoluene	U	U	U	U	U
3-Nitroaniline	U	U	U	U	U
Acenaphthene	2000 J	U	960 JD	U	U
2,4-Dinitrophenol	U	U	U	U	U
4-Nitrophenol	U	U	U	U	U

TABLE 6 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
SEMI VOLATILE ORGANICS

SAMPLE IDENTIFICATION	SB - 55 K	SB - 56 Z	SB - 56 J DL	SB - 70 Z	SB - 70 H
SAMPLE DEPTH	20-27'	0-8'	18-20'	0 - 8'	14-16
DATE OF COLLECTION	8/23/1994	8/23/1994	8/23/1994	09/19194	9/19/1994
DILUTION FACTOR	10	1	8	2	1
PERCENT SOLIDS	66	89	71	72	79
SEMIVOLATILE ORGANIC	(ug/kg)	(ug/kg)	(ug/kg)	ug/kg	ug/kg
Dibenzofuran	1900 J	U	760 JD	U	U
2,4-Dinitrotoluene	U	U	U	U	U
Diethylphthalate	U	300 J	U	1100	U
4-Chlorophenyl-phenylether	U	U	U	U	U
Fluorene	3500 J	U	1300 JD	U	U
4-Nitroaniline	U	U	U	U	U
4,6-Dinitro-2-methylphenol	U	U	U	U	U
N-Nitrosodiphenylamine	U	U	U	U	U
4-Bromophenyl-phenylether	U	U	U	U	U
Hexachlorobenzene	U	U	U	U	U
Pentachlorophenol	U	U	U	U	U
Phenanthrene	18000	180 J	9200 D	520 J	89 J
Anthracene	4300 J	57 J	1600 JD	170 J	44 J
Carbazole	880 J	U	490 JD	U	U
Di-n-butylphthalate	U	U	U	U	U
Fluoranthene	12000	490	9900 D	990	250 J
Pyrene	15000	730	11000 D	1100	210 J
Butylbenzylphthalate	U	U	U	U	U
3-3'-Dichlorobenzidine	U	U	U	U	U
Benzo (a) anthracene	7100	290 J	5300 D	620 J	140 J
Chrysene	9000	330 J	5300 D	780 J	180 J
bls(2-Ethylhexyl)phthalate	960 J	140 J	U	U	U
Dl-n-octylphthalate	U	U	U	U	U
Benzo(b)flouranthene	6300	300 J	4500 D	670 J	110 J
Benzo(k)flouranthene	4600 J	180 J	3500 JD	640 J	120 J
Benzo(a)pyrene	7000	280 J	4100 D	540 J	100 J
Indeno(1,2,3-cd)pyrene	4200 J	U	2900 JD	200 J	67 J
Dibenz(a,h)anthracene	U	U	U	U	U
Benzo(g,h,i)perylene	4600 J	U	2800 JD	140 J	51 J
TOTAL PAHs	99620	2879	63240	6740	1433
TOTAL CARCINOGEN PAHs	38200	1380	25600	3450	717
TOTAL SVOCs	105860	3319	64900	7840	1433

QUALIFIERS

J: Compound found at a concentration below the detection limit

U: Compound analyzed for but not detected

B: Compound found in method blank as well as sample

E: Data qualified as estimated based on validation criteria

D: Result from diluted run

U*: Data qualified as non-detect based on validation criteria

TABLE 7
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
PESTICIDES/PCBs

SAMPLE IDENTIFICATION	SB - 24 Z	SB - 24 L	SB - 34 Z	SB - 34 E	SB-35 Z	SB-35E	SB-36Z	SB-36 G	SB - 37 Z	SB - 43 G	SB - 43 L
SAMPLE DEPTH	0 - 8'	22 - 24'	0-8'	8-10'	0-8'	8-10'	0-8'	12-14'	0-8'	0-8'	22-24
DATE OF COLLECTION	9/7/1994	9/7/1994	9/9/1994	9/9/1994	8/16/1994	8/16/1994	8/18/1994	8/18/1994	9/1/1994	9/12/1994	9/12/1994
DILUTION FACTOR	1	10	1	1	1	1	5	1	1	1	1
PERCENT SOLIDS	92	80	93	90	93	81	92	87	87	95	73
PESTICIDE/PCBs	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
alpha-BHC	U	U	U	U	U	U	U	U	U	U	U
beta-BHC	U	U	U	U	U	U	U	U	U	U	U
delta-BHC	U	U	U	U	U	U	U	U	U	U	U
gamma-BHC (Lindane)	U	U	U	U	U	U	U	U	U	U	U
Heptachlor	U	U	U	U	U	U	U	U	U	U	U
Aldrin	U	U	U	U	U	U	U	U	U	U	U
Heptachlor epoxide	U	U	U	U	U	U	U	U	U	U	U
Endosulfan I	U	U	U	U	U	U	U	U	U	U	U
Dieldrin	U	U	U	U	4.5 PY	U	U	U	U	U	U
4,4'-DDE	U	U	U	U	U	U	U	U	U	U	U
Endrin	U	U	U	U	4.7 Y	U	U	U	U	U	U
Endosulfan II	U	U	U	U	U	U	U	U	U	U	U
4,4'-DDD	U	U	U	U	U	U	U	U	U	U	U
Endosulfan sulfate	U	U	U	U	U	U	U	U	U	U	U
4,4'-DDT	3.8	U	U	U	U	U	U	U	U	U	U
Methoxychlor	U	U	U	U	U	U	U	U	U	U	U
Endrin ketone	U	U	U	U	U	U	U	U	U	U	U
Endrin aldehyde	4.5 R	16 JP	3.9 R	U	U	6.7 P	U	U	U	U	U
alpha-Chlordane	U	U	U	U	U	U	U	U	U	U	U
gamma-Chlordane	U	U	U	U	U	U	U	U	U	U	U
Toxaphene	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1016	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1248	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1260	U	U	U	U	48	U	U	U	U	U	U
TOTAL PCBs	0.00	0.00	0.00	0.00	48.00	0.00	0.00	0.00	0.00	0.00	0.00

QUALIFIERS

U: Compound analyzed for but not detected

B: Compound found in blank as well as the sample

J: Compound found at a concentration below the detection limit

P: Greater than 25% difference between the two GC columns

Y: Presence of these pesticide components are suspect

R: Result rejected based on validation criteria

TABLE 7 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
PESTICIDES/PCBs

SAMPLE IDENTIFICATION	SB - 44 Z	SB-44K	SB - 52 G	SB - 52 F	SB - 53 G	SB - 53 H	SB - 54 G	SB - 54 I	SB-55G	SS - 55 K	SB - 56 G
SAMPLE DEPTH	0-8'	20-22'	0 - 8'	10 -17	0 - 8'	14 -16'	0 - 8'	16 -18'	0-v	20-2Z	0 - 8'
DATE OF COLLECTION	9/12/1994	9/12/1994	8/18/1994	8/18/1994	8/22/1994	8/22/1994	8/18/1994	8/18/1994	8/23/1994	08r23/94	8/23/1994
DILUTION FACTOR	1	1	1	1	1	1	1	5	1	10	1
PERCENT SOLIDS	82	82	85	80	89	79	83	73	84	66	89
PESTICIDE/PCBs	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	ug/kg	ug/kg	ug/kg
alpha-BHC	U	U	U	U	U	U	U	U	U	U	U
beta-BHC	U	U	U	U	U	U	U	U	U	U	U
delta-BHC	U	U	U	U	U	U	U	U	U	U	U
gamma-BHC (Lindane)	U	U	U	U	U	U	U	U	U	U	U
Heptachlor	U	U	U	U	U	U	U	U	U	U	U
Aldrin	U	U	U	U	U	U	U	U	U	U	U
Heptachlor epoxide	U	2.6 R	U	U	U	U	U	U	U	U	U
Endosulfan I	U	U	U	U	U	U	U	U	U	U	U
Dieldrin	U	6.6 R	U	U	U	U	U	U	U	U	U
4,4'-DDE	U	10	U	U	U	U	U	U	U	U	U
Endrin	U	U	U	U	U	9.9 P	U	U	U	37 JP	U
Endosulfan II	4.5	8.4 Y	U	U	U	U	U	U	U	U	U
4,4'-DDD	4.4 R	U	U	U	U	4.6 P	U	U	17	140	U
Endosulfan sulfate	U	U	U	U	U	5.6	U	U	U	U	U
4,4'-DDT	U	21 PY	U	U	4.1	U	U	U	U	U	U
Methoxychlor	U	U	U	U	U	U	U	U	U	U	U
Endrin ketone	U	U	U	U	U	U	U	U	U	46 J	U
Endrin aldehyde	U	5.7 R	U	5.6	U	U	6.1 P	U	U	U	U
alpha-Chlordane	U	2.7	U	U	U	U	U	U	U	U	U
gamma-Chlordane	U	U	U	U	U	U	U	U	U	U	U
Toxaphene	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1016	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1221	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1232	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1242	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1248	U	U	U	U	U	U	U	U	U	U	U
Aroclor-1254	U	U	U	U	U	U	U	U	16 JP	U	U
Aroclor-1260	U	100 P	U	U	U	U	U	U	U	U	U
TOTAL PCBs	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	16.00	0.00	0.00

QUALIFIERS

U: Compound analyzed for but not detected

B: Compound found in blank as well as the sample

J: Compound found at a concentration below the detection limit

P: Greater than 25% difference between the two GC columns

Y: Presence of these pesticide components are suspect

R: Result rejected based on validation criteria

TABLE 7 (CONT'D)
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
PESTICIDES/PCBs

SAMPLE IDENTIFICATION	SB-56J	SB - 70 G	SB - 70 H
SAMPLE DEPTH	18 - 20'	0-8'	14-16'
DATE OF COLLECTION	8/23/1994	9/19/1994	9/19/1994
DILUTION FACTOR	2	2	1
PERCENT SOLIDS	71	72	79
PESTICIDE/PCBs	ug/kg	ug/kg	ug/kg
alpha-BHC	U	U	U
beta-BHC	U	U	U
delta-BHC	U	U	U
gamma-BHC (Lindane)	U	U	U
Heptachlor	U	U	U
Aldrin	U	U	U
Heptachlor epoxide	U	U	U
Endosulfan I	U	U	U
Dieldrin	U	U	U
4,4'-DDE	U	U	U
Endrin	31 PY	U	U
Endosulfan II	U	U	U
4,4'-DDD	21	U	U
Endosulfan sulfate	U	U	U
4,4'-DDT	19 Y	U	U
Methoxychlor	U	U	U
Endrin ketone	U	U	U
Endrin aldehyde	U	U	U
alpha-Chlordane	U	U	U
gamma-Chlordane	U	U	U
Toxaphene	U	U	U
Aroclor-1016	U	U	U
Aroclor-1221	U	U	U
Aroclor-1232	U	U	U
Aroclor-1242	U	U	U
Aroclor-1248	U	U	U
Aroclor-1254	U	U	U
Aroclor-1260	82 JP	59 JP	U
TOTAL PCBs	82.00	59.00	0.00

QUALIFIERS

U: Compound analyzed for but not detected

B: Compound found in blank as well as the sample

J: Compound found at a concentration below the detection limit

P: Greater than 25% difference between the two GC columns

Y: Presence of these pesticide components are suspect

R: Result rejected based on validation criteria

TABLE 8
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
INORGANIC CONSTITUENTS

SAMPLE IDENTIFICATION	SB - 29 Z	SB - 34 Z	SB - 34 E	SB - 35 Z	SB - 35 E	SB - 36 Z	SB - 36 G	SB - 37 Z	SB - 37 H	SB - 43 Z	SB - 43 L
SAMPLE DEPTH	0 - 8'	0 - 8'	8 - 10'	0 - 8'	8 - 10'	0 - 8'	12 - 14'	0 - 8'	14 - 16'	0-8'	22- 24'
DATE OF COLLECTION	9/8/1994	9/9/1994	9/9/1994	8/16/1994	8/16/1994	8/18/1994	8/18/1994	9/1/1994	9/1/1994	9/12/1994	9/12/1994
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1	1
PERCENT SOLIDS	88.9	93.4	89.7	93.2	92.8	91.8	79.5	87.0	80.0	84.3	73.1
INORGANIC CONSTITUENTS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aluminum	8010	7500	3990	3310	2940	3950	3750	6470	3590	9310	10500
Antimony	11.5 B	6.4 B	9.7 B	U	U	U	U	U	U	U	U
Arsenic	9.3	4.3	3.2	2.8	3.0	3.0	2.5	4.3	4.3	5.6	21.4
Barium	145	53.5	26.8 B	22.9 B	13.2 B	35.4 B	18.7 B	85.4 E	34.6 BE	109	60.6
Beryllium	U	U	U	U	U	U	U	U	U	U	U
Cadmium	0.58 B	U	0.76 B	U	0.42 B	U	U	U	1.1 BE	0.70 B	2.3
Calcium	56400	72800	121000	47700	33700	51900	32800	51900	60800	77100	38900
Chromium	15.3	9.0	7.3	5.7	5.4	7.9	7.5	9.5	13.6	15.4	18.3
Cobalt	5.4 B	4.8 B	U	U	U	U	U	U	U	7.4 B	10.9 B
Copper	85.7 R	16.5 R	6.8 R	8.7	7.3	16.9	14.5	17.9	15.8	47.9 R	35.4 R
Iron	15500	10100	15900	8400	8490	8310	10100	16600	12700	18800	19900
Lead	221 R	36.2 E	16.9	32.2	6.1	35.7	12.9	37.7	25.1	195	94.7 R
Magnesium	11400	11900	43500	9600	5970	9180	7710	12200	24400	14900	14200
Manganese	1220	303	1450	271	228	348	317	563	497	505	375
Mercury	0.21	U	U	U	U	U	U	U	0.14	U	0.28
Nickel	14.6	10.5	U	9.2	9.0	10.9	13.5	9.8	U	14.1	27.9
Potassium	822 B	923 B	783 B	520 B	548 B	519 B	816 B	927 B	527 B	1220	1290
Selenium	U	U	U	U	U	U	U	U	U	U	U
Silver	U	U	U	U	U	U	U	U	U	U	U
Sodium	3200	U	U	U	U	U	U	U	U	U	U
Thallium	U	U	U	U	U	U	U	U	U	U	U
Vanadium	15.8	13.5	15.7	10.6	13.3	10.2	10.2 B	15.9	13.2	22.7	24.8
Zinc	165	64.3	45.8	45.1	32.1	68.2	51.4	106	108	172	428
Cyanide	R	R	UE	R	R	R	R	R	R	UE	UE

QUALIFIERS

R: Result rejected based upon validation criteria

U: Compound analyzed for but not detected

B: Compound concentration is less than the CRDL but greater than the IDL

E: Result qualified as estimated based on validation criteria

TABLE 8
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
INORGANIC CONSTITUENTS

SAMPLE IDENTIFICATION	SB - 44 Z	SB - 44 K	SB - 52 Z	SB - 52 F	SB - 53 Z	SB - 53 H	SB - 54 Z	SB-55Z	SB-55K	SB-56Z	SB-56J
SAMPLE DEPTH	0-8'	20- 22'	0-8'	10- 12'	0-8'	14- 16'	0-8'	0-8'	20- 22'	0-8'	18- 20'
DATE OF COLLECTION	9/12/1994	9/12/1994	8/18/1994	8/18/1994	8/22/1994	8/22/1994	8/18/1994	8/23/1994	8/23/1994	8/23/1994	8/23/1994
DILUTION FACTOR	1	1	1	1	1	1	1	1	1	1	1
PERCENT SOLIDS	81.9	82.0	84.8	87.1	89.0	79.0	83.1	84.0	66.5	88.9	70.9
INORGANIC CONSTITUENTS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aluminum	8140	9870	5760	8320	3540	8510	4880	3120	8410	3260	7310
Antimony	11.1 B	17.0	U	U	U	U	U	U	19.6	U	15.1 B
Arsenic	4.2	15.3	4.5	3.3	3.6	5.3	3.7	2.6	24.2	3.4	45.6
Barium	85.2	192	50.6	72.1	24.7 B	54.4	115	34.5 B	778	14.5 B	702
Beryllium	0.93 B	U	U	U	U	U	U	U	U	U	U
Cadmium	2.1	4.2	0.56 B	U	U	U	U	U	4.8 E	U	4.9 E
Calcium	155000	59100	46100	62900	29800	49400	107000	34000	20100	40700	16300
Chromium	13.6	22.1	16.9	10.8	7.2	31.3	7.9	7.7	55.3	6.5	36.1
Cobalt	U	9.6 B	U	7.9 B	U	8.2 B	U	U	11.6 B	U	7.5 B
Copper	13.5 R	35.4 R	26.4	12.8	12.9 E	22.6 E	44.3	49.7 E	430 E	9.9E	344 E
Iron	12200	31100	17300	14800	10200	22200	11300	8560	30900	8250	32100
Lead	68.4	580 R	78.3	11.4	71.7	30.2	253	44.6	1190	10.4	1000
Magnesium	19400	15400	12600	25500	9050	20000	9980	13500	2370	8770	3850
Manganese	685	893	448	417	271	715	579	256	314	252	258
Mercury	U	0.16	U	U	U	0.19	0.14	0.12	2.2	U	2.4
Nickel	U	23.0	13.9	17.8	U	18.3	13.0	U	50.4	9.1	38.9
Potassium	1460	1380	735 B	2000	729 B	1560	1120 B	574 B	884 B	630 B	460 B
Selenium	U	3.0	U	U	U	U	U	U	2.5 E	U	1.3
Silver	U	U	U	U	U	U	U	U	U	U	U
Sodium	U	U	U	1400	U	3650	U	1910	39100	U	1760
Thallium	U	U	U	U	U	U	U	U	U	U	U
Vanadium	22.0	26.4	18.8	20.6	11.1	23.4	16.4	11.9	33.2	11.3	24.5
Zinc	117	307	136	53.1	54.4	163	115	120	1140	45.4	1040
Cyanide	UE	UE	1 R	R	R	R	R	R	R	R	R

QUALIFIERS

R: Result rejected based upon validation criteria

U: Compound analyzed for but not detected

B: Compound concentration is less than the CRDL but greater than the IDL

E: Result qualified as estimated based on validation criteria

TABLE 8
NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT
SOIL BORING SAMPLE RESULTS
INORGANIC CONSTITUENTS

SAMPLE IDENTIFICATION	SB - 70 Z	SB- 70 H	SB - 80
SAMPLE DEPTH	0-8'	14- 16'	14'-16'
DATE OF COLLECTION	9/19/1994	9/19/1994	6/19/1995
DILUTION FACTOR	1	1	1
PERCENT SOLIDS	72.5	79.4	75.0
INORGANIC CONSTITUENTS	(mg/kg)	(mg/kg)	(mg/kg)
Aluminum	10200	6470	NA
Antimony	U	U	NA
Arsenic	10.6	3.6	NA
Barium	98.1	44.0 B	NA
Beryllium	1.0 B	U	NA
Cadmium	2.2	1.3	NA
Calcium	60300	50500	NA
Chromium	25.9	15.6	NA
Cobalt	9.9 B	6.4 B	NA
Copper	43.5	11.9	329
Iron	24300	14100	NA
Lead	153	16.7	1630 E
Magnesium	18500	22100	NA
Manganese	568	434	NA
Mercury	0.36	U	NA
Nickel	22.3	U	NA
Potassium	2110	1710	NA
Selenium	U	U	NA
Silver	U	U	NA
Sodium	U	U	NA
Thallium	U	U	NA
Vanadium	30.0	22.0	NA
Zinc	218	94.5	754
Cyanide	U	U	NA

QUALIFIERS

R: Result rejected based upon validation criteria

U: Compound analyzed for but not detected

B: Compound concentration is less than the CRDL but greater than the IDL

E: Result qualified as estimated based on validation criteria

FIGURES

Niagara Frontier Transportation Authority
Port-Greenbelt Shoreline Improvement Project
Site Location Plan

URS

Figure 1

Niagara Frontier Transportation Authority
Port-Greenbelt Shoreline Improvement Project
Project Organization

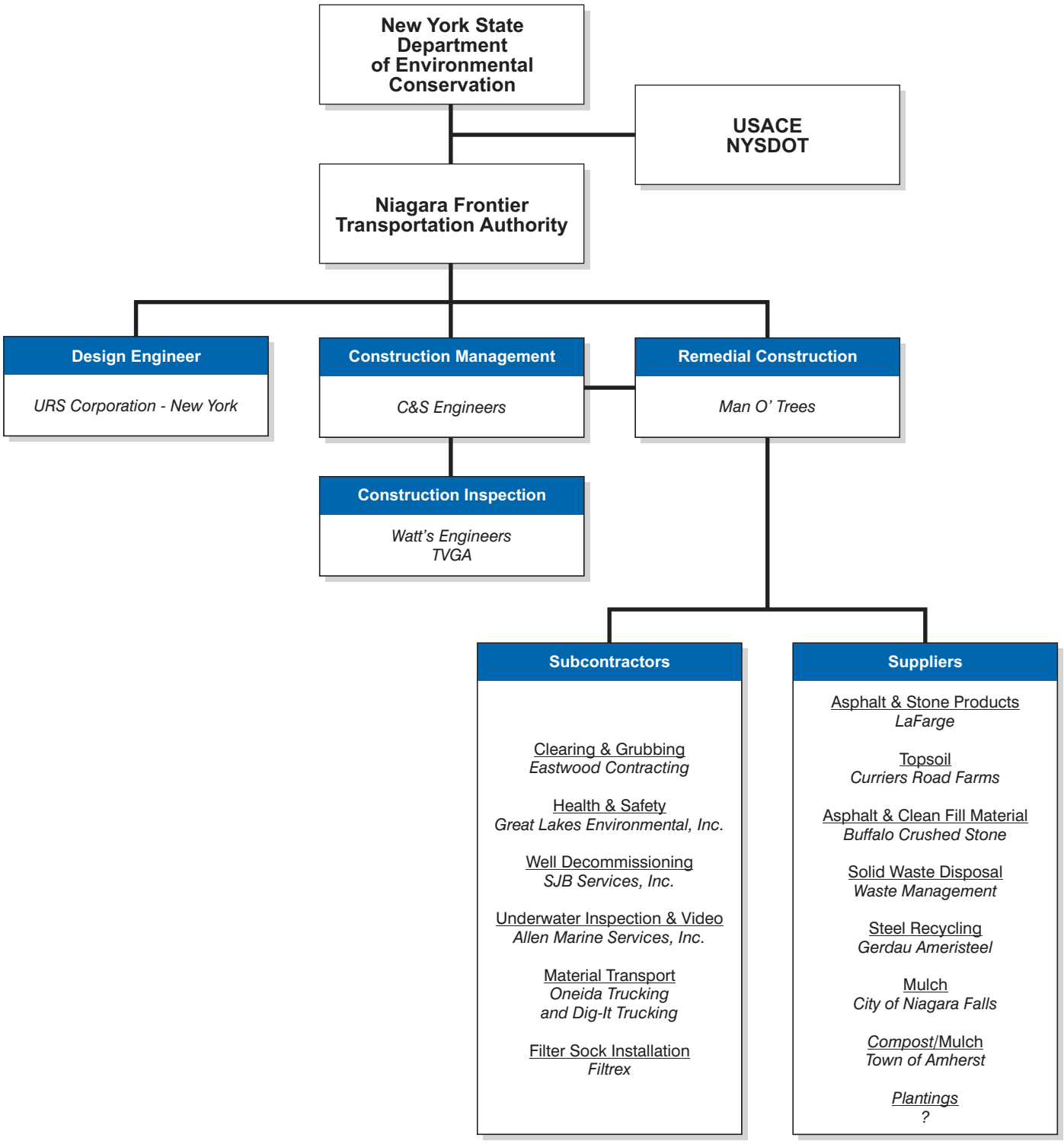

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Figure 2

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TEMPORARY STOCKPILE LOCATIONS PLAN

FIGURE 3

AG20556-11174825-031611-GCM

APPENDIX A

SURVEY MAP, METES AND BOUNDS

Description of lands surveyed for Niagara Frontier Transportation Authority in accordance with the American Land Title Association (ALTA) Survey; performed by URS Corporation – New York, Buffalo New York, September 2010

All that tract and parcel of land situate in the City of Buffalo, County of Erie and State of New York, being parts of the Outer Lots and the Ogden Gore, being more particularly bounded and described as follows:

Beginning at a point in the westerly line of Furhmann Boulevard (also know as Seawall Highway, Harbor Turnpike and New York State Route 5), said point being the northeasterly corner of the herein described parcel; said point also being the most westerly corner of lands conveyed to the People of the State of New York for the "High Level Bridge" and designated as Parcel 4; said point also being the most westerly corner of Parcel 2, being a tract of land conveyed to the Niagara Frontier Transportation Authority (NFTA) by the City of Buffalo as recorded in Liber 11098 at Page 5306 of the Deed Records of the Office of the Clerk of Erie County; said point also being at the intersection of the southerly line of Parcel 1 as described in the aforementioned deed and the shoreline of Lake Erie as described in the Laws of the State of New York in Chapter 616 in 1913; said point also being the northeasterly corner of lands conveyed to the Niagara Frontier Port Authority (NFPA) in Liber 6776 at page 83 of said Deed Records;

thence South 44°-09'-29" East along an easterly line described in the last mentioned deed, 287.54 feet to a point in the westerly line of Furhmann Boulevard as established by a conveyance to the People of the State of New York for highway purposes by Appropriation Map No. 10TR-2, Parcel 10;

thence southerly along the westerly line of Furhmann Boulevard as established in a conveyance to the People of the State of New York for highway purposes by the last mentioned Appropriation Map on a curve to the left having a radius of 5789.65 feet, an arc length of 722.54 feet and a chord length of 722.07 feet, which chord bears South 24°-38'-56" East, to a point the westerly line of the last mentioned Appropriation Map;

thence continuing along the last mentioned line, South 28°-24'-49" East, 217.68 feet to a point on southerly line of lands conveyed to the NFPA in Liber 6776 at page 83 of said Deed Records;

thence along the southerly line of lands conveyed to the NFPA by the last mentioned deed, also being the northerly line of lands conveyed to NFPA in Liber 6746 at Page 57 of said Deed Records, South 66°-43'-35" West, 19.98 feet to a point in the last mentioned line; said point being the northwesterly corner of lands conveyed to the People of the State of New York for highway purposes by Appropriation Map No. 8, Parcel 8;

thence along the westerly line of lands conveyed to the People of the State of New York by the last mentioned Appropriation Map, South 29°-52'-11" East, 791.45 feet to a point;

said point being the northeasterly corner of lands conveyed to the People of the State of New York for highway purposes by Appropriation Map No. 343, Parcel 386;

thence along the westerly lines of lands conveyed to the People of the State of New York by the last mentioned Appropriation Map, the following seven courses and distances:

1) South 60°-55'-41" West, 22.73 feet to an angle point;
2) South 29°-44'-55" East, 523.77 feet to an angle point;
3) South 11°-01'-43" West, 184.37 feet to an angle point;
4) South 36°-07'-21" East, 125.93 feet to an angle point;
5) South 78°-59'-26" East, 264.01 feet to an angle point;
6) South 50°-54'-36" East, 205.63 feet to an angle point;
7) South 38°-12'-40"East, 286.54 feet to an angle point;

the last mentioned point being in the easterly line of lands conveyed to the NFPA as Parcel 2 described in Liber 6434 at Page 84 of said Deed Records;

thence along the last mentioned line, South 28°-24'-25" East, 861.30 feet to a point; said point being a northwesterly corner of lands conveyed to the NFPA as Parcel 4 described in Liber 6434 at Page 84 of said Deed Records; said point also being the northeasterly corner of lands formerly owned by the Ford Motor Company as described in a deed recorded in Liber 2100 at Page 566 of said Deed Records;

thence along the said northerly line of said Parcel 4, North 69°-33'-15" East, 50.49 feet to a point; said point being the northwesterly corner of lands conveyed to the People of the State of New York for highway purposes by Appropriation Map No. 311R-1, Parcel 322;

thence along the westerly lines of lands conveyed to the People of the State of New York by the last mentioned Appropriation Map, the following two courses and distances:

1) South 28°-24'-25" East, 907.19 feet to an angle point;
2) South 37°-38'-01" East, 392.11 feet to an angle point;

said point being in the westerly line of lands conveyed to the People of the State of New York by the last mentioned Appropriation Map; said point also being a northeasterly corner of 3.44 acres of land now or formerly part of lands conveyed to the NFPA as Parcel 1 in Liber 6434 at page 84 of said Deed Records, which 3.44 acres are shown as lands to be conveyed to the New York State Office of Parks and Recreation as shown on a survey prepared for the NFTA by URS Corporation , Buffalo, New York entitled "Small Boat Harbor Survey" dated April 2006;

thence along the said lands to be conveyed to the New York State Office of Parks and Recreation as shown on the above mentioned survey, the following three courses and distances:

1) South 58°-42'-15" West, 47.00 feet to a point of curvature;
2) Along a curve to the right having a radius of 377.85 feet, an arc distance of 382.84 feet and a chord length of 366.67 feet which bears South 20°-54'-42" West, to a point;

3) thence leaving said curve to the right on a non tangent line, South 20°-16'-26" East, 203.70 feet to a point;

said point being on the southerly line of lands conveyed to the NFPA as Parcel 1 in the last mentioned deed;

thence along the southerly line of said Parcel 1, South 69°-33'-10" West, 1249.73 feet to a point; said point being on the Harbor Line as established by the United States Government by instrument dated March 27, 1899, which Harbor Line is shown on a map prepared by U. S. Engineer Office, Buffalo, New York, entitled "Buffalo Harbor, N.Y., U. S. Harbor Line 1939", dated December 28, 1939;

thence following the said Harbor Line and along the westerly line of lands conveyed to NFPA in Liber 6434 at page 84 and Liber 6434 at page 43 of said Deed Records, North 26°-53'-50" West, 1582.93 feet to a point, said point being 187.95 feet south of the northwesterly corner of lands conveyed to NFPA in Liber 6434 at page 43 of said Deed Records;

thence continuing along said Harbor Line, North 20°-45'-48" West, 2305.84 feet to an angle point in said Harbor Line; said point also being in the westerly line of lands conveyed to the NFPA in Liber 6746 at page 57 of said Deed Records;

thence continuing along said Harbor Line, North 32°-52'-47" West, 2100.59 feet to a point in said Harbor Line; said point also being the northwesterly corner of herein described parcel; said point also being in the northwesterly corner of lands conveyed to the NFPA in Liber 6776 at page 83 of said Deed Records;

thence along the northerly line of lands conveyed to NFPA by the last mentioned deed, North 66°-44'-55" East, 1046.44 feet to the POINT OF BEGINNING;

Containing 164.68 acres of land, more or less.

The bounds of the above described parcel is based upon a field survey performed in September 2010 by URS Corporation, Buffalo, New York and was supplemented by the information contained in the documents referenced in the above description, which description was prepared October 5, 2010.

All bearings referred to above are based on the coordinates of National Geodetic Survey Monument "LEHR" PID No AE2177 which coordinated are based upon the New York State Plane Coordinate System, West Zone, North American Datum of 1983.

Description for Environmental Easement granted to the New York State Department of Environmental Conservation from the Niagara Frontier Transportation Authority

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Buffalo, County of Erie and State of New York, being part of Lots Nos. 1 and 2 of the Ogden Gore Tract, part of Outer Lots Nos. 44 to 50 and part of lands formerly lying under the waters of Lake Erie, bounded and described as follows:

Commencing at a point in the westerly line of Fuhrmann Boulevard (aka Seawall Highway, Harbor Turnpike, Hamburg Turnpike or New York State Route 5), said point being the southeasterly corner of Parcel Two of lands conveyed to the Niagara Frontier Port Authority (NFPA), predecessor in title to the Niagara Frontier Transportation Authority (NFTA) by deed recorded in the Office of the Clerk of Erie County in Liber 6434 at Page 84; said point also being the northeasterly corner of lands now belonging to NFTA as described in a deed to the Ford Motor Company recorded in said Clerks Office in Liber 2100 at Page 566;

thence along the most easterly line of said Parcel Two, which line is also the westerly line of Fuhrmann Boulevard, so called, N 28°-24'-25" W, 861.30 feet to a point, said point being the most southerly point of lands conveyed by NFTA to the People of the State of New York for the improvement of Fuhrmann Boulevard by Appropriation Map Number 343 Parcel 386;

thence along a westerly line of lands conveyed to the People of the State of New York by said Map 343 Parcel 386, N 38°-12'-40" W, 216.58 feet to the POINT OF BEGINNING of this easement; said point having the coordinates of North 1,042,653.63 feet, East 1,070,809.47 feet based on the coordinates of National Geodetic Survey Monument "LEHR" PID No AE2177 which coordinates are based upon the New York State Plane Coordinate System, West Zone, North American Datum of 1983;

thence along the last mentioned line, S 38°-12'-40" E, 15.22 feet to a point;

thence through the lands conveyed to NFTA by deeds recorded in said Clerks office in Liber 6434 at Page 84, Liber 6434 at page 43, Liber 6746 at Page 57, Liber 6742 at Page 235 and Liber 6776 at Page 83, the following courses and distances:

S 61°-32'-00" W, 290.45 feet;
S 21°-15'-03" E, 130.49 feet;
S 07°-15'-48" W, 167.74 feet;
S 54°-22'-55" W, 149.98 feet;
S 77°-26'-54" W, 184.98 feet;
S 62°-50'-48" W, 305.63 feet;
S 21°-19'-22" W, 147.32 feet;

S 20°-46'-13" E, 735.87 feet;
S 64°-40'-53" W, 120.11 feet to a point at the ground elevation of 573.56 feet on the shoreline revetment mats along the Lake Erie shoreline as said mats existed at the time of this survey; said 573.56 feet elevation being the historical Lake Erie ordinary high water mark as determined by the United States Army Corp of Engineers (USACE); said elevation is referenced to North American Vertical Datum of 1988 (NAVD 88) as converted from (573.4 feet) International Great Lakes Datum of 1985 (IGLD 85);

thence along the said USACE 573.56 feet ground elevation of said revetment mats the following courses and distances:

N 26°-22'-58" W, 71.63 feet;
N 17°-23'-25" W, 73.77 feet;
N 19°-50'-50" W, 126.26 feet;
N 16°-25'-22" W, 150.44 feet;
N 25°-24'-56" W, 200.72 feet;
N 12°-51'-54" W, 130.38 feet;
N 21°-07'-11" W, 50.56 feet;
N 03°-05'-42" W, 89.98 feet;
N 38°-38'-46" E, 128.76 feet;
N 60°-40'-42" E, 88.50 feet;
N 65°-01'-25" E, 100.01 feet;
N 61°-03'-58" E, 58.83 feet;
N 61°-22'-23" E, 136.10 feet;
N 77°-23'-51" E, 88.96 feet;
N 85°-47'-09" E, 59.60 feet;
N 69°-10'-33" E, 48.61 feet;
N 55°-47'-51" E, 23.69 feet;
N 33°-55'-22" E, 50.27 feet;
N 05°-40'-13" E, 37.64 feet;
N 21°-44'-03" W, 24.72 feet;
N 03°-43'-32" W, 25.50 feet;
N 20°-53'-18" E, 27.88 feet;
N 48°-35'-48" E, 35.45 feet;
N 26°-53'-36" E, 11.86 feet;
N 01°-58'-32" E, 17.30 feet;
N 23°-04'-42" W, 58.09 feet;
N 44°-07'-51" W, 27.73 feet;
N 89°-14'-12" W, 54.82 feet;
N 71°-35'-26" W, 53.90 feet;
N 59°-12'-17" W, 58.40 feet;
N 49°-59'-22" W, 30.33 feet;
N 09°-07'-32" W, 31.70 feet;
N 05°-54'-47" E, 36.31 feet;
N 00°-21'-37" W, 42.00 feet;
N 02°-16'-13" W, 29.80 feet;

N 69°-59'-08" W, 13.35 feet;
S 70°-29'-49" W, 19.04 feet;
S 89°-18'-06" W, 16.82 feet;
S 84°-25'-18" W, 17.93 feet;
S 49°-01'-00" W, 19.65 feet;
S 20°-29'-22" W, 40.01 feet;
S 15°-49'-32" W, 49.58 feet;
S 04°-46'-17" W, 40.67 feet;
S 10°-35'-52" E, 66.31 feet;
S 10°-36'-42" W, 59.60 feet;
S 50°-19'-44" W, 42.55 feet;
S 57°-47'-47" W, 51.93 feet;
S 48°-59'-36" W, 21.44 feet;
S 52°-45'-02" W, 83.34 feet;
S 56°-55'-16" W, 89.77 feet;
S 72°-33'-31" W, 11.45 feet;
N 83°-07'-40" W, 13.78 feet;
S 72°-25'-43" W, 81.95 feet;
S 74°-05'-52" W, 41.83 feet;
N 84°-54'-16" W, 88.38 feet;
N 64°-04'-19" W, 84.10 feet;
N 33°-41'-51" W, 84.40 feet;
N 21°-25'-44" W, 72.42 feet;
N 22°-06'-04" W, 49.81 feet;
N 09°-41'-32" W, 50.99 feet;
N 21°-51'-47" W, 150.12 feet;
N 12°-42'-48" W, 100.93 feet;
N 18°-56'-41" W, 100.16 feet;
N 26°-06'-45" W, 77.12 feet;
N 19°-59'-55" W, 123.23 feet;
N 25°-23'-30" W, 50.23 feet;
N 17° 37' 13" W, 73.99 feet;
N 21°-08'-42" W, 75.30 feet;
N 36°-13'-51" W, 77.83 feet;
N 29°-38'-15" W, 73.26 feet;
N 33°-51'-26" W, 226.80 feet;
N 24°-15'-24" W, 100.98 feet;
N 33°-55'-40" W, 100.27 feet;
N 33°-56'-26" W, 100.06 feet;
N 38°-20'-15" W, 100.44 feet;
N 32°-13'-30" W, 177.43 feet;
N 33°-01'-29" W, 150.88 feet;
N 28°-13'-30" W, 122.03 feet;
N 39°-42'-07" W, 81.36 feet;
N 64°-40'-24" W, 23.19 feet;
N 24°-52' 32" W, 49.66 feet;

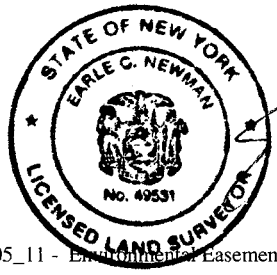
N 32°-15'-59" W, 50.30 feet;
N 35°-27'-19" W, 100.03 feet;
N 27°-59'-40" W, 100.35 feet;
N 35°-52'-04" W, 49.98 feet;
N 26°-11'-40" W, 50.57 feet;
N 42°-09'-55" W, 50.72 feet;
N 32°-24'-53" W, 220.81 feet;
N 30°-42'-28" W, 106.00 feet;

thence leaving the said revetment mats at the said USACE ground elevation of 573.56 feet and continuing through the lands conveyed to NFTA by said deeds recorded in said Clerks office the following courses and distances:

N 63°-01'-46" E, 110.25 feet;
S 32°-53'-12" E, 2122.77 feet;
S 20°-46'-13" E, 976.59 feet;
N 74°-51'-01" E, 227.52 feet;
N 49°-34'-57" E, 168.13 feet;
N 01°-31'-52" E, 143.02 feet;
N 16°-20'-28" E, 178.93 feet;
S 84°-45'-39" E, 224.85 feet;
S 00°-19'-06" W, 197.83 feet;
S 59°-39'-49" E, 39.51 feet;
S 75°-49'-09" E, 127.99 feet;
S 21°-15'-03" E, 65.37 feet;
N 61°-32'-00" E, 285.97 feet to the POINT OF BEGINNING.

Containing 15.83 acres, more or less.

The bounds of the above described easement is based upon a field survey performed in September 2010 by URS Corporation – New York, Buffalo, New York and is shown on a map entitled *ÁLTA Survey Showing Lands Owned By Niagara Frontier Transportation Authority Conveyed As an Environmental Easement Area To The New York State Department Of Environmental Conservation* dated September 2010, revised August 26, 2011 and was supplemented by the information contained in the documents referenced in the above description, which description was revised on August 26, 2011.



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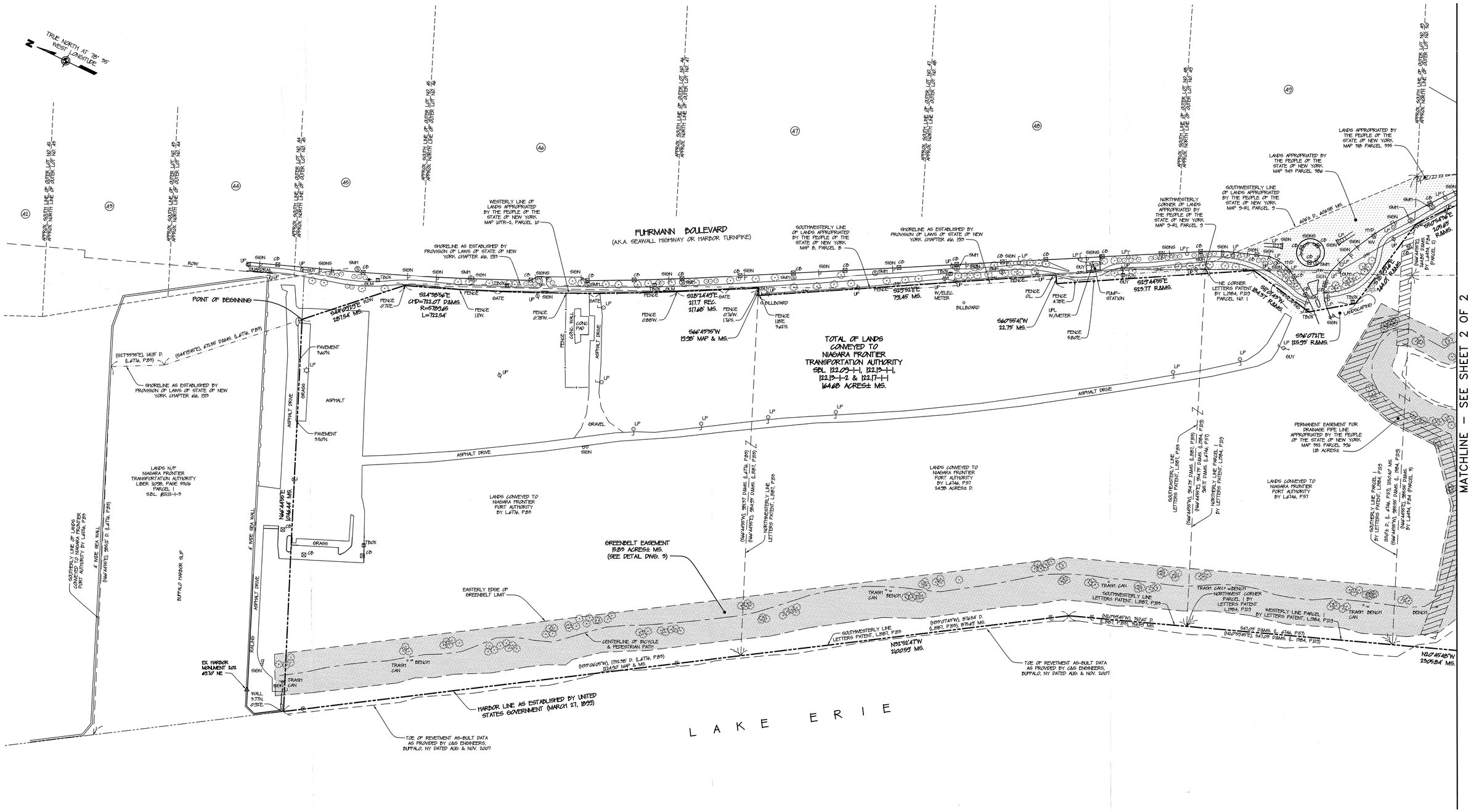

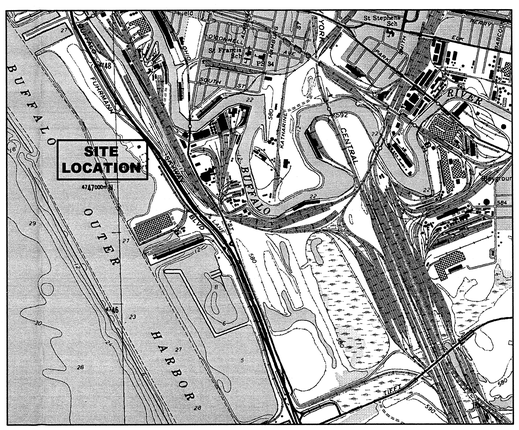

NOTES:

1. ALL BEARINGS SHOWN HEREON ARE REFERENCED TO GRID NORTH AT 78°-35' WEST LONGITUDE AS ESTABLISHED FROM NATIONAL GEODETIC SURVEY (NGS) MONUMENTS "LEHR" P.I.D. NO. AE2177.
2. DISTANCES SHOWN HEREON ARE GROUND MEASURE DISTANCES.
3. ALL BEARINGS SHOWN AS (PARENTHETICAL) ARE REFERENCED WITHIN THE RECORDED TITLE DOCUMENTS AND ARE SHOWN FOR REFERENCE PURPOSES ONLY.
4. THE UNITED STATES HARBOR LINE SHOWN ON THIS SURVEY ARE FROM RECORDS PROVIDED BY THE UNITED STATES ARMY CORPS OF ENGINEERS BUFFALO, NEW YORK SURVEY OFFICE. THE RECORD PLAN ENTITLED "BUFFALO HARBOR, N.Y. US HARBOR LINE 1939" IS STATED TO INDICATE THE PROVISIONS OF SECTION II OF THE RIVERS AND HARBOR ACT APPROVED MARCH 3, 1899 (SEE MAP 18-C-2A, DATED DEC 28, 1939). THE FOLLOWING REFERENCED CONTROL INDICATED ON THE FACE OF THIS PLAN WERE RECOVERED AND VERIFIED:

   TRIANGULATION POINT 19
   COORDINATE REFERENCE POINT 202

   THESE POINTS WERE COORDINATED AND DISTANCES AND ANGULAR ORIENTATION VERIFIED.
5. RECORD ROW AND CONSTRUCTION MAPPING ALONG FUHRMAN BOULEVARD WAS OBTAINED FROM THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION AND WAS UTILIZED TO ESTABLISH THE BOUNDARIES OF FURHMAN BOULEVARD. RECENTLY (2010) CONSTRUCTED IMPROVEMENTS ALONG FURHMAN BOULEVARD WERE SURVEYED AND FOUND TO AGREE WITH THE ROW AND CONSTRUCTION MAPPING.
6. THIS SURVEY WAS PRODUCED WITHOUT THE BENEFIT OF HAVING AN ABSTRACT OF TITLE AND IS THEREFORE SUBJECT TO WHATEVER FACTS THAT A TITLE REPORT WOULD SHOW.
7. HOLLAND LAND COMPANY GREAT LOT LINES ARE SHOWN FOR REFERENCE ONLY AND THEIR LOCATIONS, UNLESS PART OF THE OUTBOUNDS OF THIS SURVEY SHOULD BE CONSIDERED APPROXIMATE.
8. THIS SURVEY WAS PREPARED USING THE MOST CURRENT (1985) EDITION OF THE AMERICAN LAND TITLE ASSOCIATION (ALTA) STANDARDS AND SUPPLEMENTED BY THE NFTA'S CHOICE OF ADDITIONAL COMPONENTS AS SHOWN ON ALTA TABLE B PROVIDED BY NFTA TO URS CORPORATION.
9. THIS PARCEL CONSISTS OF CITY OF BUFFALO TAX MAP LOTS: S.B.L. 122.09-1-1, 122.13-1-1, 122.13-1-2 AND 122.17-1-1.
10. WATER ELEVATION OF 571.0' WAS TAKEN FROM NFTA PROJECT NO. 12PL0202, TITLED "PORT – GREENBELT SHORLINE IMPROVEMENT PROJECT" AND DATED JUNE 2006. THE CURRENT LAKE EDGE ELEVATION WAS NOT SURVEYED AS PART OF THIS MAP.

LEGEND

Ⓢ	SANITARY MANHOLE
⊠	CATCH BASIN
⌀	UTILITY POLE
○	LIGHT POLE
⊷	GAS LINE MARKER
▣	TELEPHONE BOX
⊕	WATER VALVE
⍾	HYDRANT

ABBREVIATIONS

N	NORTH	UP	UTILITY POLE
S	SOUTH	HYD	HYDRANT
W	WEST	WV	WATER VALVE
E	EAST	TBOX	TELEPHONE BOX
MS.	MEASURED	GLM	GAS LINE MARKER
D.	DEED	UP	UTILITY POLE
℄	PROPERTY LINE	CB	CATCH BASIN

NIAGARA FRONTIER TRANSPORTATION AUTHORITY

ALTA SURVEY SHOWING LANDS OWNED BY NIAGARA FRONTIER TRANSPORTATION AUTHORITY

PROJECT:

SITUATE IN:
OUTER LOTS 45 – 50 & OGDEN GORE TRACTS 1–3

CITY OF BUFFALO, ERIE COUNTY
STATE OF NEW YORK

I HEREBY CERTIFY THAT THIS IS AN ACCURATE SURVEY MAP PREPARED BY ME OR UNDER MY DIRECTION, OF AN ACTUAL SURVEY, AND THAT THE SURVEY WAS PERFORMED IN ACCORDANCE TO THE STANDARDS AND PROCEDURES ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS AND THE AMERICAN LAND TITLE ASSOCIATION (ALTA) STANDARDS

EARLE C. NEWMAN PLS NO. 49531

3/9/11
DATE

RESURVEY

DATE	JOB	DESCRIPTION
2/16/2011		REVETMENT EASEMENT BOUNDARY REVISED FROM TOE TO CONTOUR LINE ELEV. OF 573.56'
3/09/2011		REVETMENT EASEMENT BOUNDARY REVISED FROM PROJECT LIMIT LINE TO GREENBELT EASEMENT LINE AS SHOWN ON BIG DRAWINGS MAP MT 100, DATED JUNE 2006

URS Corporation
New York
77 Goodell Street
Buffalo, New York 14203
(716)856-5636 – (716)856-2545 fax

DRAWN BY: JJS SCALE: AS SHOWN
CHECKED BY: ECN DATE: SEPT. 2010

DWG. 1 of 2

URS JOB NO. 11174825

THIS MAP VOID UNLESS EMBOSSED WITH NEW YORK STATE LICENSED LAND SURVEYORS SEAL EARLE C. NEWMAN NO. 49531

MATCHLINE – SEE SHEET 2 OF 2

NOTES:

1. ALL BEARINGS SHOWN HEREON ARE REFERENCED TO GRID NORTH AT 78°-35' WEST LONGITUDE AS ESTABLISHED FROM NATIONAL GEODETIC SURVEY (NGS) MONUMENTS "LEHR" P.I.D. NO. AE2177.
2. DISTANCES SHOWN HEREON ARE GROUND MEASURE DISTANCES.
3. ALL BEARINGS SHOWN AS (PARENTHETICAL) ARE REFERENCED WITHIN THE RECORDED TITLE DOCUMENTS AND ARE SHOWN FOR REFERENCE PURPOSES ONLY.
4. THE UNITED STATES HARBOR LINE SHOWN ON THIS SURVEY ARE FROM RECORDS PROVIDED BY THE UNITED STATES ARMY CORPS OF ENGINEERS BUFFALO, NEW YORK SURVEY OFFICE. THE RECORD PLAN ENTITLED "BUFFALO HARBOR, N.Y. US HARBOR LINE 1939" IS STATED TO INDICATE THE PROVISIONS OF SECTION II OF THE RIVERS AND HARBOR ACT APPROVED MARCH 3, 1899 (SEE MAP 18-C-2A, DATED DEC 28, 1939). THE FOLLOWING REFERENCED CONTROL INDICATED ON THE FACE OF THIS PLAN WERE RECOVERED AND VERIFIED:

   TRIANGULATION POINT 19
   COORDINATE REFERENCE POINT 202

   THESE POINTS WERE COORDINATED AND DISTANCES AND ANGULAR ORIENTATION VERIFIED.
5. RECORD ROW AND CONSTRUCTION MAPPING ALONG FUHRMAN BOULEVARD WAS OBTAINED FROM THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION AND WAS UTILIZED TO ESTABLISH THE BOUNDARIES OF FURHMAN BOULEVARD. RECENTLY (2010) CONSTRUCTED IMPROVEMENTS ALONG FURHMAN BOULEVARD WERE SURVEYED AND FOUND TO AGREE WITH THE ROW AND CONSTRUCTION MAPPING.
6. THIS SURVEY WAS PRODUCED WITHOUT THE BENEFIT OF HAVING AN ABSTRACT OF TITLE AND IS THEREFORE SUBJECT TO WHATEVER FACTS THAT A TITLE REPORT WOULD SHOW.
7. HOLLAND LAND COMPANY GREAT LOT LINES ARE SHOWN FOR REFERENCE ONLY AND THEIR LOCATIONS, UNLESS PART OF THE OUTBOUNDS OF THIS SURVEY SHOULD BE CONSIDERED APPROXIMATE.
8. THIS SURVEY WAS PREPARED USING THE MOST CURRENT (1985) EDITION OF THE AMERICAN LAND TITLE ASSOCIATION (ALTA) STANDARDS AND SUPPLEMENTED BY THE NFTA'S CHOICE OF ADDITIONAL COMPONENTS AS SHOWN ON ALTA TABLE B PROVIDED BY NFTA TO URS CORPORATION.
9. THIS PARCEL CONSISTS OF CITY OF BUFFALO TAX MAP LOTS: S.B.L. 122.09-1-1, 122.13-1-1, 122.13-1-2 AND 122.17-1-1.
10. WATER ELEVATION OF 571.0' WAS TAKEN FROM NFTA PROJECT NO. 12PL0202, TITLED "PORT - GREENBELT SHORLINE IMPROVEMENT PROJECT" AND DATED JUNE 2006. THE CURRENT LAKE EDGE ELEVATION WAS NOT SURVEYED AS PART OF THIS MAP.

LEGEND

Ⓢ	SANITARY MANHOLE
⊠	CATCH BASIN
⌀	UTILITY POLE
	LIGHT POLE
	GAS LINE MARKER
	TELEPHONE BOX
	WATER VALVE
	HYDRANT

ABBREVIATIONS

N	NORTH	UP	UTILITY POLE
S	SOUTH	HYD	HYDRANT
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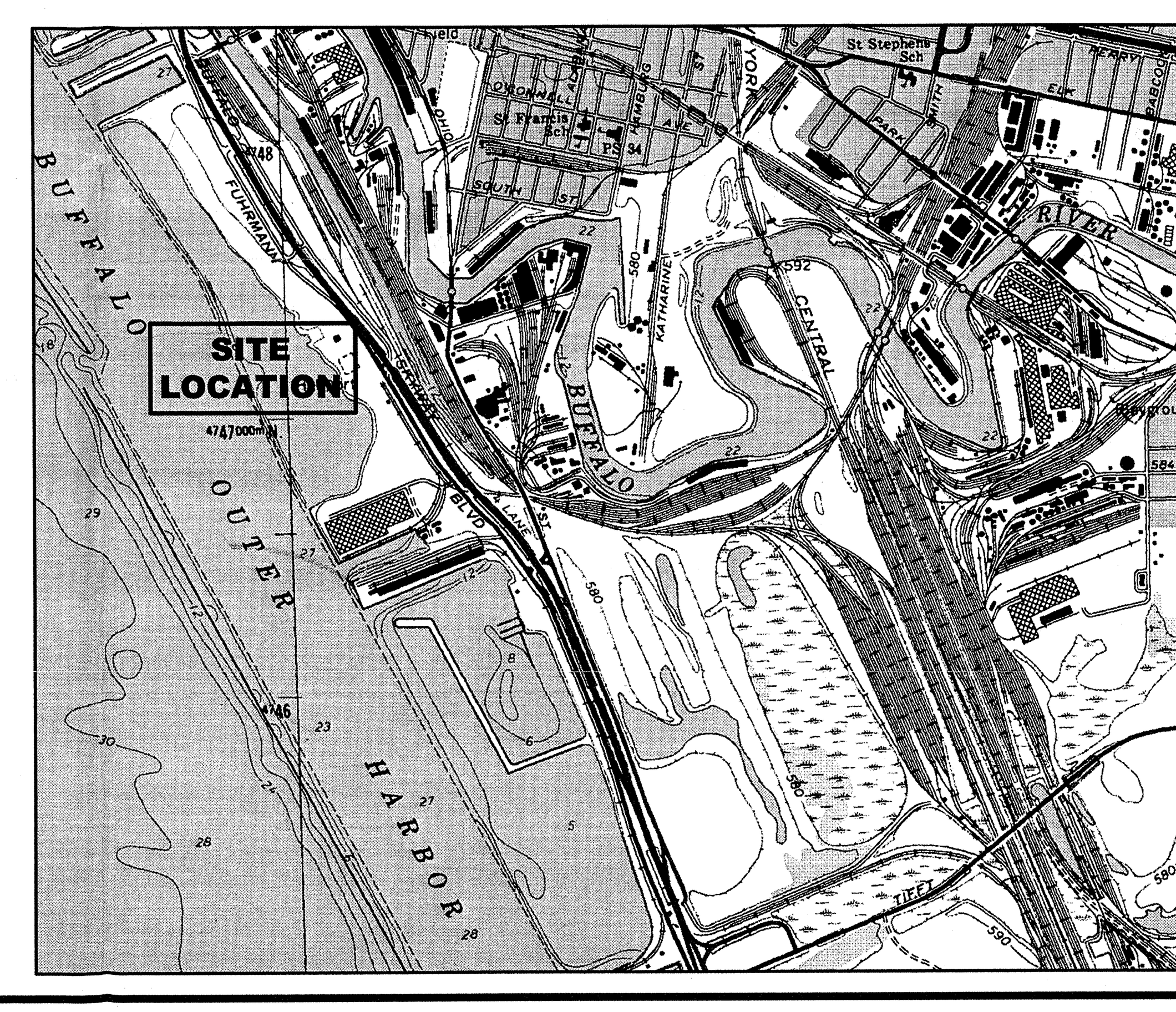
E	EAST	TBOX	TELEPHONE BOX
MS.	MEASURED	GLM	GAS LINE MARKER
D.	DEED	UP	UTILITY POLE
ℙ	PROPERTY LINE	CB	CATCH BASIN



100' 0 100'
SCALE IN FEET

NIAGARA FRONTIER TRANSPORTATION AUTHORITY

ALTA SURVEY SHOWING LANDS OWNED BY NIAGARA FRONTIER TRANSPORTATION AUTHORITY

PROJECT:

SITUATE IN:
OUTER LOTS 45 - 50 & OGDEN GORE TRACTS 1-3

CITY OF BUFFALO, ERIE COUNTY
STATE OF NEW YORK

I HEREBY CERTIFY THAT THIS IS AN ACCURATE SURVEY MAP PREPARED BY ME OR UNDER MY DIRECTION, OF AN ACTUAL SURVEY, AND THAT THE SURVEY WAS PERFORMED IN ACCORDANCE TO THE STANDARDS AND PROCEDURES ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS AND THE AMERICAN LAND TITLE ASSOCIATION (ALTA) STANDARDS

[illegible]

EARLE C. NEWMAN PLS NO. 49531

3/9/11
DATE

WARNING:
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON OTHER THAN WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

RESURVEY

DATE	JOB	DESCRIPTION
2/16/2011		REVETMENT EASEMENT BOUNDARY REVISED FROM TOE TO CONTOUR LINE ELEV. OF 573.56'
3/09/2011		REVETMENT EASEMENT BOUNDARY REVISED FROM PROJECT LIMIT LINE TO GREENBELT EASEMENT LINE AS SHOWN ON BID DRAWINGS MAP MT 100, DATED JUNE 2006

URS Corporation
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77 Goodell Street
Buffalo, New York 14203
(716)856-5636 - (716)856-2545 fax

DRAWN BY: JJS SCALE: AS SHOWN
CHECKED BY: ECN DATE: SEPT. 2010

DWG. 2 of 2

URS JOB NO. 11174825

[illegible]

THIS MAP VOID UNLESS EMBOSSED WITH NEW YORK STATE LICENSED LAND SURVEYORS SEAL EARLE C. NEWMAN NO. 49531

Environmental Easement Area granted to the New York State Department of Environmental Conservation from the Niagara Frontier Transportation Authority

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Buffalo, County of Erie and State of New York, being part of Lots Nos. 1 and 2 of the Ogden Gore Tract, part of Outer Lots Nos. 44 to 50 and part of lands formerly lying under the waters of Lake Erie, bounded and described as follow:

Commencing at a point in the westerly line of Fuhrmann Boulevard (aka Seawall Highway, Harbor Turnpike, Hamburg Turnpike or New York State Route 5), said point being the southeasterly corner of Parcel Two of lands conveyed to the Niagara Frontier Port Authority (NFPA), predecessor in title to the Niagara Frontier Transportation Authority (NFTA) by deed recorded in the Office of the Clerk of Erie County in Liber 6434 at Page 84; said point also being the northeasterly corner of lands now belonging to NFTA as described in a deed to the Ford Motor Company recorded in said Clerks Office in Liber 2100 at Page 566;

thence along the most easterly line of said Parcel Two, which line is also the westerly line of Fuhrmann Boulevard, so called, N 28°–24'–25" W, 861.30 feet to a point, said point being the most southerly point of lands conveyed by NFTA to the People of the State of New York for the improvement of Fuhrmann Boulevard by Appropriation Map Number 343 Parcel 386;

thence along a westerly line of lands conveyed to the People of the State of New York by said Map 343 Parcel 386, N 38°–12'–40" W, 216.58 feet to the POINT OF BEGINNING of this easement; said point having the coordinates of North 1,042,653.63 feet, East 1,070,809.47 feet based on the coordinates of National Geodetic Survey Monument "LEHR" PID No AE2177 which coordinates are based upon the New York State Plane Coordinate System, West Zone, North American Datum of 1983;

thence along the last mentioned line, (L1) S 38°–12'–40" E, 15.22 feet to a point;

thence through the lands conveyed to NFTA by deeds recorded in said Clerks office in Liber 6434 at Page 84, Liber 6434 at page 43, Liber 6746 at Page 57, Liber 6742 at Page 235 and Liber 6776 at Page 83, the following courses and distances:

(L2) S 61°–32'–00" W, 290.45 feet;
(L3) S 21°–15'–03" E, 130.49 feet;
(L4) S 07°–15'–48" W, 167.74 feet;
(L5) S 54°–22'–55" W, 149.98 feet;
(L6) S 77°–26'–54" W, 184.98 feet;
(L7) S 62°–50'–48" W, 305.63 feet;
(L8) S 21°–19'–22" W, 147.32 feet;
(L9) S 20°–46'–13" E, 735.87 feet;
(L10) S 64°–40'–53" W, 120.11 feet to a point at the ground elevation of 573.56 feet on the shoreline revetment mats along the Lake Erie shoreline as said mats existed at the time of this survey; said 573.56 feet elevation being the historical Lake Erie ordinary high water mark as determined by the United States Army Corp of Engineers (USACE); said elevation is referenced to North American Vertical Datum of 1988 (NAVD 88) as converted from (573.4 feet) International Great Lakes Datum of 1985 (IGLD 85);

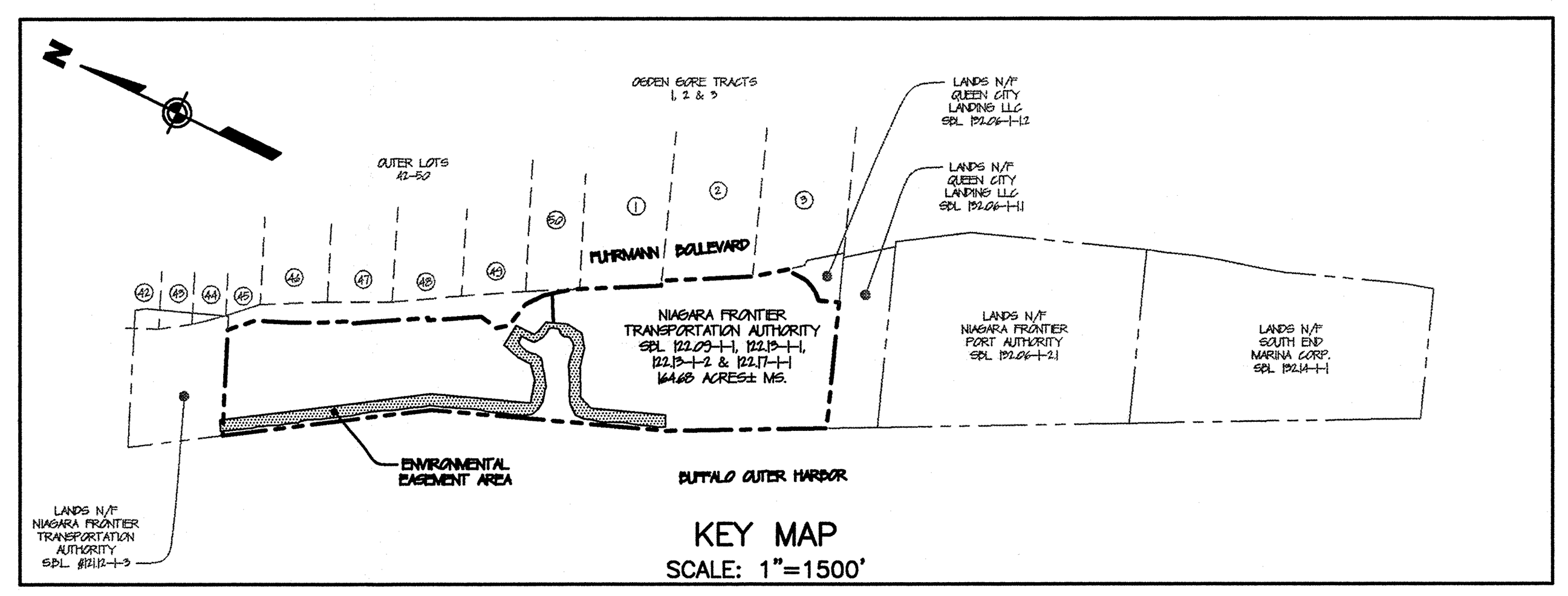
thence along the said USACE 573.56 feet ground elevation of said revetment mats the following courses and distances:

(L11) N 26°–22'–58" W, 71.63 feet;
(L12) N 17°–23'–25" W, 73.77 feet;
(L13) N 19°–50'–50" W, 126.26 feet;
(L14) N 16°–25'–22" W, 150.44 feet;
(L15) N 25°–24'–56" W, 200.72 feet;
(L16) N 12°–51'–54" W, 130.38 feet;
(L17) N 21°–07'–11" W, 50.56 feet;
(L18) N 03°–05'–42" W, 89.98 feet;
(L19) N 38°–38'–46" E, 128.76 feet;
(L20) N 60°–40'–42" E, 88.50 feet;
(L21) N 65°–01'–25" E, 100.01 feet;
(L22) N 61°–03'–58" E, 58.83 feet;
(L23) N 61°–22'–23" E, 136.10 feet;
(L24) N 77°–23'–51" E, 88.96 feet;
(L25) N 85°–47'–09" E, 59.60 feet;
(L26) N 69°–10'–33" E, 48.61 feet;
(L27) N 55°–47'–51" E, 23.69 feet;
(L28) N 33°–55'–22" E, 50.27 feet;
(L29) N 05°–40'–13" E, 37.64 feet;
(L30) N 21°–44'–03" W, 24.72 feet;
(L31) N 03°–43'–32" W, 25.50 feet;
(L32) N 20°–53'–18" E, 27.88 feet;
(L33) N 48°–35'–48" E, 35.45 feet:
(L34) N 26°–53'–36" E, 11.86 feet;
(L35) N 01°–58'–32" E, 17.30 feet;
(L36) N 23°–04'–42" W, 58.09 feet;
(L37) N 44°–07'–51" W, 27.73 feet;
(L38) N 89°–14'–12" W, 54.82 feet;
(L39) N 71°–35'–26" W, 53.90 feet;
(L40) N 59°–12'–17" W, 58.40 feet;
(L41) N 49°–59'–22" W, 30.33 feet;
(L42) N 09°–07'–32" W, 31.70 feet;
(L43) N 05°–54'–47" E, 36.31 feet;
(L44) N 00°–21'–37" W, 42.00 feet;
(L45) N 02°–16'–13" W, 29.80 feet;
(L46) N 69°–59'–08" W, 13.35 feet;
(L47) S 70°–29'–49" W, 19.04 feet;
(L48) S 89°–18'–06" W, 16.82 feet;
(L49) S 84°–25'–18" W, 17.93 feet;
(L50) S 49°–01'–00" W, 19.65 feet;
(L51) S 20°–29'–22" W, 40.01 feet;
(L52) S 15°–49'–32" W, 49.58 feet;
(L53) S 04°–46'–17" W, 40.67 feet;
(L54) S 10°–35'–52" E, 66.31 feet;
(L55) S 10°–36'–42" W, 59.60 feet;
(L56) S 50°–19'–44" W, 42.55 feet;
(L57) S 57°–47'–47" W, 51.93 feet;
(L58) S 48°–59'–36" W, 21.44 feet;
(L59) S 52°–45'–02" W, 83.34 feet;
(L60) S 56°–55'–16" W, 89.77 feet;
(L61) S 72°–33'–31" W, 11.45 feet;
(L62) N 83°–07'–40" W, 13.78 feet;
(L63) S 72°–25'–43" W, 81.95 feet;
(L64) S 74°–05'–52" W, 41.83 feet;
(L65) N 84°–54'–16" W, 88.38 feet;
(L66) N 64°–04'–19" W, 84.10 feet;
(L67) N 33°–41'–51" W, 84.40 feet;
(L68) N 21°–25'–44" W, 72.42 feet;
(L69) N 22°–06'–04" W, 49.81 feet;
(L70) N 09°–41'–32" W, 50.99 feet;
(L71) N 21°–51'–47" W, 150.12 feet;
(L72) N 12°–42'–48" W, 100.93 feet;
(L73) N 18°–56'–41" W, 100.16 feet;
(L74) N 26°–06'–45" W, 77.12 feet;
(L75) N 19°–59'–55" W, 123.23 feet;
(L76) N 25°–23'–30" W, 50.23 feet;
(L77) N 17° 37' 13" W, 73.99 feet;
(L78) N 21°–08'–42" W, 75.30 feet;
(L79) N 36°–13'–51" W, 77.83 feet;
(L80) N 29°–38'–15" W, 73.26 feet;
(L81) N 33°–51'–26" W, 226.80 feet;
(L82) N 24°–15'–24" W, 100.98 feet;
(L83) N 33°–55'–40" W, 100.27 feet;
(L84) N 33°–56'–26" W, 100.06 feet;
(L85) N 38°–20'–15" W, 100.44 feet;
(L86) N 32°–13'–30" W, 177.43 feet;
(L87) N 33°–01'–29" W, 150.88 feet;
(L88) N 28°–13'–30" W, 122.03 feet;
(L89) N 39°–42'–07" W, 81.36 feet;
(L90) N 64°–40'–24" W, 23.19 feet;
(L91) N 24°–52' 32" W, 49.66 feet;
(L92) N 32°–15'–59" W, 50.30 feet;
(L93) N 35°–27'–19" W, 100.03 feet;
(L94) N 27°–59'–40" W, 100.35 feet;
(L95) N 35°–52'–04" W, 49.98 feet;
(L96) N 26°–11'–40" W, 50.57 feet;
(L97) N 42°–09'–55" W, 50.72 feet;
(L98) N 32°–24'–53" W, 220.81 feet;
(L99) N 30°–42'–28" W, 106.00 feet;

thence leaving the said revetment mats at the said USACE ground elevation of 573.56 feet and continuing through the lands conveyed to NFTA by said deeds recorded in said Clerks office the following courses and distances:

(L100) N 63°–01'–46" E, 110.25 feet;
(L101) S 32°–53'–12" E, 2122.77 feet;
(L102) S 20°–46'–13" E, 976.59 feet;
(L103) N 74°–51'–01" E, 227.52 feet;
(L104) N 49°–34'–57" E, 168.13 feet;
(L105) N 01°–31'–52" E, 143.02 feet;
(L106) N 16°–20'–28" E, 178.93 feet;
(L107) S 84°–45'–39" E, 224.85 feet;
(L108) S 00°–19'–06" W, 197.83 feet;
(L109) S 59°–39'–49" E, 39.51 feet;
(L110) S 75°–49'–09" E, 127.99 feet;
(L111) S 21°–15'–03" E, 65.37 feet;
(L112) N 61°–32'–00" E, 285.97 feet to the POINT OF BEGINNING.

Containing 15.83 acres, more or less.



KEY MAP
SCALE: 1"=1500'

REFERENCED DEEDS:

THIS ENVIRONMENTAL EASEMENT AREA IMPACTS LANDS CONVEYED TO THE NIAGARA FRONTIER PORT AUTHORITY (NFPA), PREDECESSOR IN TITLE TO THE NIAGARA FRONTIER TRANSPORTATION AUTHORITY (NFTA) BY DEEDS RECORDED IN THE OFFICE OF THE CLERK OF ERIE COUNTY IN LIBER 6434 AT PAGE 84, RECORDED ON JUNE 19, 1959 BEING PART OF S.B.L. 122.17–1–1, LIBER 6434 AT PAGE 43, RECORDED ON JUNE 19, 1959 BEING PART OF S.B.L. 122.17–1–1, LIBER 6746 AT PAGE 57, DATED FEBRUARY 15, 1962 BEING ALL OF S.B.L. 122.13–1–2, LIBER 6742 AT PAGE 235, DATED FEBRUARY 9, 1962 BEING ALL OF S.B.L. 122.13–1–1 AND LIBER 6776 AT PAGE 83, RECORDED ON JUNE 15, 1962 BEING PART OF S.B.L. 121.12–1–3 AND S.B.L. 122.09–1–1.

NOTES:

1. ALL BEARINGS SHOWN HEREON ARE REFERENCED TO GRID NORTH AT 78°–35' WEST LONGITUDE AS ESTABLISHED FROM NATIONAL GEODETIC SURVEY (NGS) MONUMENTS "LEHR" P.I.D. NO. AE2177.
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   TRIANGULATION POINT 19
   COORDINATE REFERENCE POINT 202

   THESE POINTS WERE COORDINATED AND DISTANCES AND ANGULAR ORIENTATION VERIFIED.
5. RECORD ROW AND CONSTRUCTION MAPPING ALONG FUHRMAN BOULEVARD WAS OBTAINED FROM THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION AND WAS UTILIZED TO ESTABLISH THE BOUNDARIES OF FUHRMANN BOULEVARD. RECENTLY (2010) CONSTRUCTED IMPROVEMENTS ALONG FUHRMANN BOULEVARD WERE SURVEYED AND FOUND TO AGREE WITH THE ROW AND CONSTRUCTION MAPPING.
6. THE SUBJECT PROPERTY OF THIS ALTA/ACSM LAND TITLE SURVEY IS THAT LAND DESCRIBED AND COVERED BY STEWART TITLE INSURANCE COMPANY TITLE NO. 601677, DATED JULY 4, 2011.
7. HOLLAND LAND COMPANY GREAT LOT LINES ARE SHOWN FOR REFERENCE ONLY AND THEIR LOCATIONS, UNLESS PART OF THE OUTBOUNDS OF THIS SURVEY SHOULD BE CONSIDERED APPROXIMATE.
8. THIS SURVEY WAS PREPARED USING THE MOST CURRENT (1985) EDITION OF THE AMERICAN LAND TITLE ASSOCIATION (ALTA) STANDARDS AND SUPPLEMENTED BY THE NFTA'S CHOICE OF ADDITIONAL COMPONENTS AS SHOWN ON ALTA TABLE B PROVIDED BY NFTA TO URS CORPORATION.
9. WATER ELEVATION OF 571.0' WAS TAKEN FROM NFTA PROJECT NO. 12PL0202, TITLED "PORT – GREENBELT SHORLINE IMPROVEMENT PROJECT" AND DATED JUNE 2006. THE CURRENT LAKE EDGE ELEVATION WAS NOT SURVEYED AS PART OF THIS MAP.
10. ELEVATION OF 573.4' (IGLD 85) REPRESENTING THE ORDINARY HIGH WATER MARK AS DETERMINED BY THE UNITED STATES ARMY CORP OF ENGINEERS WAS PROVIDED BY THE NFTA. THE CONVERSION FROM INTERNATIONAL GREAT LAKES DATUM (IGLD 85) TO NAVD 88 IS +0.16 FEET. THE ORDINARY HIGH WATER MARK ELEVATION USED FOR THIS SURVEY IS 573.56 FEET (NAVD 88). THIS LINE WAS NOT SURVEYED IN THE FIELD, BUT WAS INTERPOLATED FROM CONTOURS DEVELOPED BY SURVEY DONE AUG. & NOV. 2007 BY MAN O'TREES.

120'   0   120'
SCALE IN FEET

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

THE ENGINEERING AND INSTITUTIONAL CONTROLS for the Easement are set forth in more detail in the Site Management Plan ("SMP"). A copy of the SMP must be obtained by any party with an interest in the property. The SMP may be obtained from the New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@gw.dec.state.ny.us.

ENGINEERING/INSTITUTIONAL CONTROLS

- **Composite Cover System – The system is comprised of a minimum of 12" of clean soil; an asphalt bicycle/pedestrian trail; and/or a heavy armor stone revetment. This system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.**
- **Future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the Site Management Plan.**
- **Groundwater Use Restriction – The use of groundwater underlying the property is prohibited without treatment rendering it safe for intended use.**
- **Vegetable gardens and farming on the property are prohibited.**
- **Public Passive Recreation Use restriction covers entire Environmental Easement Area.**

LEGEND

- SANITARY MANHOLE
- CATCH BASIN
- UTILITY POLE
- LIGHT POLE
- GAS LINE MARKER
- TELEPHONE BOX
- WATER VALVE
- HYDRANT
- LIMITS OF ENVIRONMENTAL EASEMENT AREA

NIAGARA FRONTIER TRANSPORTATION AUTHORITY

ALTA SURVEY SHOWING LANDS OWNED BY NIAGARA FRONTIER TRANSPORTATION AUTHORITY CONVEYED AS AN ENVIRONMENTAL EASEMENT AREA TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROJECT:
BUFFALO OUTER HARBOR
FUHRMANN BLVD.
BUFFALO, N.Y.
SITE #B00149

SITUATE IN:
OUTER LOTS 44 – 50 & OGDEN GORE TRACTS 1–2

CITY OF BUFFALO, ERIE COUNTY
STATE OF NEW YORK

I HEREBY CERTIFY TO THE PEOPLE OF THE STATE OF NEW YORK ACTING THROUGH THEIR COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NIAGARA FRONTIER TRANSPORTATION AUTHORITY AND STEWART TITLE INSURANCE COMPANY, A NEW YORK CORPORATION THAT THIS IS AN ACCURATE SURVEY MAP PREPARED BY ME OR UNDER MY DIRECTION, OF AN ACTUAL SURVEY, AND THAT THE SURVEY WAS PERFORMED IN ACCORDANCE TO THE STANDARDS AND PROCEDURES ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS AND THE AMERICAN LAND TITLE ASSOCIATION (ALTA) STANDARDS

EARLE C. NEWMAN PLS NO. 49531

10/12/11
DATE

WARNING:
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RESURVEY

DATE	JOB	DESCRIPTION
2/16/2011		REVETMENT EASEMENT BOUNDARY REVISED FROM TOE TO CONTOUR LINE ELEV. OF 573.56'
3/09/2011		REVETMENT EASEMENT BOUNDARY REVISED FROM PROJECT LIMIT LINE TO GREENBELT EASEMENT LINE AS SHOWN ON BID DRAWINGS MAP MT 100, DATED JUNE 2006
7/29/2011		INCORPORATED COMMENTS FROM DEC
8/26/2011		INCORPORATED COMMENTS FROM DEC

URS Corporation
New York
77 Goodell Street
Buffalo, New York 14203
(716)856–5636 – (716)856–2545 fax

DRAWN BY: JJS   SCALE: AS SHOWN
CHECKED BY: ECN   DATE: SEPT. 2010
DWG. 1
URS JOB NO. 11174825

STATE OF NEW YORK · EARLE C. NEWMAN · No. 49531 · LICENSED LAND SURVEYOR

10/12/11

THIS MAP VOID UNLESS EMBOSSED WITH NEW YORK STATE LICENSED LAND SURVEYORS SEAL EARLE C. NEWMAN NO. 49531

J:\11174825.00000\CAD\NFTA Outerharbor\Revised 10-5-11 – NFTA Outer Harbor.DWG 1:1 10/11/11 JJS

APPENDIX B

DIGITAL COPY OF THE FER (CD)

APPENDIX C

RECORD DRAWINGS

C&S COMPANIES
ENGINEERS
DESIGN BUILD
TECHNICAL RESOURCES
OPERATIONS

90 Broadway
Buffalo, NY 14203

Telephone 716.847.1630
Fax 716.847.1454
www.cscos.com

TRANSMITTAL

** HAND DELIVERED**

To: URS Corporation
Attn: Mr. Bob Henschel, PG
77 Goodell Street
Buffalo, NY 14203

Date: March 18, 2010

Re: Port-Greenbelt Shoreline Improvement Project; NFTA #12PL0202

File: 136.024.002

Please find the following enclosed:

- One half size copy of the Record Drawings provided by MOT received January 14th 2009
- One copy of the complete list of Certified Grades for Subgrade, Bedding Stone, and Armor Stone provided by MOT
- One copy of Pay Application #17 (including through Change Order #6)

Remarks:

For your use in completing the Final Engineering Report (FER), attached are the Record Drawings, Certified Grades and Pay Application #17 for the above referenced project. Please be advised that all of the attached information relates to work completed before January 2009. All records for work completed in 2009 will have to be provided to you by the NFTA.

If you have any questions or need additional information, please do not hesitate to contact me.

Very truly yours,

C&S ENGINEERS, INC.

Bob Sawmiller, P.E.
Resident Engineer

Cc: File

SUBGRADE
'As Builts'

Port- Greenbelt
Shoreline Improvements
NFTA Project #12po202

Station	Toe Offset A	Revent Elev	Toe Offset B	Slope Elev	Top Offset C	Slope Elev	Toe Offset D	1:1 Elev
0+40								
0+50	159.20	559.20	121.40	560.60	90.10	573.50	77.10	573.50
1+00	161.20	558.80	122.60	560.30	90.90	574.00	77.10	573.50
1+50	161.30	560.00	123.00	561.60	92.10	573.50	77.00	573.70
2+00	162.30	557.00	122.20	561.40	93.40	573.60	77.00	573.70
2+50	162.70	559.30	124.00	561.20	94.00	573.50	79.10	573.75
3+00	165.40	558.50	126.60	560.90	95.90	573.55	79.20	573.70
3+50	164.90	560.80	124.90	561.20	94.50	573.60	80.00	573.70
4+00	156.60	561.30	117.30	560.80	86.60	573.60	71.40	573.80
4+50	159.40	561.30	122.80	560.80	91.80	573.50	76.10	573.80
5+00	159.60	561.10	121.30	560.70	90.20	573.60	75.30	573.70
5+50	164.10	558.20	125.90	560.80	94.50	573.60	79.60	573.70
6+00	164.00	559.00	127.00	560.10	97.90	573.60	83.30	573.70
6+50	161.50	560.10	126.10	561.20	93.90	573.60	78.80	573.60
7+00	162.50	559.50	124.10	560.20	94.10	573.60	78.25	573.50
7+50	167.60	559.50	129.60	559.30	99.70	573.50	84.10	573.70
8+00	162.80	559.40	124.60	560.50	93.50	573.50	78.50	573.80
8+50	158.00	559.50	118.50	560.30	86.90	573.50	68.20	573.70
9+00	147.50	561.20	109.20	559.60	78.60	573.50	64.10	573.70
9+50	151.60	557.60	112.80	561.00	79.40	573.60	66.50	573.80
10+00	157.20	560.90	118.80	560.70	86.50	573.70	73.50	573.80
10+50	158.20	558.80	118.2	560.80	81.60	575.00	68.10	575.10
11+0	158.50	559.20	118.9	561.30	83.60	574.90	68.40	574.90
11+50	160.80	559.20	121.5	560.30	85.00	574.30	71.30	574.30
12+0	156.60	559.30	119.5	561.40	83.60	574.10	69.70	574.10
12+50	158.90	559.10	119.9	560.90	83.10	574.10	69.30	574.10
13+0	160.50	559.10	120.5	561.60	85.10	573.90	70.40	573.90
13+50	159.70	559.70	122	561.20	87.10	574.10	73.60	574.10
14+0	163.90	560.00	115.9	560.70	82.10	573.50	67.80	573.60
14+50	161.00	559.80	112.5	560.70	79.10	573.40	64.70	573.67
15+0	157.80	559.50	108.9	560.50	75.60	573.30	61.00	573.60
15+50	158.60	558.80	108.5	559.60	75.80	573.20	61.00	573.80
16+0	154.80	558.70	109.8	560.30	76.10	573.20	61.00	573.50
16+50	155.80	559.10	108.9	560.30	74.10	573.20	59.00	573.60
17+0	156.00	559.30	118.2	560.60	83.70	573.60	69.20	573.90
17+50	159.90	558.90	121.5	560.90	87.30	574.40	73.40	574.20
18+0	157.00	560.30	119.2	561.40	82.30	575.60	68.30	575.70
18+50	159.00	561.20	121.4	560.50	87.50	575.80	70.70	575.50
19+0	158.50	559.50	119.6	561.10	83.10	575.50	69.20	575.90
19+50	158.30	559.50	119	561.30	83.30	575.50	66.20	575.70
20+0	159.20	559.60	120.7	561.10	83.70	575.60	68.30	575.60

previously submitted

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AUG 2 1 2007

ORIGINAL

REVETMENT 'AS-BUILTS'
SUBGRADE

Port- Greenbelt
Shoreline Improvements
NFTA Project #12po202

Station	Toe Offset A	Revent Elev	Toe	Slope	Top Offset C	Slope Elev	Toe Offset D	1:1 Elev
20+50	161.7	559.2	123.2	560.7	86.2	575.8	63.1	575.7
21+0	161.0	560.0	121.2	560.6	76.9	576.0	62.6	576.2
21+50	167.4	560.3	127.0	560.3	83.2	575.2	68.7	576.0
22+0	162.9	559.2	124.7	560.8	79.7	574.8	63.0	575.3
22+50	164.3	559.7	125.9	560.8	80.1	575.8	67.0	575.4
23+0	168.4	559.0	128.7	560.8	84.7	575.8	70.5	576.0
23+50	165.0	559.8	124.3	561.2	81.5	576.0	66.4	576.0
24+0	165.8	561.1	126.8	560.7	82.1	576.0	68.1	576.0
24+50	168.7	559.6	129.4	561.6	84.4	575.9	68.2	576.0
25+0	172.6	560.8	125.2	561.2	81.1	575.8	67.0	575.8
25+50	169.0	560.5	120.8	561.3	75.2	575.7	61.7	575.9
26+0	171.7	560.5	124.3	561.0	79.9	575.7	65.9	575.9
26+50	178.5	558.6	122.2	560.5	80.1	575.8	64.3	575.9
27+0	185.1	560.6	134.7	560.4	90.1	575.6	72.0	575.3
27+50	185.9	560.8	137.3	560.9	93.0	575.8	76.0	575.3
28+0	175.9	561.2	136.4	561.4	91.8	576.0	77.4	576.0
28+50	172.8	560.4	133.6	561.1	89.9	575.6	75.0	575.7
29+0	174.1	561.0	134.0	561.2	90.9	575.8	76.0	575.8
29+50	185.0	558.3	144.7	561.0	100.4	575.8	85.5	575.7
30+0	181.2	560.0	141.2	561.2	98.2	575.7	82.6	575.8
30+50	182.3	560.7	142.7	560.8	99.8	575.7	84.8	575.7
31+0	146.2	571.7	133.8	560.3	89.2	575.6	73.6	575.7
31+50	135.3	570.3	113.6	560.9	87.5	575.7	55.0	575.7
T32+50	105.5	571.0	86.2	560.5	56.9	575.8	38.3	575.7
T33+0	109.5	571.0	96.7	561.4	52.9	575.7	38.7	575.7
T33+48	106.9	567.5	96.5	561.5	53.7	576.0	37.1	575.9
T 54+36	94.0	571.0	73.2	560.9	37.1	573.4	21.7	574.7
T 55+0	95.5	571.2	78.2	560.6	39.8	574.0	23.0	573.9
T 55+50	102.3	571.4	85.0	561.1	46.6	574.0	33.4	573.9
RV 36+50	117.4	570.8	98.4	561.1	64.1	573.8	45.0	573.8
37+0	124.0	561.4	116.2	561.2	79.7	573.6	65.0	573.6
37+50	164.5	560.3	125.4	560.1	88.1	573.5	72.5	573.7
38+0	170.4	560.0	131.0	560.2	93.9	573.9	78.6	574.0
38+50	178.1	560.5	139.0	560.4	100.2	573.7	85.0	573.9
39+0	171.8	560.9	131.8	560.0	94.5	573.7	79.1	573.7
39+50	167.1	561.0	128.1	560.1	90.8	574.0	76.5	573.9
40+0	163.6	561.0	124.1	560.5	87.4	573.9	72.0	573.8

previously submitted

STATE OF NEW YORK
THOMAS P. RYAN
No. 049234
LICENSED LAND SURVEYOR

NFTA

ORIGINAL

NFTA Subgrade As Built

11/15/2007

REVETMENT 'AS-BUILTS'
SUBGRADE

Port- Greenbelt
Shoreline Improvements
NFTA Project #12po202

Station	Toe Offset A	Revent Elev	Toe	Slope	Top Offset C	Slope Elev	Toe Offset D	1:1 Elev
40+50	162.0	560.8	122.9	561.5	86.2	573.7	70.7	573.8
41+0	166.1	560.6	125.2	561.2	88.2	573.9	73.7	573.8
41+50	170.6	560.1	130.0	560.1	91.8	573.7	77.0	573.8
42+0	173.4	560.2	131.8	560.8	93.7	573.8	81.2	573.9
42+50	172.0	560.4	133.1	560.2	93.9	574.2	77.5	574.1
43+0	174.2	559.0	134.8	559.7	91.3	575.8	76.2	575.8
43+50	174.5	559.2	134.6	558.7	91.5	575.8	75.5	575.7
44+0	172.9	559.8	137.9	560.6	94.2	575.7	79.2	575.6
44+50	170.3	559.5	132.5	560.5	88.4	575.6	75.0	575.6

STATE OF NEW YORK
THOMAS P. RYAN
No. 049234
LICENSED LAND SURVEYOR

previously submitted

ORIGINAL

BEDDING STONE
'As Builts'

Port- Greenbelt
Shoreline Improvements
NFTA Project #12po202

Station	Toe Offset A	Revent Elev	Top Offset B	Slope Elev	Toe Offset C	Slope Elev	Top Offset D	Slope Elev	Toe Offset E	1:1 Elev
0+40										
0+50	158.0	561.2	152.6	563.0	122.4	563.0	89.8	575.5	75.9	575.6
1+00	161.0	561.0	156.2	563.4	122.3	563.5	91.4	575.7	77.6	575.5
1+50	161.3	560.2	153.5	563.3	122.8	563.1	92.1	574.0	75.3	575.6
2+00	162.5	557.0	157.4	563.5	123.1	563.4	93.0	575.4	76.0	575.5
2+50	162.7	559.3	156.5	563.0	124.9	563.0	93.0	575.6	78.2	575.5
3+00	163.1	560.0	154.1	562.9	124.9	563.5	94.2	575.8	79.0	575.7
3+50	164.1	559.8	157.8	562.7	126.1	563.2	93.7	575.7	79.8	576.0
4+00	156.3	560.8	150.5	563.0	120.1	563.1	87.1	575.8	71.4	575.8
4+50	159.4	561.3	154.1	563.2	123.1	562.8	91.2	575.4	76.1	575.6
5+00	158.8	561.0	152.2	563.4	122.1	563.1	91.1	575.6	75.3	575.7
5+50	164.7	559.6	158.4	563.0	124.7	563.3	95.2	575.5	79.5	575.8
6+00	165.0	559.1	160.7	563.4	129.4	563.1	97.5	575.5	83.1	575.9
6+50	162.3	560.3	157.3	563.2	124.9	563.5	95.1	575.9	78.8	575.9
7+00	162.5	559.5	157.1	562.9	124.0	563.0	93.8	575.4	78.2	575.4
7+50	168.0	559.2	161.8	563.3	131.7	563.1	100.1	575.4	84.0	575.6
8+00	162.8	559.6	155.3	563.1	125.2	563.1	92.5	575.2	78.5	575.4
8+50	157.0	559.5	151.9	562.8	119.3	562.8	86.1	575.1	68.3	575.4
9+00	148.1	561.0	142.0	562.8	111.2	563.1	79.7	575.6	64.1	575.6
9+50	149.4	560.3	143.3	562.6	116.6	563.2	80.8	575.6	66.5	575.6
10+00	157.2	560.9	150.7	562.5	118.7	563.3	88.2	575.6	73.5	575.8
10+50	158.2	559.6	151.7	563.3	121.8	563.0	82.6	577.5	68.1	577.6
11+00	155.4	559.1	150.7	562.0	117.3	563.3	82.0	577.5	68.5	577.7
11+50	160.4	559.2	154.2	562.7	122.8	563.5	85.1	577.6	71.5	577.6
12+00	159.0	560.8	152.3	562.2	117.4	563.5	84.2	577.6	69.5	577.6
12+50	157.0	560.6	150.8	562.5	116.9	563.5	83.9	577.5	69.0	577.5
13+00	160.6	559.0	153.0	562.9	121.4	563.0	84.4	577.2	70.4	577.6
13+50	158.8	560.2	153.4	563.0	121.8	563.0	88.0	576.6	73.6	576.6
14+00	164.2	560.3	157.7	563.0	117.3	563.3	83.2	576.8	67.3	576.6
14+50	163.0	559.2	155.2	562.8	113.4	563.1	79.5	576.8	64.7	576.8
15+00	157.9	559.1	151.7	562.8	109.9	563.1	76.1	576.7	61.0	576.8
15+50	157.4	559.0	151.1	562.7	109.7	563.3	75.7	576.7	61.0	576.7
16+00	158.0	559.8	152.0	562.5	109.7	563.4	76.2	576.7	61.0	577.0
16+50	155.4	561.0	149.2	562.9	108.9	562.9	74.4	576.6	59.2	576.6
17+00	156.2	559.7	149.8	563.1	117.9	563.4	84.2	576.8	69.5	576.6
17+50	158.9	561.5	152.5	563.0	122.1	563.2	87.5	576.6	73.4	576.5
18+00	157.0	560.4	151.4	562.7	119.7	563.5	82.9	577.5	68.3	577.5
18+50	158.4	561.0	154.2	563.0	121.5	563.0	84.9	577.2	70.7	577.5
19+00	153.1	559.6	151.4	563.2	121.0	562.9	83.9	577.4	69.3	577.4
19+50	158.2	559.7	151.8	563.5	120.9	562.9	84.1	577.5	68.3	577.4
20+00	158.9	559.1	152.1	563.1	121.4	563.4	84.5	577.4	68.2	577.4
20+50	161.6	560.8	154.9	563.2	124.1	563.2	87.2	577.3	68.0	577.4
21+00	161.0	560.0	154.9	563.1	120.1	563.1	75.9	578.0	62.5	577.8
21+50	167.4	559.9	161.2	563.1	127.0	563.2	82.1	577.5	68.7	577.5
22+00	162.9	559.2	157.7	562.8	124.1	563.1	78.7	577.6	63.0	577.4
22+50	164.9	559.8	159.1	563.2	123.9	563.2	80.1	578.1	67.0	578.2

previously submitted

ORIGINAL

REVETMENT 'AS-BUILTS'
BEDDING STONE

Port- Greenbelt
Shoreline Improvements
NFTA Project #12po202

Station	Toe Offset A	Revent Elev	Top Offset B	Slope Elev	Toe Offset C	Slope Elev	Top Offset D	Slope Elev	Toe Offset E	1:1 Elev
23+0	168.4	559.0	162.4	562.7	127.9	563.1	83.6	578.2	70.5	578.1
23+50	164.3	560.4	158.2	562.6	124.5	563.0	80.6	578.1	66.4	578.1
24+0	167.1	561.2	160.5	562.6	126.0	563.0	81.5	578.0	68.1	578.1
24+50	168.7	559.6	162.0	562.9	127.2	563.5	83.7	578.1	68.2	578.2
25+0	127.7	560.8	166.7	563.5	126.3	563.1	81.3	578.0	67.0	578.0
25+50	169.0	560.5	163.6	563.0	121.1	563.6	77.3	578.1	61.7	578.1
26+0	173.7	561.0	167.1	562.9	125.2	562.9	79.6	577.6	65.9	577.8
26+50	178.3	559.2	172.6	563.3	124.0	563.5	77.9	578.0	64.3	577.9
27+0	185.1	560.8	178.0	563.5	132.1	563.4	87.1	578.0	73.0	578.2
27+50	186.0	560.9	180.4	562.7	137.9	563.4	92.7	577.8	78.0	578.0
28+0	174.8	561.2	170.3	563.2	135.8	563.1	90.7	577.7	77.4	577.8
28+50	172.8	560.1	168.1	562.7	133.1	563.2	88.5	577.8	75.0	577.9
29+00	174.1	561.0	168.5	562.8	132.9	563.2	90.2	577.7	75.6	578.1
29+50	185.1	560.5	178.4	563.0	144.0	563.1	99.7	577.8	85.0	577.9
30+0	181.3	560.0	175.9	562.8	141.5	563.0	97.7	577.8	82.5	577.8
30+50	-	-	-	-	144.1	563.4	96.3	577.8	84.5	577.7
31+0	-	-	-	-	136.3	562.0	92.2	577.8	73.5	577.7
31+50	-	-	-	-	120.1	562.2	86.8	577.8	55.0	577.8
T32+50					91.9	562.1	58.7	577.8	38.3	577.7
T33+0	-	-	-	-	102.3	562.6	53.3	577.8	38.6	577.8
T33+52	-	-	-	-	101.4	562.9	52.9	578.0	37.2	577.9
T 54+36	-	-		-	74.3	562.1	36.8	575.6	23.7	575.5
T55+0	-	-		-	80.1	562.7	42.6	575.8	29.6	575.6
T55+50	-	-	-	-	86.7	562.8	49.3	575.2	35.2	575.4
RV 36+50										
37+0	133.8	563.4			116.8	573.4	80.9	575.0		
37+50	164.5	560.8	158.6	562.8	126.4	562.9	88.1	575.7	71.1	575.7
38+0	170.8	560.3	164.7	562.7	131.9	563.2	94.1	575.6	78.0	575.8
38+50	178.1	560.5	173.8	563.4	139.2	563.4	99.7	575.6	84.8	575.6
39+0	171.8	560.8	165.3	563.1	131.5	563.5	93.0	575.7	78.0	575.6
39+50	167.0	561.0	161.9	563.1	129.0	563.2	90.7	575.6	75.4	575.7
40+0	163.6	561.2	157.2	562.8	124.2	563.0	87.1	575.6	71.0	575.6
40+50	162.8	560.8	155.2	562.6	122.8	563.5	85.8	575.6	69.9	575.7
41+0	165.2	560.8	160.2	562.2	126.2	563.0	87.5	575.6	72.6	575.6
41+50	170.6	560.1	163.1	562.7	129.5	563.2	91.9	575.6	76.2	575.7
42+0	173.4	560.2	165.4	562.8	132.3	563.1	94.7	575.6	80.0	575.6
42+50	172.5	560.8	166.8	563.0	133.7	563.5	92.9	575.6	76.5	575.6
43+0	174.0	560.9	166.7	563.3	134.5	563.1	91.3	577.6	75.1	577.6
43+50	174.4	560.1	168.3	562.8	134.7	563.5	91.0	577.8	74.2	577.8
44+0	-	-	-	-	137.1	563.1	93.8	577.6	78.0	577.6

previously submitted

REVETMENT 'AS-BUILTS'
ARMOR STONE

Port -Greenbelt
Shoreline Improvements
NFTA Project #12po202

STA	Toe Revent	Slope	Top	Slope	Toe	Slope	Top Revent	tment		
	offset	elev	offset	elev	offset	elev	offset	elev	offset	elev
0+50	138.9	563.2	124.8	568.5		meet	existing	conditions		
1+00	140.7	563.2	127.8	568.0	123.7	567.9	90.1	580.2	83.8	580.0
1+50	140.1	563.2	126.8	568.0	123.7	567.9	92.3	580.1	83.5	579.6
2+00	139.0	562.8	126.8	567.1	122.5	567.8	92.3	580.2	84.8	580.6
2+50	140.8	563.2	128.1	567.6	124.1	568.3	94.2	580.1	86.7	580.1
3+00	141.8	563.2	128.7	568.3	123.9	567.9	94.3	580.0	86.8	580.4
3+50	141.5	562.6	129.8	568.0	124.6	568.2	95.2	580.4	87.6	580.2
4+00	134.0	563.1	120.9	568.5	116.3	568.7	86.7	580.0	79.8	580.1
4+50	139.9	563.7	126.1	568.7	121.2	568.3	91.3	580.0	83.5	580.5
5+00	138.5	563.8	126.1	569.4	119.6	568.5	90.4	579.1	83.2	579.6
5+50	142.3	562.8	128.7	569.7	123.6	568.3	94.6	579.6	87.2	579.9
6+0	147.3	562.6	134.2	569.0	129.1	568.3	98.5	580.0	90.8	580.3
6+50	141.4	563.7	130.6	568.7	124.8	568.1	94.1	580.2	86.6	580.4
7+0	142.0	563.2	129.0	569.0	124.2	568.3	93.1	580.1	85.4	580.3
7+50	143.7	563.2	132.9	568.2	128.7	568.2	94.3	579.6	91.5	580.0
8+0	142.0	567.8	128.9	567.3	124.8	567.7	93.8	579.8	86.3	580.4
8+50	131.5	562.7	118.4	568.7	113.6	568.6	83.5	580.2	76.0	580.7
9+0	127.2	562.8	114.5	568.5	110.4	568.4	79.5	580.2	79.5	580.1
9+50	128.7	563.7	116.5	568.3	111.1	567.7	81.7	580.1	74.0	580.6
10+0	135.9	563.4	124.1	567.6	119.1	568.0	89.1	579.9	81.0	580.6
10+50	135.6	563.9	123.6	567.5	119.6	567.5	83.6	582.0	75.9	582.1
11+0	137.7	563.5	122.7	567.8	118.9	567.5	84.1	581.8	76.4	582.0
11+50	138.7	563.3	127.5	567.7	121.5	568.1	86.1	581.3	78.1	581.3
12+0	136.4	562.9	125.3	567.8	120.6	567.7	84.8	581.8	77.2	582.2
12+50	136.8	562.8	124.1	567.5	118.8	567.5	84.4	581.8	77.4	582.6
13+0	138.9	562.7	123.7	567.8	119.7	567.8	85.7	581.7	78.2	582.0
13+50	139.2	563.1	126.5	567.7	121.0	568.2	88.5	580.8	80.1	581.3
14+0	133.1	563.2	121.1	567.6	115.9	568.6	83.1	581.0	75.6	581.0
14+50	129.6	562.5	116.7	567.8	112.3	568.1	80.0	580.9	72.5	581.6
15+0	126.9	563.0	113.9	568.0	108.8	568.0	76.6	580.9	69.0	581.6
15+50	126.5	563.5	113.2	567.5	108.6	568.3	76.4	581.1	68.9	581.0
16+0	127.5	563.1	114.9	567.3	110.0	567.3	76.4	580.3	69.0	581.7
16+50	125.3	563.2	112.7	568.4	108.1	568.6	74.2	581.3	65.1	581.7
17+0	134.9	562.7	126.5	567.3	118.0	567.5	85.2	581.3	76.0	581.6
17+50	139.0	563.4	125.9	567.6	120.8	567.4	88.5	581.9	80.6	581.9
18+0	136.9	563.3	122.9	567.7	118.1	568.4	83.7	583.4	75.8	583.2
18+50	139.0	563.0	126.1	567.5	120.8	568.0	86.1	582.6	78.5	583.4
19+50	136.0	562.5	124.7	567.7	119.9	567.6	84.3	582.1	75.8	582.7
20+0	138.2	562.5	125.0	567.8	120.7	567.7	85.5	582.1	76.1	582.3
20+50	140.5	562.7	127.7	567.7	123.8	567.8	88.1	582.4	80.6	582.4
21+0	138.8	562.3	123.8	568.6	119.4	568.0	77.6	585.6	70.1	582.8
21+50	146.0	563.2	131.7	567.6	125.7	567.8	84.0	581.7	76.5	582.3
22+0	143.7	563.0	128.7	568.3	122.4	567.5	81.0	582.4	73.5	582.6
22+50	144.1	564.4	129.1	568.4	124.4	568.1	82.1	582.3	74.6	582.3
23+0	147.1	563.6	131.9	567.4	126.7	567.3	85.6	582.1	78.1	582.8
23+50	144.8	562.8	129.1	567.4	123.1	568.1	81.4	582.4	73.9	582.8
24+0	145.2	562.7	129.8	567.3	124.6	567.9	83.1	582.6	75.4	582.0

ORIGINAL

REVETMENT 'AS-BUILTS'
ARMOR STONE

Port -Greenbelt
Shoreline Improvements
NFTA Project #12po202

STA	Toe Revent	Slope	Top	Slope	Toe	Slope	Top Revetment		Back Revetment	
	offset	elev	offset	elev	offset	elev	offset	elev	offset	elev
24+50	146.5	562.9	130.6	568.0	126.5	568.9	85.2	581.8	77.7	582.3
25+0	145.9	562.9	129.8	567.4	128.8	568.0	82.1	581.9	74.6	582.5
25+50	138.7	563.0	124.2	567.6	120.2	568.5	76.8	582.1	70.3	582.9
26+0	141.9	562.8	128.7	567.7	122.6	567.9	80.9	582.3	73.4	582.7
26+50	141.3	563.3	126.1	567.5	121.1	567.5	79.3	582.2	71.8	583.1
27+0	149.7	563.3	134.8	567.9	129.4	568.1	88.1	581.9	80.6	582.4
27+50	156.0	563.2	139.6	567.3	135.0	567.7	93.9	582.0	86.4	582.8
28+0	154.1	562.8	139.4	567.6	134.1	567.6	92.4	582.0	84.9	583.1
28+50	153.2	563.0	138.8	568.1	132.1	568.0	90.1	582.9	82.6	582.7
29+0	152.9	562.6	137.8	567.7	132.7	568.3	91.1	582.6	83.6	582.9
29+50	161.8	563.0	148.3	568.0	143.0	568.1	101.5	582.3	94.0	582.6
30+0	161.5	563.1	146.0	567.6	141.2	567.9	98.6	582.5	91.1	583.1
30+50	162.9	563.0	148.1	562.5	143.2	567.9	97.5	583.5	90.0	584.3
31+0	-	-	-	-	140.8	565.4	87.0	585.1	79.5	586.3
31+50	-	-	-	-	97.1	564.6	75.0	585.7	67.5	586.0
T 32+50	-			-	96.5	564.4	49.5	586.1	42.0	586.4
T 33+0	-			-	103.0	564.4	48.5	586.7	41.0	587.0
T 33+47	-			-	107.7	565.1	45.0	586.0	43.0	586.3
T 54+36	-			-	83.0	565.5	35.9	580.9	28.3	581.1
T 55+0	-			-	86.1	564.3	41.6	580.7	34.1	580.6
T55+50	-			-	88.3	564.9	48.4	580.2	40.9	580.4
RV 36+50	-	-	-	-	107.8	565.3	63.9	580.1	56.4	580.4
37+0	-	-	-	-	124.2	565.4	80.3	580.0	72.9	580.3
37+50	143.5	562.9	128.5	568.2	126.7		87.9	580.2	80.3	580.4
38+0	150.2	564.1	134.6	568.0	128.2	568.0	939.0	580.3	86.4	580.5
38+50	157.2	563.1	142.9	567.3	132.8	567.9	101.1	579.9	93.6	580.1
39+0	150.2	563.3	134.6	567.7	129.4	567.8	93.6	579.8	86.1	580.1
39+50	147.3	563.0	133.2	567.8	127.9	568.0	91.2	580.0	83.7	580.3
40+0	145.6	562.7	128.1	567.3	123.4	568.3	86.5	580.1	79.0	580.3
40+50	143.6	562.4	128.3	568.4	122.7	568.4	85.3	579.7	77.9	580.0
41+0	144.5	562.7	129.5	567.8	124.2	568.1	88.4	579.9	80.9	580.2
41+50	147.6	562.8	132.7	567.3	128.1	568.0	92.0	580.5	84.5	580.7
42+0	151.2	562.8	136.4	567.7	131.6	567.9	95.5	580.6	88.0	580.8
42+50	152.3	562.7	136.1	567.9	130.8	567.8	95.7	580.0	88.2	579.9
43+0	154.3	562.6	138.9	568.0	132.6	568.0	91.6	582.3	84.1	582.1
43+50	154.4	562.9	139.1	567.3	132.2	567.7	91.5	582.4	84.0	582.4
44+0	158.8	562.7	141.1	567.7	137.1	567.2	94.8	582.6	87.2	582.7
44+50	152.1	562.6	134.8	567.9	129.8	567.9	88.5	583.4	81.0	583.5

STATE OF NEW YORK
THOMAS P. RYAN
No. 049234
LICENSED LAND SURVEYOR

ORIGINAL

11/15/2007

Niagara Frontier Transportation Authority
Serving the Niagara Region

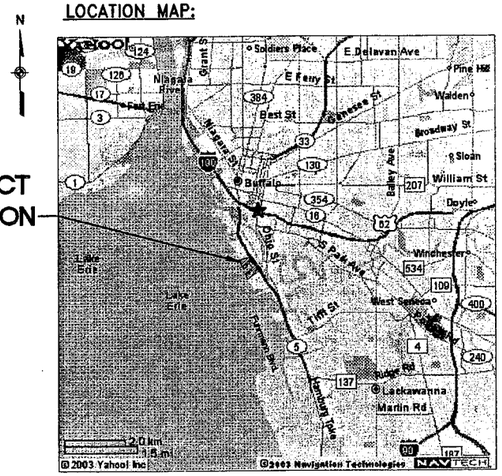
RECORD SET

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

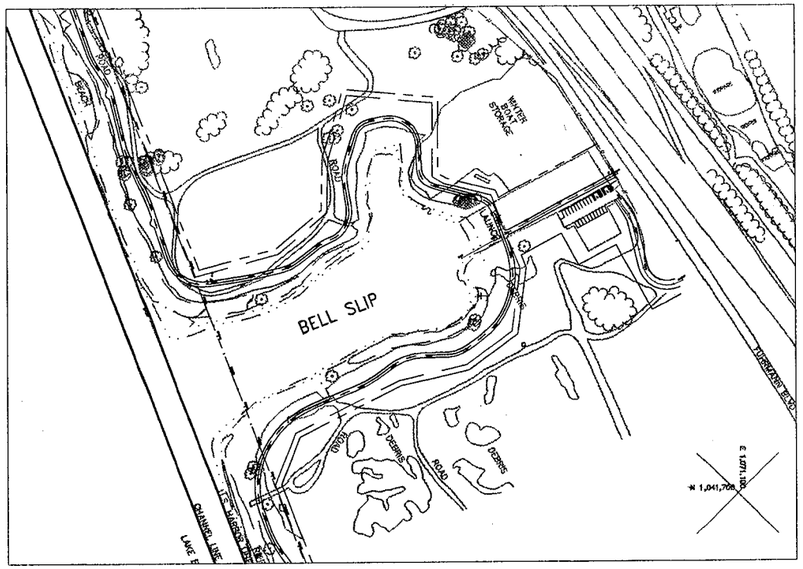
BELL SLIP SOIL EROSION / SLOUGHING REPAIR
FEBRUARY 2008

URS Corporation
New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 - (716)856-2545 fax

LOCATION MAP:



SITE PLAN:



NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
STATE ASSISTANCE CONTRACT NO. C302569
SITE NO. B-00149-9
BUFFALO, ERIE COUNTY

NFTA PROJECT NO. 12PL0202

NFTA BID NO. E-367

DESCRIPTION OF WORK

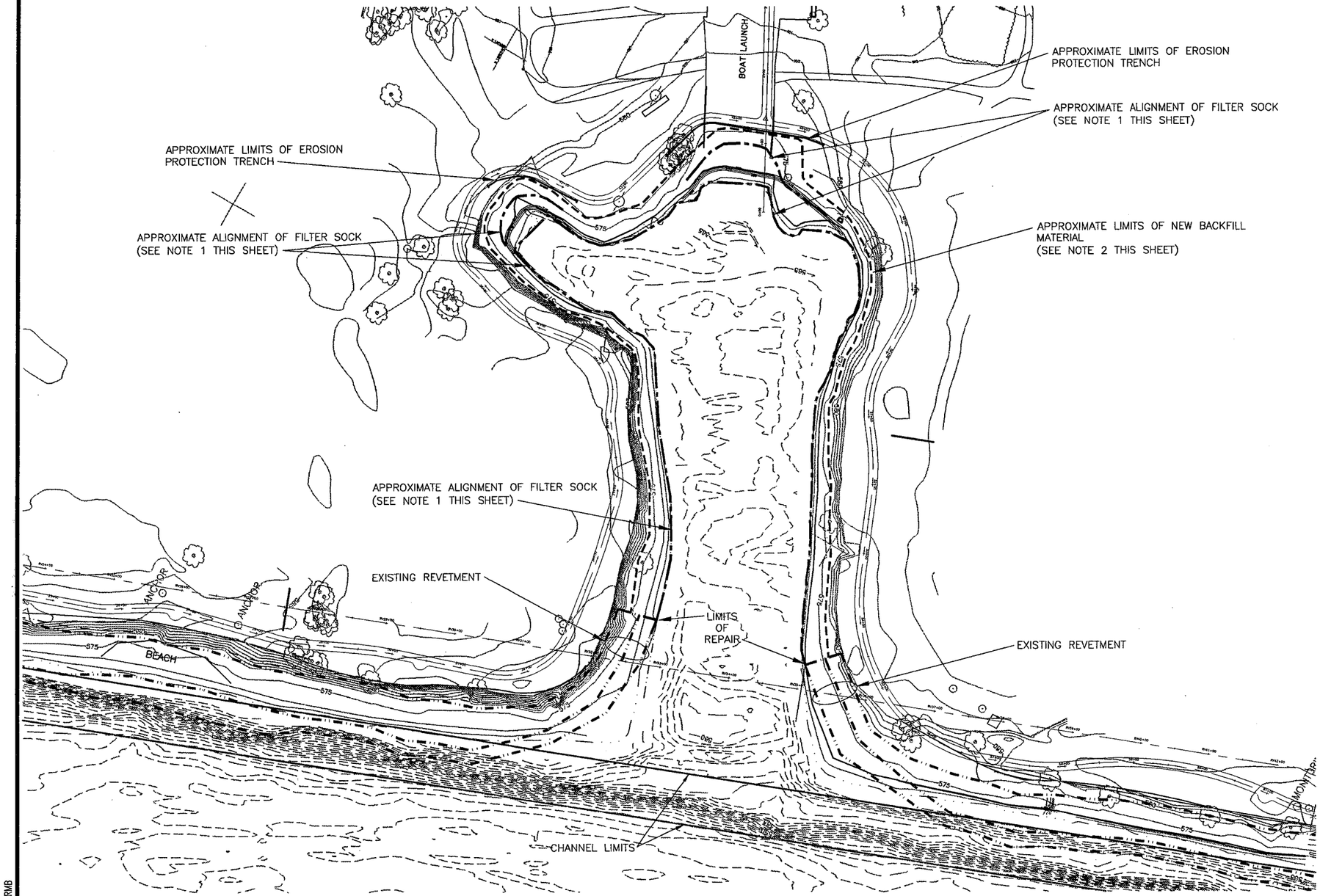
THE SITE IS LOCATED IN AN AREA KNOWN AS THE OUTER HARBOR AND CONSISTS SOLELY OF THE BELL SLIP.

THIS PROJECT INCLUDES:
COMPOST-FILLED EROSION CONTROL FILTER-SOCK, BACKFILL IN ERODED AREAS, COMPOST AND SEED, EROSION CONTROL MAT, PLANTINGS, AND EROSION PROTECTION TRENCH.

INDEX OF DRAWINGS:

DRAWING FILE NAME: G-100A.DWG
DRAWING # 1 OF 3
G-100A

N:\11173936.00000\CAD\FAILURE\G-100A.dwg 2/13/07 BAK



PLAN

80' 0 80'

SCALE: 1"= 80'

NOTES

1. CENTERLINE OF FILTREXX "SAFETYSOXX" ALONG SHORELINE IS TO BE PLACED AT APPROXIMATE ELEVATION CONTOUR OF 571.0 FEET. A SECOND ROW IS TO BE PLACED IN WIDER AREAS OF SLOUGHING/EROSION AS SHOWN.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ORIGINAL CONTRACT DOCUMENTS, AS APPROPRIATE.
4. REMOVE DEBRIS, INCLUDING ROCKS, ROOTS, LARGE CLODS, AND STICKS, AS NECESSARY, TO CREATE A REASONABLY SMOOTH SURFACE FOR PLACEMENT OF THE "FILETERSOXX"
5. PLACE THE FILTREXX LOCKDOWN NETTING (5 MM MULTIFILAMENT POLYPROPYLENE) ON THE PREPARED SURFACE. THE NETTING SHOULD BE SUFFICIENTLY WIDE SO THAT IT CAN FULLY WRAP THE COMPOST TUBE AND EXTEND BENEATH THE WIDTH OF BACKFILL BEING REPLACED, UP TO 10 FEET.
6. PLACE THE 18-INCH DIAMETER, MULTIFILAMENT POLYPROPYLENE FILTREXX "SAFETYSOXX" ON TOP OF THE LOCKDOWN NETTING, BLOW-IN THE COMPOST MIX CONSISTING OF FILTREXX GROWING MEDIA, 20 – 30% PEA GRAVEL AND THE WETLAND SEED MIX (NORTHEAST WETLAND DIVERSITY MIX).
7. LOOP FILTREXX LOCKDOWN NETTING TIGHTLY OVER THE SAFETYSOXX AND EXTENDED UPSLOPE THE WIDTH OF BACKFILL BEING REPLACED, UP TO 10 FEET
8. BACKFILL THE SLOUGHED/ERODED AREA BETWEEN THE COMPOST TUBE AND THE EXISTING SOIL FILL WITH BACKFILL CONSISTENT WITH THE ORIGINAL CONTRACT SPECIFICATION SECTION 02210, PARAGRAPH 2.1A. THIS MATERIAL IS TO BE PLACED IN ONE LIFT AND COMPACTED WITH THE CONSTRUCTION EQUIPMENT, TO THE SATISFACTION OF THE ENGINEER, TO ACHIEVE A COMPACTED MINIMUM THICKNESS OF 12 INCHES. THE LIFT THICKNESS SHALL BE MATCHED TO THE EXISTING BACKFILL THICKNESS AT THE UPSLOPE LIMIT.
9. ONCE THE BACKFILL MATERIAL IS PLACED, A 2-INCH THICK LAYER OF FILTREXX GROWING MEDIA, PRE-SEEDED WITH UPLAND SEED (I.E. NORTHEAST UPLAND WILDFLOWER/RESTORATION EROSION MIX AND SHOWY NORTHEAST NATIVE WILDFLOWER MIX WITHOUT GRASSES) IS TO BE APPLIED IN ACCORDANCE WITH CONTRACT SPECIFICATION, WITH THE MODIFICATION THAT THE SPECIFIED APPLICATION RATE OF THE SEED MIX SHALL BE DOUBLED.
10. EAST COAST-ECC-2B DOUBLE NET COCONUT BIODEGRADABLE ROLLED EROSION CONTROL BLANKET) WILL BE PLACED OVER THE SURFACE OF THE SEEDED BACKFILL TO PROTECT AND RETAIN THE SEED UNTIL IT GERMINATES. THE MAT WILL EXTEND FROM THE COMPOST TUBE UPSLOPE TO ABOUT 2-FEET BEYOND THE REPAIRED AREA. THE MAT IS TO BE STAPLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
11. LIVE PLANTS SHALL BE INSERTED INTO THE COMPOST TUBE AND THROUGH THE FIBER EROSION CONTROL MAT INTO THE SOIL BACKFILL MATERIAL, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE DENSITY OF PLANTINGS MAY BE INCREASED AT THE DIRECTION OF THE ENGINEER TO INCREASE THE RATE OF PROPAGATION.
12. THE EXISTING SOIL AREAS UPSLOPE OF THE REPAIRED AREAS ARE TO BE PROTECTED FROM SURFACE EROSION IN ACCORDANCE WITH THE EXISTING SPECIFICATIONS.
13. EROSION PROTECTION TRENCH SHALL BE INSTALLED WHERE THE PEDESTRIAN/BIKE TRAIL COMES CLOSEST TO THE AREA OF EROSION, AS DIRECTED BY THE ENGINEER (SEE DRAWING ES-102).
14. WHERE LAKE BOTTOM AREAS ARE DETERMINED BY THE ENGINEER TO BE COVERED WITH MORE THAN FOUR INCHES OF SLOUGHED/ERODED SOIL, ADDITIONAL PLANTINGS OF VALLISNERIA AMERICANA (WATER CELERY) WILL BE MADE AT THE DIRECTION OF THE ENGINEER.

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11174825.00000
Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

SLOUGHING/EROSION REPAIR LIMITS

SCALE – AS NOTED		FEB. 2008
DESIGNED BY	MCD	FEB. 2008
DRAWN BY	ELB	FEB. 2008
CHECKED BY	JCW	FEB. 2008

DRAWING FILE NAME: G-102.dwg

DRAWING # 2 OF 3

ES-101

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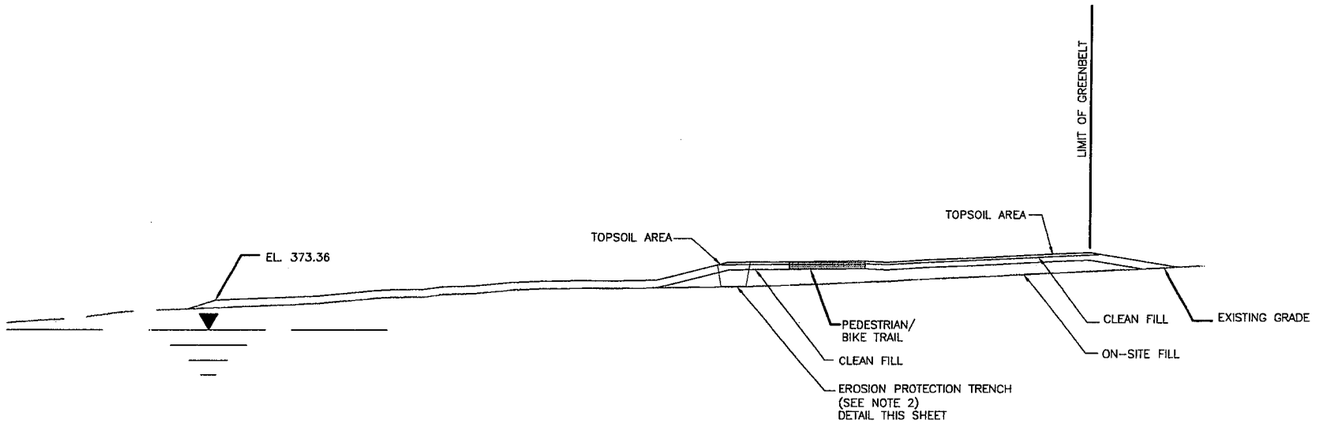
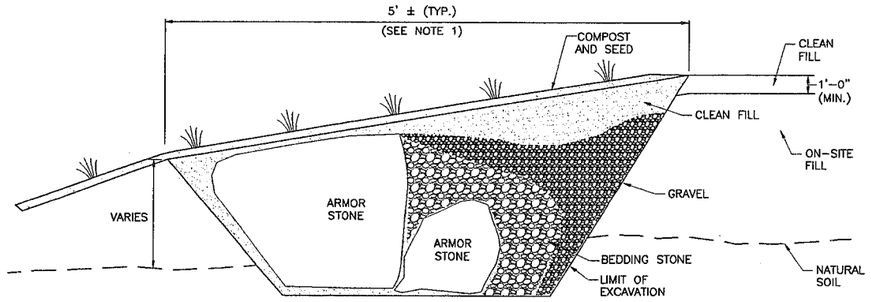


SECTION WITH TRENCH DETAIL

NOT TO SCALE

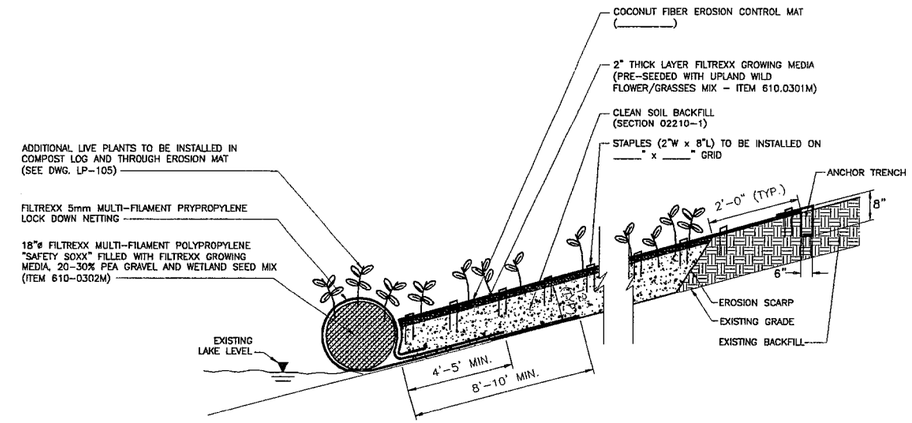
NOTES:

1. WIDTH AND DEPTH OF TRENCH TO BE ADJUSTED TO ALLOW INSTALLATION OF ARMOR STONE/BEDDING STONE/GRAVEL SUCH THAT ALL STONE WILL BE BELOW FINISHED GRADE AND CAN BE COVERED WITH EXISTING SOIL. (ROCK NOT VISIBLE WHEN COMPLETE.)
2. TRENCH TO BE INSTALLED AT APPROXIMATE BREAK IN SLOPE OR IN AREA BETWEEN PEDESTRIAN/BIKE TRAIL AND EXISTING SLOUGHED/ERODED AREA. (TO BE DETERMINED IN FIELD)
3. ARMOR STONE TO BE PLACED IN DOWN SLOPE PORTION OF TRENCH. PROGRESSIVELY SMALLER STONE IS TO BE PLACED IN UPSLOPE PORTION OF TRENCH TO FORM "GRADED FILTER". FILL VOIDS IN ROCKS WITH OFF-SITE FILL, ITEM 02210-1, TO EXTENT PRACTICABLE.



EROSION PROTECTION TRENCH DETAIL

NOT TO SCALE



SLOUGHING/EROSION REPAIR DETAIL

NOT TO SCALE

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11174825.00000
Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

SLOUGHING/EROSION REPAIR DETAILS

SCALE - AS NOTED		FEB. 2008
DESIGNED BY	MCD	FEB. 2008
DRAWN BY	ELB	FEB. 2008
CHECKED BY	JCW	FEB. 2008

DRAWING FILE NAME: ES-102.dwg

DRAWING # 3 OF 3

ES-102

N:\11173936.00000\CAD\FAILURE\ES-102.dwg 2/14/08-1 RMB

Niagara Frontier Transportation Authority

Serving the Niagara Region

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

JUNE 2006

URS Corporation

New York

77 Goodell Street, Buffalo, New York 14203

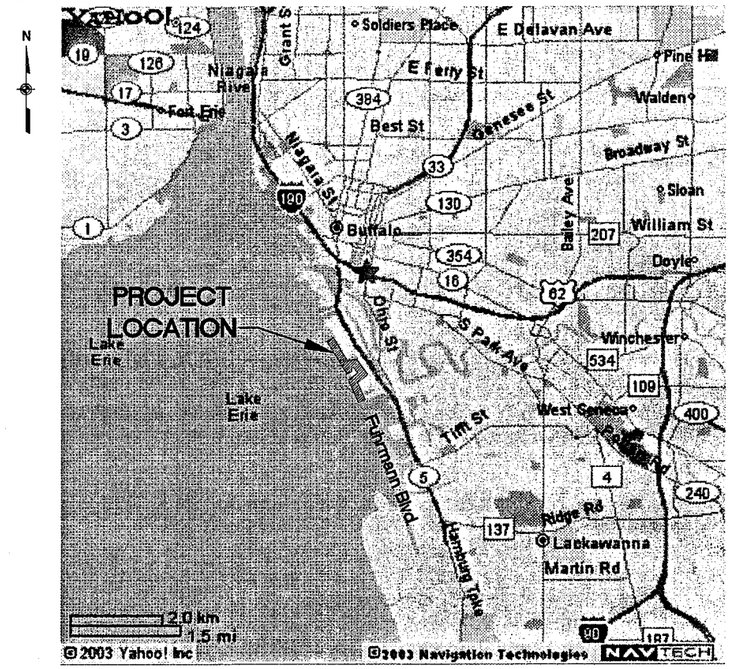
(716)856-5636 - (716)856-2545 fax

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
STATE ASSISTANCE CONTRACT NO. C302569
SITE NO. B-00149-9
BUFFALO, ERIE COUNTY

NFTA PROJECT NO. 12PL0202

NFTA BID NO. E-367

LOCATION MAP:



DESCRIPTION OF WORK

THE SITE IS LOCATED IN AN AREA KNOWN AS THE OUTER HARBOR AND EXTENDS FROM THE FORMER PIER RESTAURANT AT THE NORTH END, SOUTH TO THE NFTA TERMINAL B, APPROXIMATELY 950 FEET WEST OF FUHRMANN BLVD.

THIS PROJECT INCLUDES:
CONSTRUCTION OF AN ARMOR STONE SHORELINE REVETMENT, CRUSHING AND RE-USE OF EXISTING SHORELINE CONCRETE AND STONE RUBBLE, DISPOSAL OF WET EXCAVATED SHORELINE MATERIAL AT THE USACE CONFINED DISPOSAL FACILITY (CDF), PLACEMENT OF A GEOTEXTILE FABRIC AND ONE (1) FOOT OF CLEAN SOIL OVER THE GREENBELT PROJECT LIMITS, CONSTRUCTION OF AN ASPHALT TRAIL, CONSTRUCTION OF AQUATIC HABITATS, INSTALLATION OF UPLAND AND WETLAND PLANTINGS, CONSTRUCTION OF AN ACCESS ROAD FROM FUHRMANN BLVD. TO THE TRAILHEAD PARKING AREA, AND STRIPING OF THE TRAILHEAD PARKING AREA.

INDEX OF DRAWINGS:

REFERENCED NYSDOT STANDARD SHEETS:

M607-10 M607-11R1 M645-51 M645-52 M645-55

DRAWING FILE NAME: G-100.DWG

DRAWING # 1 OF 32

G-100

N:\11173936.00000\CAD\BID REV1\G-100.dwg 6/8/06-1 ELB

LEGEND

EXISTING	PROPOSED
—X—X— – FENCELINE	SHARED PEDESTRIAN/BIKE TRAIL
—OHE— – OVERHEAD ELECTRICAL (APPROX.)	(30) – COORDINATE IDENTIFICATION NUMBER
—UGE— – UNDERGROUND ELECTRICAL (APPROX.)	1 / C-002|C-008 – DETAIL NUMBER; DRAWING DETAIL APPEARS ON; DRAWING DETAIL IS FIRST CALLED OUT ON
—ST— – STORM LINE (APPROX.)	
—SAN— – SANITARY LINE (APPROX.)	
—W— – WATERLINE (APPROX.)	
—HPG— – HIGH PRESSURE GASLINE (APPROX.)	A / C-002|C-008 – SECTION LETTER; DRAWING SECTION APPEARS ON; DRAWING SECTION IS FIRST CALLED OUT ON
—T— – UNDERGROUND TELEPHONE LINE	
⊠ – CATCH BASIN	—X—X— CHAIN-LINK FENCE
Ⓓ – DRAINAGE MANHOLE	GEOTEXTILE (WITH END SHOWN)
– GASLINE MARKER	10 / CS – QUANTITY OF PLANTING; TYPE OF PLANTING
LP – LIGHT POLE	
△ – PROPERTY MONUMENT	PROJECT LIMIT/LIMIT OF CLEARING AND GRUBBING
Ⓢ – SANITARY MANHOLE	
– SIGN	
⊠ – TELEPHONE BOX	
– TREE	
⊠ – UTILITY BOX	
– UTILITY POLE	
– UTILITY POLE W/LIGHT	
– WATER VALVE	
SG-2 – PHASE I RI STAFF GAUGE	
GW-5B – PHASE I RI MONITORING WELL	
SB-54 – PHASE I RI SOIL BORING	
SB-5 – PREVIOUS SOIL BORING	
PZ-6 – PHASE I RI PIEZOMETER	
GB-1 ▲ – SOIL BORING (URS)	

ABBREVIATIONS

A.O.B.E.	– AS ORDERED BY ENGINEER	UGE	– UNDERGROUND ELECTRICAL
ADA	– AMERICANS WITH DISABILITIES ACT	UP	– UTILITY POLE
BLKTP.	– BLACKTOP	UST	– UNDERGROUND STORAGE TANK
BLDG.	– BUILDING	V	– VOLT
CB	– CATCH BASIN	W/	– WITH
CONC.	– CONCRETE	WSEL	– WATER SURFACE ELEVATION
CP	– CONTROL POINT		
DIA.	– DIAMETER		
ø	– DIA.		
E.P.	– EDGE OF PAVEMENT		
EMH.	– ELECTRICAL MANHOLE		
EXIST.	– EXISTING		
ELEV	– ELEVATION		
GALV.	– GALVANIZED		
LP	– LIGHT POLE		
LUP	– LIGHT UTILITY POLE		
MAX.	– MAXIMUM		
MH	– MANHOLE		
MIN.	– MINIMUM		
O.C.	– ON CENTER		
PVC	– POLYVINYL CHLORIDE		
P.C.	– POINT OF CURVE		
P.I.	– POINT OF INTERSECTION		
P.O.L.	– POINT ON LINE		
P.T.	– POINT OF TANGENCY		
RAD.	– RADIAL		
R.O.W.	– RIGHT-OF-WAY		
R.R.	– RAILROAD		
SCH.	– SCHEDULE		
TBD	– TO BE DETERMINED		
TYP.	– TYPICAL		

GENERAL NOTES

1. THE INFORMATION DEPICTED IN THESE DRAWINGS REPRESENTS THE RESULTS OF A SURVEY PERFORMED ON 5 JANUARY 2005 BY RAVI ENGINEERS AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITION EXISTING AT THAT TIME.
2. COORDINATES REFER TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83), NEW YORK WEST STATE PLANE COORDINATE SYSTEM AND ARE EXPRESSED IN U.S. SURVEY FEET.
3. ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE EXPRESSED IN U.S. SURVEY FEET. THE AVERAGE WATER ELEVATION AT THE TIME OF SURVEY WAS 570.6'.
4. THE CONVERSION FROM INTERNATIONAL GREAT LAKES DATUM (USED BY THE US ARMY CORPS OF ENGINEERS) TO NAVD 88 IS +0.16 FEET.
5. THE HYDROGRAPHIC DATA DEPICTED ON THIS MAP WAS COLLECTED BY TVGA CONSULTANTS USING HYDROGRAPHIC SURVEY ACCURACY PERFORMANCE STANDARDS IN ACCORDANCE WITH USACE EM 1110-2-1003 DATED 1 JANUARY 2004.
6. THE SUBJECT HYDROGRAPHIC SURVEY WAS COMPLETED UTILIZING THE FOLLOWING EQUIPMENT:

VESSEL:	SEA TRANSIT
POSITIONING SYSTEM:	TRIMBLE 5800 RTK W/ OTF
ECHOSOUNDER:	ODOM MKII W/ 208KHZ / 9 DEGREE TRANSDUCER
NAVIGATION/DATA LOGGING:	DESKTOP PC W/ HYPACK MAX SOFTWARE

7. PLANIMETRIC BASE MAPPING COMPILED FROM 1" = 400' SCALE AERIAL PHOTOGRAPHY DATED 19 DECEMBER 1999 WAS UTILIZED WITHOUT THE BENEFIT OF A FIELD EDIT AND SHOULD BE CONSIDERED FOR REFERENCE PURPOSES ONLY.
8. THE CHANNEL LINES AND U.S. HARBOR LINE WERE PROVIDED BY THE U.S. ARMY CORP OF ENGINEERS, BUFFALO DISTRICT.
9. THE LOCATION OF ANY UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. ALL UTILITIES MAY NOT BE SHOWN. PRIOR TO CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL PERFORM ALL DUE DILIGENCE TO DETERMINE THE EXISTENCE AND LOCATIONS OF UTILITIES ON-SITE INCLUDING BUT NOT LIMITED TO CONTACTING UTILITY COMPANIES AND THE CITY OF BUFFALO, AND OBTAINING THE SERVICES OF A UTILITY LOCATING COMPANY AS APPROPRIATE.
10. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.
11. IN INSTANCES WHERE DIGITAL INFORMATION IS SUPPLIED TO A CLIENT ON MAGNETIC MEDIUM, URS CORP. CAN NOT BE RESPONSIBLE FOR THE ACCURACY OF ANY SUBSEQUENT COMPUTER GENERATED MAPPING, BEYOND THE ORIGINAL INTENDED MAP SCALE.
12. NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS-METRIC UNITS HAVE BEEN REFERENCED FOR THIS PROJECT. THE ITEM NUMBERS ASSOCIATED WITH THESE SPECIFICATIONS REFERENCE METRIC QUANTITIES AND MEASUREMENTS. HOWEVER, US STANDARD UNITS WILL BE USED FOR MEASUREMENT AND PAYMENT. CONVERSION TABLES ARE PROVIDED IN THE CONTRACT MANUAL FOR THE CONTRACTORS USE.
13. THE NEW TRAIL PROFILE SHALL HAVE NO GRADE BREAKS. A MINIMUM 10-FOOT VERTICAL CURVE SHALL BE USED AT ALL GRADE CHANGES.
14. CONTRACTOR SHALL PARALLEL EXISTING GRADE WHEN CONSTRUCTING THE PEDESTRIAN/BIKE TRAIL, WHILE ALSO MAINTAINING A MAXIMUM SLOPE OF 1:20. IN ACCORDANCE WITH ADA REQUIREMENTS THE MAXIMUM TRAIL SLOPE SHOWN ON ALL TRAIL PROFILES IS 1:20. ROUGH GRADING TO ATTAIN THIS SLOPE SHALL BE INCIDENTAL TO FILL PLACEMENT. FINE GRADING SHALL BE INCLUDED UNDER ITEM NO. 02210-3, SITE GRADING.
15. THE CONTRACTOR SHALL BE AWARE THAT HEAVY EQUIPMENT NEAR THE SHORELINE MAY CAUSE SHORT-TERM SLOPE INSTABILITY, INCLUDING, AMONG OTHER MODES OF FAILURE, DIFFERENTIAL SETTLEMENT AND SLOPE FAILURE. THE CONTRACTOR SHALL TAKE CARE DURING THE EXCAVATION OF THE SHORELINE AND THE PLACEMENT OF THE REVETMENT STONE TO MONITOR THE SLOPE FOR SUCH MOVEMENT, AND SHALL BE RESPONSIBLE FOR ALL DAMAGE TO HIS EQUIPMENT, THE WORK, AND THE OUTER HARBOR PROPERTY THAT RESULTS FROM SUCH FAILURES.
16. SITE CLEARING SHALL BE PERFORMED WITHIN THE PROJECT LIMITS AS REQUIRED BY THE CONTRACT DOCUMENTS AND AS ORDERED BY THE ENGINEER.
17. THROUGHTOUT THE DURATION OF CONSTRUCTION CONTRACTOR SHALL LIMIT MOVEMENT OF CONSTRUCTION VEHICLES ON-SITE TO ASPHALT ROADS, THE STOCKPILE AND EQUIPMENT STORAGE AREA, CORRIDOR BETWEEN STORAGE AREA AND PROJECT LIMITS AND THE PROJECT LIMITS.
18. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER WHICH TREES SHALL REMAIN WITHIN CLEARING AREA/PROJECT LIMIT.
19. CONTRACTOR SHALL REMOVE RUBBLE FROM THE SHORELINE WITHIN THE PROJECT LIMITS INCLUDING THE BELL SLIP. RUBBLE CONSISTS OF STONE, CONCRETE, ASPHALT, BRICK AND OTHER MATERIAL. RUBBLE REMOVAL SHALL EXTEND TO THE TOP OF THE BANK AND ELEVATION 560.00.
20. ANY OVERBURDEN OR BEDROCK MONITORING WELLS LOCATED WITHIN THE LIMITS OF THE GREENBELT PROJECT ARE TO BE DECOMMISSIONED IN ACCORDANCE WITH SECTION 2.3 OF THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) "GROUNDWATER MONITORING WELL DECOMMISSIONING PROCEDURES" DATED APRIL 2003. PAYMENT FOR DECOMMISSIONING MONITORING WELLS WILL BE INCIDENTAL TO ITEM NO. 02110-1, SITE CLEARING.
21. THE ORDINARY HIGH WATER MARK FOR LAKE ERIE IS 573.56 AS PROVIDED TO URS BY THE UNITED STATES ARMY CORPS OF ENGINEERS.

N:\11173936.00000\CAD\BID\G-101.dwg 6/6/06-2 ELB

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JOB NO. 11173936.00000

Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

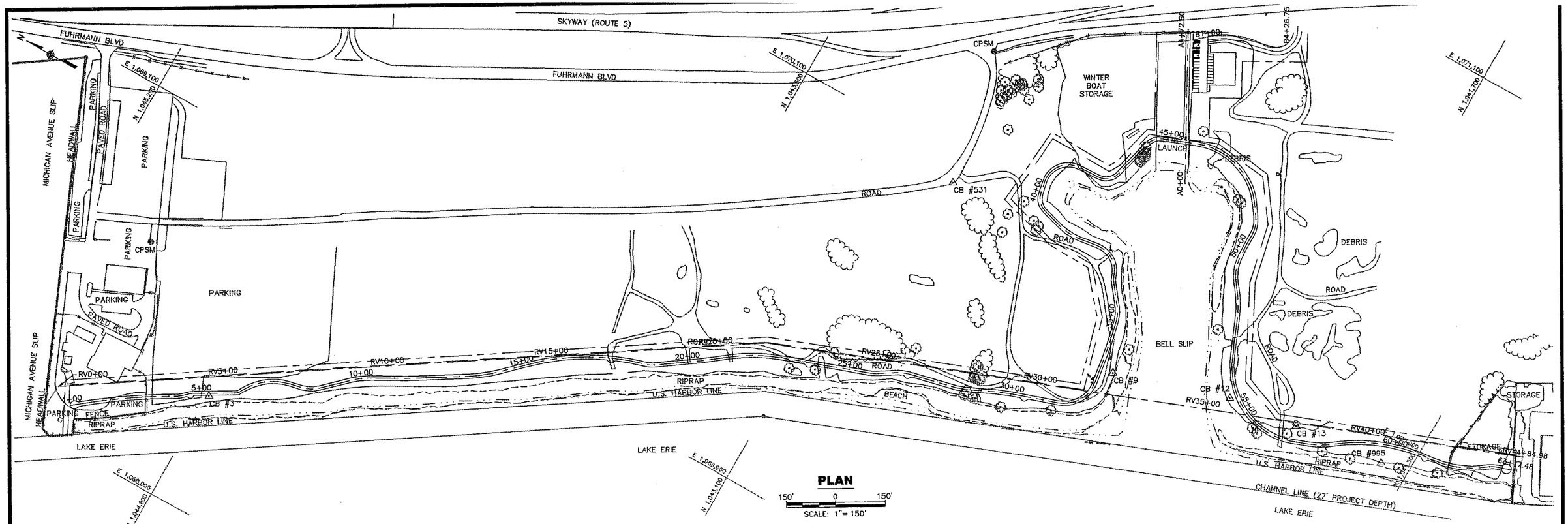
LEGEND ABBREVIATIONS AND GENERAL NOTES

SCALE - AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006

DRAWING FILE NAME: G-101.DWG

DRAWING # 2 OF 32

G-101

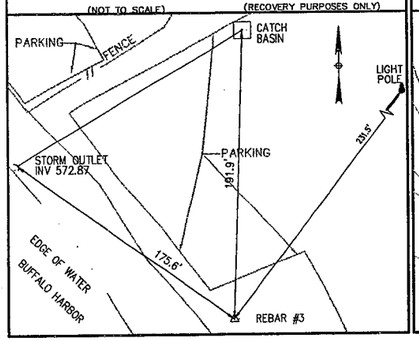


CITY, OF BUFFALO	NAME OF STATION	RECOVERY DATE
ERIE COUNTY	CB #3	JAN. 13, 2005
NORTHING 1044595.36		
EASTING 1068345.92		
ELEVATION (Feet) 579.88		
VERT. DATUM NAVD 88		
HORIZ. DATUM NAD 83		

DESCRIPTION

CB #3 IS A REBAR SET JUST EAST OF THE TOP OF BANK NEAR THE EAST EDGE OF WATER OF BUFFALO HARBOR. THE REBAR IS APPROXIMATELY 62 FEET EAST OF THE EDGE OF WATER AND IS NORTH OF THE INLET.

(NOT TO SCALE) (RECOVERY PURPOSES ONLY)

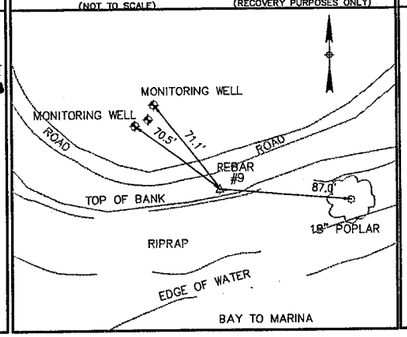


CITY, OF BUFFALO	NAME OF STATION	RECOVERY DATE
ERIE COUNTY	CB #9	JAN. 13, 2005
NORTHING 1042231.29		
EASTING 1069756.42		
ELEVATION (Feet) 587.66		
VERT. DATUM NAVD 88		
HORIZ. DATUM NAD 83		

DESCRIPTION

CB #9 IS A REBAR SET JUST NORTH OF THE TOP OF THE BANK AT THE MARINA BAY OFF OF BUFFALO HARBOR. CB #9 IS APPROXIMATELY 54 FEET NORTH OF THE EDGE OF WATER ON SAID INLET.

(NOT TO SCALE) (RECOVERY PURPOSES ONLY)

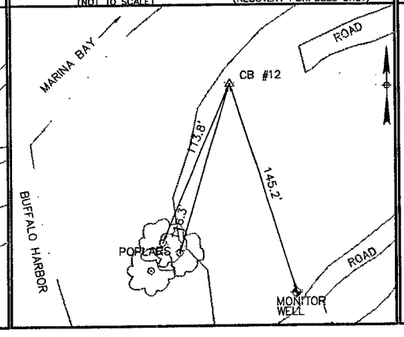


CITY, OF BUFFALO	NAME OF STATION	RECOVERY DATE
ERIE COUNTY	CB #12	JAN. 13, 2005
NORTHING 1041883.69		
EASTING 1069863.94		
ELEVATION (Feet) 582.58		
VERT. DATUM NAVD 88		
HORIZ. DATUM NAD 83		

DESCRIPTION

CB #12 IS A TWO FOOT LONG LENGTH OF REBAR SET EAST OF THE EDGE OF BUFFALO HARBOR AND IS SOUTH OF THE BAY TO THE MARINA. LOCATED IN THE TOP OF THE BANK, APPROXIMATELY 20 FEET WEST OF THE PATH WAY.

(NOT TO SCALE) (RECOVERY PURPOSES ONLY)

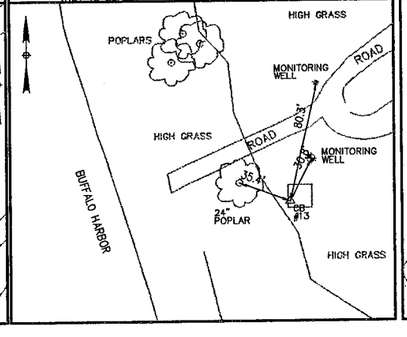


CITY, OF BUFFALO	NAME OF STATION	RECOVERY DATE
ERIE COUNTY	CB #13	JAN. 13, 2005
NORTHING 1041666.96		
EASTING 1069889.87		
ELEVATION (Feet) 581.99		
VERT. DATUM NAVD 88		
HORIZ. DATUM NAD 83		

DESCRIPTION

CB #13 IS A TWO FOOT REBAR SET NEAR THE TOP OF BANK EAST OF BUFFALO HARBOR AND IS APPROXIMATELY 35 FEET SOUTH EAST OF A 24" POPLAR TREE. APPROXIMATELY 80.3 FEET SOUTH OF A MONITOR WELL AND 30.8 FEET SOUTH WEST OF ANOTHER MONITOR WELL. CB #13 IS ALSO 3 FEET SOUTH WEST OF A GRASS PATHWAY.

(NOT TO SCALE) (RECOVERY PURPOSES ONLY)

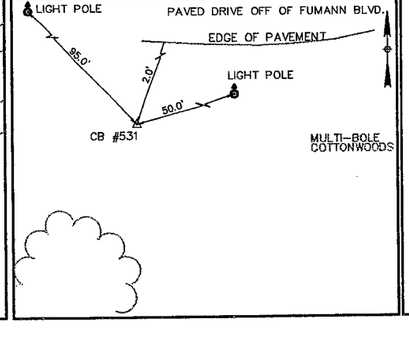


CITY, OF BUFFALO	NAME OF STATION	RECOVERY DATE
ERIE COUNTY	CB #531	JAN. 13, 2005
NORTHING 1042946.27		
EASTING 1070027.32		
ELEVATION (Feet) 585.64		
VERT. DATUM NAVD 88		
HORIZ. DATUM NAD 83		

DESCRIPTION

CB #531 IS A MAG NAIL SET ON THE SOUTH EDGE OF PAVEMENT NORTH OF MARINA BAY ON THE ACCESS ROAD TO THE PIER RESTAURANT.

(NOT TO SCALE) (RECOVERY PURPOSES ONLY)

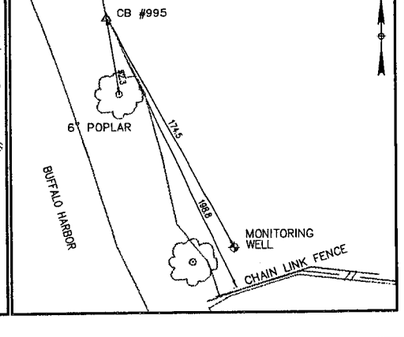


CITY, OF BUFFALO	NAME OF STATION	RECOVERY DATE
ERIE COUNTY	CB #995	JAN. 13, 2005
NORTHING 1041383.13		
EASTING 1069922.45		
ELEVATION (Feet) 581.64		
VERT. DATUM NAVD 88		
HORIZ. DATUM NAD 83		

DESCRIPTION

CB #995 IS A REBAR SET 5' EAST OF THE TOP OF BANK AND 200' +/- NORTH OF A CHAIN-LINK FENCE NORTH OF THE PORT BUILDING.

(NOT TO SCALE) (RECOVERY PURPOSES ONLY)



WARNING:
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STATE OF NEW YORK — URS CORPORATION NEW YORK — No. 065 — LICENSED PROFESSIONAL ENGINEERS

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JOB NO. 11173936.00000

Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

SURVEY CONTROL PLAN AND TIE SKETCHES

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: G-102.dwg		
DRAWING #	3 OF 32	

G-102

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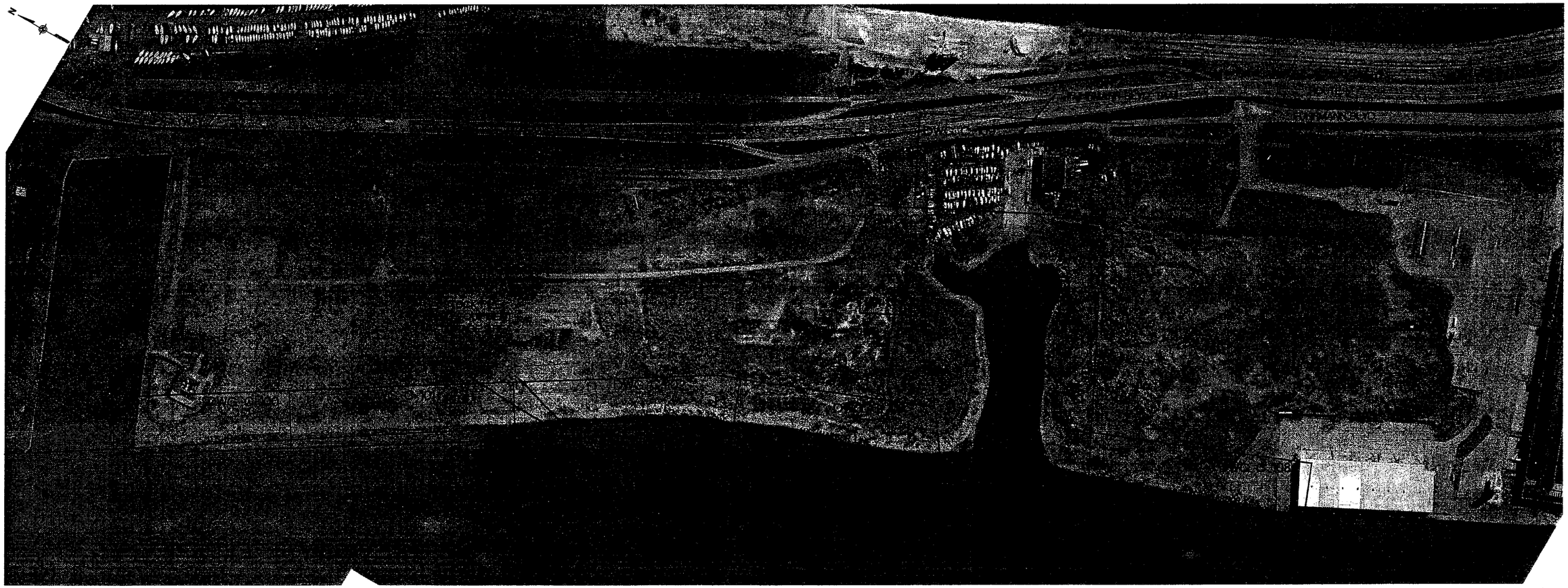

200' 0 200'

SCALE: 1" = 200'

WARNING:
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Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

KEY PLAN

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006

DRAWING FILE NAME: G-103.dwg

DRAWING # 4 OF 32

G-103

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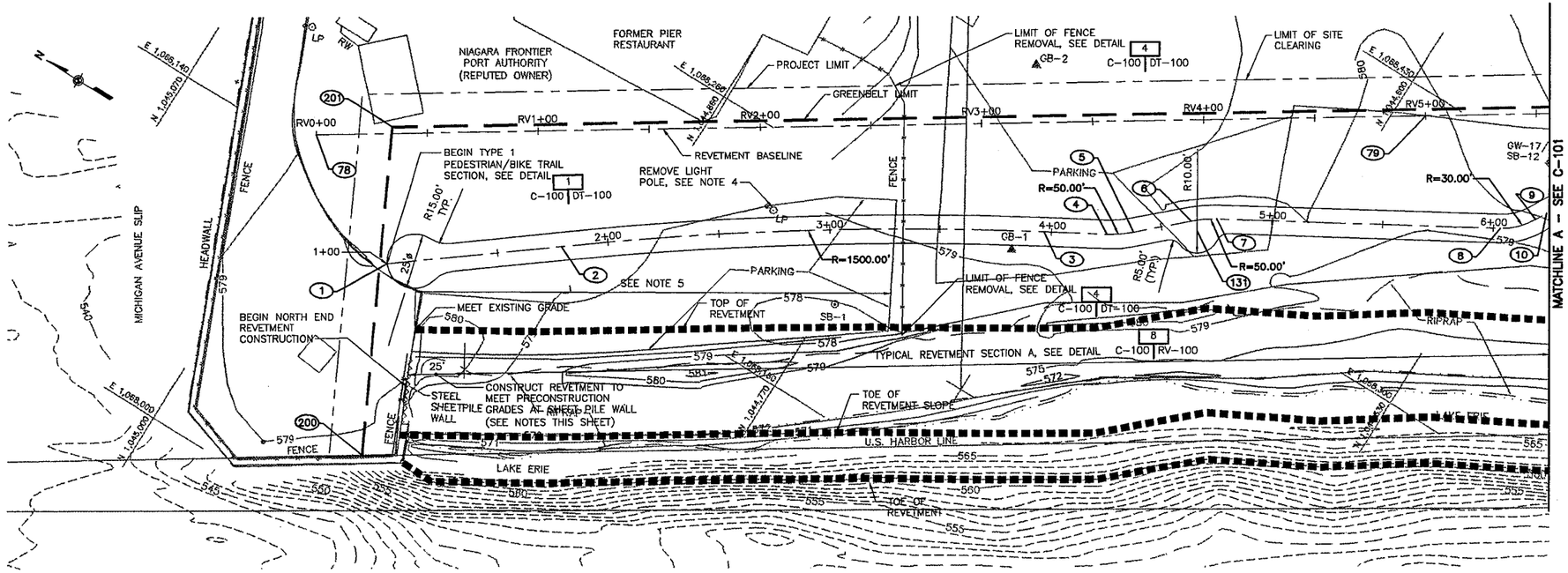
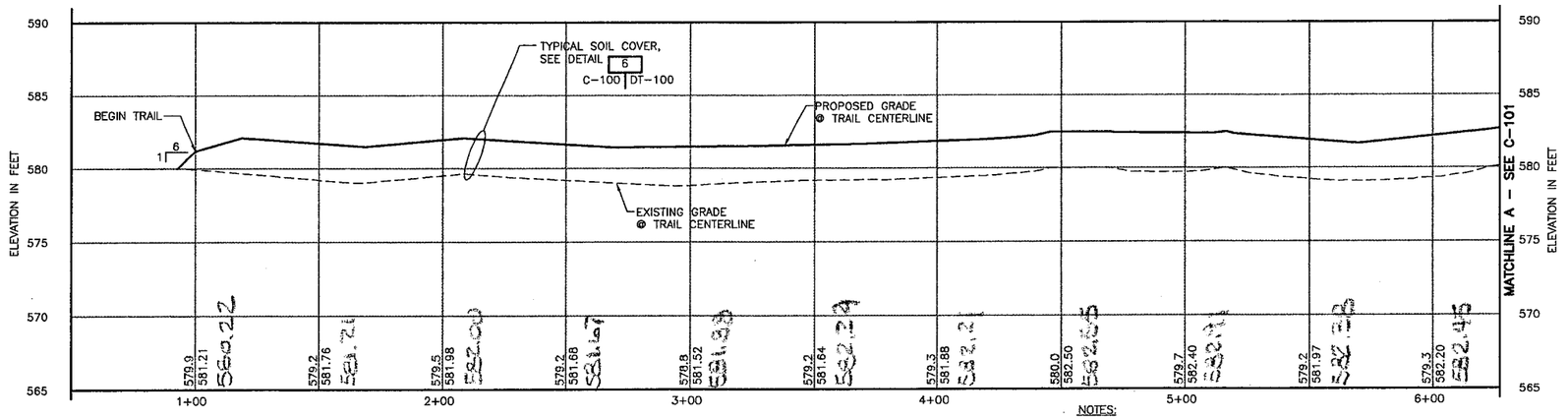


PLAN 1

30' 0 30'

SCALE: 1"= 30'



PROFILE 1

HORIZONTAL 30' 0 30' SCALE: 1"= 30'

VERTICAL 5' 0 5' SCALE: 1"= 5'

NOTES:

1. REVETMENT SHALL BE CONSTRUCTED TO RECREATE EXISTING ELEVATIONS AT STEEL SHEET PILE WALL. CONTRACTOR SHALL SURVEY GRADES AT SHEET PILE WALL PRIOR TO THE START OF DEMOLITION ACTIVITIES.
2. THE CONTRACTOR SHALL CONDUCT OPERATIONS TO PROTECT AGAINST UNDERMINING STEEL SHEET PILE WALL.
3. NO INFORMATION IS AVAILABLE REGARDING THE CONSTRUCTION OF STEEL SHEET PILE WALL.
4. LIGHT POLE SHALL BE REMOVED AND ELECTRICAL UTILITIES CAPPED UNDERGROUND. CONTRACTOR SHALL TURN OVER LIGHT POLE AND FIXTURE TO NFTA. THIS WORK SHALL BE INCIDENTAL TO EXCAVATION OF CONCRETE AND ASPHALT PAVEMENT REMOVAL UNDER ITEM 02225-3.
5. REMOVE CONCRETE OR ASPHALT AS NECESSARY TO CONSTRUCT ASPHALT TRAIL AND INSTALL LANDSCAPING. PAYMENT SHALL BE MADE UNDER ITEM 02225-3.

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Subconsultant:

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NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN AND PROFILE, (1 OF 10)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
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DRAWING FILE NAME: C-100.dwg		
DRAWING #	5 OF 32	

C-100.

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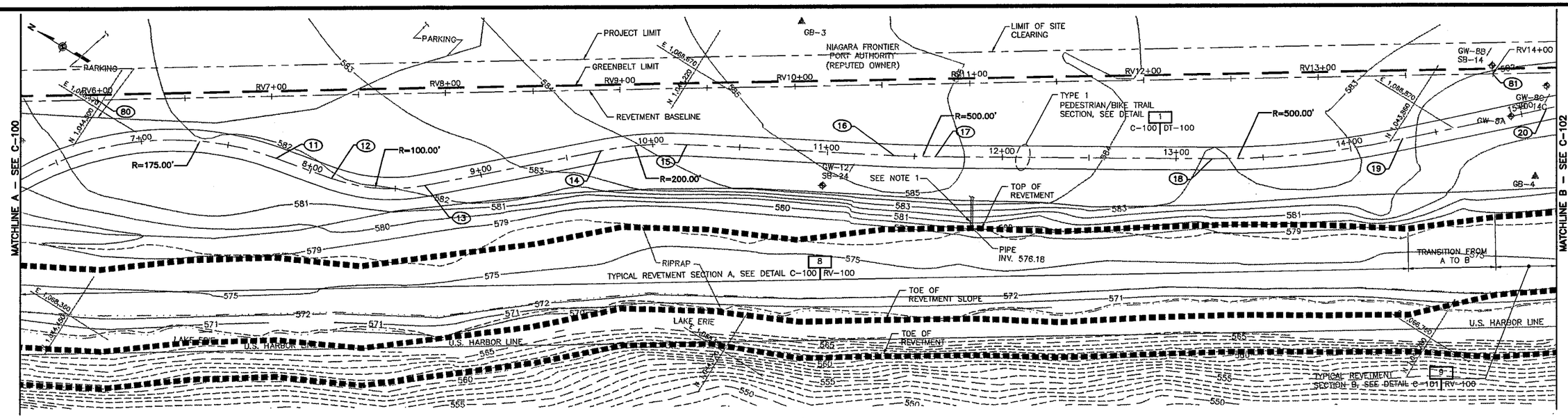
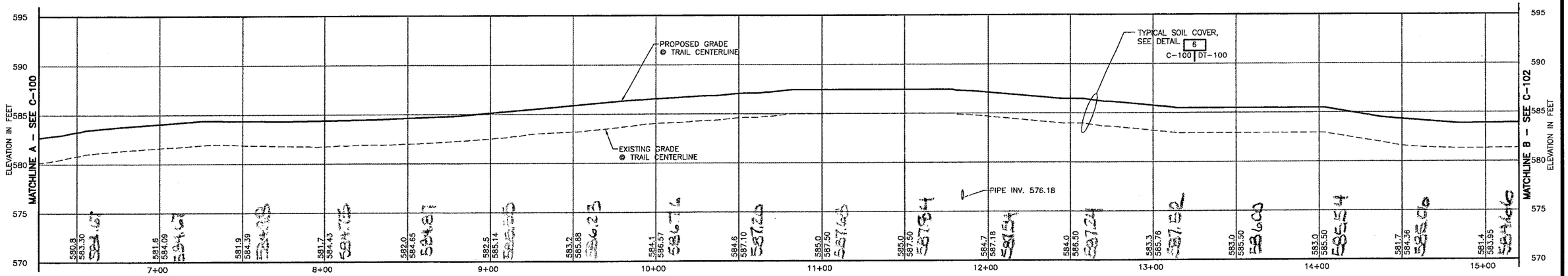


PLAN 2

30' 0 30'

SCALE: 1"= 30'



PROFILE 2

HORIZONTAL 30' 0 30' SCALE: 1"= 30'

VERTICAL 5' 0 5' SCALE: 1"= 5'

NOTES:

1. CONTRACTOR SHALL EXTEND OR CAP STORM DRAIN AT APPROXIMATE STATION RV11+00 A.O.B.E. EXTENSION OR CAPPING OF THIS PIPE WILL BE INCIDENTAL TO REVETMENT CONSTRUCTION. PIPE EXTENSION SHALL MATCH EXISTING MATERIAL.

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Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN AND PROFILE, (2 OF 10)

SCALE – AS NOTED		JUNE 2006
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DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
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DRAWING #	6 OF 32	

C-101

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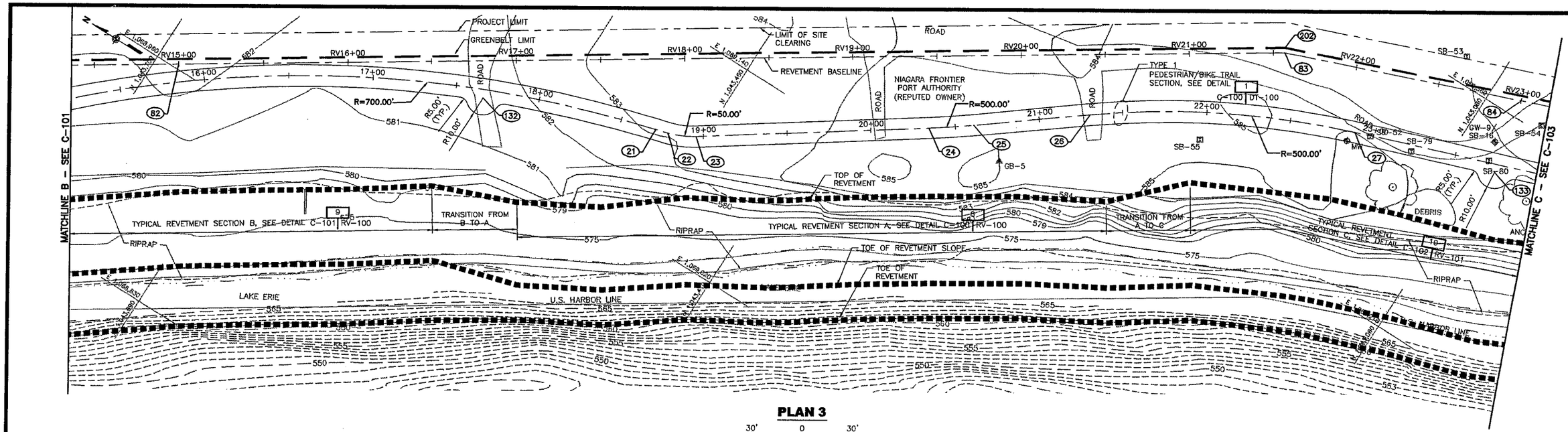
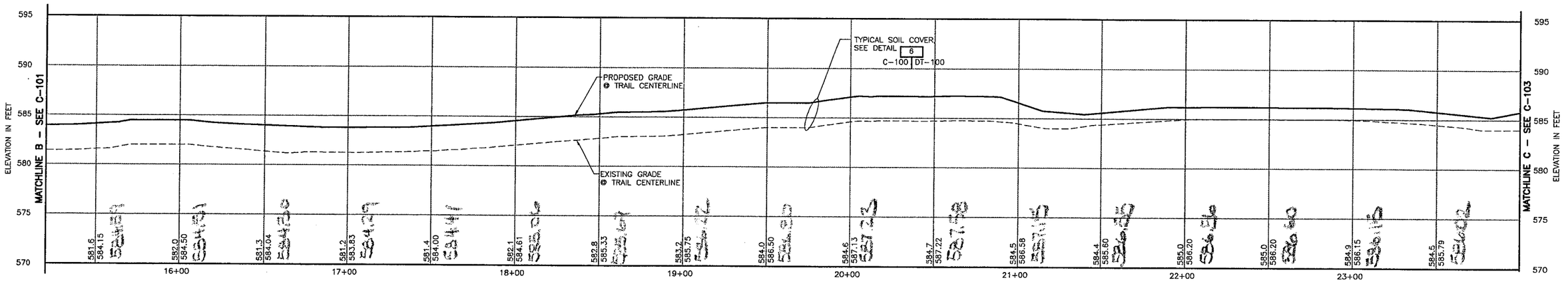


PLAN 3

30' 0 30'

SCALE: 1"= 30'



PROFILE 3

HORIZONTAL 30' 0 30' SCALE: 1"= 30'

VERTICAL 5' 0 5' SCALE: 1"= 5'

N:\11173936.00000\CAD\BID\ C-104.DWG 6/6/06-1 ELB

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STATE OF NEW YORK URS CORPORATION NEW YORK No. 065 LICENSED PROFESSIONAL ENGINEER

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Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PLO202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN AND PROFILE, (3 OF 10)

SCALE – AS NOTED		JUNE 2006
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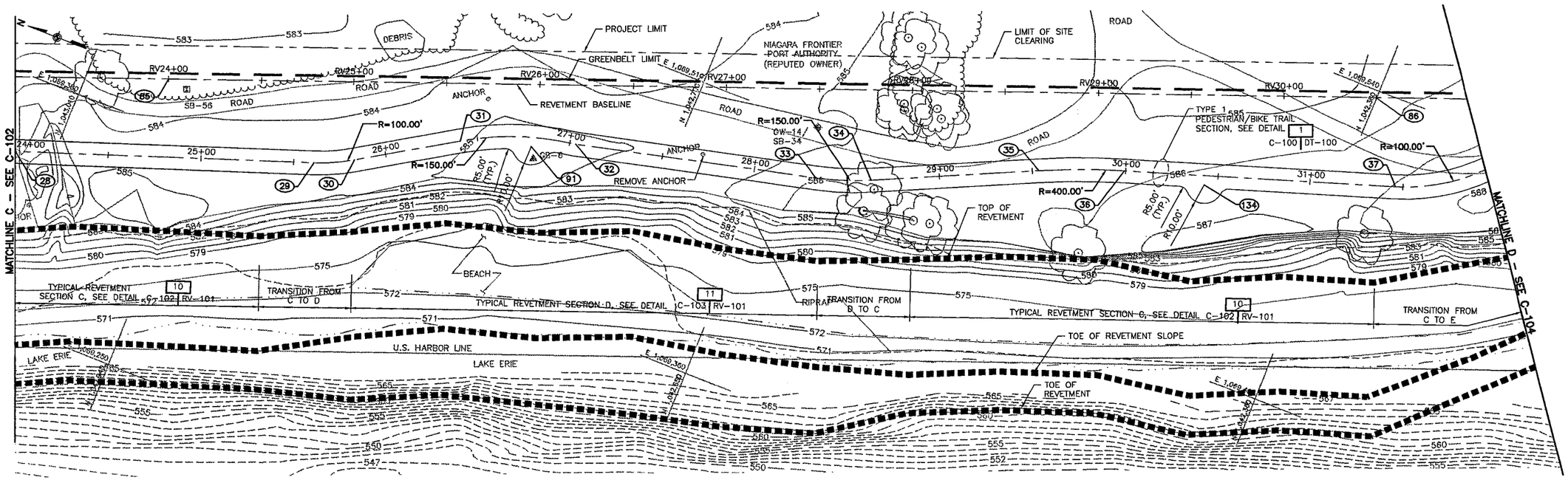
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: C-102.dwg		
DRAWING #	7 OF 32	

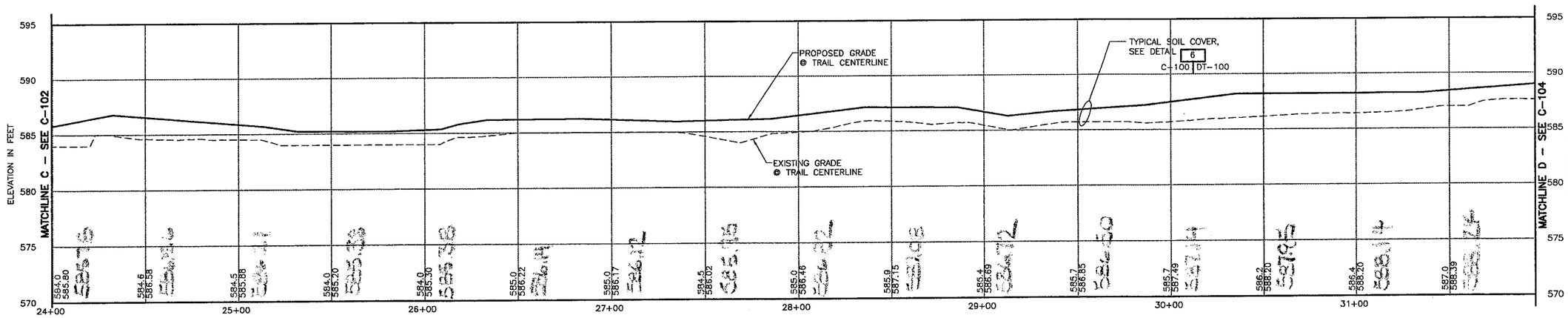
C-102



PLAN 4

30' 0 30'

SCALE: 1"= 30'



PROFILE 4

HORIZONTAL 30' 0 30' SCALE: 1"= 30'

VERTICAL 5' 0 5' SCALE: 1"= 5'

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Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

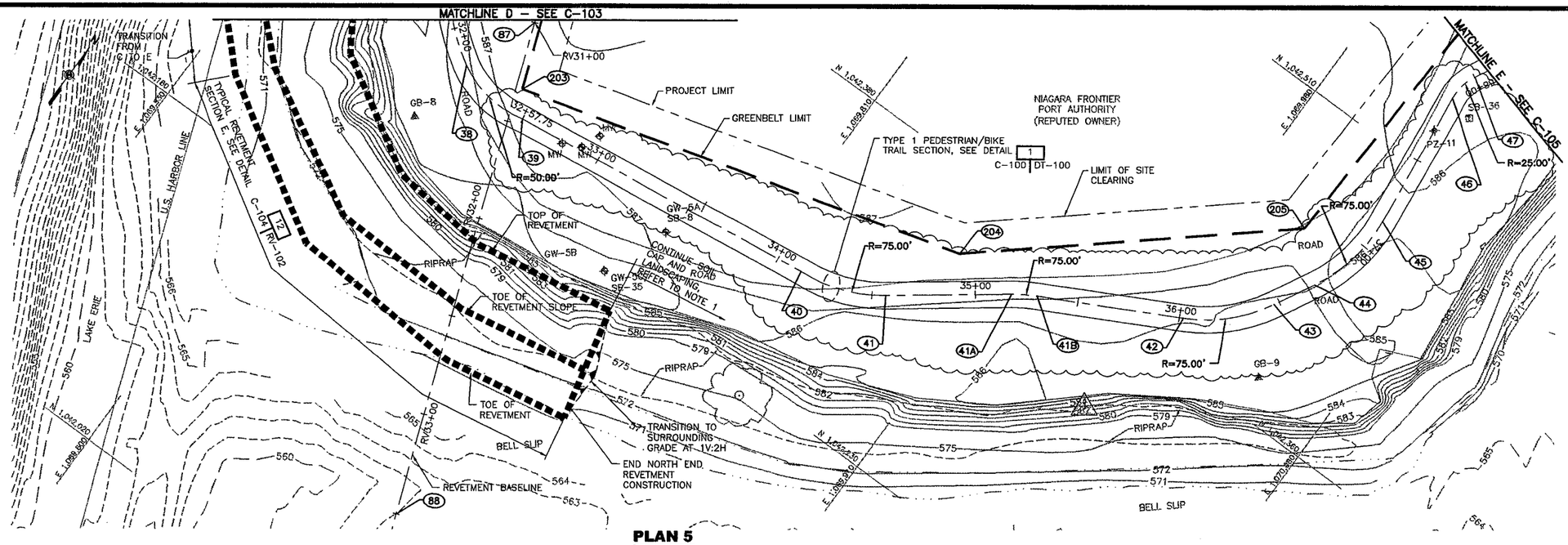
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN AND PROFILE, (4 OF 10)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: C-103.dwg		
DRAWING #	8 OF 32	

C-103

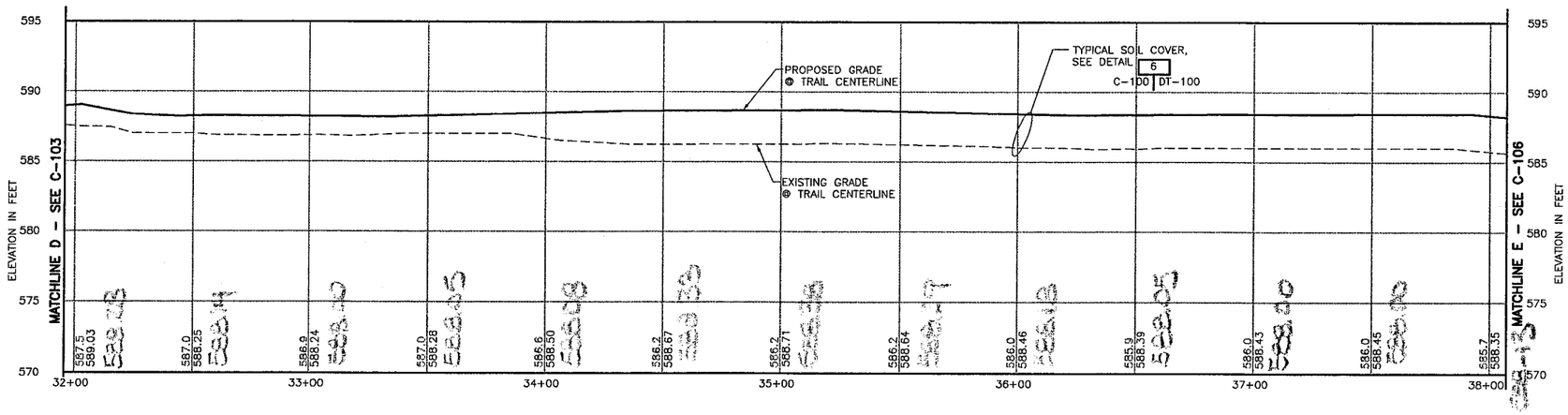
N:\11173936.00000\CAD\BID\ C-103.dwg 6/6/06-1 ELB



PLAN 5

30' 0 30'

SCALE: 1"= 30'



PROFILE 5

HORIZONTAL 30' 0 30'

SCALE: 1"= 30'

VERTICAL 5' 0 5'

SCALE: 1"= 5'

NOTES:

1. CONTRACTOR SHALL CONSTRUCT VEGETATED GREENBELT AND ASPHALT TRAIL FROM PROPOSED LIMIT OF SITE CLEARING TO THE TOP BANK ONLY, BEGINNING AT THIS POINT AND CONTINUING TO THE POINT SOUTH ALONG TRAIL WHERE REVETMENT CONSTRUCTION RESUMES. SOIL CAP SHALL CONTINUE TO ELEVATION 571.00. REFER TO TYPICAL BELL SLIP SECTION ON DRAWING RV-103.

STATE OF NEW YORK URS CORPORATION NEW YORK No. 065 LICENSED PROFESSIONAL ENGINEER

Consultant:
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Subconsultant:

Niagara Frontier Transportation Authority
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NO.	REVISION	BY	DATE
1	TRAIL REALIGNMENT	MCD	3/07

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN AND PROFILE, (5 OF 10)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006

DRAWING FILE NAME: C-104.dwg

DRAWING # 9 OF 32

C-104

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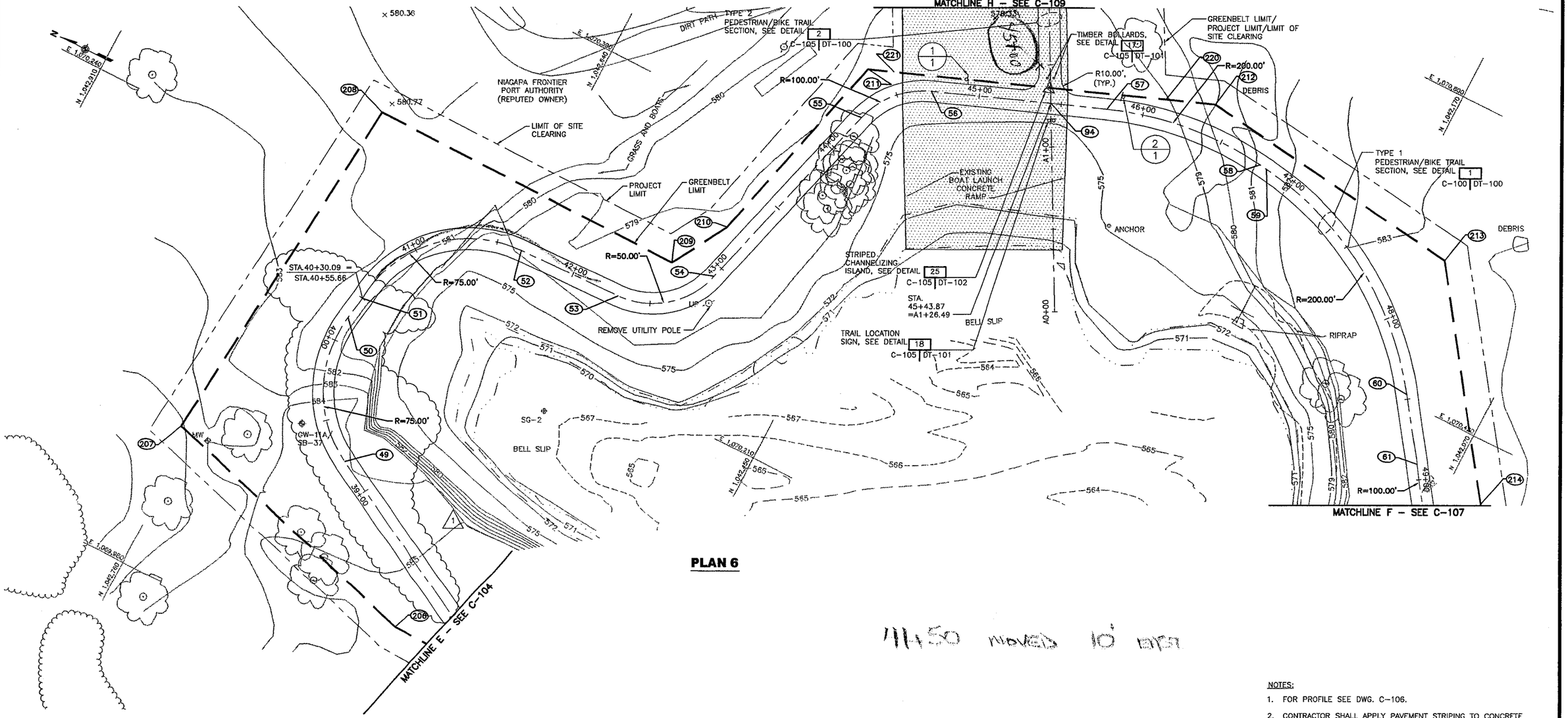

PLAN 6

11+50 moved 10' east

NOTES:

1. FOR PROFILE SEE DWG. C-106.
2. CONTRACTOR SHALL APPLY PAVEMENT STRIPING TO CONCRETE BETWEEN BOAT LAUNCH REMOVAL PART AND EAST END OF CONCRETE PAVEMENT.
3. CONTRACTOR SHALL REMOVE CONCRETE RAMP TO THE LESSER OF 10' WEST OF ELEVATION 571.00 OR THE WEST END OF THE RAMP. LIMITS OF REMOVAL ARE SHADED ⁙ .

30' 0 30'
SCALE: 1"= 30'

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE
1	REVISED ALIGNMENT	MCD	3/07

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN, (6 OF 10)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: C-105.dwg		
DRAWING #	10 OF 32	

C-105

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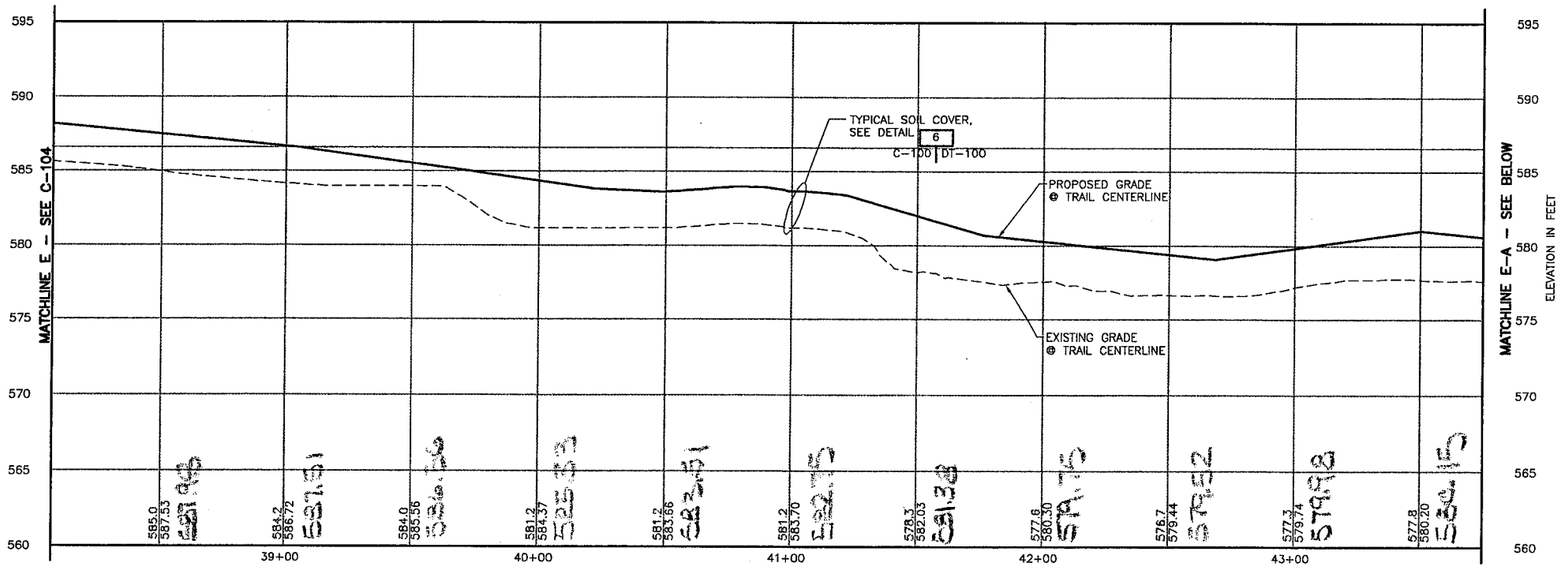
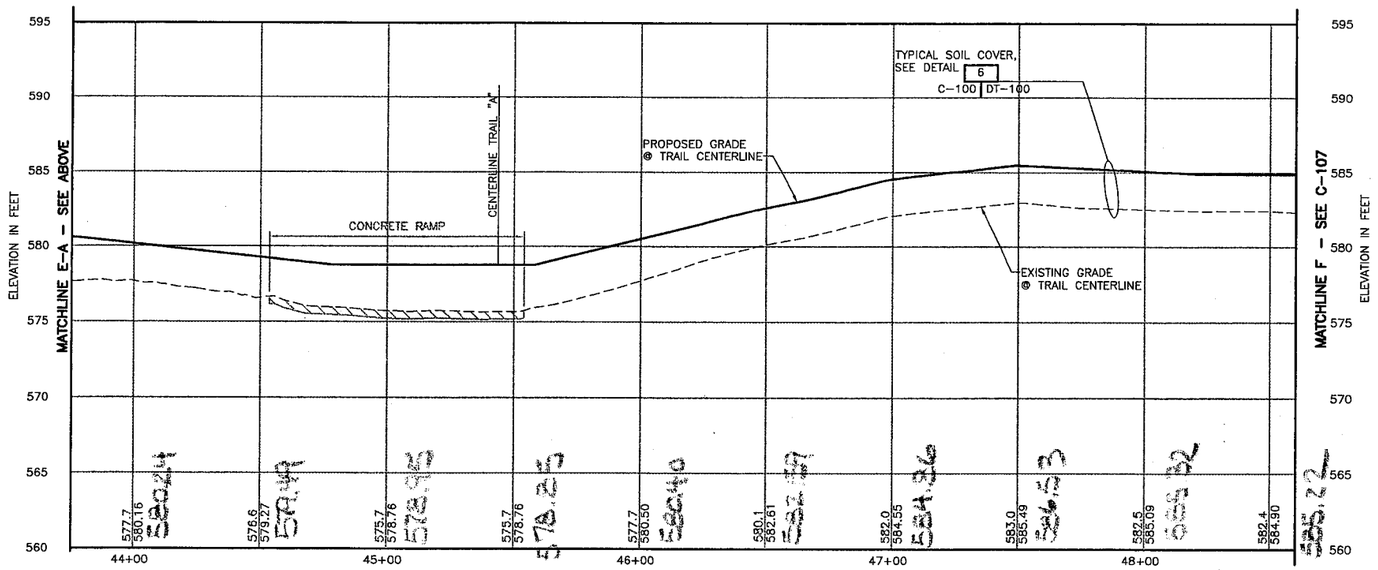


PROFILE 6



PROFILE 6

NOTES:

1. FOR PLAN SEE DWG. C-105.

HORIZONTAL 30' 0 30' SCALE: 1"= 30'

VERTICAL 5' 0 5' SCALE: 1"= 5'

N:\11173936.00000\CAD\BID REV2\ C-106.dwg 7/13/06-1 ELB

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STATE OF NEW YORK CORPORATION NEW YORK URS No. 095 LICENSED PROFESSIONAL ENGINEER

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

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1	TRAIL REALIGNMENT	MCD	7/07

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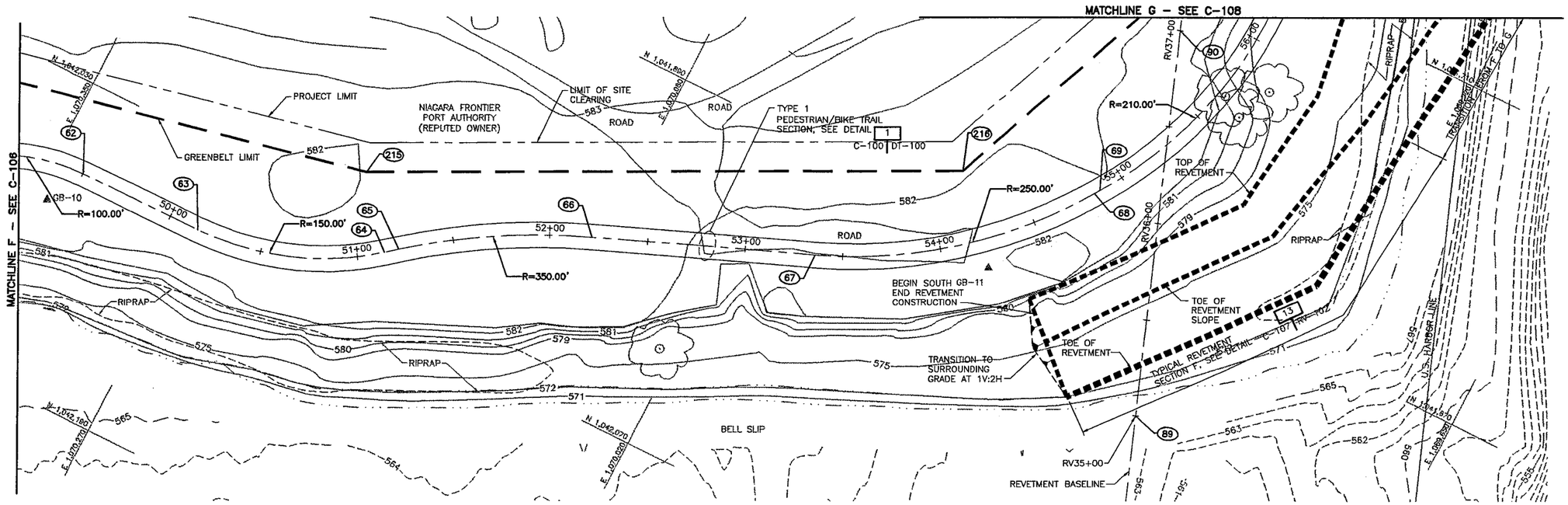
NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PROFILE, (7 OF 10)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: C-106.dwg		
DRAWING #	11 OF 32	

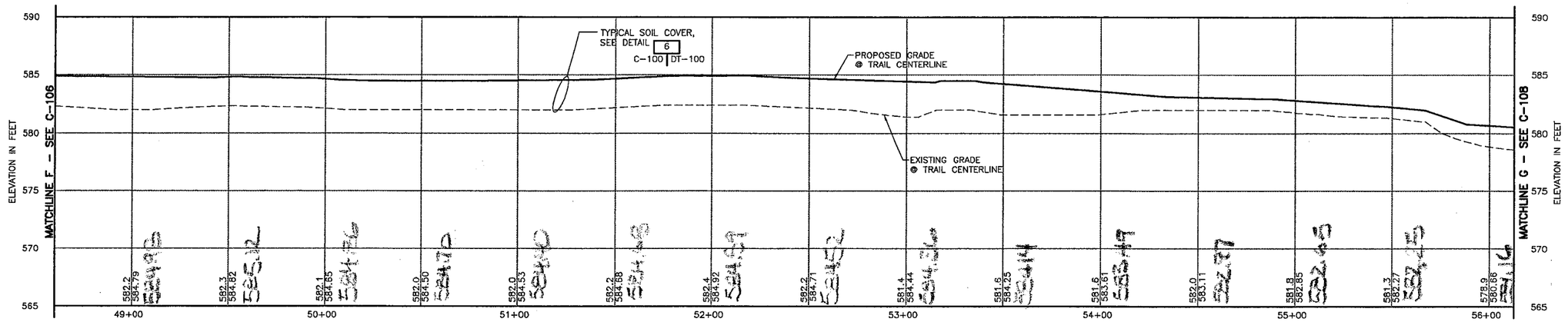
C-106



PLAN 7

30' 0 30'

SCALE: 1"= 30'



PROFILE 7

HORIZONTAL 30' 0 30' SCALE: 1"= 30'

VERTICAL 5' 0 5' SCALE: 1"= 5'

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N:\11173936.00000\CAD\D\ C-107.dwg 6/6/06-1 ELB

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Subconsultant:

NO.	REVISION	BY	DATE

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Serving the Niagara Region

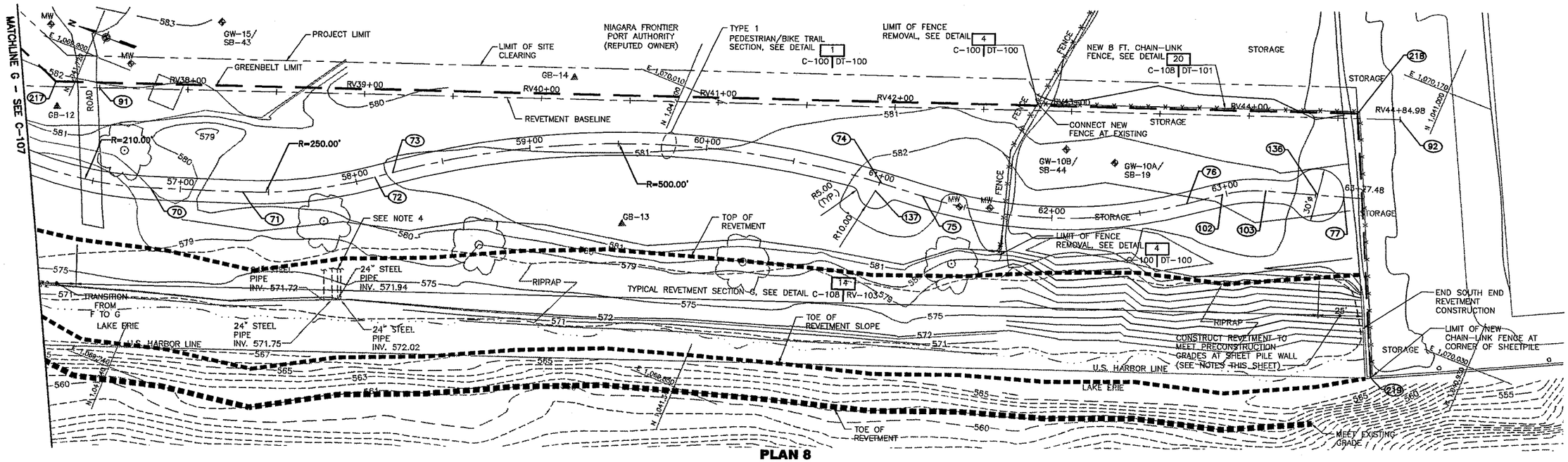
NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN AND PROFILE, (8 OF 10)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: C-107.dwg		
DRAWING #	12 OF 32	

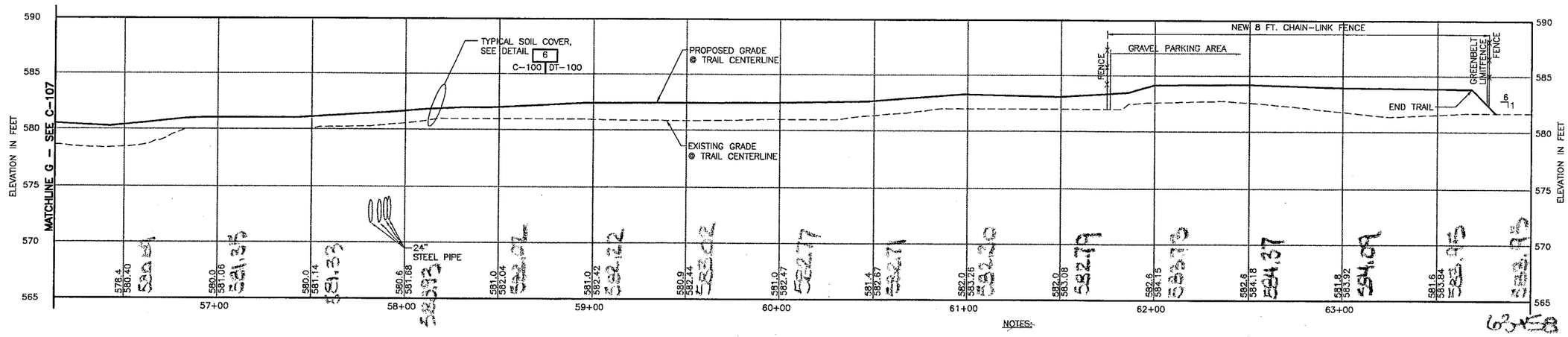
C-107



PLAN 8

30' 0 30'

SCALE: 1"= 30'



PROFILE 8

HORIZONTAL 30' 0 30' SCALE: 1"= 30'

VERTICAL 5' 0 5' SCALE: 1"= 5'

NOTES:

1. REVETMENT SHALL BE CONSTRUCTED TO RECREATE EXISTING ELEVATIONS AT STEEL SHEET PILE WALL. CONTRACTOR SHALL SURVEY GRADES AT SHEET PILE WALL PRIOR TO THE START OF DEMOLITION ACTIVITIES.
2. THE CONTRACTOR SHALL CONDUCT OPERATIONS TO PROTECT AGAINST UNDERMINING STEEL SHEET PILE WALL.
3. NO INFORMATION IS AVAILABLE REGARDING CONSTRUCTION OF STEEL SHEET PILE WALL.
4. CONTRACTOR SHALL EXTEND OR CAP STORM DRAINS LOCATED AT APPROXIMATE STATION RV38+75 AS ORDERED BY ENGINEER. EXTENSION OR CAPPING OF THESE PIPES WILL BE INCIDENTAL TO REVETMENT CONSTRUCTION. PIPE EXTENSIONS WILL MATCH EXISTING MATERIAL.

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

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Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN AND PROFILE, (9 OF 10)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: C-108.dwg		
DRAWING #	13 OF 32	

C-108

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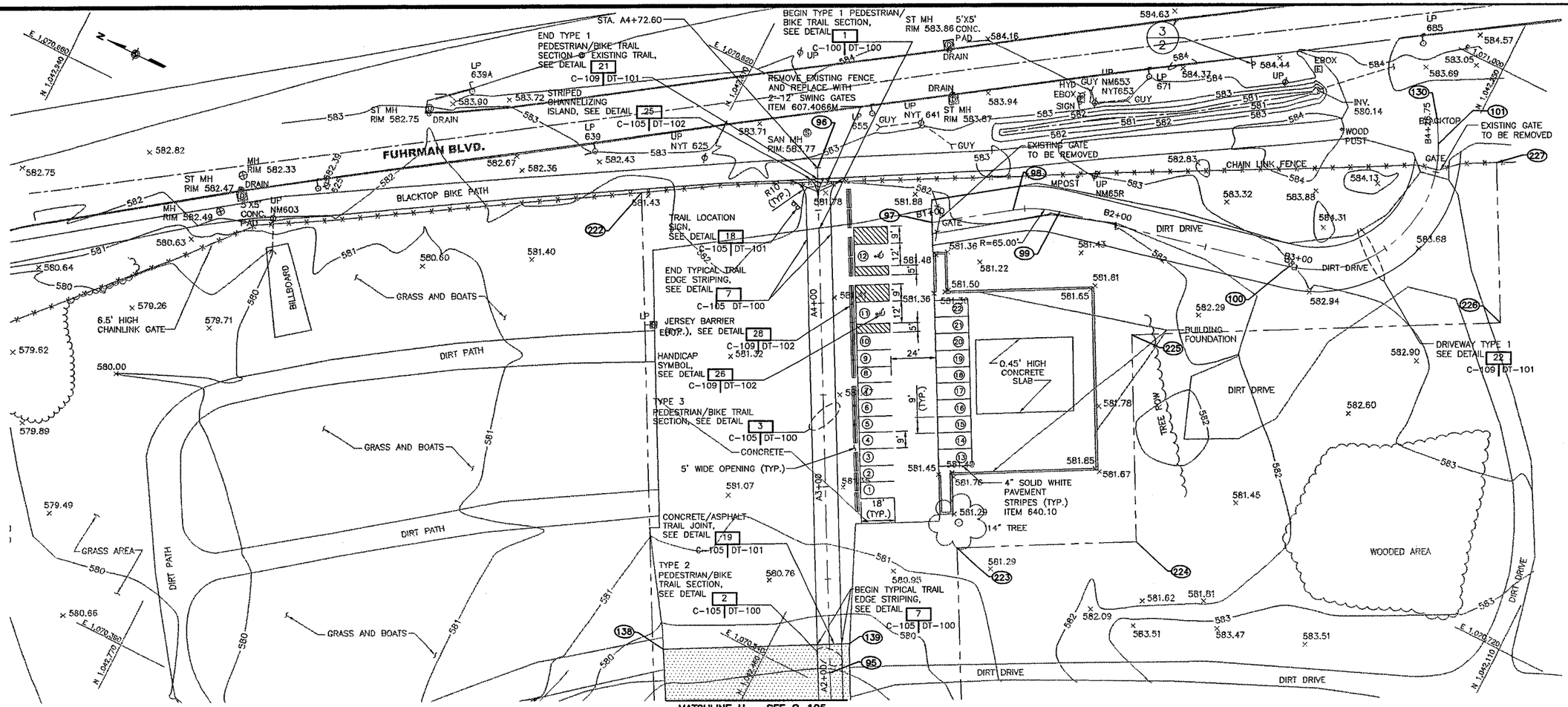

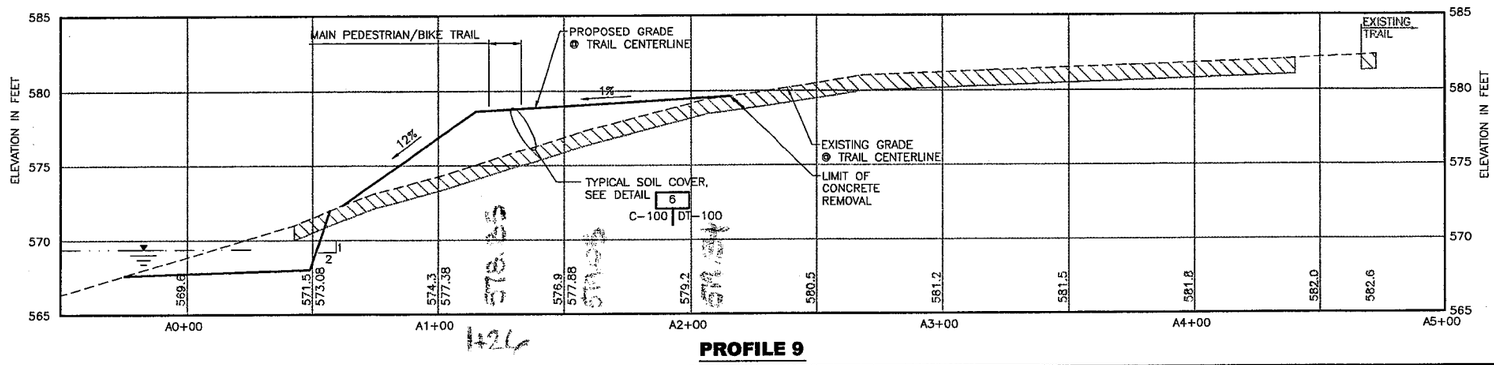

PLAN 9

SCALE: 1"= 30'

PROFILE 9

HORIZONTAL SCALE: 1"= 30'

VERTICAL SCALE: 1"= 5'

NOTES:

1. CONTRACTOR SHALL REMOVE CONCRETE RAMP TO THE LESSER OF 10' WEST OF ELEVATION 571.00 OR THE WEST END OF THE RAMP. LIMITS OF REMOVAL ARE SHADED [▨].

WARNING:
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URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
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NFTA PROJECT NO. 12PL0202

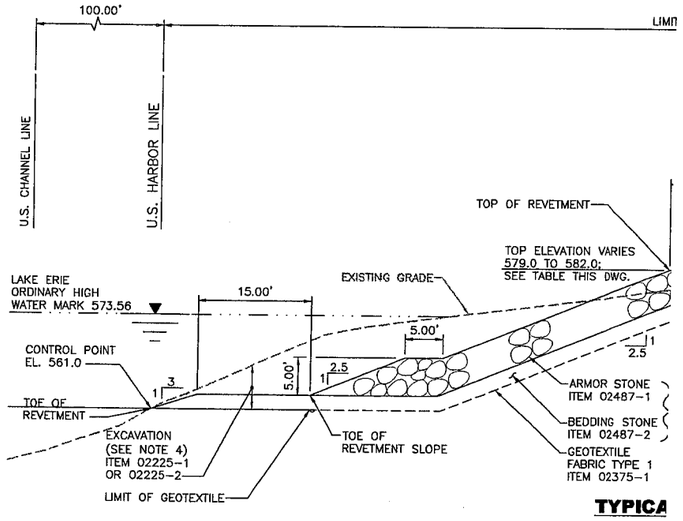
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

PLAN AND PROFILE, (10 OF 10)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: C-108.dwg		
DRAWING #	14 OF 32	

C-109

N:\11173936.00000\CAD\BID\ C-109.dwg 6/6/06-2 ELB



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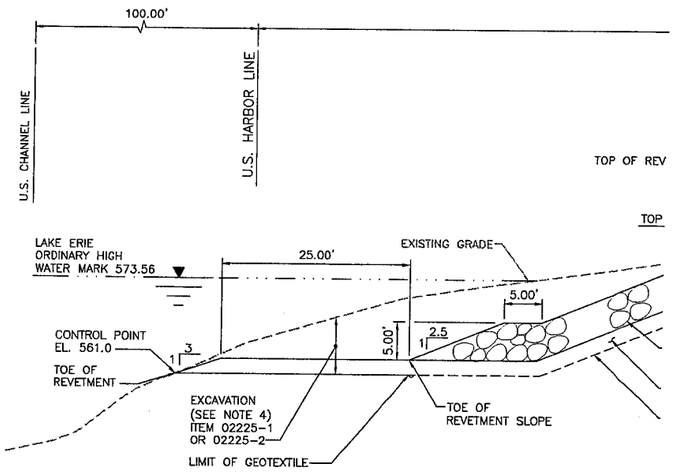

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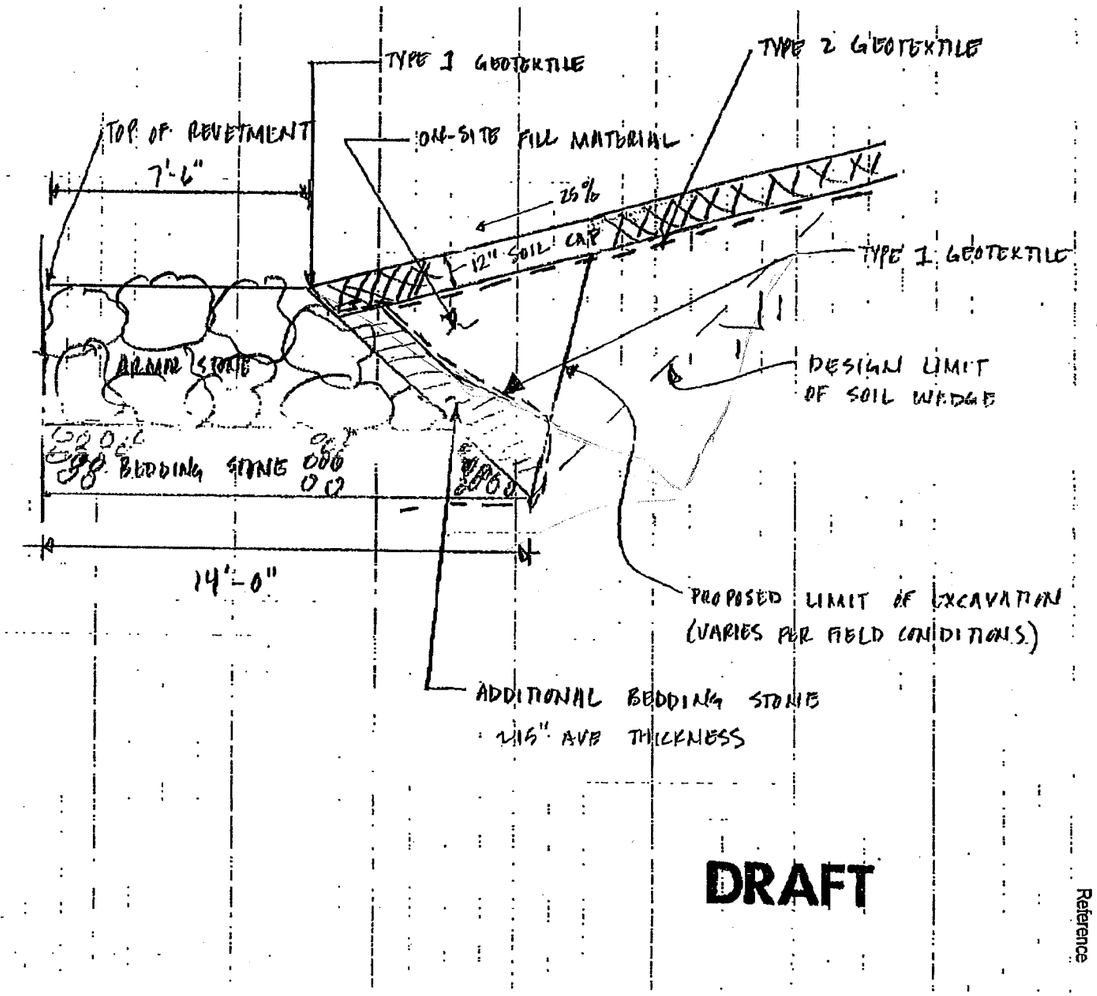

DRAFT

4. EXCAVATED MATERIAL ABOVE ELEVATION 573.56 SHALL BE PLACED ON-SITE BETWEEN THE TOP OF REVETMENT AND PROJECT LIMITS. EXCAVATED MATERIAL BELOW ELEVATION 573.56 SHALL BE DISPOSED OF AT THE US ARMY CORPS OF ENGINEERS DISPOSAL FACILITY.

Feb-14-07 16:05 From-urs corp buffalo

URS

Job Greenbelt — Project No. 11173936

Description Revetment Cross-Section for Additional Bedding Stone — Computed by MCD — Date 2/14/07

Checked by — Date —

Reference

Page — of —

Sheet 1 of 1

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STATE OF NEW YORK * URS CORPORATION NEW YORK * No. 065 * LICENSED PROFESSIONAL ENGINEER

Consultant:
URS Corporation - New York
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(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

SHORELINE REVETMENT DETAILS (1 OF 4)

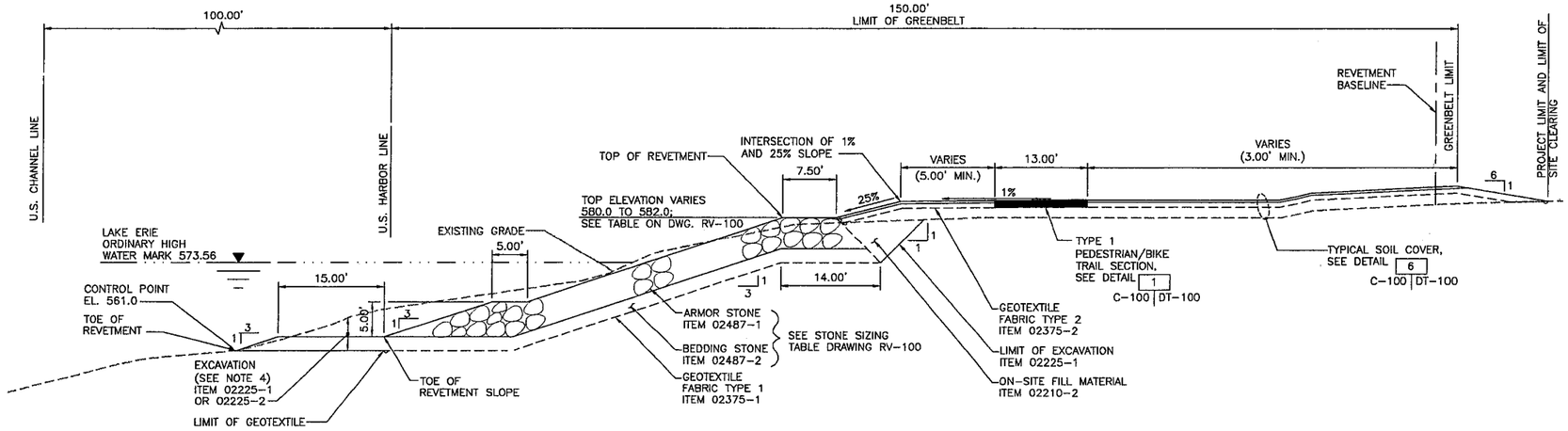
SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006

DRAWING FILE NAME: RV-100.DWG

DRAWING # 15 OF 32

RV-100

N:\11173936.00000\CAD\BID\ RV-100.dwg 6/6/06-1 ELB

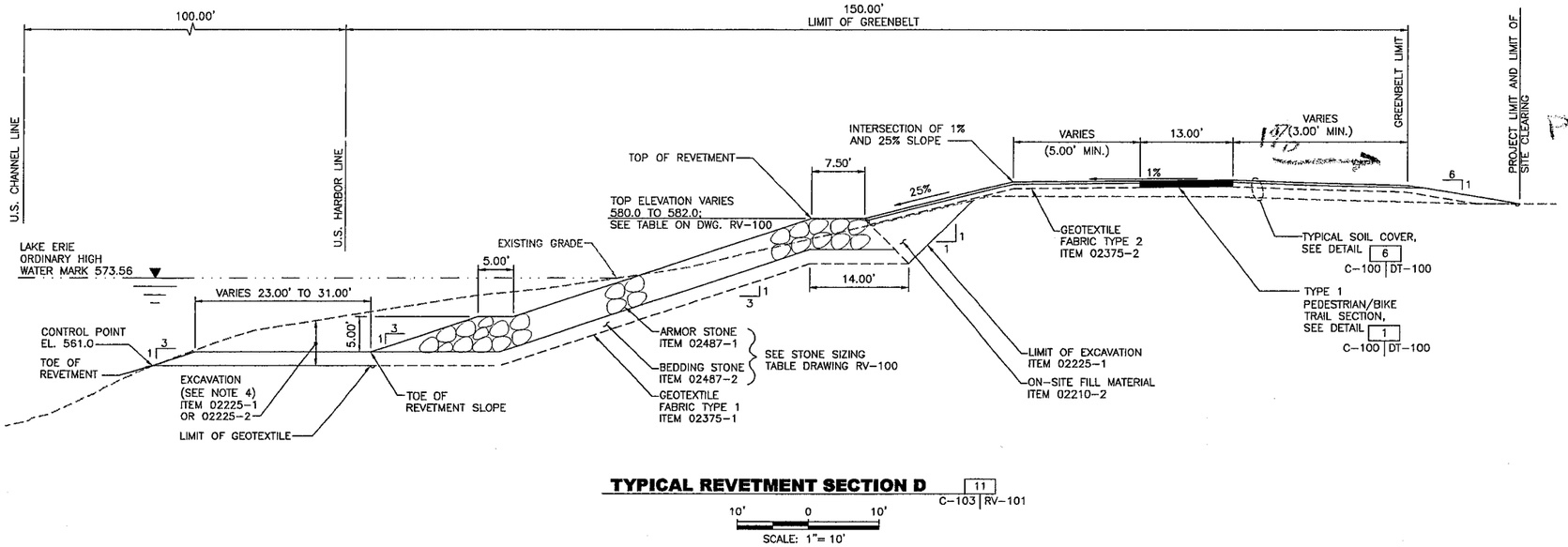


TYPICAL REVETMENT SECTION C

10 | C-102 | RV-101

10' 0 10'

SCALE: 1"= 10'



TYPICAL REVETMENT SECTION D

11 | C-103 | RV-101

10' 0 10'

SCALE: 1"= 10'

Per M.DP 9-01-11

NOTES:

1. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. STONE SIZING TABLE IS DEVELOPED FOR STONE WITH A SPECIFIC GRAVITY OF 2.55 TO 2.64. FOR STONE OUTSIDE OF THAT RANGE, SEE SPECIFICATIONS. REFER TO DRAWING RV-100 FOR THE STONE SIZING TABLE.
3. REFER TO DRAWING RV-100 FOR THE REVETMENT LAYOUT TABLE.
4. TOP LIMITS FOR EXCAVATION PAYMENT SHALL BE DETERMINED BY THE ENGINEER AFTER REMOVAL OF SHORELINE RUBBLE. CONTRACTOR SHALL SURVEY TOP LIMITS PRIOR TO THE START OF EXCAVATION. THIS SURVEY SHALL BE PAID FOR UNDER ITEM 01151-1, SURVEY AND STAKEOUT. PAYMENT FOR REMOVAL OF SHORELINE RUBBLE SHALL BE MADE UNDER ITEM 02050-1.
5. EXCAVATED MATERIAL ABOVE ELEVATION 573.56 SHALL BE PLACED ON-SITE BETWEEN THE TOP OF REVETMENT AND PROJECT LIMITS. EXCAVATED MATERIAL BELOW ELEVATION 573.56 SHALL BE DISPOSED OF AT THE US ARMY CORPS OF ENGINEERS DISPOSAL FACILITY.

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

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NFTA PROJECT NO. 12PL0202

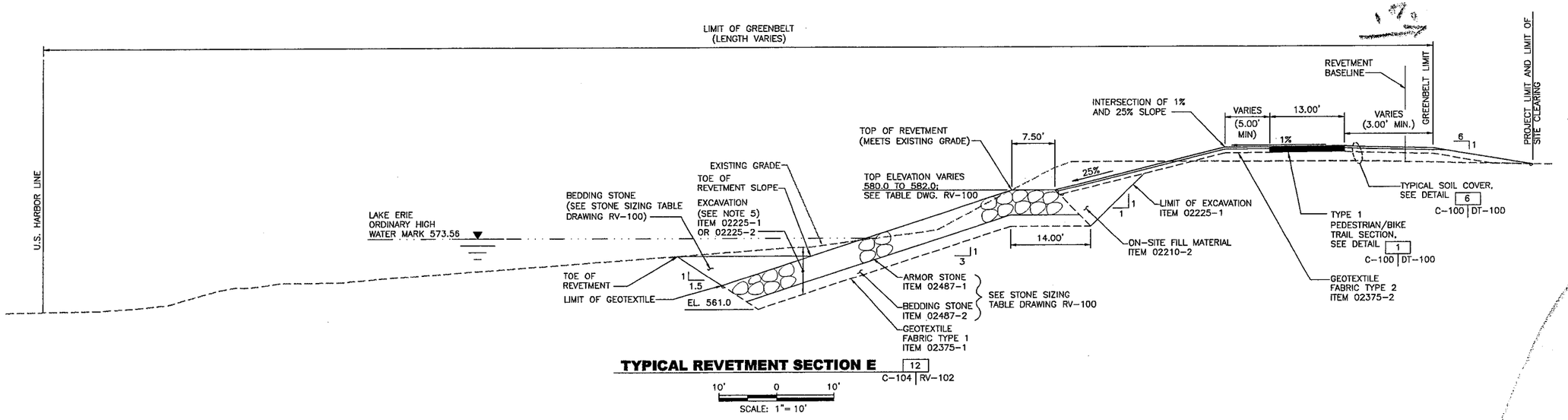
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

SHORELINE REVETMENT DETAILS (2 OF 4)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: RV-101.DWG		
DRAWING #	16 OF 32	

RV-101

N:\11173936.00000\CAD\BID\ RV-101.dwg 6/6/06-1 ELB



TYPICAL REVETMENT SECTION E 12 C-104 | RV-102

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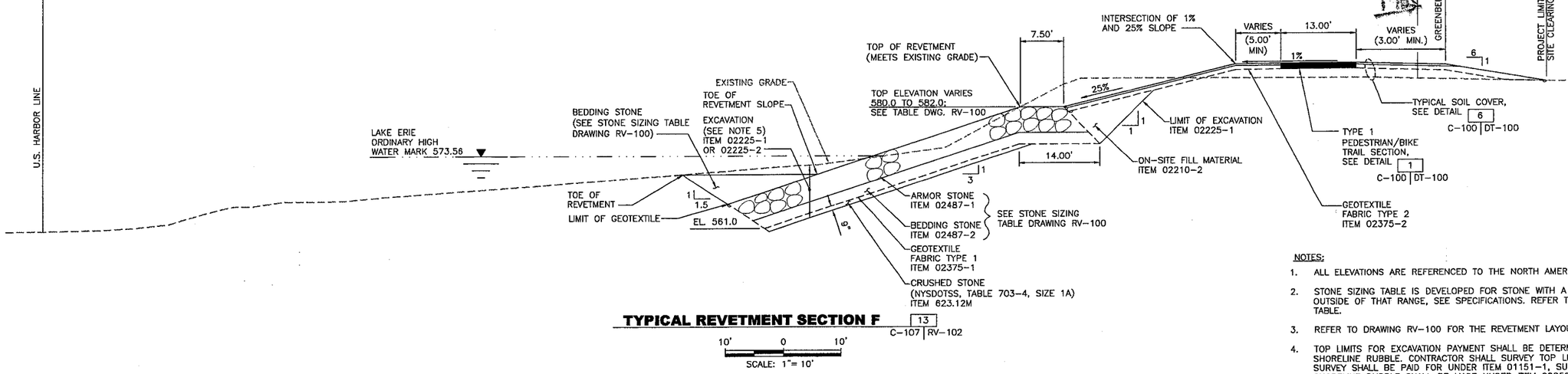
SCALE: 1"= 10'



TYPICAL REVETMENT SECTION F 13 C-107 | RV-102

10' 0 10'

SCALE: 1"= 10'

NOTES:

1. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. STONE SIZING TABLE IS DEVELOPED FOR STONE WITH A SPECIFIC GRAVITY OF 2.55 TO 2.64. FOR STONE OUTSIDE OF THAT RANGE, SEE SPECIFICATIONS. REFER TO DRAWING RV-100 FOR THE STONE SIZING TABLE.
3. REFER TO DRAWING RV-100 FOR THE REVETMENT LAYOUT TABLE.
4. TOP LIMITS FOR EXCAVATION PAYMENT SHALL BE DETERMINED BY THE ENGINEER AFTER REMOVAL OF SHORELINE RUBBLE. CONTRACTOR SHALL SURVEY TOP LIMITS PRIOR TO THE START OF EXCAVATION. THIS SURVEY SHALL BE PAID FOR UNDER ITEM 01151-1, SURVEY AND STAKEOUT. PAYMENT FOR REMOVAL OF SHORELINE RUBBLE SHALL BE MADE UNDER ITEM 02050-1.
5. EXCAVATED MATERIAL ABOVE ELEVATION 573.56 SHALL BE PLACED ON-SITE BETWEEN THE TOP OF REVETMENT AND PROJECT LIMITS. EXCAVATED MATERIAL BELOW ELEVATION 573.56 SHALL BE DISPOSED OF AT THE US ARMY CORP OF ENGINEERS DISPOSAL FACILITY.

Consultant:
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Subconsultant:

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NFTA PROJECT NO. 12PL0202

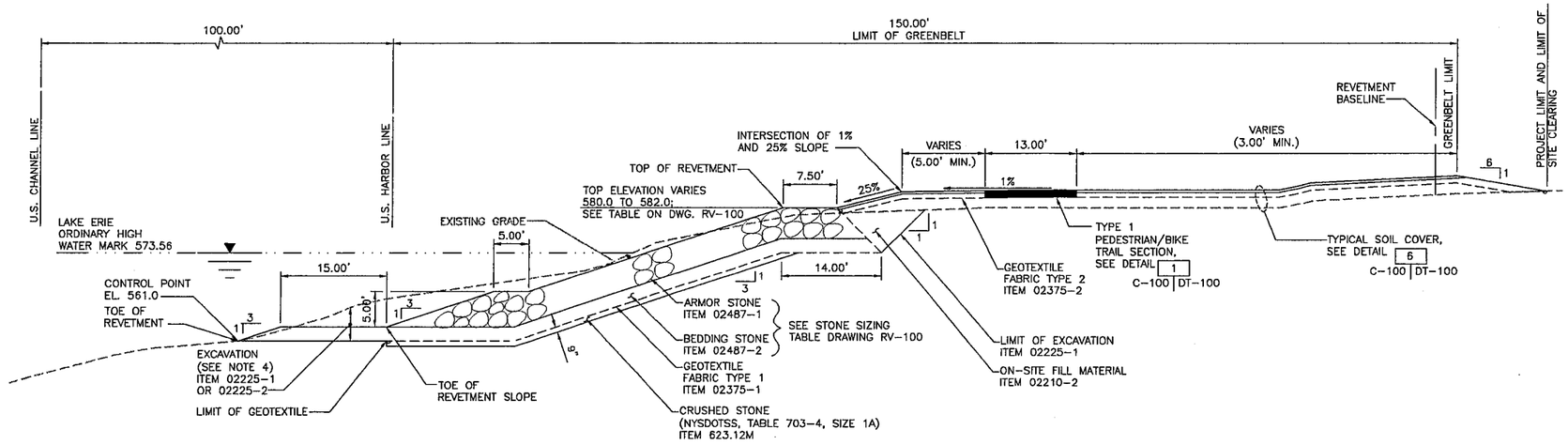
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

SHORELINE REVETMENT DETAILS (3 OF 4)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: RV-102.DWG		
DRAWING #	17 OF 32	

RV-102

N:\11173936.00000\CAD\BID\ RV-102.dwg 6/6/06-2 ELB

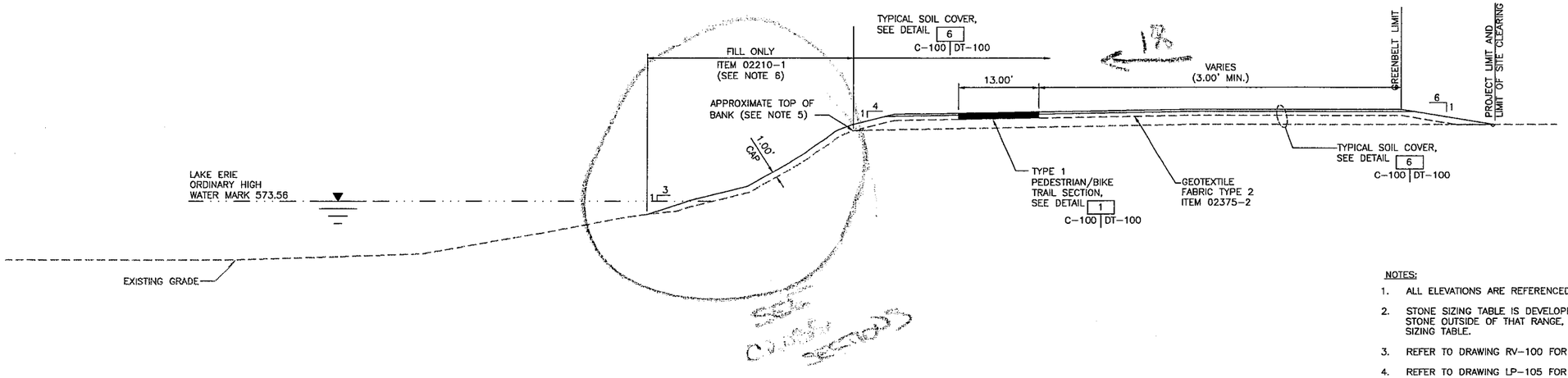


TYPICAL REVETMENT SECTION G 14

C-108 | RV-103

10' 0 10'

SCALE: 1"= 10'



TYPICAL BELL SLIP SECTION

10' 0 10'

SCALE: 1"= 10'

NOTES:

1. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
2. STONE SIZING TABLE IS DEVELOPED FOR STONE WITH A SPECIFIC GRAVITY OF 2.55 TO 2.64. FOR STONE OUTSIDE OF THAT RANGE, SEE SPECIFICATIONS. REFER TO DRAWING RV-100 FOR THE STONE SIZING TABLE.
3. REFER TO DRAWING RV-100 FOR THE REVETMENT LAYOUT TABLE.
4. REFER TO DRAWING LP-105 FOR BELL SLIP GRADING.
5. FINAL LIMIT OF TYPICAL SOIL COVER/TOP OF BANK WILL BE DETERMINED IN THE FIELD.
6. CAP FILL PLACED ON THE SHORELINE SHALL BE PLACED ONLY AFTER REMOVAL OF SHORELINE RUBBLE. PRIOR TO PLACEMENT, ENGINEER SHALL INSPECT SHORELINE TO MAKE CERTAIN REMOVAL OF THE RUBBLE HAS BEEN COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. TOP LIMITS FOR EXCAVATION PAYMENT SHALL BE DETERMINED BY THE ENGINEER AFTER REMOVAL OF SHORELINE RUBBLE. CONTRACTOR SHALL SURVEY TOP LIMITS PRIOR TO THE START OF EXCAVATION. THIS SURVEY SHALL BE PAID FOR UNDER ITEM 01151-1, SURVEY AND STAKEOUT. PAYMENT FOR REMOVAL OF SHORELINE RUBBLE SHALL BE MADE UNDER ITEM 02050-1.
8. EXCAVATED MATERIAL ABOVE ELEVATION 573.56 SHALL BE PLACED ON-SITE BETWEEN THE TOP OF REVETMENT AND PROJECT LIMITS. EXCAVATED MATERIAL BELOW ELEVATION 573.56 SHALL BE DISPOSED OF AT THE US ARMY CORP OF ENGINEERS DISPOSAL FACILITY.

Consultant:
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77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

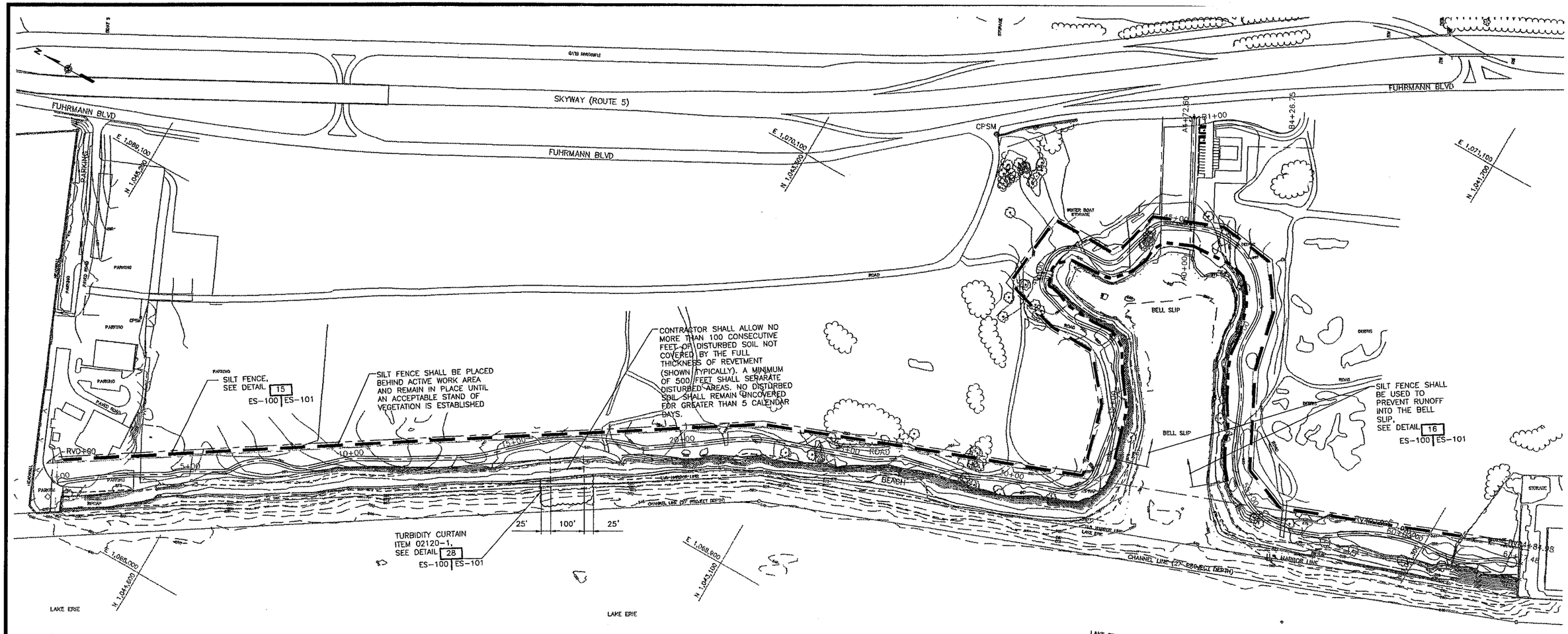
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

SHORELINE REVETMENT DETAILS (4 OF 4)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: RV-103.DWG		
DRAWING #	18 OF 32	

RV-103

N:\11173936.00000\CAD\BID\ RV-103.dwg 6/6/06-2 ELB



N:\11173936.00000\CAD\BID\ ES-100.dwg 6/6/06-2 ELB

WARNING:
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON OTHER THAN WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

STATE OF NEW YORK — URS CORPORATION NEW YORK — No. 065 — LICENSED PROFESSIONAL ENGINEERS

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JOB NO. 11173936.00000

Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

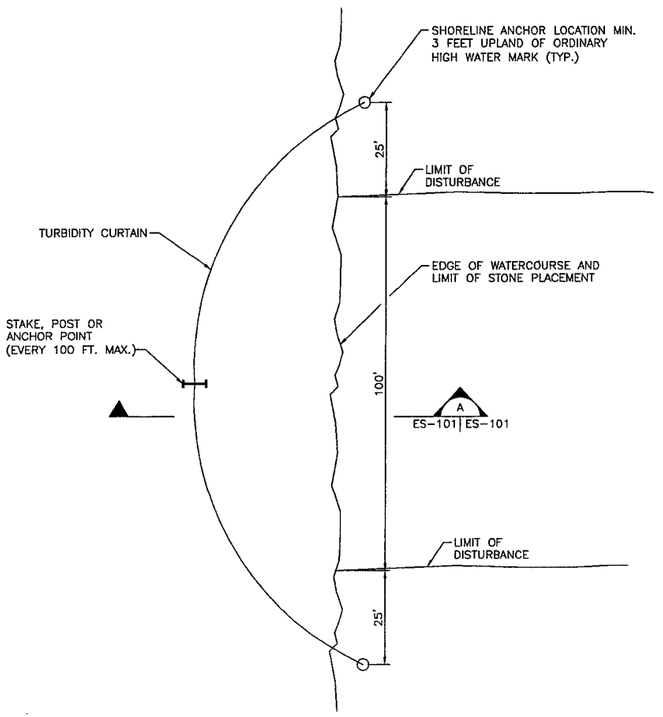
EROSION AND SEDIMENT CONTROL, (1 OF 2)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	RW	JUNE 2006
DRAWN BY	ELB	JUNE 2006
CHECKED BY	JCW	JUNE 2006
DRAWING FILE NAME: ES-100.DWG		
DRAWING #	22 OF 32	

ES-100

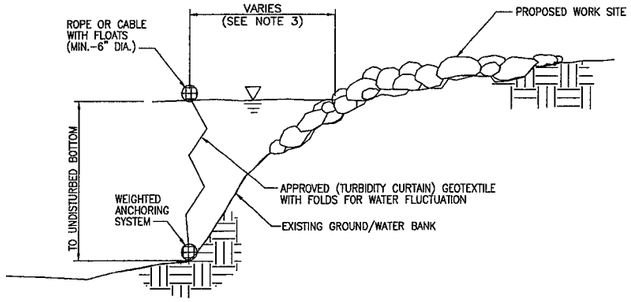
GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT AN EROSION AND SEDIMENT (E & S) CONTROL PLAN FOR APPROVAL BY THE ENGINEER. THE E & S CONTROL PLAN SHALL INCLUDE, AT A MINIMUM, THE MEASURES SHOWN IN THIS DRAWING SET. CONTRACTOR SHALL NOT COMMENCE WORK PRIOR TO APPROVAL OF THE E & S CONTROL PLAN.
2. THE CONTRACTOR SHALL NOT PERFORM CONSTRUCTION ACTIVITIES PRIOR TO INSPECTION AND APPROVAL OF THE PERIMETER E & S CONTROLS BY THE ENGINEER.
3. ALL E & S CONTROL PRACTICES SHALL COMPLY WITH THE NEW YORK GUIDELINES FOR URBAN E & S CONTROL (LATEST VERSION).
4. REVIEW AND APPROVAL OF THE CONTRACTOR'S PROPOSED E & S CONTROL PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM THIER RESPONSIBILITIES FOR COMPLIANCE WITH SEDIMENT AND STORM WATER LAWS, CODES AND REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
5. MAINTENANCE OF SOIL E & S CONTROL MEASURES ON THE PROJECT SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL THE PROJECT IS ACCEPTED BY THE NFTA.
6. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A REVISED E & S CONTROL PLAN AS NECESSARY TO ADDRESS ANY CHANGES IN THE CONTRACTOR'S MEANS AND METHODS THAT MAY AFFECT E & S CONTROL.
7. ALL DISTURBED SOIL SURFACES, INCLUDING SOIL STOCKPILES, SHALL BE TEMPORARILY STABILIZED OR OTHERWISE PROTECTED WITH E & S CONTROLS PRIOR TO THE END OF WORK EACH DAY. PERMANENT SEEDING SHALL BE PLACED WITHIN 14 DAYS OF WORK COMPLETION IN ANY GIVEN AREA, OR AS REQUIRED BY THE PLANS.
8. E & S CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL. MAINTENANCE SHALL BE PERFORMED AFTER EACH INSPECTION AS NECESSARY. ANY ERODED AREAS SHALL BE IMMEDIATELY STABILIZED AND ANY ACCUMULATED SEDIMENT SHALL BE REMOVED AND SPREAD OVER THE SITE, STOCKPILED, OR REMOVED OFF SITE, AS DIRECTED BY THE ENGINEER.
9. THE SILT FENCE SHALL BE CLEANED WHEN SEDIMENT DEPOSITS REACH APPROXIMATELY ONE-HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
10. SEDIMENT TRAPS (WHEN APPLICABLE) SHALL BE CLEANED WHEN TRAP IS HALF FULL.
11. REMOVE E & S CONTROL MEASURES WHEN VEGETATION IS FIRMLY ESTABLISHED AND FINAL STABILIZATION APPROVAL HAS BEEN OBTAINED FROM THE ENGINEER.
12. PERMANENT E & S CONTROL BLANKET SHALL BE PLACED ON ALL SLOPES EQUAL TO OR STEEPER THAN IV:3H AND ON ALL BERMS.
13. CONTRACTOR SHALL MAINTAIN ALL WORK AREAS FREE FROM EXCESS DUST IN STRICT ACCORDANCE WITH THE NEW YORK GUIDELINES FOR URBAN E & S CONTROL (LATEST VERSION) AND SPECIFICATION SECTIONS 01135-HEALTH AND SAFETY AND 01562-DUST CONTROL.



TURBIDITY CURTAIN DETAIL 28

NOT TO SCALE ES-100 | ES-101



SECTION A
ES-101 | ES-101

APPLICATION NOTES:

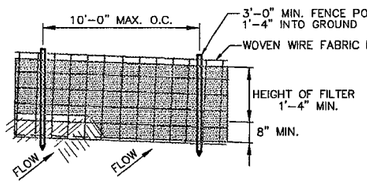
A. THE PURPOSE OF A TURBIDITY CURTAIN IS TO SEPARATE WORK AREAS IN OR ADJACENT TO WATERWAYS, TO PREVENT TURBIDITY FROM ENTERING THE WATERWAY.

B. TURBIDITY CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 0.5vm/SEC.

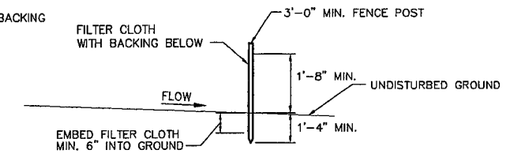
C. CONCENTRATED FLOW OUTLETS SUCH AS CULVERT OUTLETS, DITCHES, ETC SHALL NOT BE LOCATED BEHIND TURBIDITY CURTAIN.

NOTES:

1. TURBIDITY CURTAIN SHALL BE A MAXIMUM OF 100 FEET LONG FOR EACH SECTION OF CURTAIN REQUIRED. LAST SECTION SHALL TERMINATE 25 FEET BEYOND THE LIMIT OF DISTURBANCE.
2. THE TURBIDITY CURTAIN SHALL BE PLACED AS CLOSE TO THE WORK AS POSSIBLE WITHOUT INTERFERING WITH CONSTRUCTION OPERATIONS.
3. THE CONTRACTOR SHALL CONTINUALLY MONITOR THE INSTALLATION, TAKING INTO ACCOUNT WEATHER PATTERNS AND PREVAILING WIND DIRECTIONS THAT MAY AFFECT WATER LEVELS, VELOCITY AND MOVEMENT OF THE TURBIDITY CURTAIN.
4. THE TURBIDITY CURTAIN SHALL BE REMOVED BY PULLING TOWARD THE SHORE TO MINIMIZE ESCAPE OF SEDIMENTS INTO THE WATERWAY.
5. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE THAT ALLOWS THE CURTAIN TO CONFORM TO THE CONTOUR OF THE BOTTOM ON THE WATERWAY.
6. DETAIL PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL INSTALL AS REQUIRED TO LIMIT SEDIMENT RUNOFF FROM SHORELINE.



PERSPECTIVE VIEW



SECTION

NOTES:

1. WOVEN WIRE FABRIC SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH WIRE TIES SPACED AT EVERY TWO (2) FEET AT TOP AND MID-SECTION.
3. WHEN TWO SECTIONS OF FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX (6) INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR AS ADDRESSED BY THE GENERAL NOTES, THIS SHEET, WHICHEVER IS MORE RESTRICTIVE.

POSTS: EITHER STEEL T OR U SHAPES OR 2-INCH HARDWOOD

FILTER CLOTH: CARTHAGE 6%, MIRAFI 100X OR APPROVED EQUIVALENT

PREFABRICATED UNIT: ENVIROFENCE OR APPROVED EQUIVALENT

BACKING: WOVEN WELDED WIRE, 14 1/2 GA., 6-INCH (MAX.) MESH OPENING

SILT FENCE DETAIL 15

NOT TO SCALE ES-100 | ES-101

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STATE OF NEW YORK — URS CORPORATION NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 065

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JOB NO. 11173936.00000

Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

EROSION AND SEDIMENT CONTROL, (2 OF 2)

SCALE - AS NOTED		JUNE 2006
DESIGNED BY	MCD	JUNE 2006
DRAWN BY	EJH	JUNE 2006
CHECKED BY	JCW	JUNE 2006

DRAWING FILE NAME: ES-101.DWG

DRAWING # 23 OF 32

ES-101

N:\11173936.00000\CAD\BID\ ES-101.dwg 6/6/06-1 ELB

TRAIL COORDINATE TABLE

NO.	NORTHING	EASTING	STATION	REMARKS	NO.	NORTHING	EASTING	STATION	REMARKS
1	1,044,947.67	1,068,114.71	1+00.00	P.I.	73	1,041,533.78	1,069,901.73	58+20.91	P.C.
2	1,044,885.19	1,068,163.15	1+79.05	P.C.	74	1,041,275.36	1,070,000.79	61+01.32	P.T.
3	1,044,703.96	1,068,283.67	3+96.89	P.T.	75	1,041,250.99	1,070,002.88	61+25.78	P.C.
4	1,044,679.30	1,068,297.60	4+25.21	P.C.	76	1,041,111.38	1,070,055.50	62+76.87	P.T.
5	1,044,669.65	1,068,304.70	4+37.22	P.T.	77	1,041,031.01	1,070,092.26	63+66.13	P.I.
6	1,044,650.43	1,068,322.77	4+63.60	P.C.	78	1,045,006.61	1,068,148.41	RV0+00.00	P.I.
7	1,044,641.11	1,068,329.68	4+75.23	P.T.	79	1,044,586.74	1,068,419.90	RV5+00.00	P.O.L.
8	1,044,530.30	1,068,393.40	6+03.06	P.C.	80	1,044,502.76	1,068,474.20	RV6+00.00	P.O.L.
9	1,044,518.78	1,068,405.29	6+19.83	P.T.	81	1,043,830.97	1,068,908.58	RV14+00.00	P.O.L.
10	1,044,516.07	1,068,410.37	6+25.58	P.C.	82	1,043,746.99	1,068,962.88	RV15+00.00	P.O.L.
11	1,044,397.34	1,068,499.33	7+78.79	P.T.	83	1,043,195.51	1,069,319.47	RV21+56.72	P.I.
12	1,044,364.08	1,068,506.26	8+12.77	P.C.	84	1,043,061.55	1,069,370.28	RV23+00.00	P.O.L.
13	1,044,316.25	1,068,531.04	8+67.31	P.T.	85	1,042,968.05	1,069,405.74	RV24+00.00	P.O.L.
14	1,044,241.17	1,068,601.08	9+69.99	P.C.	86	1,042,360.29	1,069,636.24	RV30+50.00	P.O.L.
15	1,044,201.07	1,068,630.11	10+19.62	P.T.	87	1,042,313.54	1,069,653.98	RV31+00.00	P.O.L.
16	1,044,097.07	1,068,687.26	11+38.29	P.C.	88	1,042,079.79	1,069,742.63	RV33+50.00	P.O.L.
17	1,044,076.82	1,068,699.02	11+61.71	P.T.	89	1,041,939.54	1,069,795.82	RV35+00.00	P.O.L.
18	1,043,941.30	1,068,781.99	13+20.61	P.C.	90	1,041,752.53	1,069,866.75	RV37+00.00	P.O.L.
19	1,043,854.64	1,068,849.13	14+30.45	P.T.	91	1,041,705.78	1,069,884.48	RV37+50.00	P.O.L.
20	1,043,794.35	1,068,907.48	15+14.36	P.C.	92	1,041,018.57	1,070,145.12	RV44+84.98	P.I.
21	1,043,487.09	1,069,081.06	18+71.10	P.T.	93	1,042,772.62	1,069,443.22	26+79.41	C.P.
22	1,043,479.88	1,069,082.97	18+78.56	P.C.				45+43.87=	
23	1,043,464.43	1,069,090.07	18+95.65	P.T.	94	1,042,389.18	1,070,483.02	A1+26.49	P.I.
24	1,043,349.87	1,069,168.65	20+34.57	P.C.	95	1,042,424.19	1,070,547.65	A2+00.00	P.O.L.
25	1,043,328.30	1,069,184.31	20+61.23	P.T.	96	1,042,554.03	1,070,787.35	A4+72.60	P.I.
26	1,043,273.40	1,069,226.44	21+30.43	P.C.	97	1,042,486.09	1,070,788.76	B1+00.00	P.I.
27	1,043,134.96	1,069,301.43	22+88.54	P.T.	98	1,042,450.44	1,070,814.37	B1+43.90	P.C.
28	1,043,029.82	1,069,338.43	24+00.00	P.O.L.	99	1,042,427.55	1,070,824.81	B1+69.21	P.T.
29	1,042,877.82	1,069,391.92	25+61.13	P.C.	100	1,042,304.50	1,070,854.07	B2+95.70	P.C.
30	1,042,858.07	1,069,401.41	25+83.09	P.T.	101	1,042,262.59	1,070,948.66	B4+15.34	P.T.
31	1,042,809.11	1,069,431.97	26+40.80	P.C.	102	1,041,094.76	1,070,067.74	62+97.51	P.C.
32	1,042,751.09	1,069,453.18	27+03.02	P.T.	103	1,041,073.12	1,070,078.80	63+21.92	P.T.
33	1,042,624.42	1,069,483.76	28+33.33	P.C.	130	1,042,268.10	1,070,958.66	B4+26.75	P.I.
34	1,042,596.53	1,069,493.49	28+62.92	P.T.	131	1,044,645.72	1,068,320.29	4+65.53	C.P.
35	1,042,514.32	1,069,531.60	29+53.54	P.C.	132	1,043,583.64	1,069,042.28	17+66.71	C.P.
36	1,042,471.73	1,069,548.46	29+99.36	P.T.	133	1,043,051.82	1,069,325.39	23+74.92	C.P.
37	1,042,332.41	1,069,594.56	31+46.11	P.C.	134	1,042,772.62	1,069,443.22	26+79.41	C.P.
38	1,042,277.20	1,069,639.55	32+18.93	P.C.C.	135	1,042,428.83	1,069,557.39	30+42.90	C.P.
39	1,042,272.12	1,069,677.09	32+57.75	P.T.	136	1,041,045.30	1,070,087.69	63+51.43	C.P.
40	1,042,290.71	1,069,831.12	34+12.90	P.C.	137	1,041,277.09	1,069,995.62	60+99.13	C.P.
41	1,042,305.49	1,069,871.44	34+56.45	P.T.	138	1,042,509.93	1,070,518.52	N/A	CONCRETE
41A	1,042,342.13	1,069,920.50	35+17.69	P.C.	139	1,042,422.06	1,070,566.12	N/A	CONCRETE
41B	1,042,348.56	1,069,930.73	35+29.79	P.T.					
42	1,042,381.86	1,069,994.66	36+01.88	P.C.					
43	1,042,413.22	1,070,026.26	36+47.07	P.T.					
44	1,042,432.60	1,070,036.54	36+69.01	P.C.					
45	1,042,477.43	1,070,044.67	37+15.30	P.T.					
46	1,042,546.22	1,070,035.73	37+84.67	P.C.					
47	1,042,561.17	1,070,038.44	38+00.10	P.T.					
49	1,042,668.77	1,070,095.60	39+21.94	P.C.					
50	1,042,707.56	1,070,174.13	40+15.49	P.T.					
51	1,042,705.17	1,070,188.54	40+30.09= 40+55.66	P.C.					
52	1,042,633.00	1,070,258.09	41+65.42	P.T.					
53	1,042,568.29	1,070,260.36	42+30.18	P.C.					
54	1,042,521.82	1,070,297.11	42+93.58	P.T.					
55	1,042,487.23	1,070,423.21	44+24.34	P.C.					
56	1,042,457.14	1,070,456.59	44+70.96	P.T.					
57	1,042,357.56	1,070,495.32	45+77.80	P.C.					
58	1,042,259.78	1,070,507.31	46+77.34	P.T.					
59	1,042,255.17	1,070,506.72	46+81.98	P.C.					
60	1,042,117.42	1,070,424.17	48+47.24	P.T.					
61	1,042,092.17	1,070,388.64	48+90.83	P.C.					
62	1,042,073.72	1,070,332.98	49+50.34	P.T.					
63	1,042,072.24	1,070,267.72	50+15.62	P.C.					
64	1,042,039.04	1,070,176.94	51+14.03	P.T.					
65	1,042,034.49	1,070,171.29	51+21.29	P.C.					
66	1,041,983.45	1,070,085.23	52+21.69	P.T.					
67	1,041,939.76	1,069,979.50	53+36.09	P.C.					
68	1,041,847.45	1,069,867.01	54+83.75	P.T.					
69	1,041,844.62	1,069,865.11	54+87.15	P.C.					
70	1,041,657.04	1,069,842.19	56+83.17	P.T.					
71	1,041,608.05	1,069,859.80	57+35.23	P.C.					
72	1,041,542.02	1,069,895.51	58+10.58	P.T.					

PROJECT LIMIT COORDINATE TABLE

NO.	NORTHING	EASTING	RE
200	1,044,910.93	1,068,035.23	PRO
201	1,044,979.32	1,068,169.63	PRO
202	1,043,196.87	1,069,322.16	PRO
203	1,042,283.82	1,069,668.46	PRO
204	1,042,343.28	1,069,888.05	PRO
205	1,042,452.28	1,070,016.04	PRO
206	1,042,595.23	1,070,019.87	PRO
207	1,042,766.92	1,070,070.20	PRO
208	1,042,746.39	1,070,294.10	PRO
209	1,042,548.57	1,070,293.00	PRO
210	1,042,528.62	1,070,327.10	PRO
211	1,042,497.27	1,070,451.18	PRO
212	1,042,300.65	1,070,527.64	PRO
213	1,042,134.27	1,070,506.44	PRO
214	1,042,046.93	1,070,384.52	PRO
215	1,042,006.73	1,070,203.98	PRO
216	1,041,867.26	1,069,932.06	PRO
217	1,041,730.04	1,069,878.49	PRO
218	1,041,042.04	1,070,139.43	PRO
219	1,040,977.69	1,070,003.41	PRO
220	1,042,328.50	1,070,516.81	PRO
221	1,042,482.78	1,070,456.81	PRO
222	1,042,632.40	1,070,733.05	PRO
223	1,042,393.97	1,070,637.67	PRO
224	1,042,309.34	1,070,683.91	PRO
225	1,042,362.81	1,070,783.28	PRO
226	1,042,189.52	1,070,877.97	PRO
227	1,042,230.28	1,070,953.73	PRO

SIGN

TEXT NUMBER	LOCATION NUMBER	ITEM NUMBER	
1	1,2	645.7102M	
2	3	645.73M	

SIG

SYMBOL	DESCRIPTION	
GR. MTD.	GROUND MOUNTED	1
53/14	LOCATION NUMBER / TEXT NUMBER	

WARNING:
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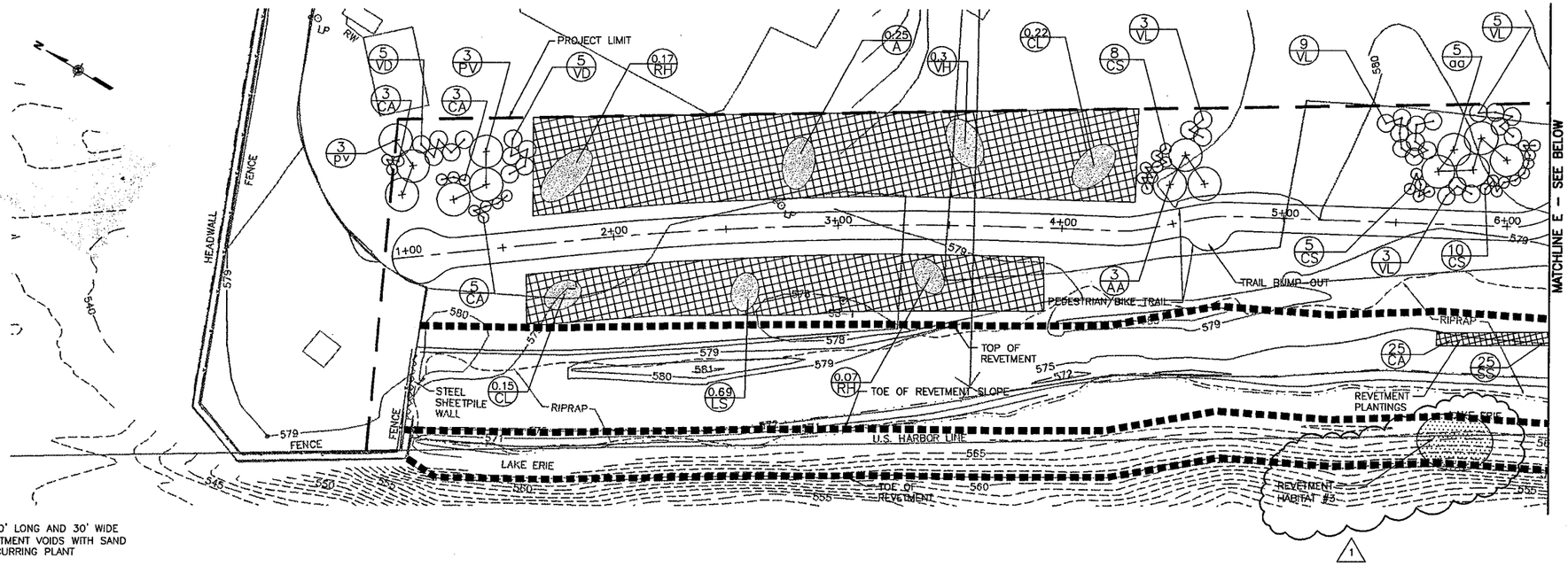
N:\11173936.00000\CAD\BID REV2\ MT-100.dwg 7/13/07-1 ELB

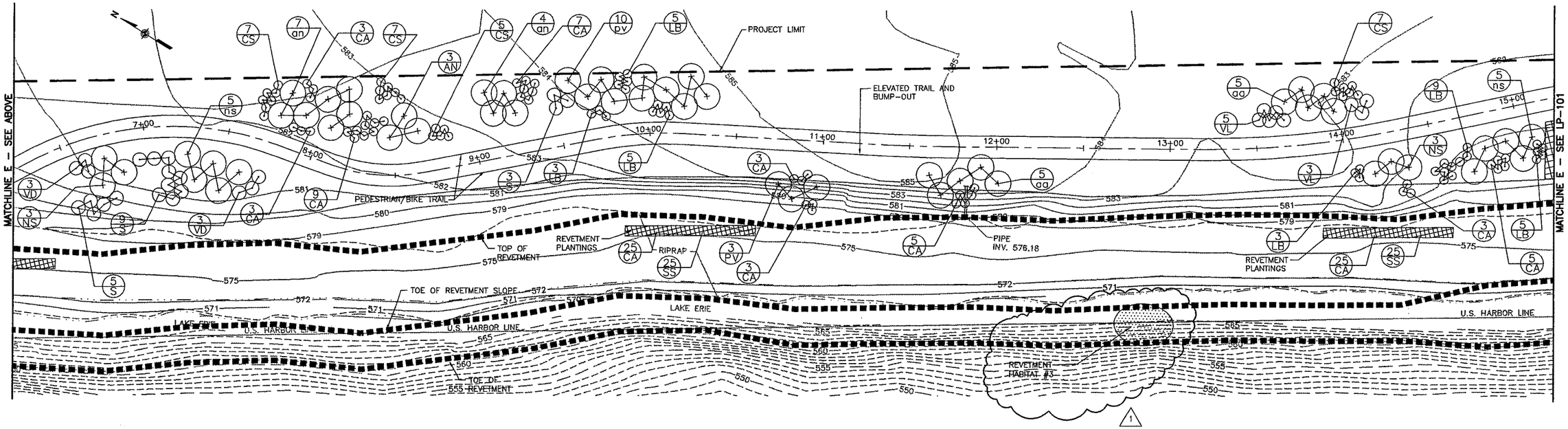
Revetment Station and Offset Table

Station	Toe of Revetment	Toe of Revetment Slope	Top of Revetment	Station	Toe of Revetment	Toe of Revetment Slope	Top of Revetment
RV0+50	159.20', RT	138.19', RT.	90.70', RT.	RV25+00	172.79', RT.	144.11	82.11', RT.
RV1+00	160.78', RT	139.77', RT.	92.28', RT.	RV25+50	169.57', RT.	138.79	76.79', RT.
RV1+50	160.87', RT	139.87', RT.	92.37', RT.	RV26+00	173.85', RT.	142.89	80.89', RT.
RV2+00	160.78', RT	139.78', RT.	92.28', RT.	RV26+50	178.19', RT.	141.35	79.35', RT.
RV2+50	162.73', RT	141.73', RT.	94.23', RT.	RV27+00	184.16', RT.	150.11	88.11', RT.
RV3+00	162.77', RT	141.76', RT.	94.25', RT.	RV27+50	185.91', RT.	155.92	93.92', RT.
RV3+50	163.59', RT	142.59	95.09', RT.	RV28+00	175.62', RT.	154.45	92.45', RT.
RV4+00	155.25', RT	134.25	86.75', RT.	RV28+50	173.97', RT.	159.19	90.06
RV4+50	159.82', RT	138.82	91.32', RT.	RV29+00	173.97	153.07	91.08', RT.
RV5+00	159.01', RT	138.01', RT.	90.51', RT.	RV29+50	184.46', RT.	163.15', RT.	101.49', RT.
RV5+50	163.30', RT.	142.24', RT.	94.80', RT.	RV30+00	191.58', RT.	160.57', RT.	98.60', RT.
RV6+00	167.01', RT.	145.95', RT.	98.51', RT.	RV30+50	183.93', RT.	162.16', RT.	100.83', RT.
RV6+50	162.60', RT.	141.60', RT.	94.10', RT.	RV31+00	147.56	142.50', RT.	90.64', RT.
RV7+00	161.99', RT.	140.99', RT.	93.49', RT.	RV31+50	130.36	118.54', RT.	73.44', RT.
RV7+50	167.92', RT.	146.92	99.42', RT.				
RV8+00	162.41', RT.	141.41	93.91', RT.	32+50	110.28	86.65',RAD.RT	53.36
RV8+50	157.00', RT.	136	88.50', RT.				
RV9+00	147.90', RT.	126.9	79.40', RT.	33+00		103.55	53.60', RT.
RV9+50	150.35	129.33', RT.	81.85', RT.	33+42.35	--	--	52.06', RT.
RV10+00	157.22', RT.	136.22	88.72', RT.	33+45.06	--		--
RV10+50	157.05' ,RT.	136.05	83.56', RT.				
RV11+00	157.29 ',RT.	136.29', RT.	83.79', RT.	33+47.24	108.98	--	
RV11+50	160.2	139.20', RT.	86.73', RT.	54+36.41	--	--	
RV12+00	158.53	137.53', RT.	85.03', RT.				
RV12+50	157.94', RT.	136.94', RT.	84.44', RT.	54+36.34	--	59.87',RAD.RT.	--
RV13+00	159.18', RT.	138.18', RT.	85.68', RT.				
RV13+50	159.85', RT.	138.85', RT.	88.05	54+37.09	89.78	--	--
RV14+00	164.07', RT.	133.07	83.07', RT.				
RV14+50	160.99', RT.	130	79.99', RT.	55+00	95.5	59.68', RAD.RT	
RV15+00	157.61', RT.	126.61	76.78', RT.				
RV15+50	157.32', RT.	126.32	76.32	55+50	102.34		
RV16+00	157.49', RT.	126.49	76.49', RT.				
RV16+50	155.88', RT.	124.88	74.88', RT.	RV36+50	119.13', RT.	93.98	63.87
RV17+00	156.20', RT.	135.20', RT.	85.20', RT.	RV37+00	143.90', RT.	124.23	80.28
RV17=50	159.61', RT.	138.61	88.61', RT.	RV37+50	164.84', RT.	143.84	87.84
RV18+00	157.06', RT.	136.06	83.56', RT.	RV38+00	170.93', RT.	149.93	93.93
RV18+50	159.54', RT.	138.54	86.04	RV38+50	178.11', RT.	157.11	101.11
RV19+00	157.91', RT.	136.91', RT.	84.41	RV39+00	170.78', RT.	149.58	93.58
RV19+50	157.84', RT.	136.84', RT.	84.34	RV39+50	168.29', RT.	147.16	91.16
RV20+00	158.74', RT.	137.74', RT.	85.24	RV40+00	163.60', RT.	142.54	86.54
RV20+50	161.65', RT.	140.65	88.15	RV40+50	162.43', RT.	141.36	85.36
RV21+00	160.60', RT.	139.60', RT.	77.60', RT.	RV41+00	165.58', RT.	144.43	88.43
RV21+50	166.96', RT.	145.96', RT.	83.96	RV41+50	169.21', RT.	148	92
RV22+00	163.96	142.95', RT.	81.01	RV42+00	172.77', RT.	151.53	95.53
RV22+50	165.05	144.05', RT.	82.06', RT.	RV42+50	172.74', RT.	151.74	95.74
RV23+00	168.53	147.53', RT.	85.57	RV43+00	174.60', RT.	153.60' ,RT	91.60', RT.
RV23+50	164.39	143.39', RT.	81.45	RV43+50	174.49', RT.	153.49', RT.	91.49', RT.
RV24+00	166.08	145.08', RT.	83.08', RT.	RV44+00	177.77', RT.	156.77', RT.	94.76', RT.
RV24+50	168.01', RT.	147.16', RT.	85.18', RT.				

2006
2006
2006
2006
NG
2



NOTE:
REVETMENT HABITAT IS APPROXIMATELY 30' LONG AND 30' WIDE LOCATED AT 2' DEPTH FOR FILLING REVETMENT VOIDS WITH SAND OR GRAVEL TO PROMOTE NATURALLY OCCURRING PLANT ESTABLISHMENT.



NOTE:
1. FOR PLANTING LIST SEE DWG. LD-100.

30' 0 30'
SCALE: 1"= 30'

WARNING:
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON OTHER THAN WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

NO.	REVISION	BY	DATE
1	BELL SLIP REVISIONS	MCD	7/23/07
	- REISSUED 7/26/07		

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

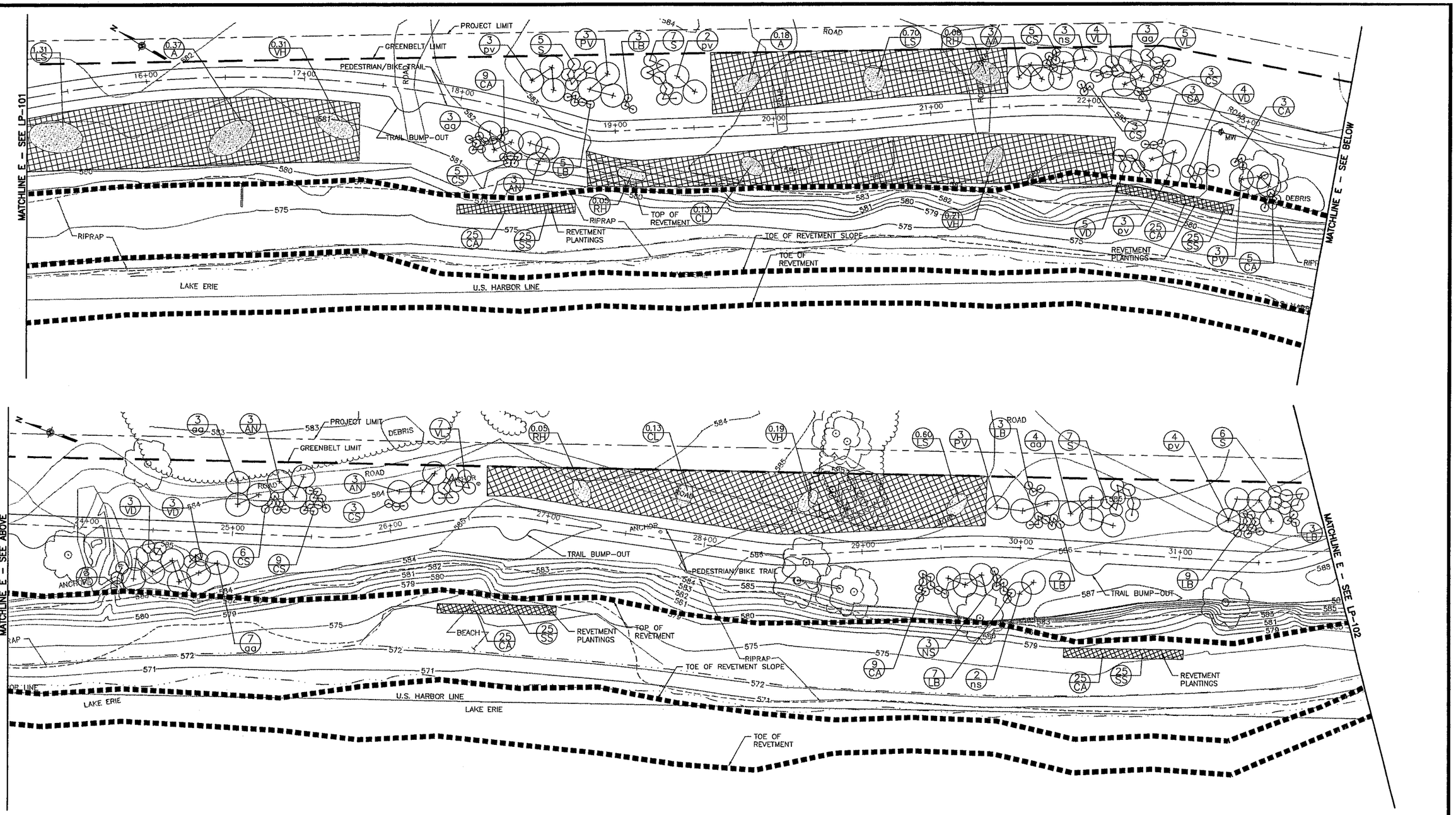
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

LANDSCAPE PLAN, (1 OF 5)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	TE, KH	JUNE 2006
DRAWN BY	KH	JUNE 2006
CHECKED BY	TE, IV	JUNE 2006
DRAWING FILE NAME: LP-100.dwg		
DRAWING #	26 OF 32	

LP-100

N:\11173936.00000\CAD\FIELD CHANGE-BELL SLIP\LP-100-LNDSCP PLAN.dwg 7/26/07-2



NOTE:
1. FOR PLANTING LIST SEE DWG. LD–100.

30' 0 30'
SCALE: 1"= 30'

WARNING:
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STATE OF NEW YORK — URS CORPORATION NEW YORK — LICENSED PROFESSIONAL ENGINEER — No. 065

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

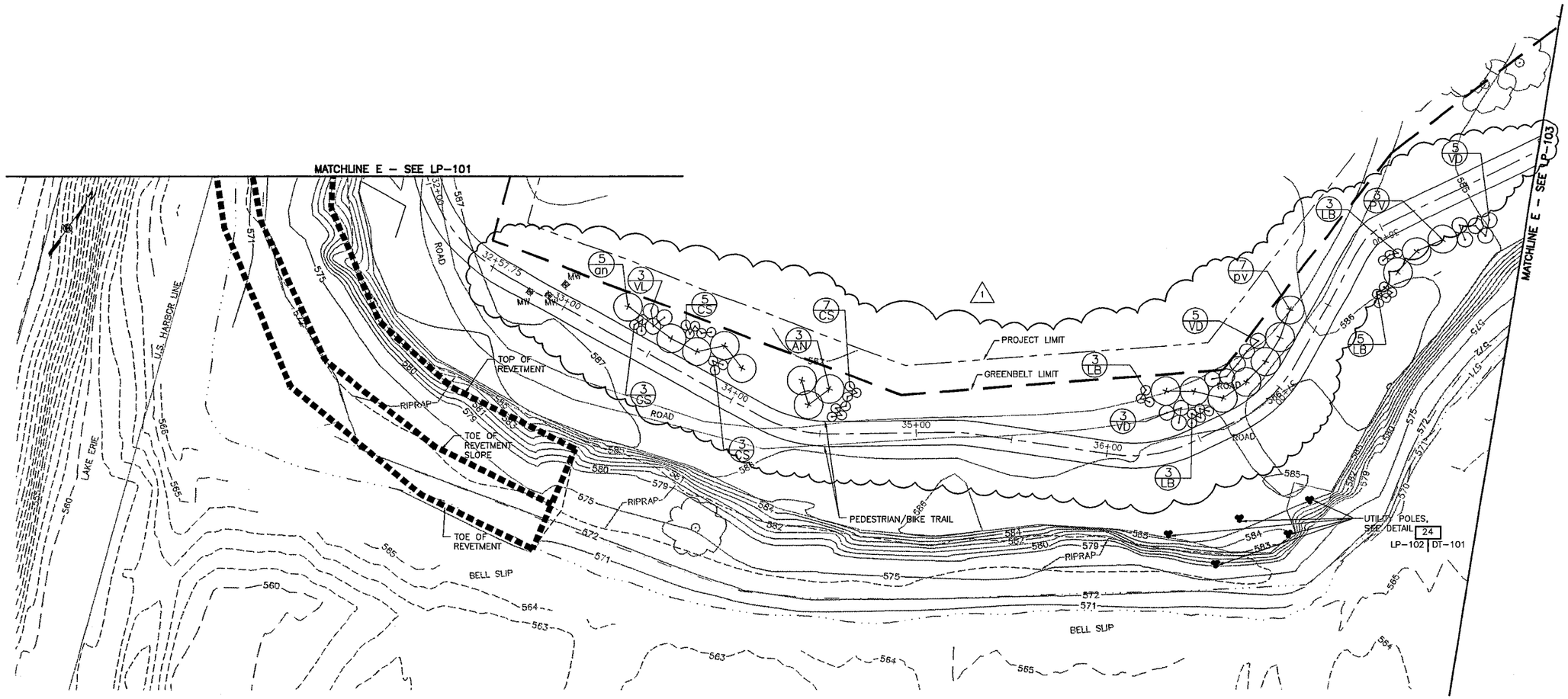
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

LANDSCAPE PLAN, (2 OF 5)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	TE, KH	JUNE 2006
DRAWN BY	KH	JUNE 2006
CHECKED BY	TE, IV	JUNE 2006
DRAWING FILE NAME: LP–101.dwg		
DRAWING #	27 OF 32	

LP–101

N:\11173936.00000\CAD\BID\LP–101.dwg 6/6/06–1 ELB



NOTE:

1. FOR PLANTING LIST SEE DWG. LD–100.

30' 0 30'

SCALE: 1"= 30'

WARNING:
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Consultant:
URS Corporation - New York
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(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE
1	BELL SLIP REVISIONS	MCD	7/23/07
	– REISSUED 7/26/07		

NFTA PROJECT NO. 12PL0202

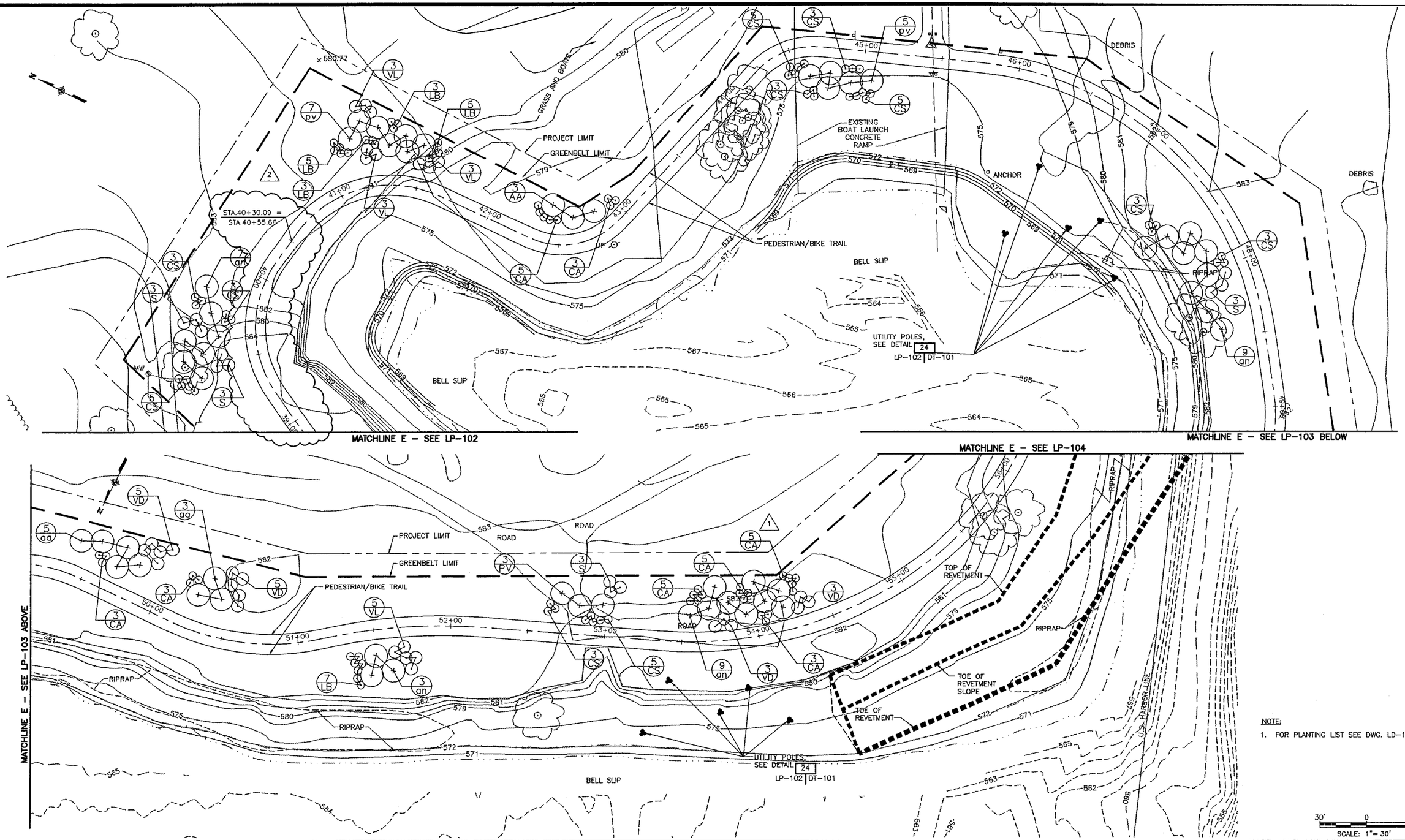
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

LANDSCAPE PLAN (3 OF 5)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	TE, KH	JUNE 2006
DRAWN BY	KH	JUNE 2006
CHECKED BY	TE, IV	JUNE 2006
DRAWING FILE NAME: LP–102.dwg		
DRAWING #	28 OF 32	

LP–102

N:\11173936.00000\CAD\FIELD CHANGES–BELL SLIP\LP–102–LNDSCP PLAN.dwg 7/26/07–2



NOTE:

1. FOR PLANTING LIST SEE DWG. LD-100.

30' 0 30'

SCALE: 1"= 30'

WARNING:
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(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

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Serving the Niagara Region

NO.	REVISION	BY	DATE
1	MOVED QUANTITY NUMBER	ELB	6/8/06
2	BELL SLIP REVISIONS	MCD	7/23/07
	– REISSUED 7/26/07		

NFTA PROJECT NO. 12PL0202

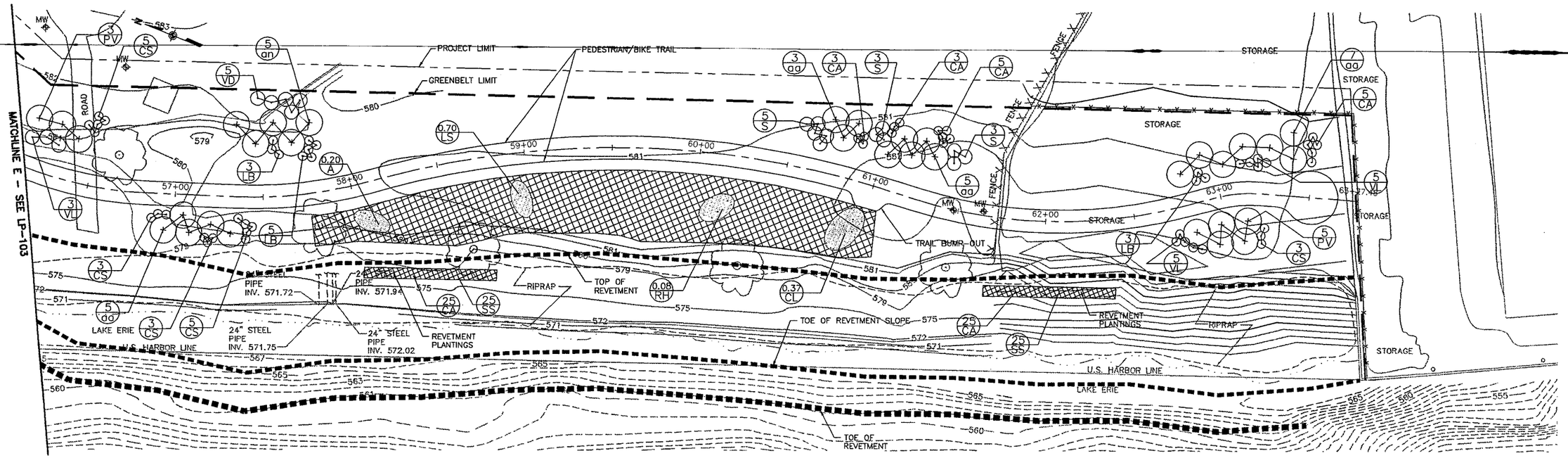
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

LANDSCAPE PLAN, (4 OF 5)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	TE, KH	JUNE 2006
DRAWN BY	KH	JUNE 2006
CHECKED BY	TE, IV	JUNE 2006
DRAWING FILE NAME: LP-103.dwg		
DRAWING #	29 OF 32	

LP-103

N:\11173936.00000\CAD\FIELD CHANGE-BELL SLIP\LP-103-LNDSCP PLAN.dwg 7/26/07-2



NOTE:

1. FOR PLANTING LIST SEE DWG. LD-100.

30' 0 30'

SCALE: 1"= 30'

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

LANDSCAPE PLAN, (5 OF 5)

SCALE – AS NOTED		JUNE 2006
DESIGNED BY	TE, KH	JUNE 2006
DRAWN BY	KH	JUNE 2006
CHECKED BY	TE, IV	JUNE 2006
DRAWING FILE NAME: LP-104.dwg		
DRAWING #	30 OF 32	

LP-104

N:\11173936.00000\CAD\BID\LP-104.dwg 6/6/06-1 ELB

NOTE:

1. FOR PLANTING LIST SEE DWG. LD-100.
2. AQUATIC SHELF RUBBLE PLACEMENT. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING UNDERWATER ELEVATIONS AT AQUATIC SHELF LOCATIONS PRIOR TO COMMENCEMENT OF WORK. ALL RUBBLE PLACEMENT SHALL BE PERFORMED UNDER THE SUPERVISION OF THE ENGINEER IN ORDER TO VERIFY QUANTITIES AND LOCATIONS.
3. AQUATIC SHELF EMBAYMENT. CONTRACTOR TO EXCAVATE AND PULLBACK A BANK AREA TO WITHIN 6" OF EXISTING WATER ELEVATION TO CREATE A SMALL CONCAVE EMBAYMENT WHICH WILL SUPPORT AQUATIC VEGETATION.

△1

40' 0 40'
SCALE IN FEET

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

NFTA Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE
1	BELL SLIP REVISIONS	MCD	7/23/07
	- REISSUED 7/26/07		

NFTA PROJECT NO. 12PL0202

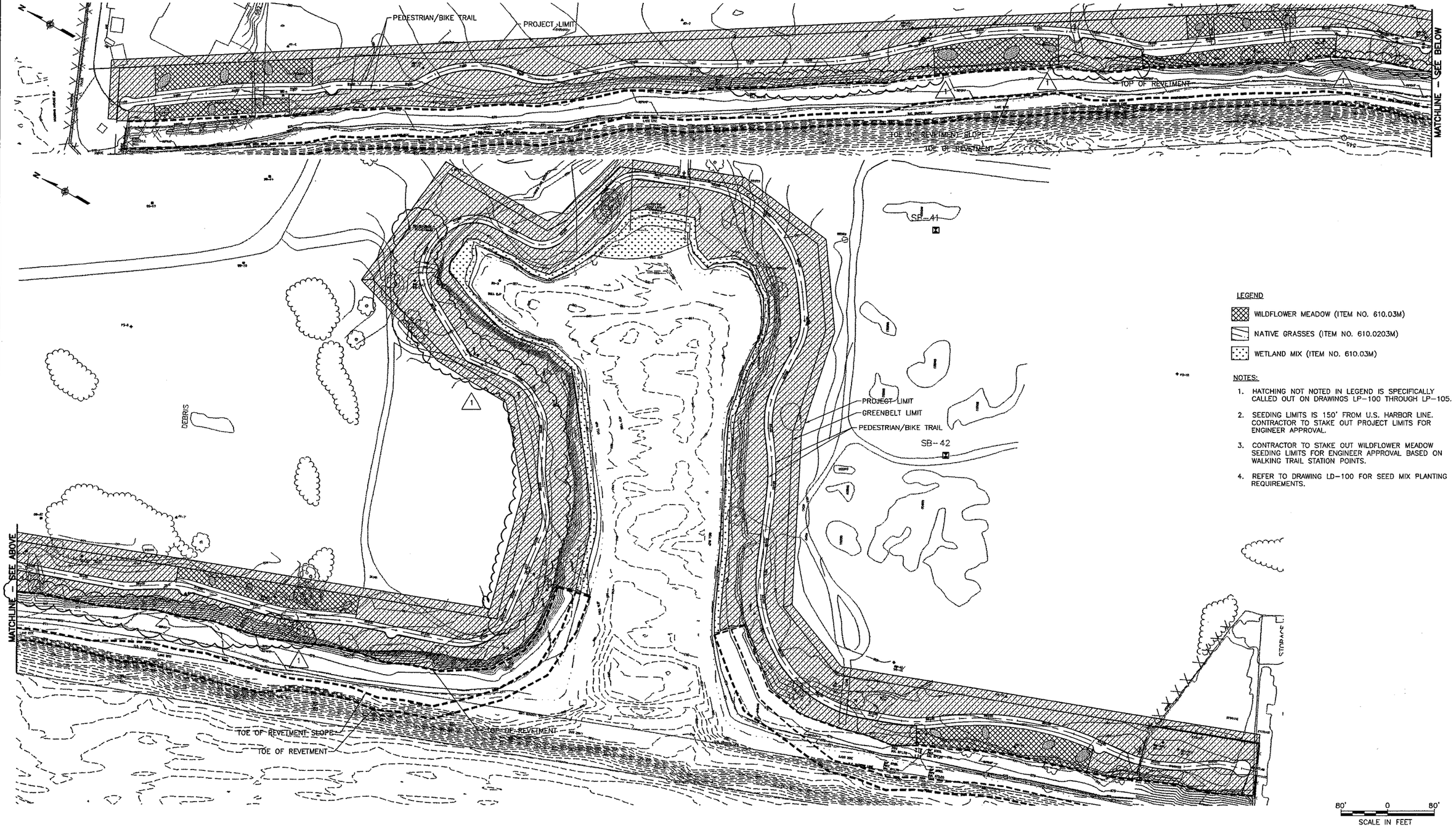
PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

BELL SLIP LANDSCAPE PLAN

SCALE - AS NOTED		JUNE 2006
DESIGNED BY	LB, KH	JUNE 2006
DRAWN BY	LB, KH	JUNE 2006
CHECKED BY	TE, KH	JUNE 2006
DRAWING FILE NAME: LP-105.dwg		
DRAWING #	31 OF 32	

LP-105

N:\11173936.00000\CAD\FIELD CHANGE-BELL SLIP\LP-105-BELLSLIP LNDSCP.dwg 7/26/07-2



LEGEND

- WILDFLOWER MEADOW (ITEM NO. 610.03M)
- NATIVE GRASSES (ITEM NO. 610.0203M)
- WETLAND MIX (ITEM NO. 610.03M)

NOTES:

1. HATCHING NOT NOTED IN LEGEND IS SPECIFICALLY CALLED OUT ON DRAWINGS LP-100 THROUGH LP-105.
2. SEEDING LIMITS IS 150' FROM U.S. HARBOR LINE. CONTRACTOR TO STAKE OUT PROJECT LIMITS FOR ENGINEER APPROVAL.
3. CONTRACTOR TO STAKE OUT WILDFLOWER MEADOW SEEDING LIMITS FOR ENGINEER APPROVAL BASED ON WALKING TRAIL STATION POINTS.
4. REFER TO DRAWING LD-100 FOR SEED MIX PLANTING REQUIREMENTS.

80' 0 80'
SCALE IN FEET

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE
1	BELL SLIP REVISIONS - REISSUED 7/26/07	MCD	7/23/07

NFTA PROJECT NO. 12PL0202

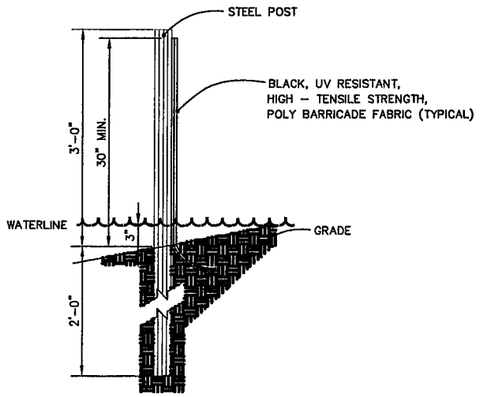
PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

LANDSCAPE SEEDING PLAN

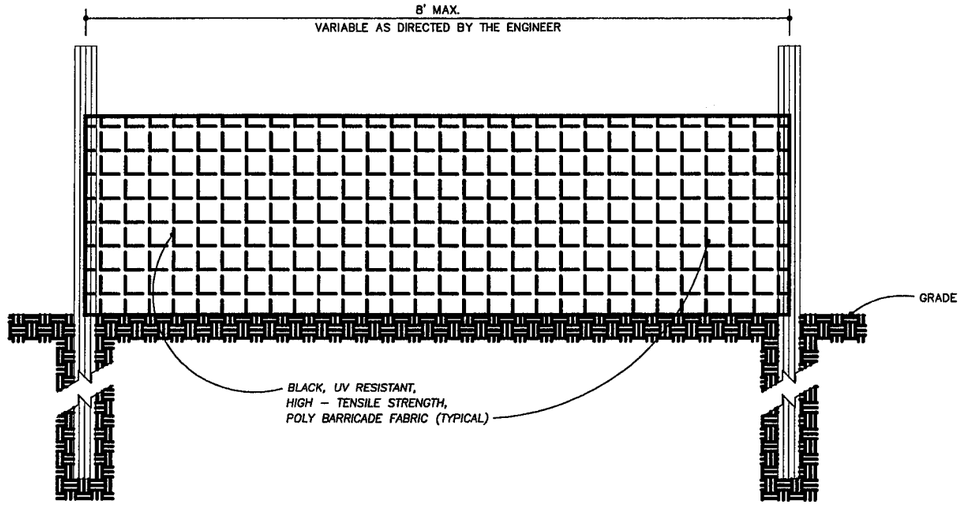
SCALE - AS NOTED		JUNE 2006
DESIGNED BY	LB, KH	JUNE 2006
DRAWN BY	LB	JUNE 2006
CHECKED BY	TE, KH	JUNE 2006
DRAWING FILE NAME: LP-106.dwg		
DRAWING #	32 OF 32	

LP-106

N:\11173936.00000\CAD\FIELD CHANGE-BELL SLIP\LP-106-SEEDING PLAN.dwg 7/26/07-2



SIDE VIEW

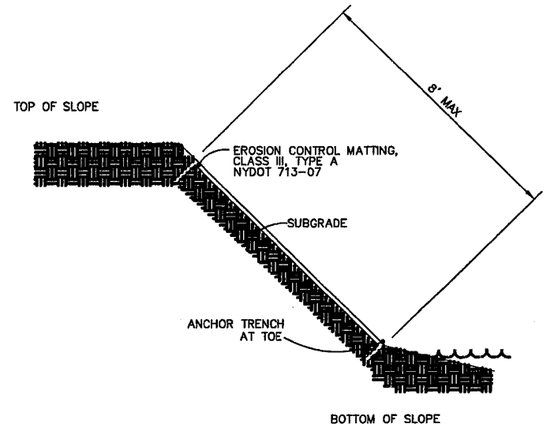


FRONT VIEW

NOTES:
1. TEMPORARY GOOSE FENCING TO BE INSTALLED AROUND ENTIRE PERIMETER OF BELL SLIP TO EDGES OF STONE REVETMENT IN 3" DEEP WATER.
2. CONTRACTOR TO INSTALL, MAINTAIN & REMOVE TEMPORARY GOOSE FENCING DURING VEGETATION ESTABLISHMENT. FENCING TO BE REMOVED AFTER ESTABLISHMENT OF VEGETATION (18" HEIGHT)

TEMPORARY GOOSE FENCING DETAIL

NOT TO SCALE



SIDE VIEW

NOTES:
1. INSTALL ALONG ENTIRE PERIMETER OF BELL SLIP TO EDGES OF STONE REVETMENT AT TOE OF SLOPE.

EROSION CONTROL MATTING DETAIL

NOT TO SCALE

N:\11173936.00000\CAD\FIELD CHANGES-BELL SLIP\LP-110-DETAILS.dwg 7/23/07-1

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

NO.	REVISION	BY	DATE
1	BELL SLIP REVISIONS	MCD	7/23/07

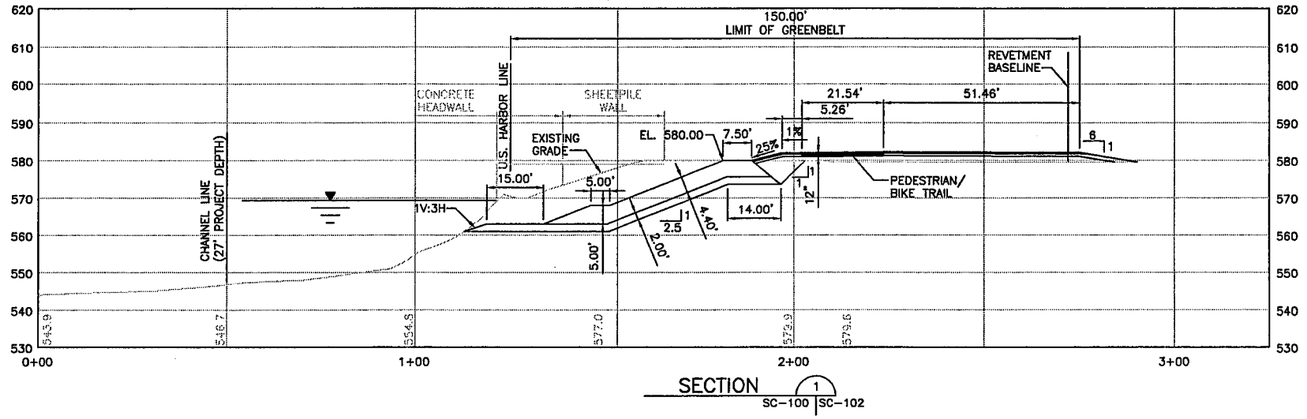
Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

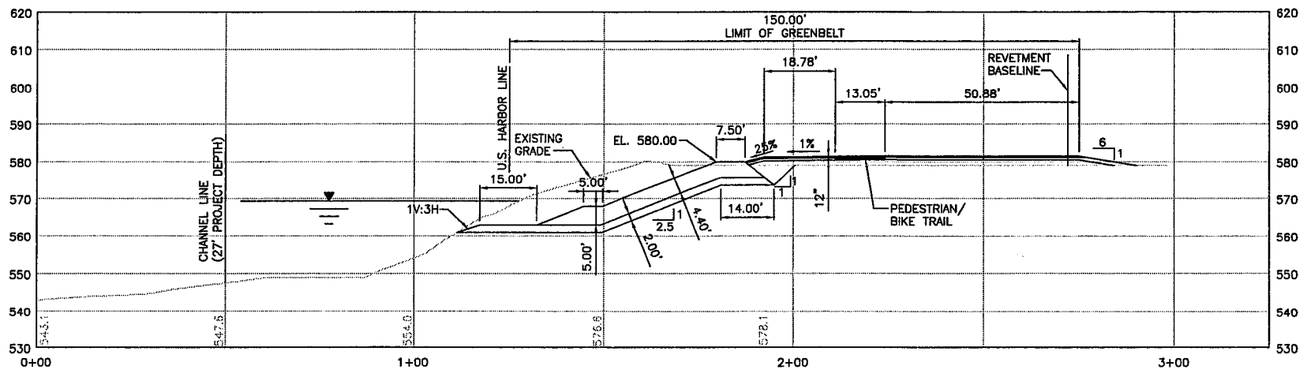
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

LANDSCAPE DETAILS (1 OF 1)

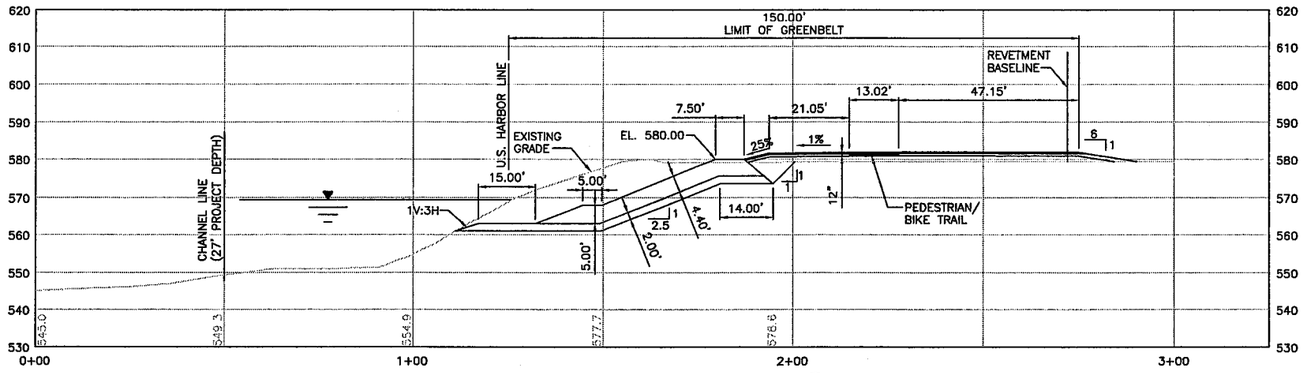
SCALE – AS NOTED		JUNE 2006
DESIGNED BY	LB	JUNE 2006
DRAWN BY	LB	JUNE 2006
CHECKED BY	KH	JUNE 2006
DRAWING FILE NAME: LP-110-DETAILS.DWG		
DRAWING #		LP-110



SECTION 1
SC-100 | SC-102



SECTION 1A
SC-100 | SC-102



SECTION 2
SC-100 | SC-102

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
2. ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE EXPRESSED IN U.S. SURVEY FEET.
3. THE HYDROGRAPHIC DATA DEPICTED ON THESE SECTIONS WAS COLLECTED USING HYDROGRAPHIC SURVEY ACCURACY PERFORMANCE STANDARDS IN ACCORDANCE WITH USACE EM 1110-2-1003 DATED 1 JANUARY 2004.
4. THE CHANNEL LINES AND U.S. HARBOR LINE WERE PROVIDED BY THE U.S. ARMY CORP OF ENGINEERS, BUFFALO DISTRICT.
5. THE WATERLINE DEPICTED ON THESE SECTIONS IS AT ELEVATION 569.2 (IGLD 1985) WHICH IS EQUAL TO 569.36 (NAVD 88) AND IS FROM THE LAKE ERIE CHART DATUM.

20' 0 20'
SCALE: 1"= 20'
HORIZ. & VERT.

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax
JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

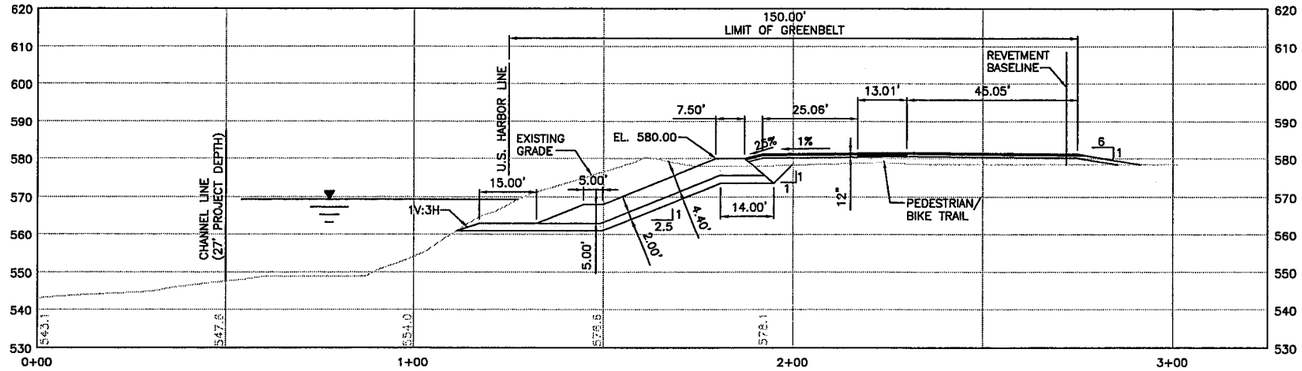
PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 1 OF 35

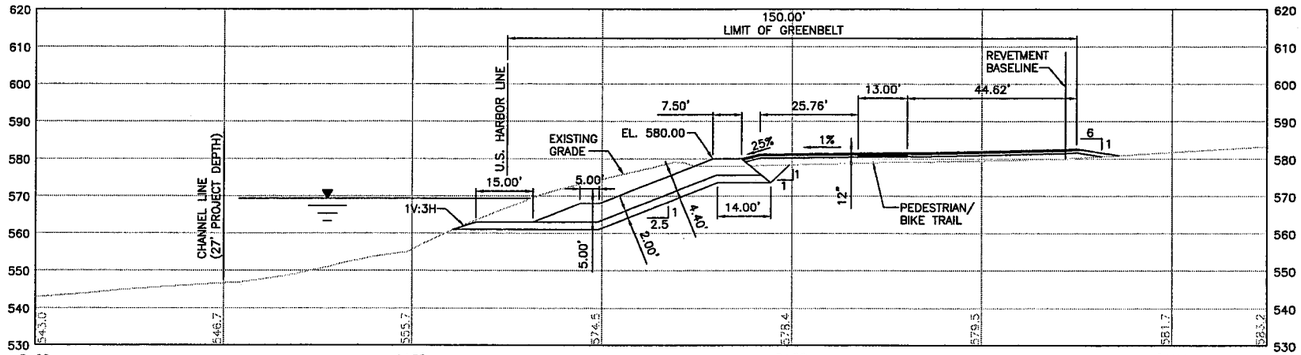
SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 3 OF 37	

SC-102

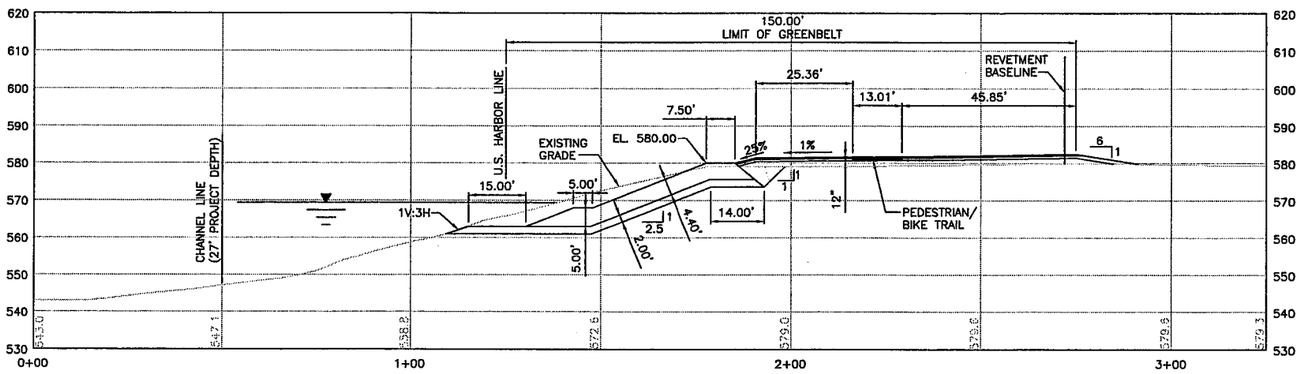
N:\11173936.00000\CAD\BID\SECTIONS-R5.dwg 6/8/06-1 ELB



SECTION 2A
SC-100 | SC-103



SECTION 3
SC-100 | SC-103



SECTION 3A
SC-100 | SC-103

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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SCALE: 1"= 20'
HORIZ. & VERT.

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Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 2 OF 35

SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
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DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	4 OF 37	

SC-103

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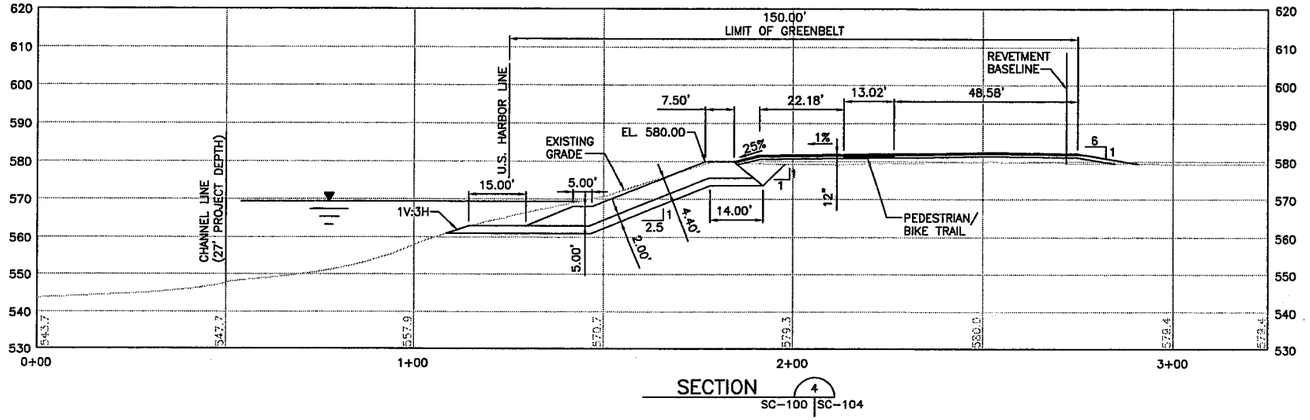
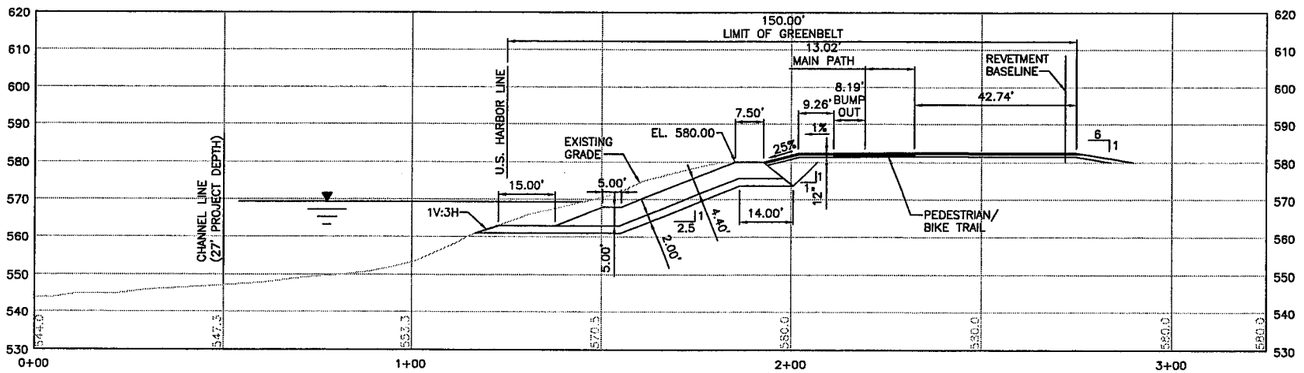
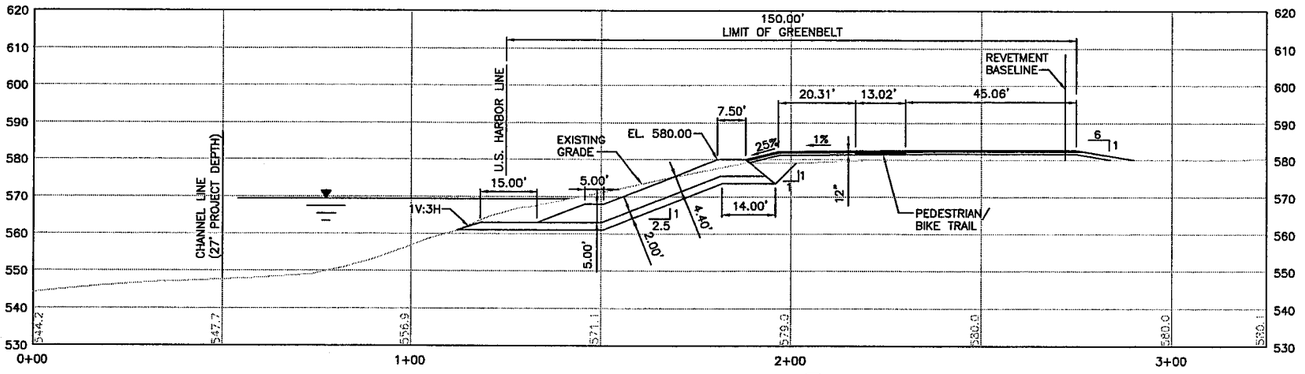


SECTION 4
SC-100 | SC-104



SECTION 4A
SC-100 | SC-104



SECTION 5
SC-100 | SC-104

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NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 3 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
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DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 5 OF 37	

SC-104

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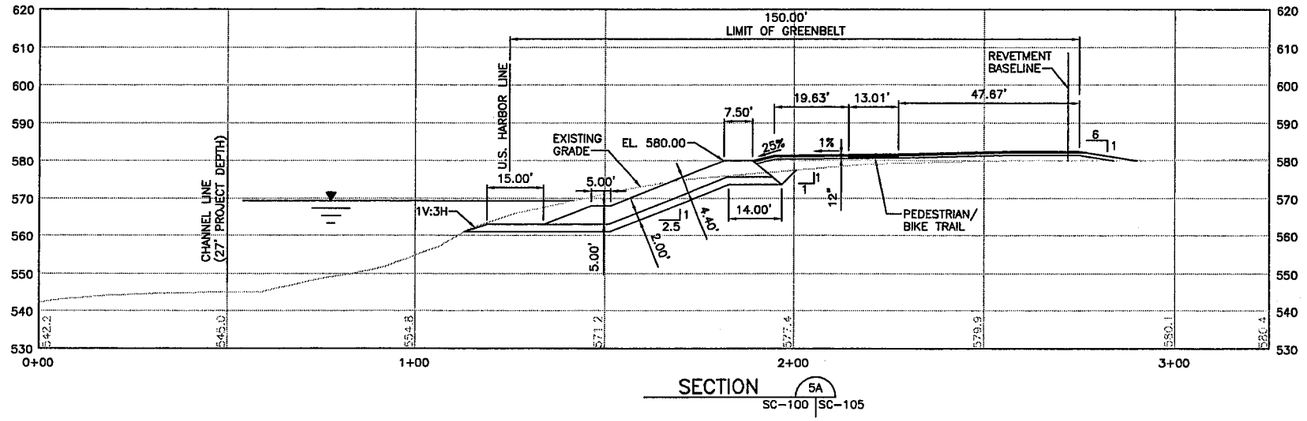
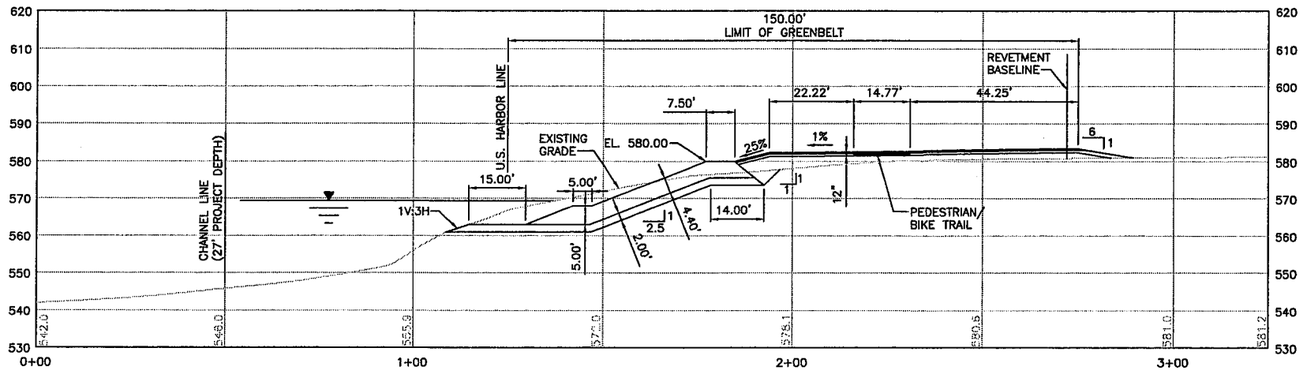
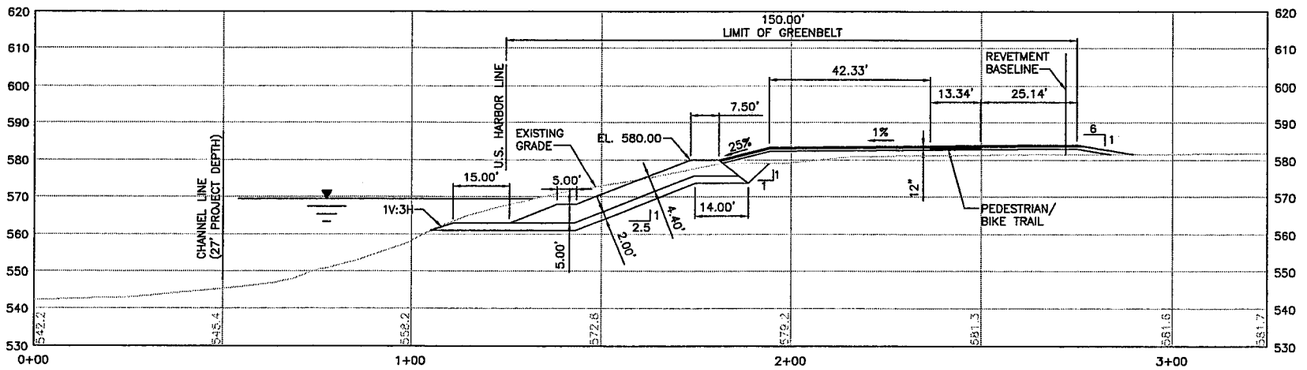


SECTION 5A
SC-100 | SC-105



SECTION 6
SC-100 | SC-105



SECTION 6A
SC-100 | SC-105

NOTES:

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Serving the Niagara Region

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NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 4 OF 35

SCALE - AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
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DRAWING #	6 OF 37	

SC-105

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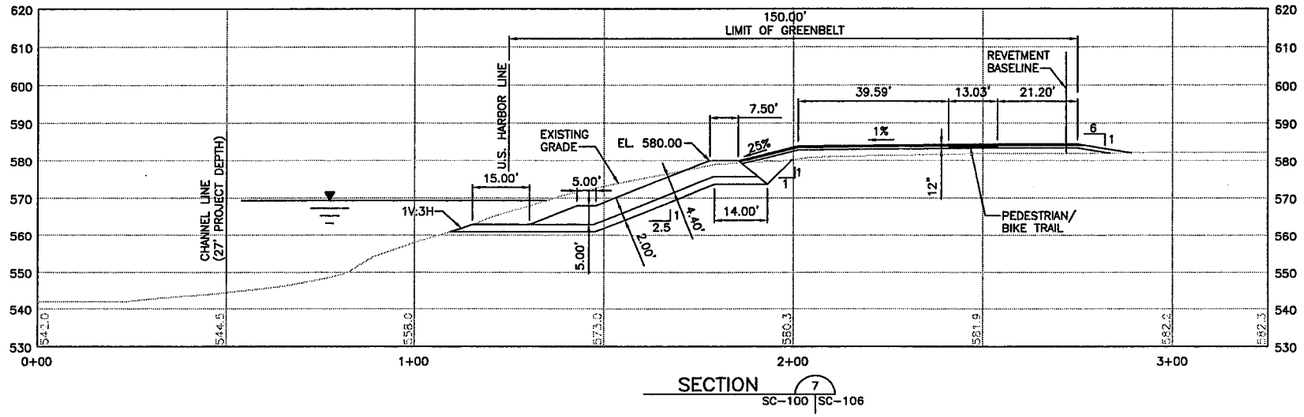
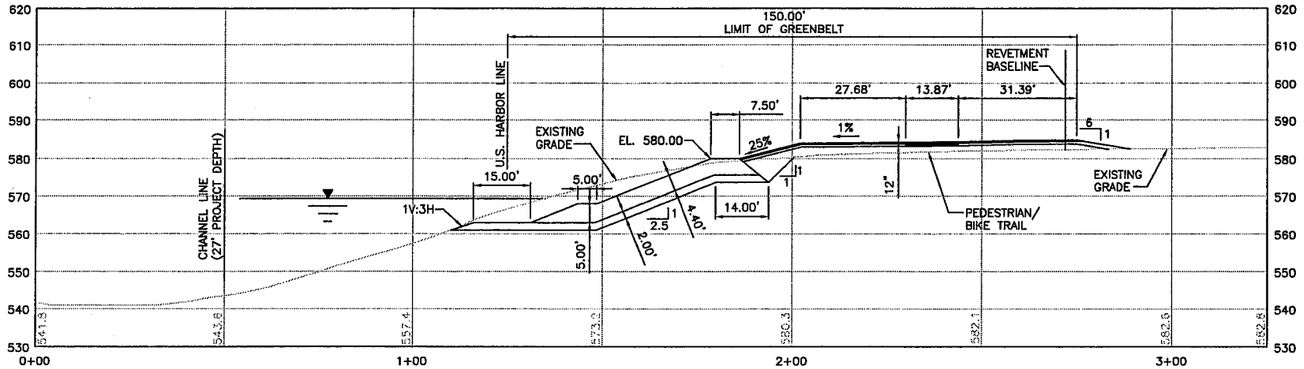
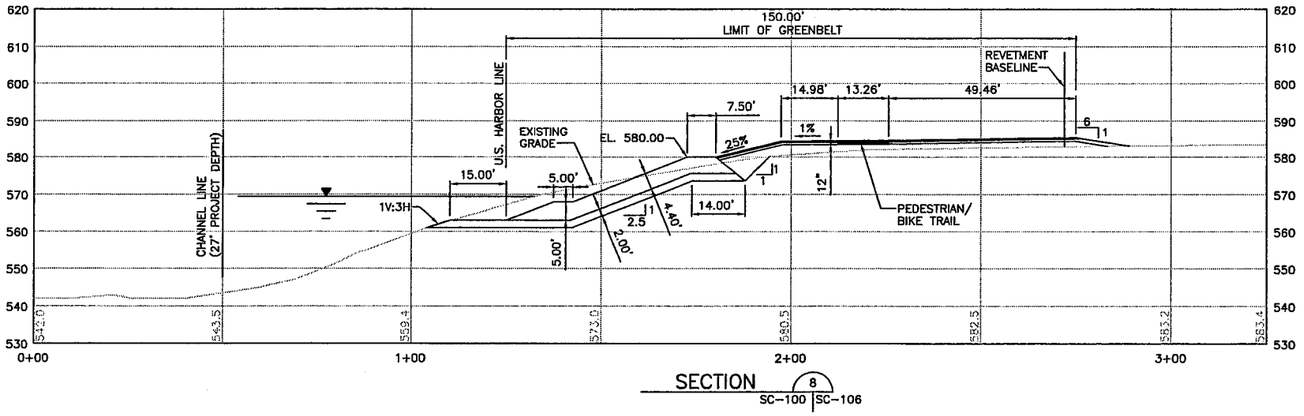


SECTION 7
SC-100 | SC-106



SECTION 7A
SC-100 | SC-106



SECTION 8
SC-100 | SC-106

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 5 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 7 OF 37	

SC-106

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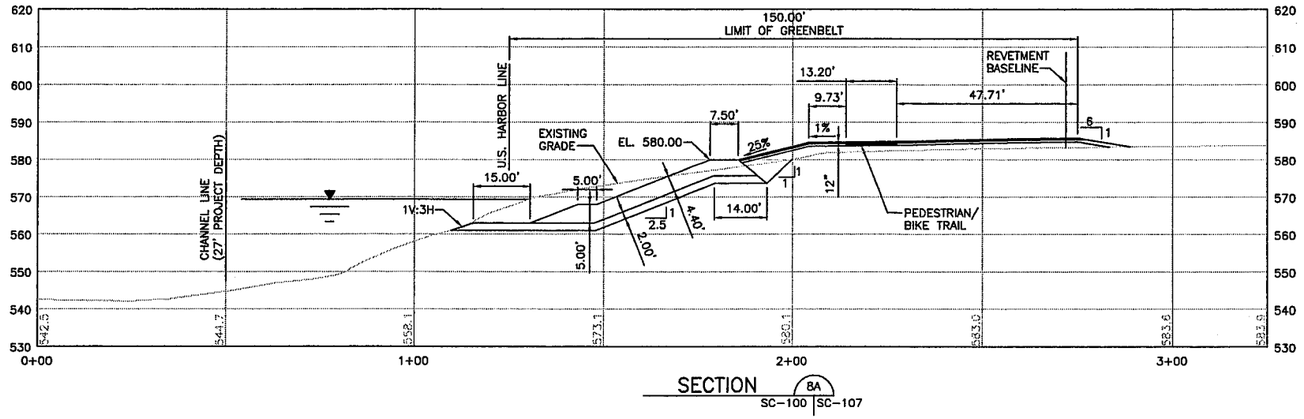
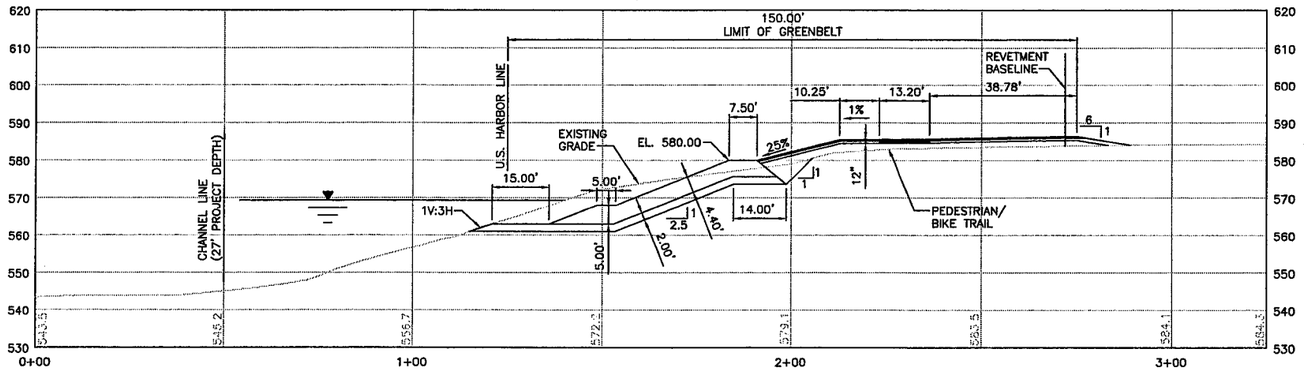
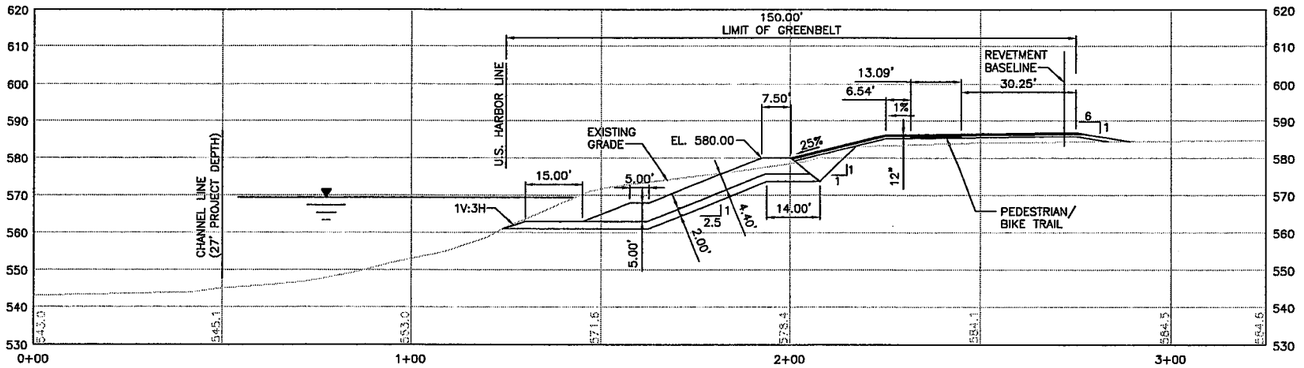


SECTION 8A
SC-100 | SC-107



SECTION 9
SC-100 | SC-107



SECTION 9A
SC-100 | SC-107

NOTES:

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Serving the Niagara Region

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NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 6 OF 35

SCALE – AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 8 OF 37	

SC-107

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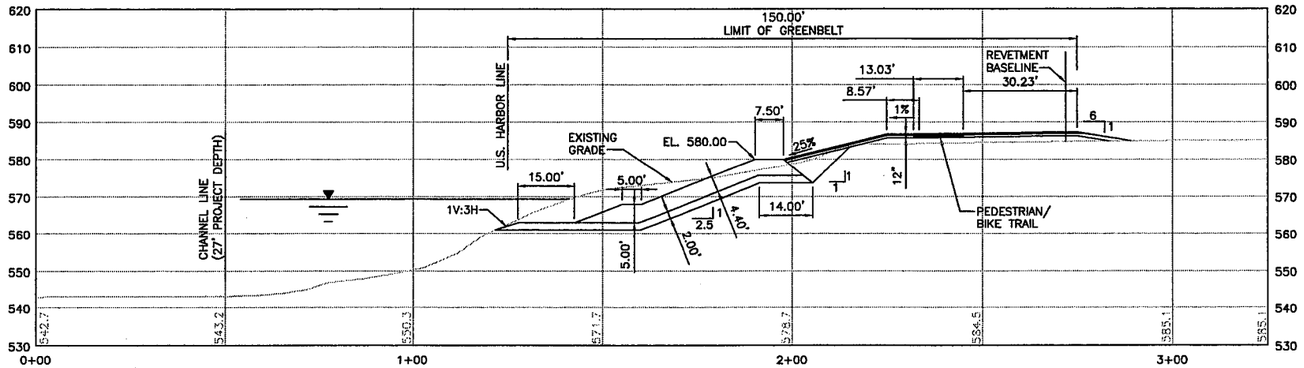
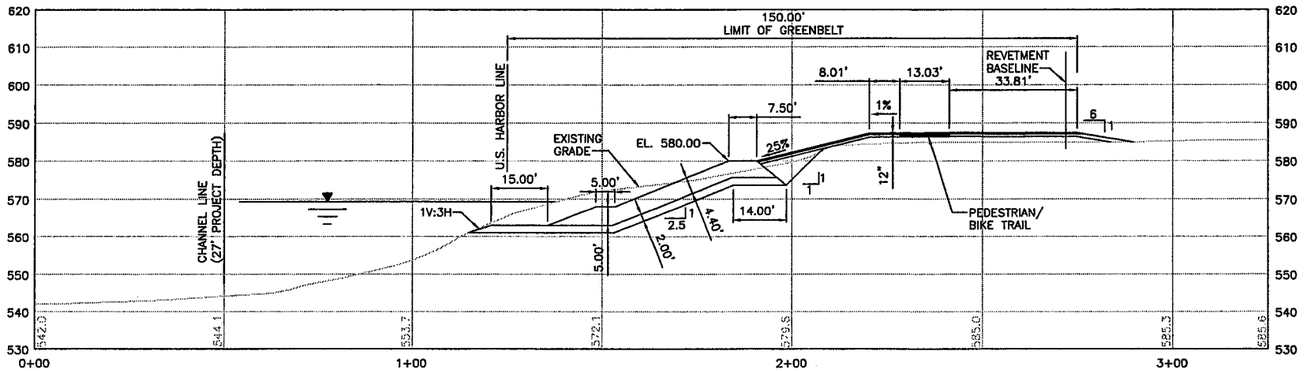
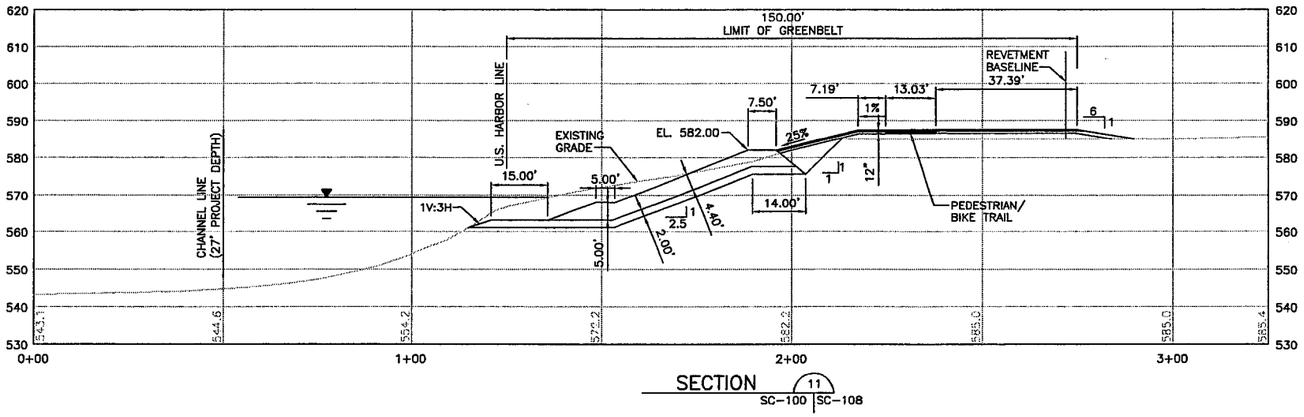


SECTION 10
SC-100 | SC-108



SECTION 10A
SC-100 | SC-108



SECTION 11
SC-100 | SC-108

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NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 7 OF 35

SCALE - AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
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DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	9 OF 37	

SC-108

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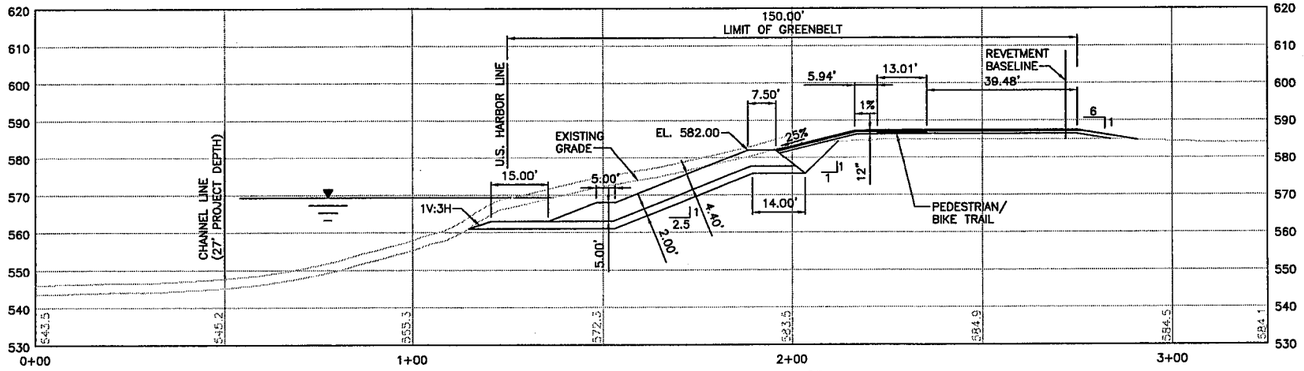
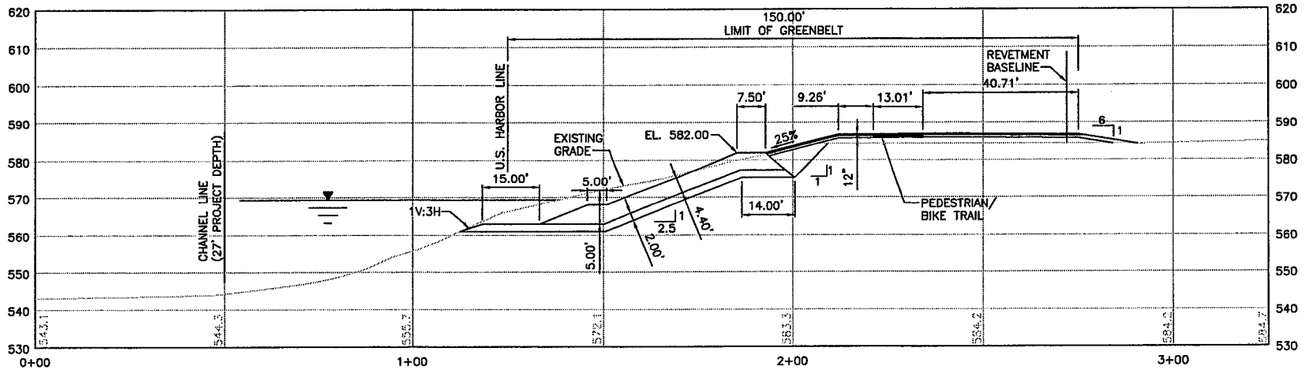
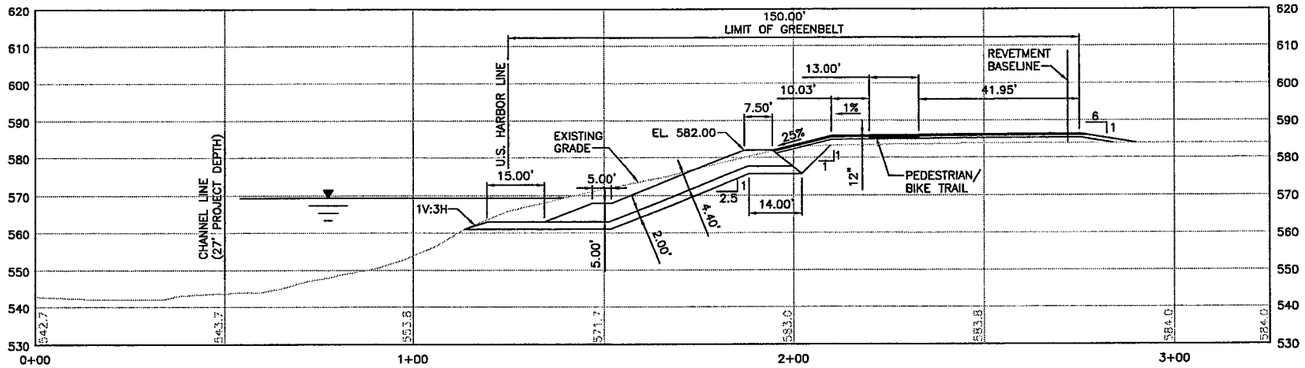


SECTION 11A
SC-100 | SC-109



SECTION 12
SC-100 | SC-109



SECTION 12A
SC-100 | SC-109

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GREENBELT TRAIL CROSS SECTIONS SHEET 8 OF 35

SCALE – AS NOTED	JUNE 2006
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DRAWING # 10 OF 37	

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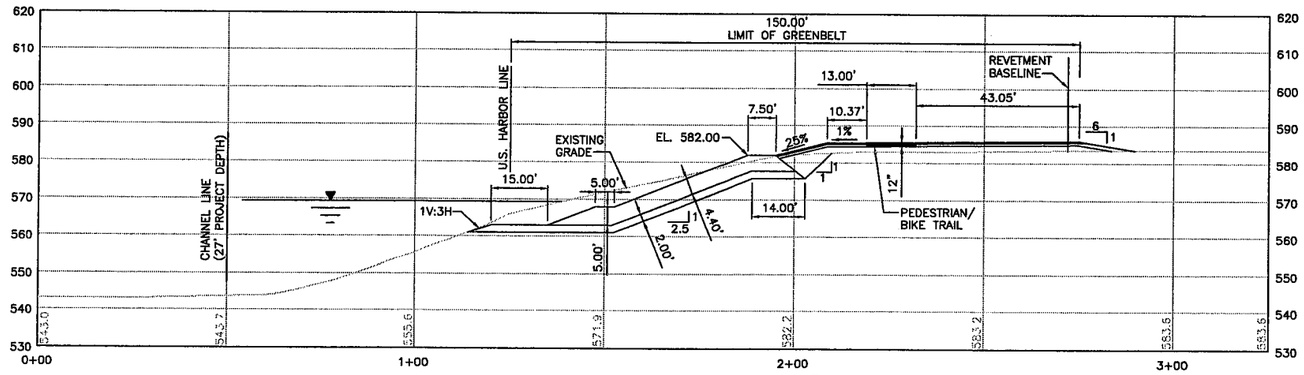
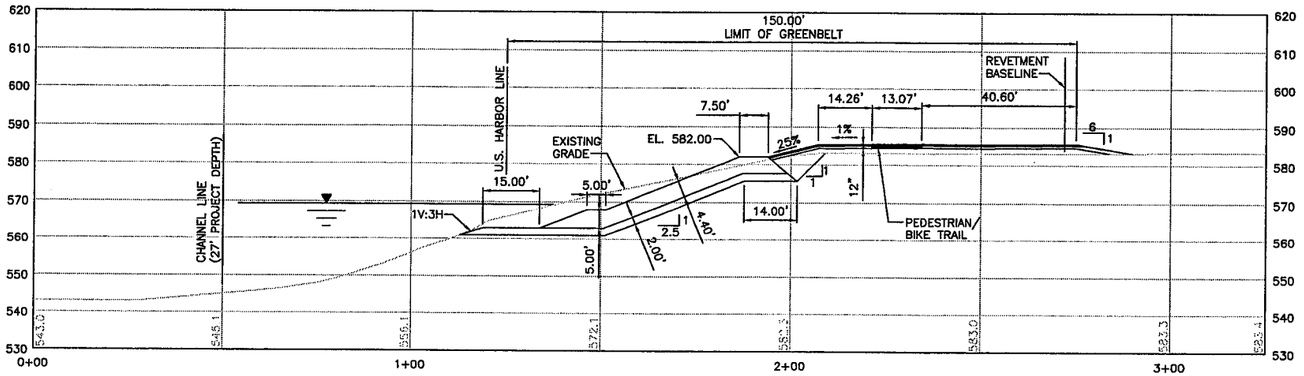
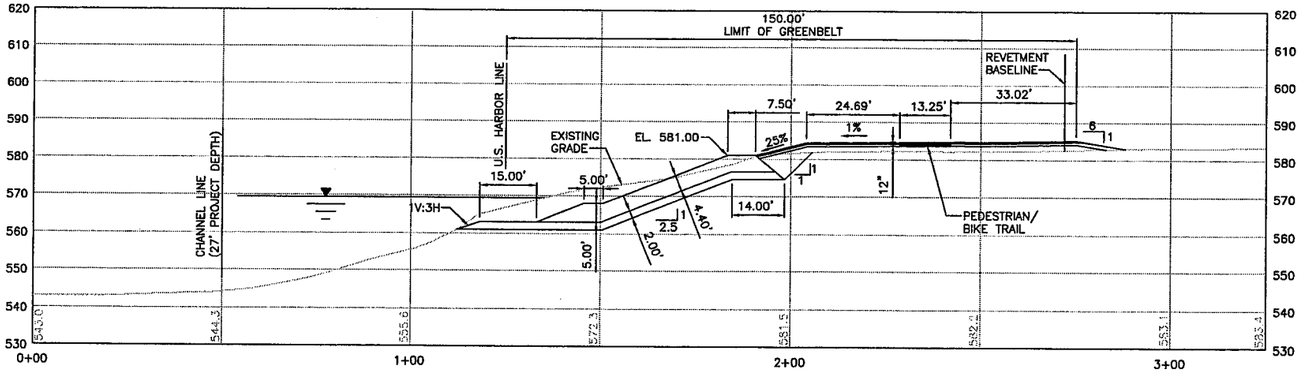


SECTION 13
SC-100 | SC-110



SECTION 13A
SC-100 | SC-110



SECTION 14
SC-100 | SC-110

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PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 9 OF 35

SCALE – AS NOTED		JUNE 2006
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DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	11 OF 37	

SC-110

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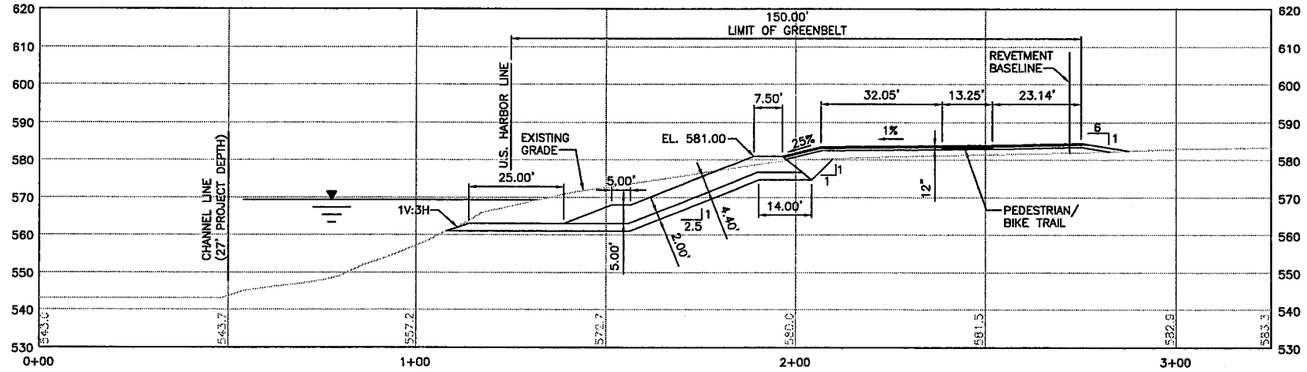
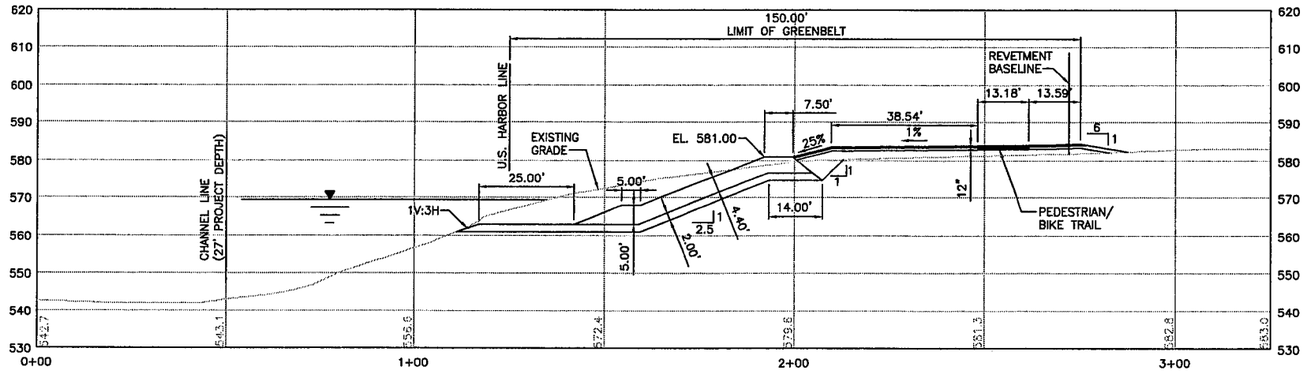
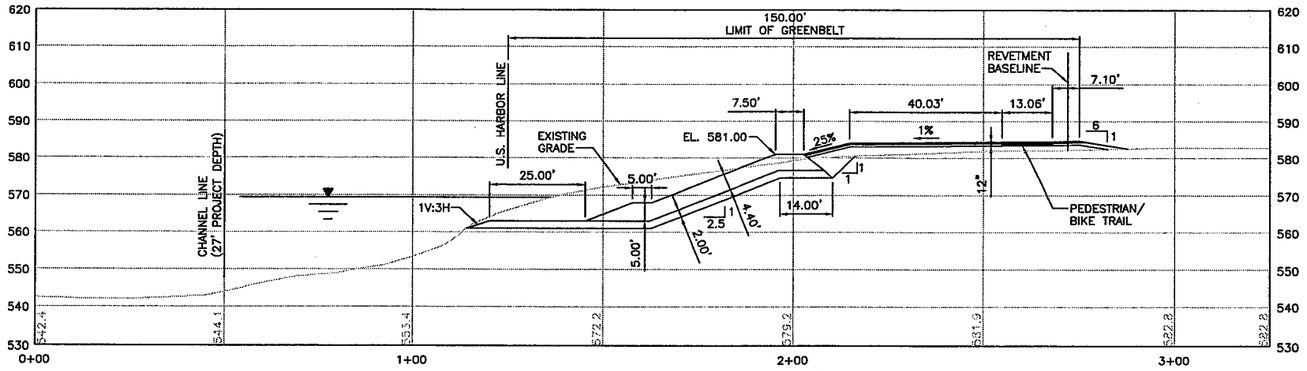


SECTION 14A
SC-100 | SC-111



SECTION 15
SC-100 | SC-111



SECTION 15A
SC-100 | SC-111

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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20' 0 20'
SCALE: 1"= 20'
HORIZ. & VERT.

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JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 10 OF 35

SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	12 OF 37	

SC-111

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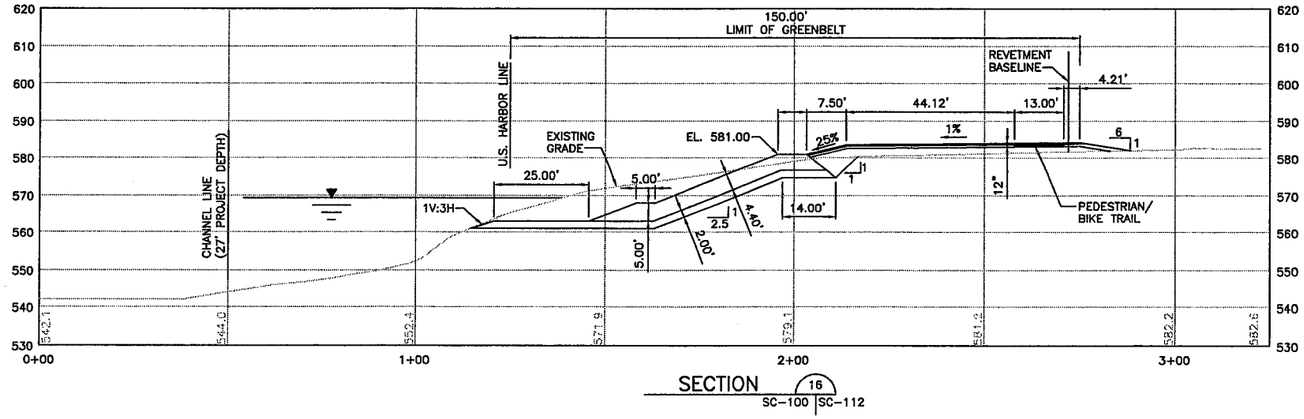
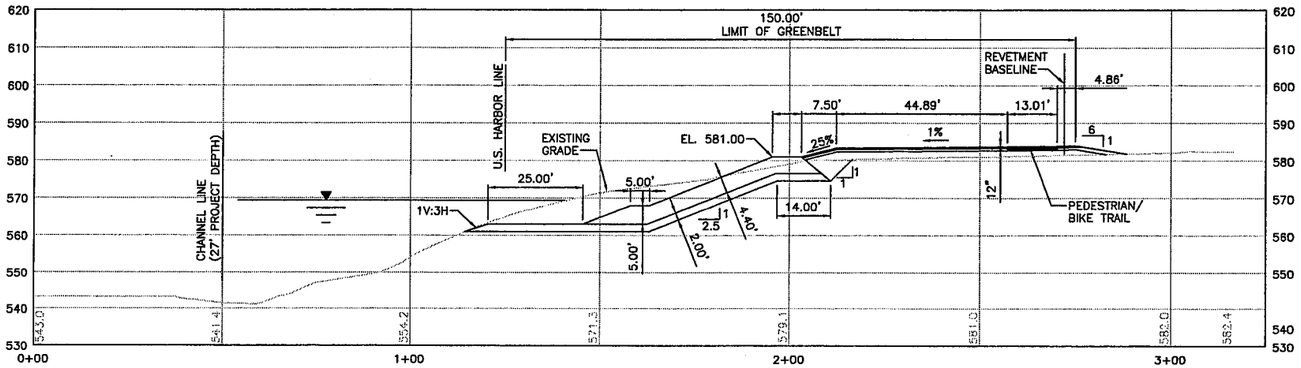
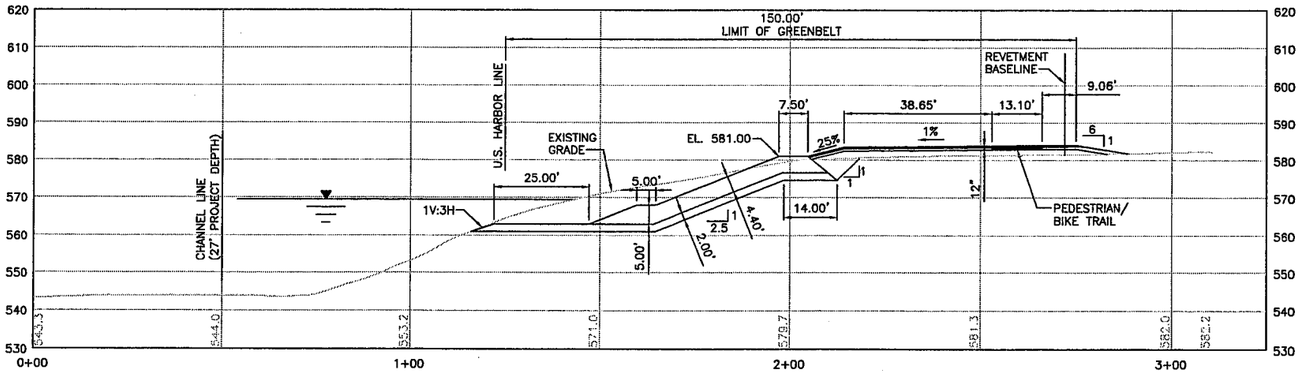


SECTION 16
SC-100 | SC-112



SECTION 16A
SC-100 | SC-112



SECTION 17
SC-100 | SC-112

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 11 OF 35

SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
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DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	13 OF 37	

SC-112

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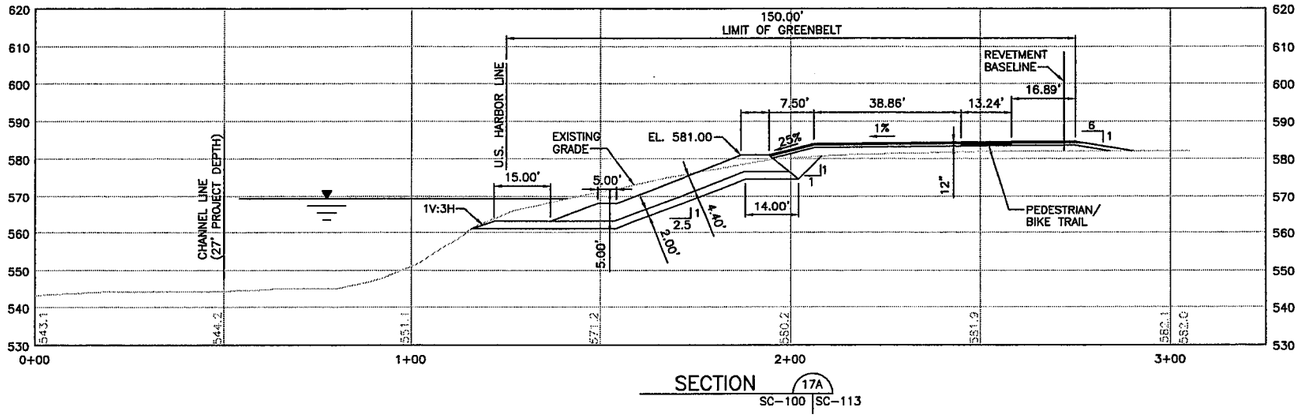
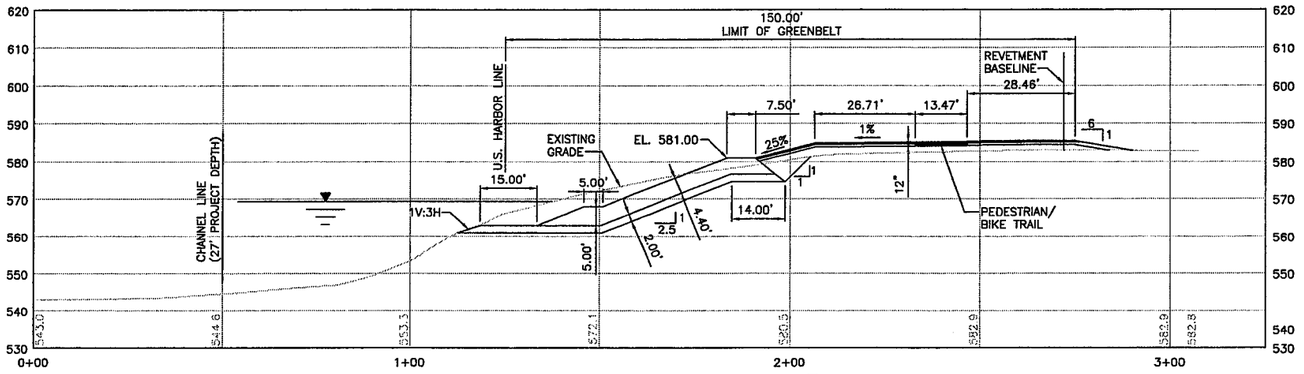
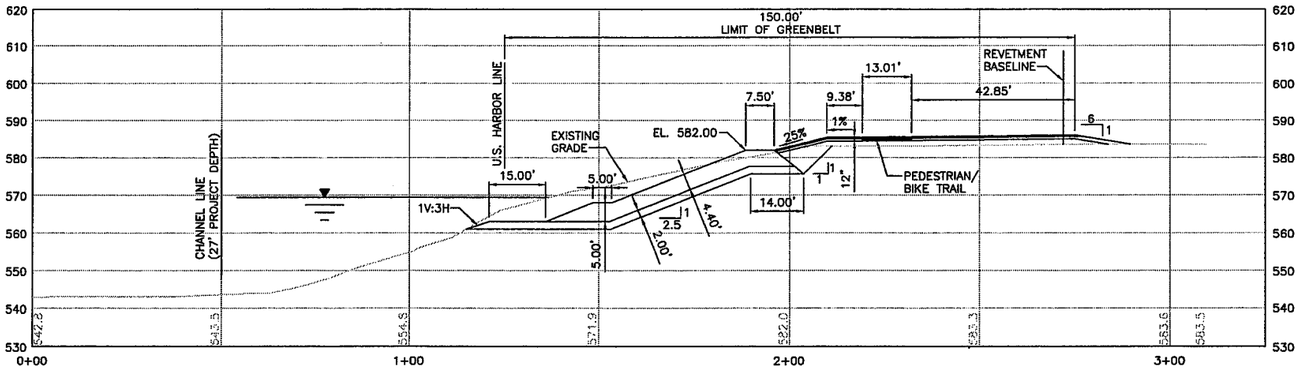


SECTION 17A
SC-100 | SC-113



SECTION 18
SC-100 | SC-113



SECTION 18A
SC-100 | SC-113

NOTES:

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HORIZ. & VERT.

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Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 12 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
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CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 14 OF 37	

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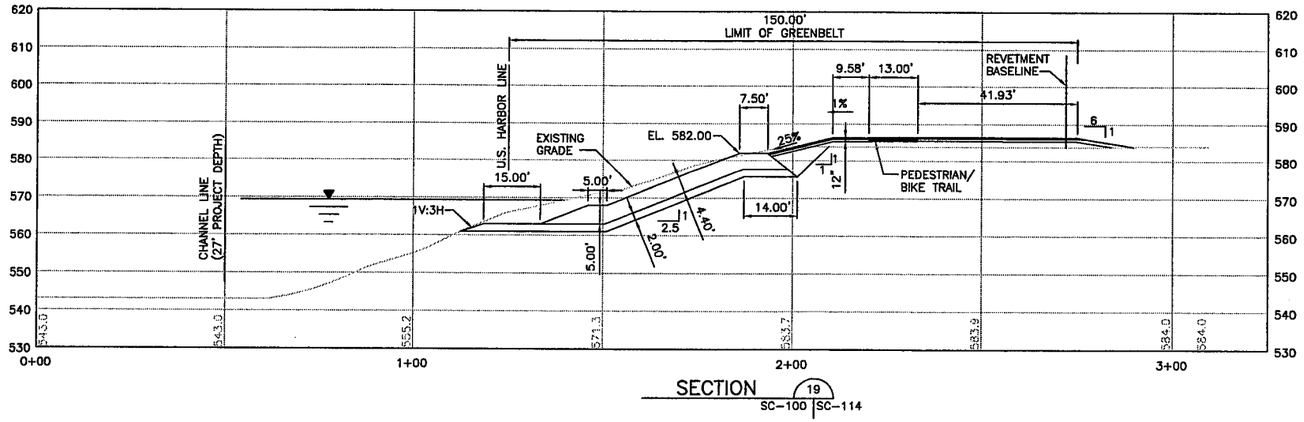
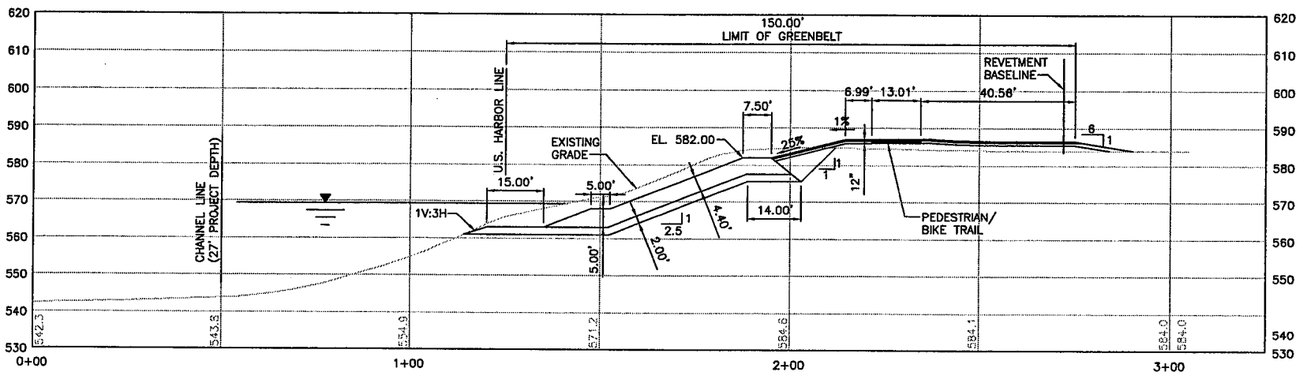
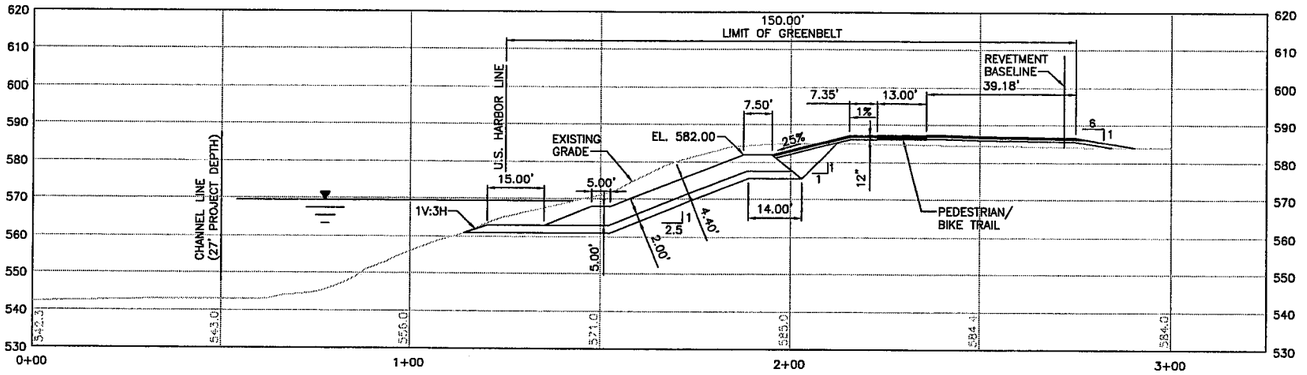


SECTION 19
SC-100 | SC-114



SECTION 19A
SC-100 | SC-114



SECTION 20
SC-100 | SC-114

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 13 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
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DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING #	15 OF 37

SC-114

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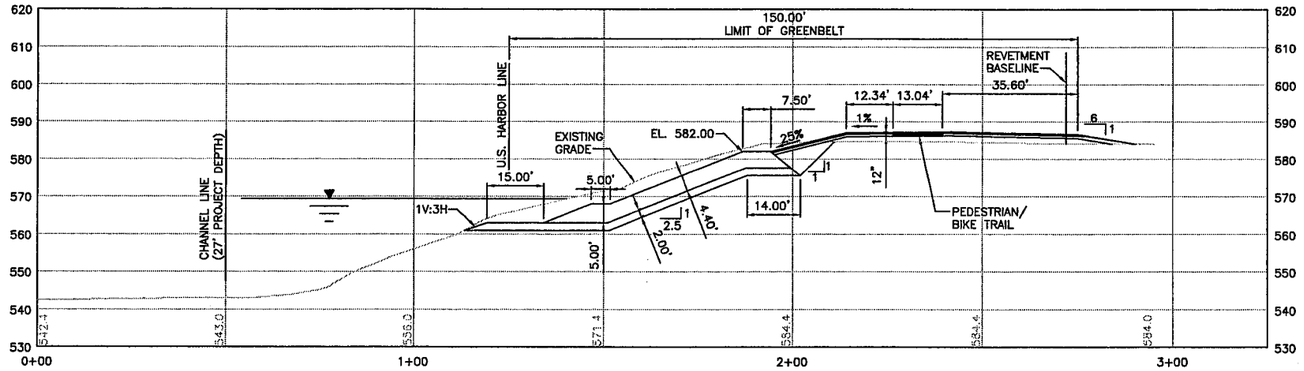
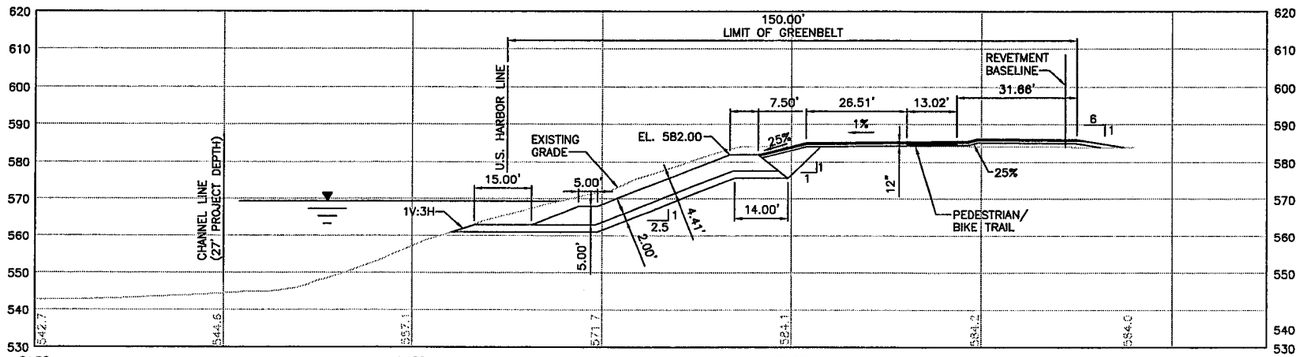
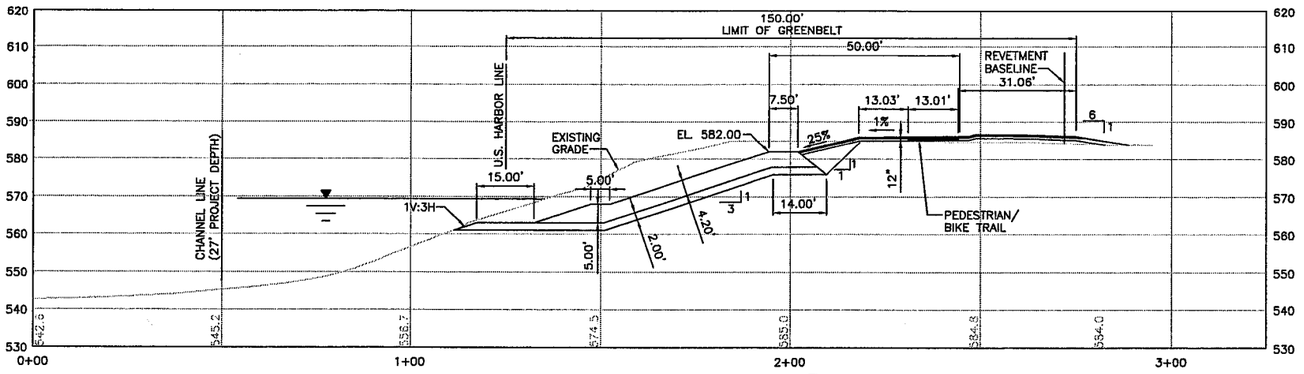


SECTION 20A
SC-100 | SC-114



SECTION 21
SC-101 | SC-115



SECTION 21A
SC-101 | SC-115

NOTES:

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Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 14 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 16 OF 37	

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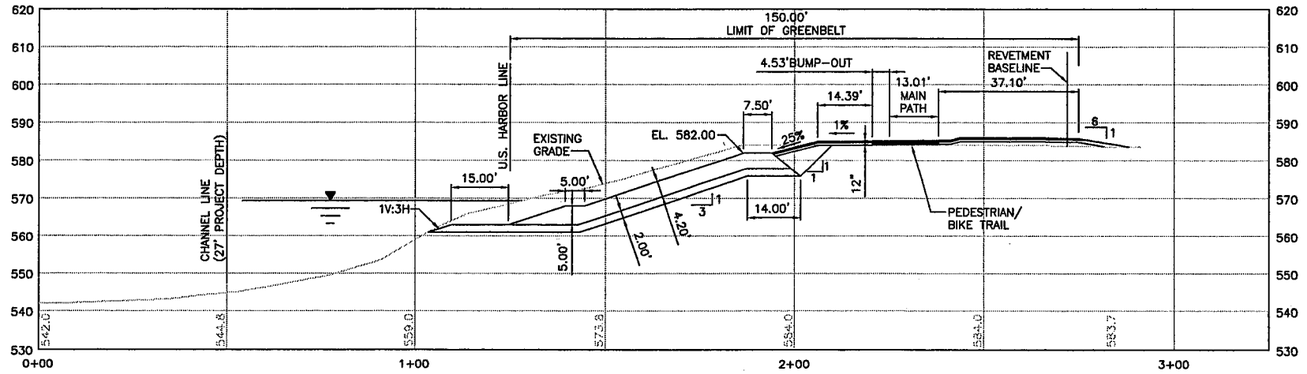
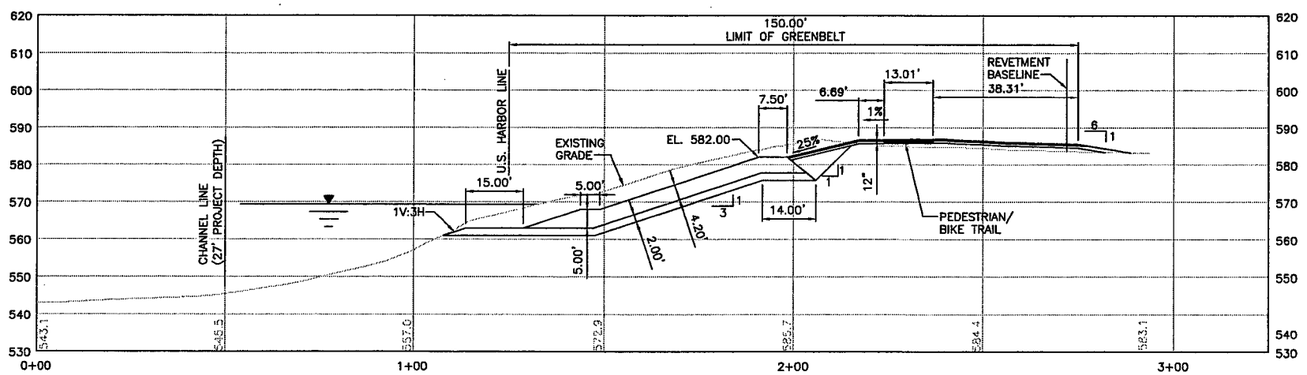
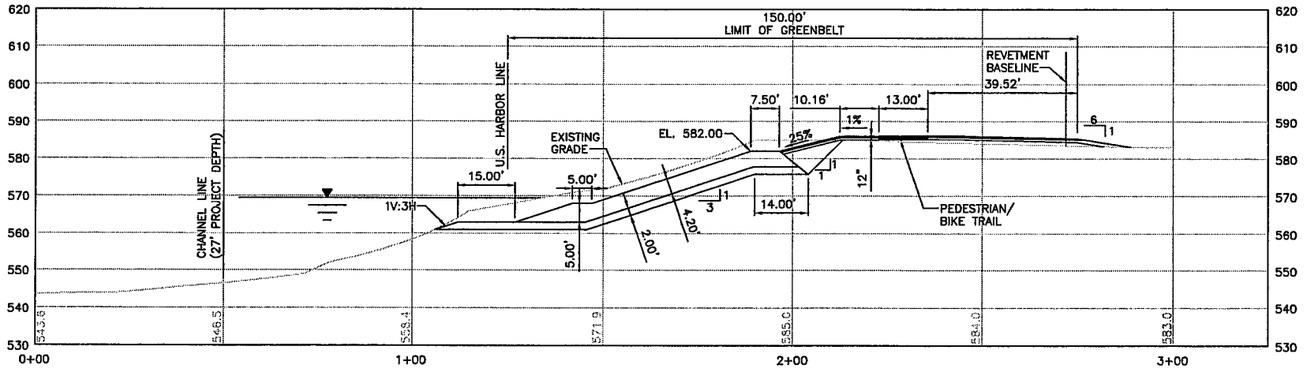


SECTION 23A
SC-101 | SC-117



SECTION 24
SC-101 | SC-117



SECTION 24A
SC-101 | SC-117

NOTES:

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SCALE: 1"= 20'
HORIZ. & VERT.

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Serving the Niagara Region

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NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 16 OF 35

SCALE – AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 18 OF 37	

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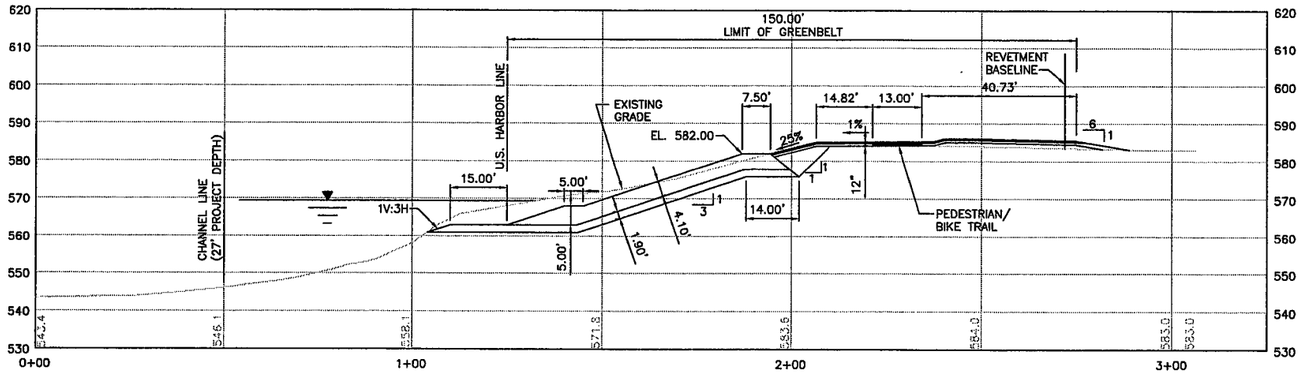
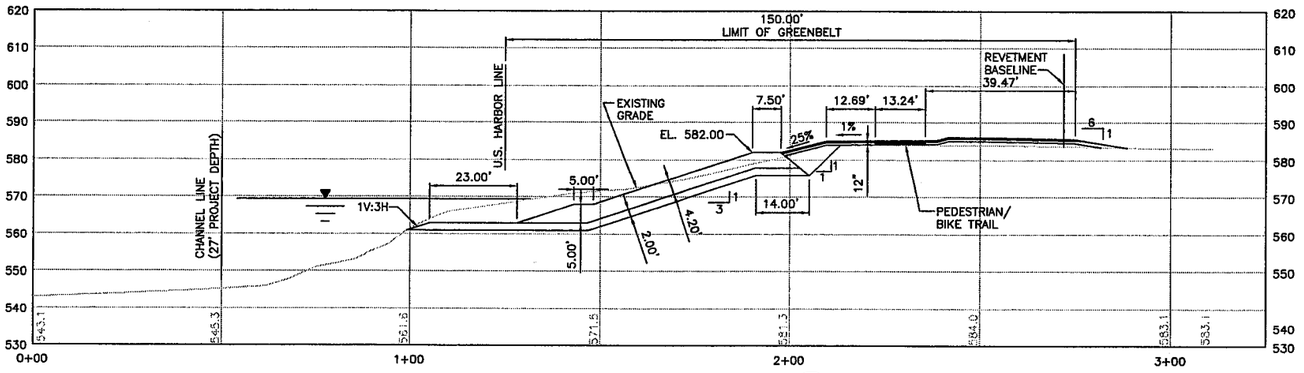
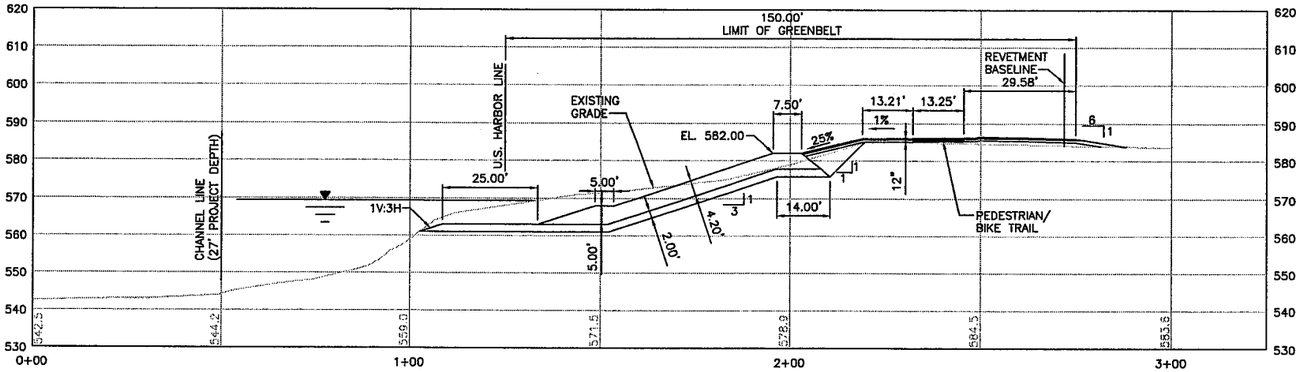


SECTION 25
SC-101 | SC-118



SECTION 25A
SC-101 | SC-118



SECTION 26
SC-101 | SC-118

NOTES:

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20' 0 20'
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NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 17 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
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DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 19 OF 37	

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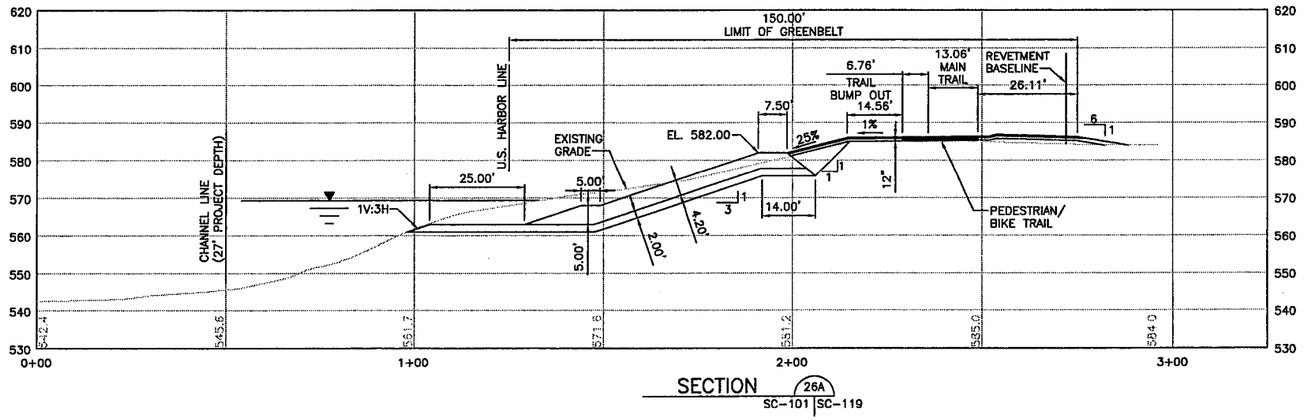
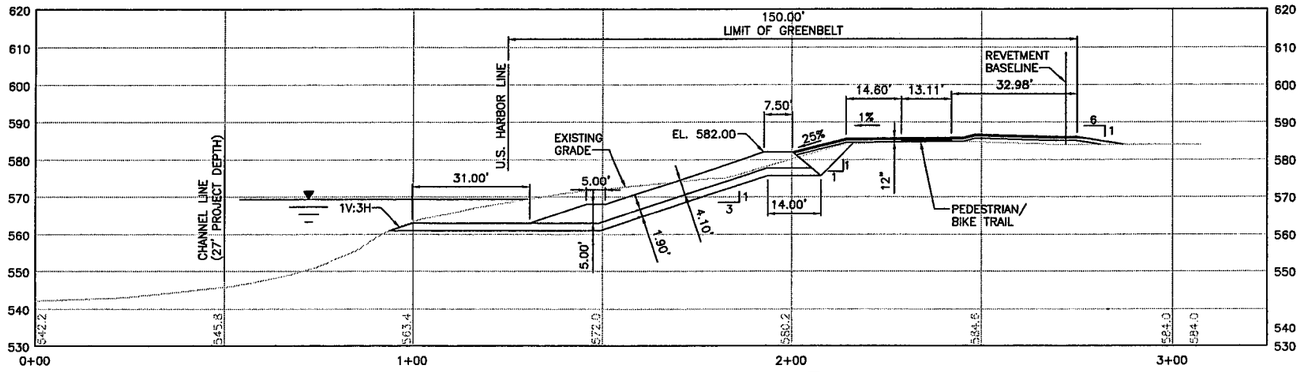
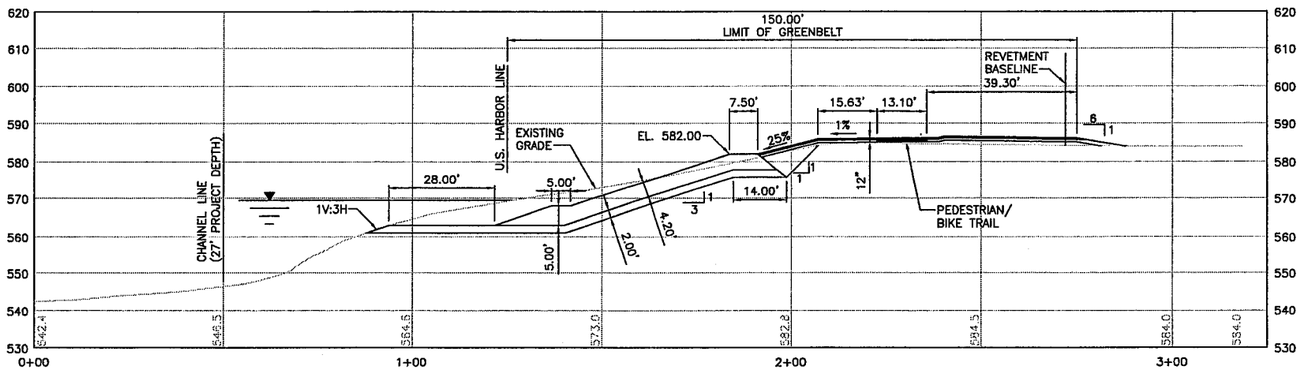


SECTION 26A
SC-101 | SC-119



SECTION 27
SC-101 | SC-119



SECTION 27A
SC-101 | SC-119

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NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 18 OF 35

SCALE – AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
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DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 20 OF 37	

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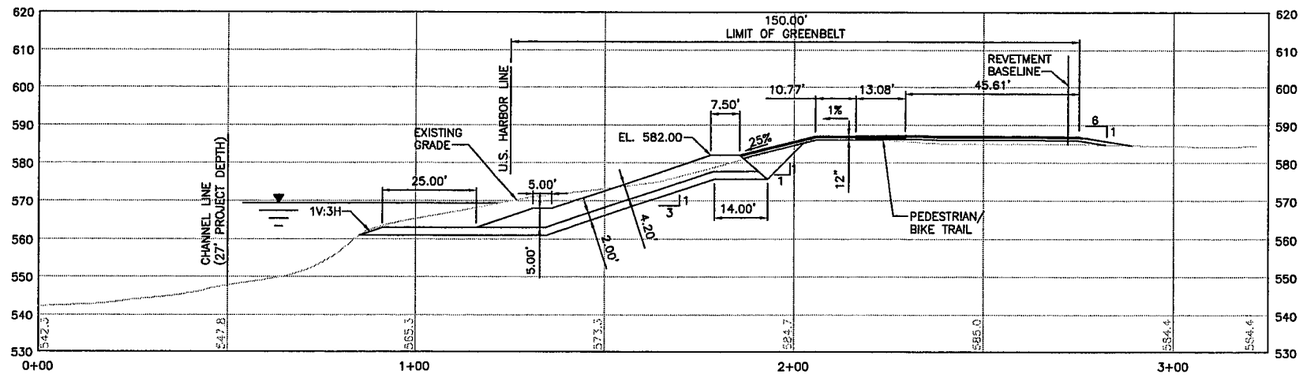
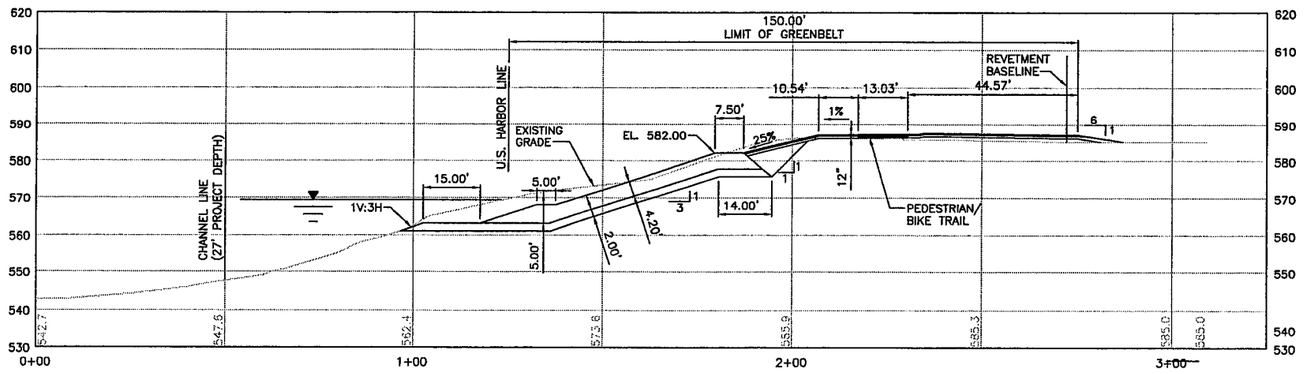
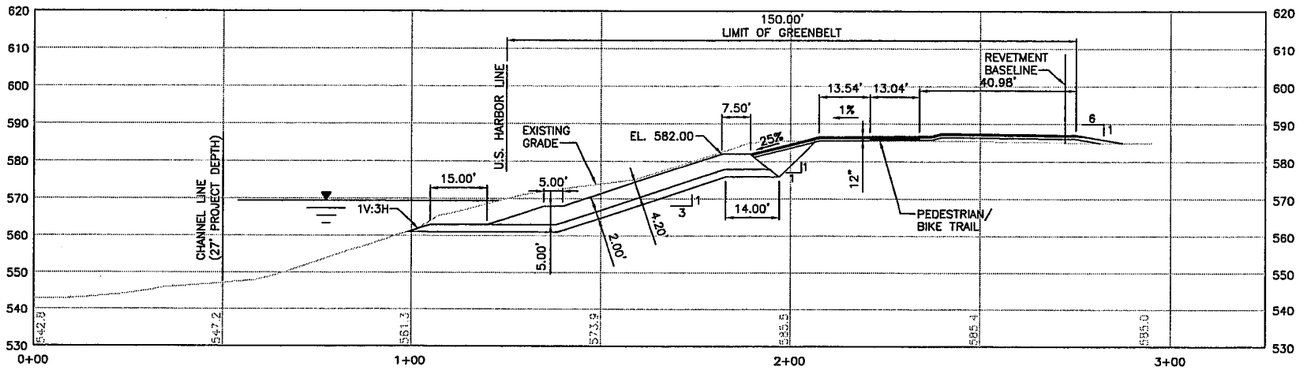


SECTION 28
SC-101 | SC-120



SECTION 28A
SC-101 | SC-120



SECTION 29
SC-101 | SC-120

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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20' 0 20'
SCALE: 1"= 20'
HORIZ. & VERT.

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JOB NO. 11173936.00000

Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

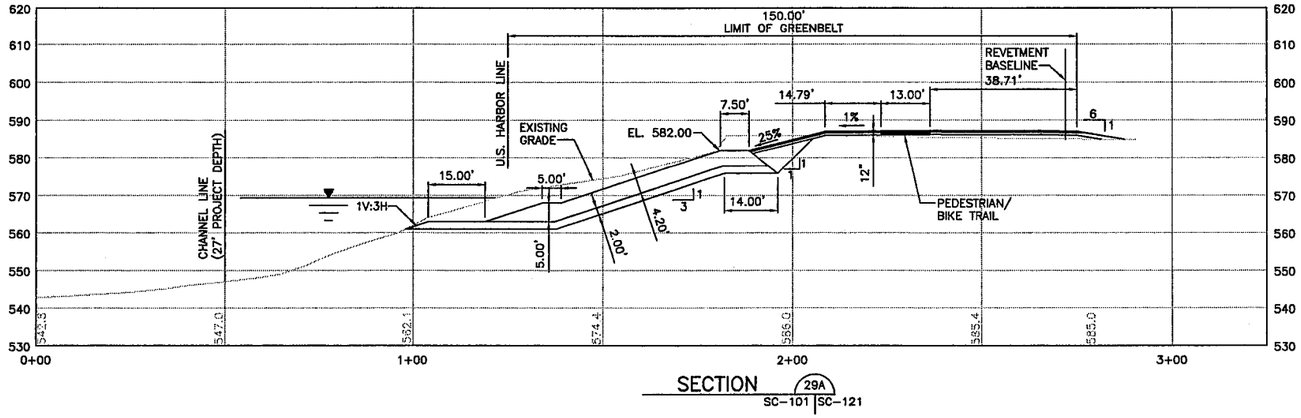
GREENBELT TRAIL CROSS SECTIONS SHET 19 OF 35

SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006

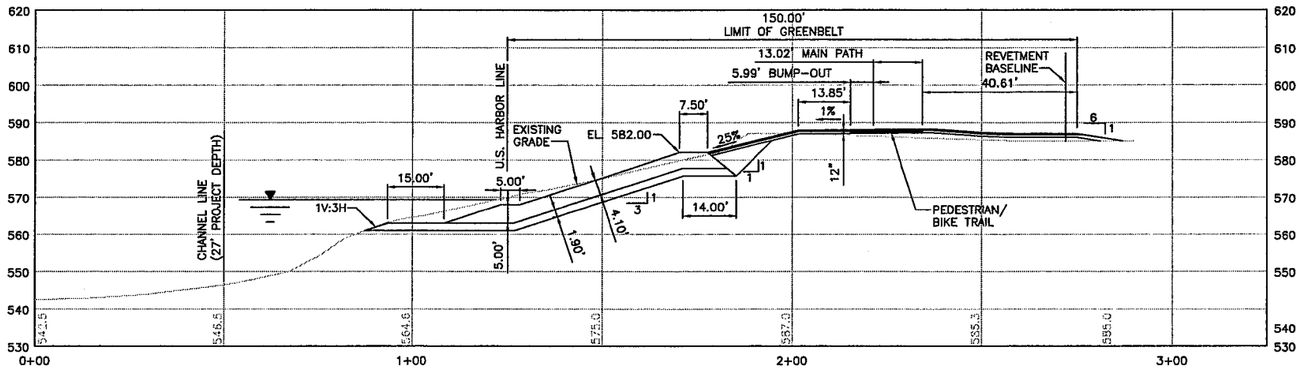
DRAWING FILE NAME: SECTIONS-R2.dwg
DRAWING # 21 OF 37

SC-120

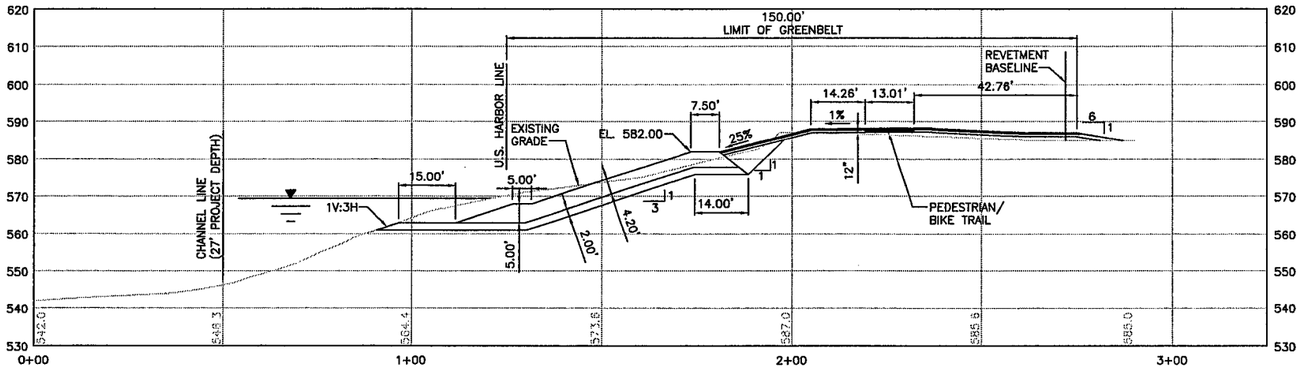
N:\11173936.00000\CAD\BID\SECTIONS-R5.dwg 6/8/06-1 ELB



SECTION 29A
SC-101 | SC-121



SECTION 30
SC-101 | SC-121



SECTION 30A
SC-101 | SC-121

NOTES:

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JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

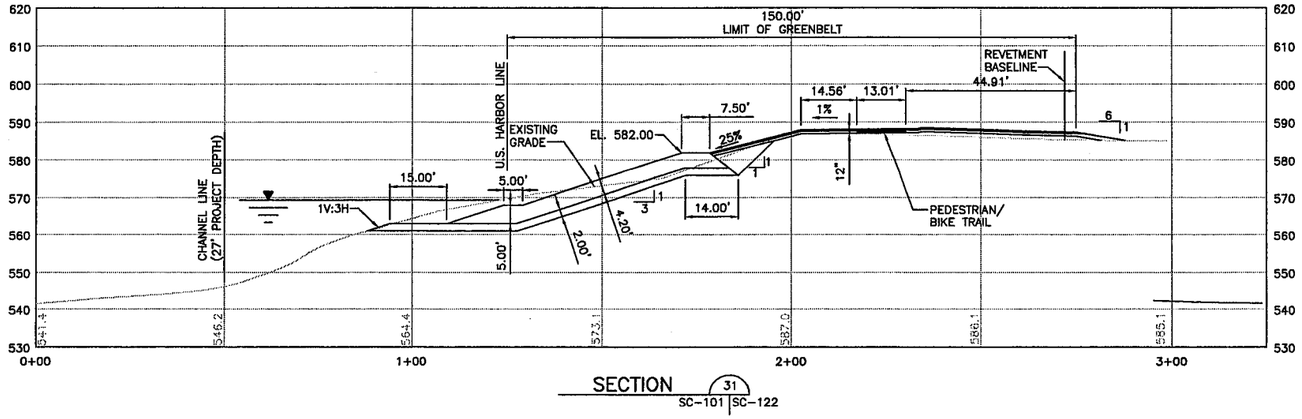
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 20 OF 35

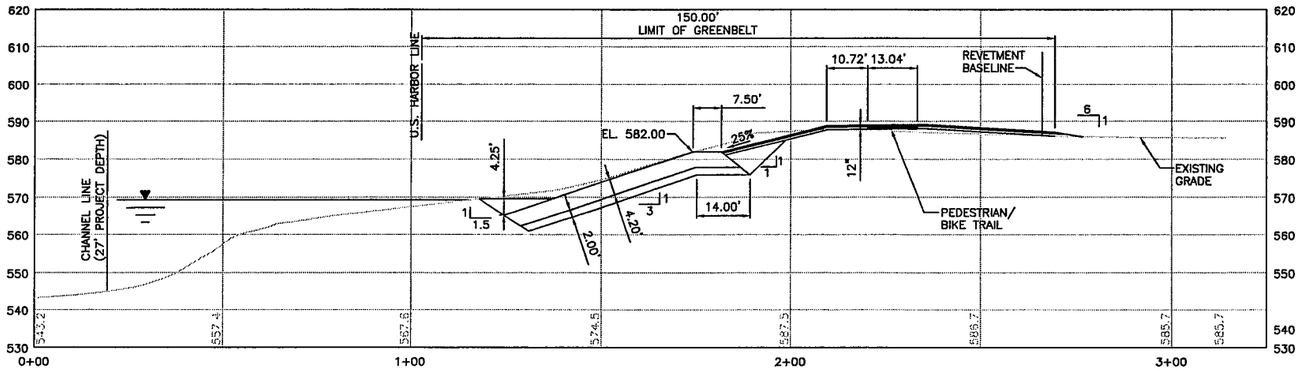
SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	22 OF 37	

SC-121

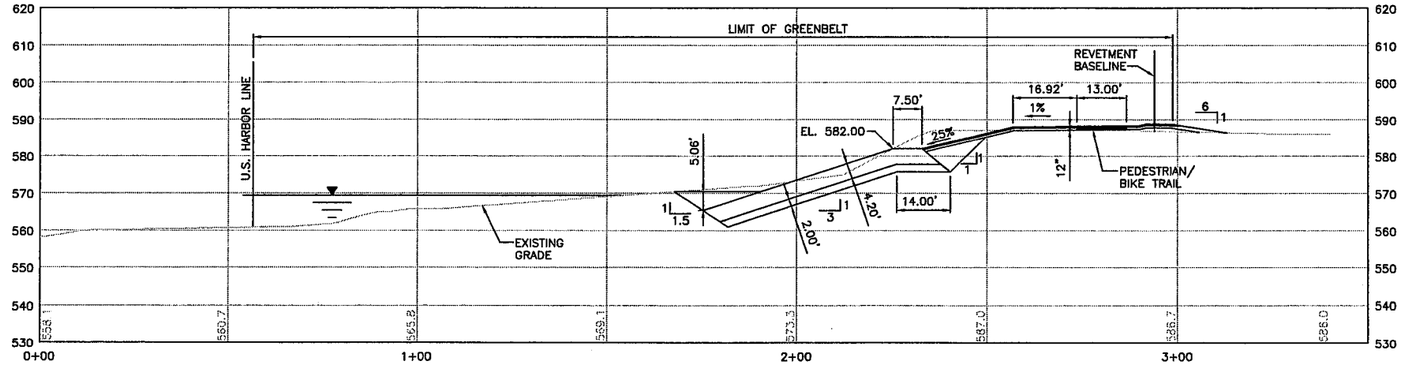
N:\11173936.00000\CAD\BID\SECTIONS-R5.dwg 6/8/06-1 ELB



SECTION 31
SC-101 | SC-122



SECTION 31A
SC-101 | SC-122



SECTION 32
SC-101 | SC-122

NOTES:

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Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

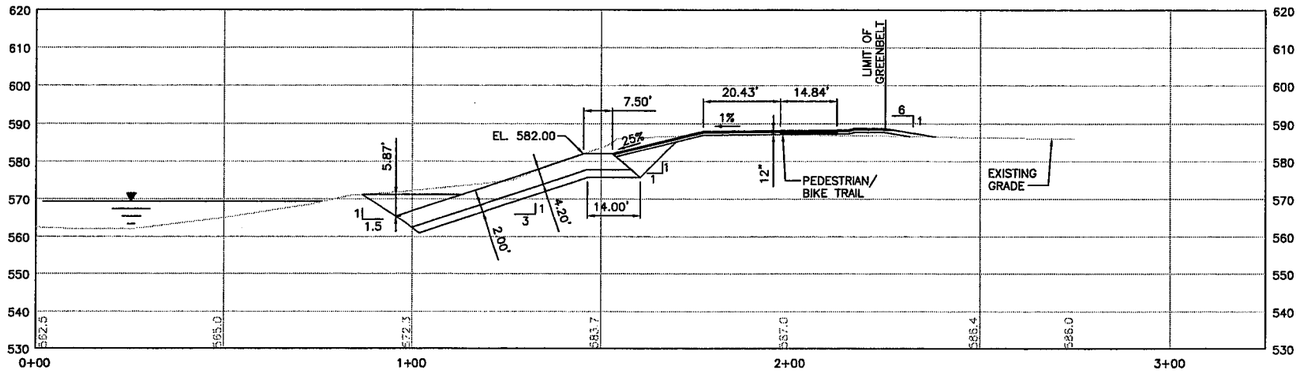
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 21 OF 35

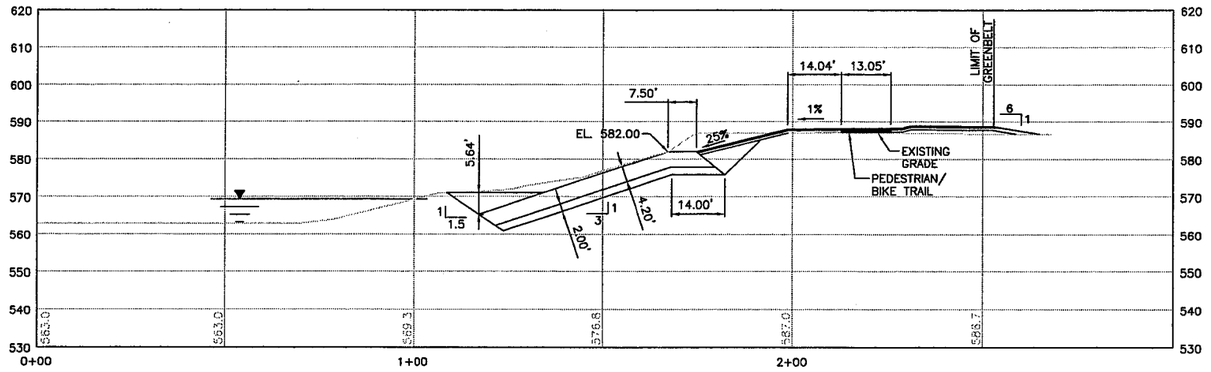
SCALE – AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 23 OF 37	

SC-122

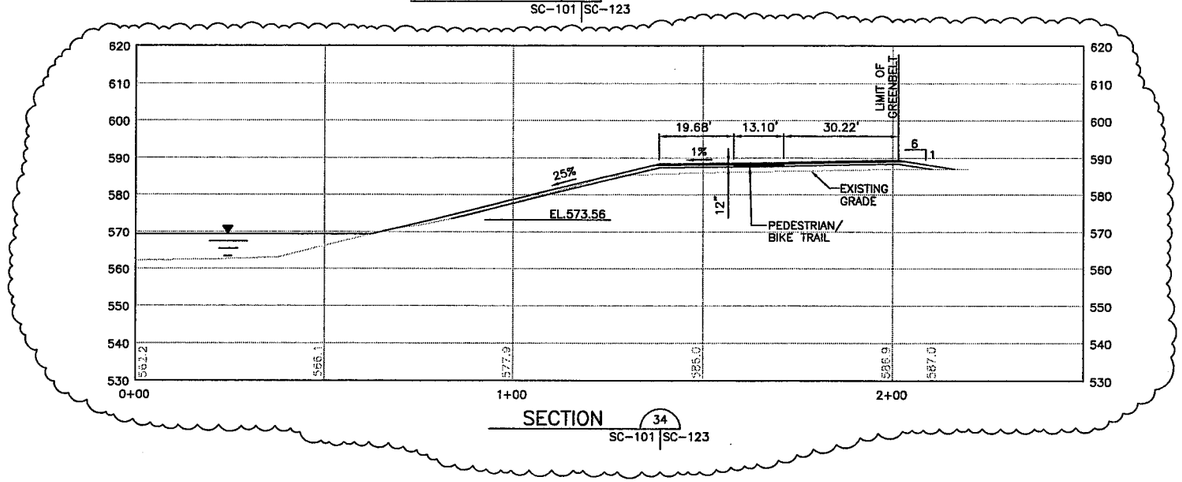
N:\11173936.00000\CAD\BID\SECTIONS-R5.dwg 6/8/06-1 ELB



SECTION 32A
SC-101 | SC-123



SECTION 33
SC-101 | SC-123



SECTION 34
SC-101 | SC-123

1

NOTES:

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JOB NO. 11173936.00000

Subconsultant:

NO.	REVISION	BY	DATE
1	REVISED BANK	MCD	3/07

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 22 OF 35

SCALE - AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	24 OF 37	

SC-123

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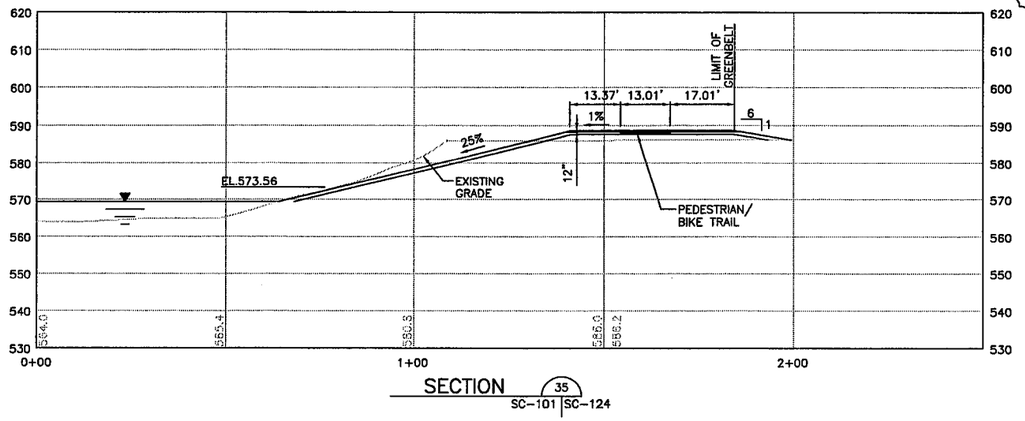
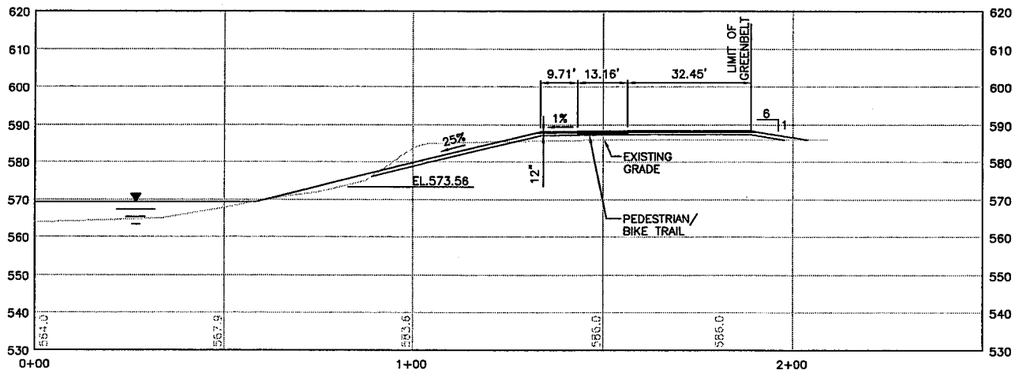
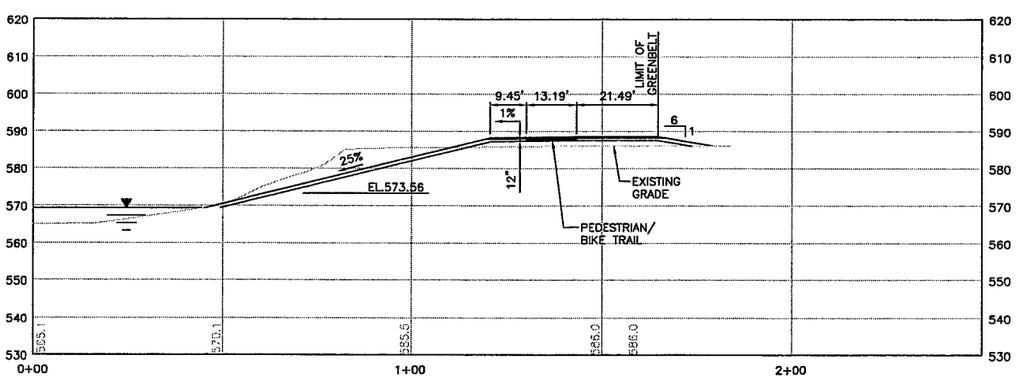


SECTION 35
SC-101 | SC-124



SECTION 36
SC-101 | SC-124



SECTION 37
SC-101 | SC-124

NOTES:

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1

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Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE
1	REVISED BANK	MCD	3/07

NFTA PROJECT NO. 12PL0202

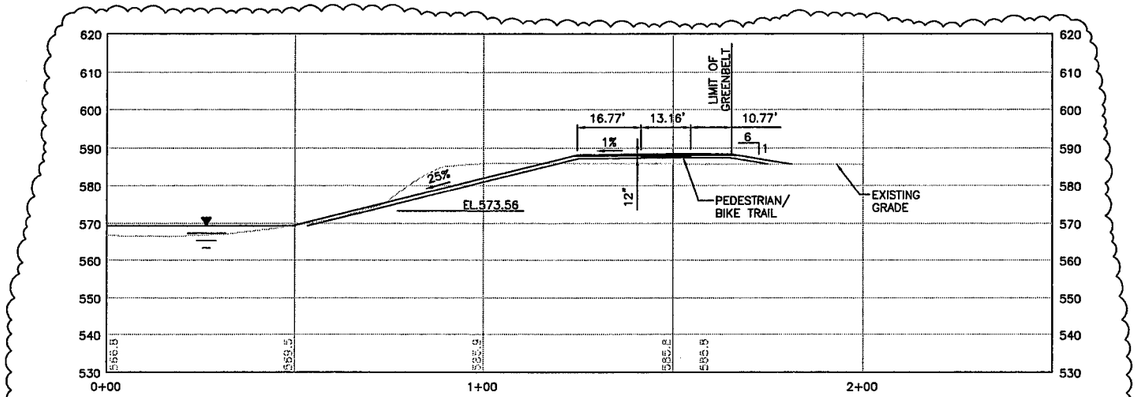
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 23 OF 35

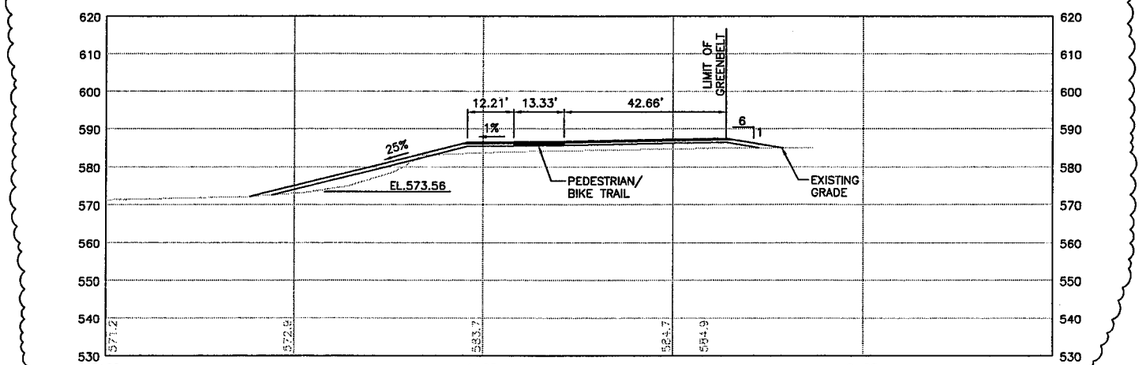
SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	25 OF 37	

SC-124

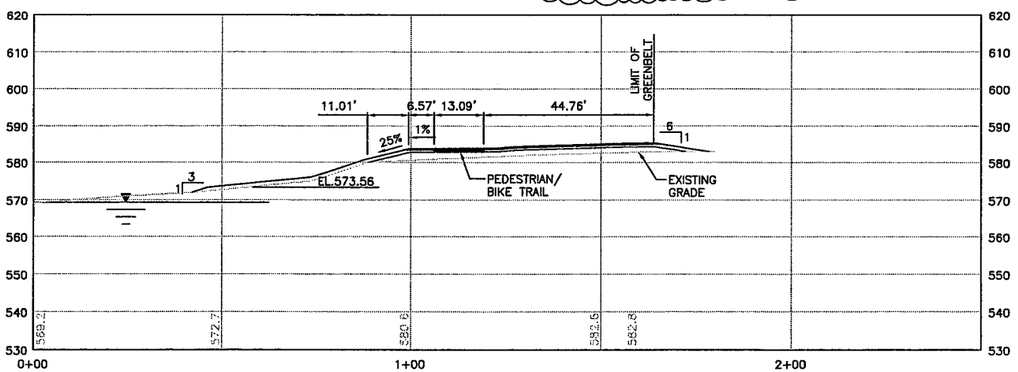
N:\11173936.00000\CAD\BID\SECTIONS-R5.dwg 6/8/06-1 ELB



SECTION 38
SC-101 | SC-125



SECTION 39
SC-101 | SC-125



SECTION 40
SC-101 | SC-125

1

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE
1	REVISED BANK	MCD	3/07

NFTA PROJECT NO. 12PL0202

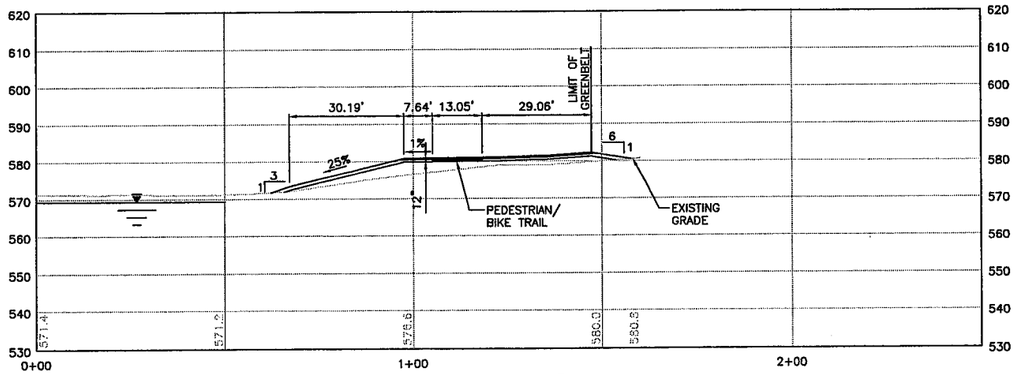
PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 24 OF 35

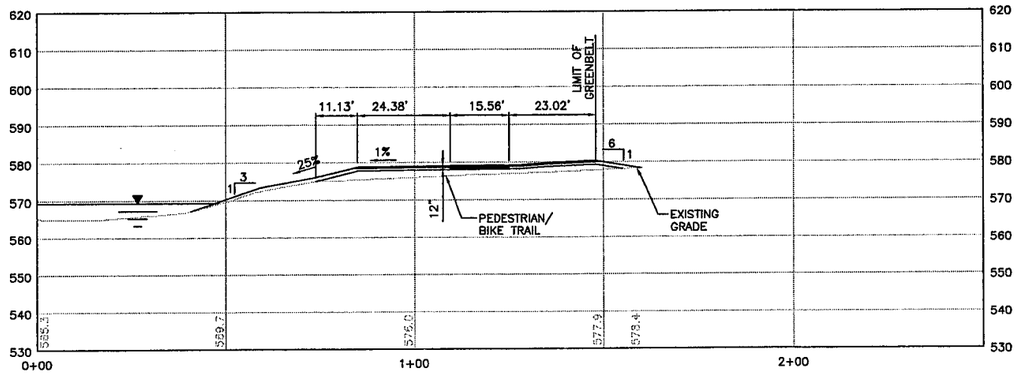
SCALE – AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING #	26 OF 37

SC-125

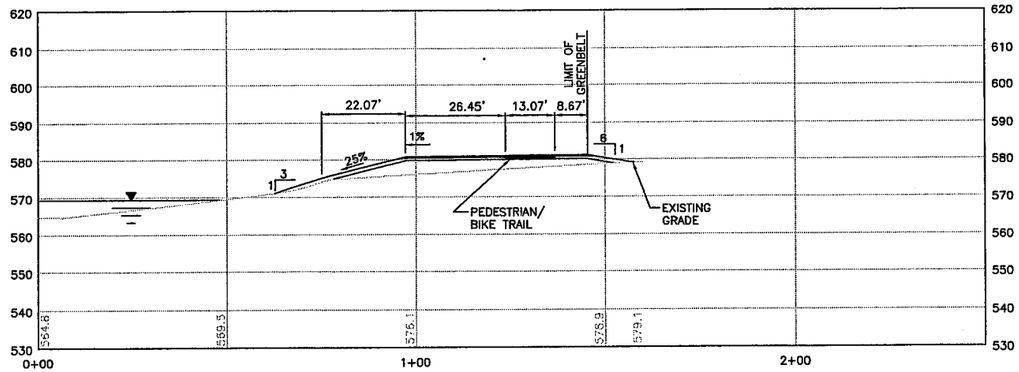
N:\11173936.00000\CAD\BID\SECTIONS-R5.dwg 6/8/06-1 ELB



SECTION 41
SC-101 | SC-126



SECTION 42
SC-101 | SC-126



SECTION 43
SC-101 | SC-126

NOTES:

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Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 25 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 27 OF 37	

SC-126

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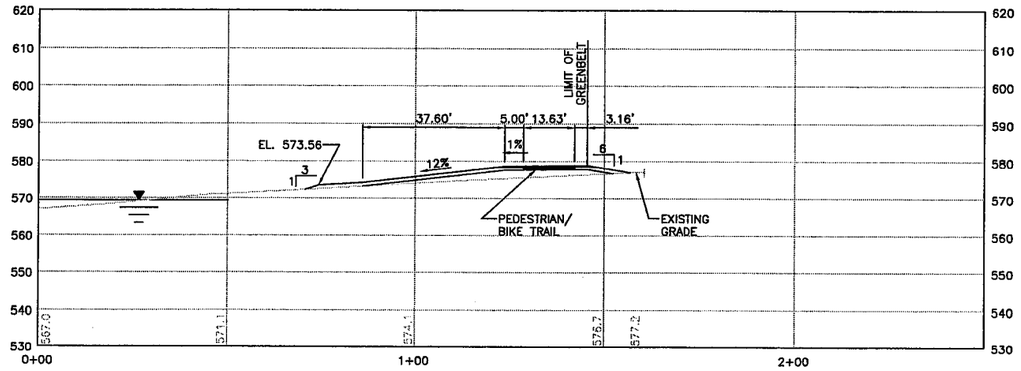
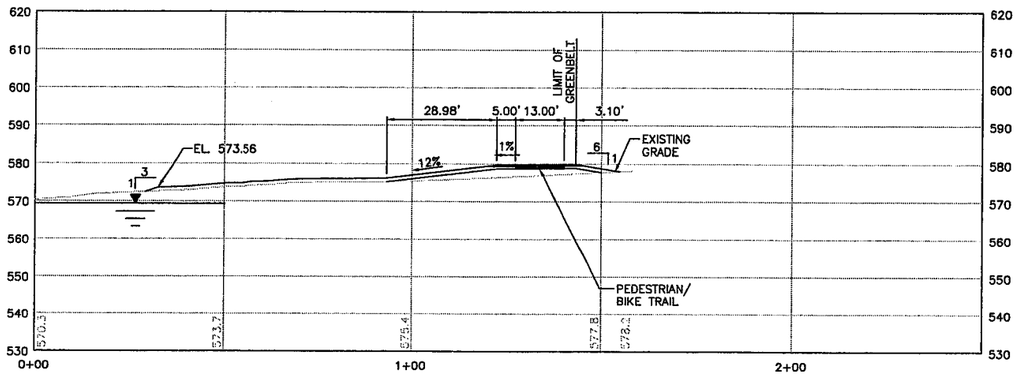
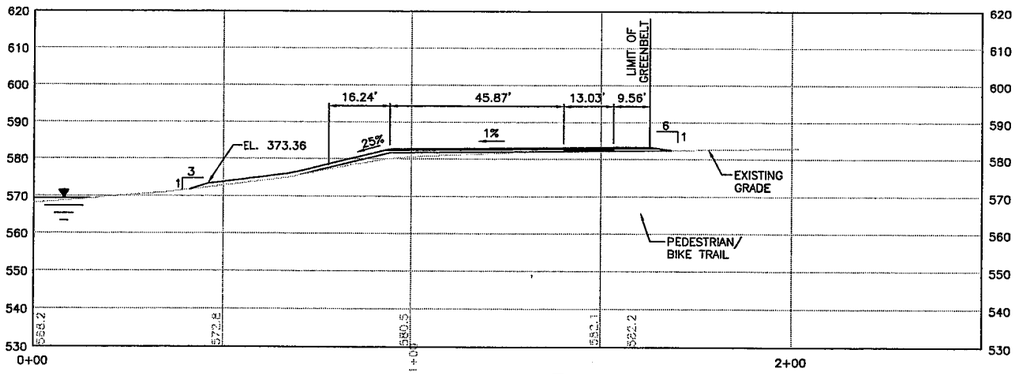


SECTION 44
SC-101 | SC-127



SECTION 45
SC-101 | SC-127



SECTION 46
SC-101 | SC-127

NOTES:

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Subconsultant:

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Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

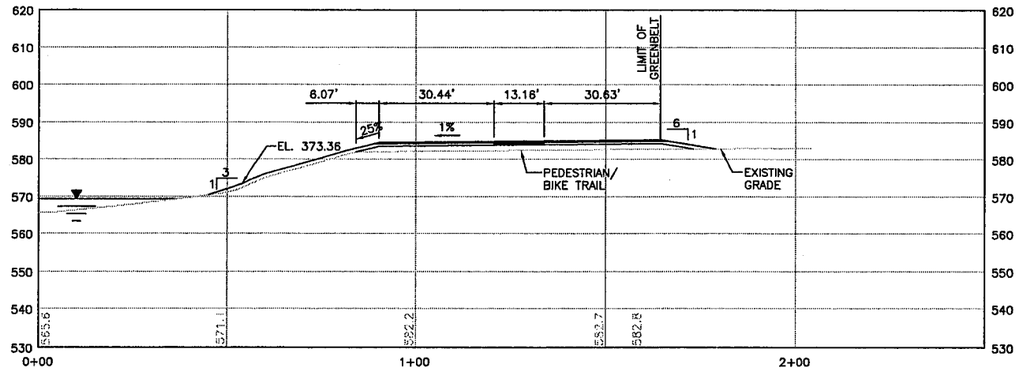
PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 26 OF 35

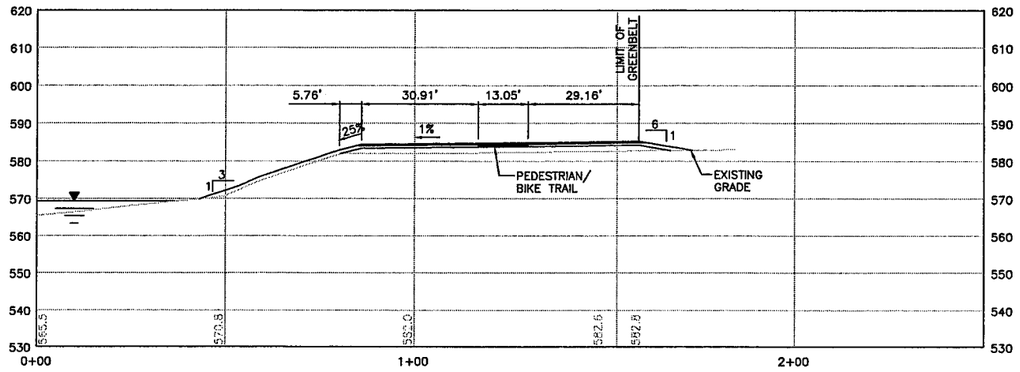
SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 28 OF 37	

SC-127

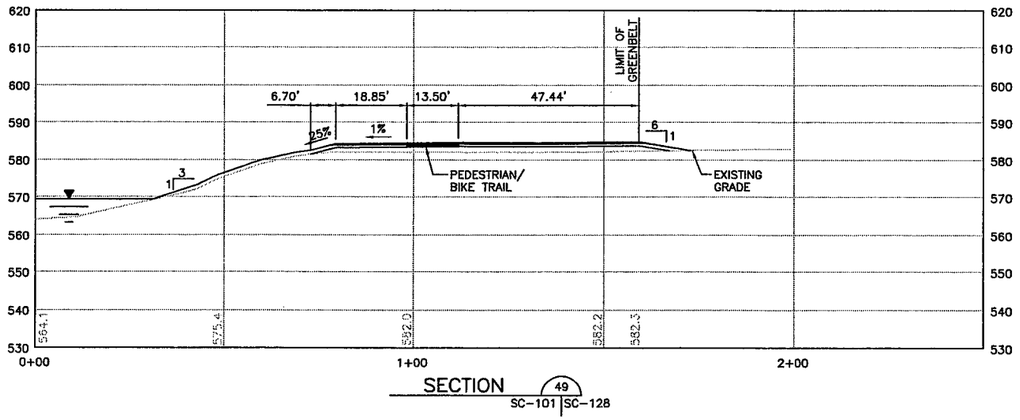
N:\11173936.00000\CAD\BID\SECTIONS-R5.dwg 6/8/06-1 ELB



SECTION 47
SC-101 | SC-128



SECTION 48
SC-101 | SC-128



SECTION 49
SC-101 | SC-128

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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SCALE: 1"= 20'
HORIZ. & VERT.

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JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 27 OF 35

SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	29 OF 37	

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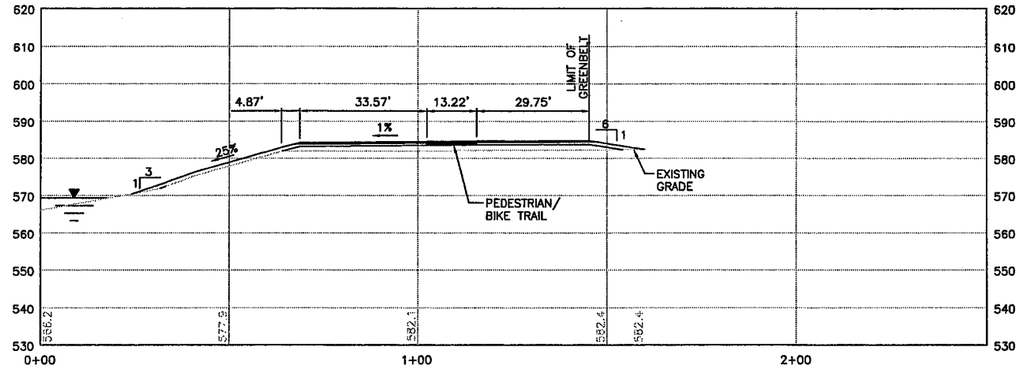
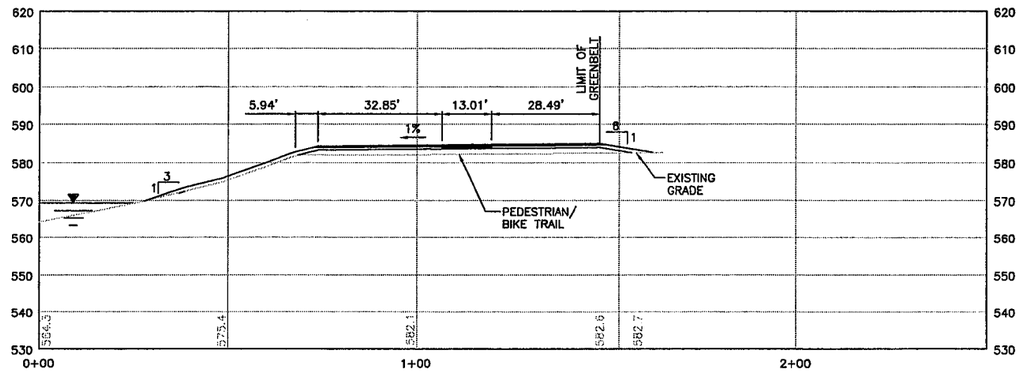
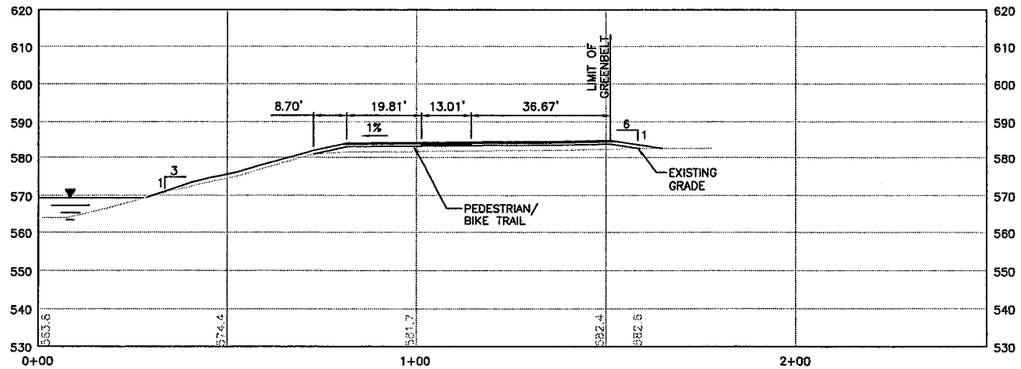


SECTION 50
SC-101 | SC-129



SECTION 51
SC-101 | SC-129



SECTION 52
SC-101 | SC-129

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 28 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING #	30 OF 37

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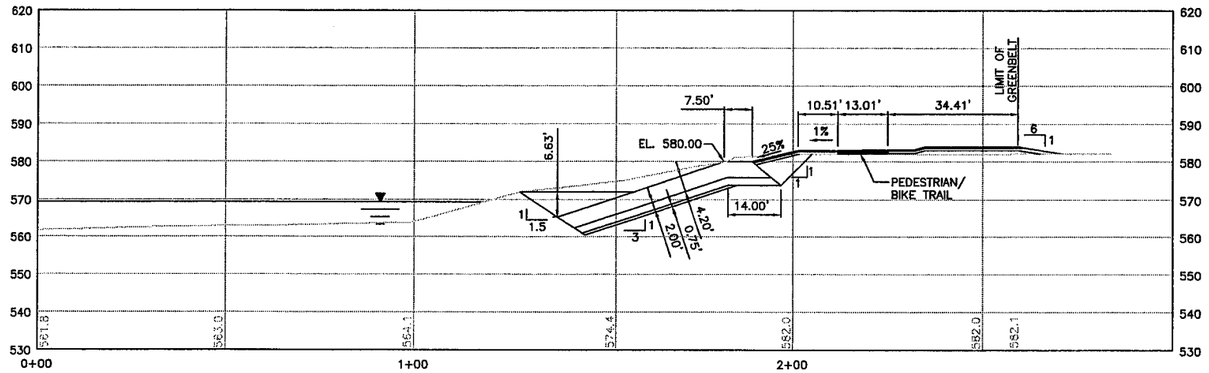
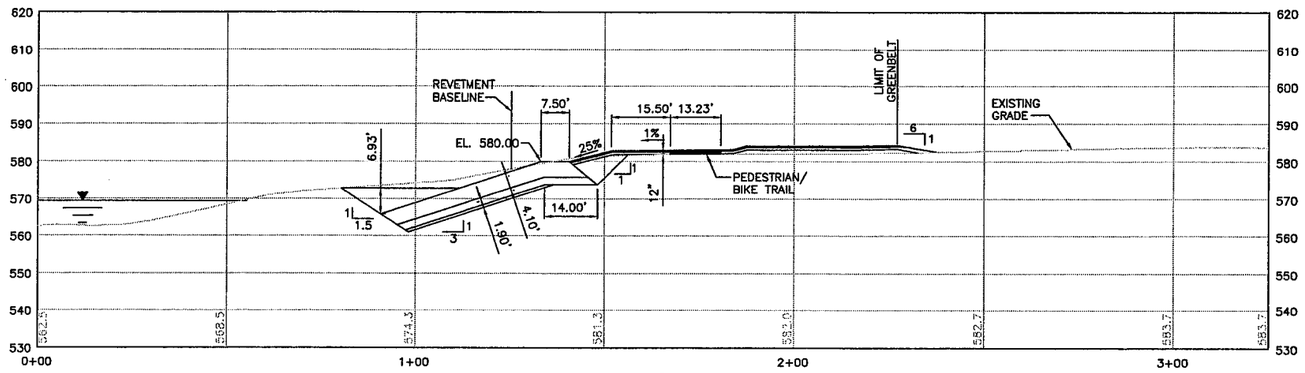
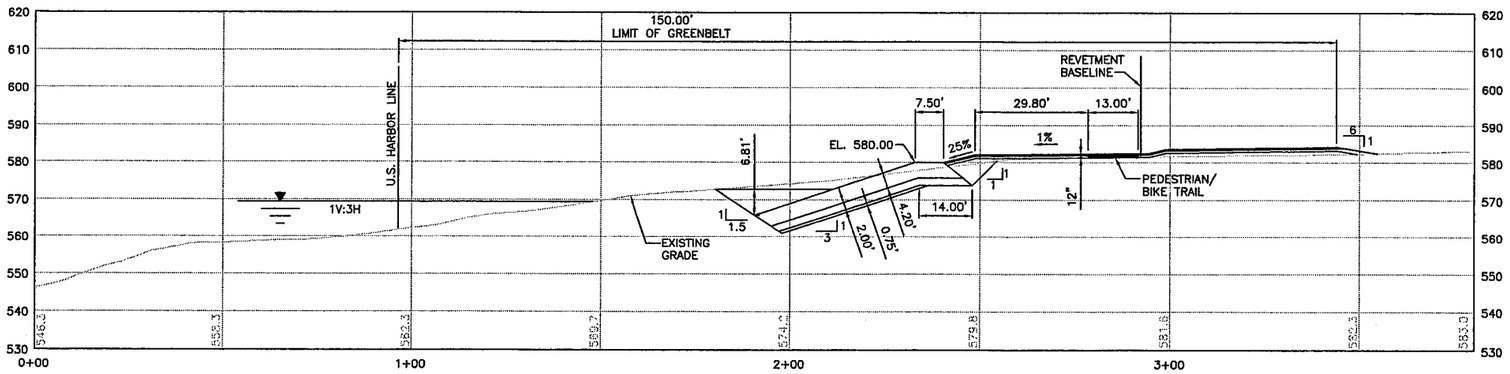


SECTION 53 (SC-101 | SC-130)



SECTION 53A (SC-101 | SC-130)



SECTION 54 (SC-101 | SC-130)

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 29 OF 35

SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	31 OF 37	

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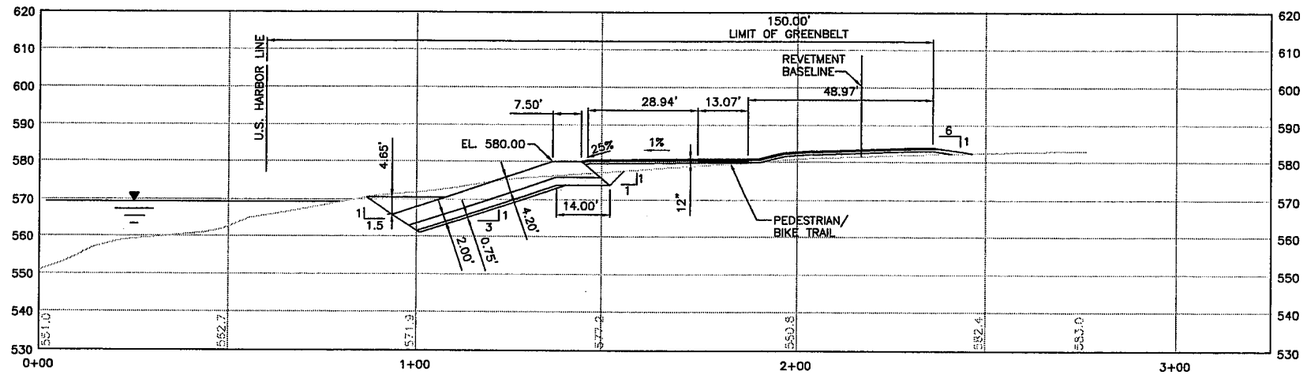
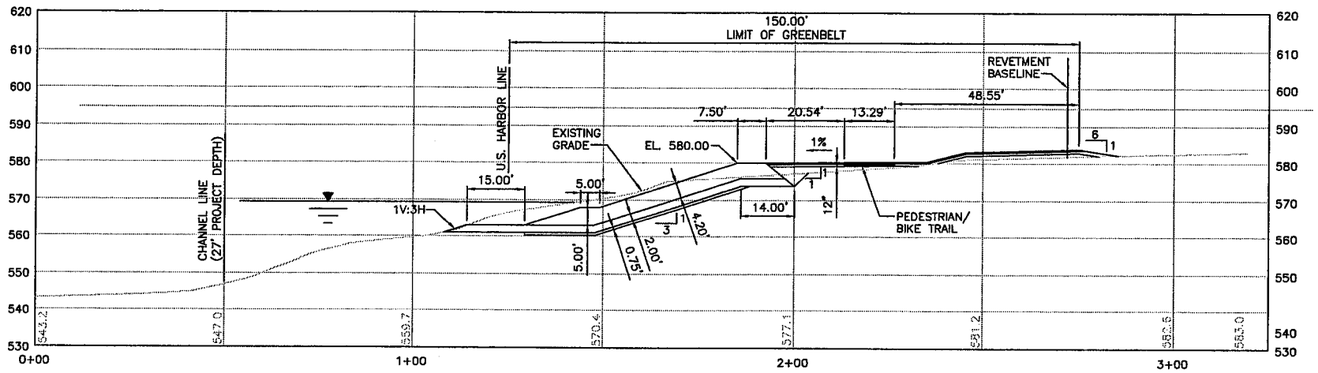
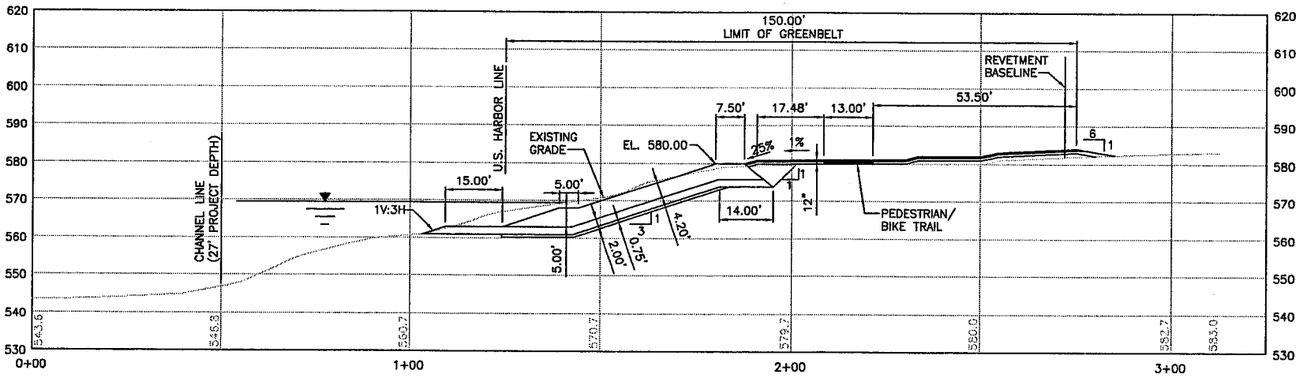


SECTION 54A
SC-101 | SC-131



SECTION 55
SC-101 | SC-131



SECTION 55A
SC-101 | SC-131

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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JOB NO. 11173936.00000
Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 30 OF 35

SCALE – AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	32 OF 37	

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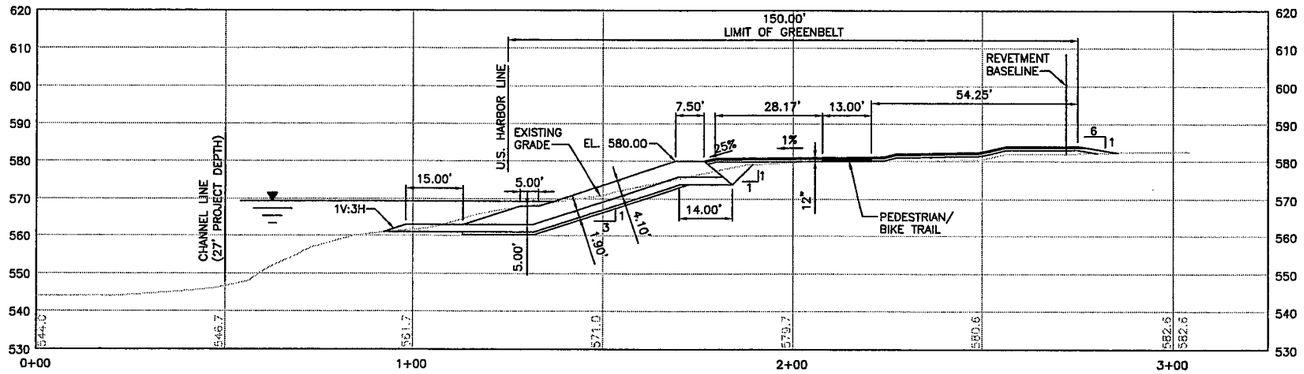
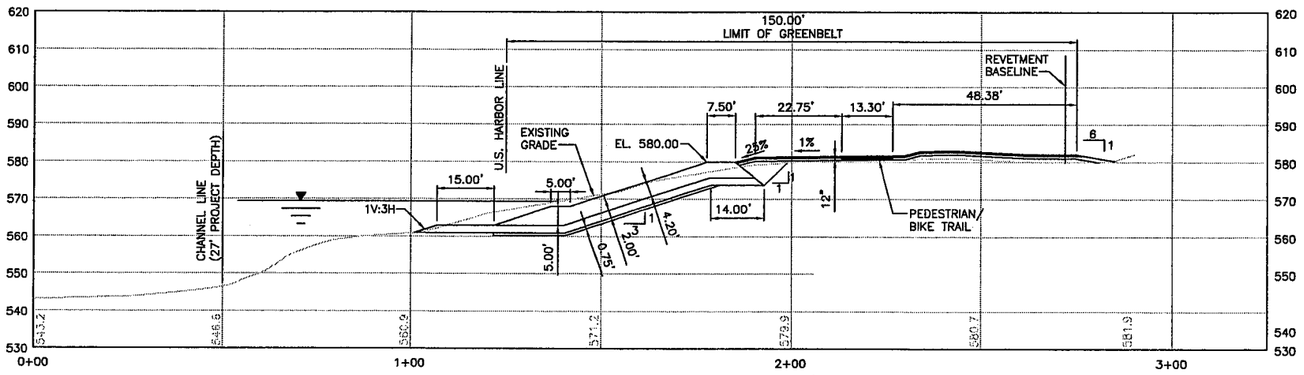
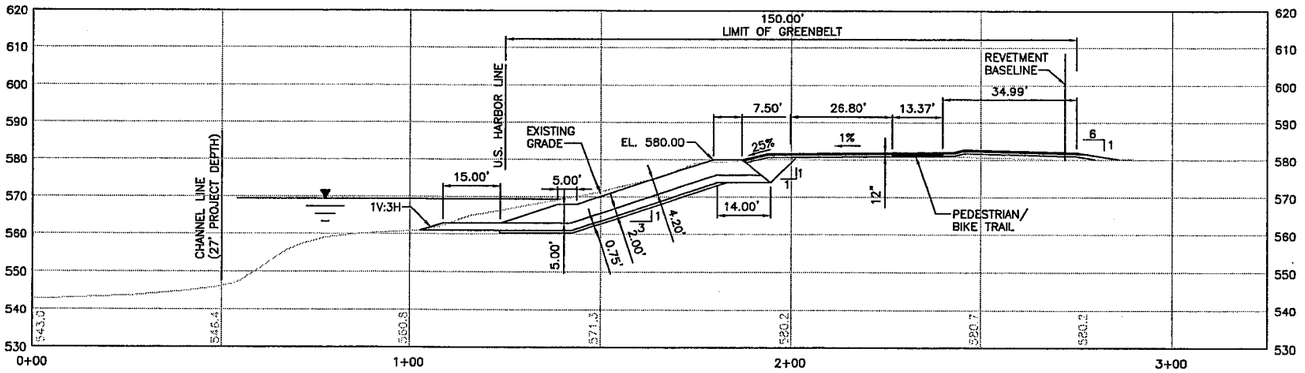


SECTION 56
SC-101 | SC-132



SECTION 56A
SC-101 | SC-132



SECTION 57
SC-101 | SC-132

NOTES:

1. THE CROSS SECTIONS ARE BASED UPON A SURVEY PERFORMED IN JANUARY 2005 BY RAVI ENGINEERS, AND DUE TO THE DYNAMIC NATURE OF A LAKE SHORELINE MAY NOT REPRESENT ACTUAL CONDITIONS THAT WILL EXIST DURING CONSTRUCTION.
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JOB NO. 11173936.00000
Subconsultant:

NO.	REVISION	BY	DATE

Niagara Frontier Transportation Authority
Serving the Niagara Region

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 31 OF 35

SCALE – AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 33 OF 37	

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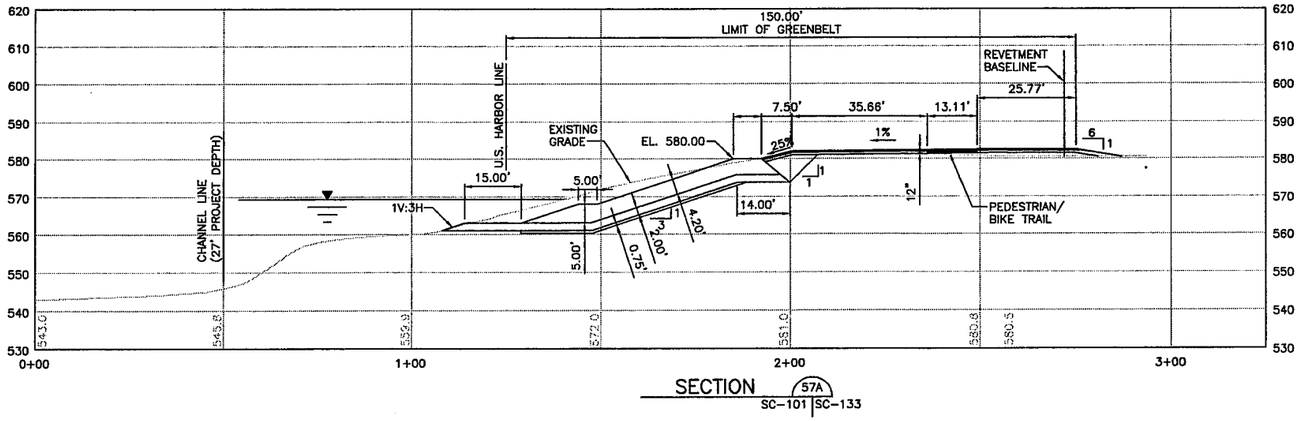
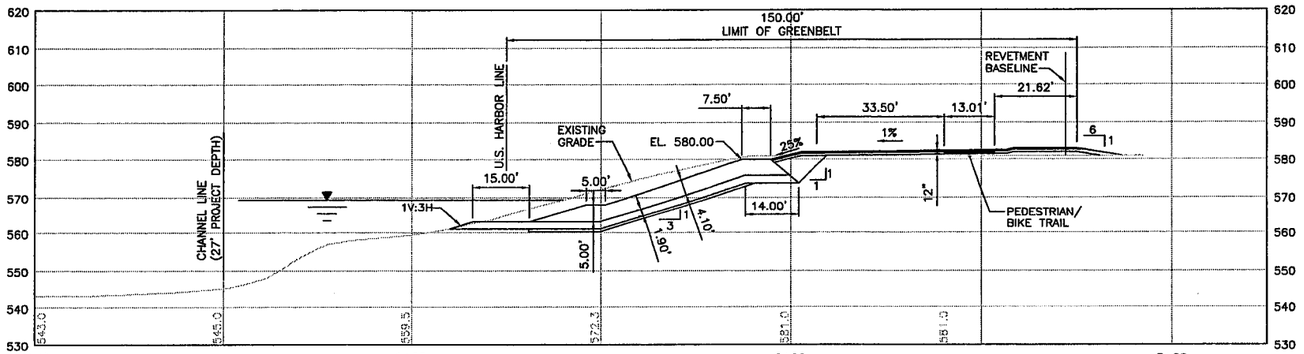
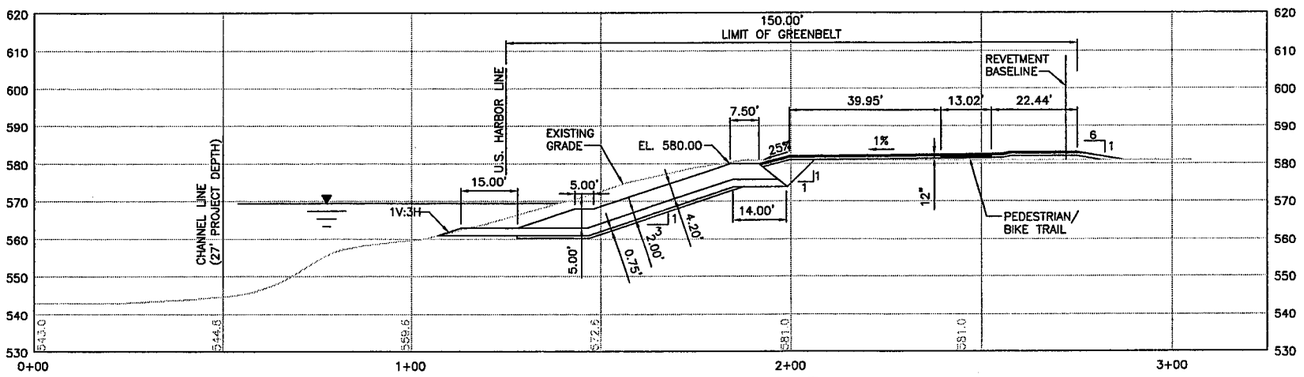


SECTION 57A
SC-101 | SC-133



SECTION 58
SC-101 | SC-133



SECTION 58A
SC-101 | SC-133

NOTES:

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Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 32 OF 35

SCALE – AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 34 OF 37	

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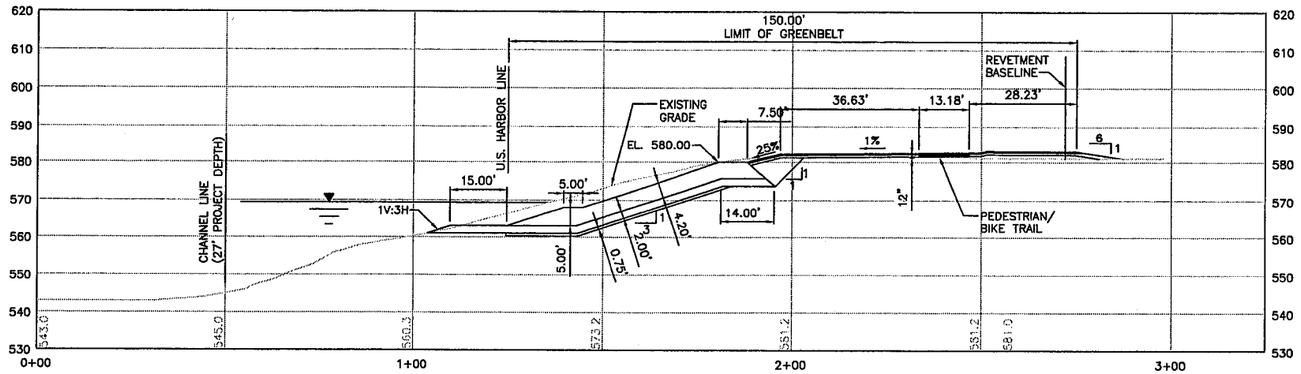
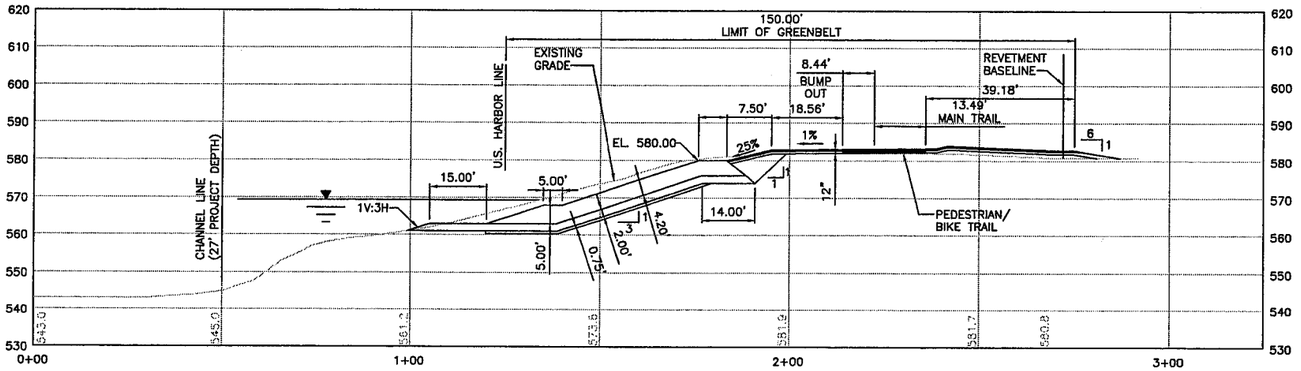
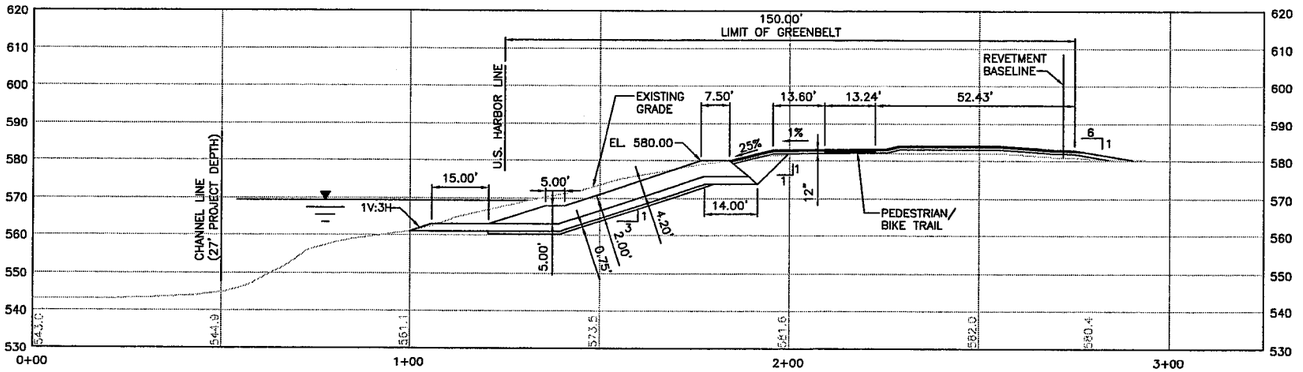


SECTION 59
SC-101 | SC-134



SECTION 59A
SC-101 | SC-134



SECTION 60
SC-101 | SC-134

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Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 33 OF 35

SCALE - AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING #	35 OF 37

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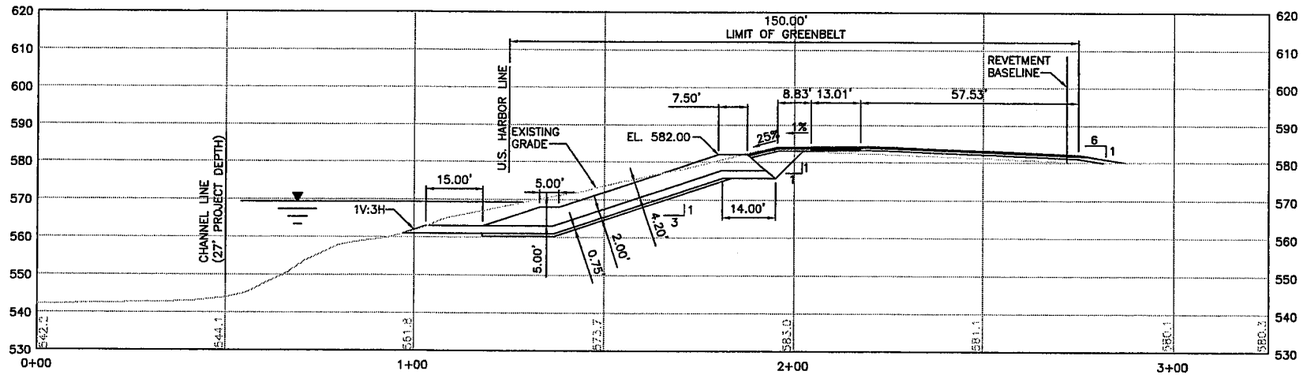
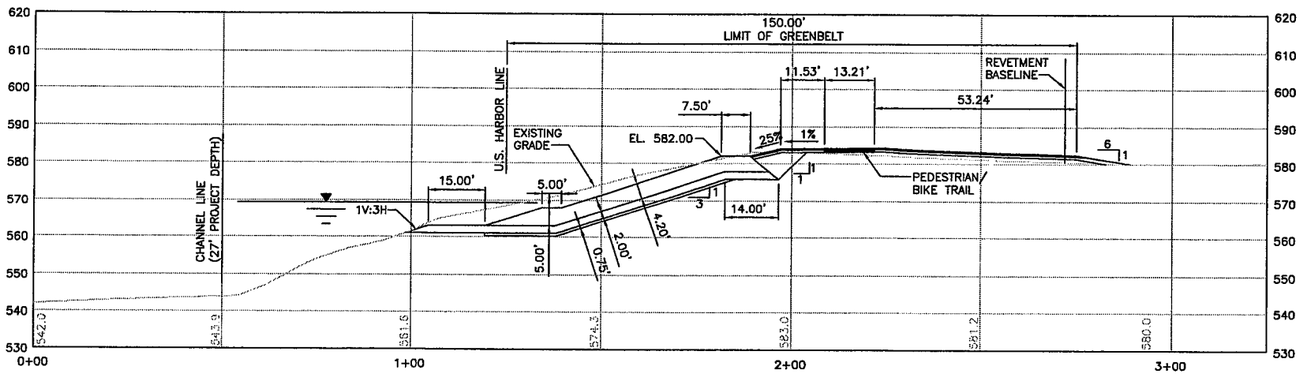
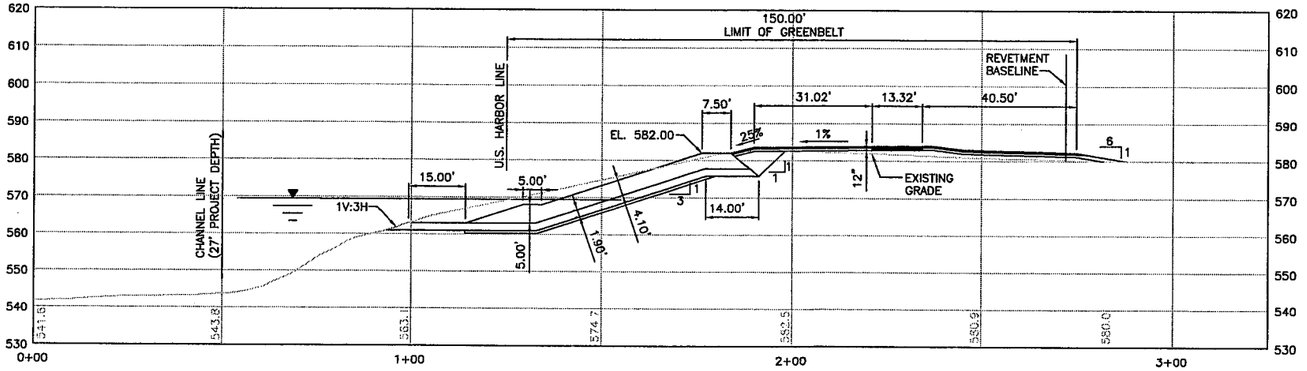


SECTION 60A
SC-101 | SC-135



SECTION 61
SC-101 | SC-135



SECTION 61A
SC-101 | SC-135

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WARNING:
IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON OTHER THAN WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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JOB NO. 11173936.00000

Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT – GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 34 OF 35

SCALE – AS NOTED	JUNE 2006
DESIGNED BY	JUNE 2006
DRAWN BY	JUNE 2006
CHECKED BY	JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg	
DRAWING # 36 OF 37	

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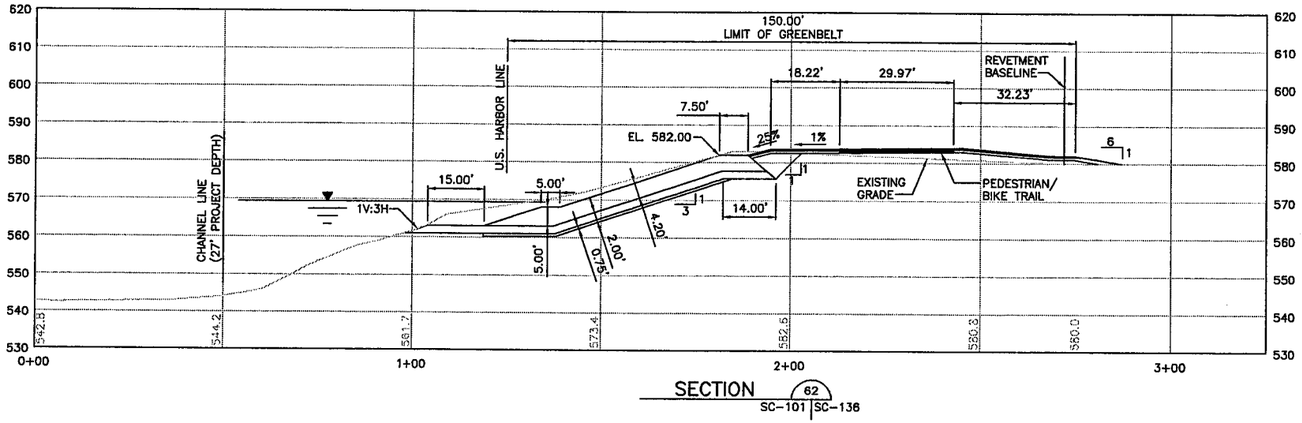

SECTION 62
SC-101 | SC-136

NOTES:

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2. ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE EXPRESSED IN U.S. SURVEY FEET.
3. THE HYDROGRAPHIC DATA DEPICTED ON THESE SECTIONS WAS COLLECTED USING HYDROGRAPHIC SURVEY ACCURACY PERFORMANCE STANDARDS IN ACCORDANCE WITH USACE EM 1110-2-1003 DATED 1 JANUARY 2004.
4. THE CHANNEL LINES AND U.S. HARBOR LINE WERE PROVIDED BY THE U.S. ARMY CORP OF ENGINEERS, BUFFALO DISTRICT.
5. THE WATERLINE DEPICTED ON THESE SECTIONS IS AT ELEVATION 569.2 (IGLD 1985) WHICH IS EQUAL TO 569.36 (NAVD 88) AND IS FROM THE LAKE ERIE CHART DATUM.

20' 0 20'
SCALE: 1"= 20'
HORIZ. & VERT.

Consultant:
URS Corporation - New York
77 Goodell Street, Buffalo, New York 14203
(716)856-5636 phone (716)856-2545 fax

JOB NO. 11173936.00000

Subconsultant:

Niagara Frontier Transportation Authority
Serving the Niagara Region

NO.	REVISION	BY	DATE

NFTA PROJECT NO. 12PL0202

PORT - GREENBELT SHORELINE IMPROVEMENT PROJECT

GREENBELT TRAIL CROSS SECTIONS SHEET 35 OF 35

SCALE - AS NOTED		JUNE 2006
DESIGNED BY		JUNE 2006
DRAWN BY		JUNE 2006
CHECKED BY		JUNE 2006
DRAWING FILE NAME: SECTIONS-R2.dwg		
DRAWING #	37 OF 37	

SC-136

N:\11173936.00000\CAD\BID\SECTIONS-R5.dwg 6/8/06-1 ELB

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ENVIRONMENTAL EASEMENT

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

THIS INDENTURE made this 18th day of November, 2011, between Owner(s) Niagara Frontier Transportation Authority, having an office at 181 Ellicott Street, Buffalo, New York 14203 (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

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

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

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

WHEREAS, Grantor, is the owner of real property located at the address of Outer Lots 44 -50 & Ogden Gore Tracts 1 - 2 in the City of Buffalo, County of Erie and State of New York, known and designated on the tax map of the County Clerk of Erie as tax map parcel numbers: Section 122.09 Block 1 Lot 1; Section 122.13 Block 1 Lot 1 & 2; Section 122.17 Block 1 Lot 1 and Section 121.12 Block 1 Lot 3 being the same as that property conveyed to Grantor by deed(s) dated June 15, 1959 and recorded in Liber 6434 at Page 84; deed dated June 15, 1959 and recorded in Liber 6434 at Page 43; Deed dated February 15, 1962 and recorded in Liber 6746 at Page 57; deed dated February 9, 1962 and recorded in Liber 6742 at Page 235; and deed dated June 15, 1962 and recorded in Liber 6776 at Page 83 in the Erie County Clerk's Office. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 15.83 +/- acres, and is hereinafter more fully described in the Land Title Survey dated September 2010 and revised February 16, 2011; March 9, 2011; July 29, 2011 and August 26, 2011 and signed October 12, 2011, prepared by Earle C. Newman of URS Corporation, which will be attached to the Site Management Plan. The Controlled Property description and survey is set forth in and attached hereto as Schedule A; and

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

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of State Assistance Contract Number: C302569, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

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

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

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

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

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

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

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

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

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

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

[6/11]

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

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

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

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

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

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

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

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

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

[6/11]

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

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

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

(i) are in-place;

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

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

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

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

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

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

(7) the information presented is accurate and complete.

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

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

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

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

5. Enforcement

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

privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

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

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

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

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

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

Parties shall address correspondence to:

Site Number: B00149
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

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

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

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or

counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

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

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

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

Grantor: Niagara Frontier Transportation Authority

By: _____

Print Name: Kimberley A. Minkel

Title: Executive Director Date: 11/2/2011

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Niagara)

On the 8th day of November in the year 2011, before me, the undersigned, personally appeared Kimberley Minkel, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

LISA M FLYNN
NOTARY PUBLIC
Niagara
STATE OF NEW YORK

Lisa M Flynn
Niagara County, NY
Exp. 12/1/12

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

By: _____
Dale A. Desnoyers, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 18th day of November in the year 2011, before me, the undersigned, personally appeared Dale A. Desnoyers, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

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

SCHEDULE "A" PROPERTY DESCRIPTION

Address: Outer Lots 44-50 & Ogden Gore Tracts 1-2, City of Buffalo, New York
Tax Map: 122.09-1-1; 122-13-1-1; 122.13-1-2; 122.17-1-1; and 121.12-1-3

Description for Environmental Easement granted to the New York State Department of Environmental Conservation from the Niagara Frontier Transportation Authority

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Buffalo, County of Erie and State of New York, being part of Lots Nos. 1 and 2 of the Ogden Gore Tract, part of Outer Lots Nos. 44 to 50 and part of lands formerly lying under the waters of Lake Erie, bounded and described as follows:

Commencing at a point in the westerly line of Fuhrmann Boulevard (aka Seawall Highway, Harbor Turnpike, Hamburg Turnpike or New York State Route 5), said point being the southeasterly corner of Parcel Two of lands conveyed to the Niagara Frontier Port Authority (NFPA), predecessor in title to the Niagara Frontier Transportation Authority (NFTA) by deed recorded in the Office of the Clerk of Erie County in Liber 6434 at Page 84; said point also being the northeasterly corner of lands now belonging to NFTA as described in a deed to the Ford Motor Company recorded in said Clerks Office in Liber 2100 at Page 566;

thence along the most easterly line of said Parcel Two, which line is also the westerly line of Fuhrmann Boulevard, so called, N 28°-24'-25" W, 861.30 feet to a point, said point being the most southerly point of lands conveyed by NFTA to the People of the State of New York for the improvement of Fuhrmann Boulevard by Appropriation Map Number 343 Parcel 386;

thence along a westerly line of lands conveyed to the People of the State of New York by said Map 343 Parcel 386, N 38°-12'-40" W, 216.58 feet to the POINT OF BEGINNING of this easement; said point having the coordinates of North 1,042,653.63 feet, East 1,070,809.47 feet based on the coordinates of National Geodetic Survey Monument "LEHR" PID No AE2177 which coordinates are based upon the New York State Plane Coordinate System, West Zone, North American Datum of 1983;

thence along the last mentioned line, S 38°-12'-40" E, 15.22 feet to a point;

thence through the lands conveyed to NFTA by deeds recorded in said Clerks office in Liber 6434 at Page 84, Liber 6434 at page 43, Liber 6746 at Page 57, Liber 6742 at Page 235 and Liber 6776 at Page 83, the following courses and distances:

S 61°-32'-00" W, 290.45 feet;
S 21°-15'-03" E, 130.49 feet;
S 07°-15'-48" W, 167.74 feet;
S 54°-22'-55" W, 149.98 feet;
S 77°-26'-54" W, 184.98 feet;
S 62°-50'-48" W, 305.63 feet;
S 21°-19'-22" W, 147.32 feet;

S 20°-46'-13" E, 735.87 feet;
S 64°-40'-53" W, 120.11 feet to a point at the ground elevation of 573.56 feet on the shoreline revetment mats along the Lake Erie shoreline as said mats existed at the time of this survey; said 573.56 feet elevation being the historical Lake Erie ordinary high water mark as determined by the United States Army Corp of Engineers (USACE); said elevation is referenced to North American Vertical Datum of 1988 (NAVD 88) as converted from (573.4 feet) International Great Lakes Datum of 1985 (IGLD 85);

thence along the said USACE 573.56 feet ground elevation of said revetment mats the following courses and distances:

N 26°-22'-58" W, 71.63 feet;
N 17°-23'-25" W, 73.77 feet;
N 19°-50'-50" W, 126.26 feet;
N 16°-25'-22" W, 150.44 feet;
N 25°-24'-56" W, 200.72 feet;
N 12°-51'-54" W, 130.38 feet;
N 21°-07'-11" W, 50.56 feet;
N 03°-05'-42" W, 89.98 feet;
N 38°-38'-46" E, 128.76 feet;
N 60°-40'-42" E, 88.50 feet;
N 65°-01'-25" E, 100.01 feet;
N 61°-03'-58" E, 58.83 feet;
N 61°-22'-23" E, 136.10 feet;
N 77°-23'-51" E, 88.96 feet;
N 85°-47'-09" E, 59.60 feet;
N 69°-10'-33" E, 48.61 feet;
N 55°-47'-51" E, 23.69 feet;
N 33°-55'-22" E, 50.27 feet;
N 05°-40'-13" E, 37.64 feet;
N 21°-44'-03" W, 24.72 feet;
N 03°-43'-32" W, 25.50 feet;
N 20°-53'-18" E, 27.88 feet;
N 48°-35'-48" E, 35.45 feet;
N 26°-53'-36" E, 11.86 feet;
N 01°-58'-32" E, 17.30 feet;
N 23°-04'-42" W, 58.09 feet;
N 44°-07'-51" W, 27.73 feet;
N 89°-14'-12" W, 54.82 feet;
N 71°-35'-26" W, 53.90 feet;
N 59°-12'-17" W, 58.40 feet;
N 49°-59'-22" W, 30.33 feet;
N 09°-07'-32" W, 31.70 feet;
N 05°-54'-47" E, 36.31 feet;
N 00°-21'-37" W, 42.00 feet;
N 02°-16'-13" W, 29.80 feet;

N 69°-59'-08" W, 13.35 feet;
S 70°-29'-49" W, 19.04 feet;
S 89°-18'-06" W, 16.82 feet;
S 84°-25'-18" W, 17.93 feet;
S 49°-01'-00" W, 19.65 feet;
S 20°-29'-22" W, 40.01 feet;
S 15°-49'-32" W, 49.58 feet;
S 04°-46'-17" W, 40.67 feet;
S 10°-35'-52" E, 66.31 feet;
S 10°-36'-42" W, 59.60 feet;
S 50°-19'-44" W, 42.55 feet;
S 57°-47'-47" W, 51.93 feet;
S 48°-59'-36" W, 21.44 feet;
S 52°-45'-02" W, 83.34 feet;
S 56°-55'-16" W, 89.77 feet;
S 72°-33'-31" W, 11.45 feet;
N 83°-07'-40" W, 13.78 feet;
S 72°-25'-43" W, 81.95 feet;
S 74°-05'-52" W, 41.83 feet;
N 84°-54'-16" W, 88.38 feet;
N 64°-04'-19" W, 84.10 feet;
N 33°-41'-51" W, 84.40 feet;
N 21°-25'-44" W, 72.42 feet;
N 22°-06'-04" W, 49.81 feet;
N 09°-41'-32" W, 50.99 feet;
N 21°-51'-47" W, 150.12 feet;
N 12°-42'-48" W, 100.93 feet;
N 18°-56'-41" W, 100.16 feet;
N 26°-06'-45" W, 77.12 feet;
N 19°-59'-55" W, 123.23 feet;
N 25°-23'-30" W, 50.23 feet;
N 17° 37' 13" W, 73.99 feet;
N 21°-08'-42" W, 75.30 feet;
N 36°-13'-51" W, 77.83 feet;
N 29°-38'-15" W, 73.26 feet;
N 33°-51'-26" W, 226.80 feet;
N 24°-15'-24" W, 100.98 feet;
N 33°-55'-40" W, 100.27 feet;
N 33°-56'-26" W, 100.06 feet;
N 38°-20'-15" W, 100.44 feet;
N 32°-13'-30" W, 177.43 feet;
N 33°-01'-29" W, 150.88 feet;
N 28°-13'-30" W, 122.03 feet;
N 39°-42'-07" W, 81.36 feet;
N 64°-40'-24" W, 23.19 feet;
N 24°-52' 32" W, 49.66 feet;

N 32°-15'-59" W, 50.30 feet;
N 35°-27'-19" W, 100.03 feet;
N 27°-59'-40" W, 100.35 feet;
N 35°-52'-04" W, 49.98 feet;
N 26°-11'-40" W, 50.57 feet;
N 42°-09'-55" W, 50.72 feet;
N 32°-24'-53" W, 220.81 feet;
N 30°-42'-28" W, 106.00 feet;

thence leaving the said revetment mats at the said USACE ground elevation of 573.56 feet and continuing through the lands conveyed to NFTA by said deeds recorded in said Clerks office the following courses and distances:

N 63°-01'-46" E, 110.25 feet;
S 32°-53'-12" E, 2122.77 feet;
S 20°-46'-13" E, 976.59 feet;
N 74°-51'-01" E, 227.52 feet;
N 49°-34'-57" E, 168.13 feet;
N 01°-31'-52" E, 143.02 feet;
N 16°-20'-28" E, 178.93 feet;
S 84°-45'-39" E, 224.85 feet;
S 00°-19'-06" W, 197.83 feet;
S 59°-39'-49" E, 39.51 feet;
S 75°-49'-09" E, 127.99 feet;
S 21°-15'-03" E, 65.37 feet;
N 61°-32'-00" E, 285.97 feet to the POINT OF BEGINNING.

Containing 15.83 acres, more or less.

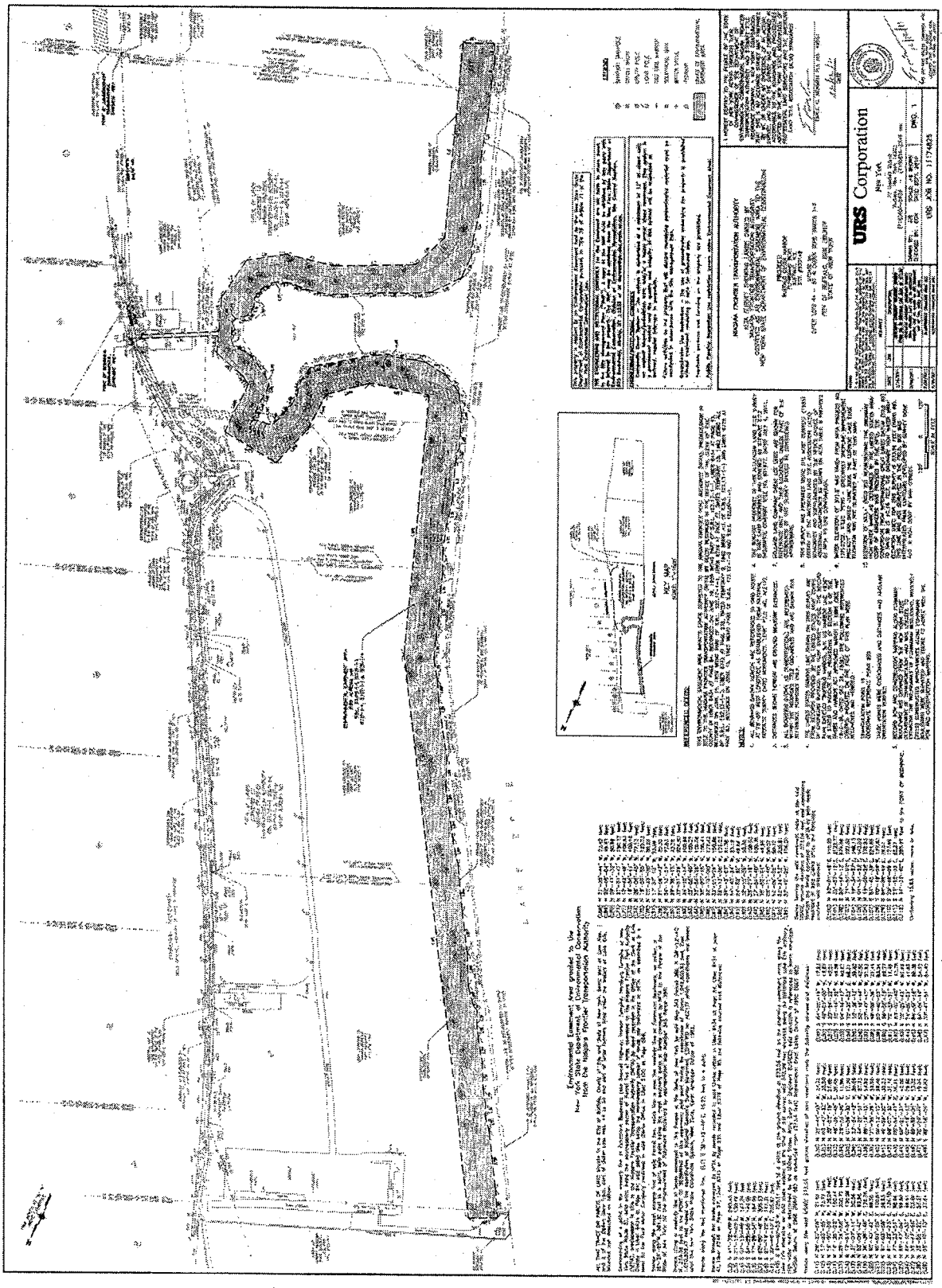
The bounds of the above described easement is based upon a field survey performed in September 2010 by URS Corporation – New York, Buffalo, New York and is shown on a map entitled *ALTA Survey Showing Lands Owned By Niagara Frontier Transportation Authority Conveyed As an Environmental Easement Area To The New York State Department Of Environmental Conservation* dated September 2010, revised August 26, 2011 and was supplemented by the information contained in the documents referenced in the above description, which description was revised on August 26, 2011.

STATE OF NEW YORK
EARLE C. NEWMAN
No. 49531
LICENSED LAND SURVEYOR

10/12/11

J:\11174825.00000\WORD\DRAFT\ALTA Survey M&B Descriptions\10_05_11 - [illegible] Easement M&B Desc..doc

SURVEY



APPENDIX K

FINAL SITE INSPECTION AND ACCEPTANCE (CD)

SEE APPENDIX E FOR CD

APPENDIX L

CONSTRUCTION COST SUMMARY

NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT

SUMMARY TABLE OF CONSTRUCTION COSTS

ITEM NO.	DESCRIPTION OF WORK	UNIT PRICE	QUANTITY	UNITS	VALUE OF WORK COMPLETED
01151-1	Survey & Stakeout	$101,800.00	1	LS	$101,800.00
01500-1	Field Office Equipment & Furnishings	$45,000.00	1	LS	$45,000.00
02050-1	Removal of Shoreline Rubble	$9.00	44,077.15	TN	$396,694.35
02050-2	Processing of Shoreline Rubble	$9.00	44,077.15	TN	$396,694.35
02050-3	Disposal of Unsuitable Rubble & Debris	$16.00	684.62	TN	$10,953.92
02110-1	Site Clearing	$12,000.00	17	AC	$204,000.00
02120-1	Erosion & Sediment Control	$85,000.00	1	LS	$85,000.00
02210-1	Off-Site Fill (Clean)	$24.25	17,628.00	CY	$427,470.03
02210-2	On-Site Fill (Dry Excavated Material Reused)	$2.75	27,238.99	CY	$74,907.22
02210-3	Site Grading	$0.95	63,504.00	SY	$60,328.80
02225-1	Excavation & Embankment (Dry Material)	$2.75	14,801.85	CY	$40,705.09
02225-2	Excavation (Wet Material)	$12.00	60,574.24	CY	$726,890.88
02225-3	Excavation of Concrete & Asphalt Pavement	$11.00	936.66	CY	$10,303.26
02250-1	Placement of Crushed Rubble for Aquatic Shelf	$26.00	144	CY	$3,744.00
02250-2	Placement of Concrete Slabs for Lunkers	$1,500.00	4	EA	$6,000.00
02375-1	Geotextile Fabric Type 1	$2.45	37,671.59	SY	$92,295.40
02375-2	Geotextile Fabric Type 2	$1.26	63,504	SY	$80,015.04
02460-1	Utility Poles	$5,000.00	15	EA	$75,000.00
02487-1	Armor Stone	$65.00	61,333.56	TN	$3,986,661.40
02487-2	Bedding Stone	$41.00	50,712.68	TN	$2,079,219.88
02875-1	Graphic Trail Sign (allowance)	$6,000.00	2	EA	$12,000.00
02940-1	Planting - Aquatic Plants	$9.00	2,454	EA	$22,086.00
02940-2	Planting - Wetland Plants	$35.00	4,363	EA	$152,705.00
05501-1	RCRA Hazardous Waste Transp.& Contain.	$350.00	0	TN	$0.00
304-1	Reuse of Crushed Rubble Material	$7.00	2,340	CY	$16,380.00
05304.12M	Subbase Crse Ty 2 w/Recycle Conc Material	$29.00	0	CY	$0.00
08520.5014M	Saw-Cutting Pavement	$10.00	228	LF	$2,280.00
607.3103M	Chain-Link Fence, 8 ft High	$27.00	330	LF	$8,910.00
607.4066M	Fence Gate, Dbl Leaf, 20-ft Opening	$1,650.00	1	EA	$1,650.00
10607.62M	Removing Chainlink Fence	$10.00	275	LF	$2,750.00
608.020101M	Asphalt Concrete Bicycle Paths	$72.00	2,340.55	TN	$168,519.60
610.0203M	Establishing Native Grasses	$105.00	270	LB	$28,350.00
610.0301M	Establishing Wildflower Meadow Mix	$320.00	20	LB	$6,400.00
610.0302M	Establishing Wetland Mix	$1,750.00	3	LB	$5,250.00
610.0303M	Establishing Wildflower Accent Mix	$468.75	8	LB	$3,750.00
611.0201M	Trees	$325.00	62	EA	$20,150.00
611.0202M	Live Whips	$45.00	171	EA	$7,695.00
611.0401M	Shrubs	$42.00	618	EA	$25,956.00
613.010101M	Topsoil	$32.00	5,150	CY	$164,800.00
613.010102M	Applying Soil Amendment	$29.00	1,614	CY	$46,806.00
615.03M	Watering Vegetation	$0.50	37,080	GAL	$18,540.00

NFTA - OUTER HARBOR
GREENBELT SHORELINE IMPROVEMENT PROJECT

SUMMARY TABLE OF CONSTRUCTION COSTS

ITEM NO.	DESCRIPTION OF WORK	UNIT PRICE	QUANTITY	UNITS	VALUE OF WORK COMPLETED
05615.75	Timber Bollards	$795.00	0	EA	$0.00
619.17M	Temporary Concrete Barrier	$75.00	150	LF	$11,250.00
623.11M	Crushed Gravel (In-place measure)	$36.00	47	CY	$1,680.12
623.12M	Crushed Stone (In-place measure)	$32.00	780.88	CY	$24,988.16
640.10M	White Paint Reflec. Pavement Stripes	$3.75	0	LF	$0.00
640.13M	White Paint Reflec. Pavement Symbols	$500.00	0	EA	$0.00
645.7102M	Ground Mounted Sign Panels,R,P,M,W	$15.00	8	SF	$120.00
645.73M	Ground Mounted Sign Panels, G,I	$15.00	5	SF	$75.00
645.81M	Type A Sign Posts	$295.00	4	EA	$1,180.00
699.0401M	Mobilization Phase 1 & 2	$427,526.10	1	LS	$427,526.10
PCO #001	Bedding Stone Revision	-$3.00	20,000.00	TON	($60,000.00)
PCO # 002	Tecumseh CDF Site Access Agreement	-$3,000.00	1	LS	($3,000.00)
PCO #003	Site Building/Facility Use and Demolition	$0.00	1	LS	$0.00
PCO #013	Concrete Moorings	$2,500.00	3	EA	$7,500.00
PCO #015	Segregation	$240,733.72	1	LS	$240,733.72
PCO #017	Bedding Stone Revision	-$3.00	30,712.68	TON	-$92,138.04
PCO # 016	Stockpiling/Handling/Processing Wet Excavated Material	$88,278.93	1	LS	$88,278.93
PCO # 019	Extension of Contract Time Completion	$0.00	1	LS	$0.00
PCO # 020	12" Storm Sewer and Yard Drains	$6,450.00	1	LS	$6,450.00
PCO # 023	Revetment Habitat	$11,396.12	1	LS	$11,396.12
PCO # 024	Installation and Removal of Goose Fence	$15,966.88	1	LS	$15,966.88
PCO # 026	Silt Fence Installation Around Perimeter of Bell	$9,129.20	1	LS	$9,129.20
PCO # 027	Armor Stone Placement along Eastern Shore of	$9,374.00	1	LS	$9,374.00
PCO # 030	Resetting Two Groups of Utility Poles in Bell Slip	$4,038.54	1	LS	$4,038.54
PCO # 031	Additional Erosion Protection on Bell Slip Embank	$225,318.99	1	LS	$225,318.99
PCO #032	Off-Site Fill Material (50-50 Blend)	$58.95	3,012.43	TON	$177,582.75
PCO# 033	Remove Existing Debris in Vicinity of Bell Slip	$4,115.00	1	LS	$4,115.00
PCO # 034	Installation of Armor Stone in Bell Slip	$9,751.50	1	LS	$9,751.50
PCO #035	Additional Coconut Erosion Control Matt	$19,512.03	1	LS	$19,512.03
PCO #036	Relocation of Jersey Barriers	$2,850.00	1	LS	$2,850.00
PCO #037	Relocation of NYSDEC Project Signs	$1,268.48	1	LS	$1,268.48
PCO #038	Relocation of Armor Stone	$5,540.24	1	LS	$5,540.24
PCO #039	Additional Cost for Asphalt Trail Subgrade Materia	$40,882.20	1	LS	$40,882.20
PCO #040	Furnish and Install Concrete Benches/Trash Cans	$12,000.00	1	LS	$12,000.00
PCO #041	Phase I - Corrective Action at Bell Slip	$416,000.00	1	LS	$416,000.00
PCO #042	Phase II - Corrective Action at Bell Slip	$61,960.00	1	LS	$61,960.00
	TOTAL CONSTRUCTION COST				**$11,299,991.14**