June 2021
Buffalo Color

Construction Completion Report Buffalo Color Corporation Site Areas A and B – Off-site NYSDEC Site No. C915230A

Prepared for

Honeywell

Honeywell International Inc.

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I Ram Mohan certify that I am currently a NYS registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Plans and Specifications were implemented and that all construction activities were completed in substantial conformance with the DER-approved Plans and Specifications.

Signature and Seal of Engineer

Ram K Mohan June 30, 2021

Signature Date

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ABBREVIATIONS

AOC	Area of Concern
BIDCO	BIDCO Marine Group, Inc.
CCR	Construction Completion Report
CDF	Confined Disposal Facility
CM	Construction Manager
CY	cubic yard
DMU	Dredge Management Unit
DPR	daily progress report
GLLA	Great Lakes Legacy Act
GLNPO	Great Lakes National Program Office
GPS	global positioning system
HASP	Health and Safety Plan
Honeywell	Honeywell International Inc.
LF	linear feet
Luedtke	Luedtke Engineering Company
NYSDEC	New York State Department of Environmental Conservation
Off-site Area	Buffalo Color Corporation Site Areas A and B Off-site Area
OSC	Ontario Specialty Company
PCB	polychlorinated biphenyl
Sevenson	Sevenson Environmental Services, Inc.
Thew	Thew Associates PLLC
TSS	total suspended solids
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency

Executive Summary

This report summarizes the installation of a submerged sheetpile wall (knee wall), dredging, and backfill activities implemented on behalf of Honeywell within the Buffalo River in Buffalo, New York. The work was conducted at the Buffalo Color Corporation Site Areas A and B Off-site Area under the Great Lakes Legacy Act (GLLA), a multiyear, multiagency initiative to restore the Great Lakes. These activities were located near and performed in conjunction with the GLLA project areas located within the Buffalo River Area of Concern, which included the entire 1.4-mile stretch of the City Ship Canal that adjoins the river just upstream of the confluence with Lake Erie and extends approximately 6.2 miles along the main Buffalo River. The installation of the knee wall was required to support the existing shoreline to allow dredging of the contaminated soft sediments located along the toe of the Buffalo Color Corporation Area A shoreline.

Honeywell entered a Consent Order with the New York State Department of Environmental Conservation (NYSDEC[1]) dated August 2016 for NYSDEC Site No. C915230A. The remedial construction activities were conducted as part of the GLLA project and completed in November and December 2015. As documented within this Construction Completion Report, the remedial action included the installation of a knee wall, dredging on the channel-side of the knee wall after its installation, and placement of backfill across a narrow area (approximately 5 feet or less) of sediments located between the knee wall and the toe of an existing marine armor mattress system. A summary of the quantities associated with the project is provided in Table ES-1.

Table ES-1
Buffalo Color Corporation Site Areas A and B – Off-site Project Quantity Summary

Project Element	Quantity
Submerged Sheetpiling Installed	240 LF
Material Dredged	1,180 CY
Post-Dredge Backfill Material Placed	80 CY

Notes:
CY: cubic yard
LF: linear feet

The purpose of this report is to provide documentation that the construction activities were conducted in accordance with applicable design documents and permits associated with the project. In support of that purpose, this report provides detailed narrative descriptions of the work and the quality assurance and quality control activities performed by the Construction Management Team. Applicable construction documentation, including construction reports, work plans, submittals, figures, and surveys that were produced during this work, are provided in supporting appendices.

[1] Website: www.dec.ny.gov

1 Introduction

This Construction Completion Report (CCR) has been prepared on behalf of Honeywell International Inc. (Honeywell[1]) and summarizes knee wall installation, dredging, and backfilling activities as described in the Buffalo Color Corporation Site Areas A and B Off-site Area Remedial Action Work Plan (Anchor QEA 2018a).

1.1 Project Overview

The Off-site Area project was performed in anticipation of a signed Consent Order with New York State Department of Environmental Conservation (NYSDEC; August 2016) and conducted under the Great Lakes Legacy Act (GLLA), a multiyear, multiagency initiative to restore the Great Lakes. The stakeholders involved in the remedial planning of capping and habitat restoration work include U.S. Environmental Protection Agency (USEPA) Great Lakes National Program Office (GLNPO), Honeywell, NYSDEC, Buffalo Niagara Riverkeeper (now called Waterkeeper), U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service, the City of Buffalo, and their respective consultants.[2] Anchor QEA Engineering, PLLC (Anchor QEA[3]), was contracted by Honeywell to operate as the project Construction Manager (CM) during the performance of field activities. Two Buffalo, New York, firms—Ontario Specialty Company and BIDCO Marine Group, Inc.—performed knee wall installation.

1.2 Purpose and Scope

This CCR summarizes and documents knee wall installation, dredging, and backfilling construction activities performed within the Buffalo Color Corporation Site Areas A and B – Off-site Area (Off-site Area) in Buffalo, New York, during the 2015 construction season. The construction activities were conducted in accordance with applicable design documents and permits associated with the project.

1.3 Report Organization

Section 2 of this report includes further description of applicable project background information. Section 3 provides an overview of project health and safety topics. Section 4 summarizes preliminary construction activities and controls addressed prior to the initiation of full-scale construction efforts. Section 5 describes the remedial activities undertaken, including knee wall installation, dredging, backfilling, and subsequent demobilization. Water quality monitoring efforts are described in Section 6. A description of progress reporting during completion of the remedial activities is provided in Section 7.

[1] Website: www.honeywell.com
[2] Additional project details available at www.epa.gov/great-lakes-aocs/about-buffalo-river-aoc
[3] Website: www.anchorqea.com

2 Project Background

2.1 Site Description

The Off-site Area is located along the Buffalo River in the City of Buffalo in New York State. This area is represented by the portion of the Buffalo River adjacent to the Buffalo Color Corporation Site Areas A and B, which are between the Buffalo Color property line and a federal navigation channel maintained by USACE at a depth of 22 feet below low water datum (see Figure 1). Brownfield remediation efforts associated with the upland Buffalo Color Area A and B site were completed in December 2013.[4] These previous efforts included building and structure demolition, groundwater cut-off wall construction, a groundwater pump and treatment system, soil cap and cover installations, and shoreline restoration. As one of the first installed components of the Buffalo Color Area A cleanup process, a protective armored shoreline cover was installed along a 200-foot section of the property shoreline along the Buffalo River (MACTEC 2008). The protective shoreline cover comprises a series of anchored marine mattresses, which were installed to provide containment and erosion protection along the shoreline. The marine mattress sections are composed of geo-composite grids filled with armor stone anchored at the top of slope and extending into the Buffalo River. In 2014, shoreline restoration, including spiny turtle habitat, placement of planting soil, and plantings, was implemented along the Area A riverbank portion of the site. In early 2014, shoreline restoration (including additional planting soil and plantings) was implemented along the Area A riverbank portion of the site as part of the larger restoration effort for the full Area A shoreline portion of the property.

The Off-site Area is located within a subset of a Dredge Management Units (DMUs) 9 and 10 within the full Buffalo River Area of Concern (AOC). The Buffalo River AOC includes the entire 1.4-mile stretch of the City Ship Canal that adjoins the river (just upstream of the river confluence with Lake Erie) and extends upstream approximately 6.2 miles along the main Buffalo River (see Figure 2). During the remedial design for the Buffalo River AOC, the Buffalo Color Area A property was identified as a critical structure due to the cut-off wall that is a critical element of the upland remedy.

Anchor QEA performed a series of supplemental investigations in the river adjacent to the Buffalo Color Area A property during 2014 and 2015 to determine the extent of impacted sediment, depth to till or clay, and current configuration of the mattress segments, as well as to evaluate geotechnical properties of the in-river sediments and upland soils. The results of these additional evaluations were used to determine an approach to maximize removal of contaminated sediments at the base of slope while reducing the potential for impact to the adjacent slopes.

[4] Project details available online at https://www.dec.ny.gov/chemical/52854.html

Following design evaluations and coordination with USEPA GLNPO, USACE, and NYSDEC regarding the approach, the installation of a knee wall was selected. The remedy selection evaluation is documented in the Remedial Investigation Alternatives Analysis for the Off-site Area (Anchor QEA 2018b). Sheetpile sections would be installed in a knee wall along the toe of the mattress sections and driven to bedrock, thereby providing support for the removal of sediments in front of the wall and protecting against future erosion concerns. Following installation of the knee wall, dredging could be performed to remove the sediments at the toe of slope followed by installation of backfill to cover any remaining gap between the sheeting installation and the mattresses. The final configuration of the sheeting would leave the top of the wall approximately 12 feet below low water conditions. Final design drawings for the Off-site Area were dated November 6, 2015.

2.2 Roles and Responsibilities

The knee wall installation, dredging, and backfill installation were performed under a contract issued by Honeywell. Anchor QEA was responsible for remedial design and CM associated with the work described in this report. Sevenson Environmental Services, Inc. (Sevenson[5]), was selected as the remediation contractor and implemented the marine construction work, including backfill installation. Installation of a knee wall to support dredging operations was completed by Ontario Specialty Company (OSC[6]) and subcontractor BIDCO Marine Group, Inc. (BIDCO[7]) under separate contract to Honeywell. Dredging was completed by Luedtke Engineering Company (Luedtke[8]) under subcontract to Sevenson.

2.3 Permitting

Designs for the knee wall were incorporated into the revised design submittal for additional dredging operations in 2015 and included in the permit modifications for the overall scope of work for the Buffalo River AOC. As a result, permit modifications to include the knee wall installation, dredging, and backfill activities were obtained under the full GLLA project and incorporated permits associated with all scopes of work. All modifications were completed prior to the initiation of work. Table 1 summarizes the permits for the GLLA project, which included the additional work associated with the Off-site Area. Permits directly relevant to the work performed at the Off-site Area are provided in Appendix A.

[5] Website: www.sevenson.com
[6] Website: www.dev-theoscgroup.greenmachineco.com
[7] Website: www.bidcomarine.com
[8] Website: www.luedtke-eng.com

Table 1
Permit Summary

Permit	Issuing Agency	Purpose
Nationwide Permit No. 27 for Capping and Habitat Restoration (No. 2013-00814)	USACE	Authorizes the capping and habitat restoration activities included in the project scope of work
Nationwide Permit No. 38 for Sediment Remedy (No. 2013-0814)	USACE	Authorizes the dredging and disposal of sediments included in the project scope of work
Excavation and Fill in Navigable Waters – Under Article 15, Title 5 (Permit ID 9-1402-01094/00001)	NYSDEC	Authorizes the work and identifies natural resource and general permit conditions
Water Quality Certification – Under Section 401 – Clean Water Act (Permit ID 9-1402-01094/00003)	NYSDEC	Authorizes the work and identifies natural resources, water quality, and general permit conditions
Risk-Based PCB Cleanup and Disposal Approval	USEPA – Region 2	Authorizes the work associated with capping of PCB-contaminated sediments

3 Health and Safety

During the 2015 construction season, which included the DMUs 9 and 10 activities, all activities performed by Sevenson and their subcontractors occurred without a recordable incident.

Sevenson performed a daily tailgate safety meeting prior to the start of each work day throughout project implementation. Each safety meeting was attended by Anchor QEA, who provided additional health and safety comments when applicable. Health and safety comments were included in Anchor QEA and Sevenson daily reports, and any initiatives related to health and safety were tracked to ensure all issues were addressed. Weekly project team meetings were used to discuss outstanding health and safety issues, as applicable.

Direct responsibility for employee safety was retained by each contractor. The contractors had the following responsibilities:

- Preparing a site-specific Health and Safety Plan (HASP) and safety procedures (see Appendix B for HASP)
- Conforming to Honeywell's Remediation and Evaluation Services Contractor Safety Workbook
- Ensuring each employee was properly trained in hazardous waste operations and emergency response, as well as all other appropriate construction safety regulations
- Ensuring each employee was included in a medical surveillance program consisting of pre-assignment, annual, and exit physicals
- Providing daily "toolbox talk" safety instruction
- Conducting personal air sampling of employees to monitor exposure to airborne hazards as needed
- Providing personal protective equipment as needed
- Ensuring employee compliance with site and contractor safety rules
- Conducting an incident investigation and providing an incident report to site health and safety representatives in the event of an employee injury, property damage, or near miss incident

As the CM, Anchor QEA had the following responsibilities:

- Providing health and safety oversight of the on-site Construction Management Team personnel
- Reviewing contractor HASPs and safety procedures
- Conducting inspections of site activities to ensure contractor compliance with the HASP and applicable Occupational Safety and Health Administration regulations
- Receiving and reviewing contractor incident reports
- Reviewing employee training and medical surveillance records
- Developing the final CCR

4 Preliminary Construction Activities and Controls

4.1 Project Work Plan Submittals

Under a separate contract, OSC and their subcontractor, BIDCO, developed separate submittal documents for the knee wall installation. A combined Work and Safety Plan was submitted to document installation procedures and health and safety practices for the work, as well as all worker certifications for crane operations and diving.

Prior to the start of work during initial supplier coordination for the steel sheeting, OSC submitted a request for an alternate steel section and grade based on availability. The original design used PZ27 steel sections ("Z" form, ball and socket joints with a section thickness of 0.375 inch) and A690 grade steel, as shown on the design drawings. Following review of proposed options for alternate section and grade, SKZ24 sections (Z form, "S" joints, 0.375-inch thickness) were approved in A572 grade 50 steel. This change in steel retained the original design strength (in thickness and yield stress) while providing a shorter lead time to fit the needs of the project schedule.

To support the change in steel section, a modification to the alignment details was required to support the wider sheeting sections and different joint connections of the SKZ24. A revised layout from the steel supplier, Skyline Steel, was submitted that used the same control points for the main alignment and adjusted the individual sheet locations to fit the revised width and connection details. Additionally, two fabricated corner sections were approved to remove the need for a separate corner angle to simplify construction. The revised design layout and steel details can be found in Appendix C. Following delivery of the steel, mill certifications were submitted to verify steel section and grade and that all delivered sections were new, unused sheeting.

Detailed daily CM reports summarizing the work performed began immediately upon contractor mobilization to the project and are included as Appendix D of this report. Detailed daily contractor reports are included as Appendix E.

4.2 Mobilization and Staging Area Preparation

4.2.1 Mobilization for Knee Wall

Honeywell contracted the installation of the knee wall as in-kind work as part of the GLLA Buffalo River cleanup and restoration project. OSC was contracted to perform the knee wall installation work and subcontracted BIDCO to complete installation of the sheeting from the water. Installation was coordinated with the separate contract for dredging and backfilling operations because both activities were scheduled concurrently.

For operations associated the knee wall installation, OSC and BIDCO used BIDCO's property located at 220 Katherine Street, Buffalo, New York 14210. Steel sheeting was mobilized to this property, and all equipment setup and river access were performed from BIDCO's privately owned marina at this location. Mobilization of sheeting to the BIDCO property began the week of November 2, 2015. OSC began project mobilization activities associated with the installation of the knee wall on November 17, 2015, following a Notice to Proceed issued by Honeywell on October 19, 2015. Equipment was initially mobilized at BIDCO's facilities on the Buffalo River, with all waterside equipment mobilized to DMUs 9 and 10 on November 17, 2015.

4.2.2 Mobilization for Dredging

Sevenson began project mobilization activities associated with the additional dredging scope on November 2, 2015, following a Notice to Proceed for this work scope, issued by Honeywell on October 30, 2015. Construction activities first began at the USACE Confined Disposal Facility (CDF) No. 4, where sediment offloading facilities were mobilized and dredging equipment was prepared for the start of work.

Staging for dredging operations performed by Luedtke under subcontract to Sevenson occurred from the existing Luedtke staging location at South End Marina (1515 Fuhrmann Boulevard, Buffalo, New York 14203). Mobilization to the South End Marina property began the week of November 2, 2015. Dredge equipment, barges, and trailers for subcontractor personnel were staged at this location, with additional equipment staged at CDF No. 4 for offloading operations.

4.3 Pre-Construction Bathymetric Surveys

Pre-construction bathymetric surveys were performed by Thew Associates PLLC (Thew) on November 4 and 5, 2015, which was within 30 days of the commencement of dredging work. Bathymetric surveys comprised multibeam surveys supplemented with conventional topographic surveys in shallow nearshore areas. Pre-dredge surveys were obtained to be able to provide accurate dredge volumes following the completion of post-dredge surveys. Figures in Appendix F show pre-dredge surfaces for DMUs 9 and 10, and figures in Appendix G compare the existing conditions surfaces from the design drawings to pre-construction conditions as identified by the pre-construction bathymetric surveys to identify any discrepancies between the pre-construction surveys and the surveys contained in the design drawings.

4.4 Utility Line Interference

During pre-construction, Dig Safe coordination was performed to notify possible utility line operators near the knee wall installation and dredge areas. No conflicts were noted by utility line operators near DMUs 9 and 10.

4.5 Backfill Material Testing Verification

Backfill material testing verification was conducted in conjunction with the work conducted for the Buffalo River AOC. As part of the Buffalo River AOC program, Anchor QEA reviewed and verified the gradation and analytical data for backfill materials submitted by Sevenson at regular 5,000-cubic yard (CY) intervals in accordance with the project technical specifications. All gradation testing was performed by Glynn Geotechnical Engineering in accordance with ASTM International D-422. Analytical testing was performed by ALS Environmental in Rochester, New York. Laboratory testing data is provided in Appendix H. Anchor QEA tracked the review and verified accurate reporting of these laboratory results using a regularly updated log. All material sources provided certification of virgin source material and current NYSDEC permits associated with their operations prior to acceptance of materials.

Analytical data submittals met the requirements of the project technical specifications. As identified in the specifications, all backfill materials were required to meet New York Codes, Rules, and Regulations, Part 375 – Soil Cleanup Objectives for unrestricted use, and all source locations provided certification of the use of clean virgin materials. During initial sampling of the several local sources, it was found that background levels of zinc slightly exceeded the unrestricted use criteria. Zinc was the most commonly occurring exceedance and was persistent in many of the obtained samples. The zinc levels were determined to be a result of naturally occurring zinc levels (i.e., regional background). Approval to use material with zinc exceedances was obtained from NYSDEC via email on September 5, 2014, prior to the use of the material on site. Following this approval, Sevenson was directed to use sources that showed lesser quantity of zinc failures.

In addition to the review and verification of analytical and gradation laboratory reports, routine visual observation of backfill materials delivered to the site was performed throughout the project implementation. Material stockpiles were visually inspected by the CM and construction quality assurance staff for indication of possible material type change. Color and gradation of the material were observed at the appropriate material stockpiles. Field staff did not observe changes that would warrant additional laboratory testing of the backfill materials during construction.

4.6 Backfill Material Handling and Stockpiling

Handling and stockpiling of backfill material the for DMUs 9 and 10 work were performed at the Buffalo Scholastic Rowing Association property located adjacent to DMU 44e at 345 Ohio Street, Buffalo, New York. Material was transferred onto a material scow and pushed via tug boat to the DMUs 9 and 10 knee wall area for in-water placement.

5 Description of Remedial Activities

Remedial activities at DMUs 9 and 10 included the installation of a knee wall, dredging conducted at the toe of slope adjacent to the knee wall, and backfill placement to cover a narrow band (approximately 5 feet or less) of sediments located between the toe of an existing marine armor mattress system and the installed knee wall. The major components of the remedy included the following:

- Setup of sediment offloading equipment at CDF No. 4
- Dig Safely utility location coordination
- Installation of approximately 240 linear feet (LF) of knee wall
- Dredging of approximately 1,180 CY of sediment
- Offloading and disposal of all dredged sediment and debris
- Placement of approximately 80 CY of backfill
- Final demobilization of all equipment associated with knee wall construction, dredging, and backfill installation

5.1 Knee Wall Construction

All sheeting sections were inspected upon delivery to BIDCO's facility located at 220 Katherine Street then loaded onto barges for transport to the DMUs 9 and 10 installation area. BIDCO's surveyor, GPI Engineering & Surveying, LLP, performed initial site survey checks to confirm the alignment coordinates prior to the start of work. Prior to the start of installation, a turbidity curtain was installed surrounding the work area with an additional oil-absorbent boom along the shorelines to capture any potential sheens released during the work.

Sheeting operations commenced on November 17, 2015, and were completed on December 2, 2015. Sheet installation started at the downstream corner and proceeded upstream along the front face of the alignment. After starting the first sequence of sheets along the initial template location, the downstream return was installed prior to resuming the main wall with the second guide installation location. The upstream return was installed last after the main wall length was set. All sheets were installed using a submersible vibratory hammer. The following main pieces of equipment were used for the knee wall installation:

- Link-Belt LS-98A crane located on a Flexifloat barge configuration with supporting generators, storage, welding, and dive equipment
- ICE Model 14C vibratory pile hammer
- BIDCO push boat for barge location adjustment

Sheets were installed in sections following a "false work" guide template installed along the inside or outside line of the sheeting alignment to provide support for the sheets prior to driving to final

depth. Two H-beams were partially driven to support a crossbeam following the face of the desired alignment. After the false work was installed and verified by survey, sheet sections were driven along the alignment to partial depth with the top of sheets a few feet above the top of the false work. Partial driving allowed ease of connection of following sheets and further alignment checks. Once sufficient, sheet sections were installed to provide support. The false work was relocated to adjacent sections to continue progression of the wall construction. Following initial installation of all sheets, individual sheets were driven to bedrock and measured for cutoff. After all sheets were measured, they were partially extracted. The tops were cut to the final length based on the bed rock installation measurement, and the sheets were re-driven to bedrock at the final design grade. During installation of the return sections, a field adjustment was made to the top elevation of the returns to follow the existing mudline once the rising bathymetry slope came above the design top elevation to prevent the need for excavation along the short return lengths. Photographs 1 and 2 in Attachment 1 show the sheeting installation process.

During installation, all sheets along the main front face were driven cleanly to bedrock except for three sheets (SP-22, 23, and 24), which encountered an obstruction approximately 2 to 4 feet above bedrock. Multiple attempts to complete driving continued to encounter the same hard obstruction. Following review of the length of the completed sheet and full driving of adjacent sheets, approval was provided to adjust final lengths to match the top elevations of adjacent piles and to drive the sheets to the achievable tip depth. Details of the installed sheets, including installation date, sheet length, and top and tip elevations, are included in the sheetpile driving log in Appendix I. CM and verification activities were conducted concurrent with ongoing dredging operations for this scope of work.

Following construction, as-built submittals, including surveyed alignment and all pile driving records, were prepared to document the final configuration of the knee wall. The post-knee wall installation survey was performed on December 3, 2015. The final alignment as-built drawings, including surveyed alignment points and GPS checkpoints along the alignment, are provided in Appendix I. After acceptance of the installation and completion of all as-built verification, Sevenson performed a post-installation survey to confirm elevations prior to commencing dredging and backfill operations in DMUs 9 and 10.

5.2 Dredging

Dredging at DMUs 9 and 10 was completed on the channel side of the knee wall following its installation. Dredging was performed by Sevenson and their subcontractor, Luedtke, who completed the GLLA dredging during the 2013 and 2014 project work under subcontract to Environmental Quality Management, Inc. Dredging operations commenced on December 5, 2015, and were concluded on December 7, 2015.

The following main pieces of equipment were used for the dredging work:

- *Derrick Boat No. 12* (the SS Murphy), which comprised a deck barge equipped with a Liebherr crawler crane dredge equipped with a 6-CY dredge bucket
- Material scows and tugboats for transport of material from the dredge location to CDF No. 4
- *Lucille T* hydraulic dredge used to hydraulically unload dredge material from scows into CDF No. 4
- Excavator used to bury consolidated debris in CDF No. 4 debris pit

Material was dredged mechanically and placed into material scows for transport to CDF No. 4. Sediment was hydraulically unloaded into the CDF from the sediment scows. Dredged debris mainly comprised woody debris and was mechanically unloaded from the scows and buried in appropriate, surveyed debris pits within the CDF. Disposal of debris in the CDF was approved prior to the performance of the work and involved direct coordination with on-site USACE representatives, similar to previous operations for the USEPA GLNPO scope dredging.

Photographs 3 and 4 in Attachment 1 illustrate the dredging operations and equipment suite used during the performance of dredging work.

The dredge template provided in the design was developed using both available bathymetry and geotechnical borings in the area that identified the general subsurface elevations of native clay material, a lithologic layer used as the target delineating clean native vs. potentially impacted sediment and used as the limit to dredge design depths throughout the GLLA project. Though the borings were able to provide an estimate of native clay depth across the target remedial area, variability in the elevation of the clay layer was expected, as seen in previous dredging throughout the river. Where this layer occurred higher than the target dredge design template, dredging was halted and was documented by field oversight staff through observation of removed materials during dredging. The target clay layer has a visible difference in color and consistency making visual confirmation of clay possible during the work. In locations where clay was not encountered by the target depth, additional dredging was performed to capture any remaining impacted sediment, within the limit of the slope stability calculations. The dredging project effectively removed impacted material above the confining clay layer from within the DMUs, outboard of the knee wall. Post-dredge bathymetric surveys were completed by Thew and are provided as Appendix J of this report. A summary of dredge volumes from DMUs 9 and 10 is provided in Table 2.

Table 2
Dredge Volume Summary

DMU	Volume Removed (CY)
9	260
10	920
Total	**1,180**

5.3 Backfill Placement

Post-dredging backfill placement was conducted in DMUs 9 and 10 to address limited areas of undisturbed sediments that could not be removed due to concerns with the stability of surrounding shoreline structures. Backfilling at DMUs 9 and 10 covered a narrow band (approximately 5 feet or less) of sediments between the toe of an existing marine armor mattress system and the knee wall that was installed as described in Section 5.1.

Backfilling at DMUs 9 and 10 was performed following the completion of the knee wall installation and after completion of dredging along the face of the knee wall. Before backfilling was initiated, a thorough review of post-dredging bathymetric surveys was performed (Appendix J) to confirm that dredging had been satisfactorily completed to design requirements.

Backfill placement operations in DMUs 9 and 10 commenced on December 8, 2015, and were completed on December 9, 2015. The following main pieces of equipment were used for the backfill operations:

- PC 450LC8 LF Komatsu excavator with a conventional bucket, which was used to place backfill materials
- No. 11 barge scow with a platform for excavator, which was used to transport backfill material to DMUs 9 and 10 for placement

The backfill materials used were equivalent to the City Ship Canal in-water fill used for the 2014 capping work. Material was placed from the surface of the water and targeted a final layer thickness of 18 inches. Photograph 5 in Attachment 1 shows the material placement process. Placement progress was monitored in the field using elevation spot checks with a real-time kinematic GPS device. Post-backfill placement bathymetric surveys were completed and are provided as Appendix K of this report. Photograph 6 in Attachment 1 shows the post-backfill placement bathymetric survey being performed.

Approximately 80 CY of in-water fill material were placed in DMUs 9 and 10.

5.4 Demobilization

OSC completed demobilization from the DMUs 9 and 10 knee wall installation on December 2, 2015, following completion of knee wall driving activities on the same day. Equipment was transported back to the BIDCO project support area. Sediment and erosion control materials were removed from upland areas and an as-built survey was performed.

Following completion of dredging and backfilling activities for the 2015 construction season, Sevenson and Luedtke completed demobilization between December 8 and 17, 2015. During this time, all equipment and materials were demobilized from the Buffalo River. Major demobilization milestones were as follows:

- December 8, 2015 – Sevenson demobilized a floating dock from Premier Towing site.
- December 9, 2015 – Luedtke demobilized a dredge barge to the South End Marine for off-site transport.
- December 10 to 11, 2015 – Sevenson removed turbidity controls from the river.
- December 14 to 17, 2015 – Sevenson transported equipment, including turbidity buoys, excavators, and in-water equipment, to Niagara Falls yard.

6 Water Quality Monitoring

Water quality monitoring was performed upstream and downstream of the work areas during backfill material placement and dredging activities. In addition to employing best management practices to limit the generation of suspended solids within the work areas, Sevenson continuously monitored turbidity near the work areas on a real-time basis. Sevenson used two automated YSI 600OMS turbidity monitors strategically located in the Buffalo River to represent upstream and downstream conditions as possible. Monitoring was performed in accordance to established turbidity monitoring guidelines for the main remediation project. Monitors were situated on buoys with a telemetry system that allowed turbidity monitoring in real time, with readings recorded once every 15 minutes at each buoy and automatically uploaded to a hosting website within 5 minutes of obtaining each reading. The turbidity monitoring setup included automated email notifications based on the readings and instances of readings above the 100-Nephelometric Turbidity Unit threshold value. Emails were automatically sent to Sevenson and CM staff.

Dredging work conducted during 2013 and 2014 as part of the GLLA project required total suspended solids (TSS) sampling in addition to turbidity sampling. Due to the infrequency of TSS exceedances observed during the preceding dredging work, Anchor QEA requested a modification to the water quality monitoring requirements for the 2015 dredging operations. NYSDEC accepted the modified water quality monitoring program approach and amended the project permits to reflect turbidity-only monitoring for the 2015 scope of work, which included the DMUs 9 and 10 dredging work.

No exceedances of the turbidity threshold value occurred periodically during the performance of the DMUs 9 and 10 dredging work in 2015.

Detailed water quality monitoring tracking tables were provided in Sevenson's Daily Reports, which are included as Appendix E of this report.

7 Reporting

Construction activities were documented by Anchor QEA via daily reports. Daily reporting included day-to-day descriptions of oversight procedures, as well as contractor activities performed. The daily reports were used to document changes in field conditions, on-site contractor and oversight personnel, equipment used during the performance of the work, contractor submittal reviews, and applicable health and safety notes. Weekly reports summarized work performed throughout each week and were used to further summarize daily activities performed, submittals received, and action items to be reviewed at weekly construction meetings. Daily reports are provided in Appendix D of this report.

Sevenson and OSC/BIDCO also documented work performed in daily progress reports (DPRs) submitted daily. The DPRs were reviewed by Anchor QEA oversight staff to ensure the accuracy of the reported work performed. In addition to providing a summary of the work performed, DPRs were also used to track quantities of materials placed and installed, results from water quality measurements, and on-site personnel and equipment. DPRs are provided as Appendix E of this report.

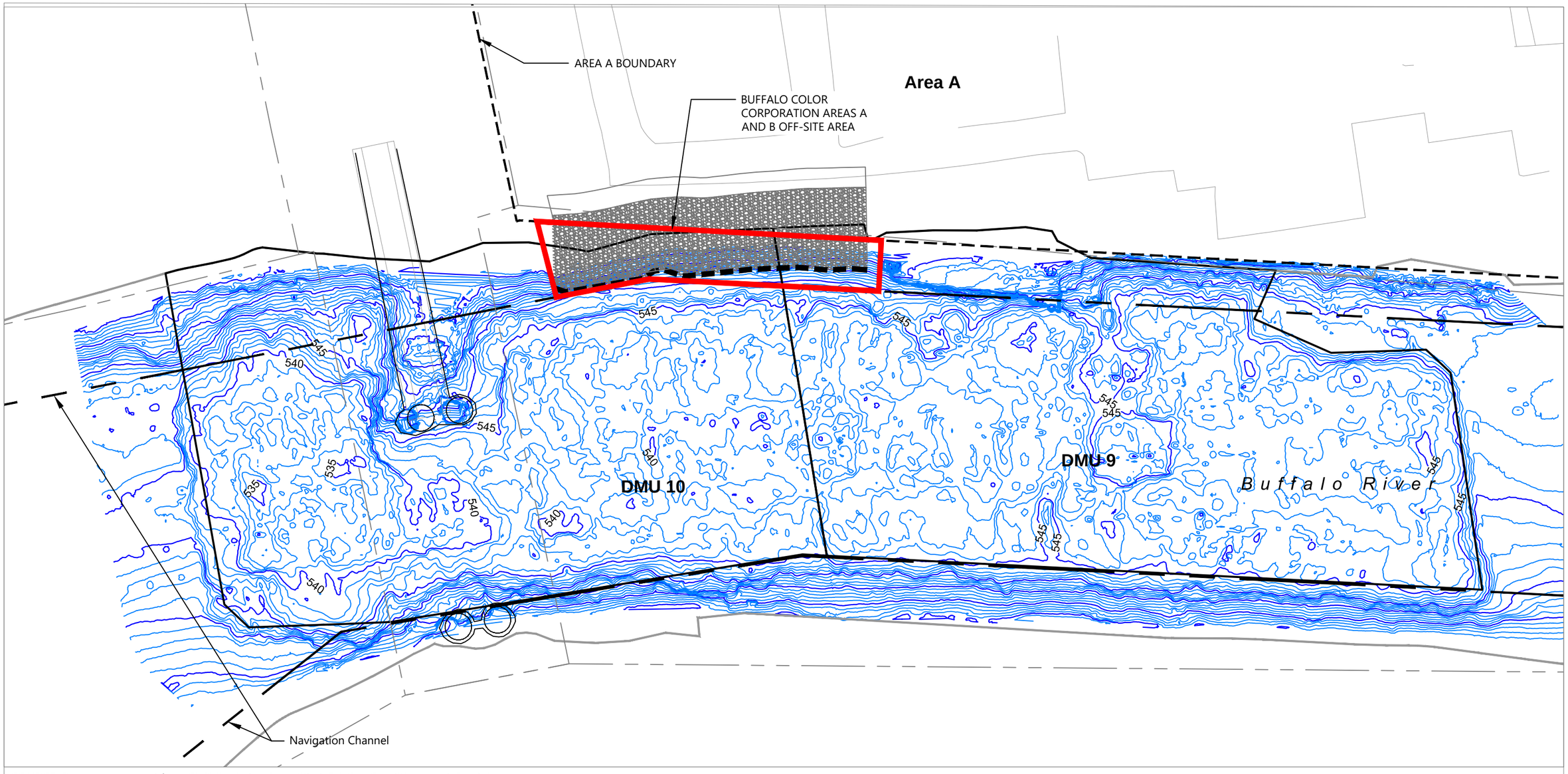
8 References

Anchor QEA (Anchor QEA Engineering, PLLC), 2018a. *Buffalo Color Corporation Site Areas A and B Off-site Area Remedial Action Work Plan.* July 2018.

Anchor QEA, 2018b. *Buffalo Color Corporation Site Areas A and B Off-site Area Remedial Investigation Alternatives Analysis.* July 2018.

MACTEC, 2008. *Final Engineering Report – Buffalo Color Site Area ABCE Interim Corrective Measure*. October 2008.

Figures



SOURCE: Basemap prepared from CH2MHILL drawings, titled 'Existing Conditions' and 'Dredging Operations'. Bathymetry from AECOM, dated October 2014.
HORIZONTAL DATUM: New York State Plane West, NAD83, U.S. Feet.
VERTICAL DATUM: International Great Lakes Datum of 1985 (IGLD85)
NOTES:

1. Base map information including navigation channel, in-water structure and 90% Design toe of marine mattress is shown as indicated in the Basis of Design Report prepared by CH2MHill/Ecology and Environment (March, 2013)
2. Actual toe of marine mattress is based on May 28, 2013 diver survey and probing conducted by OSI (April 2014).

LEGEND:

- 550 — Existing Contours (October 2014, 1' and 5' Interval)
- Toe of Marine Mattress (May 2013 and April 2014)
- DMU Boundary
- Marine Mattress Design Footprint (Mactec)
- Parcels

0 100 Feet

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ANCHOR QEA

Figure 1
Site Overview Map
Buffalo Color Corporation Areas A and B Off-Site
Buffalo, New York

SOURCE: Aerial Imagery from Bing Maps.
HORIZONTAL DATUM: New York State Plane West, NAD83, U.S. Feet.
VERTICAL DATUM: International Great Lake Datum of 1985

0 2000
Feet

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Filepath: K:\Projects\0287-Honeywell International Inc\Buffalo River Site Strategy & Eng Sup\0287-RP-019 (Surface XS_20140604).dwg Site Loc Areas A and B

ANCHOR QEA

Figure 2
Site Location Map

Buffalo Color Corporation Areas A and B Off-site
Buffalo, New York

Attachment 1
Representative Photograph Log

Photograph 1

Knee Wall Installation – DMUs 9 and 10

Photograph 2

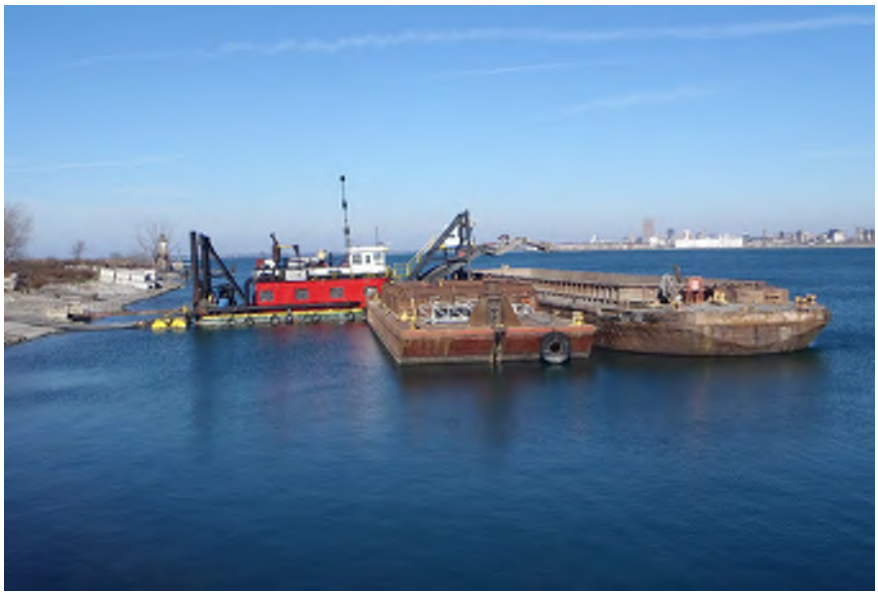
Knee Wall Installation – DMUs 9 and 10

Photograph 3

Dredging Operations – DMUs 9 and 10

Photograph 4

Dredged Material Offloading Operations – USACE CDF No. 4

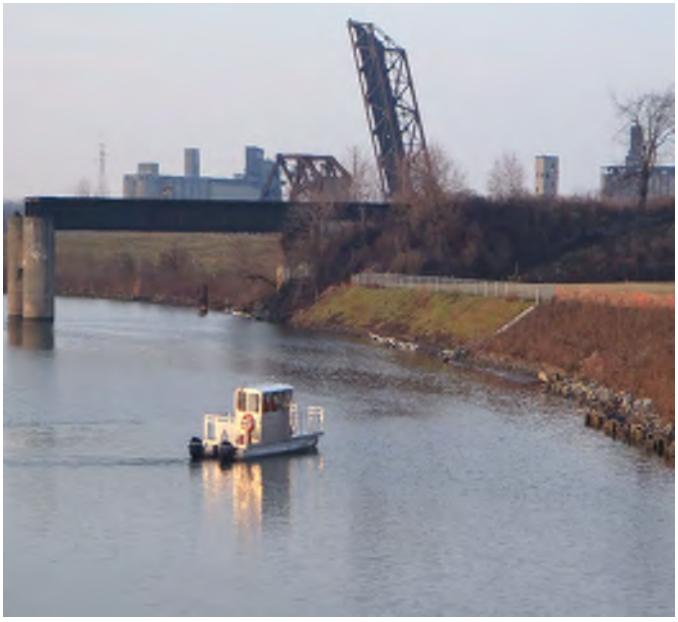


Photograph 5

Backfill Placement Operations – DMUs 9 and 10

Photograph 6

Performing Post-Backfill Bathymetric Survey



Appendix A
Great Lakes Legacy Act Project Permits

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

REPLY TO
ATTENTION OF:

August 14, 2013

Regulatory Branch

SUBJECT: Transmittal of Department of the Army Permit No. 2013-00814, Nationwide Permit No. 38 as Published in the Federal Register, Volume 77, No. 34, on Tuesday, February 21, 2012, New York State Department of Environmental Conservation No. 9-1402-01094

Mr. Rich Galloway
Honeywell International, Inc.
101 Columbia Road
Morristown, New Jersey 07962

Dear Mr. Galloway:

I am writing to you in regard for the Department of the Army permit application you submitted on behalf of Honeywell International, Inc. to dredge approximately 430,000 to 485,000 cubic yards of contaminated sediment and discharge clean sediment/stone to cap an approximate 388,700 square foot area within the Buffalo River Area of Concern (AOC) under the U.S. EPA's Great Lakes Legacy Act (GLLA). The dredging/capping mentioned above will be implemented within 6.2 miles from the mouth of the Buffalo River up to Cazenovia/Buffalo Creeks, including the 1.4 mile City Ship Canal, in the City of Buffalo, Erie County, New York.

I have evaluated the impacts associated with your proposal, and have concluded that they are authorized by the enclosed Nationwide Permit (NWP) provided that the attached conditions are satisfied.

Verification of the applicability of this NWP is valid until March 19, 2017 unless the NWP is modified, suspended, revoked, or the activity complies with any subsequent permit modification. Please note in accordance with 33 CFR part 330.6(b), that if you commence or are under contract to commence an activity in reliance of the permit prior to the date this Nationwide permit expires, is suspended or revoked, or is modified such that the activity no longer complies with the terms and conditions, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of the permit, unless the permit has been subject to the provisions of discretionary authority.

It is your responsibility to remain informed of changes to the NWP program. A public notice announcing any changes will be issued when they occur and will be available for viewing at our website: http://www.lrb.usace.army.mil/Missions/Regulatory.aspx. Finally, note that if

your activity is not undertaken within the defined period or the project specifications have changed, you must immediately notify this office to determine the need for further approval or reverification.

This affirmation is limited to the attached NWP and associated WQC, and does not obviate the need to obtain any other project specific Federal, state, or local authorization. Specifically, you may need to obtain Article 15 (Protection of Water), Article 24 (Freshwater Wetland), and/or Article 34 (Coastal Erosion Management) authorization from the New York State DEC.

In addition to the general conditions attached to the NWP, your attention is directed to the following Special Conditions which are also appended at the end of the NWP General Conditions:

Administrative

1. At the request of an authorized representative of the Buffalo District, U.S. Army Corps of Engineers, the permittee shall allow access to the project site and all restoration areas to determine compliance with the conditions of this permit.

2. You are responsible for ensuring that all contractors and/or workers executing the activity(s) authorized by this permit have knowledge of the terms and conditions of the authorization and that a copy of the permit document is at the project site throughout the period that the authorized work is underway. You shall also inform all contractors of liabilities associated with non-compliance of this permit.

3. If any historic or archeological artifacts or remains are discovered while conducting work authorized by this permit, you must notify the Corps of Engineers in accordance with General Condition 21 and all work in the vicinity of the discovery must be stopped immediately, pending initiation of any required consultation under the National Historic Preservation Act.

4. Should human remains be encountered during any phase of the proposed project, such person or persons encountering the human remains must immediately cease work in the vicinity of the discovery and must not disturb or remove the remains, must protect the exposed portions of the remains from inclement weather and vandalism, and immediately notify the permittee. Continuing work on the project may result in adverse effects to the remains, which may be contrary to the National Historic Preservation Act. After discovery, the permittee must immediately notify (within 24 hours) Joseph Rowley, USACE Buffalo District, 1776 Niagara Street, Buffalo New York 14207 at (716) 879-4279 or email: joseph.m.rowley@usace.army.mil and the New York State Office of Parks, Recreation, and Historic Preservation, Peebles Island State Park, P.O. Box 189, Waterford, New York 12188-0189, (518) 237-8643.

5. Please note, no dredging activities will extend beyond the horizontal and vertical extent of previous maintenance dredging episodes that may have occurred within DMU-45c (Black shaded area indicated on Sheet 2 of 111).

6. Please note, no dredging can take place within a 100 buffer area around Sonar Target BF-5 where no dredging can take place. This area is adjacent to DMU-11 and is indicated on Sheet 5 of 111.

7. The permittee is authorized to discharge only clean fill material that is free of fines, oil and grease, debris, wood, general refuse, plaster, broken asphalt, or other potential pollutants.

8. The Section 401 Water Quality Certification issued for this project by the State of New York is hereby part of this Department of the Army permit pursuant to Section 401(d) of the Clean Water Act. Noncompliance with any limitations or requirements stated in the certification may be a basis for suspension, revocation or modification of this permit.

9. The permittee is prohibited from performing in-water work between December 30 and June 15 within the Buffalo River and December 30 and June 30 in City Ship Canal to preclude adverse impacts on the spawning, nursery, and feeding activities of indigenous fish species.

Dredging

1. The permittee, including their contractors, must ensure the dredged material is not temporarily or permanently placed in Waters of the U.S., including wetlands.

2. The permitte must notify Mr. Joseph Rowley, USACE Buffalo District, 1776 Niagara Street, Buffalo New York 14207, in writing, at least two (2) weeks prior to initiating any dredging activities authorized by this permit.

3. The permittee or their contractors must have a copy of this permit on the vessel used for the authorized transportation and disposal of dredged material.

4. The permittee must install and maintain, at their expense, any safety lights and signals prescribed by the United States Coast Guard (USCG), through regulations or otherwise, on the structures or vessels being utilized for the dredging operation. The USCG may be reached at the following address: Commander (OAN), U.S. Coast Guard, Ninth Coast Guard District, 1240 East Ninth Street, Cleveland, Ohio 44199-2060, Telephone: (216) 902-6069; FAX: (216) 902-6059

5. Dredging operations must be strictly controlled to minimize spillage and re-suspension of

bottom sediments.

Confined Disposal Facility

1. Prior to conducting any work authorized by this permit including the use of a Federal Confined Disposal Facility (CDF), the permittee must enter into a Memorandum of Agreement (MOA) with the Buffalo District and be willing to abide by all terms and conditions, including but not limited to, paying the required tipping fee (fee varies with each Federal CDF), submitting and complying with an Buffalo District approved Operations Plan, and participating in a site visit with the Corps (Mr. Robert Remmers, see below) to the selected CDF before and after disposal operations.

   NOTE: Issuance of a Corps permit for dredging does not automatically guarantee approval for use of the Federal CDF. An approved MOA must be fully executed prior to use of a federal CDF.

2. The following specific requirements must be met in order for the Corps to allow dredged material to be placed into a Federal CDF:

   a. The dredged material must be from a project that is directly related to navigation.

   b. The material that is proposed to be disposed in the Federal CDF must be toxicologically suitable, as determined by a technical review of relevant contaminant information. This office must approve the technical review prior to final approval of use of the CDF. Such determinations may vary for each CDF depending on site-specific conditions. The material cannot be suitable for open-lake placement, but must not be too contaminated for disposal in the Federal CDF. Upon written request, the Buffalo District will provide guidance on how to adequately characterize the material for Federal CDF disposal. The permittee will be responsible for performing any required sampling, testing and evaluation of the material. The permittee shall submit this required information to the Buffalo District for concurrence regarding the evaluation of the material and its suitability for Federal CDF disposal.

   c. The sediments that are dredged must be physically suitable for placement into the Federal CDF. Dredged materials accepted for disposal shall include natural sediments and, not include large natural or man-made items such as trees, tree stumps, large tree branches, large boulders, concrete rubble, wooden timbers, steel items, construction materials, etc. Sediments containing small stones (under

1-foot in diameter) and/or small branches or other minor natural woody debris are acceptable.

d. The dredged material must be removed from below the ordinary high water mark, which was determined by this office. Material above this elevation shall not be disposed of into the Federal CDF. If necessary, contact the Buffalo District for the elevation of the ordinary high water mark.

3. If the MOA is approved, the permittee must then submit an Operations Plan, prior to dredging as authorized by this permit, to the Corps (Mr. Robert Remmers, see below) for review and approval. The Operations Plan must address operational activities associated with usage of the CDF including, but not limited to, the method of dredged material disposal (i.e. clamshell, hydraulic pipeline, etc.), identification of the disposal location in the CDF as provided by the Corps, and method of quantity measurement and computation.

4. The permitee must perform the work authorized by this permit in such a way that it will not interfere with any scheduled or ongoing maintenance activity conducted by the Federal Government, including at the Federal channel, Federal CDF, or Federal navigation structures. Information regarding the scheduling of Federal maintenance projects may be obtained by contacting Mr. Robert Remmers as noted below.

5. Immediately upon completion of disposal operations (within 5 days) the permittee is required to submit to this office a copy of an itemized contractor's bill or statement showing the total cubic yardage deposited into the Federal Disposal Site and a description of the method used to calculate the yardage (e.g., before and after depth soundings within the dredge area). Backup information (including soundings or other survey data) must also be submitted to this office. This information will be used to calculate the disposal facility usage fee, which they will be billed for this amount. The information must be sent to Mr. Robert Remmers as noted below and a second copy must be sent to: Mr. Harold Keppner, Chief, Monitoring and Enforcement Section, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199.

6. Approval to use a Federal CDF is subject to space limitations, as determined by the U.S. Army Corps of Engineers, Buffalo District.

7. That should the CDF reach capacity prior to project completion; the permittee will be responsible for finding an alternate upland disposal location and will not be authorized to use the alternate location until they receive written approval from this office.

8. Information on how to coordinate an MOA with this office, and requirements for an Operations Plan, may be obtained by contacting Mr. Robert Remmers, Chief, Operations and Technical Support Section, who may be contacted by calling (716) 879-4277, by e-mail: robert.w.remmers@usace.army.mil, or by writing to: Mr. Robert Remmers, Chief,

Regulatory Branch
SUBJECT: Transmittal of Department of the Army Permit No. 2013-00814, Nationwide Permit No. 38 as Published in the Federal Register, Volume 77, No. 34, on Tuesday, February 21, 2012, New York State Department of Environmental Conservation No. 9-1402-01094

Operations and Tech Support, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199.

Finally, this letter contains an approved JD for the subject parcel. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal the above determination, you must submit a completed RFA form within 60 days of the date on this letter to the Great Lakes/Ohio River Division Office at the following address:

Attn: Appeal Review Officer
Great Lakes and Ohio River Division
CELRD-PD-REG
550 Main Street, Room 10032
Cincinnati, OH 45202-3222
Phone: 513-684-6212;FAX(513) 684-2460

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by October 14, 2013.

It is not necessary to submit an RFA to the Division office if you do not object to the determination in this letter.

A copy of this correspondence has been sent to Ms. Mary Beth Giancarlo of the U.S. Environmental Protection Agency Great Lakes National Program Office.

Questions pertaining to this matter should be directed to me at 716-879-4279, by writing to the following address: U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207, or by e-mail at: joseph.m.rowley@usace.army.mil

Sincerely,

ROWLEY.JOSEPH.M.1266892183

Digitally signed by ROWLEY.JOSEPH.M.1266892183
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=ROWLEY.JOSEPH.M.1266892183
Date: 2013.08.14 09:51:44 -04'00'

Joseph Rowley
Physical Scientist

Enclosures

COMPLETION FORM / COMPLIANCE CERTIFICATION

Each permittee who receives a Nationwide Permit (NWP) verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any compensatory mitigation.

APPLICANT:	POINT OF CONTACT:	File No.: 2013-00814
Honeywell International, Inc.	Mr. Rich Galloway	File Closed: July 24, 2013
101 Columbia Road	Honeywell International, Inc.	NWP No.: 38
Morristown, New Jersey 07962	101 Columbia Road	
	Morristown, New Jersey 07962	

Upon completion of the activity authorized by this permit and any required compensatory mitigation sign this certification and return it to the address listed below within 30 days of project completion.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, revocation, and/or assessment of administrative penalties.

The permittee shall certify the completion of the authorized work and mitigation:

a. The authorized work was done in accordance with the NWP authorization, including any general, regional, or activity specific conditions.

b. The implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, this certification must include the documentation required by 33 CFR 332.3(1)(3) to confirm that the permittee secured the appropriate number and resource type of credits.

_____ _____

APPLICANTS NAME Date

Permittee Telephone Number: _____

Project location: 6.2 miles from the mouth of the Buffalo River up to Cazenovia/Buffalo Creeks, including the 1.4 mile City Ship Canal, in the City of Buffalo, Erie County, New York.

Project Description: dredge approximately 485,000 cubic yards of contaminated sediment, discharge clean sediment/stone to cap an approximate 388,700 square foot area

Authorized Impacts (Waters of the U.S. Impacted by Project): 6.2 miles of the Buffalo River

Waterway and/or Project Setting: Buffalo River

Return completed form to:
Mr. David Leput
Regulatory Branch
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL			
Applicant: Honeywell International, Inc.		File Number: 2013-00814	Date:
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact:
Joseph Rowley United States Army Corps of Engineers Buffalo District 1776 Niagara Street Buffalo, NY 14207 716-879-4279 joseph.m.rowley@usace.army.mil	Attn: Appeal Review Officer Great Lakes and Ohio River Division CELRD-PD-REG 550 Main Street, Room 10032 Cincinnati, OH 45202-3222 (513) 684-6212;FAX(513) 684-2460

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

NAVIGABLE WATERWAYS IN THE BUFFALO DISTRICT
APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

BACKGROUND INFORMATION

A. **REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** December 19, 2007

B. **DISTRICT OFFICE:** Buffalo

C. **PROJECT LOCATION AND BACKGROUND INFORMATION:** The Buffalo District has previously determined the extent of navigable waters within their regulatory jurisdiction in the states of New York and Ohio. Posting of this jurisdictional determination establishes Corps jurisdiction over these navigable waters under Section 10 of the Rivers and Harbors Act of 1899. A list of these waters is posted on the Buffalo District's regulatory website at http://www.lrb.usace.army.mil/Portals/45/docs/regulatory/DistrictInfo/waterway_ny.pdf and http://www.lrb.usace.army.mil/Portals/45/docs/regulatory/DistrictInfo/waterway_oh.pdf . The Buffalo District has determined that a site/project specific jurisdictional determination involving these Section 10 navigable waters is not required.

D. **REVIEW PERFORMED FOR EVALUATION:** Office (Desk) Determination. Date: December 19, 2007

SUMMARY OF FINDINGS
RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are** *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

- ☐ Waters subject to the ebb and flow of the tide.
- ☒ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain: Prior to the determination and listing of Buffalo District's Section 10 navigable waters, detailed navigability studies were performed throughout the Buffalo District to determine which waters met the navigable waters definition found in 33 CFR Part 329. Upon completion, the Buffalo District issued several public notices updating the listing of Section 10 navigable waters determinations within the Buffalo District's regulatory boundaries. Since the most recent Public Notice (PN) 7-81, dated 27 July 1981, the extent of navigability of these listed waters and additional waters determined to be navigable was further refined pursuant to the "Definition of Navigable Waters of the United States" as provided in 33 CFR Part 329. The PN indicated that federal regulatory jurisdiction extends laterally to the entire water surface and bed of a navigable waterbody, which includes all the land and waters below the ordinary high water mark (OHW) and that all adjacent embayments, or backwater areas, ponds or wetlands located below OHW are considered navigable for administrative purposes. In addition, the Pittsburg District issued PN 00-54, dated 3 October 2000, established Section 10 jurisdiction over a portion of the Allegheny River which now occurs within the Buffalo District's regulatory boundaries. The current list of navigable waters, including extent of jurisdiction, occurring within the geographic limits of the Buffalo District and meeting this definition was established in 1996 and updated in 1999 may also be found on the Buffalo District's regulatory website at http://www.lrb.usace.army.mil/Portals/45/docs/regulatory/DistrictInfo/waterway_ny.pdf and http://www.lrb.usace.army.mil/Portals/45/docs/regulatory/DistrictInfo/waterway_oh.pdf, or provided upon request.

DATA SOURCES

SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☐ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☒ Corps navigable waters' study: Navigable water studies are available for the majority of navigable waters within the Buffalo District regulatory jurisdiction; Buffalo District issued PN 7-81, dated 27 July 1981; Pittsburg District issued PN 00-54, dated 3 October 2000
- ☐ U.S. Geological Survey map(s). Cite scale & quad name:.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- ☐ Photographs: ☐ Aerial (Name & Date):
  or ☐ Other (Name & Date):
- ☐ Previous determination(s). File no. and date of response letter:
- ☐ Applicable/supporting case law:
- ☐ Applicable/supporting scientific literature:
- ☒ Other information (please specify): Definition of Navigable Waters of the United States (33 CFR Part 329).

ACTIVITIES AUTHORIZED BY 2012 NATIONWIDE PERMIT WITHIN THE STATE OF NEW YORK

Expiration March 18, 2017

B. Nationwide Permits

38. Cleanup of Hazardous and Toxic Waste. Specific activities required to effect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Court ordered remedial action plans or related settlements are also authorized by this NWP. This NWP does not authorize the establishment of new disposal sites or the expansion of existing sites used for the disposal of hazardous or toxic waste.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. (See general condition 31.) (Sections 10 and 404)

Note: Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.

Buffalo District Only Permit-specific Regional Conditions: None

New York District Only Permit-specific Regional Conditions:

a. For those activities that are located within Essential Fish Habitat waters as defined in Section G-D.8. below, to the maximum extent practicable, no in-water work shall occur between March 1 and June 30.

b. For those activities that would impact more than 0.5 acres of waters of the United States, and are located within Essential Fish Habitat waters as defined in Section G-D.8. below, a complete copy of any PCN submitted to the Corps of Engineers shall also be forwarded by the applicant, directly to the National Marine Fisheries Service (NMFS) Habitat Conservation Division, 212 Rogers Avenue, Milford, Connecticut 06460. The applicant must provide evidence to the Corps that this has been accomplished. The Corps of Engineers will coordinate review of the PCN with the NMFS pursuant to the requirements of the Magnuson Stevens Fishery Conservation and Management Act.

Section 401 Water Quality Certification:
The New York State Department of Environmental Conservation (NYSDEC) has denied Section 401 Water Quality Certification in New York State for this Nationwide Permit. Any party conducting the activities authorized by this NWP must apply for and obtain an individual Section 401 Water Quality Certification from the New York State Department of Environmental Conservation.

New York State Department of State Coastal Zone Management Consistency Determination:
Pursuant to 15 CFR Part 930.41, the New York State Department of State (NYSDOS) concurs with the USACE consistency determination for this NWP with which all general and all Buffalo and New York District regional conditions are complied.

C. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined

to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to

ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

F. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent – meaning bordering, contiguous, or neighboring – to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)-(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

G. General Regional Conditions
These conditions apply to ALL Nationwide Permits.

G-A. Construction Best Management Practices (BMP's): Unless specifically approved otherwise through issuance of a waiver by the District Engineer, the following BMP's must be implemented to the maximum degree practicable, to minimize erosion, migration of sediments, and adverse environmental impacts. Note that at a minimum, all erosion and sediment control and stormwater management practices must be designed, installed and maintained in accordance with the latest version of the *"New York Standards and Specifications for Erosion and Sediment Control"* and the *"New York State Stormwater Management Design Manual"*. These documents are available at: http://www.dec.ny.gov/chemical/29066.html and http://www.dec.ny.gov/chemical/29072.html , respectively.

1. All synthetic erosion control features (e.g., silt fencing, netting, mats), which are intended for temporary use during construction, shall be completely removed and properly disposed of after their initial purpose has been served. Only natural fiber materials, which will degrade over time, may be abandoned in place.

2. Materials resulting from trench excavation for utility line installation or ditch reshaping activities which are temporarily sidecast or stockpiled into waters of the United States must be backfilled or removed to an upland area within 30 days of the date of deposition. Note: upland options shall be utilized prior to temporary placement within waters of the U.S., unless it can be demonstrated that it would not be practicable or if the impacts of complying with this upland option requirement would result in more adverse impacts to the aquatic environment.

3. For trenching activities in wetlands the applicant shall install impermeable trench dams or trench breakers at the wetland boundaries and every 100 feet within wetland areas to prevent inadvertent drainage of wetlands or other waters of the United States.

4. Dry stream crossing methods (e.g., diversion, dam and pump, flume, bore) shall be utilized for culvert or other pipe, or utility installations to reduce downstream impacts from turbidity and sedimentation. This may require piping or pumping the stream flow around the work area and the use of cofferdams.

5. No in-stream work shall occur during periods of high flow, except for work that occurs in dewatered areas behind temporary diversions, cofferdams or causeways.

6. Construction access shall be by means that avoid or minimize impacts to aquatic sites (e.g. upland access, floating barges, mats, etc.). Discharges of fill material associated with the construction of temporary access roads and work pads in wetlands shall be placed on filter fabric. All temporary fills shall be removed upon completion of the work and the disturbed area restored to pre-construction contours, elevations and wetland conditions.

7. All return flow from dredge material disposal areas shall not result in an increase in turbidity in the receiving water body that will cause a substantial visible contrast to natural conditions. (See NWP #16)

8. For activities involving the placement of concrete into waters of the U.S., the permittee must employ watertight forms. The forms shall be dewatered prior to the placement of the concrete. The use of tremie concrete is allowed, provided that it complies with New York State water quality standards.

9. New stormwater management facilities shall be located outside of waters of the U.S. A waiver of this requirement may be requested with the submission of a PCN. The PCN must include justification which demonstrates that avoidance and minimization efforts have been met.

10. To the maximum extent practicable, the placement of fill in wetlands must be designed to maintain pre-construction surface water flows/conditions between remaining on or off-site waters. This may require the use of culverts and/or other measures. Furthermore, the activity must not restrict or impede the passage of normal or expected high flows (unless the primary purpose of the fill is to impound waters). The activity may alter the pre-construction flows/conditions if it can be shown that it benefits the aquatic environment (i.e. wetland restoration and/or enhancement).

11. In order to ensure compliance with NWP General Condition #2 – Aquatic Life Movement and #9 Management of Water Flows, all new or replacement culverts shall be constructed/installed in accordance with the following:

General Information:

a. Use of the following requirements and recommendations alone will not satisfy the need for proper engineering and design. In particular, appropriate engineering is required to ensure structures are sized

and designed to provide adequate capacity (to pass various flood flows) and stability (bed, bed forms, footings and abutments).

b. Site specific information (i.e. stream bed slope, type and size of stream bed material, stream type, existing natural or manmade barriers, etc.) should be assessed to determine appropriate culvert design and to ensure management of water flows and aquatic life movement.
c. Before replacing a culvert or other crossing structure with a larger structure it is essential that the replacement be evaluated for its impacts on: downstream flooding, upstream and downstream habitat (in-stream habitat, wetlands), potential for erosion and headcutting, and stream stability.
d. Measures should be included in all culvert designs that will promote the safe passage of fish and other indigenous aquatic organisms.
e. The dimension, pattern, and profile of the stream above and below the stream crossing should not be permanently modified by changing the width or depth of the stream channel.

Preconstruction Notification (PCN)/Waiver Requirements:

A. A PCN is not required for projects that are designed to meet Requirements B and C, below, unless a PCN is otherwise required by the NWP regulations.

B. In order to comply with General Condition #2 Aquatic Life Movement, either a bottomless culvert or bridge must be used where practicable. If the stream cannot be spanned, the culvert must be installed with its bottom buried (embedded) below the grade of the stream bed where practicable. (Note: When not practicable to do so due to small culvert size, it is suitable to allow natural deposition to cover the interior of the culvert bed.)

   i. A minimum of three stream channel cross sections shall be taken at proximal locations to the crossing location to determine the average of the lowest points in elevation of the stream bed. This average low point shall be used to ensure low flow is maintained through the culvert and from which all embedment depths are measured.
   ii. To ensure low flow and aquatic life movement is maintained, an embedment depth of a minimum of 20 percent of the culvert vertical rise throughout the length of the culvert is recommended. Additionally, it is recommended that the culvert bed slope remain consistent with the slope of the adjacent stream channel.

C. In order to comply with General Condition #9 Management of Water Flows, bank-full flows shall be accommodated through maintenance of the existing bank-full channel cross sectional dimensions within the culvert. Bank-full width is generally considered to be the top width at the stage where a stream begins to overtop its banks and spread into the floodplain.

   i. An average of three measurements (project location and straight sections of the stream upstream and downstream) shall be used to determine appropriate opening width. If the project is a replacement of an existing structure then only upstream and downstream locations shall be used to compute the average.
   ii. To ensure bank-full flow is accommodated by the culvert, it is recommended that minimum culvert widths include a minimum of 1.25 times width of the stream channel at the ordinary high water or a 2 year design storm.

D. In summary, a PCN is required, requesting a waiver of the above requirements for projects where:
   i. both spanning the waterway and embedding are found to be not practicable;
   ii. embedding is practicable but the recommendations for embedment depth cannot be met;
   iii. bank-full flow will not be accommodated within the culvert;
   iv. less than the recommended minimum culvert width is proposed

E. In addition to the PCN requirements of General Condition #31, the PCN must include the following information:
   i. a note indicating which of the above requirements will not be met by the proposed project;
   ii. information as to why the use of such structures or measures would not be practicable;
   iii. a brief description of the stream discussing the items outlined in the above General Information section;
   iv. the cross sections of the stream used to calculate the stream bed low point and bank-full

width;

v. an evaluation of the effects the crossing would have on aquatic life movement and/or water flows; and

vi. mitigation measures that will be employed to minimize these effects.

A waiver of the requirement(s) will be issued if it can be demonstrated that the proposal would result in the least environmentally damaging practicable alternative (e.g. compliance with any of the requirement(s) would result in detrimental impacts to the aquatic system).

12. Culvert Rehabilitation Projects, not including culvert replacement projects:

a. A PCN is required for culvert rehabilitation projects which will involve pipe slip lining or other activities, including concrete invert paving and concrete lining, that raise the existing invert elevation such that it causes an impediment to the passage of low flow or aquatic life movement. A PCN is not required for projects that utilize cured-in-place pipe lining. Slip lining is defined as the insertion of a smaller diameter pipe into an existing pipe by pulling pushing, or spiral winding.

b. Culvert rehabilitation projects shall assess the existing culvert, prior to the proposed repair, for compliance with Nationwide Permit General Conditions (GC) #2 (Aquatic Life Movements) and #9 (Management of Water Flows). If an impediment is found to exist, a PCN is required for any rehabilitation project.

c. For all projects requiring PCN, the applicant must provide an evaluation of the existing culvert and proposed rehabilitation project and their effects upon aquatic life movements and low/ high flow conditions in order to show compliance with GC #2 & #9. For those culverts that will impede the movement of aquatic life and water flows, the applicant must provide information as to how they will mitigate for those deficiencies. Mitigation measures may include, but are not limited to baffles, weirs, roughened channels, and grade control structures.

G-B. No regulated activity authorized by a Nationwide Permit can cause the loss of areas classified as a bog or fen in the State of New York, as determined by the Buffalo or the New York District Corps of Engineers, due to the scarcity of this habitat in New York State and the difficulty with in-kind mitigation. The Districts will utilize the following document in the classification:

Reschke, C. 1990. *Ecological Communities of New York State.* New York Natural Heritage Program. New York State Department of Environmental Conservation. Latham, N.Y. 96p. This document is available at the following location: http://www.dec.ny.gov/animals/29389.html

G-C. National Wild and Scenic Rivers (NWSR): The Upper Delaware River has been designated as a National Wild and Scenic River from the confluence of the East and West Branches below Hancock, New York, to the existing railroad bridge immediately downstream of Cherry Island in the vicinity of Sparrow Bush, New York. Also, the portion of the Genesee River located within Letchworth Gorge State Park, beginning at the southern boundary of the park and extending downstream to the Mt. Morris Dam, was designated by Congress as a permanent Study River in the Genesee River Protection Act of 1989. In accordance with General Condition #16, no activity may occur within a NWSR, including Study Rivers, unless the National Park Service (NPS) has determined in writing that the proposed work will not adversely affect the NWSR designation or study status. Therefore, a PCN is required for any NWP which would impact the designated portions of the Genesee River or the Upper Delaware River. (Note: the applicant may not commence work under any NWP until the NPS determines in writing that the project will not adversely affect the NWSR even if 45-days have passed since receipt of the PCN package.) Information regarding NWSR may be found at: http://www.rivers.gov/wildriverslist.html

G-D. For all proposals requiring a pre-construction notification (PCN), in addition to the requirements in General Condition 31, the applicant shall also include: (Note: the application will not be considered complete until all of the applicable information is received).

1. **New York State/USACE Joint Application Form:** The application form shall be completed and signed and shall clearly indicate that the submission is a PCN.

2. **Drawings:** The PCN must include legible, black and white project drawings on 8.5" x 11" paper. Full size drawings may be submitted in addition to the 8.5" x 11" plans to aid in the application review. Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are a Vicinity Map (i.e. a location map such as a USGS topographical map), a Plan View and a Cross-Section Map. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view or cross section). The Vicinity Map shall provide the location of the entire project site. In addition, each illustration should be identified with a figure or attachment number. The location map shall include the Latitude and Longitude or UTM coordinates of the project. For linear projects, the PCN shall include a map of the entire project including a delineation of all waters of the U.S. within the corridor. Aquatic resource information shall be submitted using the Cowardin Classification System mapping conventions (e.g. PFO, PEM, etc.)

3. **Color photographs:** The photos should be sufficient to accurately portray the project site, keyed to a location map and not taken when snow cover is present.

4. **Avoidance and Minimization:** The PCN must include a written narrative explaining how avoidance and minimization of temporary impacts and permanent losses of waters of the U.S. were achieved on the project site (i.e. site redesign, reduction in scope, alternate methods, etc). It should include a description of the proposed construction practices that would be implemented to perform the proposed work and a description of the reasonably foreseeable direct and indirect effects to waters of the U.S. from the proposed construction practices.

5. **Mitigation**(See General Conditions 23 & 31(b)(5)):The PCN must include at least a conceptual compensatory mitigation plan for all projects resulting in the loss of greater than $1/10^{th}$ of an acre of waters of the United States; or for which a waiver of the 300 linear foot limit on intermittent and ephemeral streams is being requested. Mitigation conceptual plans submitted with the PCN must include the following information at a minimum: proposed compensation type (bank or in-lieu fee credit, restoration, creation, preservation, etc.), location and brief discussion on factors considered for site selection (i.e. soils, water source, potential for invasive species, etc.), amount proposed per resource type and a discussion of how the proposal will compensate for aquatic resource functions and services lost as a result of the project.
Note 1: All mitigation projects must comply with the Federal Regulations on compensatory mitigation (33 CFR 332) entitled "Compensatory Mitigation for Losses of Aquatic Resources: Final Rule", dated April 10, 2008, which is available at: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title33/33cfr332_main_02.tpl, and any applicable District Guidelines.
Note 2: Although a conceptual mitigation plan may be sufficient for the purposes of a PCN submission, a detailed mitigation plan must be approved by the Corps before any jurisdictional work may occur on the project site.

6. **Nationwide Rivers Inventory:** The PCN shall indicate if a river segment listed within the National Park Service Nationwide Rivers Inventory (NRI) is located within the proposed project area. For project areas containing a listed NRI segment, the PCN shall also include a statement as to how adverse effects to the river have been avoided or mitigated. The list is available at: http://www.nps.gov/ncrc/programs/rtca/nri/states/ny.html.

7. **Historic or Cultural Resources:** In accordance with General Condition 20, a PCN is required for any non-federal activity which may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places. Please refer to General Condition 20 for submission requirements. In addition, all PCNs must include a written statement indicating if any such properties may be affected by the proposed project. A copy of any completed survey reports shall be provided with the PCN. If a survey has not been performed, the statement shall include a list of resources checked in the determination. Copies of any available correspondence from the New York State Office of Parks, Recreation, and Historic Preservation State Historic Preservation Officer (SHPO) regarding historic properties shall be provided with the PCN. Information regarding cultural resources may be found at: http://nysparks.state.ny.us/shpo/. In addition, assistance regarding the determination of the presence of historic or cultural resources at or near the project site should be directed to SHPO. NOTE: as stated in General Condition 20, if any listed, eligible or potentially eligible properties are present, the applicant shall not begin the activity until notified by the district engineer in writing either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

8. **Endangered Species** (See General Condition 18) **and Essential Fish Habitat:** The PCN must include a written statement and documentation concerning any Essential Fish Habitat (EFH) and any federally listed Threatened and Endangered (T&E) species or designated critical habitat that might be affected or is in the vicinity of the project, or

if the project is located in designated critical habitat. The PCN must include a copy of any correspondence from the U.S. Fish and Wildlife Service (USFWS) and/or National Oceanic and Atmospheric Administration Fisheries Service (NOAA-Fisheries) formerly National Marine Fisheries Service (NMFS), regarding the presence of T&E species or evidence that the applicant has utilized the USFWS T&E website: http://www.fws.gov/northeast/nyfo/es/section7.htm. Information on NOAA-Fisheries (NMFS) species (both T&E and EFH) can be found at: http://www.nero.noaa.gov/nero.
Website evidence shall include a County list of T&E species. For projects located in counties containing T&E species, the PCN shall also include a discussion of potential T&E habitat within the project site. If there is potential habitat for any Federally listed species within the project site the following should be submitted:

a. The results of any habitat surveys and presence/absence surveys. Note: all surveys should be coordinated with the USFWS and/or NOAA-Fisheries(NMFS) prior to initiation.

b. A detailed description of the proposed project, including secondary impacts and approximate proposed project construction schedule of project activities (e.g. land clearing, utilities, stormwater management).

c. A description of the natural characteristics of the property and surrounding area (e.g. forested areas, freshwater wetlands, open waters, and soils). Additionally, please include a description of surrounding land use (residential, agricultural, or commercial).

d. A description of the area to be impacted by the proposed project, including the species and number or acres of trees to be removed.

e. The location of the above referenced property and extent of any project related activities or discharges clearly indicated on a copy of a USGS 7.5 minute topographic quadrangle (quad) with the name of the quad(s) and latitude/longitude clearly labeled.

f. A description of conservation measures to avoid or minimize impacts to listed species.

Please note that there are no known threatened or endangered (T&E) species or EFH species under the jurisdiction of the NOAA-Fisheries (NMFS) within the Buffalo District. Therefore, all Buffalo District requests for information regarding the presence of T&E species should be directed to the USFWS.

General Condition #18 is emphasized, ..."In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed work will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed."

9. **100 Year Floodplain:** For permanent fills within waters of the United States within the 100 year floodplain, documentation of compliance with FEMA-approved state or local floodplain management requirements.

10. **Submission of Multiple Copies of PCN**:

a) One (1) additional copy of the PCN package shall be provided to USACE for coordination with National Oceanic and Atmospheric Administration (NOAA) for utility lines to be constructed or installed in navigable waters of the U.S. proposed under NWP #12, (See Note 1 of NWP #12)

b) One (1) additional copy of the PCN package shall be provided to USACE for coordination with Department of Defense Siting Clearinghouse (See NWP #12, 39, 51 & 52 Notes) for:
   i. overhead utility lines proposed under NWP #12 and
   ii. any activity that involves the construction of a wind energy generating structure, solar tower, or overhead transmission lines proposed under NWP #39, 51 or 52

c) Two (2) additional copies of the PCN package shall be provided to USACE when the project is located within the New York City Watershed, for coordination with the New York City Department of Environmental Protection.

d) Five (5) additional copies of the PCN package shall be submitted to USACE for agency coordination in accordance with General Condition # 31(d)(2) for:
   i. All NWP activities that result in the loss of greater than 1/2-acre of waters of the United States,
   ii. NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed,
   iii. All NWP 48 activities requiring pre-construction notification.

G- E. CRITICAL RESOURCE WATERS

In accordance with NWP General Condition (GC) #22, certain activities in Critical Resource Waters cannot be authorized under the NWP program or would require a PCN (see GC #22 for a list of the NWP activities that are either excluded or require a PCN).

Critical Resource Waters in New York State include the following:

1. **East-of-Hudson portion of the New York City Water Supply:** This area includes portions of Dutchess, Putnam and Westchester Counties as delineated on Enclosure 2.

2. **Hudson River National Estuarine Research Reserves (NERR):** The Hudson River NERR consists of four components: Piermont Marsh, Iona Island, Tivoli Bay, and Stockport Flats.

H. NYSDEC General Water Quality Certification (WQC) Conditions applicable to all NWPs for which WQC has been provided are as follows:

1. Non-contamination of Waters:
• All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, resins, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

2. Installation and Maintenance of Culverts:
• This certification does not authorize the installation of any culverts that are not embedded beneath the existing grade of the stream channel.
• This certification does not authorize culvert rehabilitation projects that involve slip lining, invert paving, or similar treatments that can result in an impediment to the passage of aquatic life movement through the culvert.
• This certification does authorize the rehabilitation of culverts utilizing Cure in Place Pipe Lining (CIPP) or concrete spray lining for culverts which currently meet Nationwide Permit General Condition # 2 - Aquatic Life Movements.

3. Discharges and Disturbances:
• Except for Nationwide Permit # 3, 4, 20, 22, 27, 30, 33, 37, 41 and maintenance activities under Nationwide Permit 43, this certification does not authorize discharges greater than 1/4 acre in size or more than 300 feet of stream disturbance.

4. Maintenance of Water Levels:
• Except for Nationwide Permit 27, this certification does not authorize any activity that results in a permanent water level alteration in waters of the United States, such as draining or impounding.

5. Dewatering:
• Authorized dewatering is limited to immediate work areas that are cofferdammed or otherwise isolated from the larger water body or waters of the United States. Dewatering must be localized and not drain extensive areas of a water body or reduce the water level such that fish and other aquatic vertebrates are killed, or their eggs and nests are exposed to desiccation, freezing or depredation in areas outside of the immediate work site.
• Cofferdams or diversions shall not be constructed in a manner that causes or exacerbates erosion of the bed or banks of a watercourse.
• All dewatering structures must be permanently removed when construction is completed.

6. Endangered or Threatened Species:
• Applicants must certify that the proposed activity will not jeopardize the existence of an endangered species or threatened species listed in 6 NYCRR Part 182, or likely to destroy or adversely modify the habitat of such species. Information on New York State endangered or threatened species may be obtained from the NYS Department of Environmental regional offices, the New York Natural Heritage Program in Albany, New York or on the NYSDEC website at http://www.dec.ny.gov/animals/29338.html. If it is determined that there is a species of concern that may be impacted by the proposed activity, this blanket water quality certification is not applicable, and the applicant will need an individual water quality certification from the Department.

7. Prohibition Period/or In-stream Work:
Unless approved in writing by the Regional Natural Resources Supervisor or their designee, in-stream work is prohibited during the following time periods:

- in cold water trout fisheries (waters classified under Article 15 of New York's Environmental Conservation Law with a "t" or "ts" designation), beginning October 1 and ending May 31
- in perennial warm water fisheries, (non- trout waters classified under Article 15 of New York's Environmental Conservation Law as "A, B or C"), beginning March 1 and ending July 15.

To determine which prohibition period is in effect for a particular water, contact the Regional Natural Resources Supervisor in the appropriate NYSDEC regional office.

8. Significant Coastal Fish and Wildlife Habitat:
• This certification does not authorize any discharge occurring in a designated Significant Coastal Fish and Wildlife Habitat area pursuant to 19 NYCRR Part 602 ; Title 19 Chapter 13, Waterfront Revitalization and Coastal Resources.

9. Coastal Erosion Hazard Areas:
• This certification does not authorize projects in Coastal Erosion Hazard Areas, as identified in NYS Environmental Conservation Law (ECL) Article 34, and its implementing regulations, 6 NYCRR Part 505.

10. State-owned Underwater Lands:
• Prior to undertaking any Nationwide Permit activity that will involve or occupy state owned lands now or formerly under the waters of New York State, the party proposing the activity must first obtain all necessary approvals from:

NYS Office of General Services
Division of Real Estate Development
Corning Tower Building, 26th Floor
Empire State Plaza
Albany, NY 12242
Tel. (518) 474-2195

11. Tidal Wetlands:
• This authorization does not authorize any activities in tidal wetlands as defined in Article 25 of NYS ECL, with the exception of NWP # 4, 20 and 48.

12. Wild, Scenic and Recreational Rivers:
• This certification docs not authorize activities in any Wild, Scenic or Recreational River or state designated WSR corridors.

13. Floodplains:
• Authorized projects must be in compliance with State and Local Floodplain Regulations.

14. Combined use of permits:
• This authorization does not allow the stacking of NWPs so that in combination they exceed *1/4* of an acre of fill or 300 linear feet of stream disturbance. When used in combination, the most restrictive conditions apply.

15. Public Service Commission:
• This certification does not authorize activities regulated pursuant to Article VII of the New York State Public Service Law. For such projects, Section 401 Water Quality Certification is obtained from the New York State Public Service Commission.

16. Utility Projects:
• This certification does not authorize maintenance or other activities associated with hydropower projects.
• This certification does not authorize the construction of substation facilities or permanent access roads in wetlands or within the FEMA mapped 100 year floodplain.
• Excess materials resulting from trench excavation must be moved out of the wetland and contained so that they do not re-enter any waters of the United States.

1. New York State Department of State (NYSDOS) Coastal Zone Management Consistency Determination applicable to all NWPs located within or affecting the NYS Coastal Zone:

To ensure that the NWPs and activities authorized by USACE would be consistent with the NYS Coastal Management Program and approved LWRPs, the following conditions will apply to NWPS where NYSDOS has objected to the USACE consistency determination or where the project will not comply with the NYSDOS NWP specific condition(s):

The applicant will submit a request for an individual consistency determination to NYSDOS. Within thirty (30) days of receipt by NYSDOS of an applicant's submission, which should include a complete joint New York State Department of Environmental Conservation and U.S. Army Corps of Engineers Permit Application, completed Federal Consistency Assessment Form, and all information and data necessary to assess the effects of the proposed activity on and its consistency with the CMP, including location maps and photographs of the site where the activity is proposed, NYSDOS will inform the applicant and the Corps whether:

1) Necessary data and information is missing from the applicant's submission. If so, the NYSDOS will notify the applicant and the Corps of the missing necessary data and information, and state that the NYSDOS review will not commence until the date the necessary data and information is provided;

2) The activity meets the General Concurrence criteria set forth in the CMP and therefore, further review of the proposed activity by the NYSDOS, and the NYSDOS concurrence with an individual consistency certification for the proposed activity, are not required; or

3) NYSDOS review of the proposed activity and NYSDOS concurrence with the applicant's consistency certification is necessary. If NYSDOS indicates review of the activity and a consistency certification for it is necessary, the activity shall not be authorized by NWP or other form of Corps authorization unless NYSDOS concurs with an applicant's consistency certification, in accordance with 15 CFR Part 930, Subpart D, or unless NYSDOS indicates the activity meets CMP General Concurrence criteria (see item 2 above).

NYSDOS concurrence with an applicant's consistency certification shall not be presumed unless NYSDOS fails to concur with or object to an applicant's consistency certification within six (6) months of commencement of NYSDOS review of an applicant's consistency certification and all necessary data and information in accordance with 15 CFR Parts 930.62 or 930.63.

Notes:

- Unless NYSDOS issues consistency concurrence or USACE has determined that NYSDOS concurrence is presumed, NWPs are not valid within the Coastal Zone.

- Limits of the coastal zone, including the CMP special management area designations of Significant Coastal Fish and Wildlife Habitats (SCFWH), can be viewed at: http://www.dos.ny.gov/communitieswaterfronts/atlas/index.html Local Waterfront Revitalization Program information can be viewed at: http://www.dos.ny.gov/communitieswaterfronts/WFRevitalization/LWRP_status.html
- All consistency concurrence determination requests must be submitted directly to NYSDOS.
- Details regarding NYSDOS submission requirements can be obtained at: http://www.dos.ny.gov/communitieswaterfronts/consistency/federal.html

J. INFORMATION ON NATIONWIDE PERMIT VERIFICATION

Verification of the applicability of these Nationwide Permits is valid until March 19, 2017 unless the Nationwide Permit is modified, suspended revoked, or the activity complies with any subsequent permit modification.

It is the applicant's responsibility to remain informed of changes to the Nationwide Permit program. A public notice announcing any changes will be issued when they occur and will be available for viewing at our website: http://www.lrb.usace.army.mil/Missions/Regulatory.aspx.

Please note in accordance with 33 CFR part 330.6(b), that if you commence or are under contract to commence an activity in reliance of the permit prior to the date this Nationwide permit expires, is suspended or revoked, or is modified such that the activity no longer complies with the terms and conditions, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of the permit, unless the permit has been subject to the provisions of discretionary authority.

Possession of this permit does not obviate you of the need to contact all appropriate state and/or local governmental officials to insure that the project complies with their requirements.

NOTE: This document is an excerpt of the May 30, 2012 Public Notice by USACE Buffalo & New York Districts. The above referenced Enclosures 2-4 and Appendix A are not included in this Buffalo District document as they are only applicable within the geographic boundaries of the New York District. The Public Notice is available at the USACE websites or by contacting the Districts at the addresses provided below in Section K.

K. AGENCY CONTACT INFORMATION

NYS Department of Environmental Conservation

www.dec.ny.gov

NYS DEC REGION 1
Regional Permit Administrator
SUNY @ Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409
(631) 444-0365

NYS DEC REGION 2
Regional Permit Administrator
1 Hunter's Point Plaza
47-40 21st Street
Long Island City, NY 11101-5407
(718) 482-4997

NYS DEC REGION 3
Regional Permit Administrator
21 South Putt Corners Road
New Paltz, NY 12561-1620
(845) 256-3054

NYS DEC REGION 4
Regional Permit Administrator
1130 North Westcott Road
Schenectady, NY 12306-2014
(518) 357-2069

NYS DEC REGION 4 Sub-Office
Deputy Regional Permit Administrator
65561 State Hwy 10
Stamford, NY 12167-9503
(607) 652-7741

NYS DEC REGION 5
Regional Permit Administrator
PO Box 296
1115 Route 86
Ray Brook, NY 12977-0296
(518)897-1234

NYS DEC REGION 5 Sub-Office
Deputy Regional Permit Administrator
PO Box 220
232 Golf Course Rd
Warrensburg, NY 12885-0220
(518) 623-1281

NYS DEC REGION 6
Regional Permit Administrator
317 Washington Street
Watertown, NY 13601-3787
(315) 785-2245

NYS DEC REGION 6 Sub-Office
Deputy Regional Permit Administrator
207 Genesee Street
Utica, NY 13501-2885
(315) 793-2555

NYS DEC REGION 7
Regional Permit Administrator
615 Erie Blvd. West
Syracuse, NY 13204-2400
(315)426-7438

NYS DEC REGION 7 Sub-Office
Deputy Regional Permit Administrator
1285 Fisher Avenue
Cortland, NY 13045-1090
(607) 753-3095

NYS DEC REGION 8
Regional Permit Administrator
6274 E. Avon - Lima Road
Avon, NY 14414-9519
(585) 226-2466

NYS DEC REGION 9
Regional Permit Administrator
270 Michigan Avenue
Buffalo, NY 14203-2915
(716) 851-7165

NYS DEC REGION 9 Sub-Office
Deputy Regional Permit Administrator
182 East Union Street
Allegany, NY 14706-1328
(716) 372-0645

NYS Department of State

Division of Coastal Resources
Consistency Review Unit
One Commerce Plaza
99 Washington Avenue, Suite 1010
Albany, NY 12231-00001
(518) 474-6000
www.nyswaterfronts.com
PO Box 296
1115 Route 86
Ray Brook, NY 12977-0296
(518) 897-1234

US Army Corps of Engineers

www.usace.army.mil

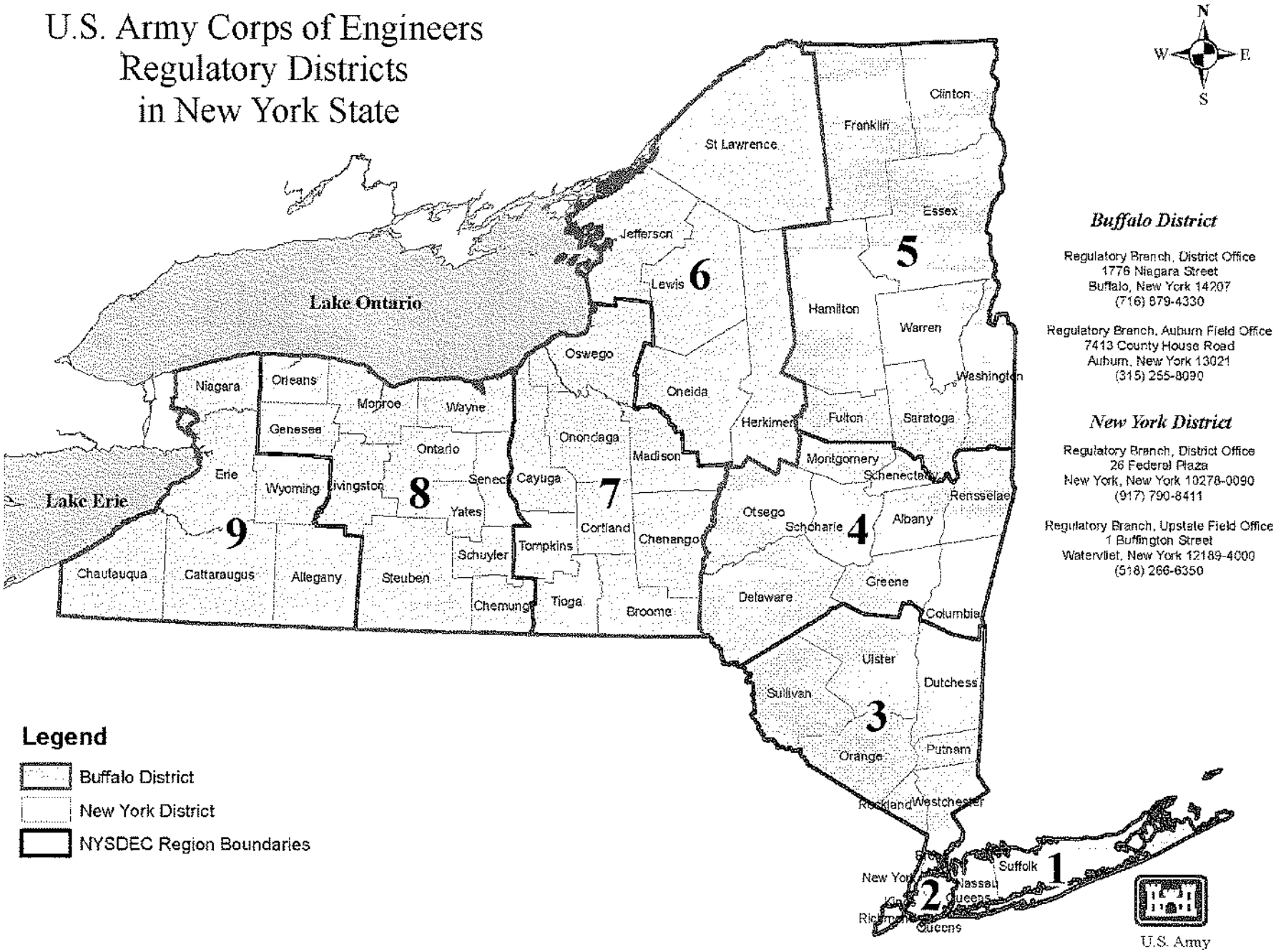
For DEC Regions 1, 2 and 3
US Army Corps of Engineers NY District
ATTN: Regulatory Branch
26 Federal Plaza, Room 1937
New York, NY 10278-0090
Email: CENAN.PublicNotice@usace.army.mil
For DEC Regions 1, 2, Westchester County and Rockland County (917) 790-8511
For the other counties of DEC Region 3 -
(917) 790-8411

For DEC Regions 4, 5
Department of the Army
ATTN: CENAN-OP-R
NY District, Corps of Engineers
1 Buffington Street
Building 10, 3rd Floor
Watervliet, NY 12189-4000
(518) 266-6350 - Permits team
(518) 266-6360 - Compliance Team

Email: cenan.rfo@usace.army.mil

For DEC Regions 6, 7, 8, 9
US Army Corps of Engineers
Buffalo District
ATTN: Regulatory Branch
1776 Niagara Street
Buffalo, NY 14207-3199
(716) 879-4330
Email: LRB.Regulatory@usace.army.mil
www.lrb.usace.army.mil

U.S. Army Corps of Engineers Regulatory Districts in New York State



Legend

- Buffalo District
- New York District
- NYSDEC Region Boundaries

Buffalo District

Regulatory Branch, District Office
1776 Niagara Street
Buffalo, New York 14207
(716) 879-4330

Regulatory Branch, Auburn Field Office
7413 County House Road
Auburn, New York 13021
(315) 255-8090

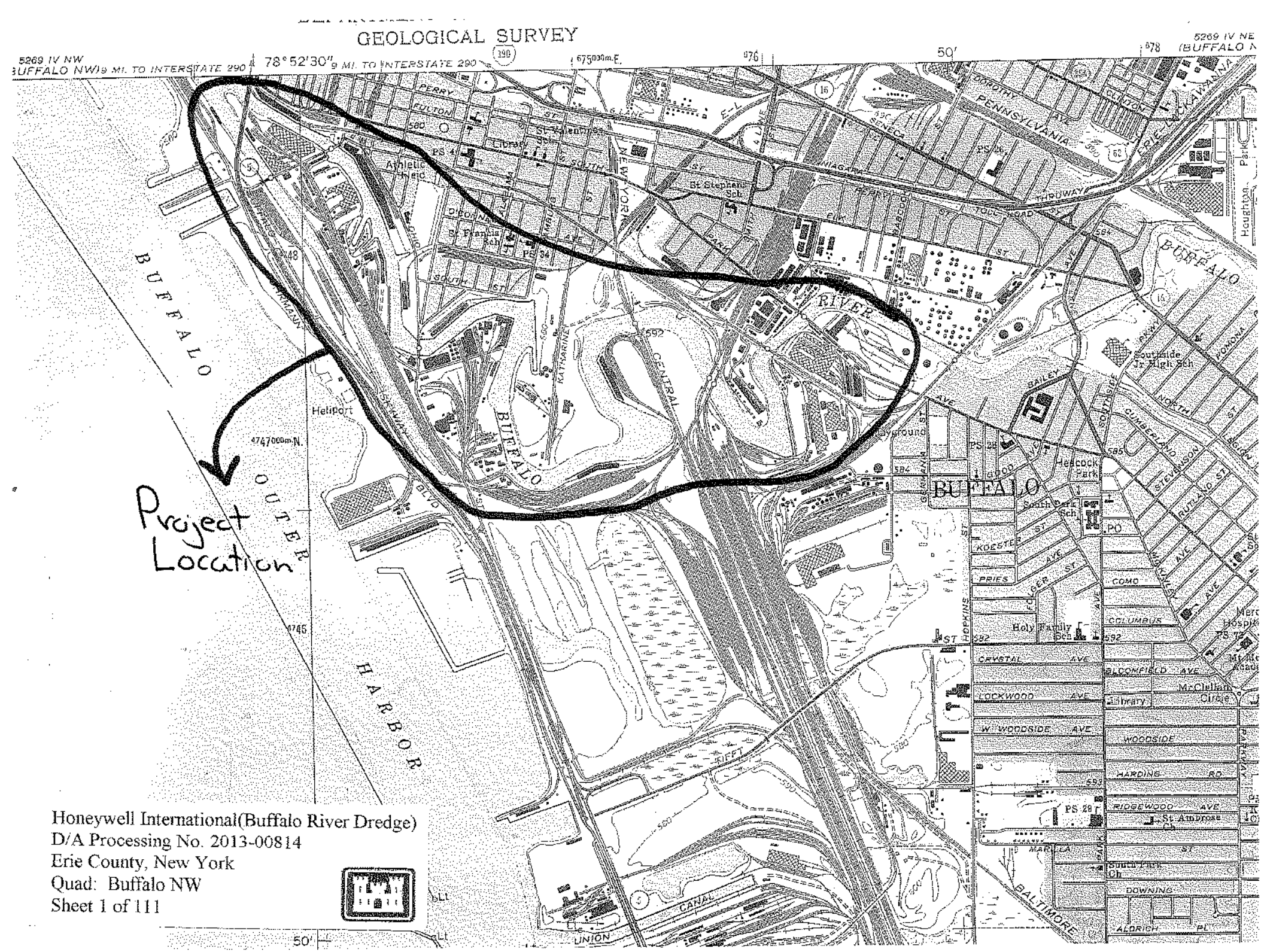
New York District

Regulatory Branch, District Office
26 Federal Plaza
New York, New York 10278-0090
(917) 790-8411

Regulatory Branch, Upstate Field Office
1 Buffington Street
Watervliet, New York 12189-4000
(518) 266-6350

U.S. Army
Corps of Engineers

ENCLOSURE 1


GEOLOGICAL SURVEY
5269 IV NW
BUFFALO NW
9 MI. TO INTERSTATE 290
78°52'30"
9 MI. TO INTERSTATE 290
675000m.E.
5269 IV NE
(BUFFALO N
BUFFALO
RIVER
OUTER
HARBOR
Project Location
Heliport
4747000m.N.
4745
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 1 of 111

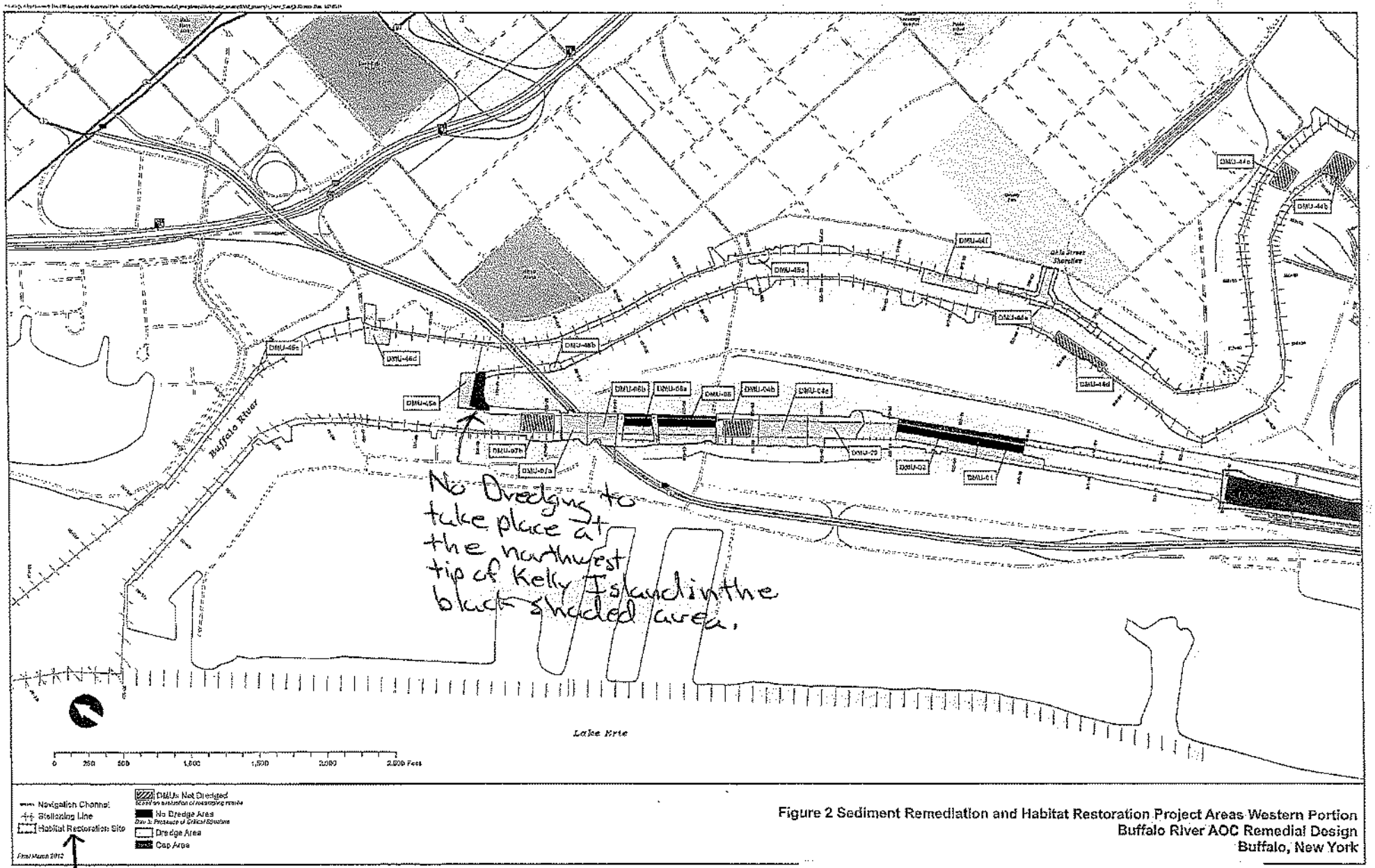
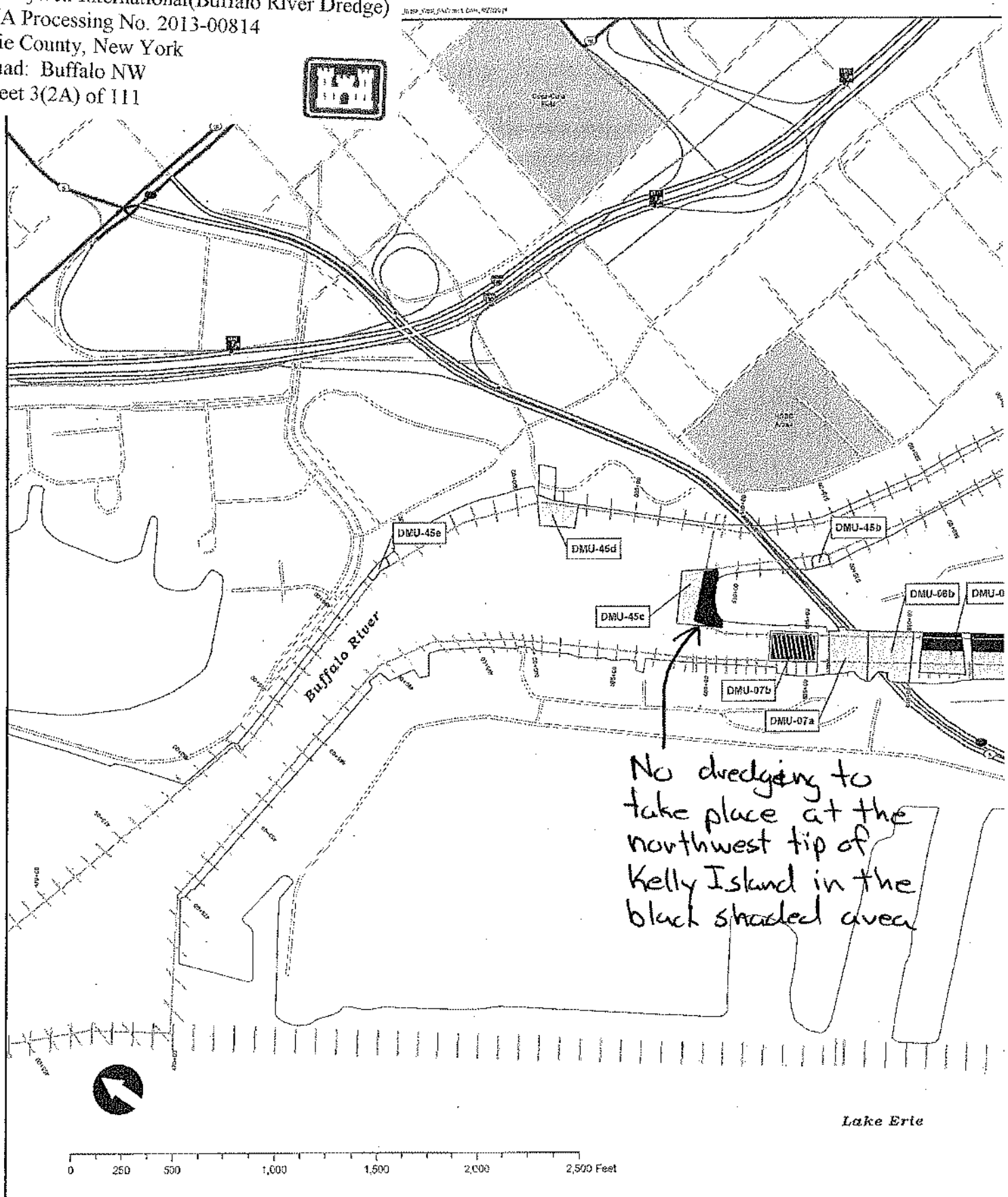


Figure 2 Sediment Remediation and Habitat Restoration Project Areas Western Portion
Buffalo River AOC Remedial Design
Buffalo, New York

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 3(2A) of 111



No dredging to take place at the northwest tip of Kelly Island in the black shaded area

Navigation Channel
Stationing Line
Habitat Restoration Site

DMUs Not Dredged
based on evaluation of resampling results
No Dredge Area
Due to Presence of Critical Structure
Dredge Area
Cap Area

Final March 2013

↓ will be constructed at a different time

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 4(2B) of 111

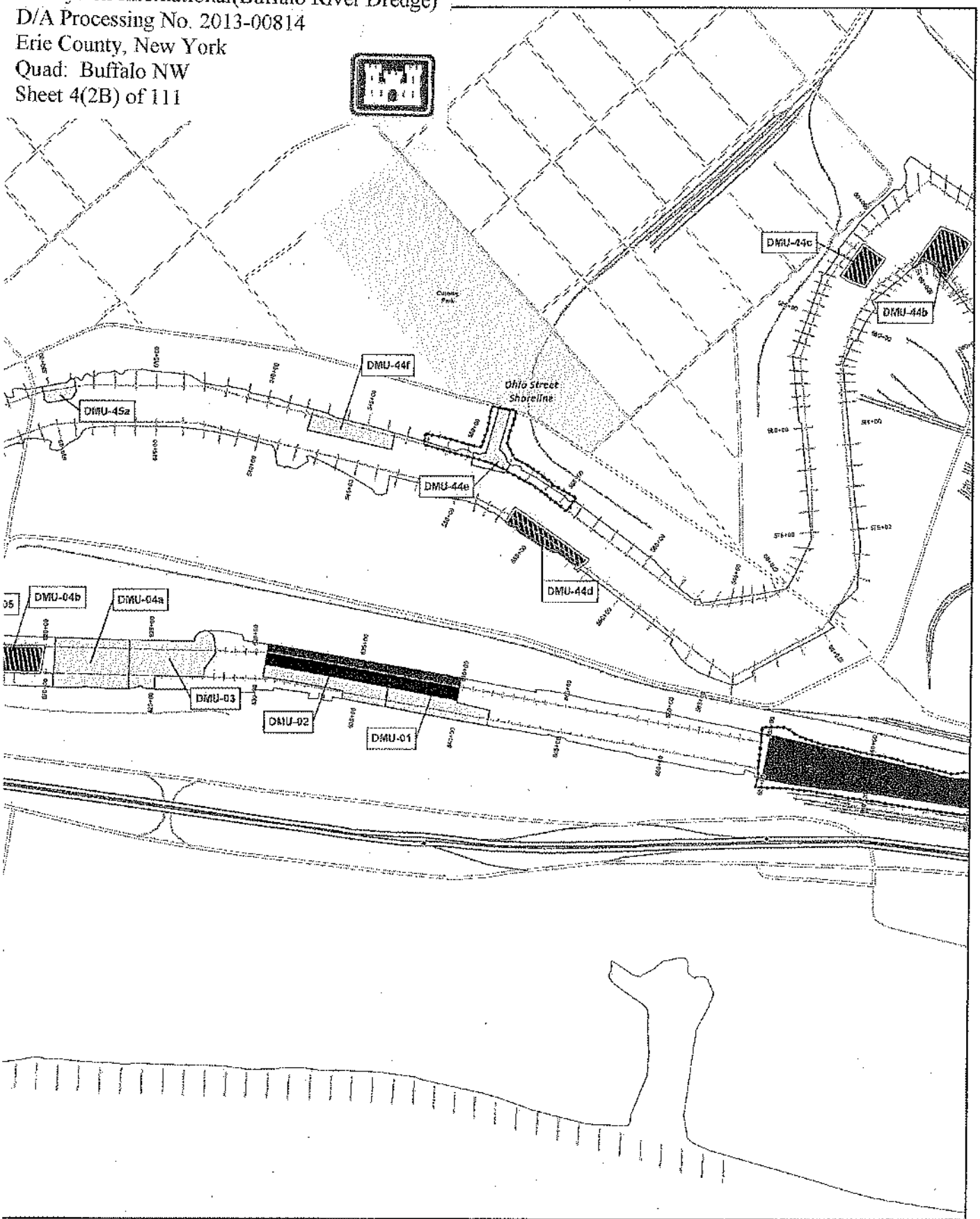


Figure 2 Sediment Remediation and Habitat Restoration Project Areas Western Portion
Buffalo River AOC Remedial Design
Buffalo, New York

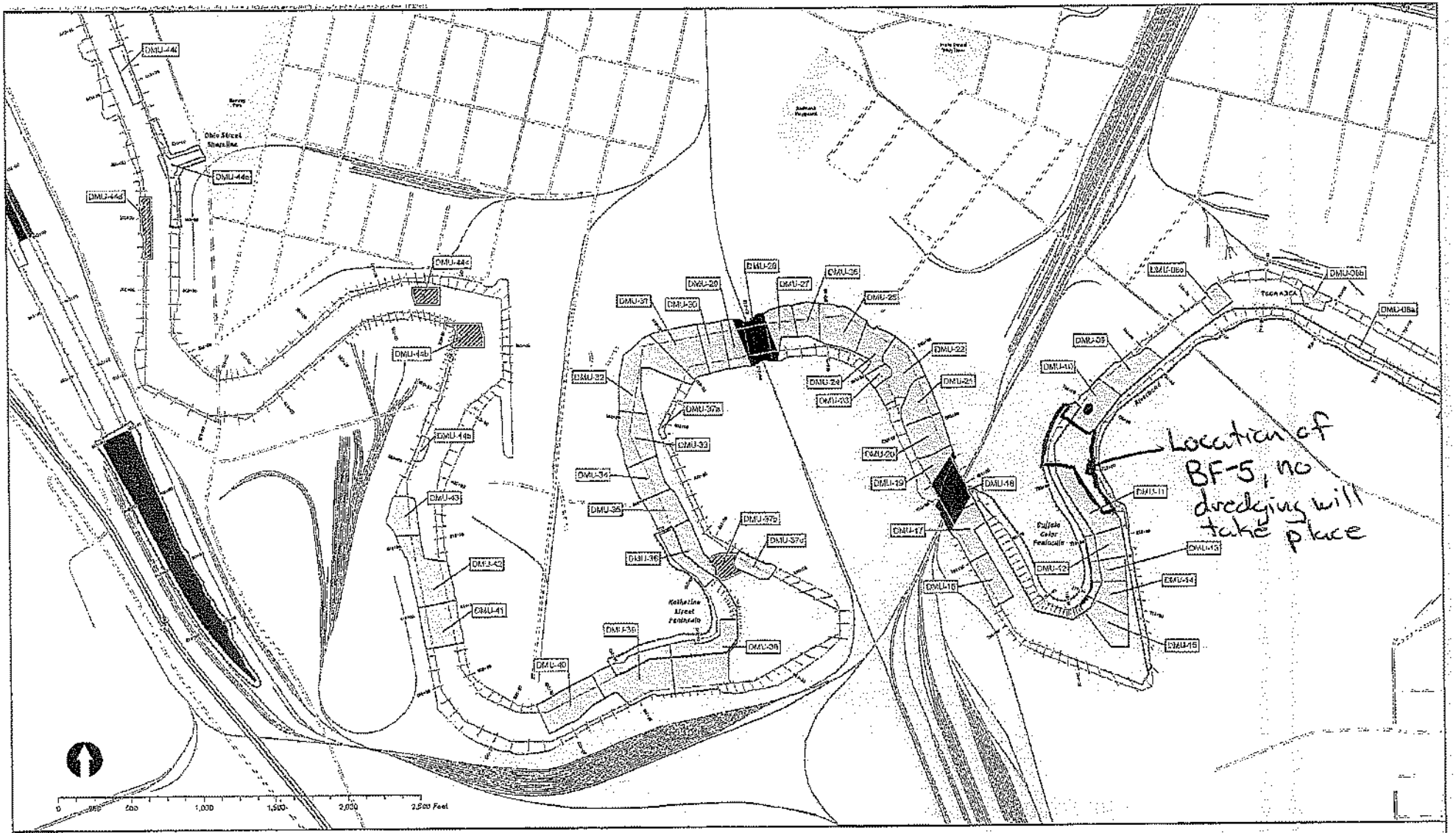
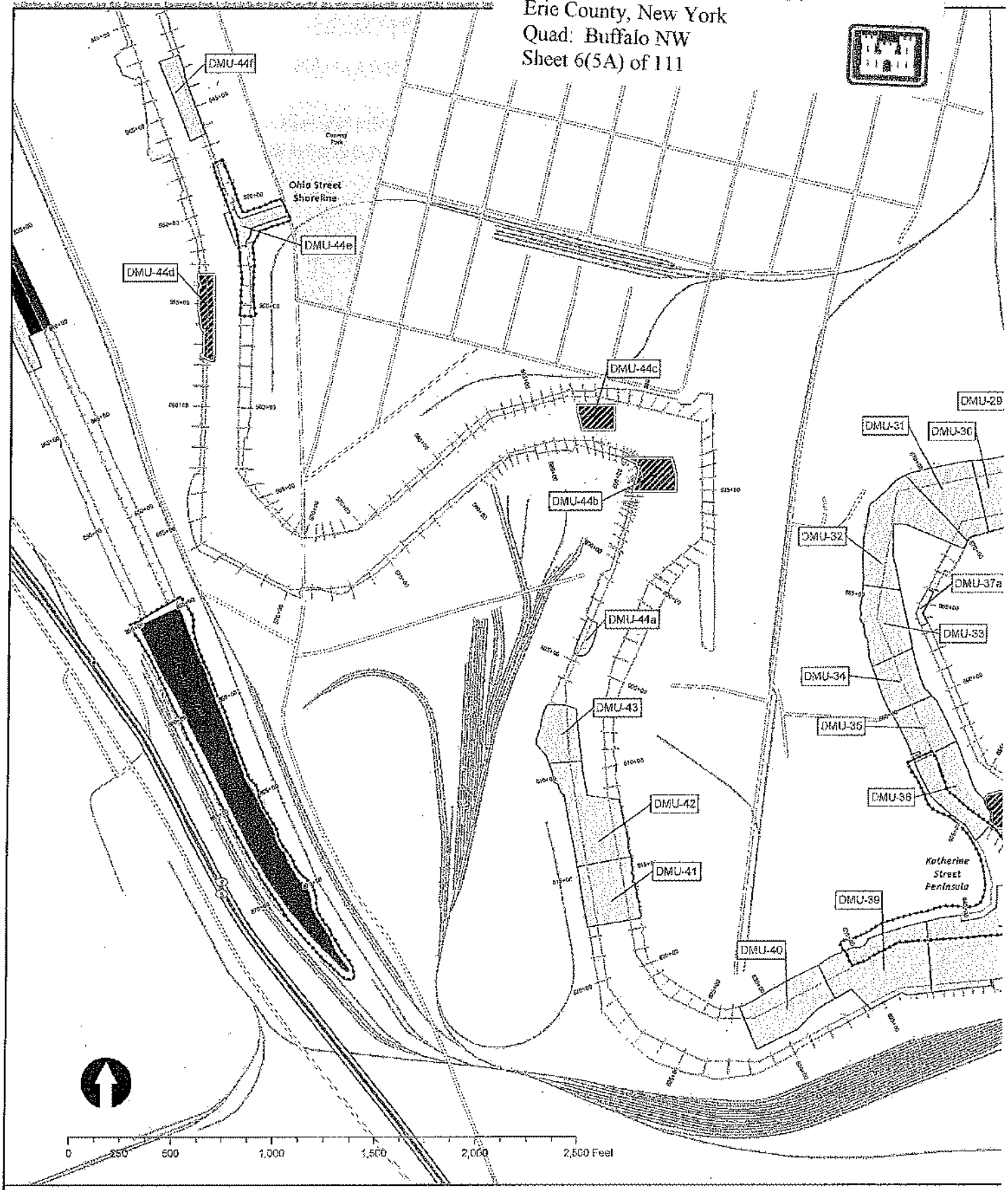


Figure 3 Sediment Remediation and Habitat Restoration Project Areas Eastern Portion
Eastern Portion, Buffalo River AOC

Will be constructed at a different time

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 5 of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 6(5A) of 111



Navigation Channel
Stationing Line
Habitat Restoration Site
DMUs Not Dredged
Based on evaluation of resampling results
No Dredge Area
Due to Presence of Critical Structure
Dredge Area
Cap Area

Will be constructed at a different time

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 7(5B) of 111

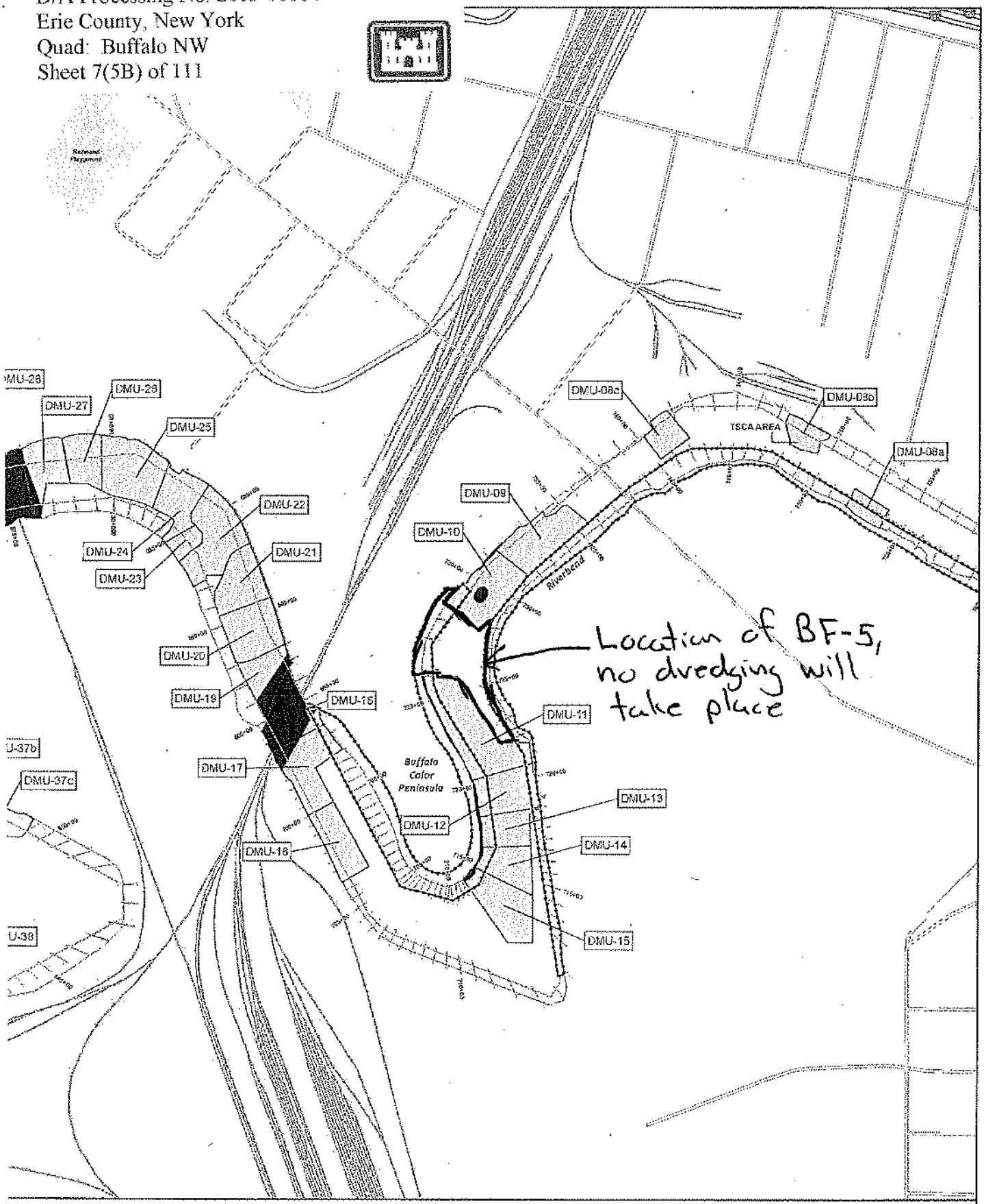


Figure 3 Sediment Remediation and Habitat Restoration Project Areas Eastern Portion
Eastern Portion, Buffalo River AOC
Buffalo, New York

Table 2. Addendum 1 Design Volume Estimates by Dredge Management Unit (DMU)

last update: 5/13/2013

DMU No.	Dredge Area Name	USACE Dredge Depth	EPA Dredge Depth	DMU Total Dredge Volume	USACE Dredge Volume (cy)	Total EPA Dredge Volume (cy)	Potential Undredged Volume (total DMU) (cy)	Potential Dredged Volume (cy)	DMU Dredge Surface Area (ft^2)	Average Dredge Depth (ft)	Allowable Over-dredge Volume (cy)	Operational Dredge Volume (cy)	Change Note
Buffalo Ship Canal													
1	DA-1	545.7	to till on noncritical structure side of the river only and to 5 ft of noncritical structure	9,800	1,600	8,200	5,500	2,700	44,800	2.1	800	3,500	
2		545.7		8,000	1,500	6,500	5,100	1,400	38,800	1.5	700	2,100	
3	DA-2	545.7	to till	6,600	1,700	4,900	0	4,900	75,600	2.3	1,400	6,300	
4a		545.7		8,100	2,500	5,600	0	5,600	82,400	2.3	1,500	7,100	
4b	R-01	545.7	No environmental dredging										
5	DA-03	545.7	to till on noncritical structure side of the river only	12,400	2,700	9,700	4,400	5,300	52,900	3.2	1,000	6,300	
6a	R-02	545.7		8,800	1,300	7,500	3,700	3,800	24,600	4.7	500	4,300	
6b	DA-04	545.7	to till, to riprap	10,000	1,000	9,000	200	8,800	48,800	6.4	900	9,700	
7a		545.7		7,000	600	6,400	200	6,200	40,900	4.6	800	7,000	
7b	R-03	545.7	No environmental dredging										
Buffalo River													
8a	DA-17	545.7	to till	3,700	1,600	2,100	0	2,100	20,500	3.3	400	2,500	
8b*	DA-16	545.7	See the TSCA Tables for the volumes of this DMU	1,300	0	1,300	0	1,300	5,600	6.8	100	1,400	
8c	R-15	545.7	to till, to 5 ft of noncritical structure	3,200	1,000	2,200	0	2,200	27,100	2.7	500	2,700	
9	DA-15	545.7	to till, to 5 ft of noncritical structure	25,700	12,200	13,500	400	13,100	69,600	5.6	1,300	14,400	
10		545.7	to till, to 20ft of critical structure	18,700	7,000	11,700	1,800	9,900	71,100	4.3	1,300	11,200	
11	DA-14	545.7	to till, to riprap	30,200	12,500	17,700	500	17,200	113,100	4.6	2,100	19,300	
12		545.7		20,500	10,000	10,500	600	9,900	57,900	5.1	1,100	11,000	
13		545.7		7,800	4,100	3,700	200	3,500	39,000	2.9	700	4,200	
14		545.7		7,000	4,200	2,800	100	2,700	43,800	2.2	800	3,500	
15		545.7		18,700	11,400	7,300	100	7,200	67,700	3.4	1,300	8,500	
16	DA-13	545.7	to till	5,900	1,200	4,700	0	4,700	50,800	3.0	900	5,600	
17		545.7	to till, to no dredge boundary	14,400	6,700	7,700	2,100	5,600	65,300	2.8	1,200	6,800	
18		545.7	no dredge zone	14,700	500	14,200	13,300	900	5,400	5.0	100	1,000	
19	R-14	545.7	to till, to no dredge boundary	8,100	2,600	5,500	3,200	2,300	29,200	2.6	500	2,800	
20	DA-12	545.7	to till	12,300	6,700	5,600	0	5,600	64,100	2.9	1,200	6,900	
21		545.7	to till	11,100	3,900	7,200	0	7,200	56,500	3.9	1,000	8,200	
22	R-13	545.7	to till	19,100	8,500	10,600	0	10,600	85,900	3.8	1,600	12,200	
23	DA-11	545.7	to till	4,400	2,000	2,400	0	2,400	16,500	4.4	300	2,700	
24		545.7	to till, to 5 ft of noncritical structure	12,200	6,700	5,500	0	5,500	51,100	3.4	900	6,400	
25		545.7	to till	17,000	8,800	8,200	0	8,200	81,600	3.2	1,500	9,700	
26		545.7	to till	7,800	2,100	5,700	0	5,700	41,100	4.3	800	6,500	
27	DA-11	545.7	to till, to no dredge boundary	11,600	2,100	9,500	2,300	7,200	43,300	5.0	800	8,000	
28		545.7	no dredge zone	13,600	0	13,600	13,600	0	100	0.0	0	0	
29		545.7	to till, to no dredge boundary	7,900	800	7,100	1,600	5,500	40,700	4.2	800	6,300	
30	DA-11	545.7	to till	12,200	2,900	9,300	0	9,300	53,100	5.2	1,000	10,300	
31		545.7	to till	23,600	6,700	17,100	0	17,100	84,300	6.0	1,600	18,700	
32		545.7	to till	34,000	8,300	25,700	100	25,600	123,600	6.1	2,300	27,900	
33		545.7	to till	13,400	800	12,600	0	12,600	75,700	5.0	1,400	14,000	
34		545.7	to till	10,900	300	10,600	0	10,600	53,300	5.9	1,000	11,600	
35		545.7	to till	11,200	2,400	8,800	0	8,800	56,400	4.7	1,000	9,800	
36		545.7	to till	21,500	3,300	18,200	200	18,000	86,300	6.1	1,600	19,600	
37a	DA-18	545.7	to till, to 10 ft of critical structure	3,100	600	2,500	400	2,100	5,900	0.0	100	2,200	A
37b	R-12	545.7	No environmental dredging										

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Table 2. Addendum 1 Design Volume Estimates by Dredge Management Unit (DMU) last update: 5/13/2013

DMU No.	Dredge Area Name	USACE Dredge Depth	EPA Dredge Depth	DMU Total Dredge Volume	USACE Dredge Volume (cy)	Total EPA Dredge Volume (cy)	Potential Undredged Volume (total DMU) (cy)	Potential Dredged Volume (cy)	DMU Dredge Surface Area (ft^2)	Average Dredge Depth (ft)	Allowable Over-dredge Volume (cy)	Operational Dredge Volume (cy)	Change Note
37c	DA-10	545.7	to till, to 10 ft of critical structure	15,400	7,200	8,200	1,600	6,600	31,800	6.1	600	7,200	A
38	DA-9	545.7	to till, to 10 ft of critical structure	23,500	5,700	17,800	400	17,400	152,600	3.6	2,800	20,200	A
39		545.7		24,000	6,700	17,300	1,100	16,200	149,200	3.4	2,800	19,000	A
40		545.7	to till	7,400	200	7,200	0	7,200	90,500	2.7	1,700	8,900	A
41	DA-8	545.7	to till, to 5 ft of noncritical structure	13,900	3,300	10,600	100	10,500	79,300	4.1	1,500	12,000	
42		545.7	to till, to 5 ft of noncritical structure	16,300	2,200	14,100	400	13,700	110,500	3.8	2,000	15,700	
43		545.7	to till	10,700	700	10,000	100	9,900	51,200	5.7	900	10,800	
44a	R-11	--	no dredge zone	700	0	700	0	700	12,100	0.0	200	900	
44b	R-10	--	No environmental dredging										
44c	R-09	--	No environmental dredging										
44d	R-08	545.7	No environmental dredging										
44e	DA-07	545.7	to till, to 5 ft of noncritical structure	17,700	500	17,200	400	16,800	25,600	18.2	500	17,300	
44f	R-07	--	to till	2,400	100	2,300	0	2,300	36,100	2.2	700	3,000	
45a	R-06	545.7	to till, to 5 ft of noncritical structure	1,400	200	1,200	0	1,200	12,200	3.1	200	1,400	
45b	R-05	--	to till, to structure	900	0	900	0	900	4,600	0.0	100	1,000	
45c	DA-05	545.7	to till	16,800	3,400	13,400	9,600	3,800	24,700	4.7	500	4,300	
45d	DA-06	545.7	to till, to 10ft of critical structure	6,800	4,300	2,500	400	2,100	23,700	0.0	400	2,500	A
45e	R-04	545.7	to till, to 5 ft of noncritical structure	1,200	200	1,000	0	1,000	4,600	6.5	100	1,100	
Totals:				656,800	189,500	467,300	73,700	393,600	2,903,200	4.99	53,800	447,400	
											Additional dredging based on confirmation sampling		0
											Sedimentation (Year 1)		10,000
											Sedimentation (Year 2)		30,000
													487,400
											Rounded Volume		488,000
											Volume Range (Rounded)	464,000	512,000

* The volume is shown for Non-TSCA material in DMU-8b. The estimated volume of TSCA material is 4200 cy.

Notes:

1. Volume estimates are presented in cubic yards (cy), rounded to the nearest 100 cy.
2. ***USACE Dredge Depth*** based on USACE contract drawing C-102, and is the depth beneath low water datum of 569.2'.
3. ***EPA Dredge Depth*** based on evaluation of till elevation measurements within the DMU and presence of structures (critical and non-critical) which affect potential dredge prisms.
4. ***DMU Total Dredge Volume*** based on a total volume within a DMU between the EPA dredge depth and current (2010) bathymetric surface.
5. DMUs 4b, 7b, 37b, 44b, 44c, and 44d (Resample Areas R-1, R-3, R-12, R-10, R-9, and R-8 respectively) will not be dredged based on the DMU evaluations.
6. ***USACE Dredge Volume*** was calculated by the difference between the bathymetric surface and USACE Dredge Prism within the DMU boundaries (assuming a 1H:1V side slope and dredge depth to elevation 545.7'). Refer to USACE contract drawing C-101).
7. ***Total EPA Dredge Volume*** is the difference between the ***DMU Total Dredge Volume*** and the ***UASCE Dredge Volume***.
8. ***Potential Undredged Volume*** is the volume of sediment assumed to be left in place without bank stabilization and assuming 1H:1V side slopes or estimated remaining material at critical structures based on CAD calculations of no dredge zones and hand calculations of offsets.
9. ***Potential Dredge Volume*** is the difference between ***Total EPA Dredge Volume*** and ***Potential Undredged Volume***.
10. ***Dredge Surface Area*** is the ***Total DMU surface area adjusted for no dredge boundaries***.
11. **Allowable Over-Dredge Volume** was estimated as 6" thick over each DMU area. This volume is the overdredge volume for which the contractor will be reimbursed.
12. **Operational Dredge Volume** was the **Potential Dredge Volume** plus the **Allowable Over-Dredge Volume.**

Change Note:

A - Change in approach to critical structure with dredging to within 10 feet of structure.

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GENERAL NOTES

1. THIS PROJECT IS ENVIRONMENTAL DREDGING IN SELECTED AREAS OF THE BUFFALO RIVER AND CITY SHIP CANAL. THE PROJECT ALSO INCLUDES CAPPING AND HABITAT RESTORATION WORK IN SELECTED AREAS.
2. DWGS ED-1 THROUGH ED-4 SHOW EXISTING BATHYMETRIC CONTOURS AND DWGS DD-1 THROUGH DD-10 SHOW DREDGE CUT LINE CONTOURS.
3. THE BATHYMETRIC CONTOURS SHOWN ON THE EXISTING CONDITIONS SHEETS ARE BASED ON POINT DATA PROVIDED BY AFFILIATED RESEARCHERS (OCTOBER 24TH, 2011). IN AREAS WHERE DATA WAS NOT INCLUDED BY AFFILIATED RESEARCHERS, THE TOPOGRAPHIC AND BATHYMETRIC INFORMATION SHOWN ON THEW ASSOCIATES SURVEY DRAWING (2010) WAS USED. EXISTING CONDITION DRAWINGS (EH-1 THROUGH EH-5) ARE NOT POST DREDGE DRAWINGS AND ACTUAL SITE TOPOGRAPHY AND BATHYMETRY MAY VARY.
4. USACE HAS COMPLETED DREDGING WITHIN THE NAVIGATION CHANNEL UNDER THE GREAT LAKES RESTORATION INITIATIVE (GLRI) IN 2011 AND 2012. EXISTING BATHYMETRY SHOWN WILL HAVE SIGNIFICANT DIFFERENCES WITHIN THE NAVIGATION CHANNEL.
5. DREDGE CUT LINE CONTOURS ARE BASED ON EVALUATION OF THE ELEVATION OBSERVATIONS MADE AT TEST BORING LOCATIONS AND SEDIMENT THICKNESS POLING LOCATIONS.
6. ELEVATIONS SHOWN BASED ON THE INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 85).
7. LOW WATER DATUM (LWD) FOR LAKE ERIE IS 569.2 FT (IGLD 85). BECAUSE THE WATER LEVEL DEPICTED IN SECTIONS AND USED TO ESTABLISH SHORE LINE IN PLAN VIEWS WAS THE LOW WATER DATUM, CONTRACTOR MAY FIND AT SLOPING SHORELINES THAT SOME DREDGING OCCURS OUT OF THE WATER AT THE TIME OF THE DREDGING.
8. LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN FOR BIDDING PURPOSES ONLY, AS SPECIFIED IN SPECIFICATION 01 71 00 EXAMINATION AND PREPARATION. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND LOCATING ALL UTILITIES.
9. BATHYMETRIC CONTOURS SHOWN ARE 1-FOOT INTERVALS.
10. LOCATION OF NAVIGATION CHANNEL AND STATIONING IN PROJECT AREA PROVIDED BY USACE.
11. DREDGE MANAGEMENT UNITS (DMUs) WERE DELINEATED BASED ON THE 2010 FEASIBILITY STUDY (ENVIRON INTERNATIONAL CORPORATION, MACTEC ENGINEERING & CONSULTING, INC., LIMNOTECH, 2010. DRAFT FINAL FEASIBILITY STUDY FOR THE BUFFALO RIVER, NEW YORK, PREPARED ON BEHALF OF BUFFALO RIVER GREAT LAKES LEGACY ACT PROJECT COORDINATION TEAM, NOVEMBER 2010), AND FURTHER DEFINED DURING DISCUSSIONS WITHIN THE PROJECT COORDINATION TEAM.
12. DMUs 4b, 7b, 37b, 44b, 44c AND 44d WILL NOT BE DREDGED BASED ON THE EVALUATIONS OF THE 2010 RESAMPLE RESULTS.
13. DMUs 37a, 44a, 45d, WILL NOT BE DREDGED BECAUSE THE PROPERTY OWNERS HAVE NOT SIGNED A LIABILITY AGREEMENT.
14. LOCATIONS DISPLAYED FOR EXISTING CONDITIONS SUCH AS SHORELINES, STRUCTURES, AND UTILITIES ARE APPROXIMATE.
15. CRITICAL STRUCTURE BUFFERS ARE SHOWN ON THE DREDGING OPERATION DRAWINGS.
16. EXISTING STRUCTURE INFORMATION IS BASED ON VISUAL OBSERVATION AND LIMITED HISTORICAL INFORMATION WITH SIDE SCAN SONAR VERIFICATION (OCTOBER 24, 2011) ABOVE THE SEDIMENT ELEVATION. EEEPC AND CH2MHILL HAVE NOT EVALUATED THE IMPACT OF THE PROPOSED DREDGING ON EXISTING STRUCTURES.
17. IF AN UNDERWATER SHORELINE STRUCTURE (e.g. RIPRAP, CONCRETE BOAT RAMPS, ETC.) IS ENCOUNTERED IN ANY AREA WHERE NSRF IS INDICATED, CONTRACTOR SHALL NOTIFY ENGINEER FOR A DECISION ON HOW TO PROCEED.
18. THE HABITAT RESTORATION DESIGN WAS BASED ON AN AVERAGE WATER SURFACE ELEVATION OF 571 FEET.

ABBREVIATIONS

DBH	DIAMETER AT BREAST HEIGHT
DMU	DREDGE MANAGEMENT UNIT
EV	EMERGENT VEGETATION
KB	KNEE BRACE
LUNKERS	LITTLE UNDERWATER NEIGHBORHOOD KEEPERS ENCOMPASSING RHEOTACTIC SALMONIDS
NTS	NOT TO SCALE
N.I.C.	NOT IN CONTRACT
SAV	SUBMERGED AQUATIC VEGETATION

SHORELINE TYPES

AWB	ALUMINUM/WOOD BOAT DOCKS	NS	NATURALLY SLOPED SHORE
AC	ANCHORED CONCRETE SHEET WALL	NSS	NATURALLY AND STONE SLOPED SHORE
ASP	ANCHORED STEEL SHEET PILE WALL	NST	NATURALLY SLOPED SHORE WITH TIMBER PILES
BR	BOAT RAMP	OTP	OLD TIMBER PILES
CGS	COBBLE AND GRAVEL SHORELINE	RPRP	RIPRAP
CGDS	COBBLE, GRAVEL, AND DEBRIS SHORELINE	RRA	RR ABUTMENT
CCT	CONCRETE CAP ON TIMBER PILES	SSG	SLOPED STONE GABION
CPCW	CONCRETE PIER CRIB WALL	SHPC	STEEL H PILES WITH CONCRETE CAP
CPC	CONCRETE PILES AND CAP	SSPW	STEEL SHEET PILE WALL
CW	CONCRETE WALL	SSPW	STEEL SHEET PILE WALL (UNANCHORED)
CSW	CUT STONE WALL	SPC	STEEL SHEET PILE WITH CONCRETE CAP
GSSS	GROUTED SLOPE STONE SHORELINE	SFC	STONE FILLED TIMBER CRIB
LD	LARGE DIAMETER STEEL SHEET PILE CELLS	TB	TIMBER BULKHEAD
		TWTP	TIMBER WHARF OR TIMBER PILE

UTILITY INFORMATION TABLE

Designation	Drawing (s)	Company	Description
BSA-1	ED-1, ED-2	Buffalo Sewer Authority	Sewer shaft is 50 feet below grade 25' west (downstream) of Buffalo Skyway (Route 5)
BSA-2	ED-2, ED-3, EH-5	City of Buffalo Division of Water	From south shaft of tunnel to south shaft of tunnel, 24" pipe in tunnel under Buffalo River near Ohio Street Bridge 10' west (downstream) of Ohio Street bridge
A	ED-1, EH-2	Linde LLC (formerly Air Reduction Company)	Two (2) 10" steel air lines, 50' downstream of Erie-Lackawanna RR Bridge (-35' LWD)
B	ED-4, EH-1, EH-2	National Grid (formerly Niagara Mohawk Power Corporation)	Maps sent by National Grid (current owner of Niagara Mohawk Power Corporation) show crossing near South Park Bridge. USACE description, four (4) power submarine cables, 37' upstream of South Park Avenue Lift Bridge (-30' LWD).
C	ED-4, EH-2	City of Buffalo	54" diameter concrete pipeline 210' upstream of Buffalo Creek RR Bridge (-51.5' LWD)
D	ED-2	City of Buffalo Division of Water	City of Buffalo Division of Water drawing from Big Sale shows old 2" pipe below the Michigan Avenue Bridge. USACE description, three (3) 3-1/2" diameter plastic pipes below Michigan Avenue Lift Bridge, on River natural bottom
E	ED-4, EH-1, EH-2	City of Buffalo Division of Water	City of Buffalo Division of Water drawing shows 10" PVC inside old 16" submarine line, 52' upstream of South Park Avenue Lift Bridge-33' LWD)
F	ED-4, EH-1, EH-2	City of Buffalo	2-3/4" diameter television cable in trench, immediately upstream of South Park Avenue Lift Bridge (-35' LWD)
G	ED-2	New York Telephone	2 6" armored communications cable, 20' downstream of removed Lower Michigan Avenue Bridge (-35' LWD).
H	ED-4, ED-2	City of Buffalo Division of Water	16" diameter flexible water pipeline crossing Buffalo River through Ship Tug Slip, 100' downstream of Michigan Avenue Lift Bridge (-35' LWD)
I	ED-1, EH-1, EH-2	City of Buffalo Fire Department	2" diameter submarine cable, 135' downstream of South Park Avenue Lift Bridge (-30' LWD).
J	ED-3	New York Central Railroad	Submarine cable, 50' downstream of N.Y. Central RR Bridge (-35' LWD)
K	ED-4, EH-1, EH-2	National Grid (formerly Niagara Mohawk Power Corporation)	Maps sent by National Grid (current owner of Niagara Mohawk Power Corporation) show crossing near South Park Bridge. USACE Description: twelve (12) 4" steel conduits approximately 39' upstream of South Park Avenue Lift Bridge (-35' LWD)
L	ED-4, EH-1, EH-2	City of Buffalo	Five (5) 2-3/4" & four (4) 2-1/2" armored power cables, immediately downstream of South Park Avenue Lift Bridge (-30' LWD)
M	ED-4, EH-2	CSX	2" diameter electric cable, 30' upstream of Buffalo Creek RR Bridge (-35' LWD)
N	ED-3	AT&T (formerly US Sprint)	Map sent by AT&T (current owner of US Sprint) shows 4" steel submerged pipe adjacent to the east side of the CSX railroad bridge. According to the drawing the crossing location is marked on both sides of the river. USACE Description: two (2) 4" steel pipe for fiber-optic cable, 30' upstream of N.Y. Central RRBridge (-27' LWD)
O	ED-4, EH-1, EH-2	New York Telephone	Eight (8) 4" diameter submarine cables, 160' downstream of South Park Avenue Lift Bridge (-30' LWD)
P	ED-4, EH-1, EH-2	New York Telephone	Submarine communications cable, approximately 60' downstream of South Park Avenue Lift Bridge (-35' LWD)
Q	ED-3	Verizon (formerly MCI)	Submarine communications cable in 5" conduit, approximately 20' upstream of N.Y. Central RR Bridge (-35' LWD)
R	ED-3	Linde LLC (formerly SOC Processing Plant)	Buried 10" nitrogen pipeline, approximately 335' downstream of N.Y. Central RR Bridge (-32.7 LWD)
S	ED-2	City of Buffalo Division of Water	16" flexible submerged pipe crossing City Ship Canal downstream of Michigan Ave Bridge.
T	ED-3, EH-3	City of Buffalo Division of Water	6" broken water line pipe, wrought iron pipe, 6 feet south of center of Ensign street
U	ED-1, ED-2	National Grid	Maps from National Grid show a crossing at the Skyway Bridge
V	ED-2, ED-3, EH-5	National Grid	Maps from National Grid show a crossing at the Ohio St. Bridge

SEE EXISTING CONDITIONS DRAWINGS (DREDGING AND HABITAT) FOR APPROXIMATE LOCATIONS

LEGEND

Symbol	Description
542 / DMU 4 540 / 539	DREDGE MANAGEMENT UNIT (DMU) (DASH REPRESENTS UNIT OF NO DREDGE WITHIN DMU, DESIGN CUT LINE CONTOURS ARE SHOWN IN THE DREDGE AREA)
540	MAJOR CONTOUR (SEE NOTE 2)
541	MINOR CONTOUR (SEE NOTE 2)
BUFFALO SKYWAY ROUTE 5	EXISTING ROAD
	EXISTING PARCEL BOUNDARY
	EXISTING NAVIGATION CHANNEL
	EXISTING SHORELINE
820+00	STATIONING LINE
U	APPROXIMATE UTILITY LOCATION
MATCH STATION 650+00 SEE DD-2 FOR CONTINUATION	MATCH STATION LINE
	SHORELINE TYPE START/STOP
	AVERAGE SURFACE WATER ELEVATION LINE
	NAVIGATION CHANNEL
TS / SC-1	DETAIL OR SECTION LETTER/NUMBER; DRAWING DETAIL OR SECTION IS SHOWN ON
	SUBMERGED AQUATIC VEGETATION (SAV) PLANTING AREA, SEE SHEET HD-1
	EMERGENT VEGETATION (EV) PLANTING AREA WITH COIR LOGS ALONG ENTIRE LENGTH OF DOWNSLOPE SIDE OF AREA (569' ELEVATION), SEE SHEET HD-1
564	IN-WATER FILL, SEE DETAIL ON HD-4
	REACTIVE CAP AREA, SEE HD-5

NO	DATE	REVISION	BY	APVD
F	3-1-12	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KXK	TPK
E	12-7-12	REVISED FOR PREFINAL DESIGN (NOT FOR CONSTRUCTION)	KXK	TRL
D	12-2-11	REVISED FOR USACE DRAFT (NOT FOR CONSTRUCTION)	MMC	TRL
C	1-6-11	ISSUED FOR USACE DRAFT REVIEW (NOT FOR CONSTRUCTION)	KXK	TRL
B	2-7-11	REVISED FOR 30% DRAFT (NOT FOR CONSTRUCTION)	KXK	TRB
A	5-16-11	ISSUED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	MMC	TRL

DSGN M.LOPER P.E. · DR K.KRAJEWSKI · CHK M.GILLINGS · APVD T.TRENTS P.E.

CH2MHILL

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

GENERAL NOTES, ABBREVIATIONS AND LEGEND

NOT TO SCALE · VERIFY SCALE

DWG G-2 · SHEET 2 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME G-2.DWG · PLOT DATE 3-1-12 · PLOT TIME 5:00 PM

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GENERAL NOTES

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2. DWGS ED-1 THROUGH ED-4 SHOW EXISTING BATHYMETRIC CONTOURS AND DWGS DC-1 THROUGH DC-10 SHOW DREDGE CUT LINE CONTOURS.
3. THE BATHYMETRIC CONTOURS SHOWN ON THE EXISTING CONDITIONS SHEETS ARE BASED ON POINT DATA PROVIDED BY AFFILIATED RESEARCHERS (OCTOBER 24TH, 201 NOT INCLUDED BY AFFILIATED RESEARCHERS. THE TOPOGRAPHIC AND BATHYMETRIC INFORMATION SHOWN ON THEW ASSOCIATES SURVEY DRAWING (2010) WAS USED. E (EH-1 THROUGH EH-5) ARE NOT POST DREDGE DRAWINGS AND ACTUAL SITE TOPOGRAPHY AND BATHYMETRY MAY VARY.
4. USACE HAS COMPLETED DREDGING WITHIN THE NAVIGATION CHANNEL UNDER THE GREAT LAKES RESTORATION INITIATIVE (GLRI) IN 2011 AND 2012. EXISTING BATHYMET SIGNIFICANT DIFFERENCES WITHIN THE NAVIGATION CHANNEL.
5. DREDGE CUT LINE CONTOURS ARE BASED ON EVALUATION OF TILL ELEVATION OBSERVATIONS MADE AT TEST BORING LOCATIONS AND SEDIMENT THICKNESS POLING LOC
6. ELEVATIONS SHOWN BASED ON THE INTERNATIONAL GREAT LAKES DATUM 1985 (IGLD 85).
7. LOW WATER DATUM (LWD) FOR LAKE ERIE IS 569.2 FT (IGLD 85). BECAUSE THE WATER LEVEL DEPICTED IN SECTIONS AND USED TO ESTABLISH SHORE LINE IN PLAN DATUM, CONTRACTOR MAY FIND AT SLOPING SHORELINES THAT SOME DREDGING OCCURS OUT OF THE WATER AT THE TIME OF THE DREDGING.
8. LOCATIONS OF UNDERGROUND UTILITIES ARE SHOWN FOR BIDDING PURPOSES ONLY. AS SPECIFIED IN SPECIFICATION 01 71 00 EXAMINATION AND PREPARATION, THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND LOCATING ALL UTILITIES.
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11. DREDGE MANAGEMENT UNITS (DMUs) WERE DELINEATED BASED ON THE 2010 FEASIBILITY STUDY (ENVIRON INTERNATIONAL CORPORATION, MACTEC ENGINEERING & CONS DRAFT FINAL FEASIBILITY STUDY FOR THE BUFFALO RIVER, NEW YORK, PREPARED ON BEHALF OF BUFFALO RIVER GREAT LAKES LEGACY ACT PROJECT COORDINATION T AND FURTHER DEFINED DURING DISCUSSIONS WITHIN THE PROJECT COORDINATION TEAM.
12. DMUs 4b, 7b, 37b, 44b, 44c, AND 44d WILL NOT BE DREDGED BASED ON THE EVALUATIONS OF THE 2010 RESAMPLE RESULTS.
13. DMUs 37a, 44a, 45d, WILL NOT BE DREDGED BECAUSE THE PROPERTY OWNERS HAVE NOT SIGNED A LIABILITY AGREEMENT.
14. LOCATIONS DISPLAYED FOR EXISTING CONDITIONS SUCH AS SHORELINES, STRUCTURES, AND UTILITIES ARE APPROXIMATE.
15. CRITICAL STRUCTURE BUFFERS ARE SHOWN ON THE DREDGING OPERATION DRAWINGS.
16. EXISTING STRUCTURE INFORMATION IS BASED ON VISUAL OBSERVATION AND LIMITED HISTORICAL INFORMATION WITH SIDE SCAN SONAR VERIFICATION (OCTOBER 24, 201 EEEPC AND CH2MHILL HAVE NOT EVALUATED THE IMPACT OF THE PROPOSED DREDGING ON EXISTING STRUCTURES.
17. IF AN UNDERWATER SHORELINE STRUCTURE [e.g. RIPRAP, CONCRETE BOAT RAMPS, ETC.] IS ENCOUNTERED IN ANY AREA WHERE NONE IS INDICATED, CONTRACTOR SHA
18. THE HABITAT RESTORATION DESIGN WAS BASED ON AN AVERAGE WATER SURFACE ELEVATION OF 571 FEET.

ABBREVIATIONS

DBH	DIAMETER AT BREAST HEIGHT
DMU	DREDGE MANAGEMENT UNIT
EV	EMERGENT VEGETATION
KB	KNEE BRACE
LUNKERS	LITTLE UNDERWATER NEIGHBORHOOD KEEPERS ENCOMPASSING RHEOTACTIC SALMONIDS
NTS	NOT TO SCALE
N.I.C.	NOT IN CONTRACT
SAV	SUBMERGED AQUATIC VEGETATION

SHORELINE TYPES

AWB	ALUMINUM/WOOD BOAT DOCKS	NS	NATURALL SLOPED
AC	ANCHORED CONCRETE SHEET WALL	NSS	NATURALLY AND S
ASP	ANCHORED STEEL SHEET PILE WALL	NST	NATURALLY SLOPE
BR	BOAT RAMP	OTP	OLD TIMBER PILES
CGS	COBBLE AND GRAVEL SHORELINE	RPRP	RIPRAP
CGSS	COBBLE, GRAVEL, AND DEBRIS SHORELINE	RRA	RR ABUTTMENT
CCT	CONCRETE CAP ON TIMBER PILES	SSG	SLOPED STONE GA
CPCW	CONCRETE PIER CRIB WALL	SHPC	STEEL H PILES WI
CPC	CONCRETE PILES AND CAP	SSPW	STEEL SHEET PILE
CW	CONCRETE WALL	SSPW	STEEL SHEET PILE
CSW	CUT STONE WALL	SPC	STEEL SHEET PILE
GSSS	GROUTED SLOPE STONE SHORELINE	SFC	STONE FILLED TIM
LD	LARGE DIAMETER STEEL SHEET PILE CELLS	TB	TIMBER BULKHEAD
		TWTP	TIMBER WHARF ON

UTILITY INFORMATION TABLE

Designation	Drawing (s)	Company	Description
BSA-1	ED-1, ED-2	Buffalo Sewer Authority	Sewer shaft is 60 feet below grade 26' west (downstream) of Buffalo Skyway (Route 5)
18A-2	ED-2, ED-3, EH-5	City of Buffalo Division of Water	From north shaft of tunnel to south shaft of tunnel, 24" pipe in tunnel under Buffalo River nea (downstream) of Ohio Street bridge.
A	ED-4, EH-2	Linde LLC. (formerly Air Reduction Company)	Two (2) 10" steel air lines, 50' downstream of Erie-Lackawanna RR Bridge (-35' LWD).
B	ED-4, EH-1, EH-2	National Grid (formerly Niagara Mohawk Power Corporation)	Maps sent by National Grid (current owner of Niagara Mohawk Power Corporation) show orc description: four (4) power submarine cables, 32' upstream of South Park Avenue Lift Bridge
C	ED-4, EH-2	City of Buffalo	54" diameter concrete pipeline, 210' upstream of Buffalo Creek RR Bridge (-61.5' LWD).
D	ED-2	City of Buffalo Division of Water	City of Buffalo Division of Water drawing from Dig Safe shows old 2" pipe below the Michigai three (3) 3-1/2" diameter plastic pipes below Michigan Avenue Lift Bridge, on River natural b
E	ED-4, EH-1, EH-2	City of Buffalo Division of Water	City of Buffalo Division of Water drawing shows 10" PVC inside old 16" submarine line, 32' u Bridge-33' LWD).
F	ED-4, EH-1, EH-2	City of Buffalo	2-1/4" diameter television cable in trench, immediately upstream of South Park Avenue Lift E
G	ED-2	New York Telephone	2.64" armored communications cable, 30' downstream of removed Lower Michigan Avenue E
H	ED-1, ED-2	City of Buffalo Division of Water	16" diameter flexible water pipeline crossing Buffalo River through Fire Tug Slip, 100' downst (-35' LWD)
I	ED-4, EH-1, EH-2	City of Buffalo Fire Department	4" diameter submarine cable, 130' downstream of South Park Avenue Lift Bridge (-38' LWD)
J	ED-3	New York Central Railroad	Submarine cable, 60' downstream of N.Y. Central RR Bridge (-35' LWD)
K	ED-4, EH-1, EH-2	National Grid (formerly Niagara Mohawk Power Corporation)	Maps sent by National Grid (current owner of Niagara Mohawk Power Corporation) show orc Description, twelve (12) 4" steel conduits approximately 30' upstream of South Park Avenue
L	ED-4, EH-1, EH-2	City of Buffalo	Five (5) 2-3/4" & four (4) 2-1/2" armored power cables, immediately downstream of South Pa
M	ED-4, EH-2	OSX	2" diameter electric cable, 30' upstream of Buffalo Creek RR Bridge (-30' LWD).
N	ED-3	AT&T (formerly US Sprint)	Map sent by AT&T (current owner of US Sprint) shows 4" steel submerged pipe adjacent to bridge. According to the drawing the crossing location is marked on both sides of the river. pipe for fiber-optic cable, 30' upstream of N.Y. Central RRBridge (-27' LWD)
O	ED-4, EH-1, EH-2	New York Telephone	Eight (8) 4" diameter submarine cables, 180' downstream of South Park Avenue Lift Bridge (
P	ED-4, EH-1, EH-2	New York Telephone	Submarine communications cable, approximately 50' downstream of South Park Avenue Lif
Q	ED-3	Verizon (formerly MCI)	Submarine communications cable in 5" conduit, approximately 20' upstream of N.Y. Cent/a
R	ED-3	Linde LLC. (formerly BOC Processing Plant)	Buried 10" nitrogen pipeline, approximately 387' downstream of N.Y. Central RR Bridge (-32
S	ED-2	City of Buffalo Division of Water	16" flexible submerged pipe crossing City Ship Canal downstream of Michigan Ave Bridge.
T	ED-3, EH-3	City of Buffalo Division of Water	6" broken waterline pipe, wrought iron pipe, 6 feet south of center of Ensign street
U	ED-1, ED-2	National Grid	Maps from National Grid show a crossing at the Skyway Bridge
V	ED-2, ED-3, EH-3	National Grid	Maps from National Grid show a crossing at the Ohio St. Bridge

SEE EXISTING CONDITIONS DRAWINGS (DREDGING AND HABITAT) FOR APPROXIMATE LOCATIONS

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 11(10A) of 111

N WORK IN SELECTED AREAS.

3 WHERE DATA WAS
DITION DRAWINGS

WILL HAVE

THE LOW WATER

, LIMNOTECH, 2010,
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E SEDIMENT ELEVATION.

NGINEER FOR A DECISION ON HOW TO PROCEED.

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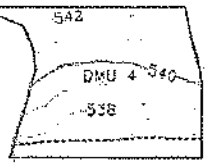
E CAP

NCHORED)
RETE CAP

E

Bridge, 15' west
uth Park Bridge, USACE
ge, USACE description:
outh Park Avenue Lift
VD).
VD).
gan Avenue Lift Bridge
uth Park Bridge, USACE 35' LWD).
Bridge (-35' LWD).
of the CSX railroad ription: two (2) 4" steel
LWD).
35' LWD).

LEGEND



DREDGE MANAGEMENT UNIT (DMU)
(DASH REPRESENTS LIMIT OF NO DREDGE WITHIN DMU, DESIGN CUT LINE CONTOURS ARE SHOWN IN THE DREDGE AREA)

540 — MAJOR CONTOUR (SEE NOTE 2)

541 — MINOR CONTOUR (SEE NOTE 2)

BUFFALO SKYWAY
ROUTE 5 — EXISTING ROAD

EXISTING PARCEL BOUNDARY

EXISTING NAVIGATION CHANNEL

EXISTING SHORELINE

B20+00 — STATIONING LINE

U — APPROXIMATE UTILITY LOCATION

MATCH STATION
650+00
SEE DC-2 FOR
CONTINUATION — MATCH STATION LINE

SHORELINE TYPE START/STOP

AVERAGE SURFACE WATER ELEVATION LINE

NAVIGATION CHANNEL

15 / DC-5 — DETAIL OR SECTION LETTER/NUMBER; DRAWING DETAIL OR SECTION IS SHOWN ON

SUBMERGED AQUATIC VEGETATION (SAV) PLANTING AREA, SEE SHEET HD-1

EMERGENT VEGETATION (EV) PLANTING AREA WITH COIR LOGS ALONG ENTIRE LENGTH OF DOWNSLOPE SIDE OF AREA (569' ELEVATION), SEE SHEET HD-1

569 — IN-WATER FILL, SEE DETAIL ON HD-5

REACTIVE CAP AREA, SEE HD-5

NO.	DATE	REVISION	DSN	CHK	APVD
F	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KAK	TRH	
E	12-7-12	REVISED FOR PRELIMINAL DESIGN (NOT FOR CONSTRUCTION)	KAK	TRH	
D	10-12-11	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KAK	TRH	
C	12-6-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KAK	TRH	
B	3-7-11	REVISED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KAK	TRH	
A	2-18-11	ISSUED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KAK	TRH	

DSGN: M MALOLEY P.E. DR: K KRA-SEWSKI CHK: M GILLINGS APVD: T HEINS P.E.

CH2MHILL ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

GENERAL NOTES, ABBREVIATIONS AND LEGEND

NOT TO SCALE
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DATE 3-1-13
PROJ EE-002304-0023-03-01
DWG G-2
SHEET 2 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

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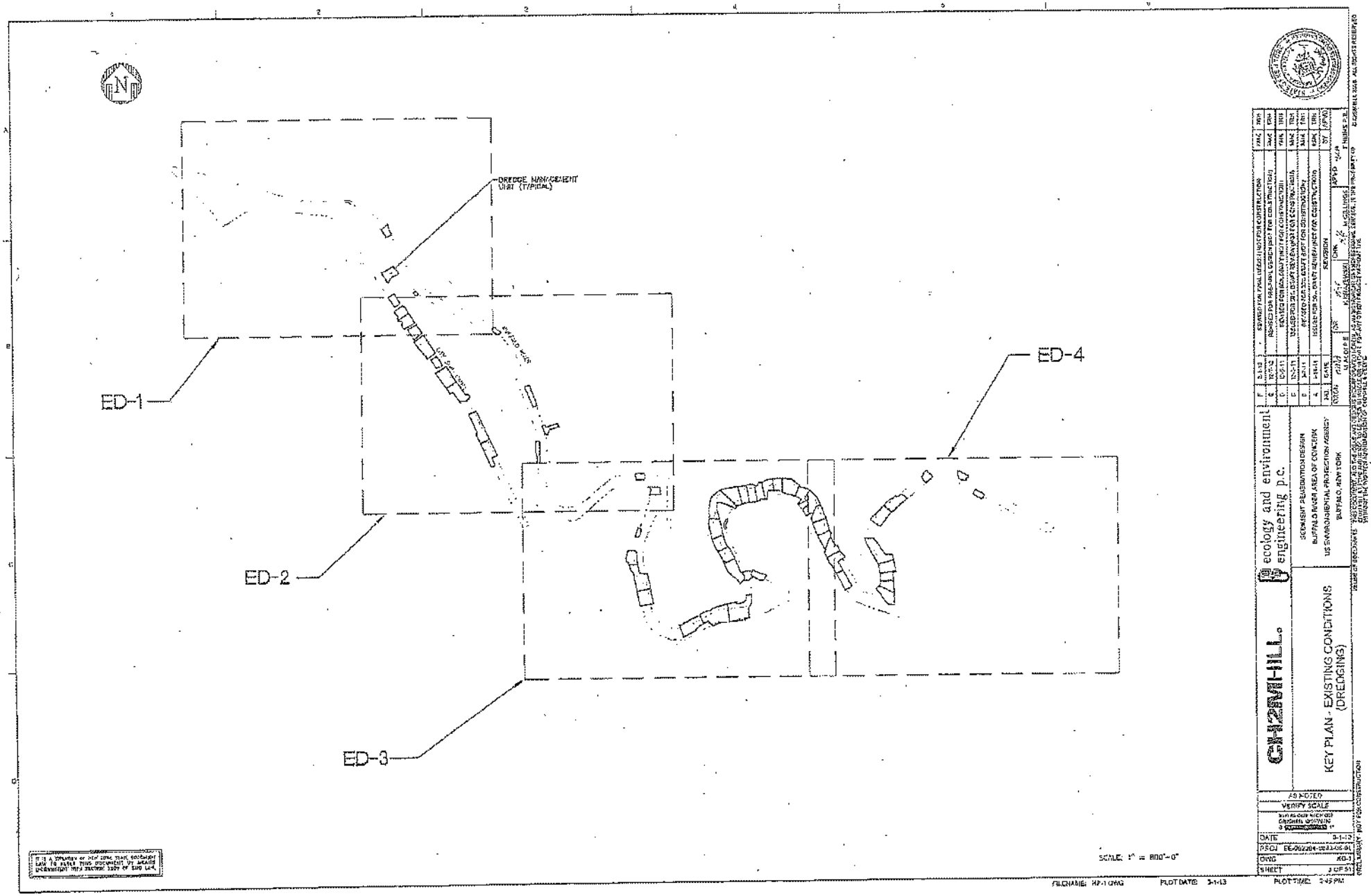
Erie County, New York
Quad: Buffalo NW
Sheet 12 (10B) of 111

E DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM



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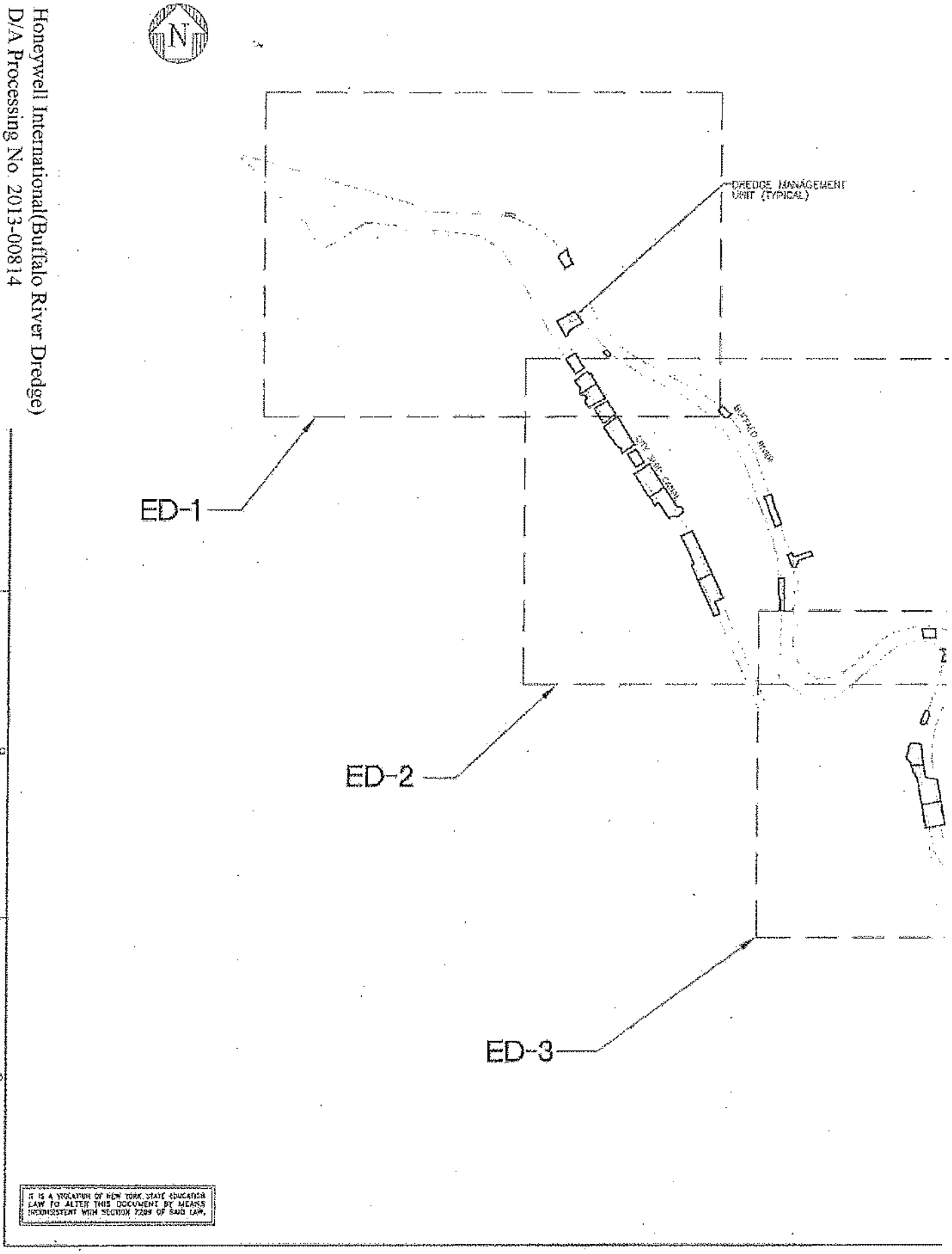
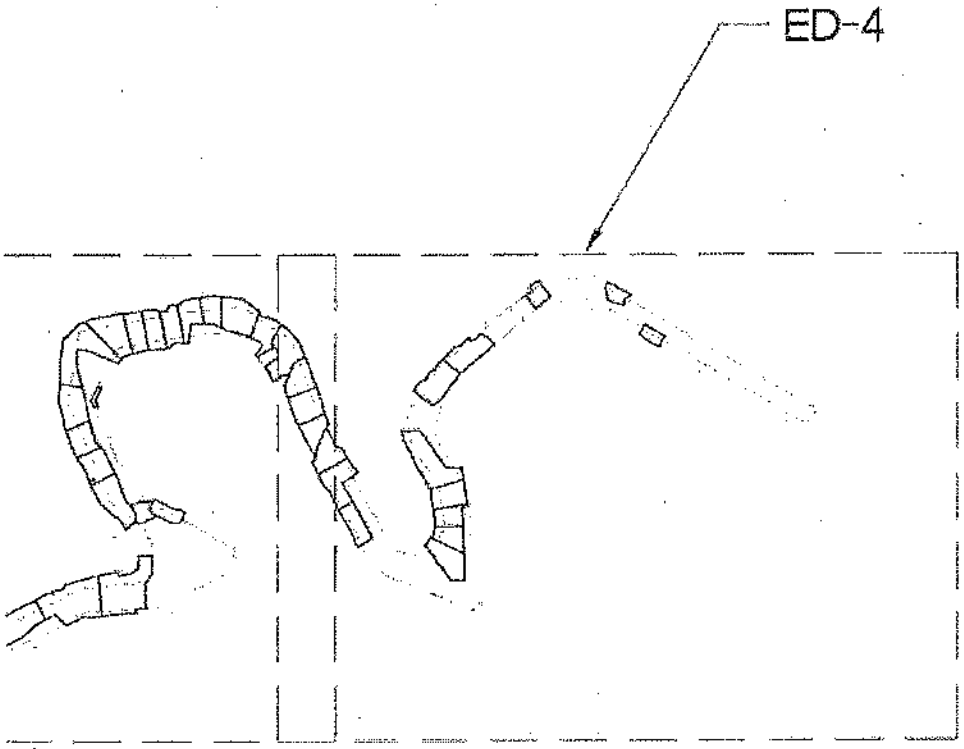
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 13 of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 14(13A) of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 15(13B) of 111



SCALE: 1" = 600'-0"

NO.	DATE	REVISION	DR	CHK	APVD
F	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH	
E	12-7-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH	
D	12-3-11	REVISED FOR 90% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH	
C	12-2-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH	
B	3-7-11	REVISED PER 30% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH	
A	2-16-11	ISSUED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH	

DESIGN: M.ALOISE | DR: K.KRAJEWSKI | CHK: M.GILLINGS | APVD: T.HEINS P.E.

CH2MHILL ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

KEY PLAN - EXISTING CONDITIONS (DREDGING)

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DATE 3-1-13
PROJ E6-002304-0933-08-01
DWG KD-1
SHEET 3 OF 31

PRELIMINARY - NOT FOR CONSTRUCTION

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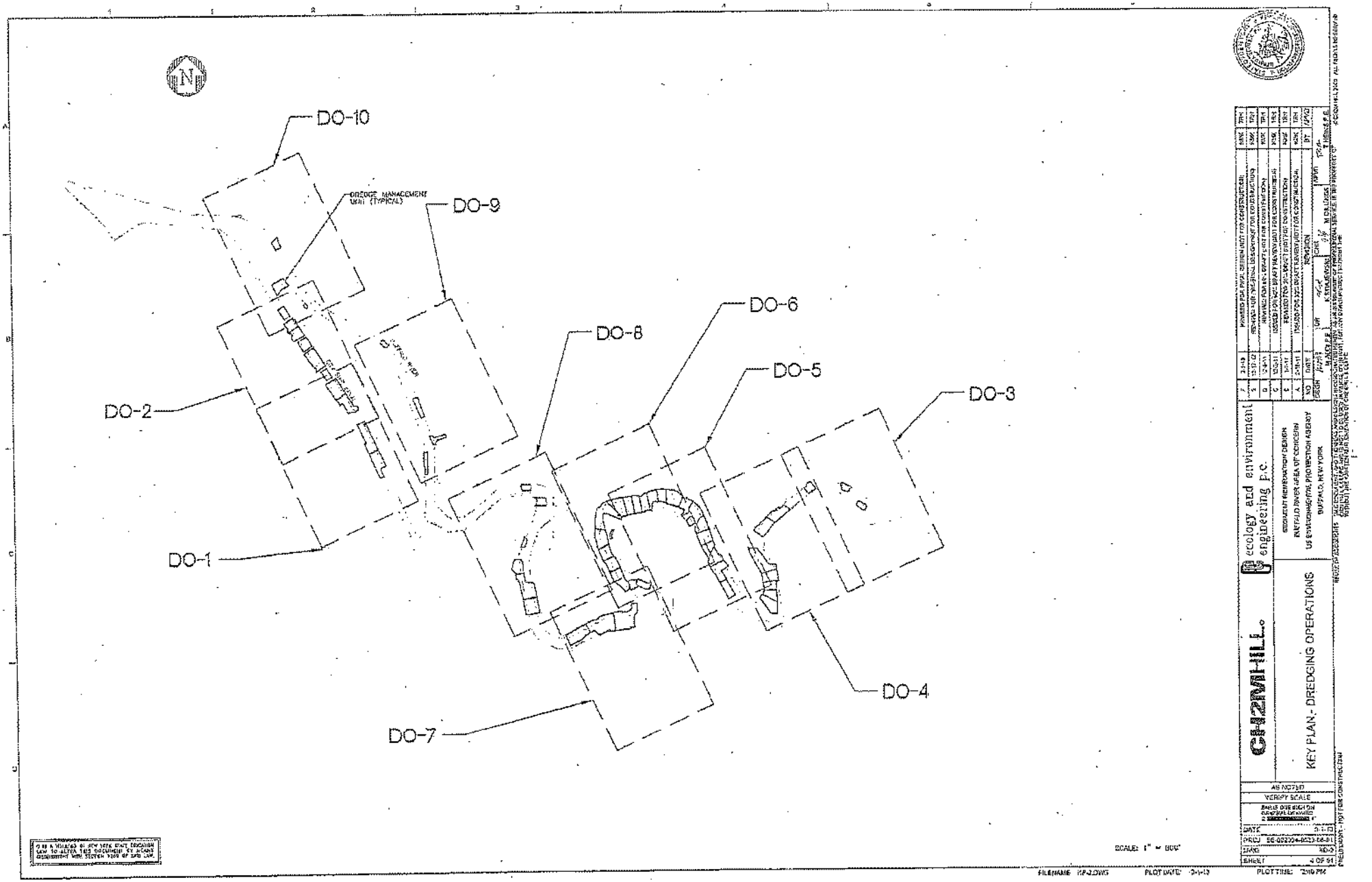

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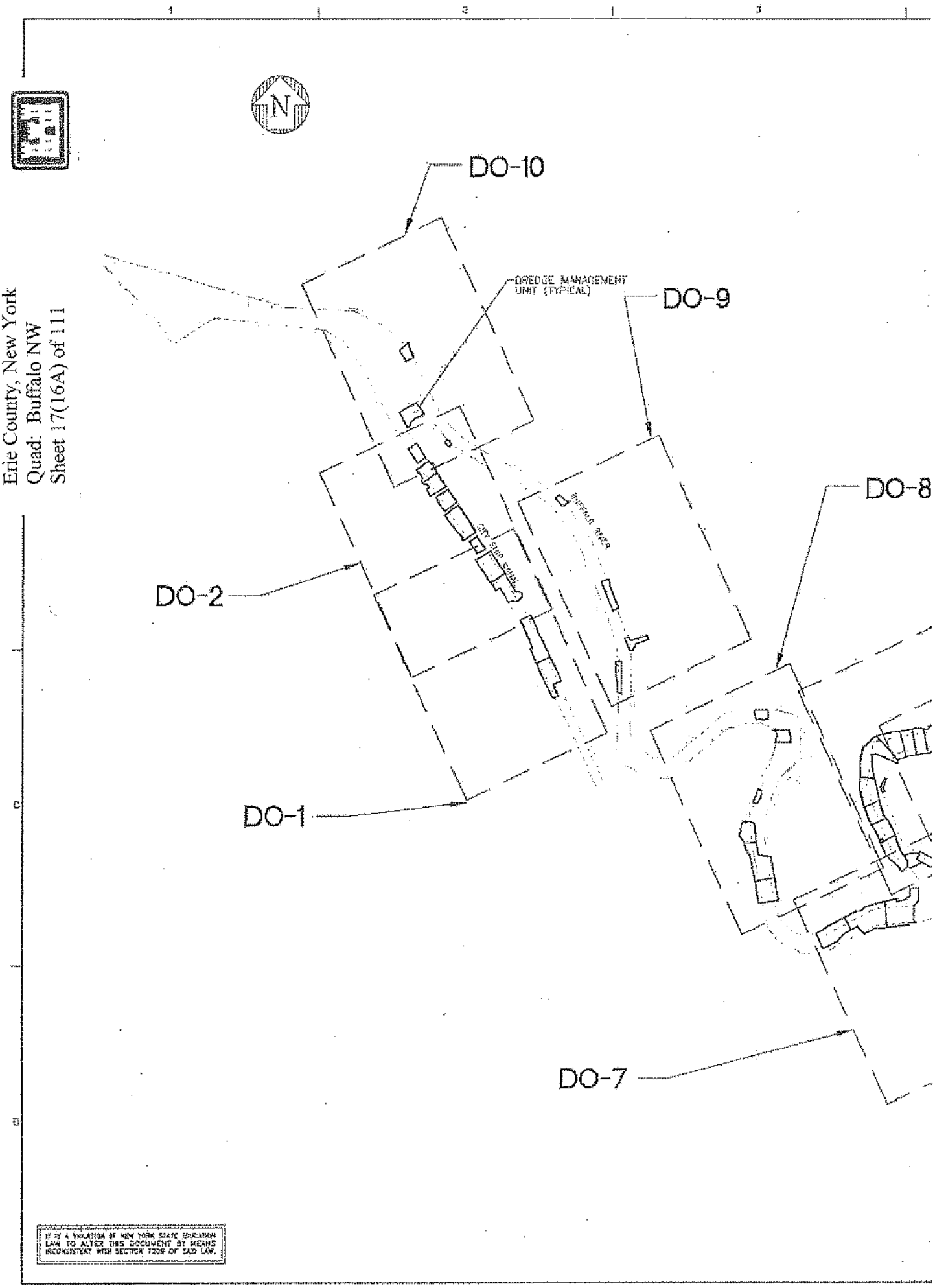
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 16 of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 17(16A) of 111



IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

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Erie County, New York
Quad: Buffalo NW
Sheet 18(16B) of 111

SCALE: 1" = 800'

FILENAME: KP-2.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:40 PM

NO	DATE	REVISION	BY	APVD
F	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
E	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
D	12-5-11	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
C	12-2-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH
B	3-7-11	REVISED FOR 30% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
A	2-16-11	ISSUED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH

DESIGN: K KRAJEWSKI P.E. DR: CHK: M GILLINGS APVD: T HEINS P.E.

CH2MHILL ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

KEY PLAN - DREDGING OPERATIONS

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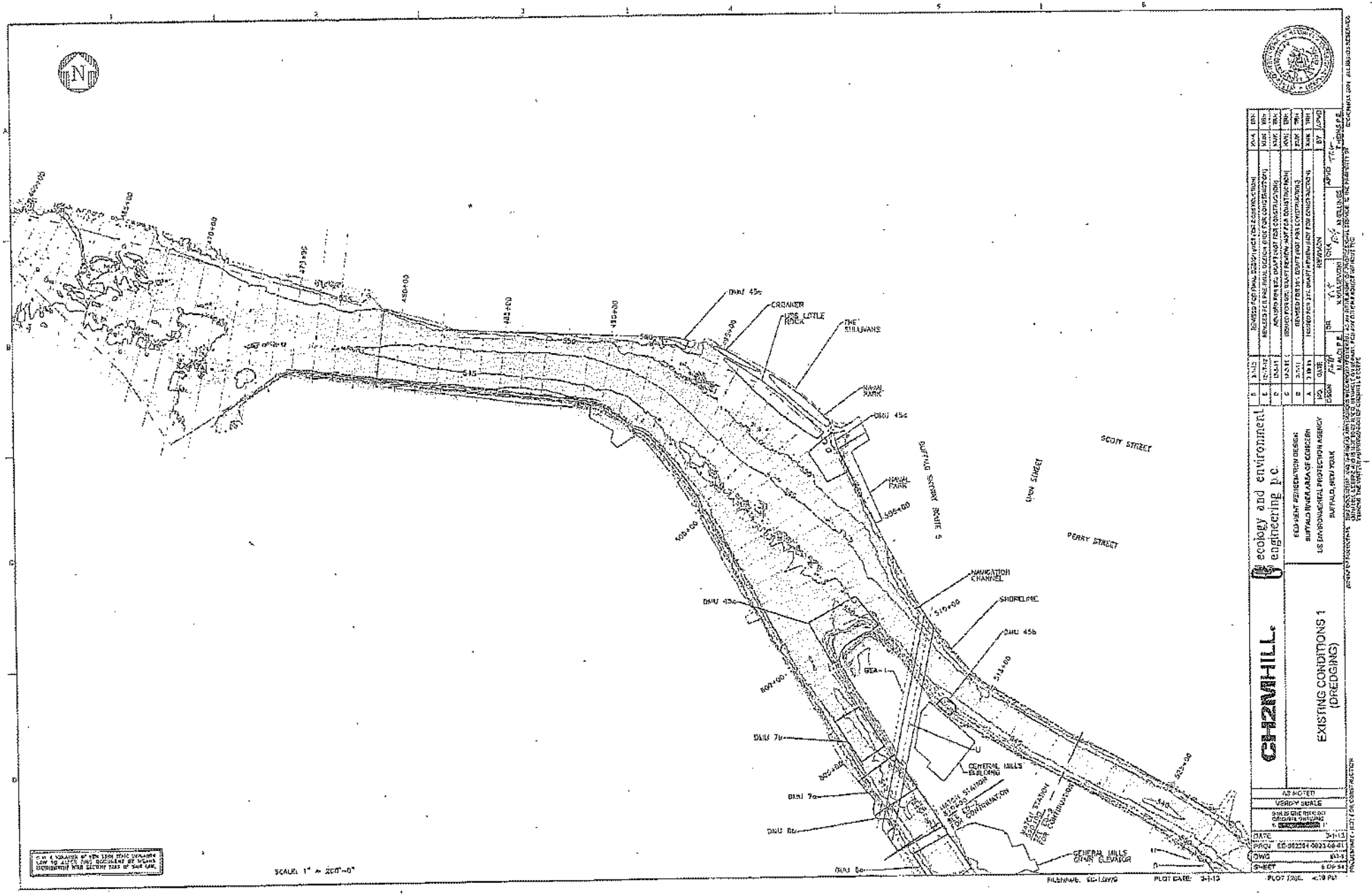
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE 3-1-13
PROJ EE-002304-0023-08-01
DWG KD-2
SHEET 4 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION



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D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 19 of 111

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SCALE: 1" = 200'-0"

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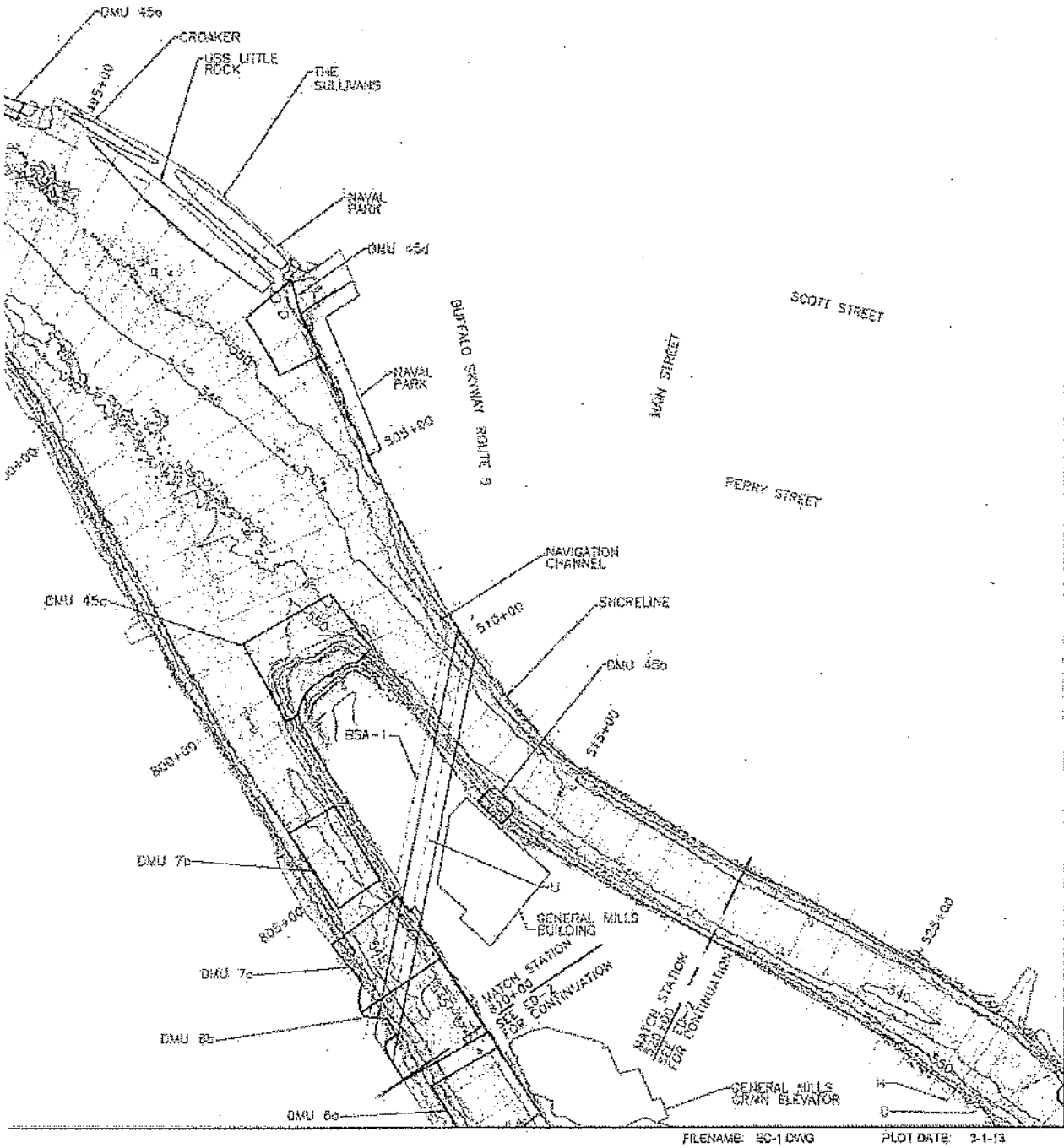
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 20(19A) of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 21(19B) of 111



NO.	DATE	REVISION	BY	APVD
F	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
E	12-12-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
D	12-5-11	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
C	10-3-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH
B	3-7-11	REVISED FOR 30% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
A	2-18-11	ISSUED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH

DESIGN M.ALONI P.E. DR K.KRAJEWSKI CHK M.GILLINGS APVD T.HEINS P.E.

ecology and environment engineering p.c.

CH2MHILL

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

EXISTING CONDITIONS 1
(DREDGING)

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE 3-1-13
PROJ EE-002304-0523-05-01
DWG ED-1
SHEET 5 OF 51

FILENAME: ED-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:19 PM

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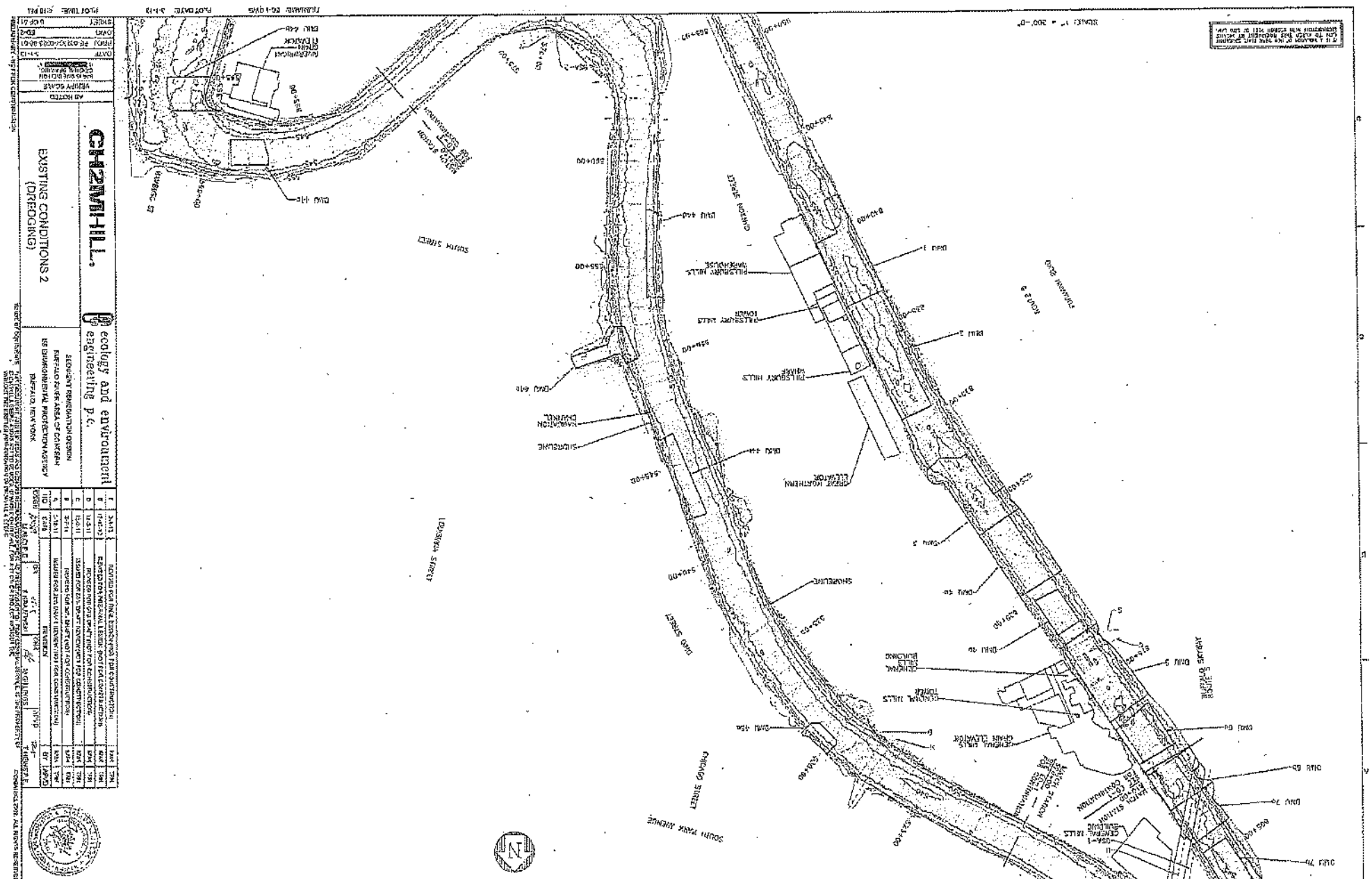
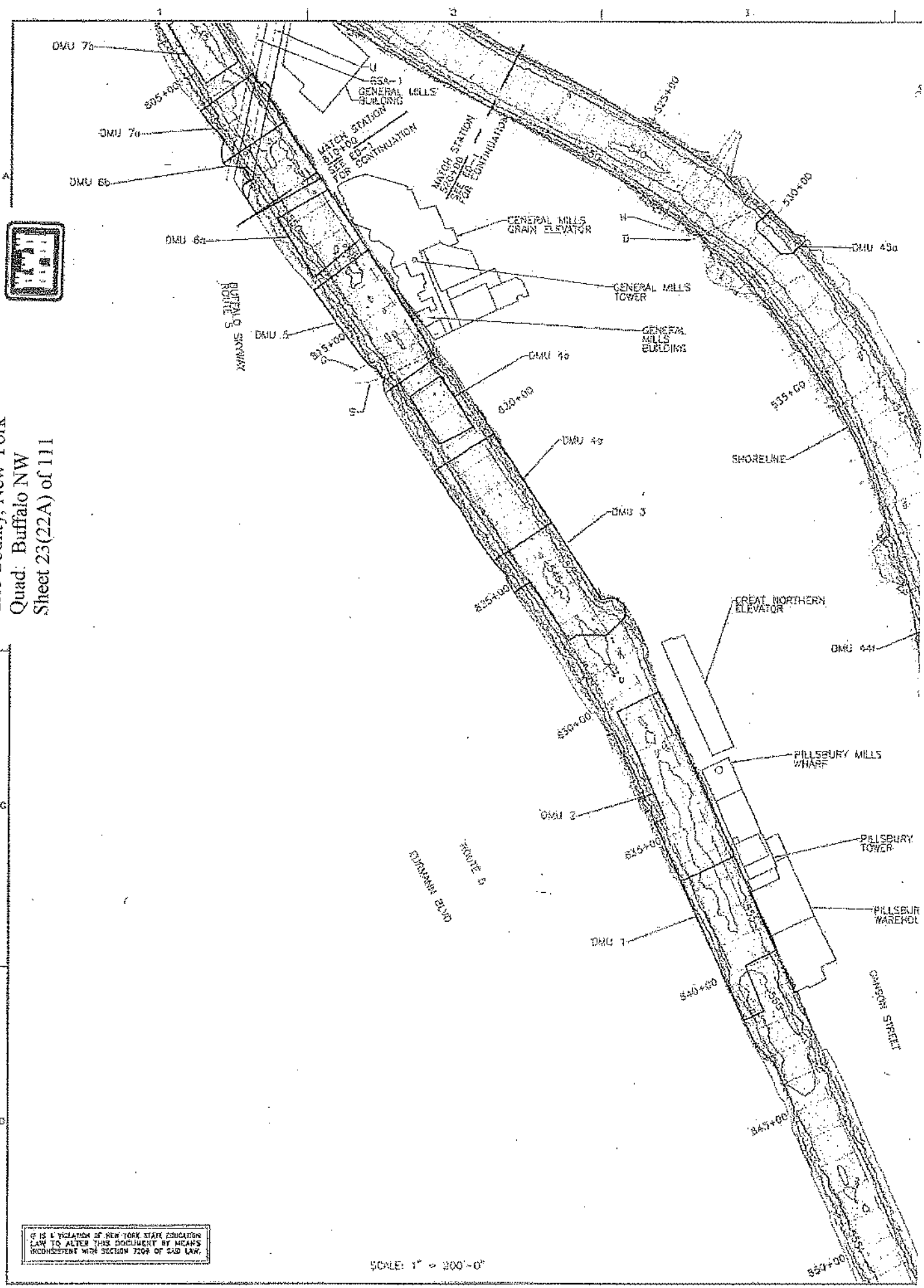
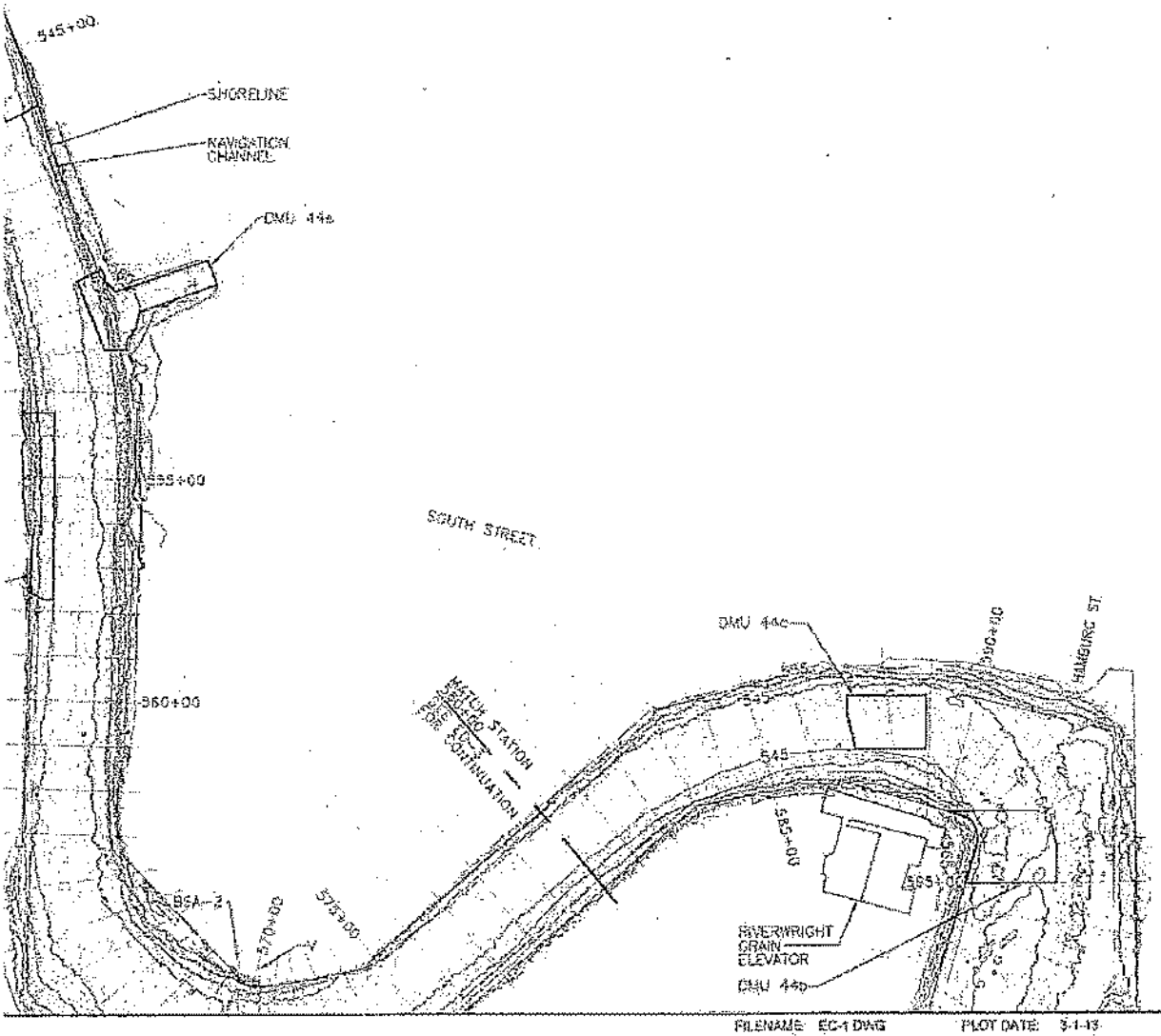
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 22 of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 23(22A) of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 24(22B) of 111



NO.	DATE	REVISION	BY	APVD
F	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
E	12-19-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
D	12-5-11	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
C	12-5-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH
B	5-7-11	REVISED FOR 30% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
A	5-16-11	ISSUED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH

DESIGN M ALOI P.E. DR K KRAJEWSKI CHK M GILLINGS APVD T HEINS P.E.

CH2MHILL

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
U.S. ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

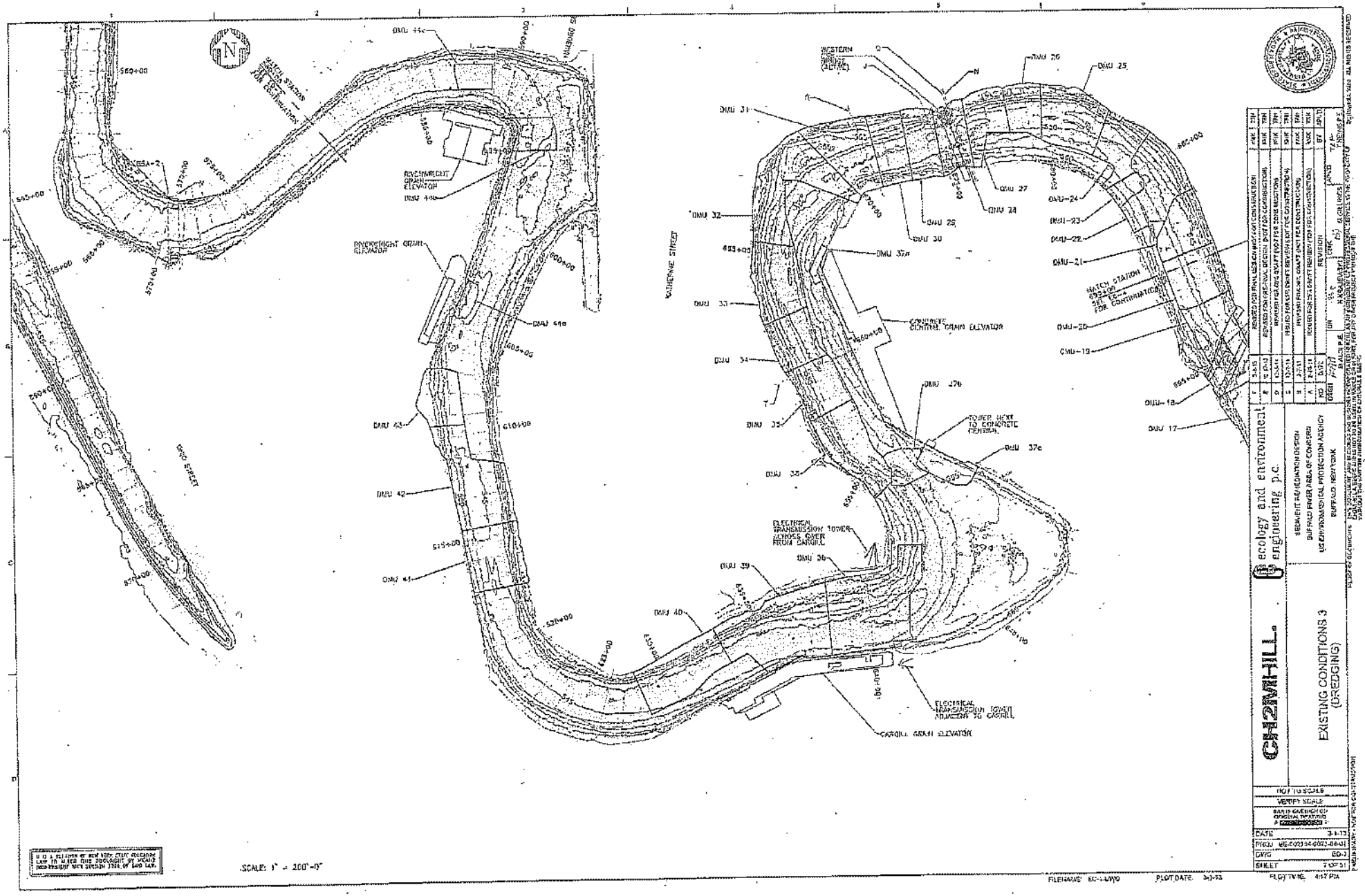
EXISTING CONDITIONS 2
(DREDGING)

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

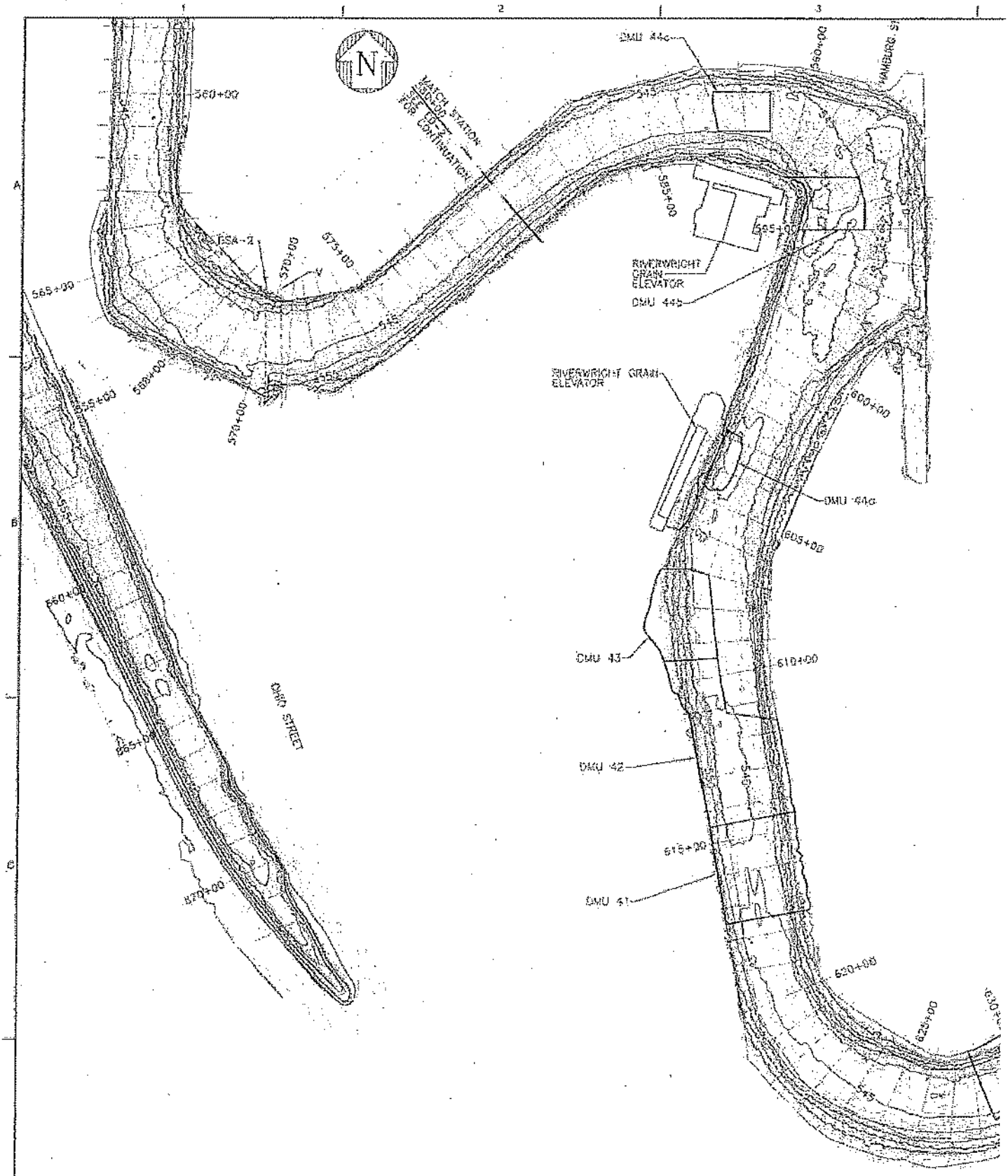
DATE 3-1-13
PROJ EE-002304-0023-08-01
DWG EC-2
SHEET 6 OF 81

PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME: EC-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:18 PM

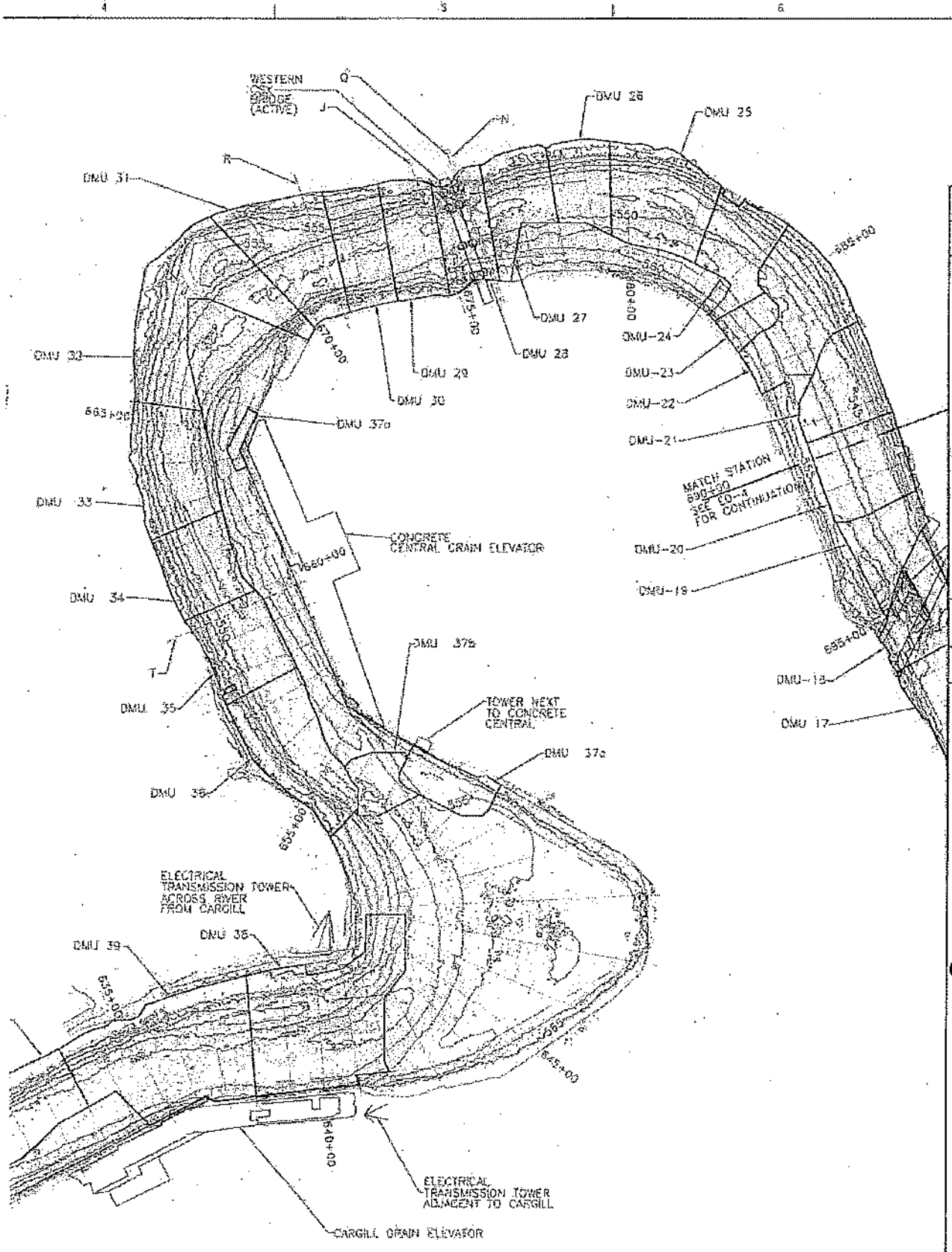


Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 25 of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 26(25A) of 111

SCALE: 1" = 200'-0"



NO.	DATE	REVISION	BY	APVD
F	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
E	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
D	12-5-11	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
C	10-26-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH
B	3-4-11	REVISED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH
A	2-18-11	ISSUED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH

DESIGN: M.ALOI P.E. DA: K.NOWAKOWSKI CHK: M.GILLINGS APVD: T. THEINS P.E.

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

EXISTING CONDITIONS 3 (DREDGING)

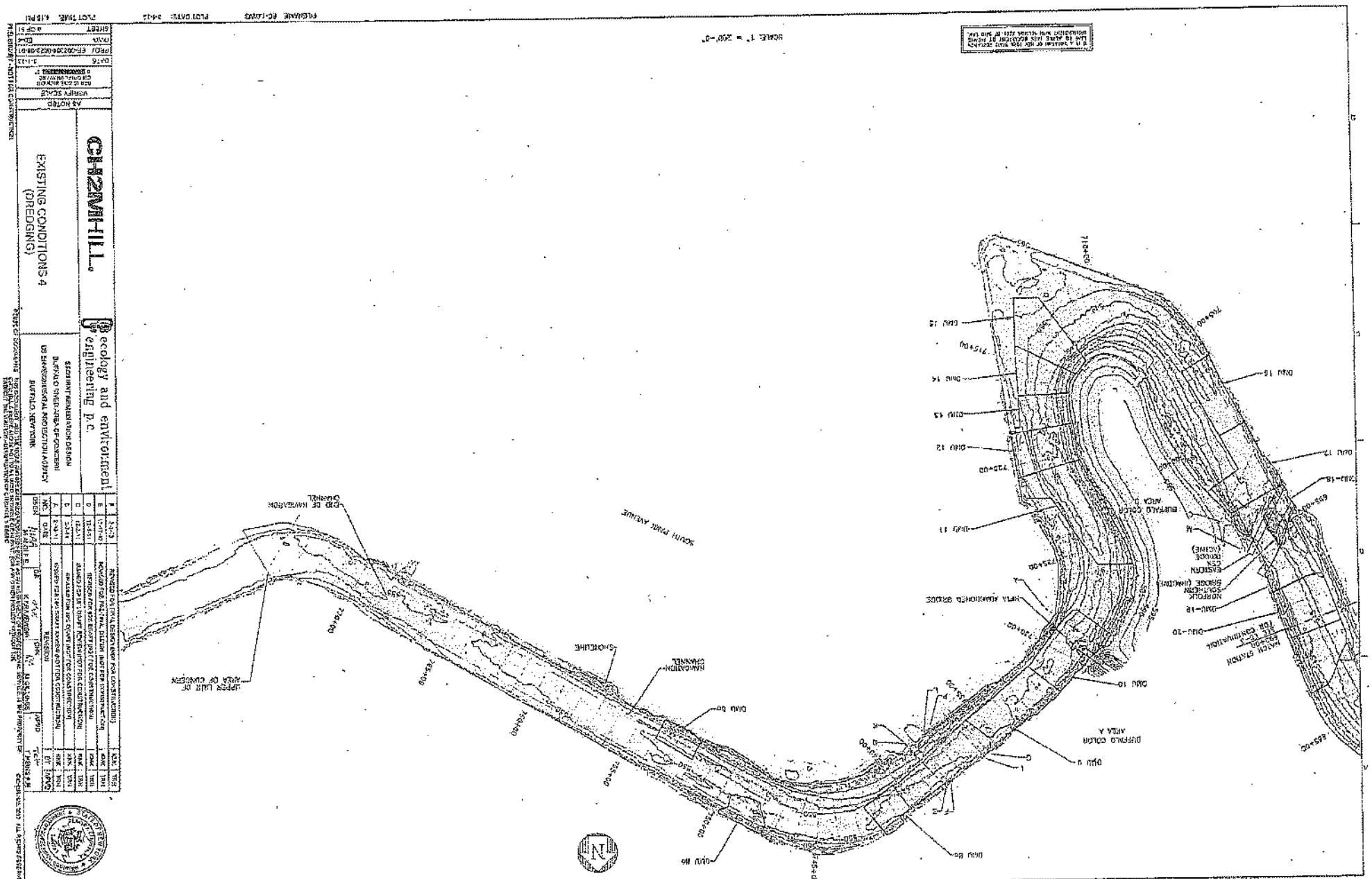
NOT TO SCALE
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

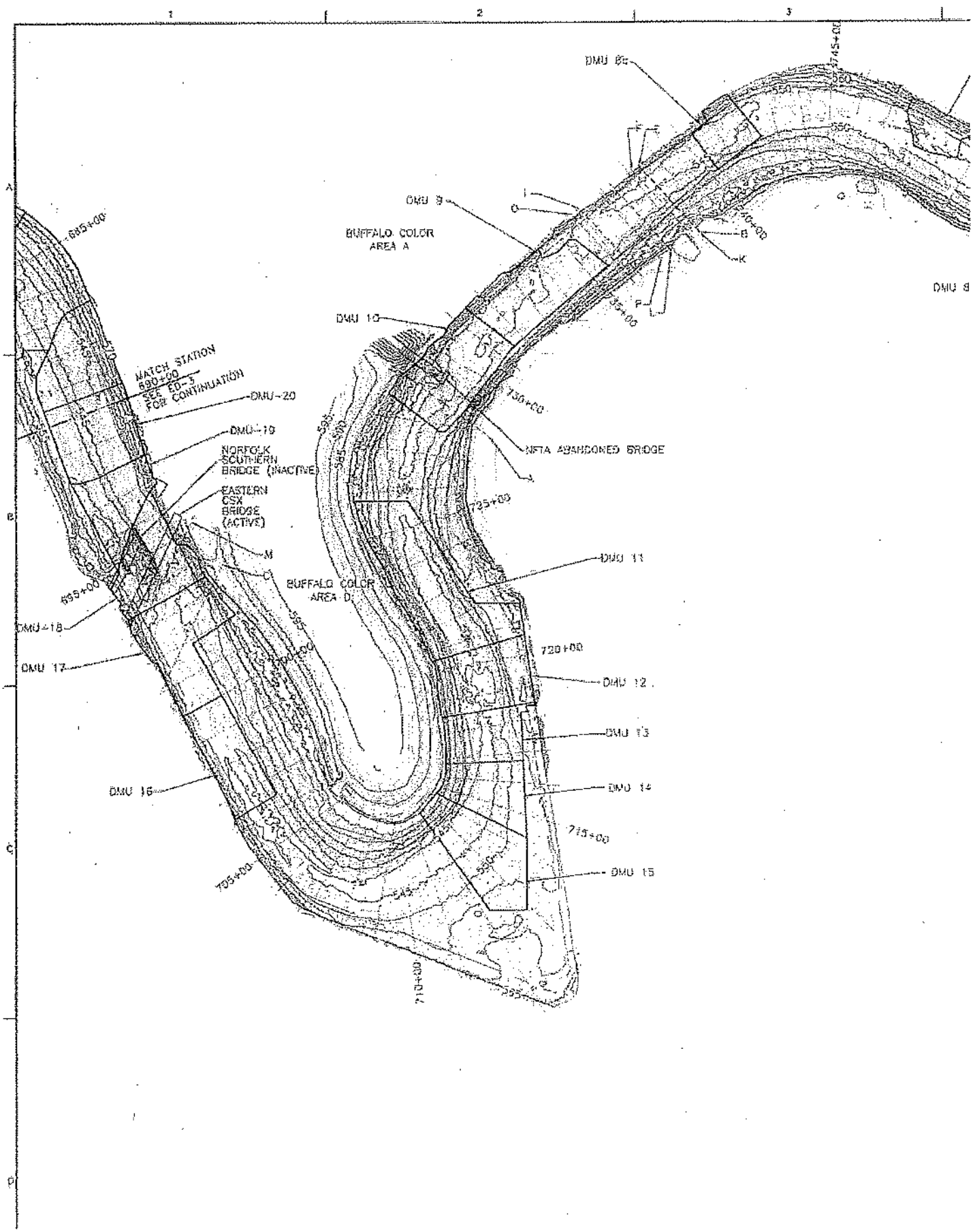
DATE 3-1-13
PROJ. EE-603304-0023-08-01
DWG ED-3
SHEET 7 OF 51

FILENAME: EC-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:17 PM

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 27 (25B) of 111

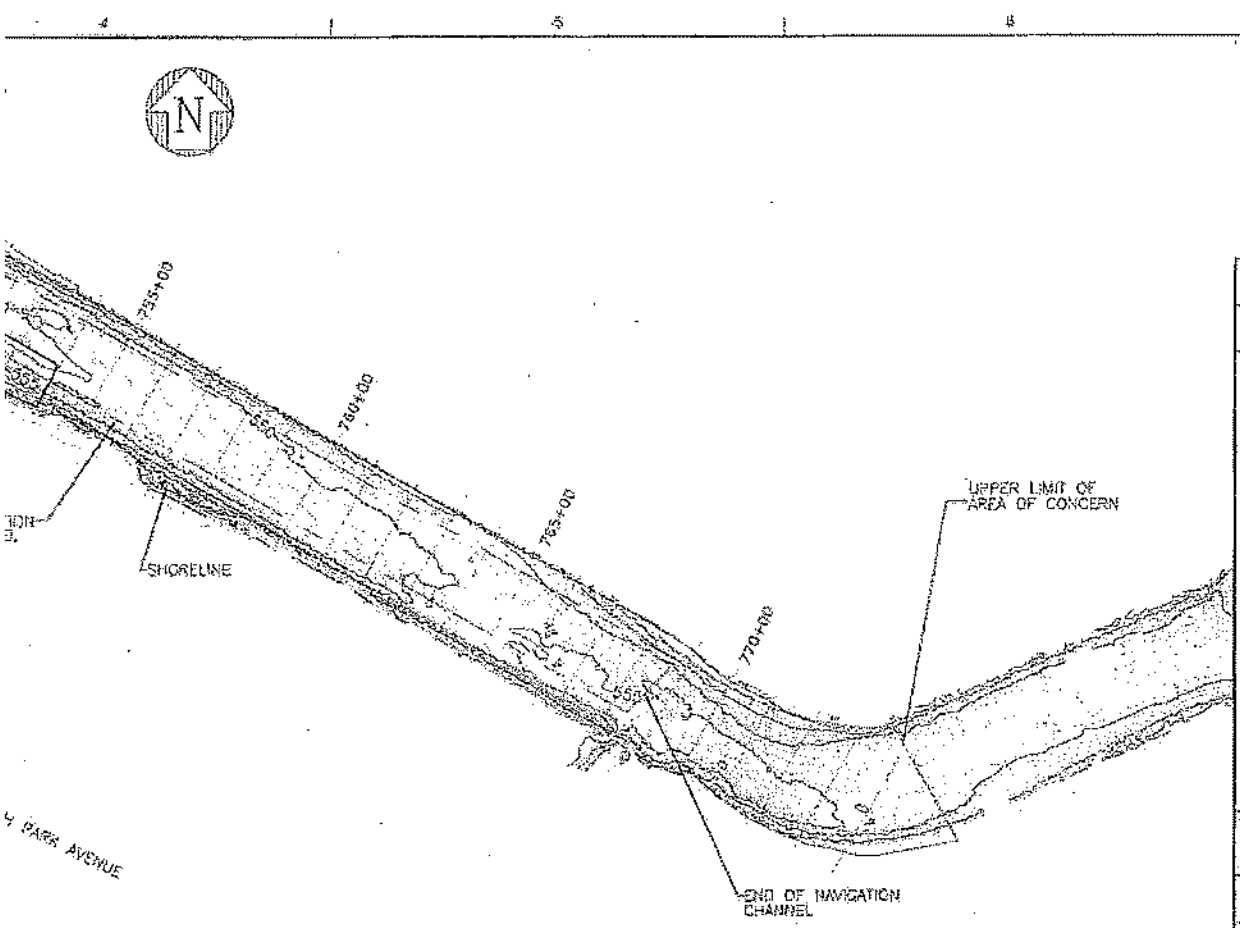
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 28 of 111





Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 29(28A) of 111

SCALE: 1" = 200'



NO.	DATE	REVISION	DR	CHK	APVD
F	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH	
E	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH	
D	10-5-12	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH	
C	12-2-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH	
B	3-7-11	REVISED FOR 30% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH	
A	2-16-11	ISSUED FOR 30% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH	

DESIGN M ALCOLF P.E. | DR K KRAJEWSKI | CHK M GILLINGS | APVD T HEINS P.E.

"I CERTIFY THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NEW YORK AND THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY SUPERVISION."

CH2MHILL®

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

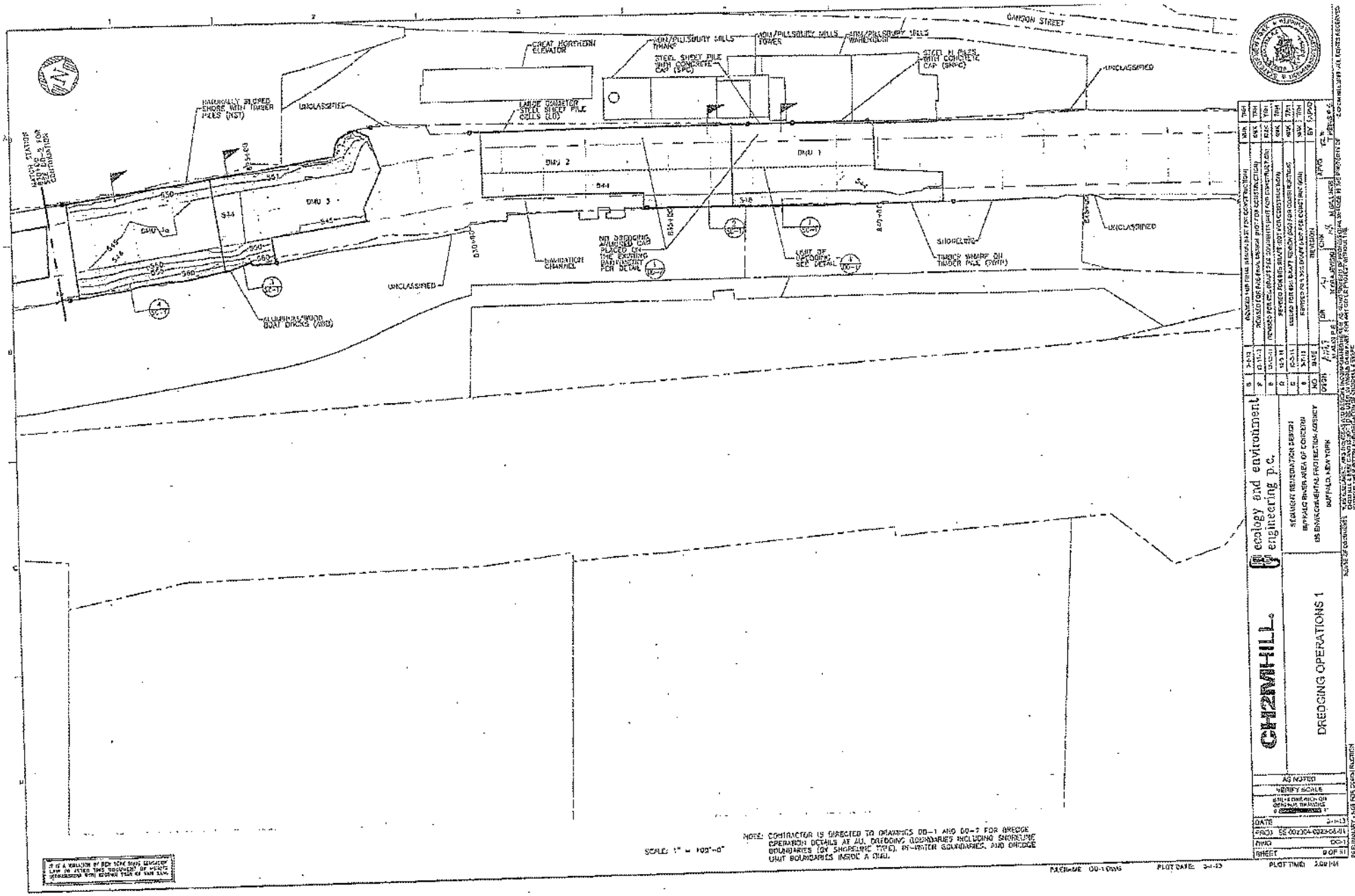
EXISTING CONDITIONS 4
(DREDGING)

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF [redacted] 1"

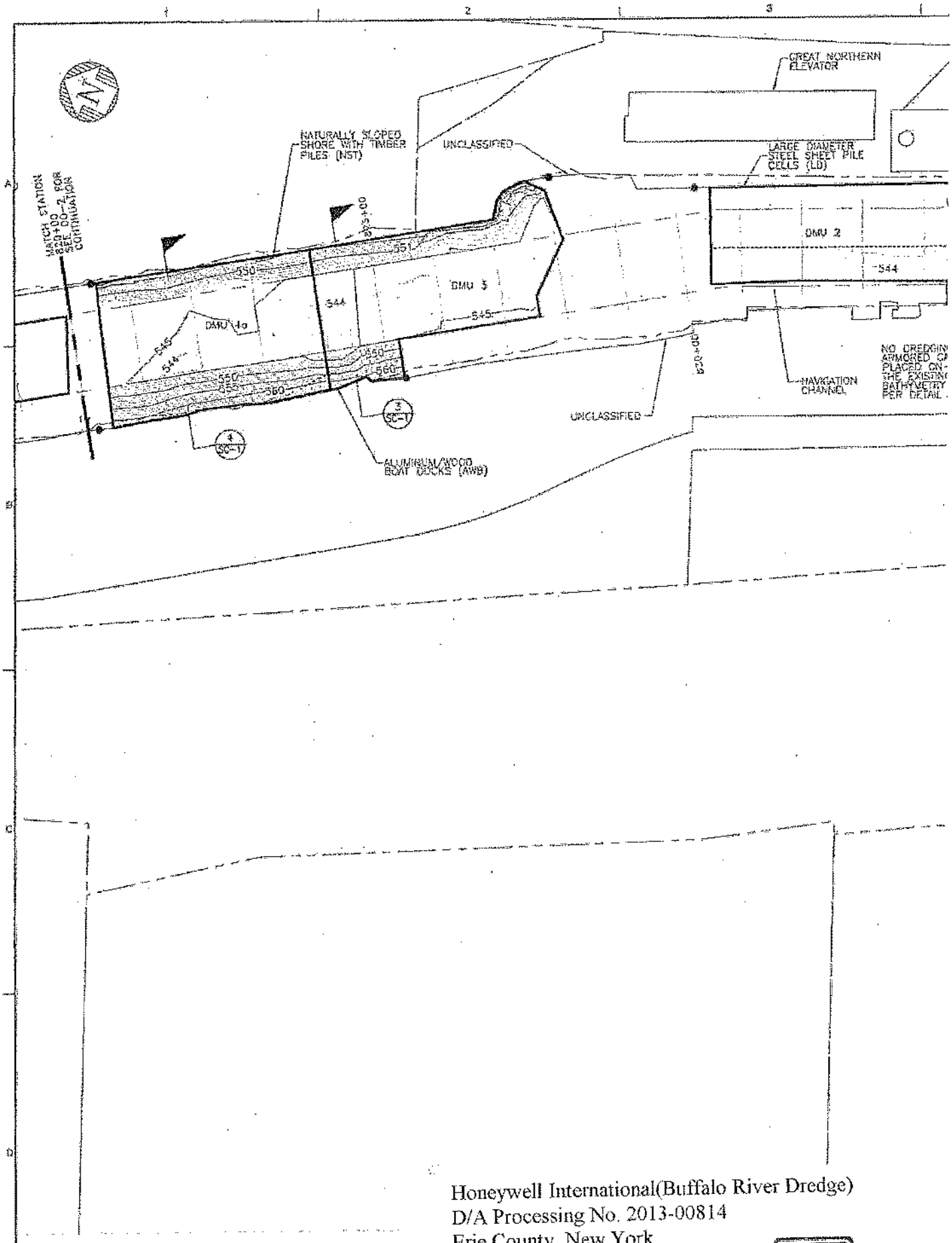
DATE 3-1-13
PROJ 662304-0923-08-01
DWG ED-4
SHEET 8 OF 91

FILENAME: ED-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:18 PM

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 30(28B) of 111

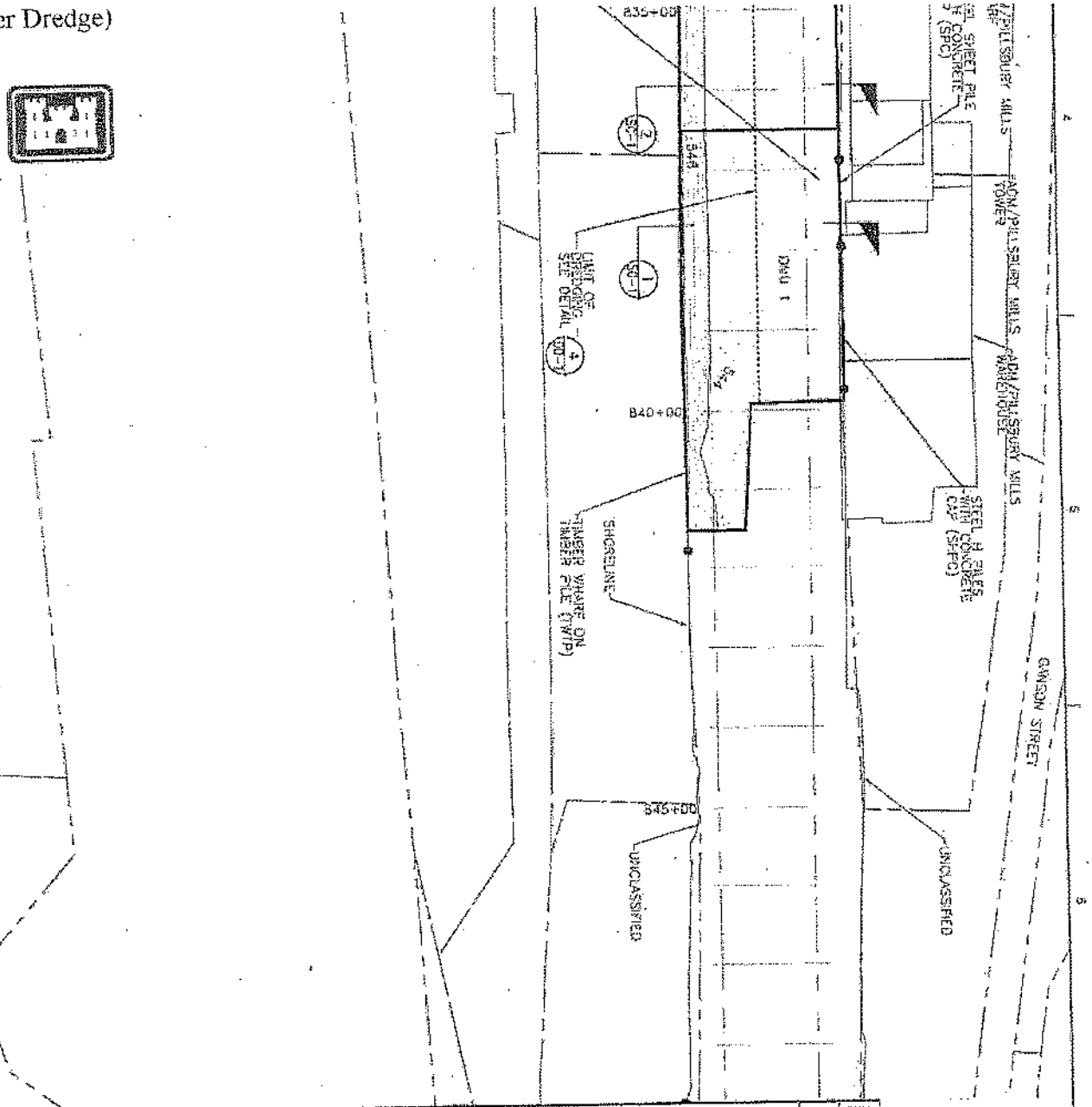


Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 31 of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 32(31A) of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 33(31B) of 111



NOTE: CONTRACTOR IS DIRECTED TO DRAWINGS DD-1 AND DD-2 FOR DREDGE OPERATION DETAILS AT ALL DREDGING BOUNDARIES INCLUDING SHORELINE BOUNDARIES (BY PRESSURE TYPE), IN-WATER BOUNDARIES, AND DREDGE LIMIT BOUNDARIES INSIDE A CHAN.

1" = 100'-0"

FILENAME: DD-1.DWG PLOT DATE: 3-4-13 PLOT TIME: 3:00 PM

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

DREDGING OPERATIONS 1

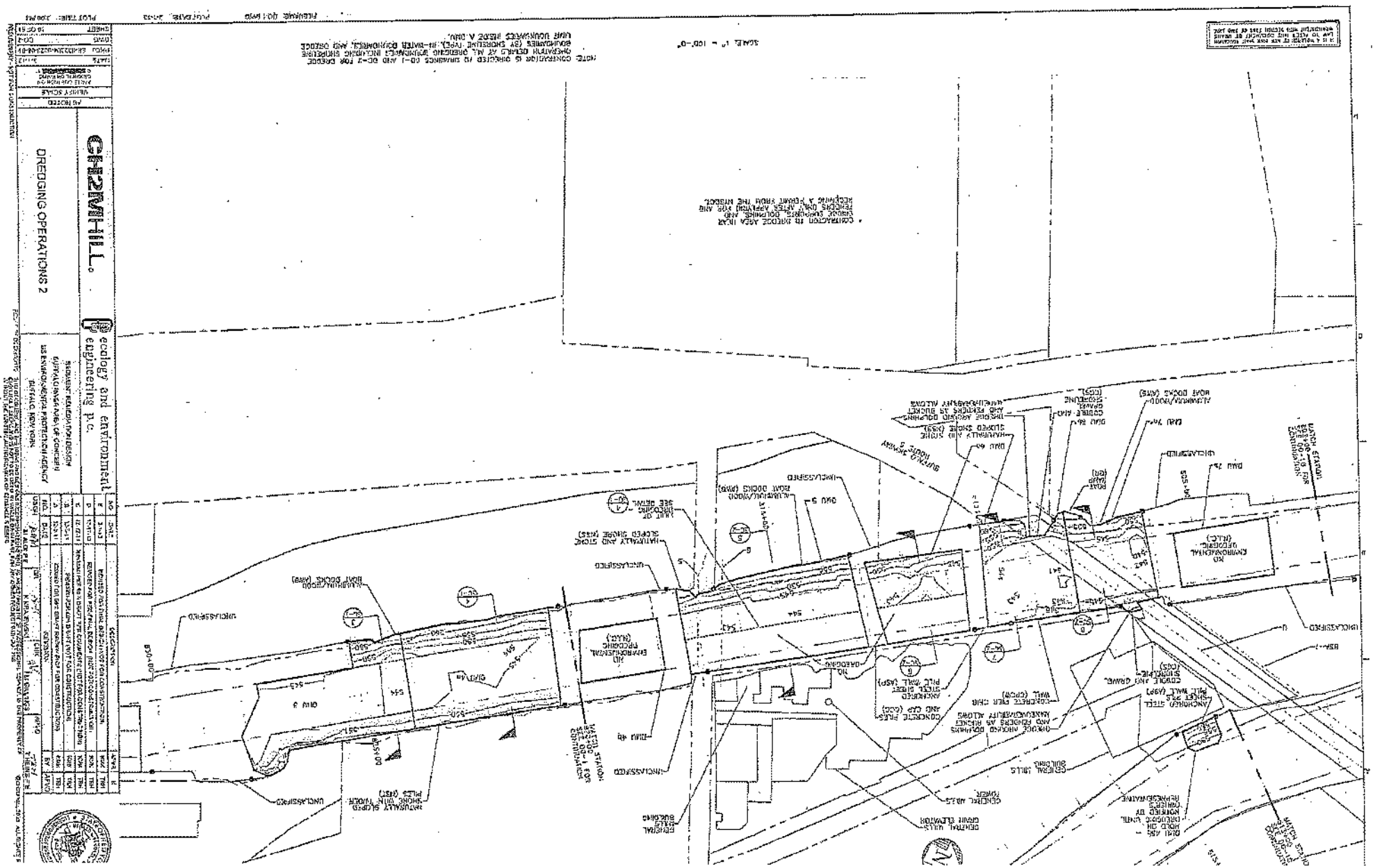
NO.	DATE	REVISION	BY	APVD
G	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
F	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
E	12-12-11	REVISED FOR 60% DRAFT PER COMMENTS (NOT FOR CONSTRUCTION)	KMK	TRH
D	12-5-11	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
C	12-2-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH
B	3-7-11	REVISED FOR 30% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH

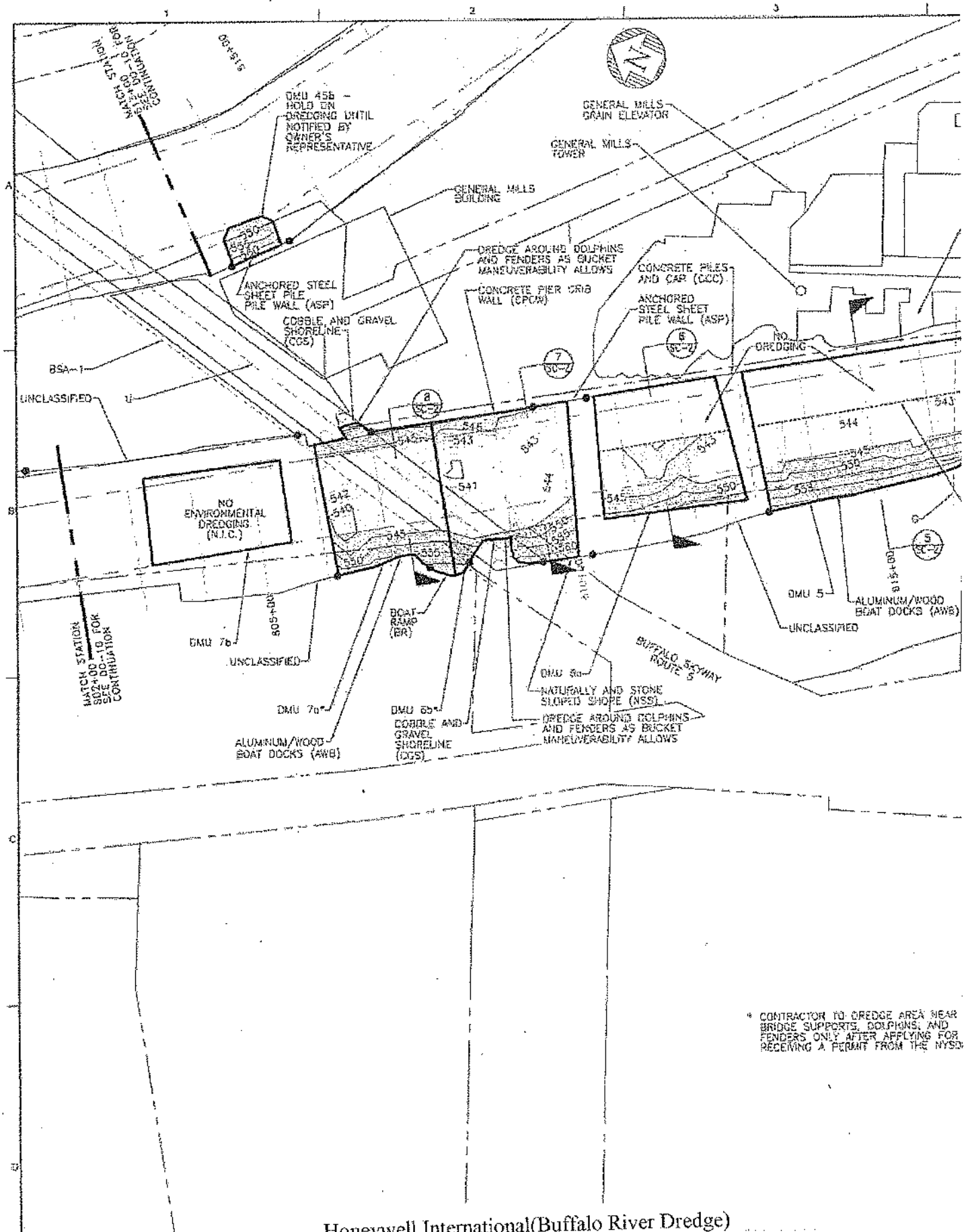
DSGN M ALOI P.E. DR K KRAJEWSKI CHK M GILLINGS APVD T HEINS P.E.

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ADJUST SCALES ACCORDINGLY
0 1"
DATE 3-1-13
PROJ EE-002594-0823-49-001
DWG DD-1
SHEET 9 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 34 of 111



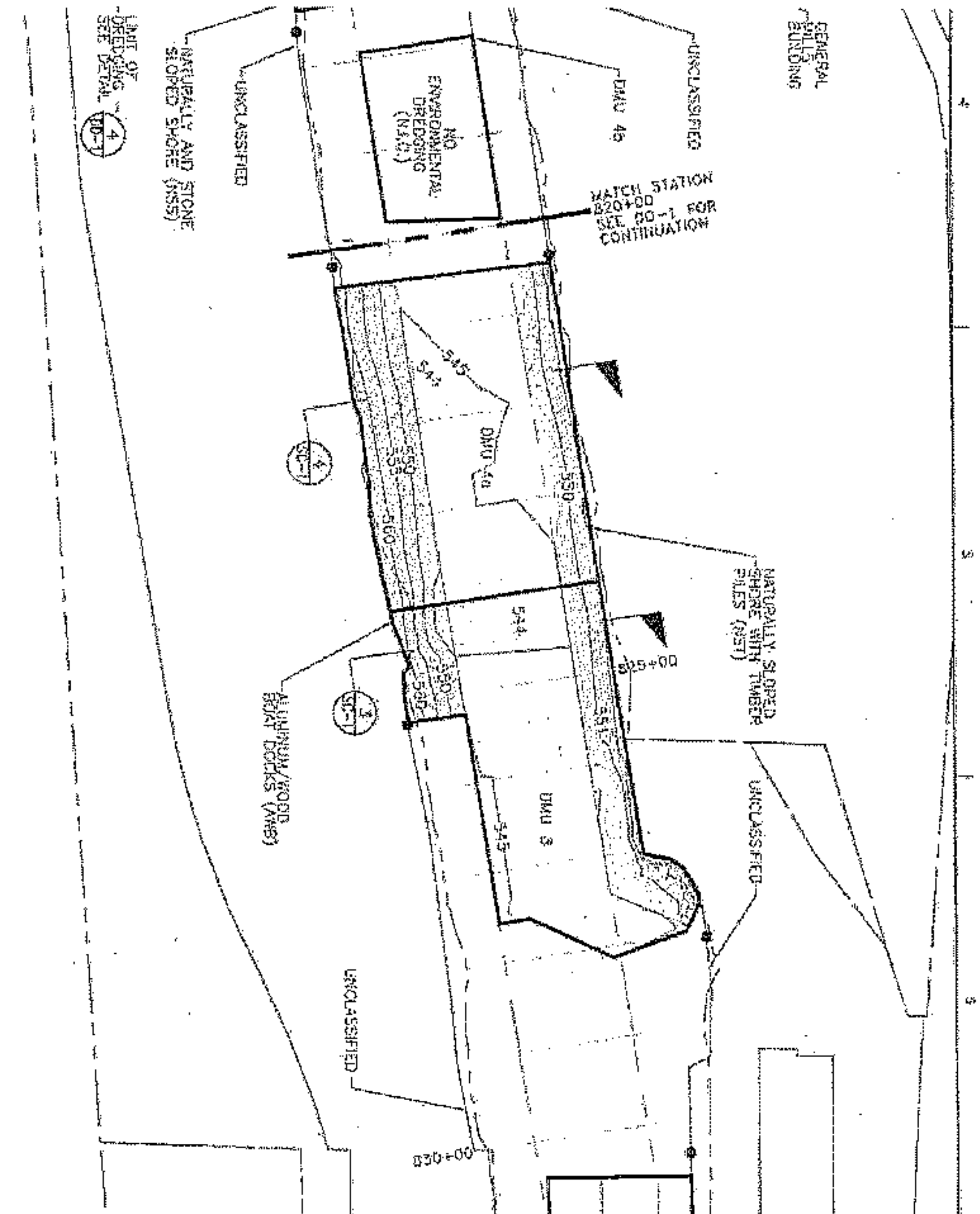


* CONTRACTOR TO DREDGE AREA NEAR BRIDGE SUPPORTS, DOLPHINS, AND FENDERS ONLY AFTER APPLYING FOR, RECEIVING A PERMIT FROM THE NYSD

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 35(34A) of 111

SCALE: 1" =

D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 36(34B) of 111



NOTE: CONTRACTOR IS DIRECTED TO DRAWINGS DD-1 AND DD-2 FOR DREDGE OPERATION DETAILS AT ALL DREDGING BOUNDARIES INCLUDING SHORELINE BOUNDARIES (BY SHORELINE TYPE), IN-WATER BOUNDARIES, AND DREDGE LIMIT BOUNDARIES INSIDE A DMU.

FILENAME: DO-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM

NO.	DATE	DESCRIPTION	APVR	R
E	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
D	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
C	12-12-11	REVISED PER 90% DRAFT PER COMMENTS (NOT FOR CONSTRUCTION)	KMK	TRH
B	12-5-11	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
A	12-2-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH
NO.	DATE	REVISION	BY	APVD

DSGN M ALOI P.E. | DR K KRAJEWSKI | CHK M GILLINGS | APVD T HEINS P.E.

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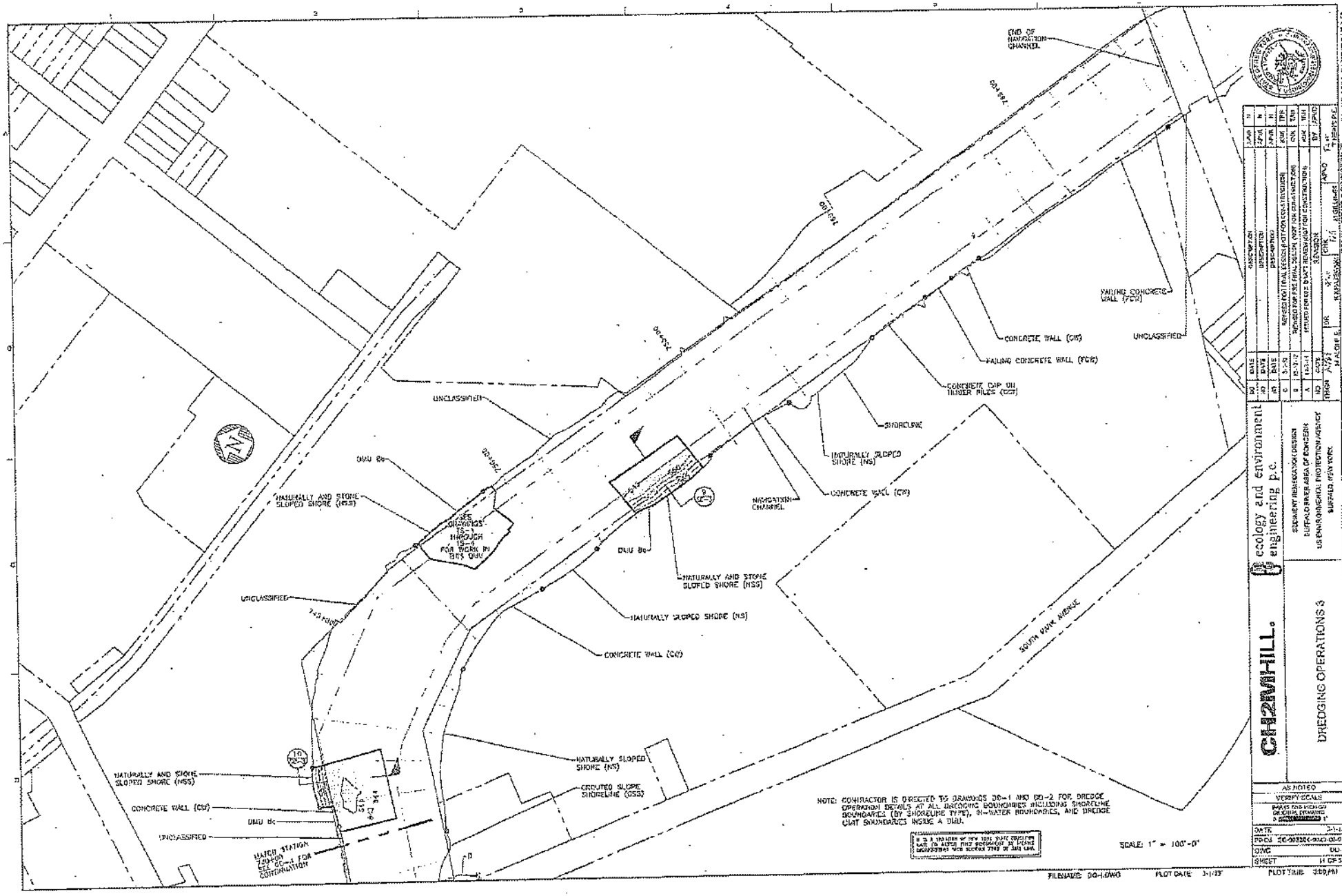
SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

DREDGING OPERATIONS 2

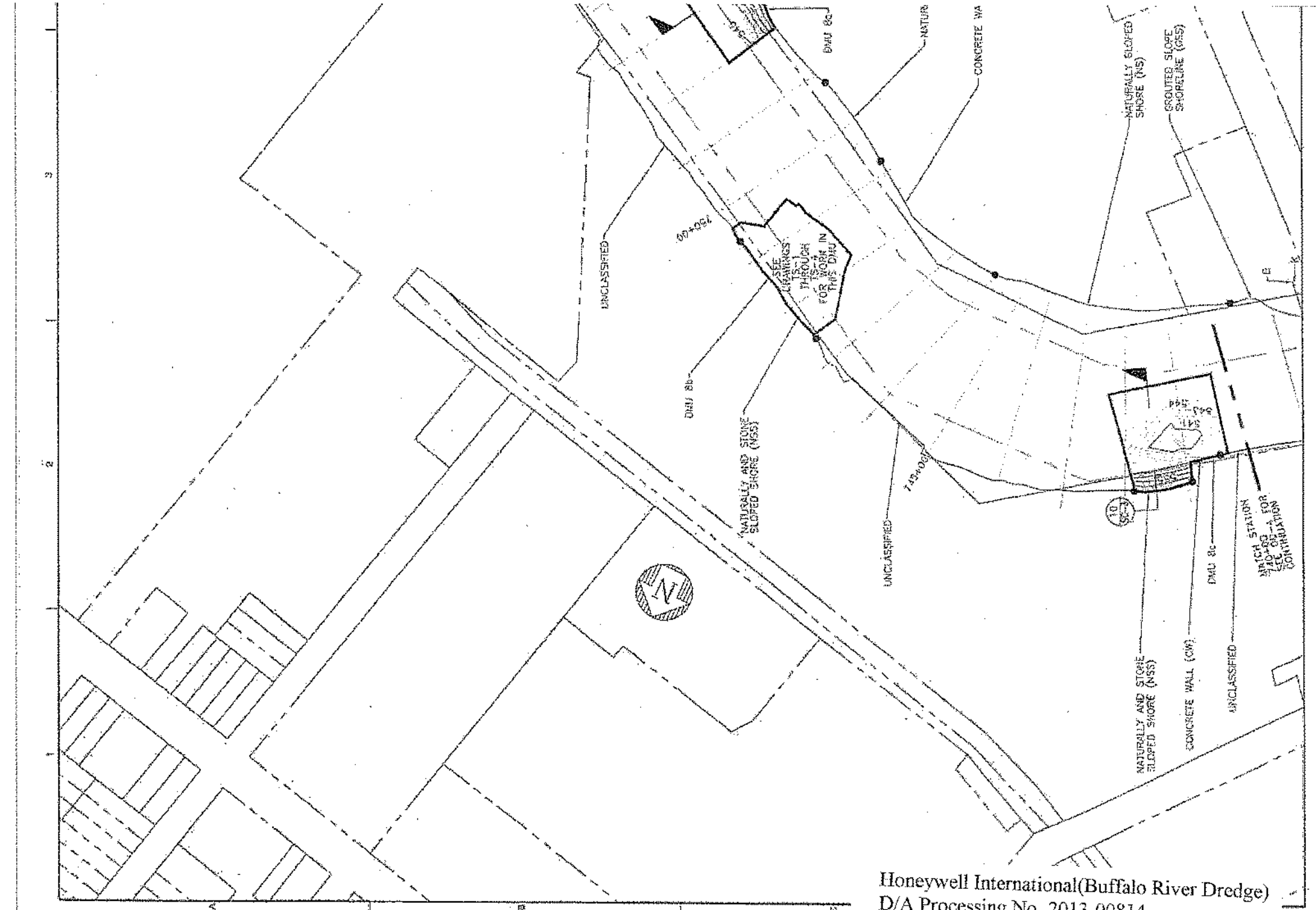
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE 3-1-13
PROJ EE-082394-0023-08-01
DWG DO-2
SHEET 10 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

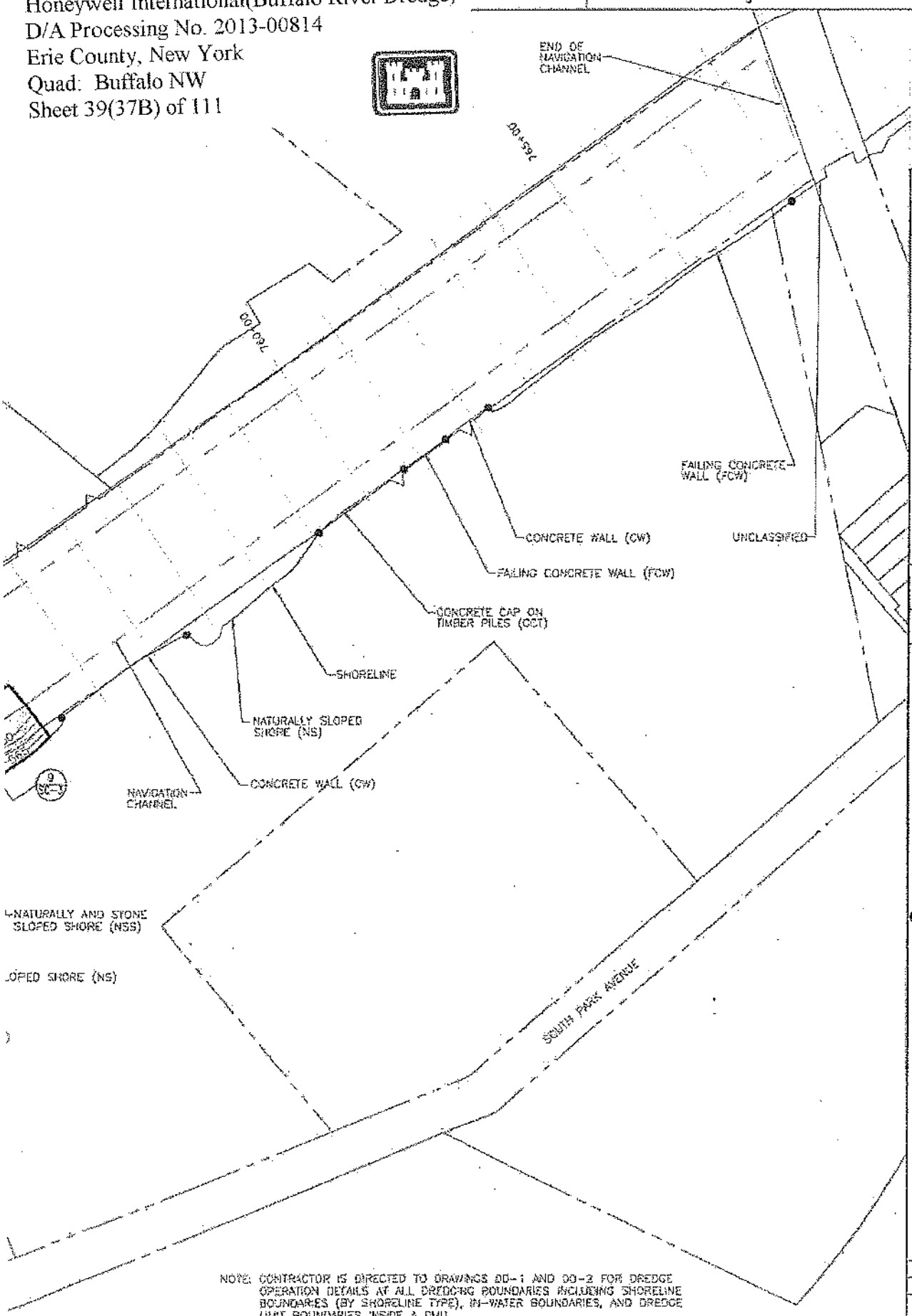


Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 37 of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 38(37A) of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 39(37B) of 111



NOTE: CONTRACTOR IS DIRECTED TO DRAWINGS DD-1 AND DD-2 FOR DREDGE OPERATION DETAILS AT ALL DREDGING BOUNDARIES INCLUDING SHORELINE BOUNDARIES (BY SHORELINE TYPE), IN-WATER BOUNDARIES, AND DREDGE UNIT BOUNDARIES INSIDE A DMU.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

SCALE: 1" = 100'-0"

NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
C	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
B	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
A	12-6-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK
NO.	DATE	REVISION	BY
DESIGN		DR K KRAJEWSKI CHK M GILLINGS APVD T HEINS P.E.	

ecology and environment engineering p.c.

CH2MHILL®

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

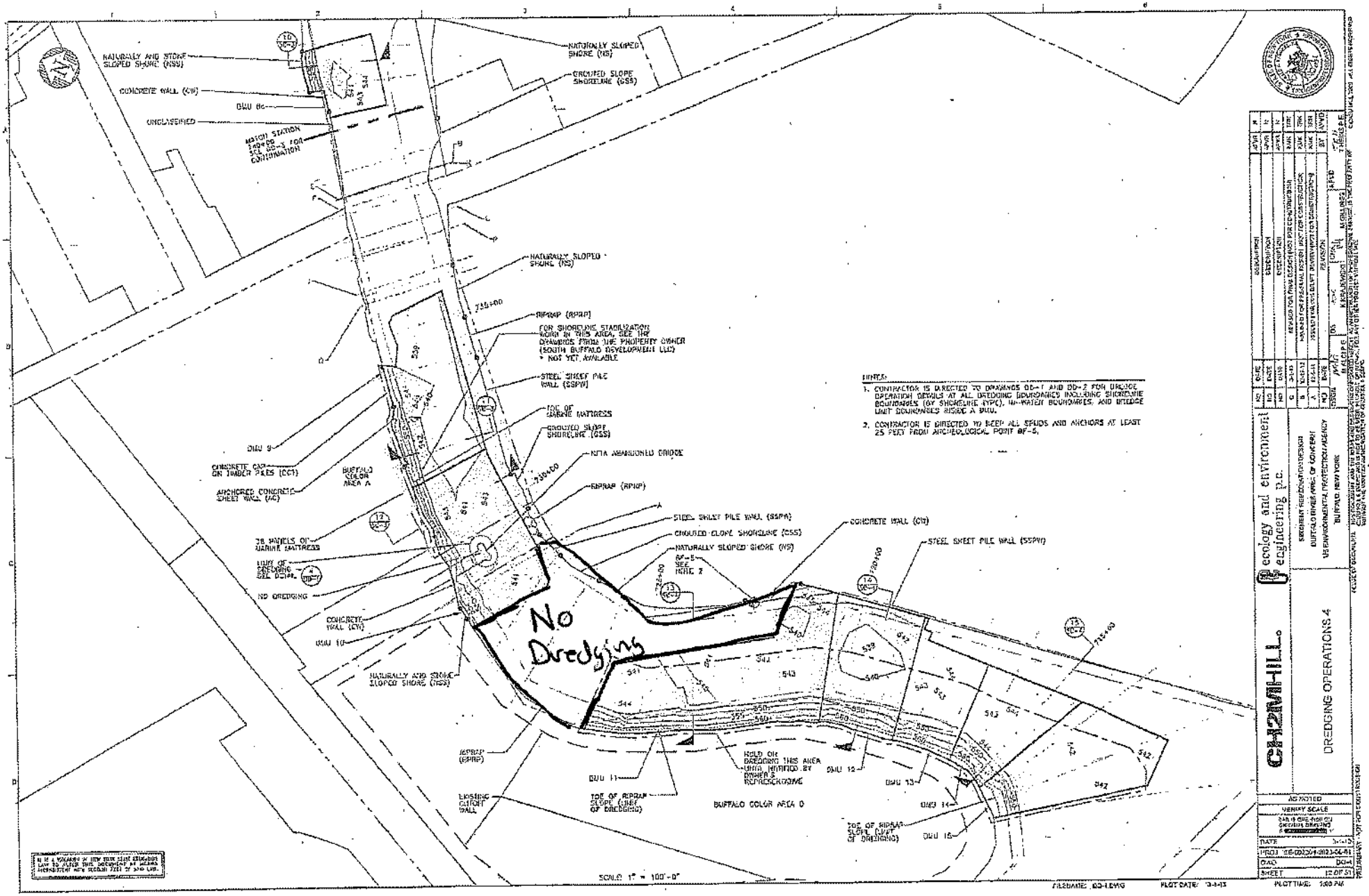
DREDGING OPERATIONS 3

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ADJUST SCALES ACCORDINGLY

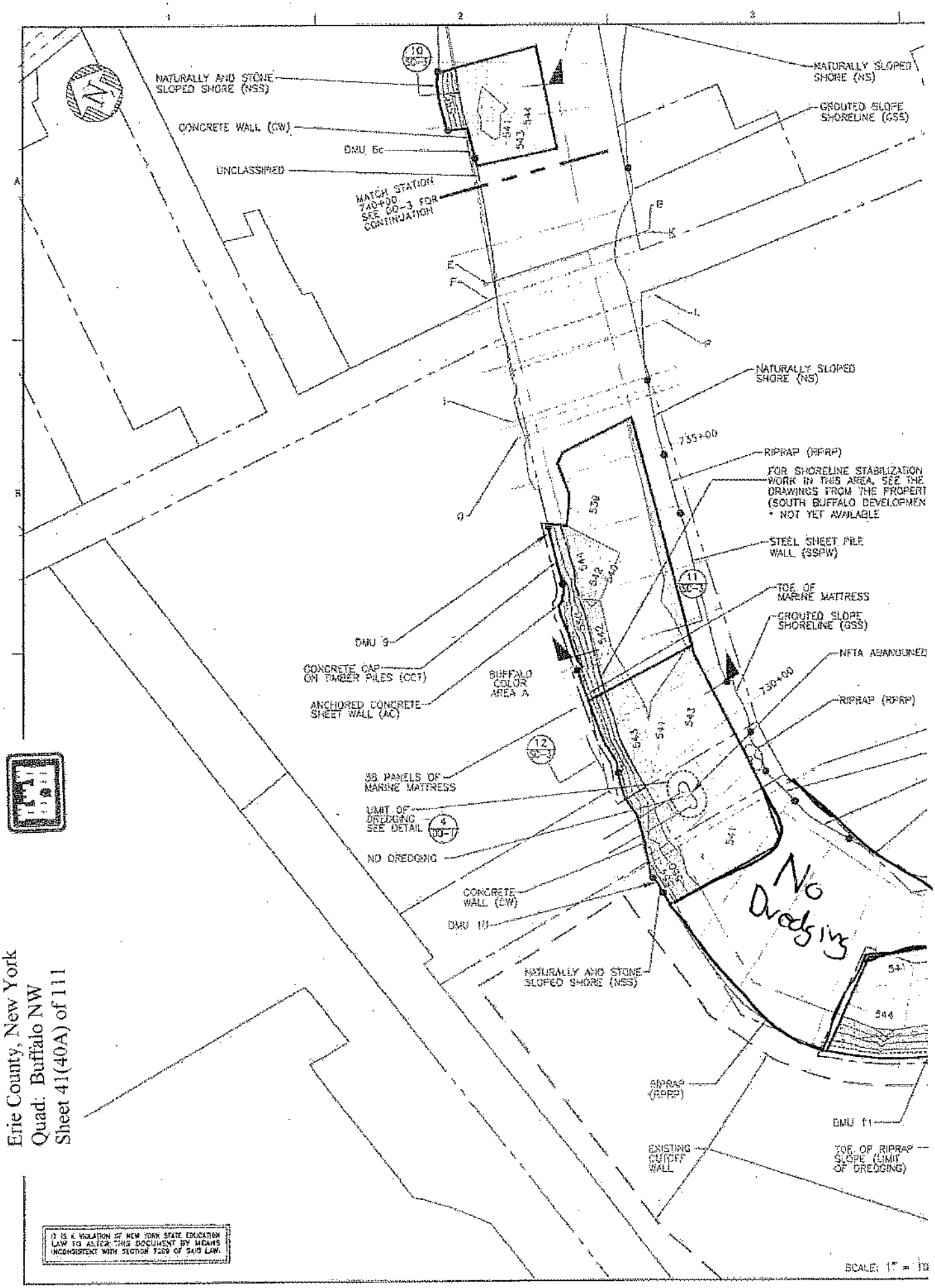
DATE 3-1-13
PROJ EE-002304-0023-08-01
DWG DD-3
SHEET 11 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME: DD-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 40 of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 41(40A) of 111

Buffalo River Area of Concern (Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 42(40B) of 111

NOTES:

1. CONTRACTOR IS DIRECTED TO DRAWINGS DD-1 AND DD-2 FOR DREDGE OPERATION DETAILS AT ALL DREDGING BOUNDARIES INCLUDING SHORELINE BOUNDARIES (BY SHORELINE TYPE), IN-WATER BOUNDARIES, AND DREDGE LIMIT BOUNDARIES INSIDE A DMU.
2. CONTRACTOR IS DIRECTED TO KEEP ALL SPUDS AND ANCHORS AT LEAST 25 FEET FROM ARCHEOLOGICAL POINT BF-5.

EET PILE WALL (SSPW)
SLOPE SHORELINE (OSS)
Y SLOPED SHORE (HS)
CONCRETE WALL (CW)
STEEL SHEET PILE WALL (SSPW)
720+00
715+00
HOLD ON DREDGING THIS AREA UNTIL NOTIFIED BY OWNER'S REPRESENTATIVE
DMU 12
DMU 13
DMU 14
DMU 15
TOE OF RIPRAP SLOPE (LIMIT OF DREDGING)
BUFFALO COLOR AREA D

NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
C	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
B	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
A	10-5-12	REVISED PER COE DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK
NO	DATE	REVISION	BY
ORIGIN		M ALOI P.E. 072 K KRAJEWSKI M GILLINGS	APVD

M GILLINGS THEINS P.E.

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

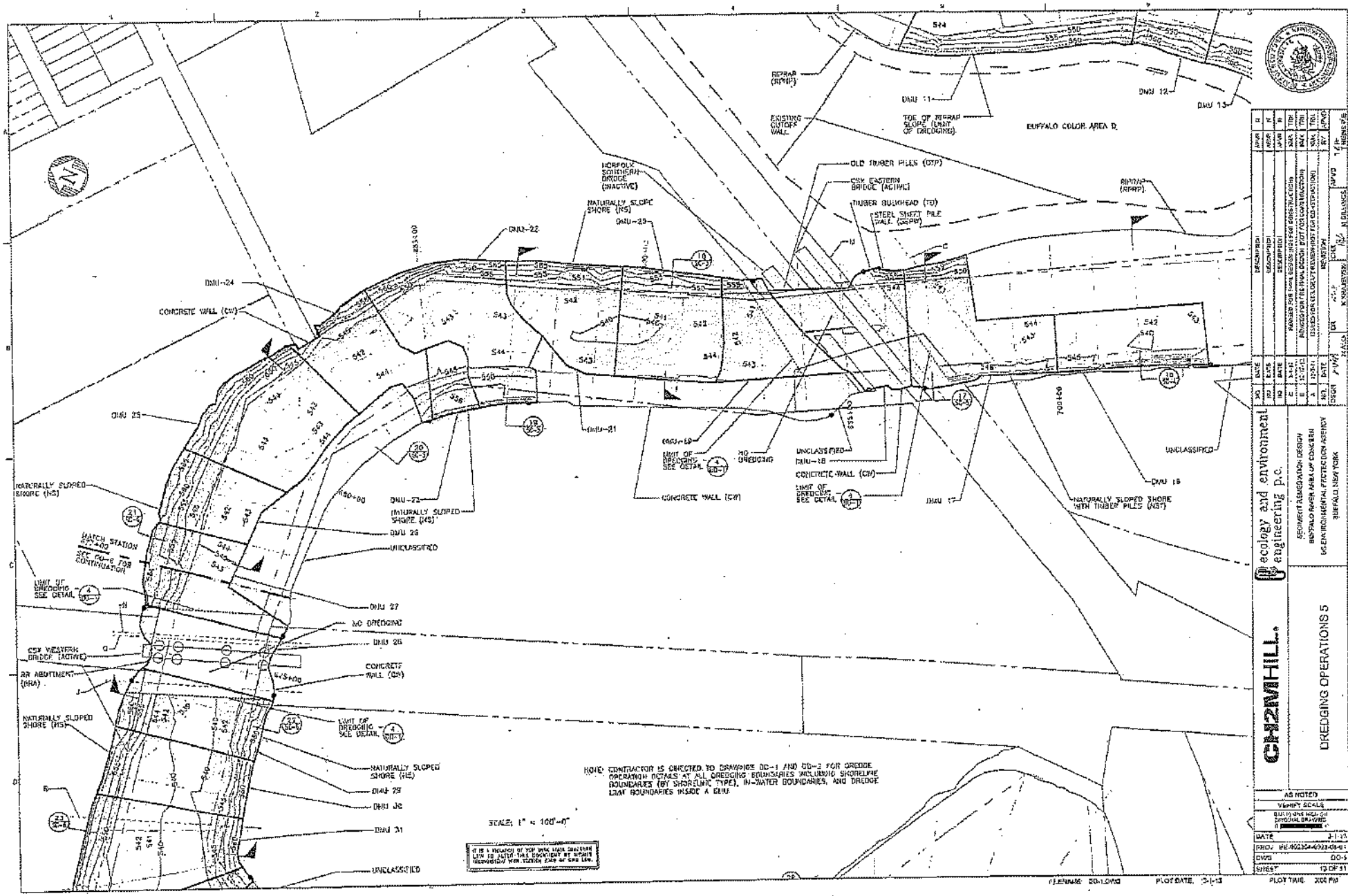
DREDGING OPERATIONS 4

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DATE 3-1-13
PROJ EE-002304-0023-08-01
DWG DD-4
SHEET 12 OF 51

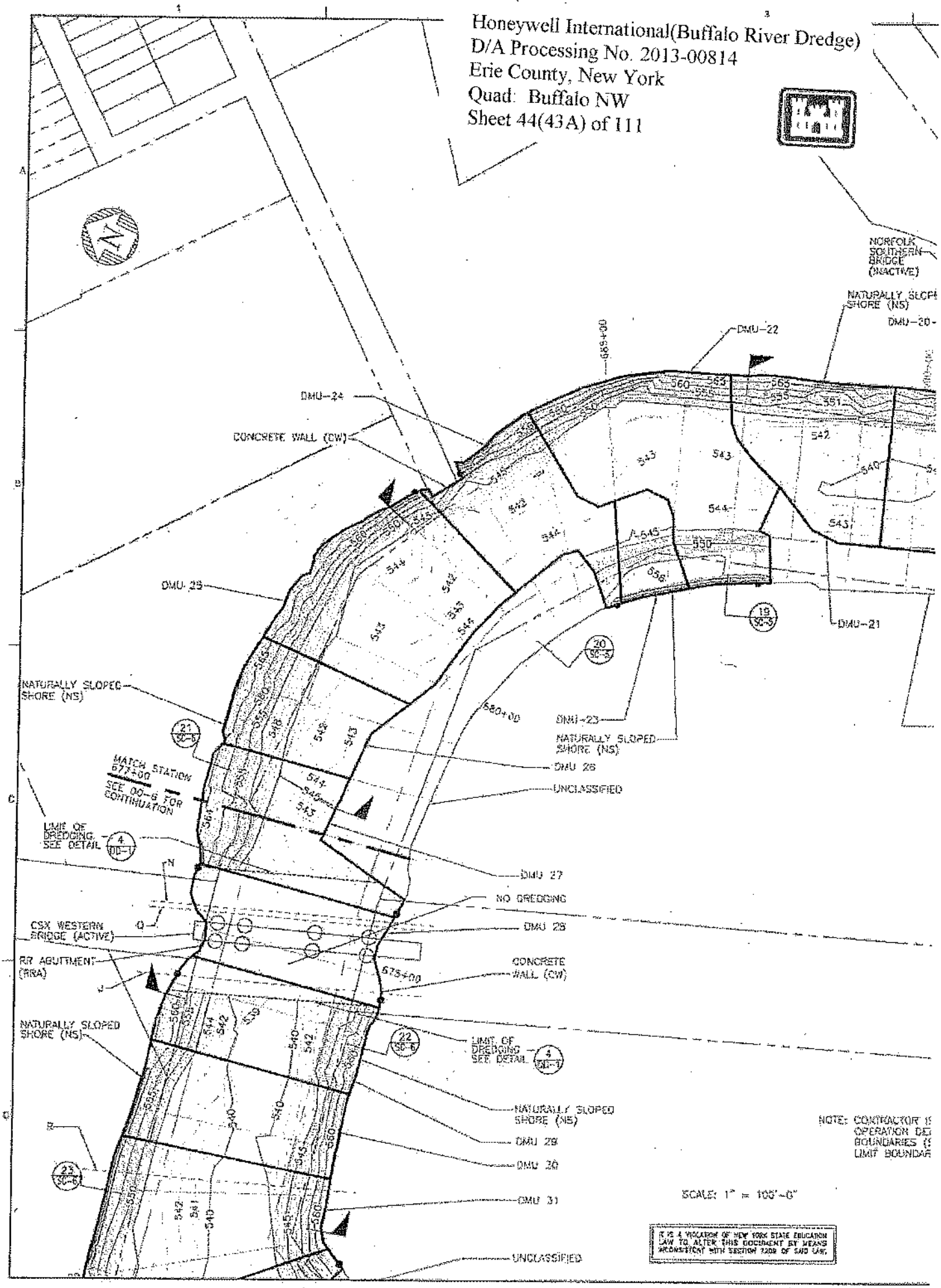
PRELIMINARY - NOT FOR CONSTRUCTION

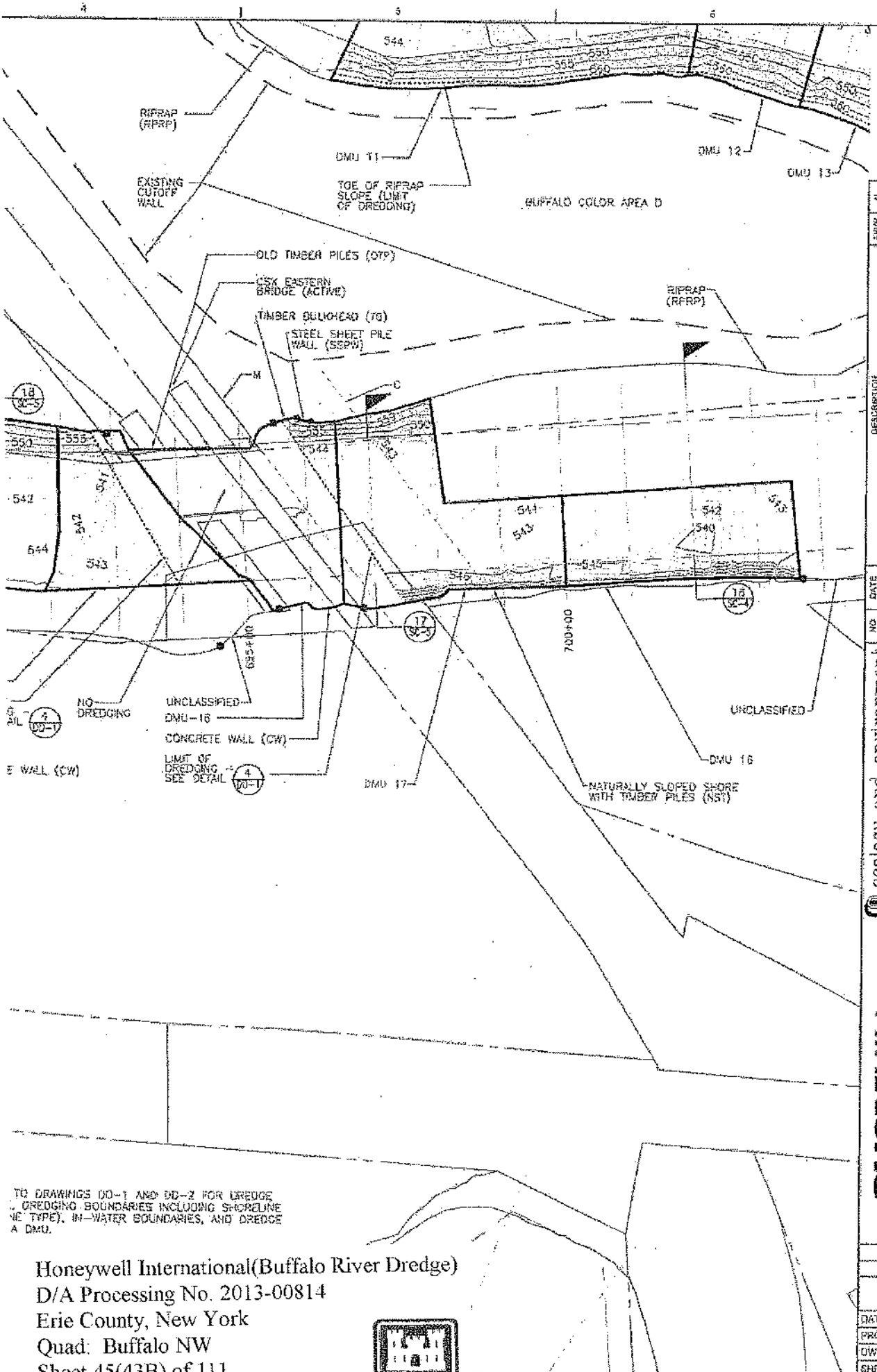
FILENAME: DD-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 43 of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 44(43A) of 111





TO DRAWINGS DO-1 AND DO-2 FOR DREDGE
.. DREDGING BOUNDARIES INCLUDING SHORELINE
NE TYPE), IN-WATER BOUNDARIES, AND DREDGE
A DMU.

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 45(43B) of 111

NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
5	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
4	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
3	12-6-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK
NO.	DATE	REVISION	BY
DSGN		DR CHK APVD	
		M KRAJEWSKI M GILLINGS	

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

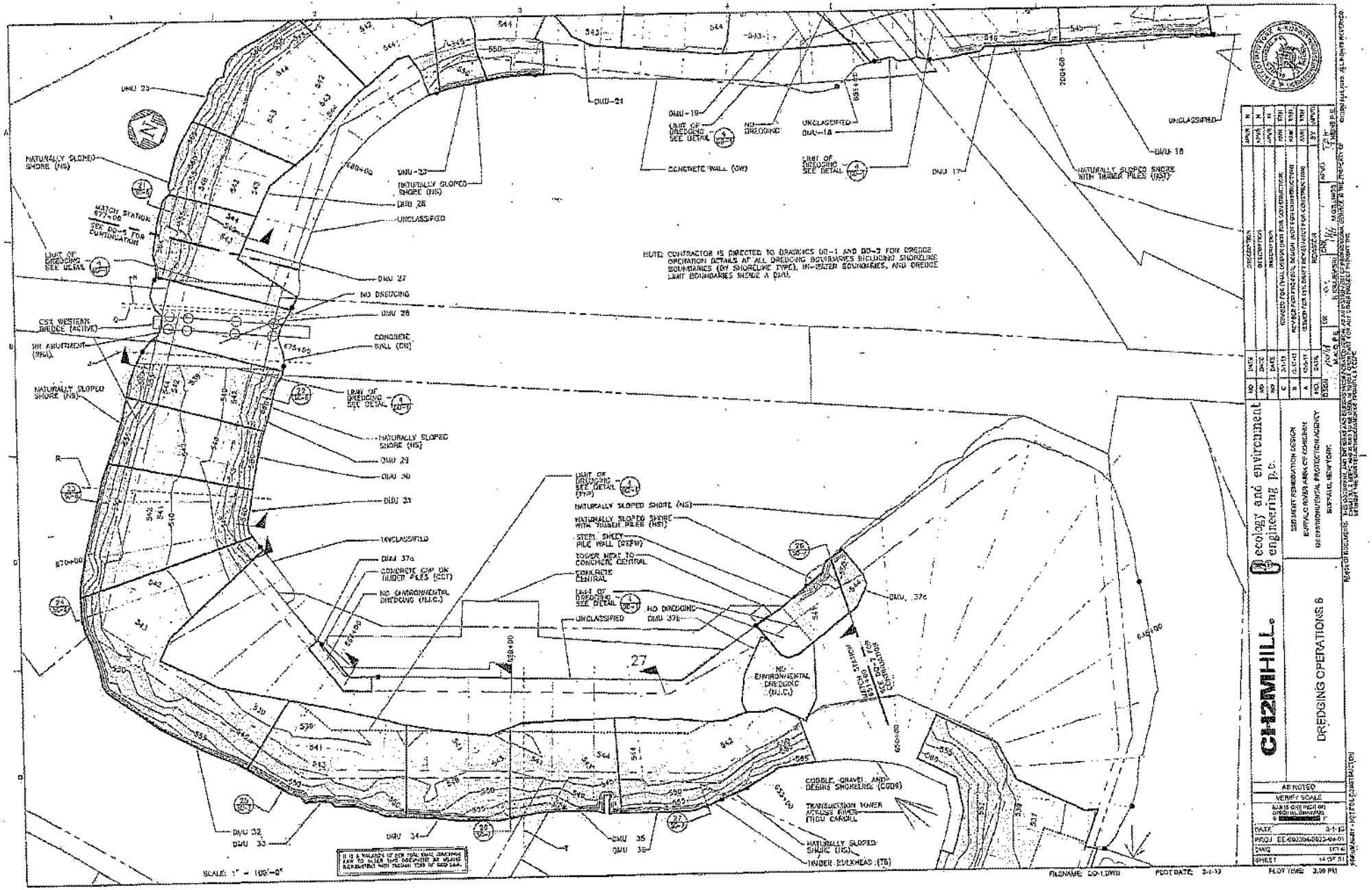
DREDGING OPERATIONS 5

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

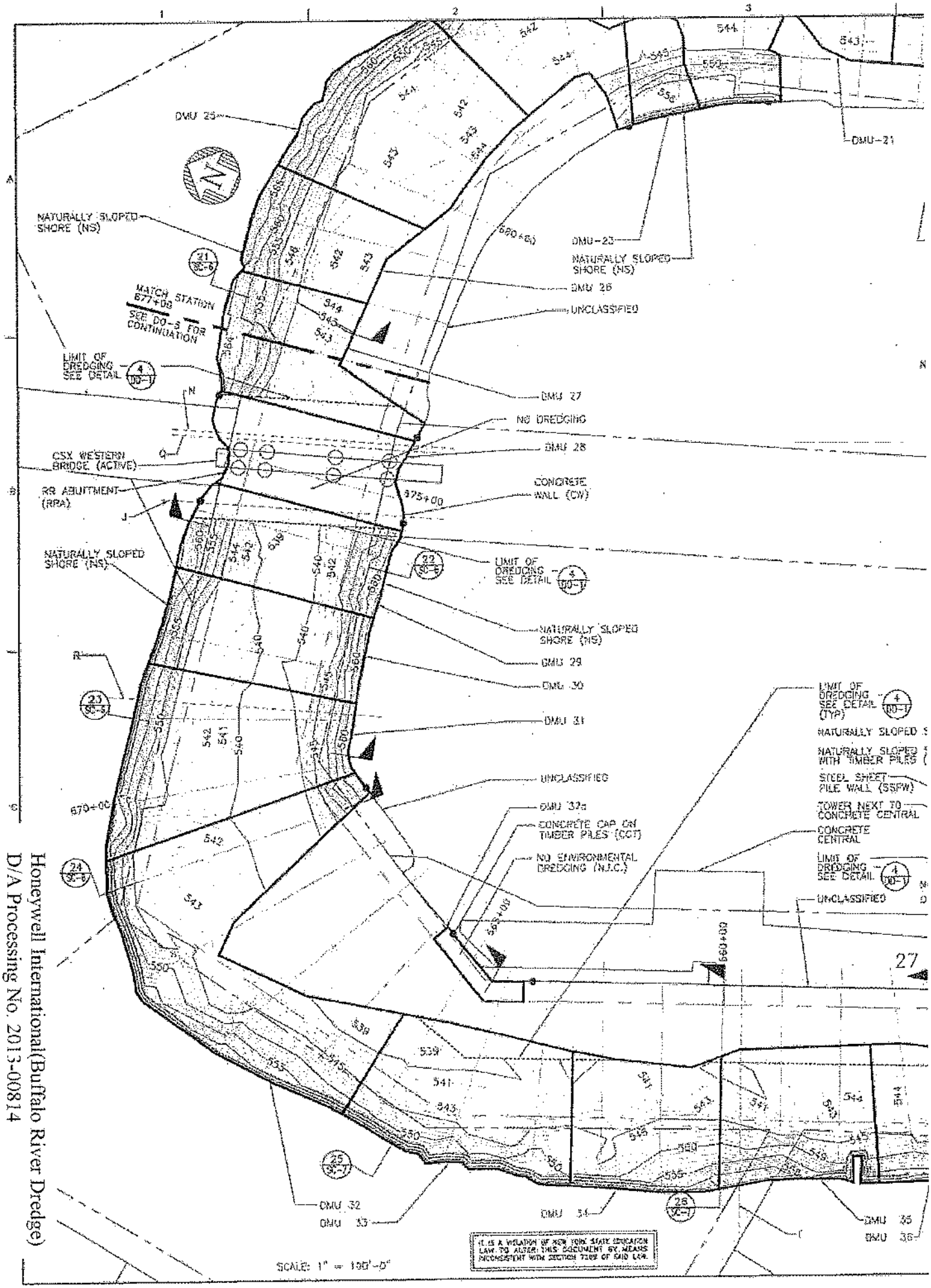
DATE 3-1-13
PROJ RE-092304-0029-08-01
DWG DO-5
SHEET 13 OF 51

FILENAME: DO-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM

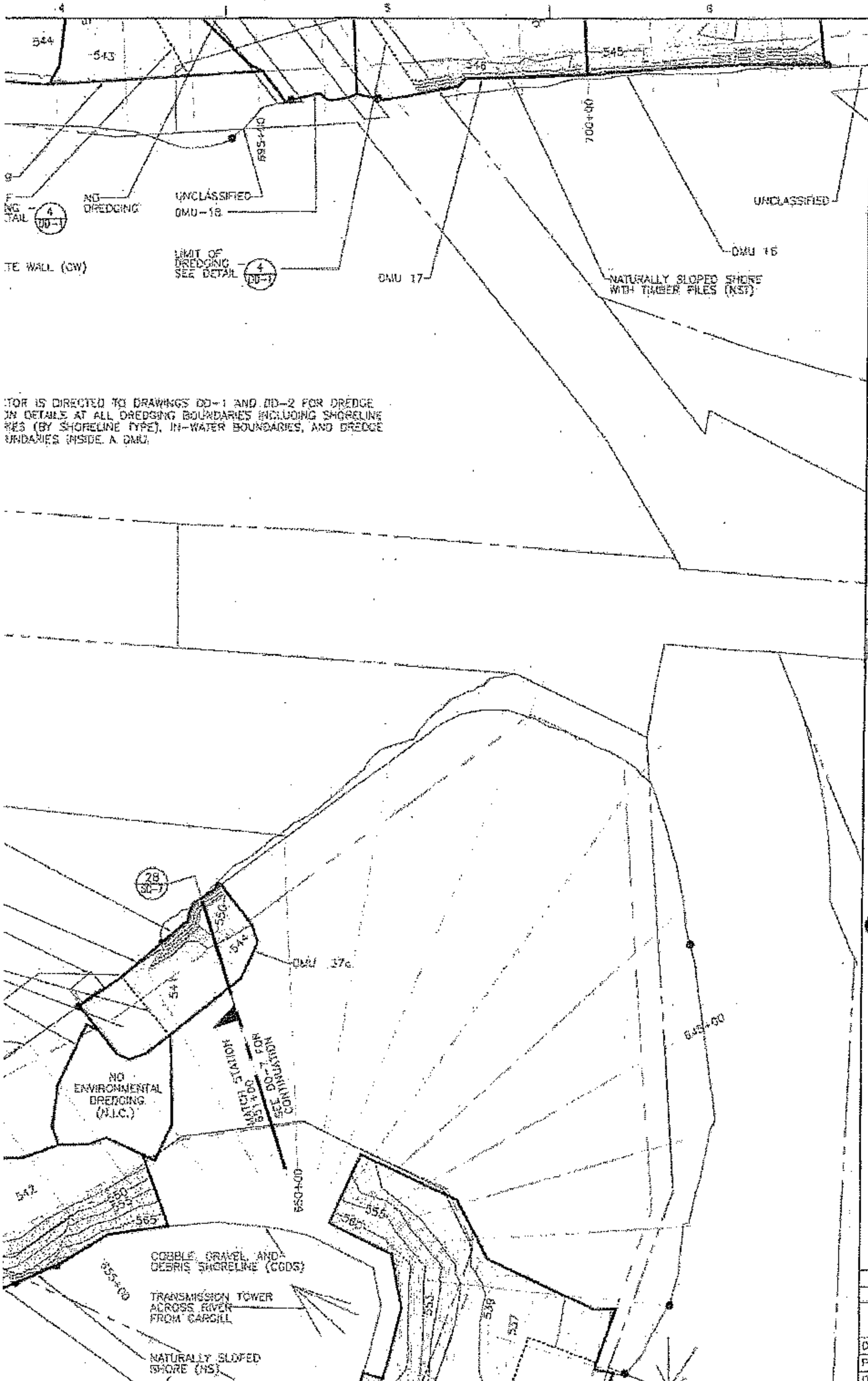
PRELIMINARY - NOT FOR CONSTRUCTION



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 46 of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 47(46A) of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 48(46B) of 111

NO.	DATE	DESCRIPTION
C	3-1-13	REVISED FOR
B	12-17-12	REVISED FOR
A	12-5-11	ISSUED FOR

DSGN M. ALOI P.E. DR

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

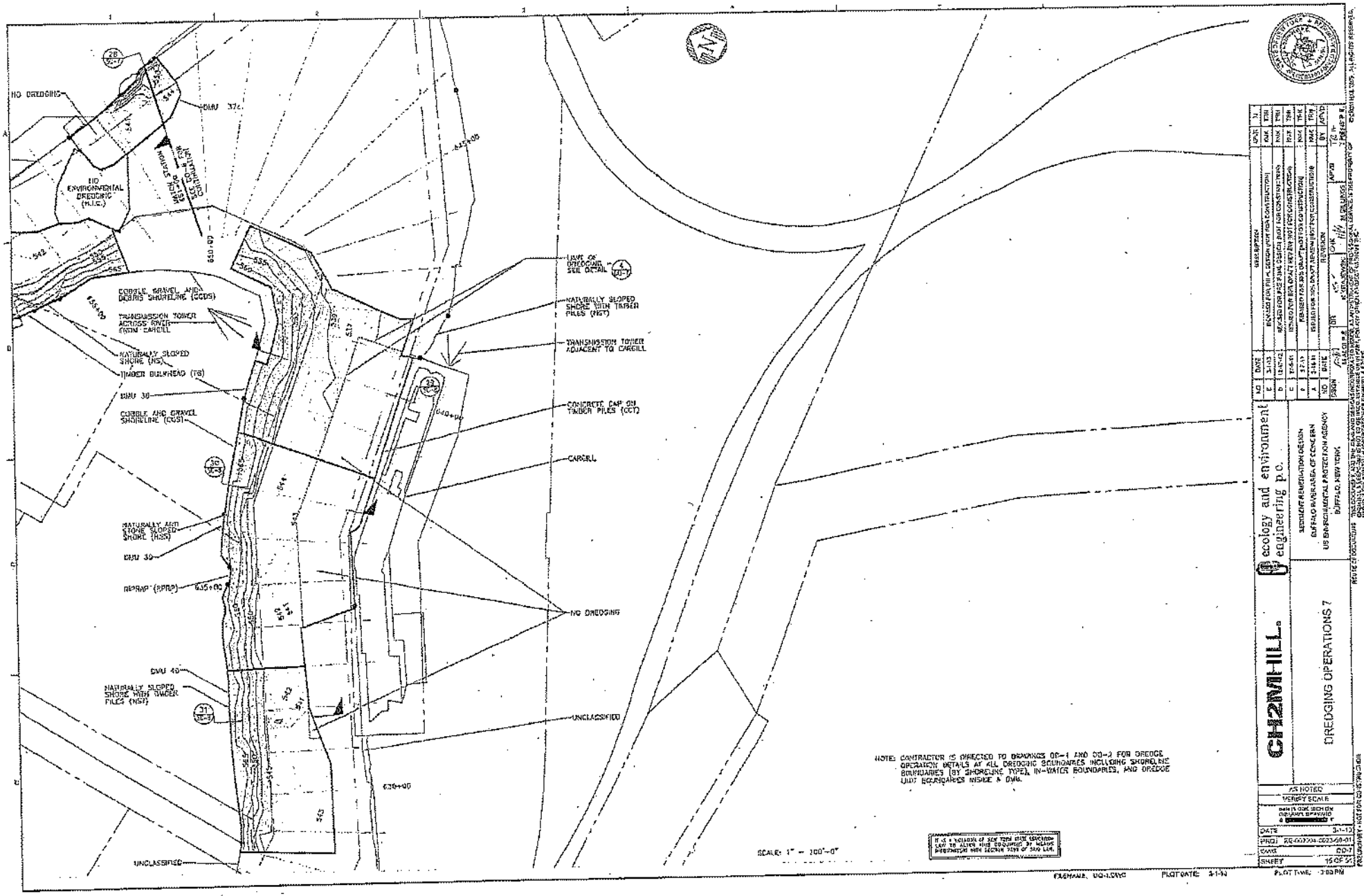
DREDGING OPERATIONS 6

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE 3-1-13
PROJ EE-002504-0023-08-01
DWG. DO-6
SHEET 14 OF 51

FILENAME: DO-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM

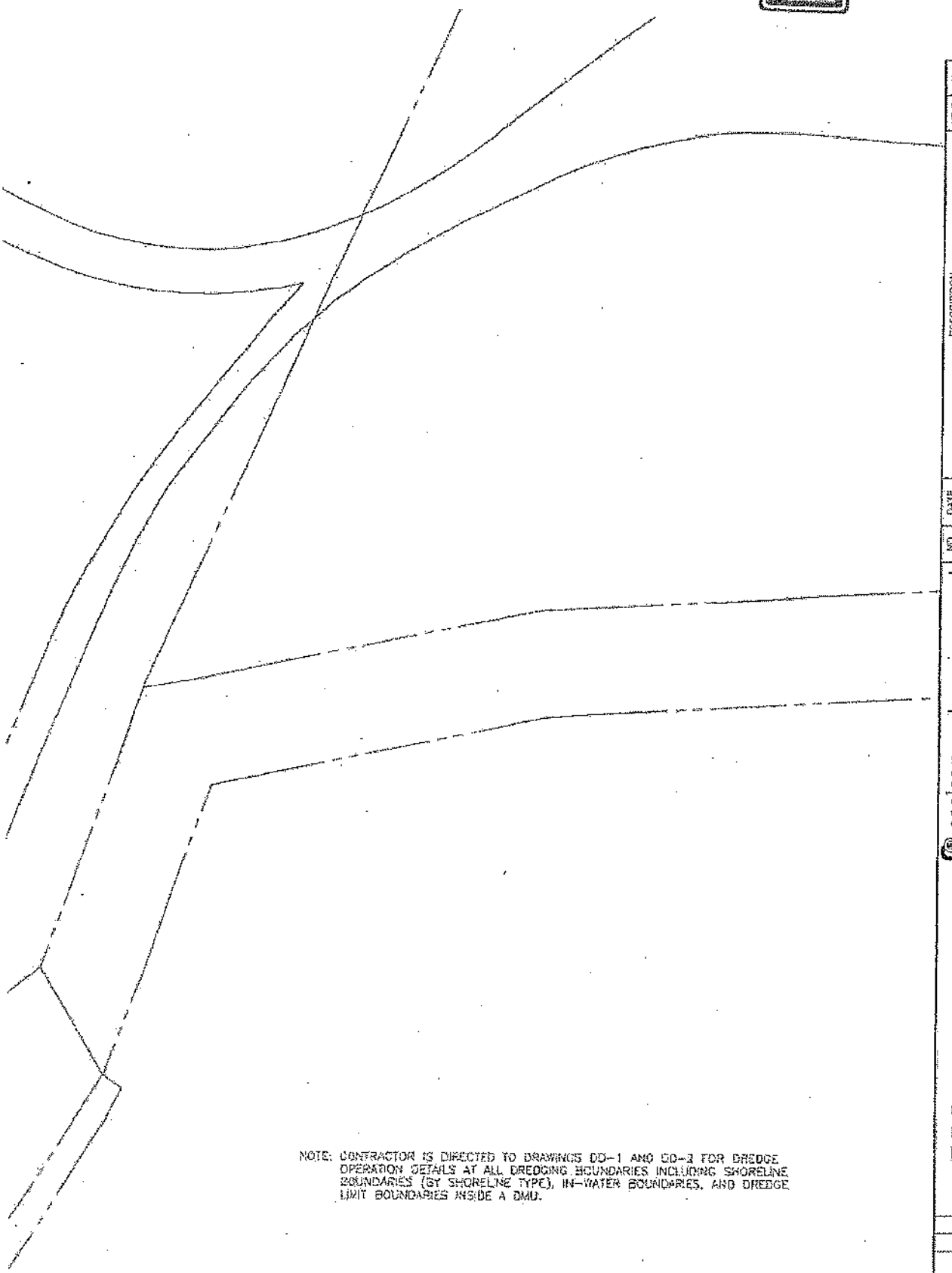
PRELIMINARY - NOT FOR CONSTRUCTION



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 49 of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 51(49B) of 111



NOTE: CONTRACTOR IS DIRECTED TO DRAWINGS DD-1 AND DD-2 FOR DREDGE OPERATION DETAILS AT ALL DREDGING BOUNDARIES INCLUDING SHORELINE BOUNDARIES (BY SHORELINE TYPE), IN-WATER BOUNDARIES, AND DREDGE LIMIT BOUNDARIES INSIDE A DMU.

SCALE: 1" = 100'-0"

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

NO	DATE	DESCRIPTION	APVR
E	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
D	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
C	12-5-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK
B	3-7-11	REVISED FOR 30% DRAFT (NOT FOR CONSTRUCTION)	KMK
A	2-16-11	ISSUED FOR 10% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK
NO.	DATE	REVISION	BY

DSGN: M ALOI P.E. | DR: K KRAJEWSKI | CHK: M GILLIGAN | APVD: T HERRS P.E.

CH2MHILL
ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

DREDGING OPERATIONS 7

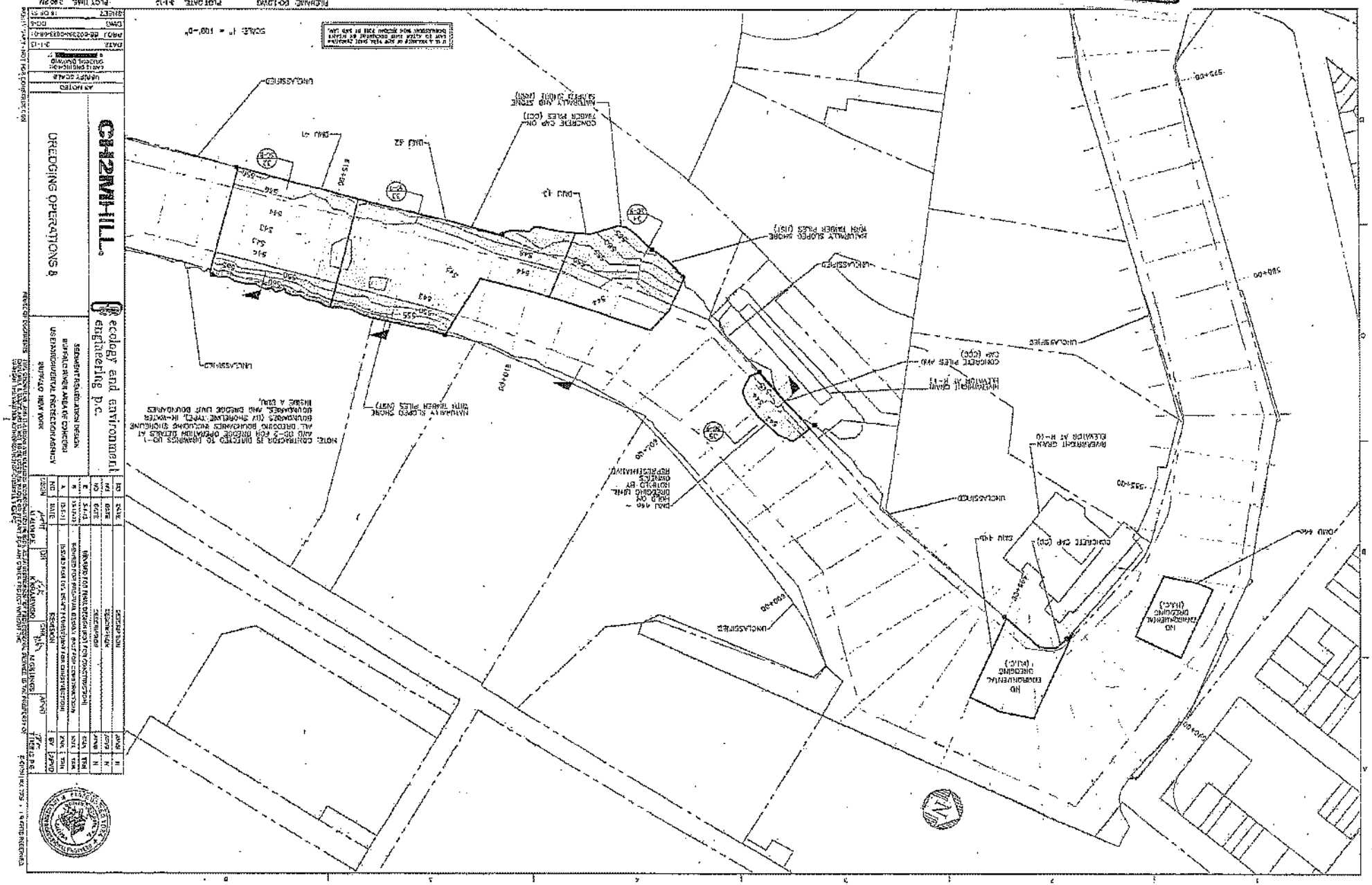
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DATE 3-1-13
PROJ EE-307364-0023-08-01
DWG DD-7
SHEET 15 OF 51

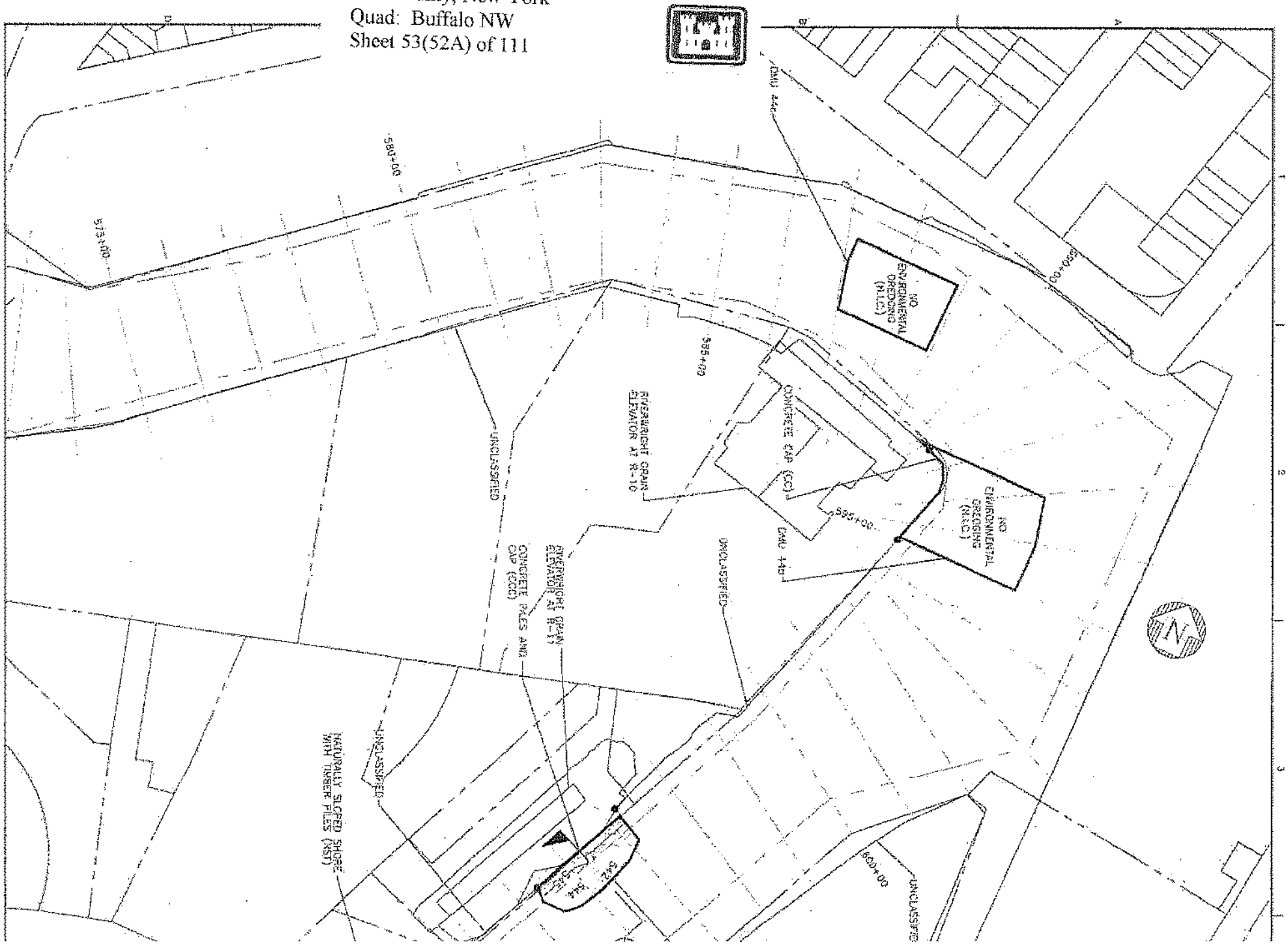
PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME: DD-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:03 PM

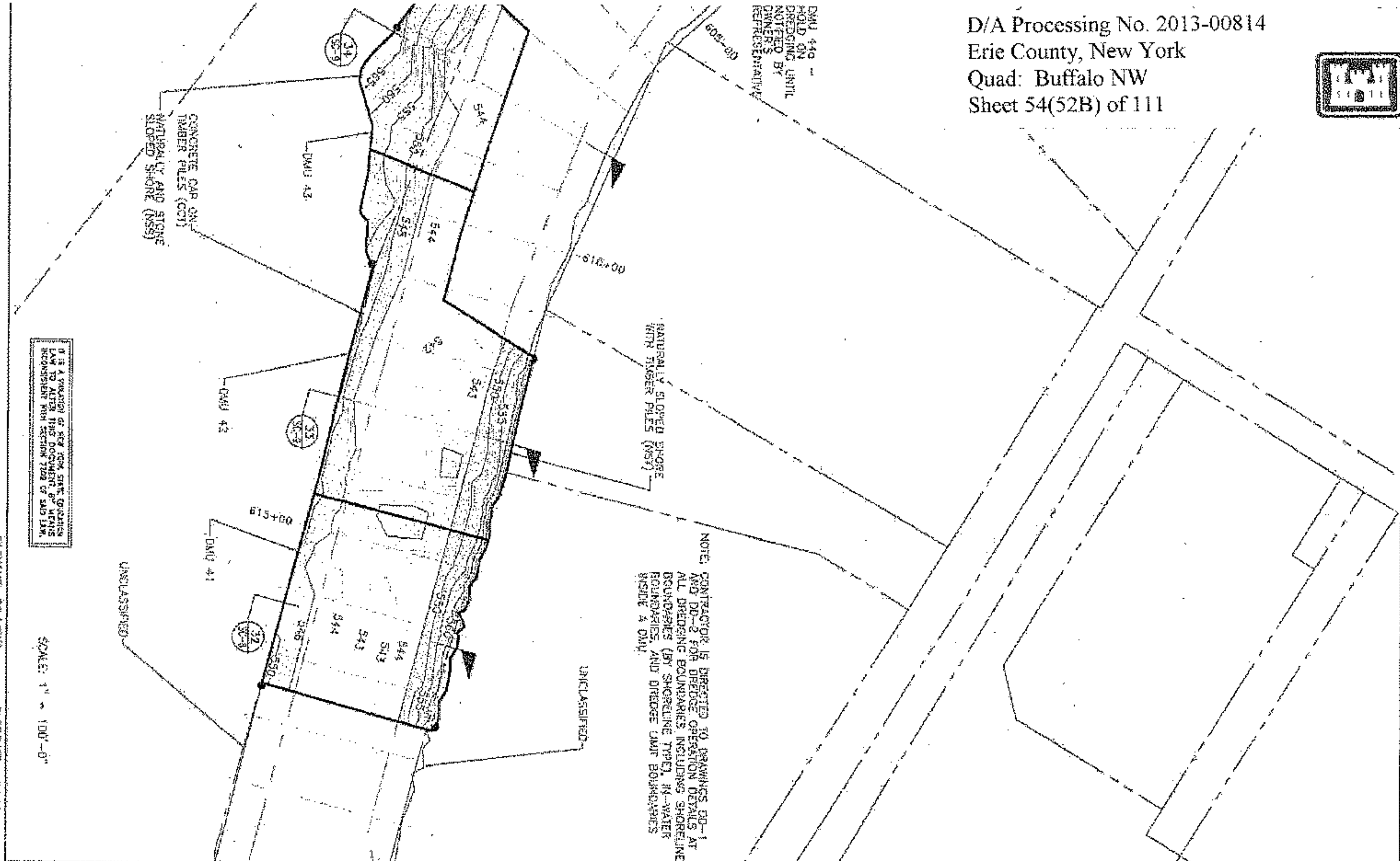
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 52 of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 53(52A) of 111



D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 54(52B) of 111



IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT, BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

SCALE: 1" = 100'–0"

NO.	DATE	DESCRIPTION	BY	APVD
NO	DATE	DESCRIPTION	APVR	N
NO	DATE	DESCRIPTION	APVR	N
NO	DATE	DESCRIPTION	APVR	N
C	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
B	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
A	12-5-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK	TRH
NO.	DATE	REVISION	BY	APVD

DSGN M ALOI P.E. | DR K KRAJEWSKI | CHK M GILLINGS | APVD T HEINS P.E.

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

DREDGING OPERATIONS 8

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

DATE 3-1-13
PROJ EE-002304-0023-08-01
DWG DO-8
SHEET 16 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

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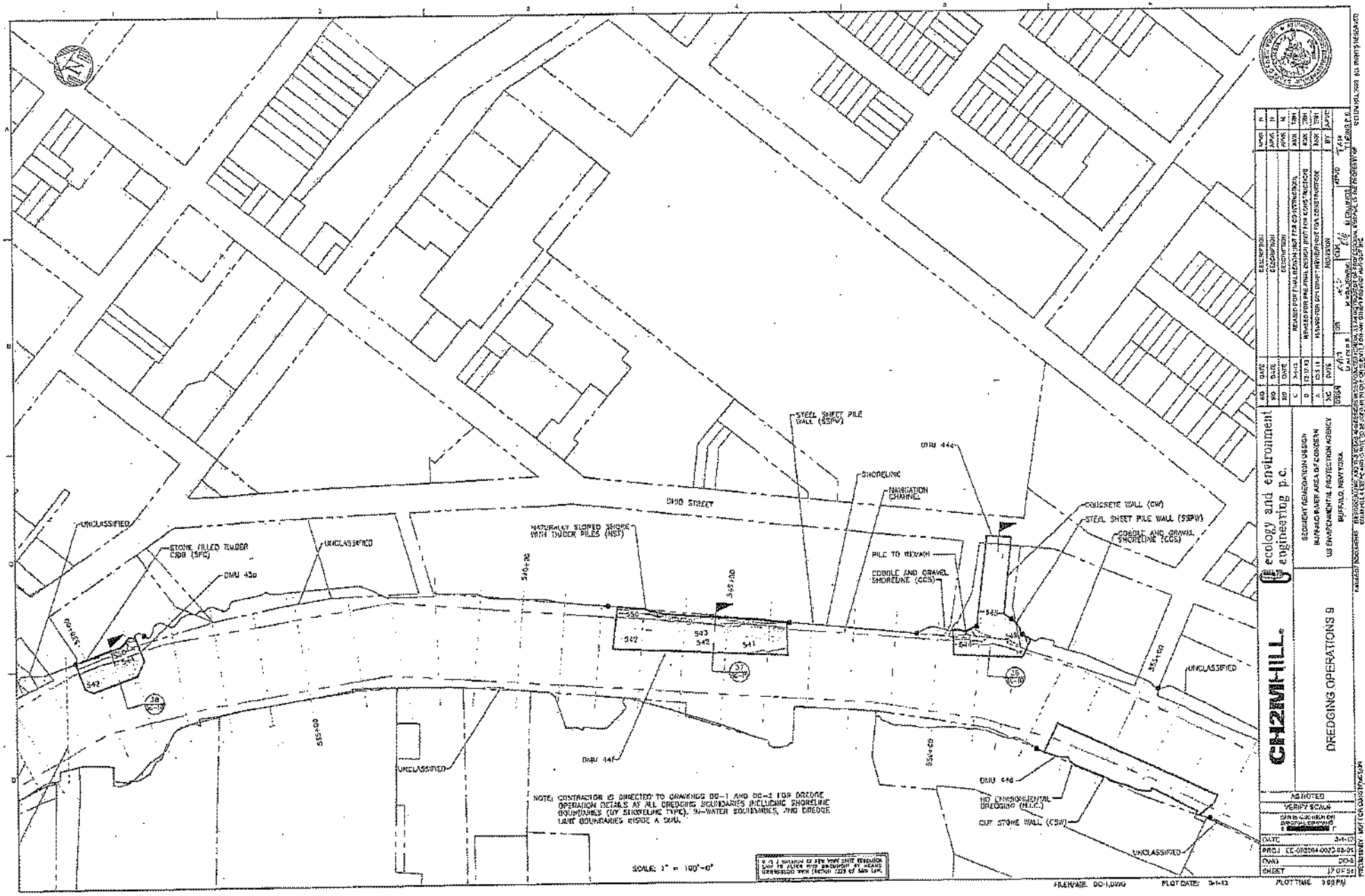
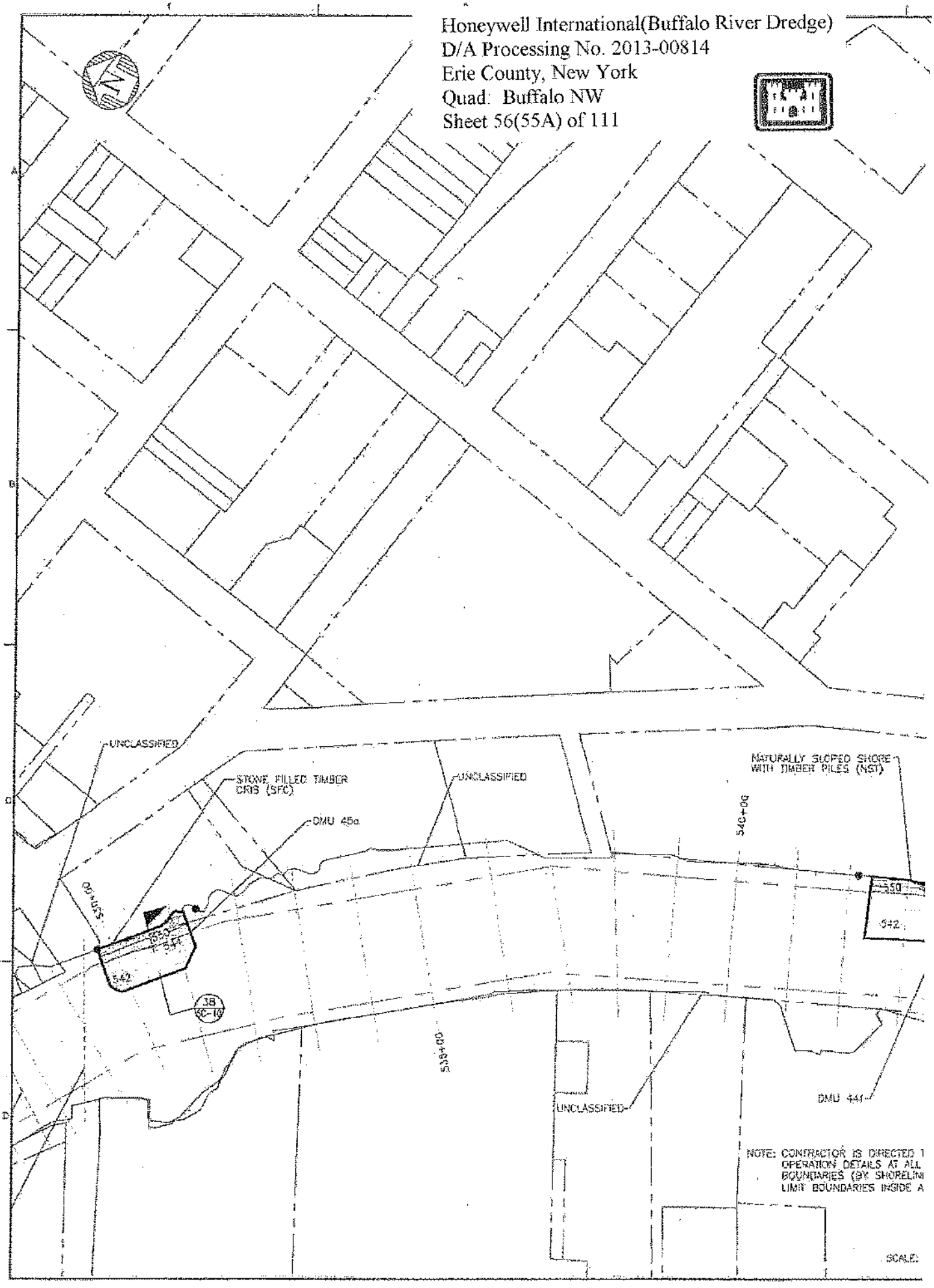
FILENAME: DO-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM

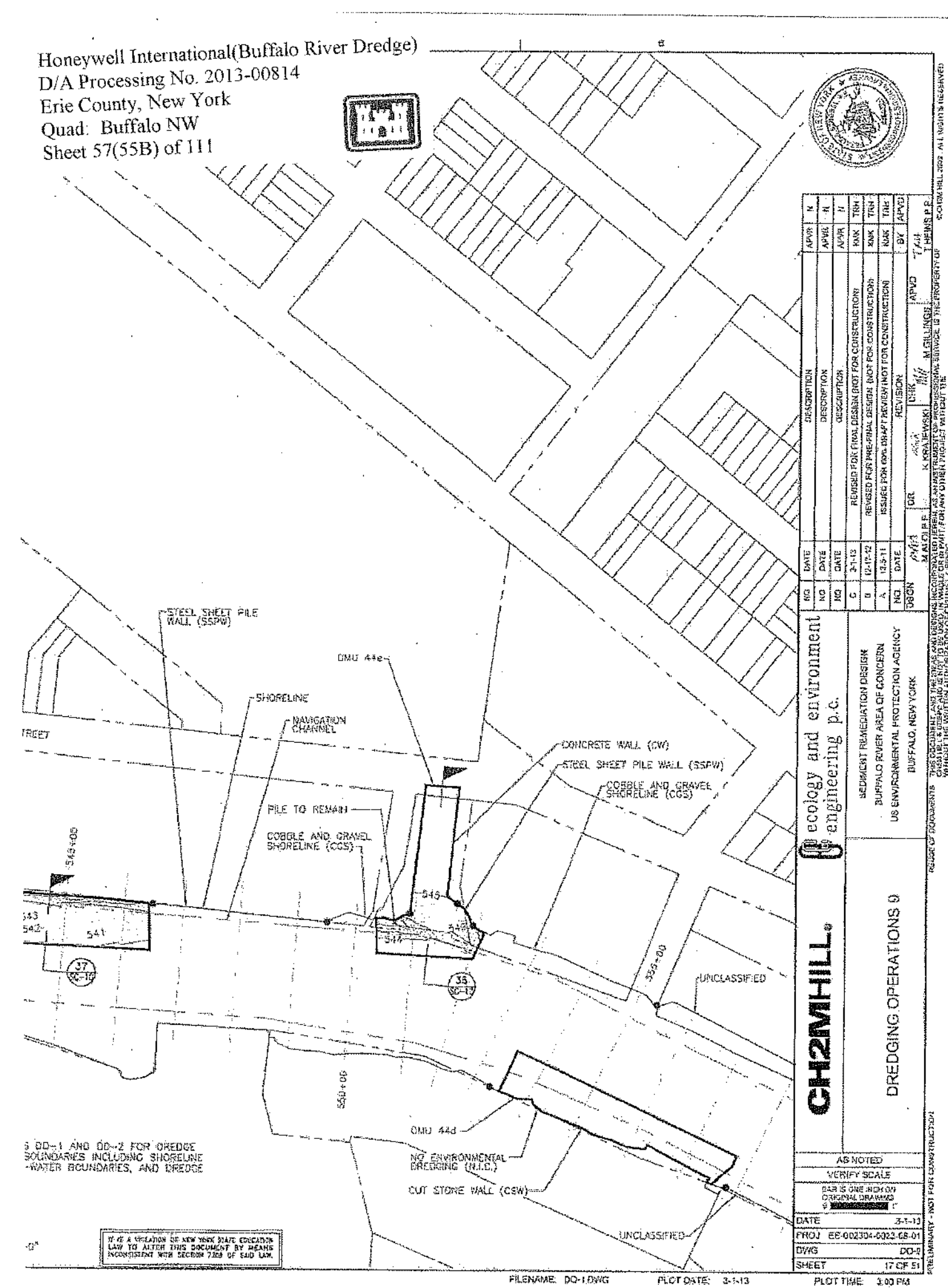


Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 55 of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 56(55A) of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 57(55B) of 111



NO	DESCRIPTION	DATE	BY	APVD
C	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	3-1-13	KAK	TRH
B	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	12-17-12	KAK	TRH
A	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	12-3-11	KAK	TRH

DESIGN M. ATOR P.E. DR. K. KRAJEWSKI CHK M. GILLINGS APVD T. HEIMS P.E.

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

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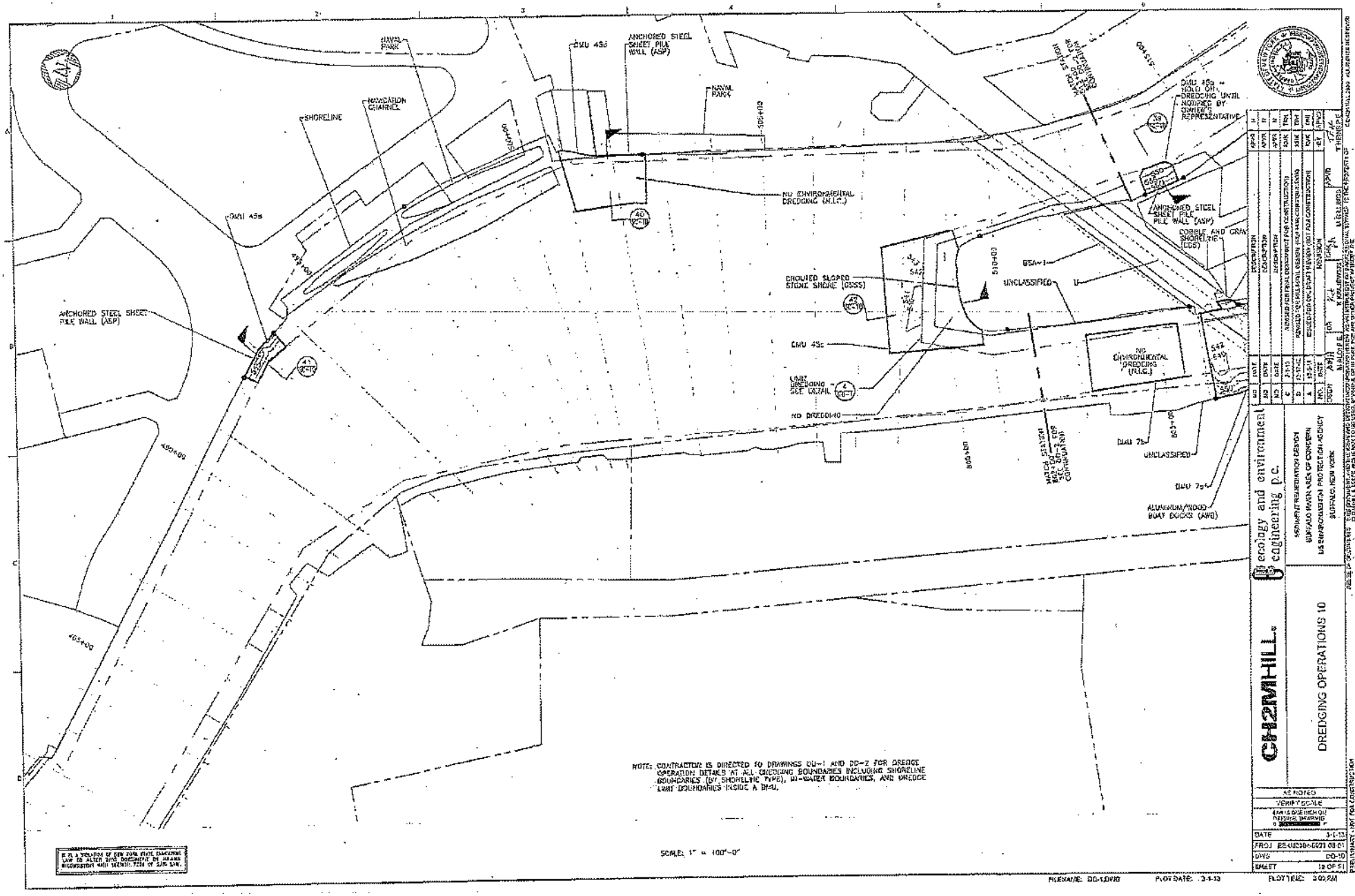
DREDGING OPERATIONS 9

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
DATE 3-1-13
PROJ EE-002304-0023-GS-01
DWG DO-9
SHEET 17 OF 51

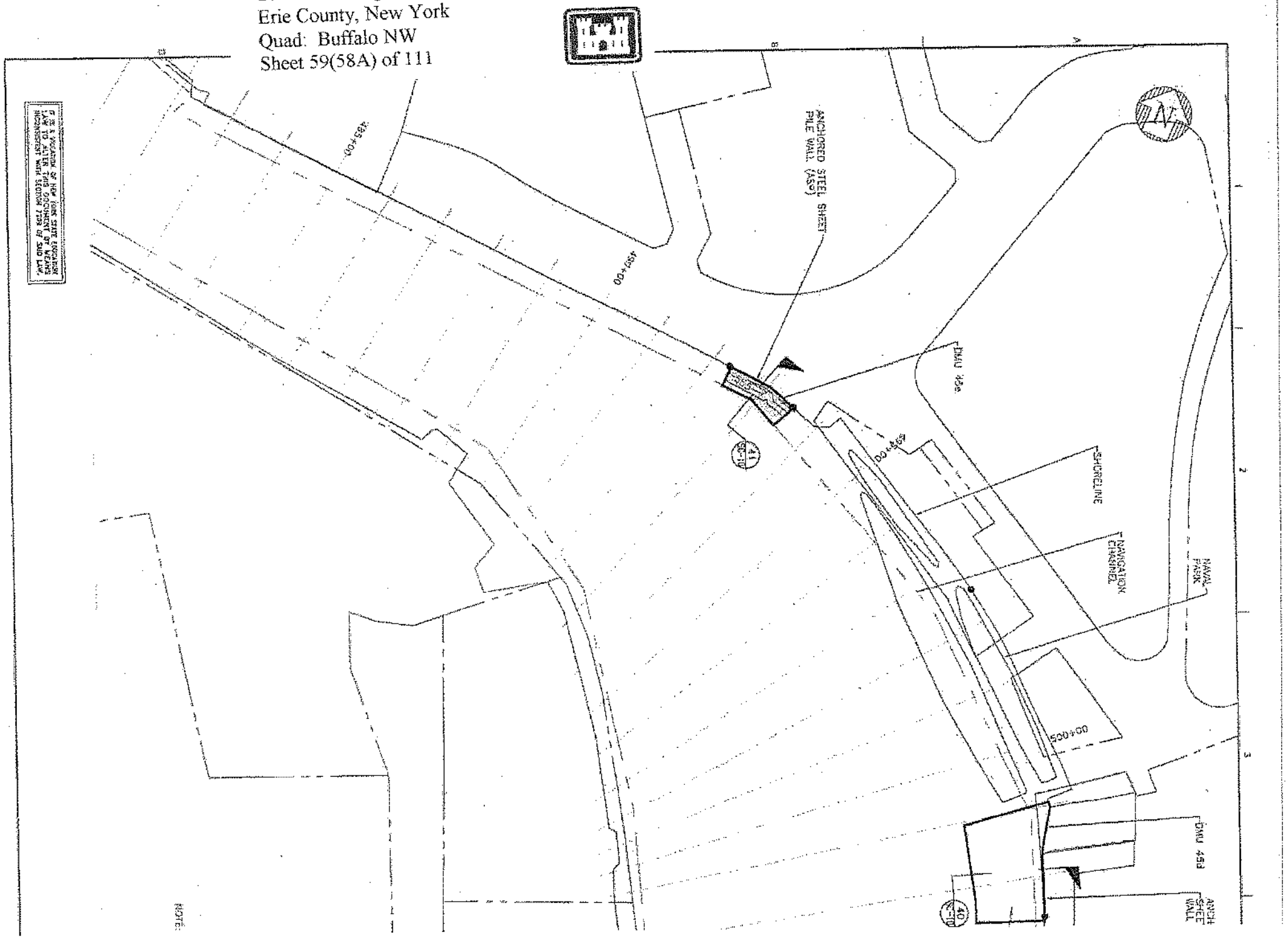
PRELIMINARY - NOT FOR CONSTRUCTION

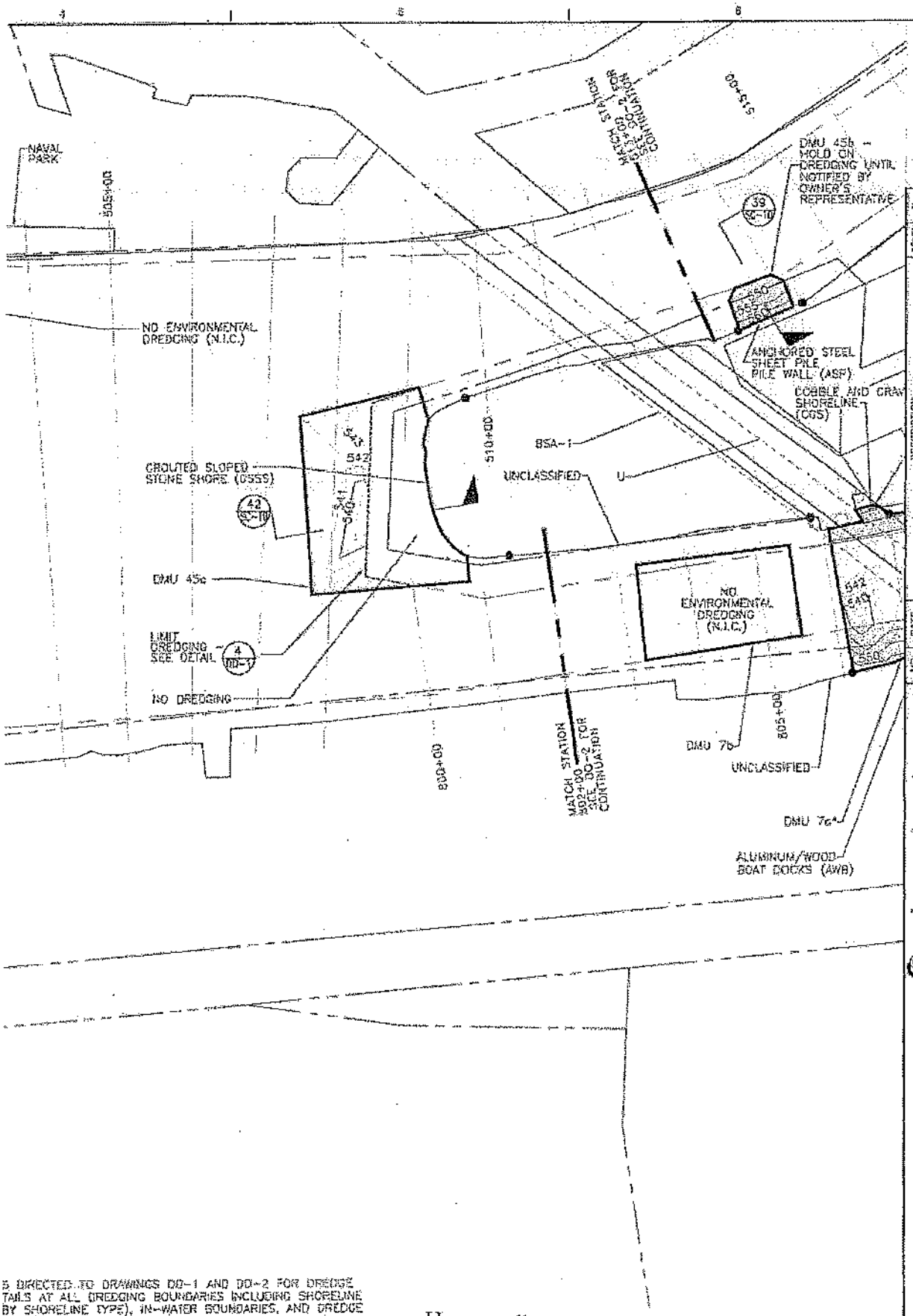
FILENAME: DO-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 58 of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 59(58A) of 111





5 DIRECTED TO DRAWINGS DD-1 AND DD-2 FOR DREDGE TAILS AT ALL DREDGING BOUNDARIES INCLUDING SHORELINE BY SHORELINE TYPE), IN-WATER BOUNDARIES, AND DREDGE NES INSIDE A DMU.

100'-0"

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 60(58B) of 111

NO	DATE	DESCRIPTION	DR	CHK	APVD
C	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KRA	MG	TH
B	12-17-12	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KRA	MG	TH
A	12-3-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KRA	MG	TH
NO.	DATE	REVISION	DR	CHK	APVD

DESIGN M ALOI P.E. DR K KRAJEWSKI CHK M GILLINGS APVD T HEINS P.E.

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

DREDGING OPERATIONS 10

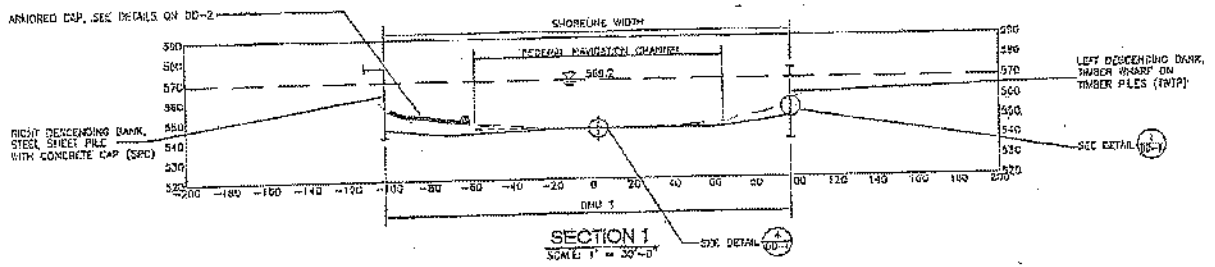
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY
0 1"

DATE 3-1-13
PROJ EE-092304-0023-08-01
DWG DD-10
SHEET 13 OF 51

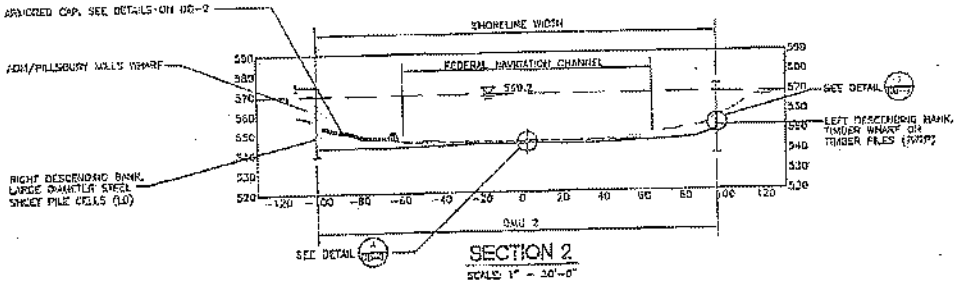
PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME: DD-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 61 of 111



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



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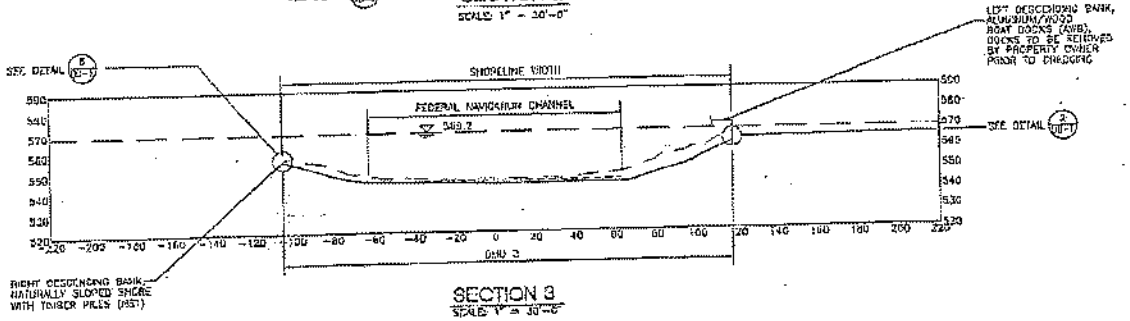

SECTION 3
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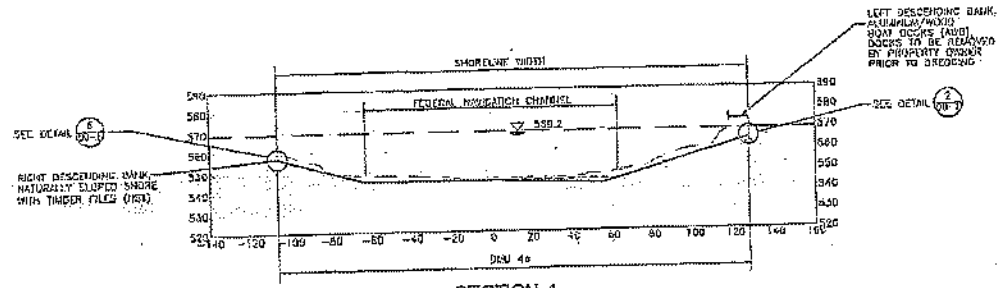

SECTION 4
SCALE: 1" = 30'-0"

SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLR PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREAS OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CROSS-SECTIONS 1

AS NOTED
VERIFY SCALE
DATE 3-1-13
PROJ# EE-0022U1-CH2-SEA-13
DWG SC-1
SHEET 10 OF 61

PRELIMINARY - NOT FOR CONSTRUCTION

PREPARED BY: ENGINEERING-SCIENCE, P.C. 1 WALL STREET, ALBANY, NEW YORK 12205

PREPARED FOR: HONEYWELL INTERNATIONAL INC. 115 TABOR ROAD, MORRIS PLAINS, NEW JERSEY 07950

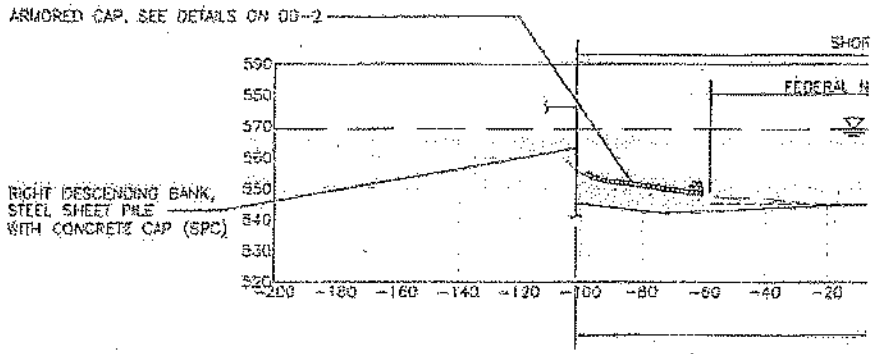
PROJECT DESCRIPTION: REMEDIAL DESIGN FOR THE BUFFALO RIVER AREAS OF CONCERN, BUFFALO, NEW YORK. THIS DRAWING IS THE PROPERTY OF ENGINEERING-SCIENCE, P.C. AND IS NOT TO BE USED IN WHOLE OR IN PART FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF ENGINEERING-SCIENCE, P.C.

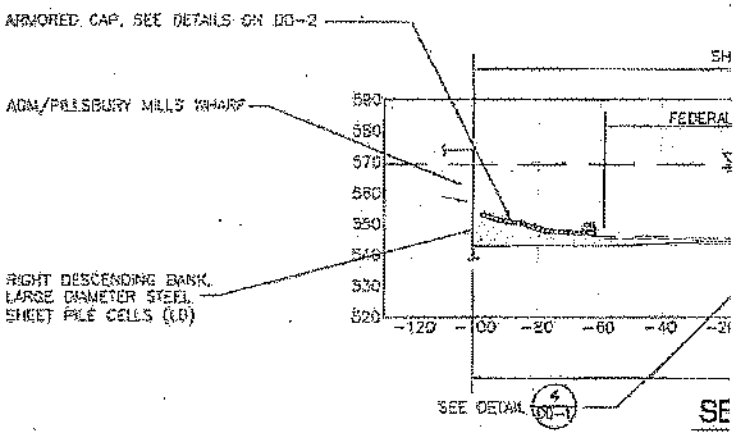
NO	DESCRIPTION	BY	DATE
1	REVISED PER FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	3/28/13
0	REVISED FOR PRELIMINARY DESIGN (NOT FOR CONSTRUCTION)	KMK	3/1/13

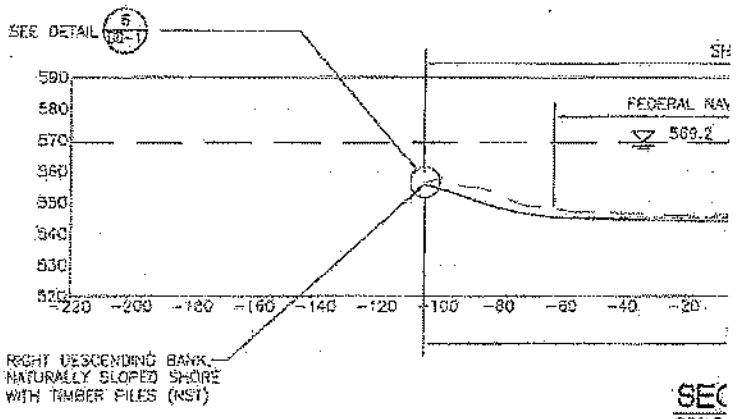
DESIGN KMK DATE 3/1/13
DRAWN JWH DATE 3/1/13
CHECK KMK DATE 3/1/13
APVD DATE

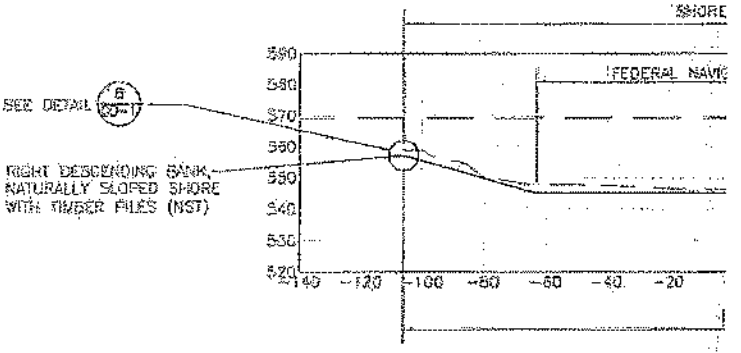
PREFRAME: SC-1.DWG PLOT DATE: 3-4-13 PLOT TIME: 3:00 PM

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 62(61A) of 111



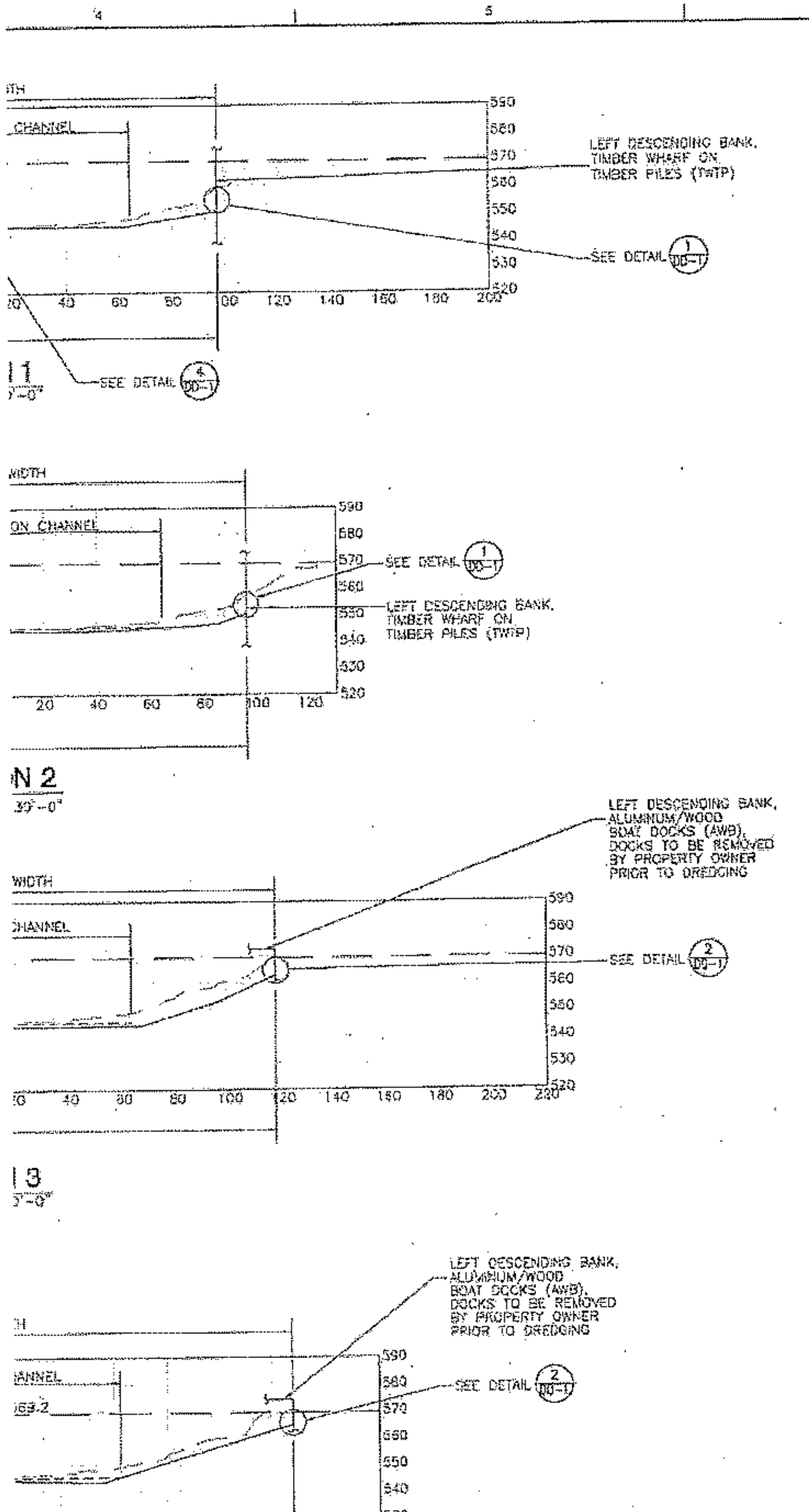




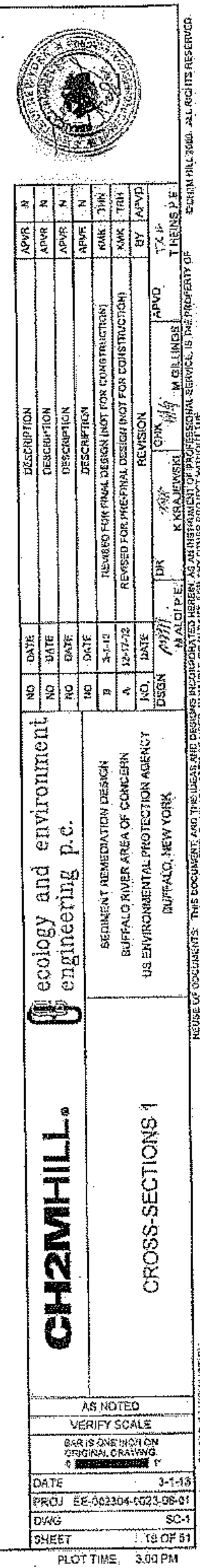


SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING



LEFT DESCENDING BANK, TIMBER WHARF ON TIMBER PILES (TWTP)
SEE DETAIL 1 DD-1
SEE DETAIL 4 DD-1
LEFT DESCENDING BANK, TIMBER WHARF ON TIMBER PILES (TWTP)
N 2
LEFT DESCENDING BANK, ALUMINUM/WOOD BOAT DOCKS (AWB), DOCKS TO BE REMOVED BY PROPERTY OWNER PRIOR TO DREDGING
SEE DETAIL 2 DD-1
3
LEFT DESCENDING BANK, ALUMINUM/WOOD BOAT DOCKS (AWB), DOCKS TO BE REMOVED BY PROPERTY OWNER PRIOR TO DREDGING
SEE DETAIL 2 DD-1



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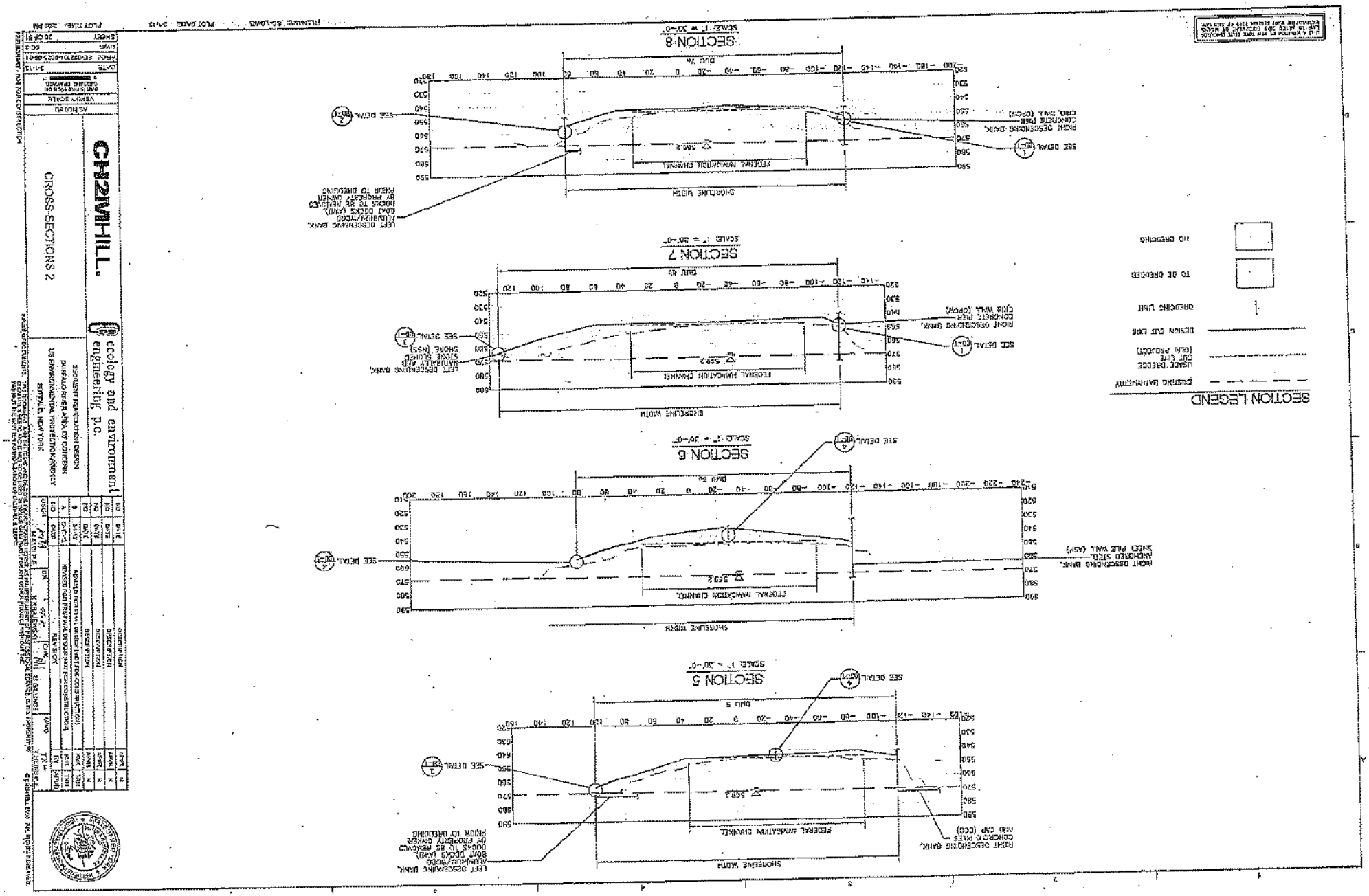
SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK
CROSS-SECTIONS 1
B 3-1-13 REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)
A 12-17-12 REVISED FOR PREFINAL DESIGN (NOT FOR CONSTRUCTION)
AS NOTED
VERIFY SCALE
DATE 3-1-13
DWG SC-1
SHEET 18 OF 51
PRELIMINARY - NOT FOR CONSTRUCTION

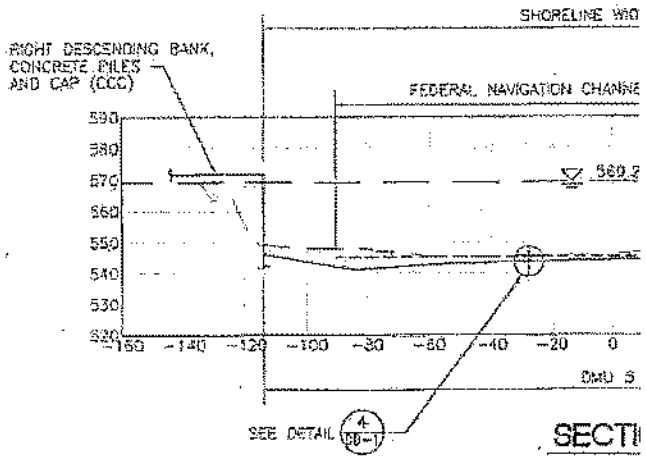
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 63(61B) of 111

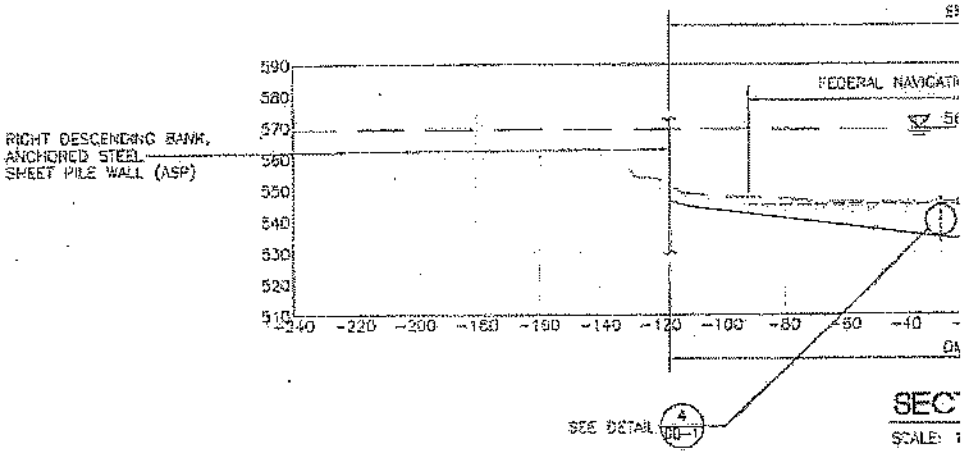
PLOT TIME: 3:00 PM

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 64 of 111



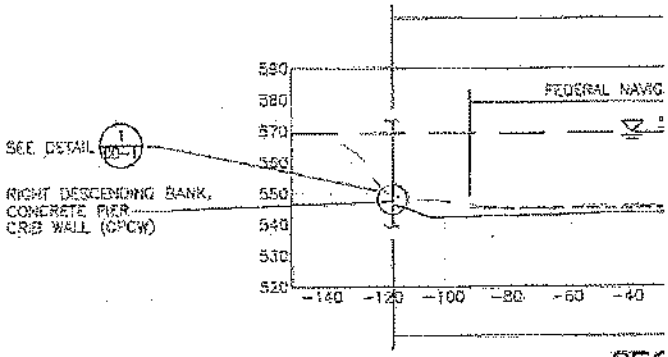
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 65(64A) of 111

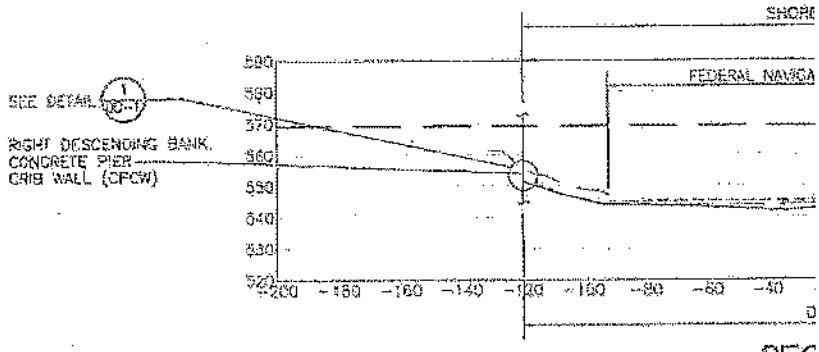




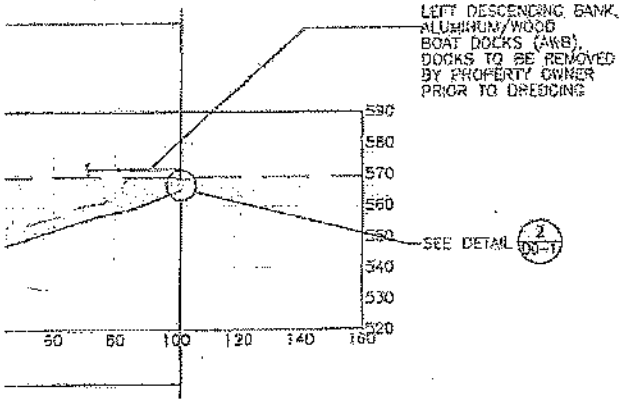
SECTION LEGEND

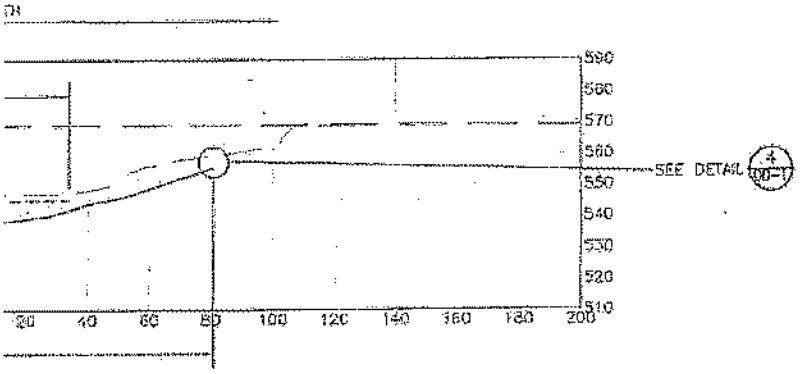
- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE, (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING

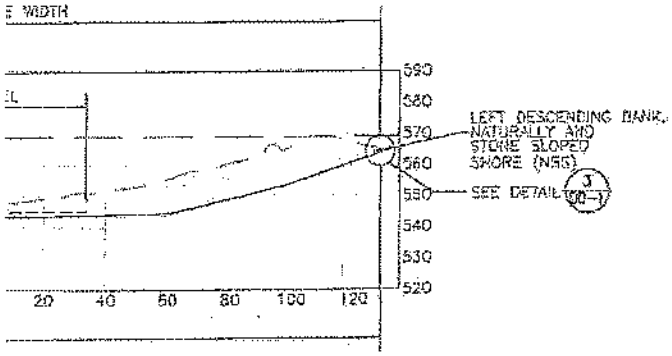


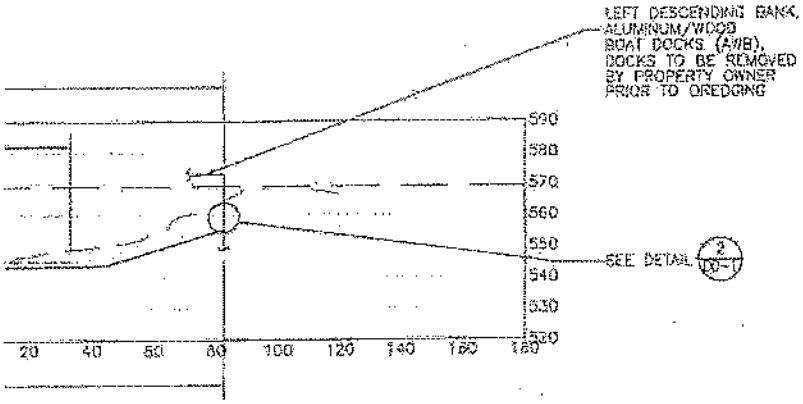


Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 66(64B) of 111









NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
B	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
A	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
NO	DATE	REVISION	BY
DSGN		DR K KRAJEWSKI CHK M GILLINGS APVD T HENRY P.E.	APVD

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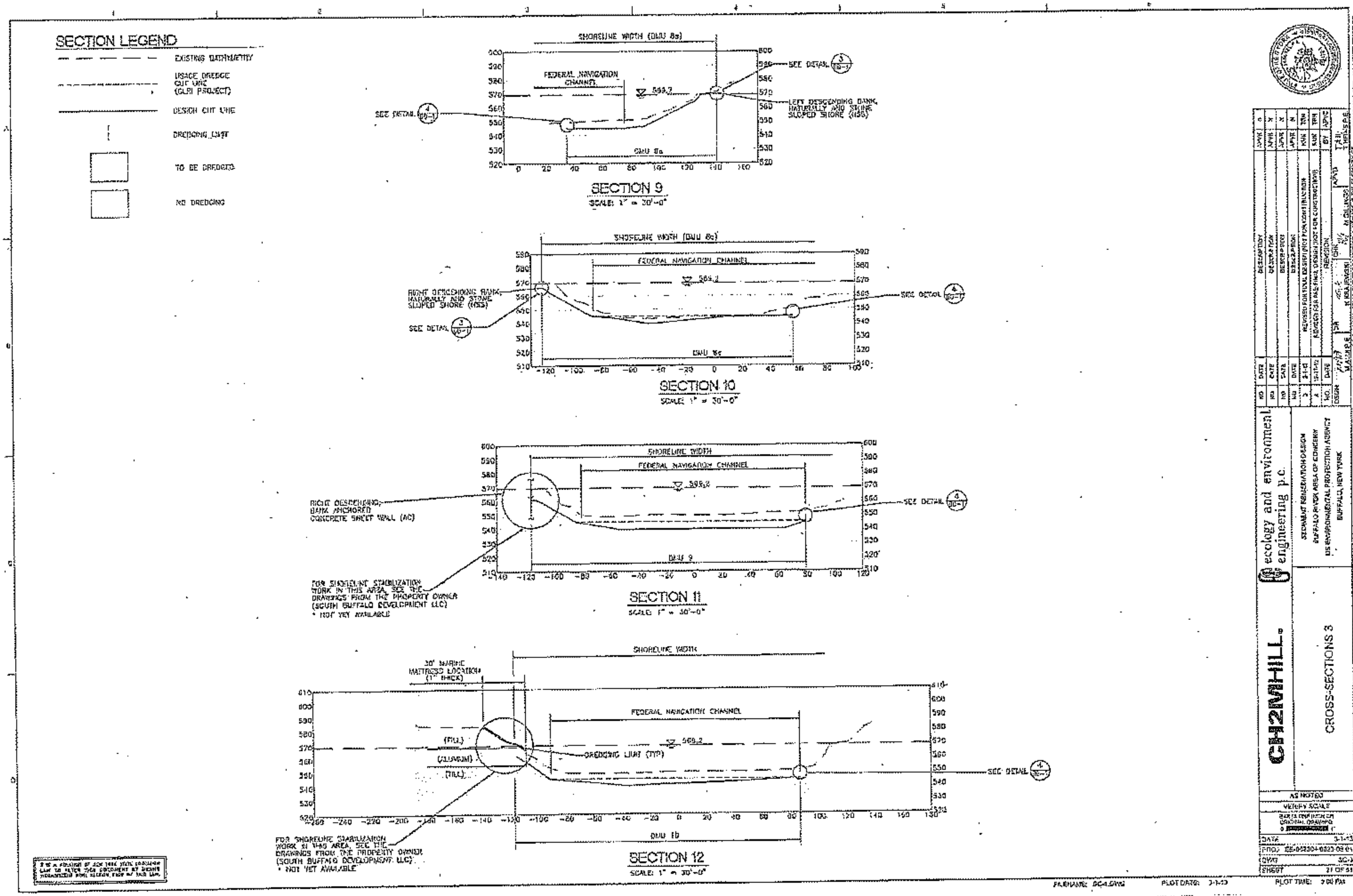
SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CROSS-SECTIONS 2

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

DATE 3-1-13
PROJ. EE-002304-0023-08-01
DWG SC-2
SHEET 20 OF 51

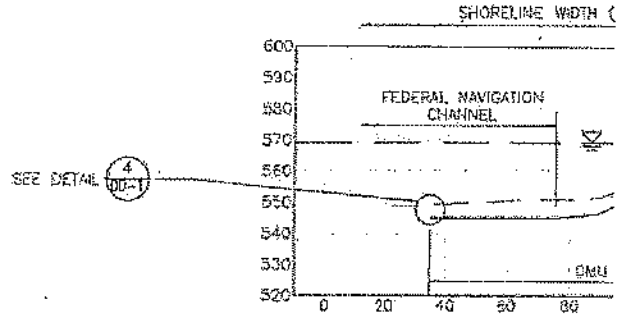
FILENAME: SC-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM


SECTION LEGEND
EXISTING BATHYMETRY
USACE DREDGE CUT LINE (GLRI PROJECT)
DESIGN CUT LINE
DREDGING LIMIT
TO BE DREDGED
NO DREDGING
SHORELINE WIDTH (DMU 8a)
FEDERAL NAVIGATION CHANNEL
569.2
SEE DETAIL
LEFT DESCENDING BANK, NATURALLY AND STONE SLOPED SHORE (NSS)
DMU 8a
SECTION 9
SCALE: 1" = 30'-0"
SHORELINE WIDTH (DMU 8c)
RIGHT DESCENDING BANK, NATURALLY AND STONE SLOPED SHORE (NSS)
DMU 8c
SECTION 10
SCALE: 1" = 30'-0"
SHORELINE WIDTH
RIGHT DESCENDING BANK ANCHORED CONCRETE SHEET WALL (AC)
FOR SHORELINE STABILIZATION WORK IN THIS AREA, SEE THE DRAWINGS FROM THE PROPERTY OWNER (SOUTH BUFFALO DEVELOPMENT LLC)
* NOT YET AVAILABLE
DMU 9
SECTION 11
SCALE: 1" = 30'-0"
30' MARINE MATTRESS LOCATION (1' THICK)
(FILL)
(ALLUVIUM)
(TILL)
DREDGING LIMIT (TYP)
DMU 1b
SECTION 12
SCALE: 1" = 30'-0"
ecology and environment engineering p.c.
CH2MHILL
CROSS-SECTIONS 3
SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK
AS NOTED
VERIFY SCALE
DATE 3-1-13
SHEET 21 OF 51

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 67 of 111

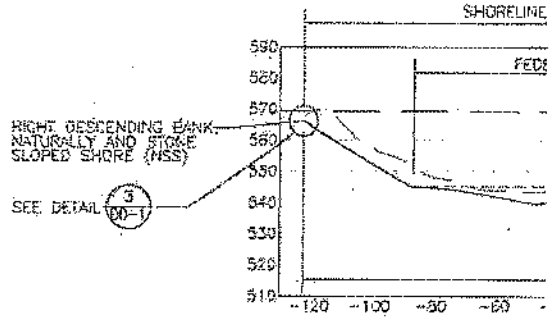
SECTION LEGEND

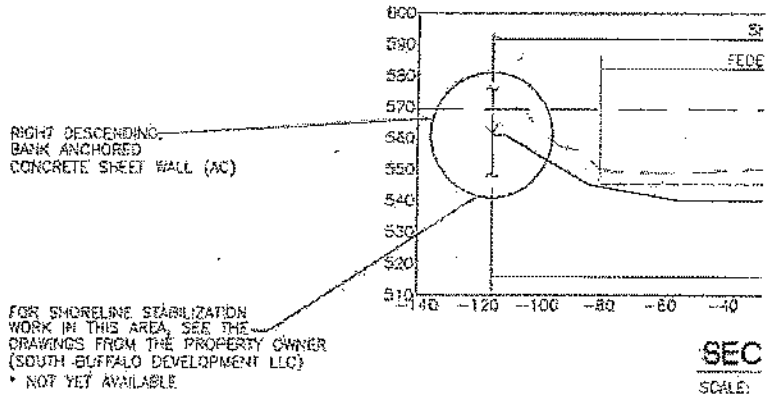
- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING



SECTION

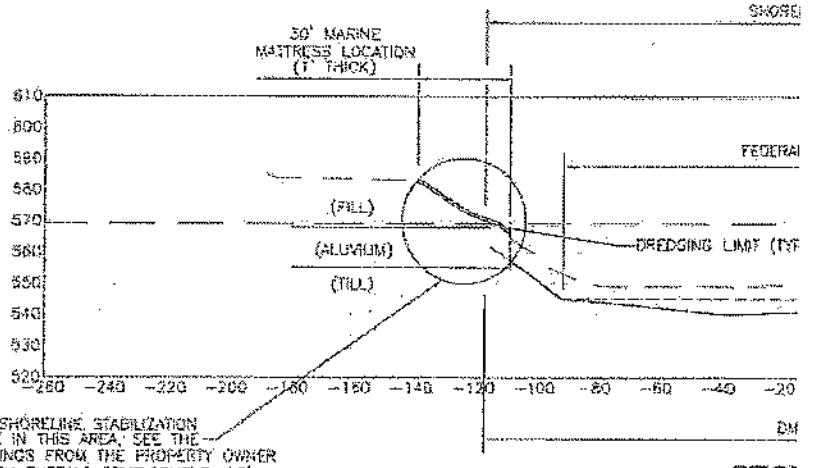
SCALE: 1" = 30'





SEC

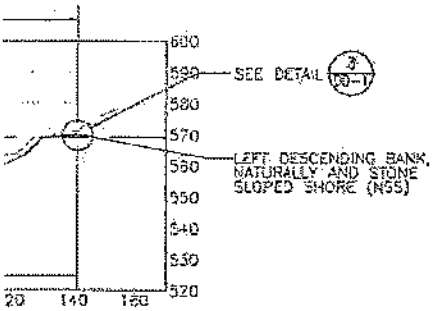
SCALE:

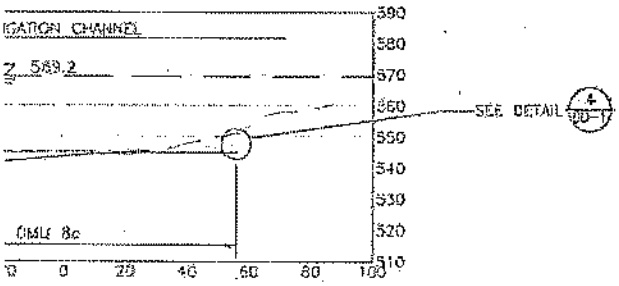


SEC

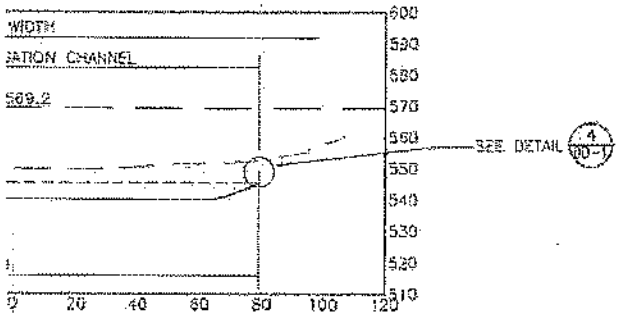
SCALE:

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 69(67B) of 111

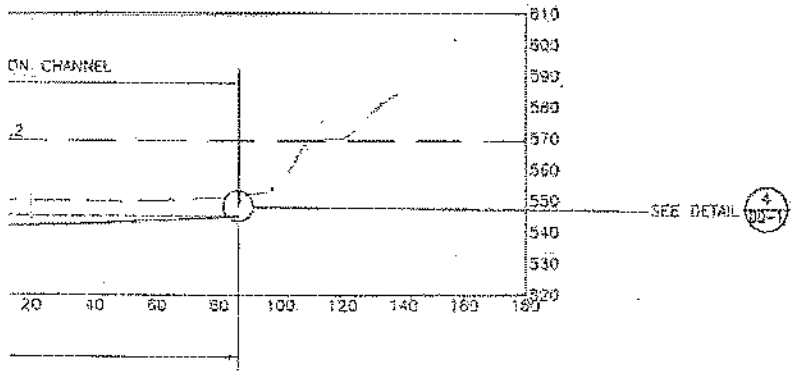




TION 10
1" = 30'-0"



11
-0"



2
0"

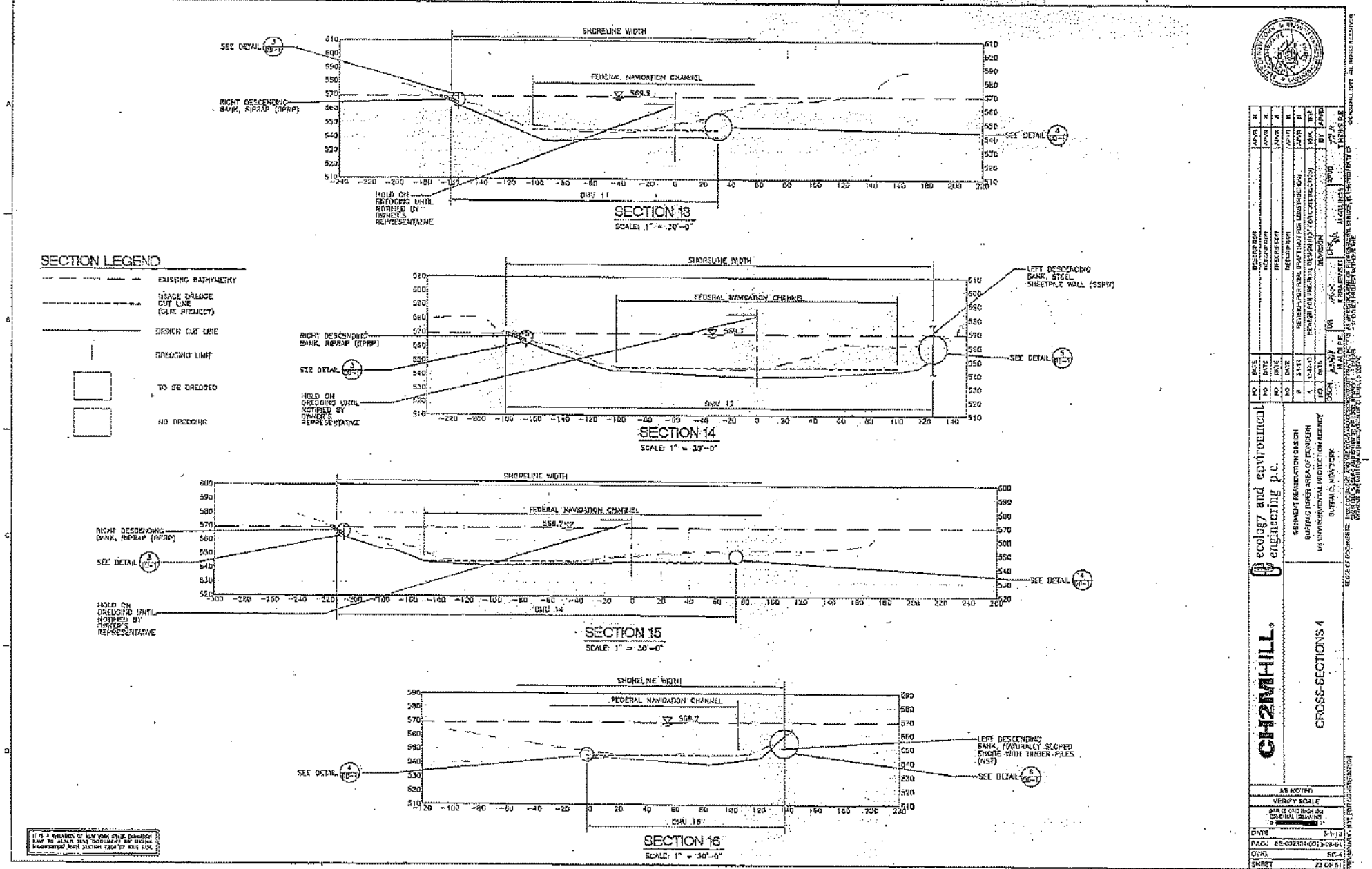
CH2MHILL
ecology and environment engineering p.c.
SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK
CROSS-SECTIONS 3

NO.	DESCRIPTION	DATE	DR	CHK	APVD
DESIGN			K KRAJEWSKI	M GILLNESS	T HEINS P.E.
A	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	12-17-12	KMK	TRH	APVD
B	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	3-1-13	KMK	TRH	APVD
NO	DESCRIPTION	DATE	APVR	N	
NO	DESCRIPTION	DATE	APVR	N	
NO	DESCRIPTION	DATE	APVR	N	

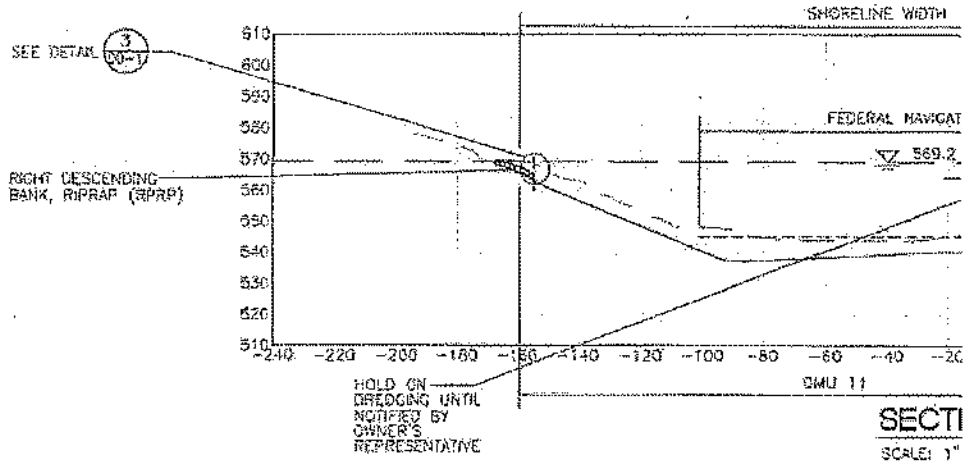
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY
DATE 3-1-13
PROJ EE-052304-2023-08.01
DWG SC-3
SHEET 21 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME: SC-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 70 of 111

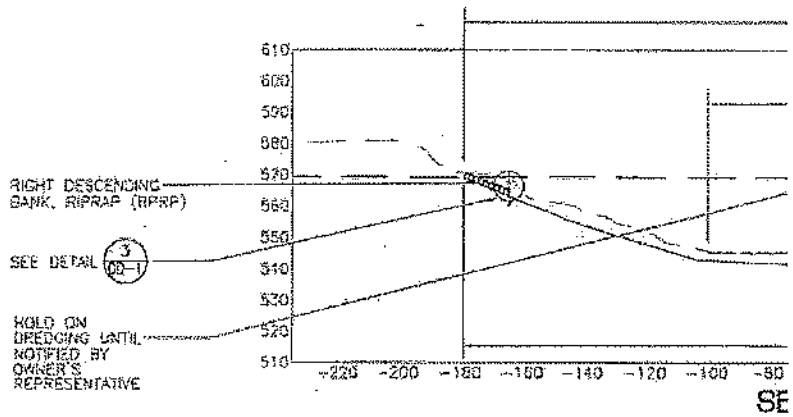


SECTI

SCALE: 1"

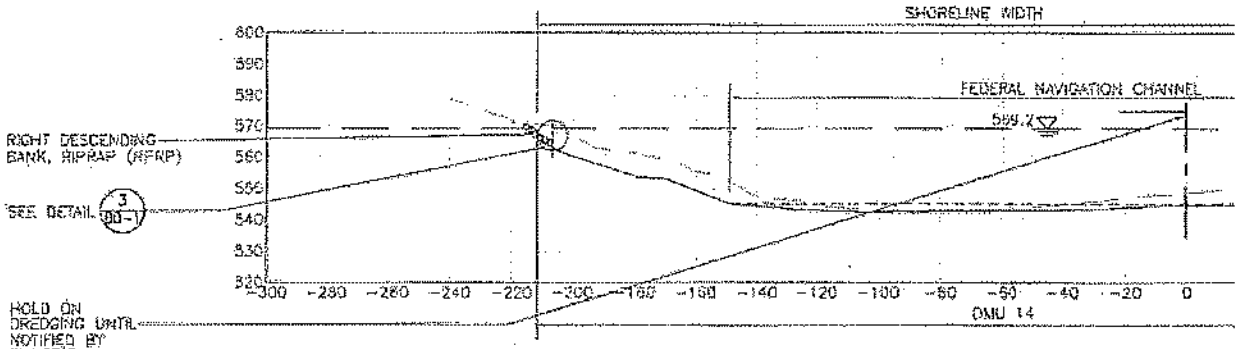
SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING



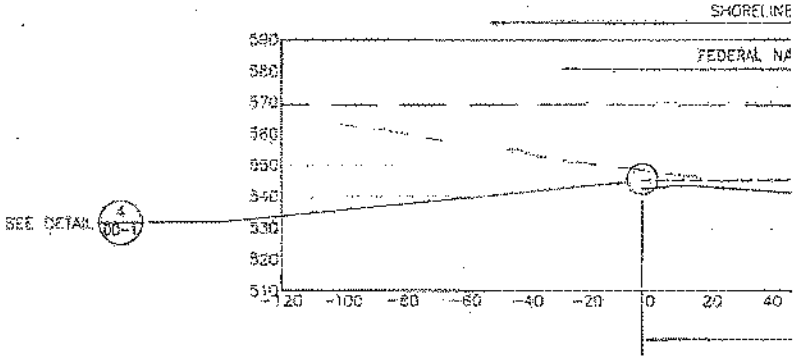
SE

SCA



SECTION 1

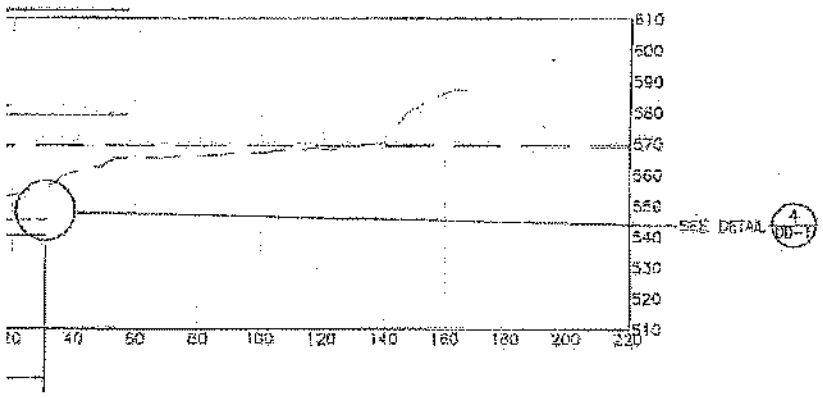
SCALE: 1" = 30'

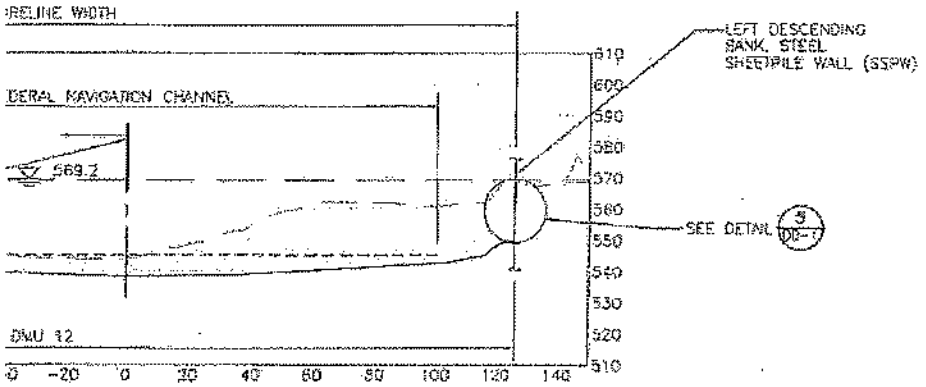


S

SC

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 71(70A) of 111





14
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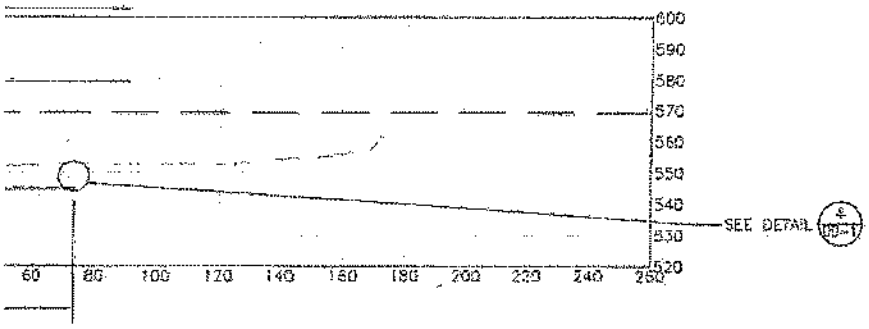

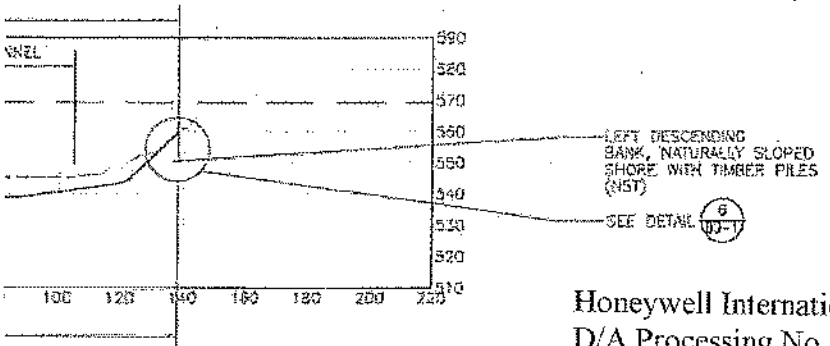

16
-0"

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 72(70B) of 111

NO	DATE	DESCRIPTION	APVR	IN
NO	DATE	DESCRIPTION	APVR	IN
NO	DATE	DESCRIPTION	APVR	N
NO	DATE	DESCRIPTION	APVR	N
3	3-4-13	REVISION FOR FINAL DRAFT NOT FOR CONSTRUCTION	APVR	N
4	12-17-12	REVISED FOR PRELIMINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TGH
NO.	DATE	REVISION	BY	APVD

DESIGN J MALOSPE DR. K KRAJEWSKI CHK R GILLINGS APVD T HEINS P.E.

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

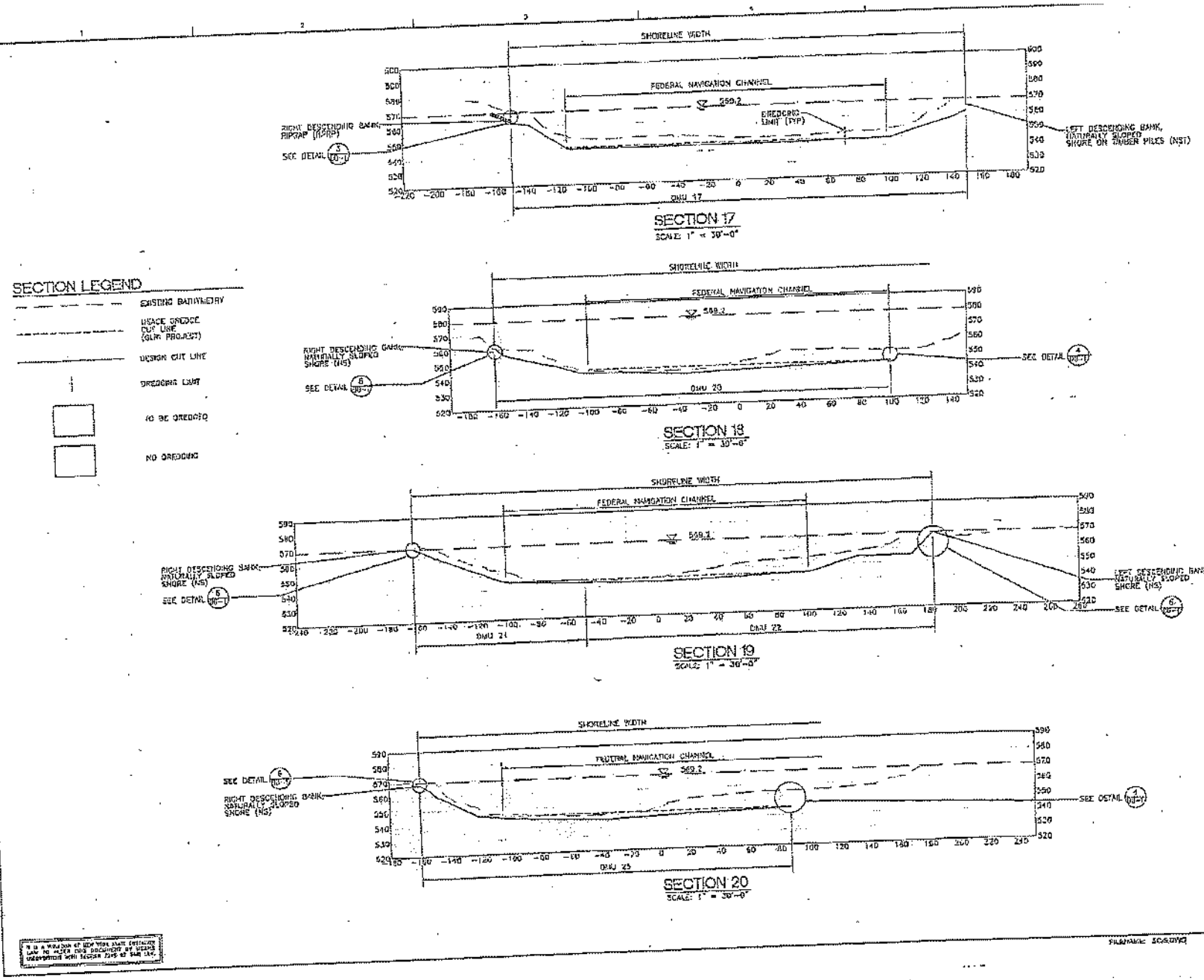
CH2MHILL.

CROSS-SECTIONS 4

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

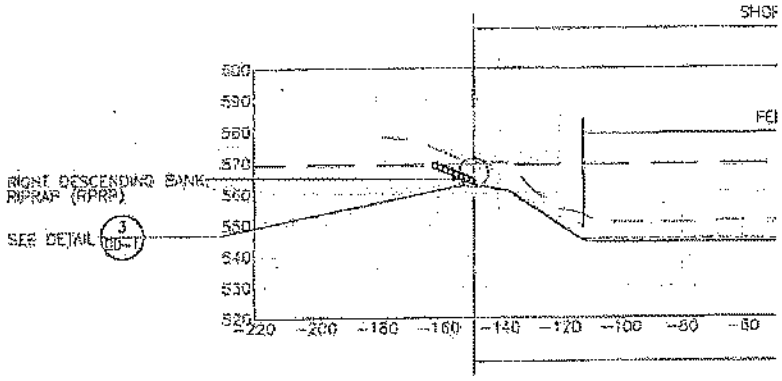
DATE 3-1-13
PROJ SE-002304-0023-03-01
DWG SC-4
SHEET 22 OF 51
PLOTTIME: 3:00 PM

PRELIMINARY - NOT FOR CONSTRUCTION



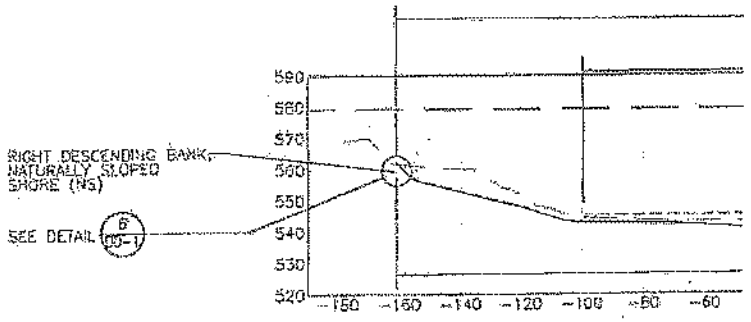
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 73 of 111

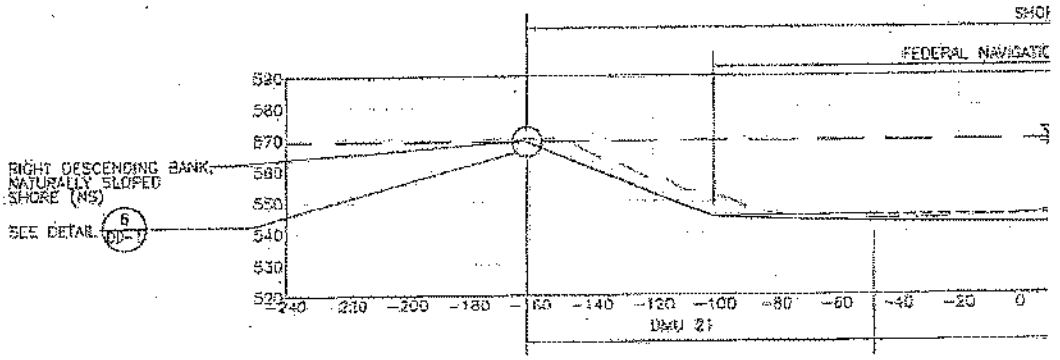
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 74(73A) of 111

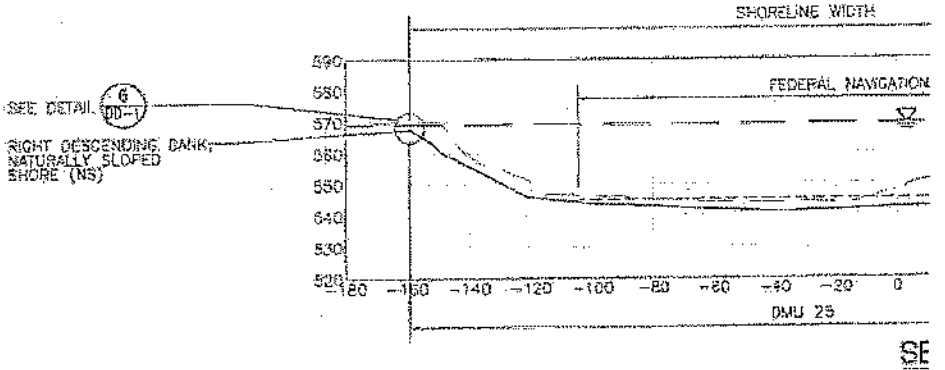


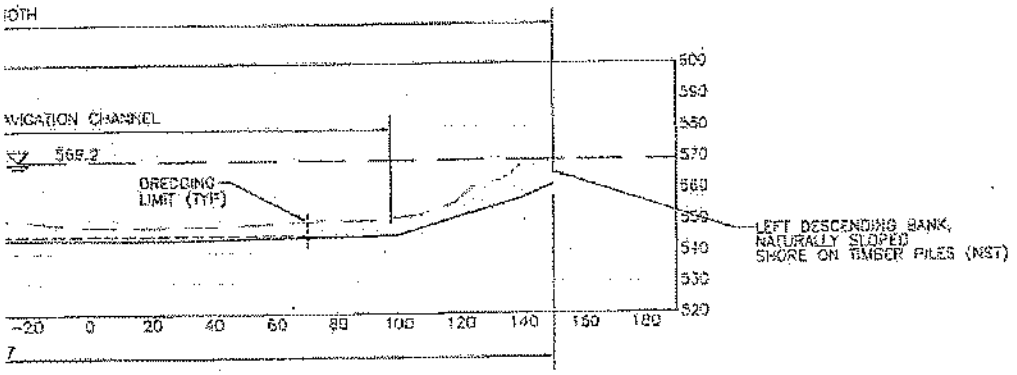
SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING

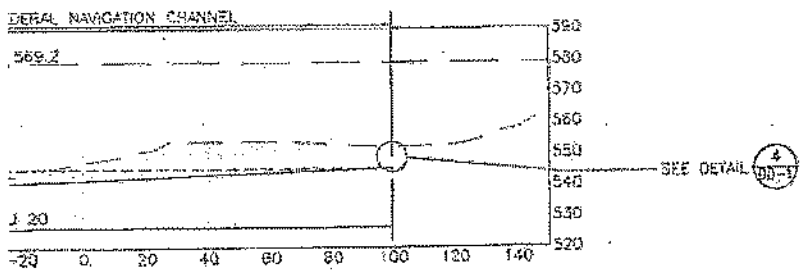




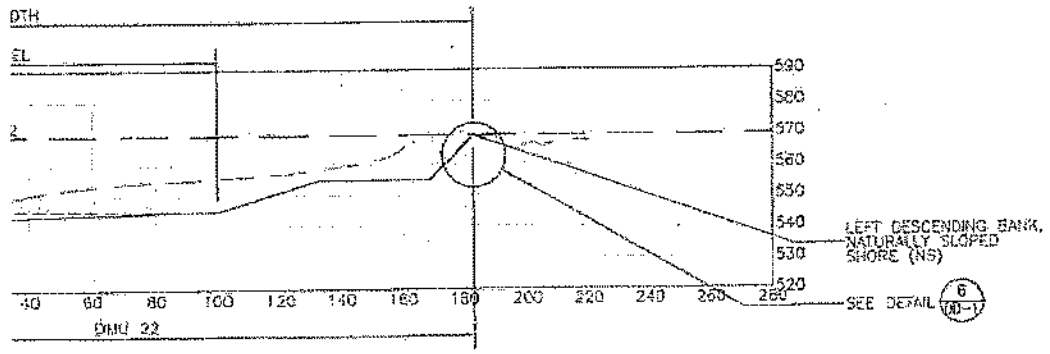




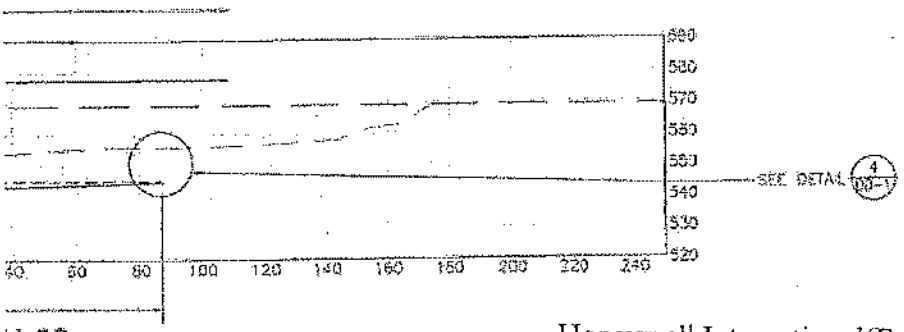
ON 17
= 30'-0"



ION 18
= 30'-0"



ION 19
= 30'-0"



N 20
30'-0"

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 75(73B) of 111

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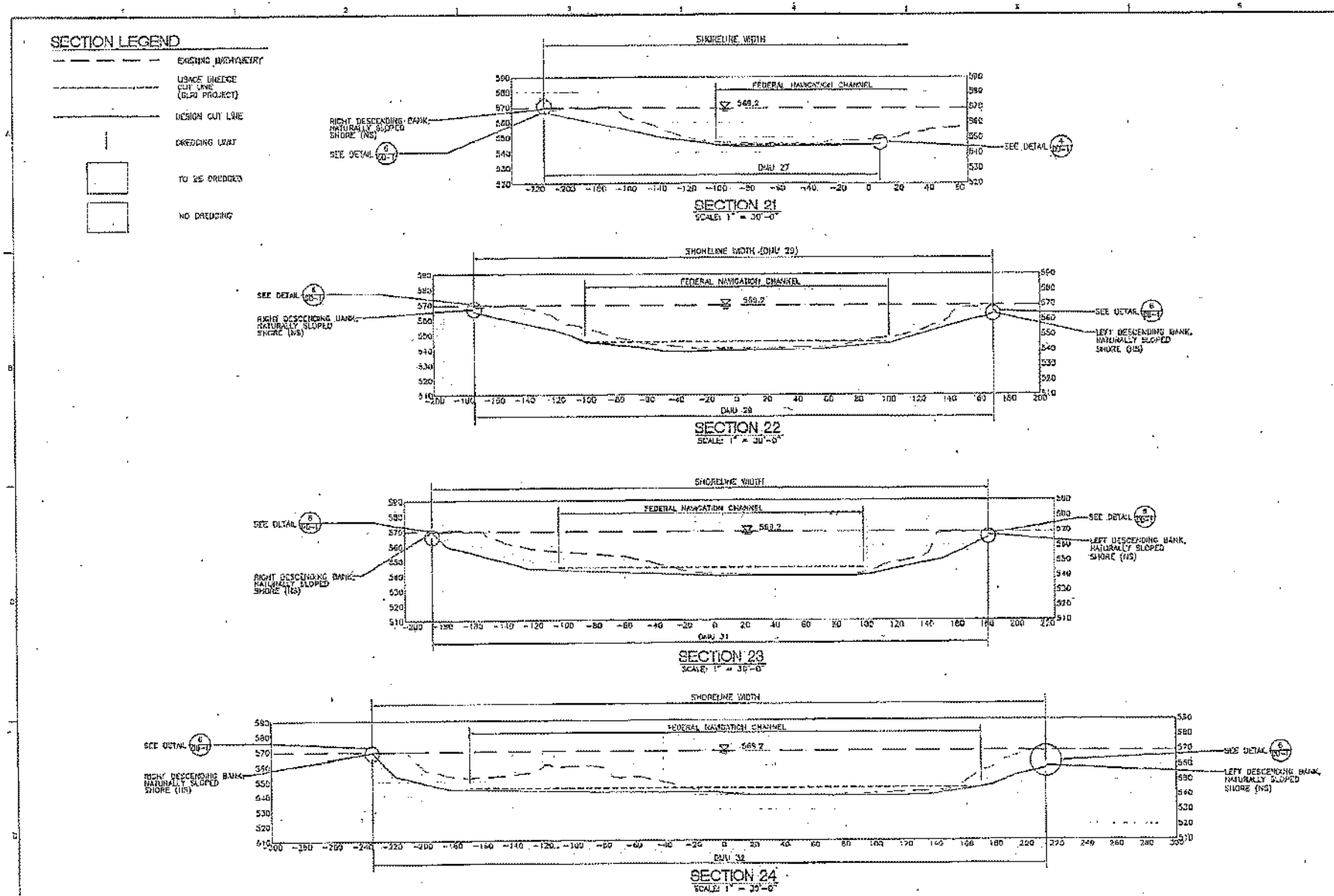
ecology and environment engineering p.c.
SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK
CROSS-SECTIONS 5
AS NOTED
VERIFY SCALE
DATE 3-1-13
PROJ GE-0023641-0023-08-01
DWG SD-5
SHEET 23 OF 51
PLOT TIME: 3:09 PM
PRELIMINARY - NOT FOR CONSTRUCTION

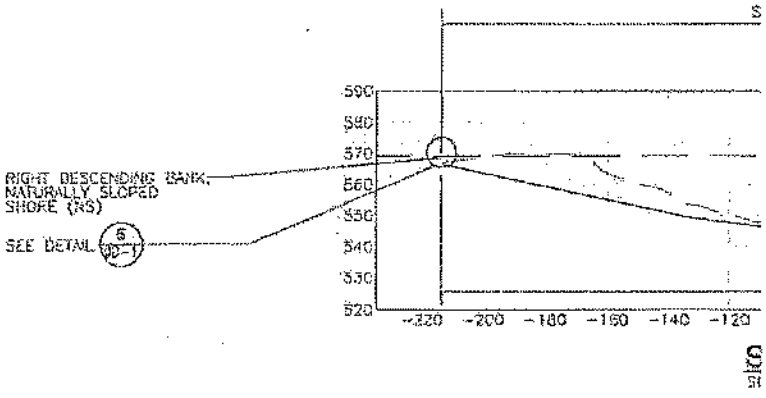


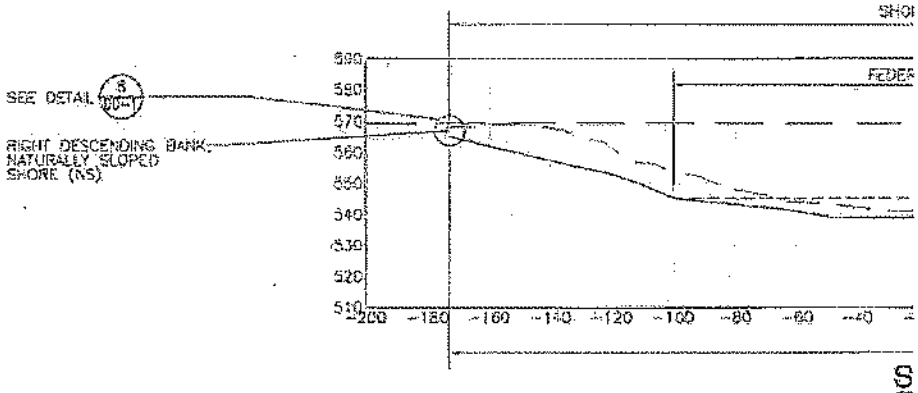
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 76 of 111

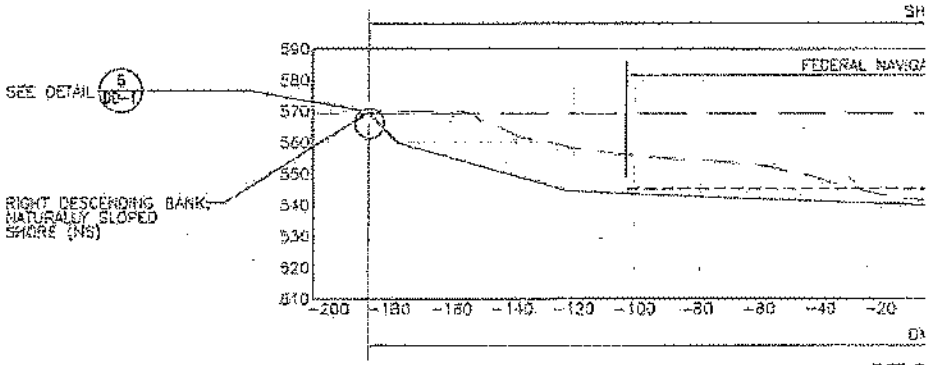
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 77(76A) of 111

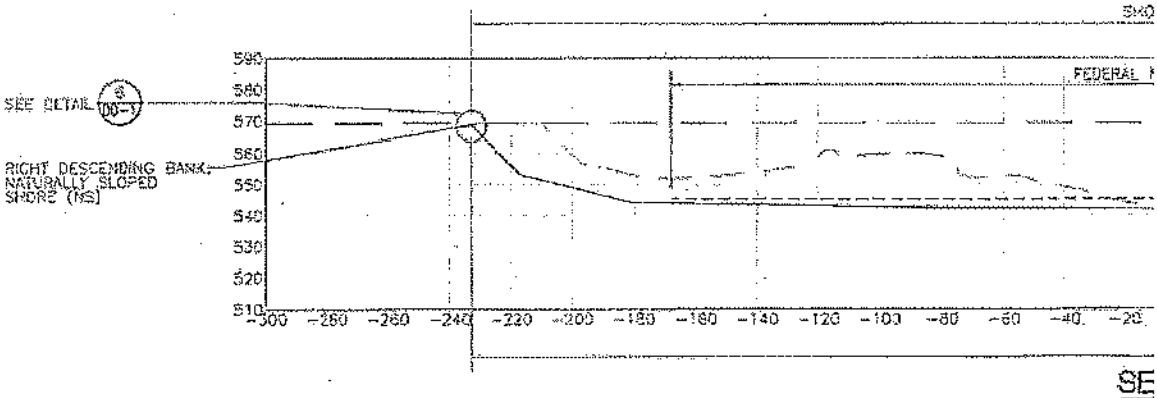
SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING

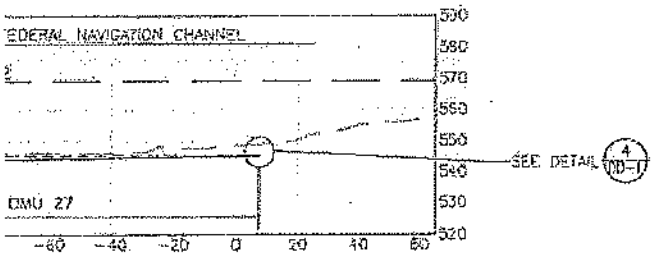




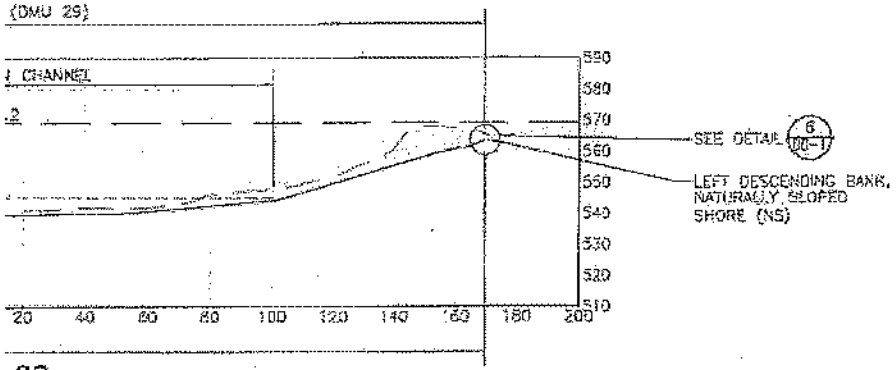




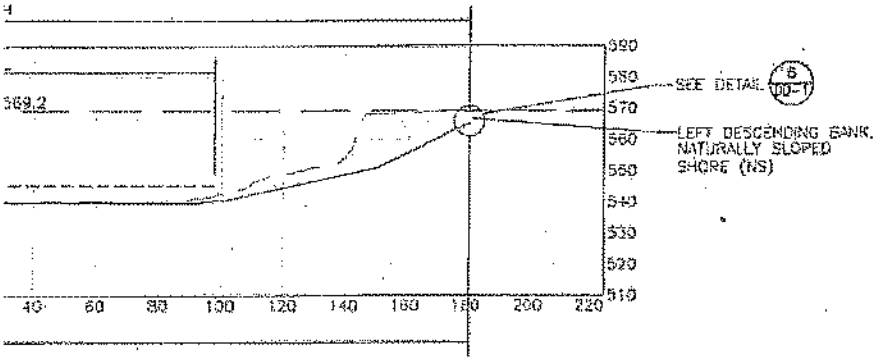
IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

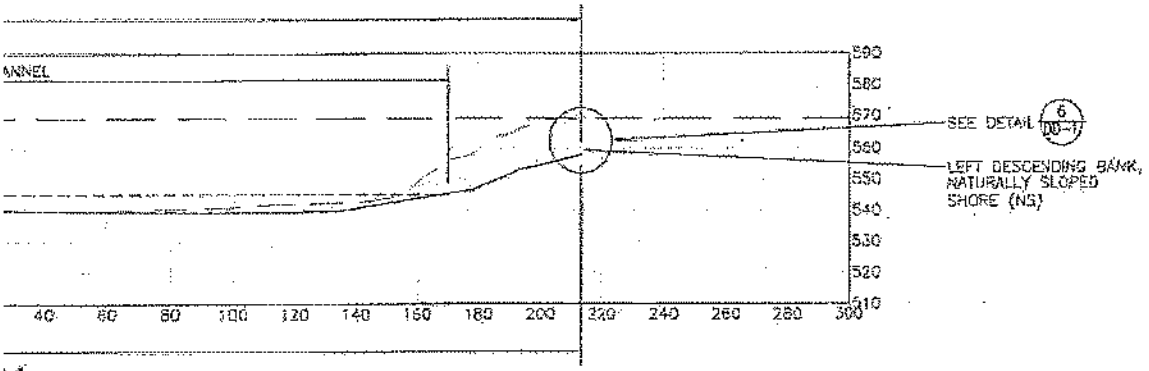


21
0"-0"



22
0"-0"





4
-0"

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 78(76B) of 111

NO	DATE	DESCRIPTION	APVR	
NO	DATE	DESCRIPTION	APVR	
NO	DATE	DESCRIPTION	APVR	
NO	DATE	DESCRIPTION	APVR	
B	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	RAK	TRH
A	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KAK	TRH
NO.	DATE	REVISION	CHK	APVD
DSGN	M.GILLINGS P.E.	DR K.KRAJEWSKI	CHK	APVD

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

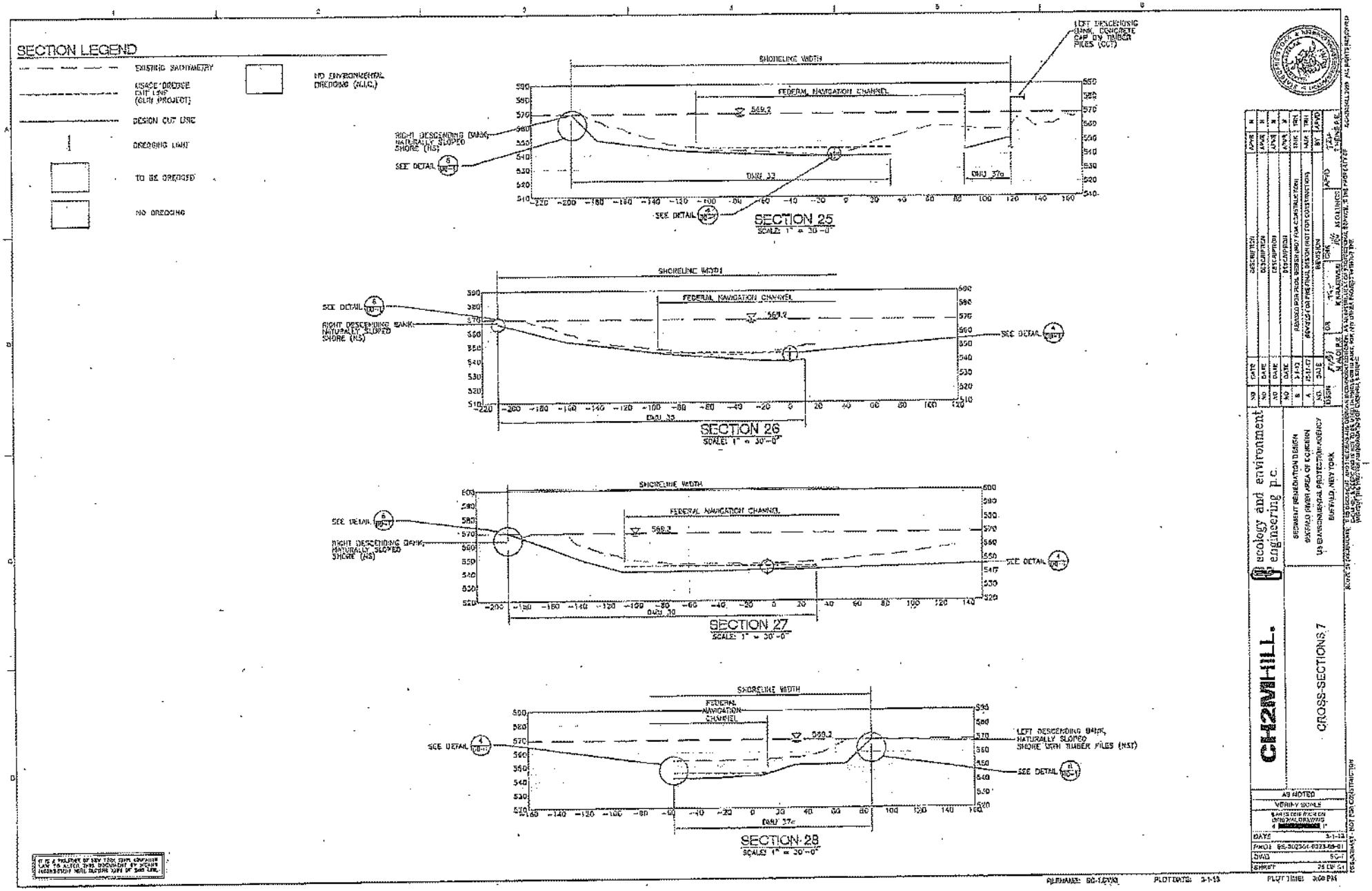
CH2MHILL

CROSS-SECTIONS 6

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0" 1"
DATE 3-1-13
PROJ EE-002204-0023-08-01
DWG SC-6
SHEET 24 OF 51

FILENAME: SC-6.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM

PRELIMINARY - NOT FOR CONSTRUCTION



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 79 of 111

SECTION LEGEND

EXISTING BATHYMETRY

USACE DREDGE CUT LINE (GLRI PROJECT)

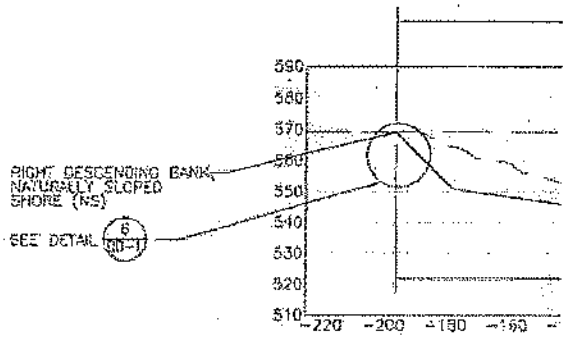
DESIGN CUT LINE

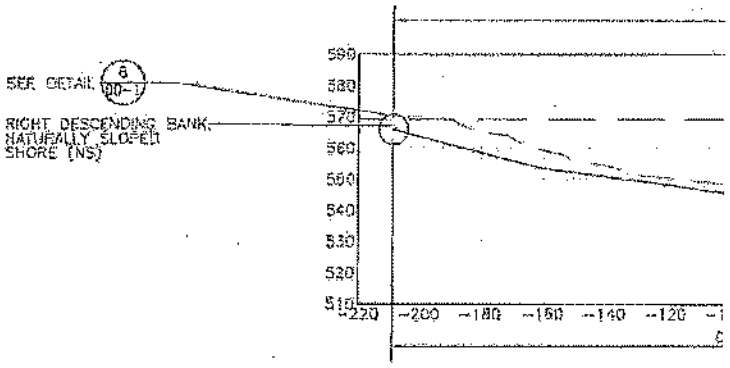
DREDGING LIMIT

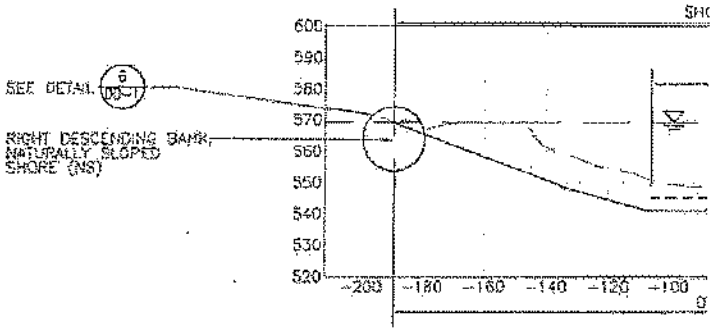
TO BE DREDGED

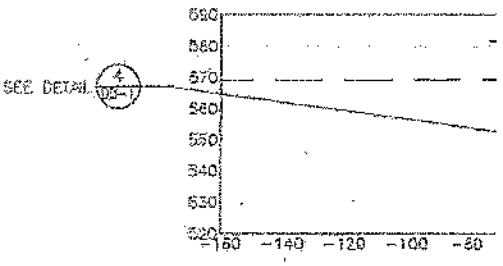
NO DREDGING

NO ENVIRONMENTAL DREDGING (N.I.C.)



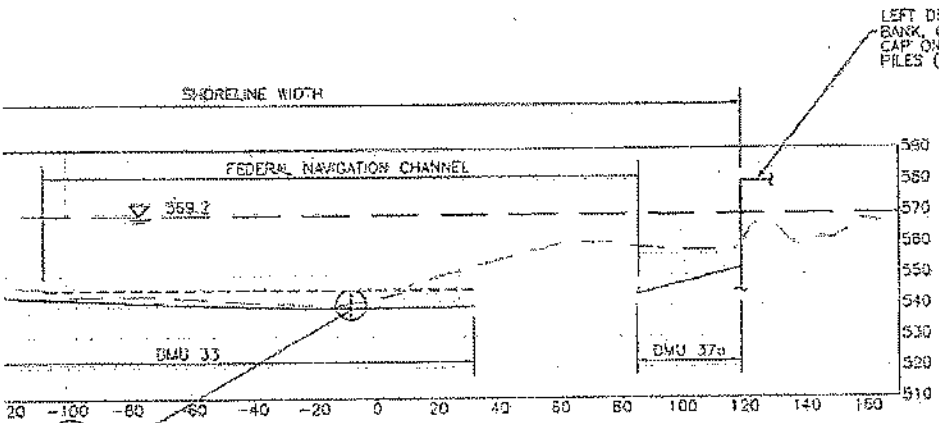




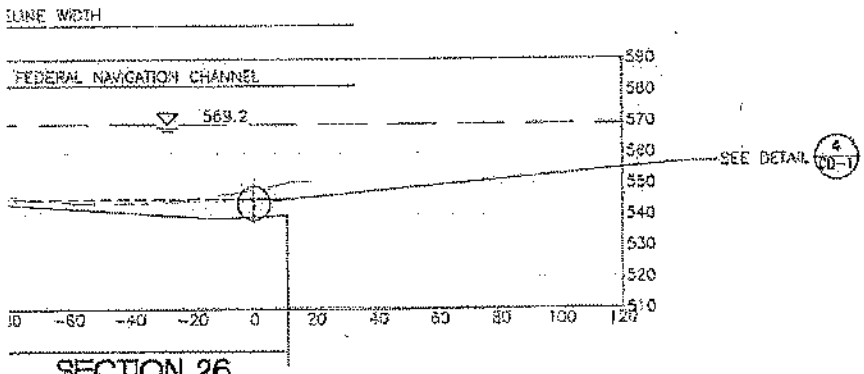


IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

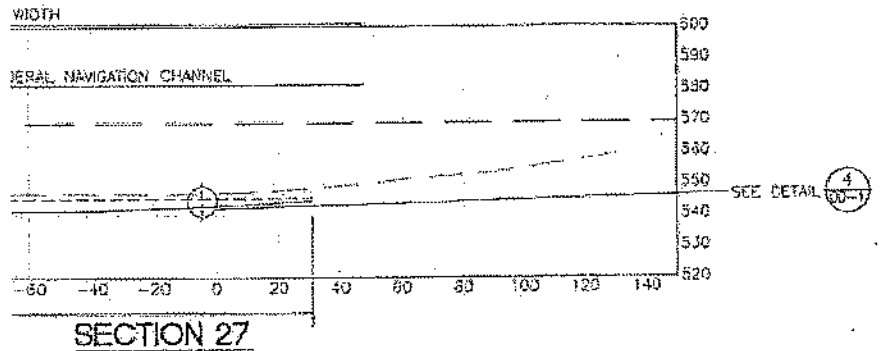
Honeywell International/Buffalo RIVER CROSSBY
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 80(79A) of 111



SECTION 25
SCALE: 1" = 30'-0"



SECTION 26
SCALE: 1" = 30'-0"



SECTION 27
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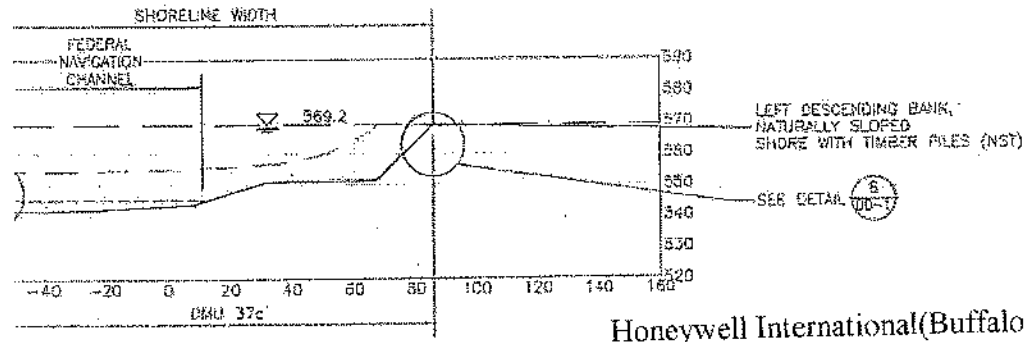


SECTION 28
SCALE: 1" = 30'-0"

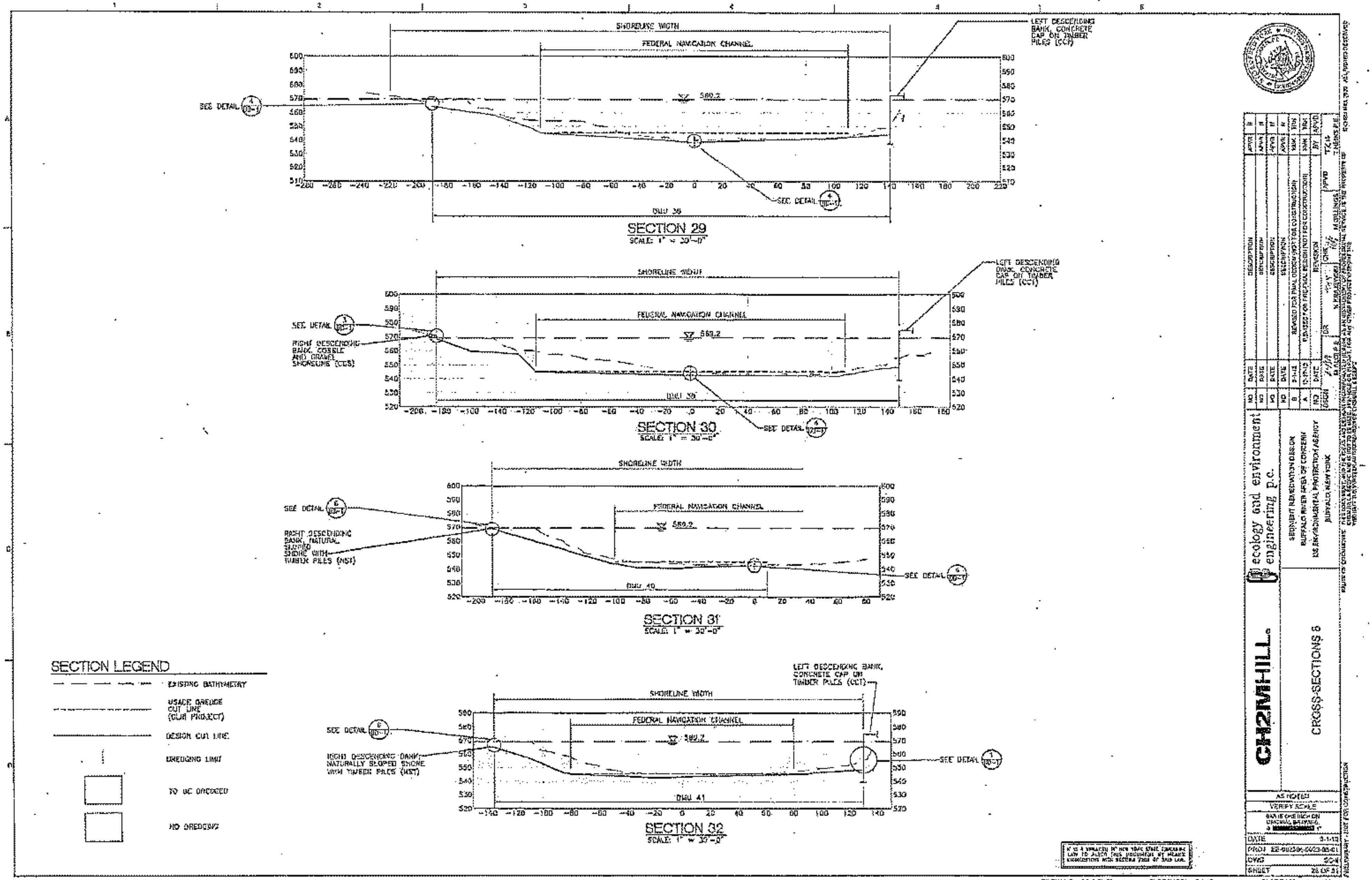
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 81(79B) of 111

CH2MHILL
ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

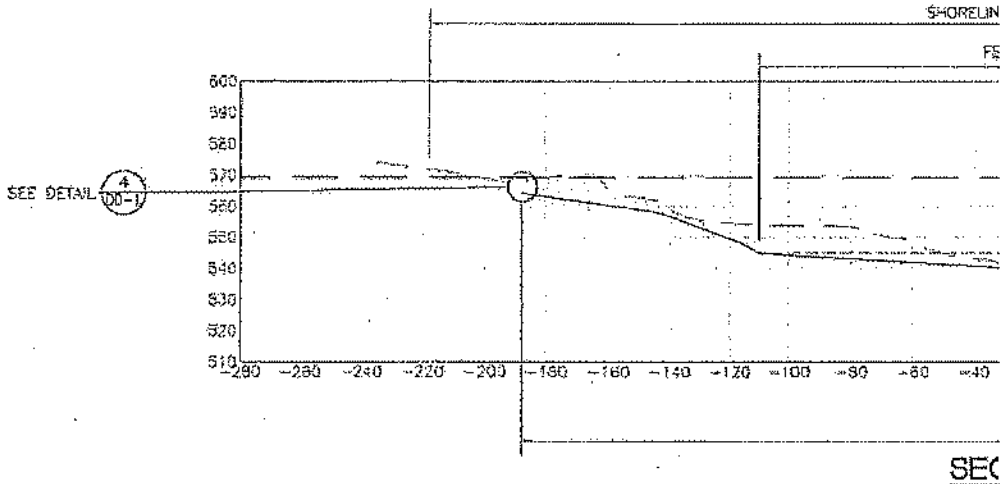
CROSS-SECTIONS 7

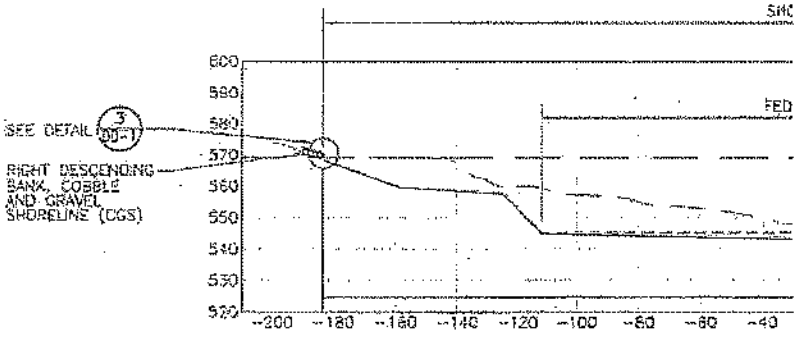
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE 3-1-13
PROJ EE-002304-0023-09-01
DWG SC-7
SHEET 25 OF 51
PLOT TIME: 3:00 PM

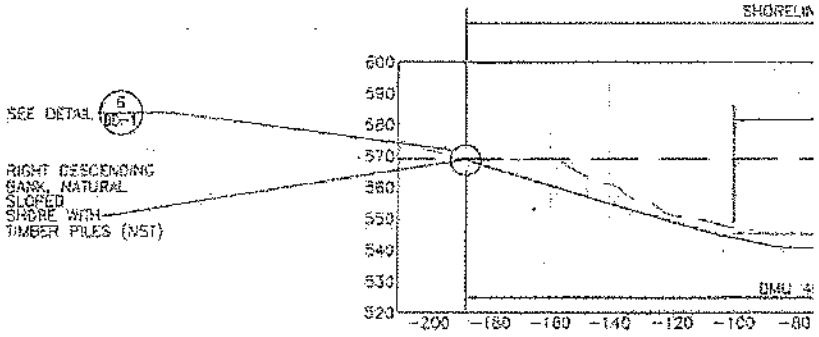

SECTION 29
SCALE: 1" = 30'-0"
SECTION 30
SCALE: 1" = 30'-0"
SECTION 31
SCALE: 1" = 30'-0"
SECTION 32
SCALE: 1" = 30'-0"
SHORELINE WIDTH
FEDERAL NAVIGATION CHANNEL
SECTION LEGEND
EXISTING BATHYMETRY
USACE DREDGE CUT LINE (GLRI PROJECT)
DESIGN CUT LINE
DREDGING LIMIT
TO BE DREDGED
NO DREDGING
CH2MHILL.
ecology and environment engineering p.c.
SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK
CROSS-SECTIONS 8

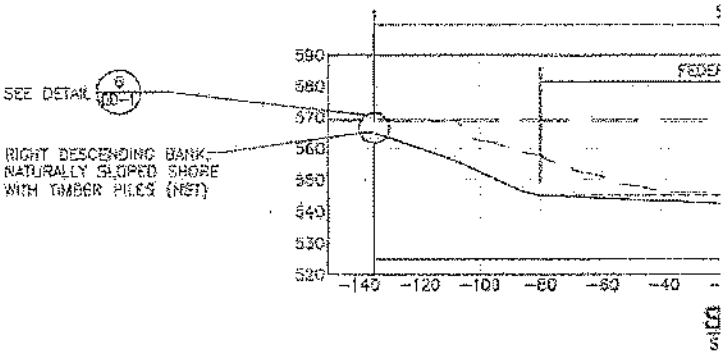
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 83(82A) of 111



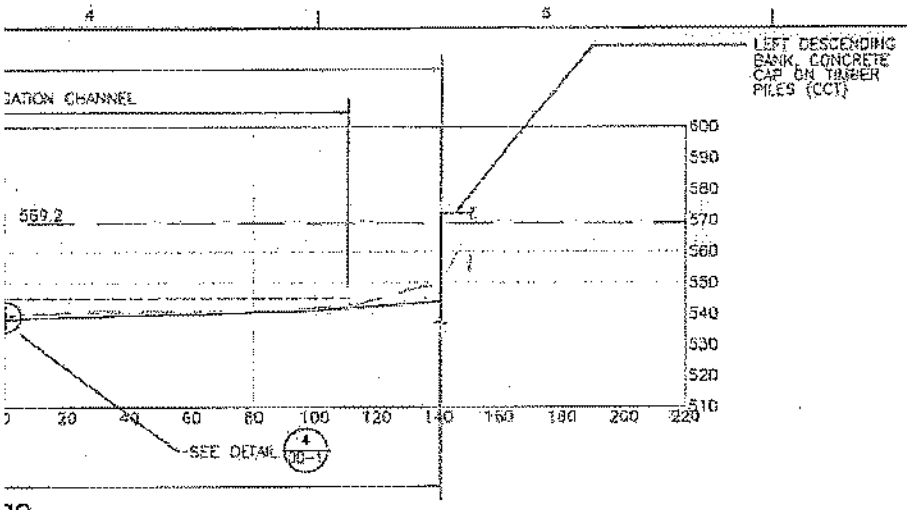


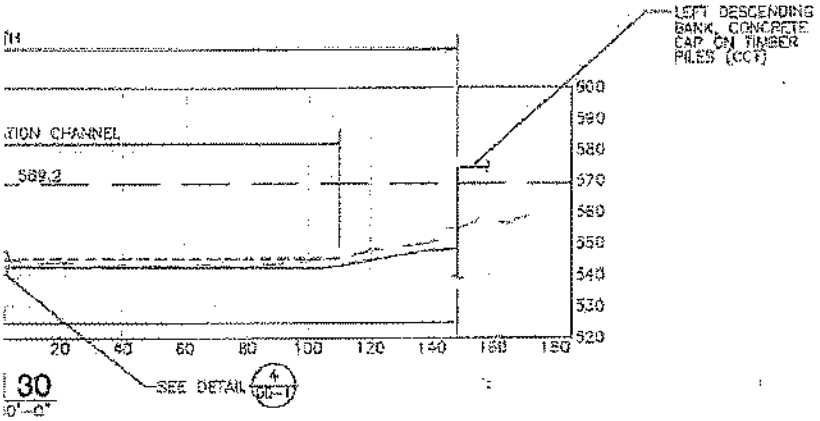


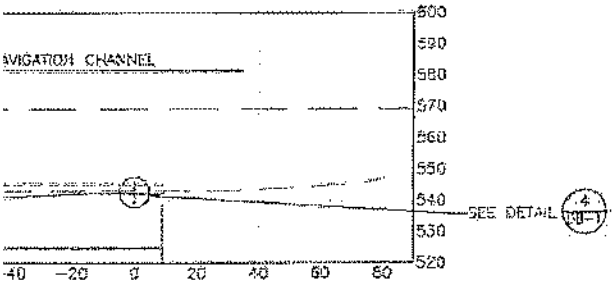


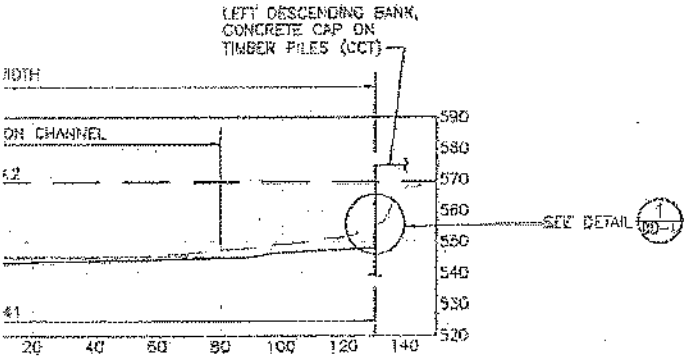
SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING









Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 84(82B) of 111

NO	DESCRIPTION	DATE	BY
4	REVISED PER	3-1-13	
3	REVISED FOR	12-17-12	

DSGN | DATE | DR | CHK

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CH2MHILL

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

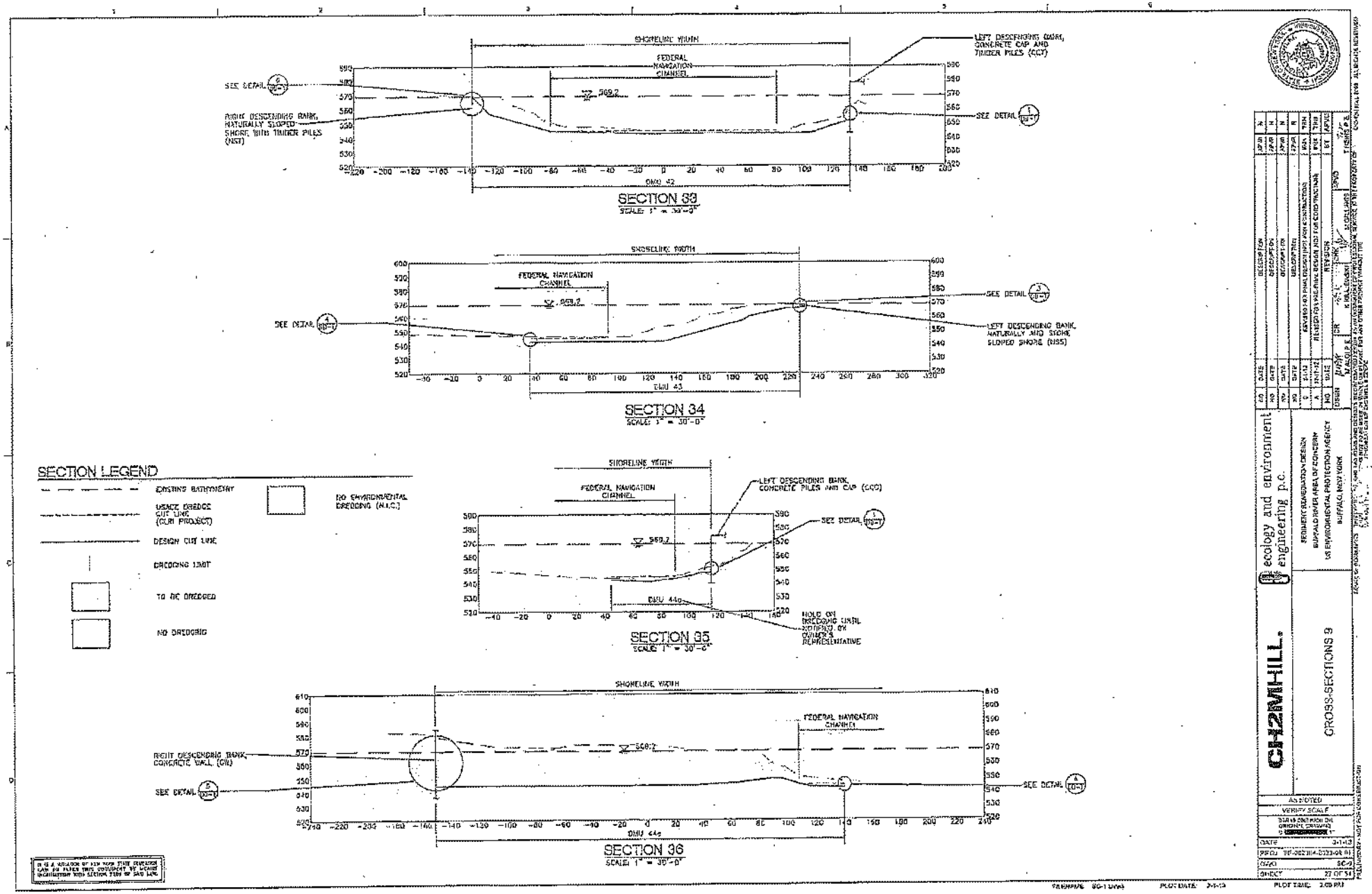
CROSS-SECTIONS 8

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

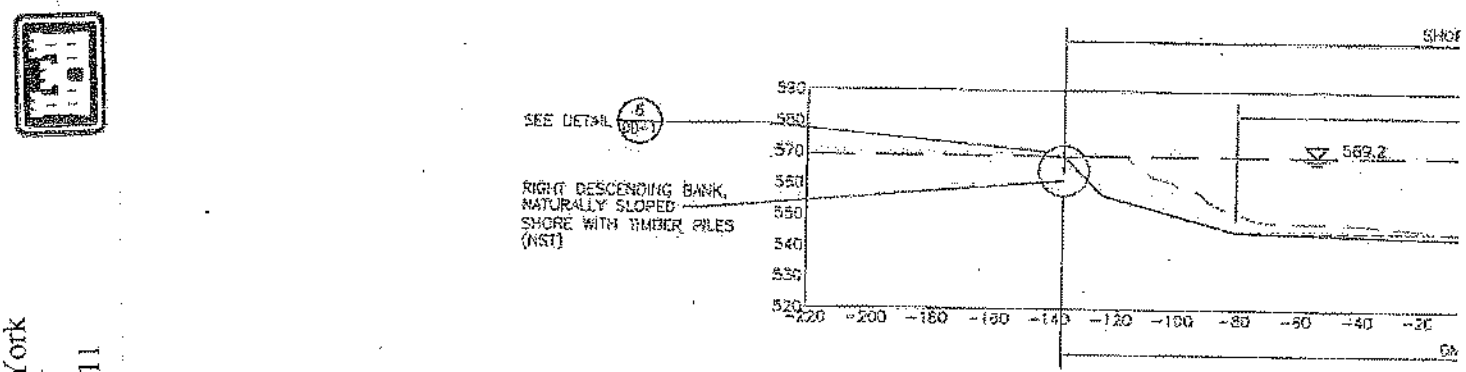
DATE 3-1-13
PROJ. EE-002304-0023-08-01
DWG SC-8
SHEET 28 OF 91

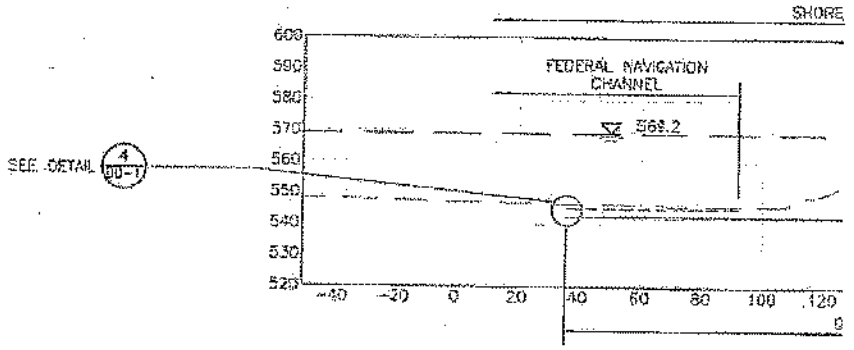
PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME: SC-8.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM



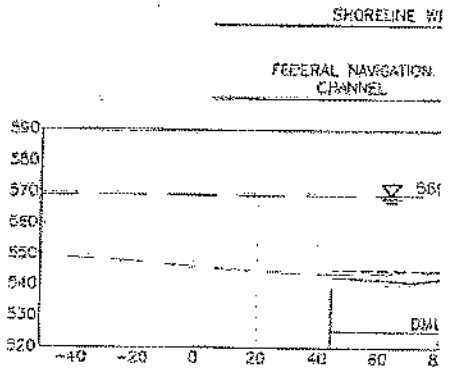
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 85 of 111

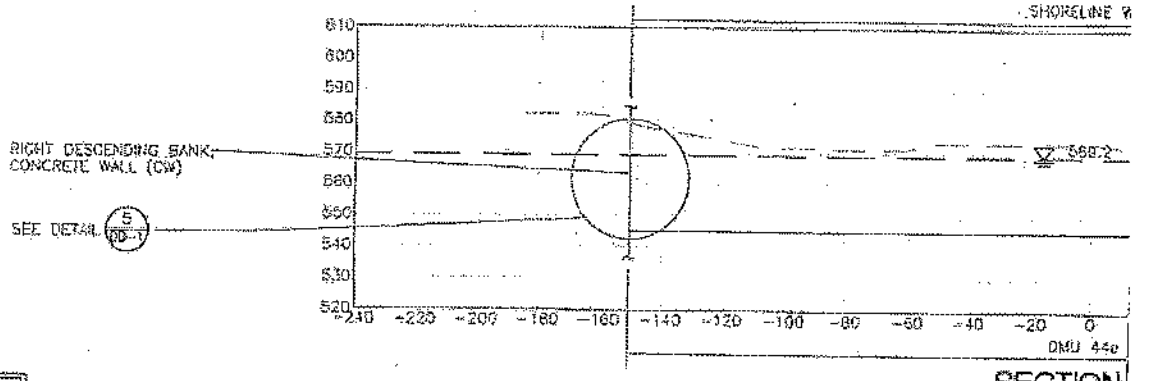




SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING
- NO ENVIRONMENTAL DREDGING (N.E.D.)





33
0"-0"

34
0"-0"

35
30"-0"

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 87(85B) of 111

NO	DATE	DESCRIPTION
0	3-1-13	REVISED FOR BID
A	12-17-12	REVISED FOR P
NO	DATE	
NO	DATE	
NO	DATE	

DESIGN NGH | DRAWN [illegible] | CHECK [illegible]

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

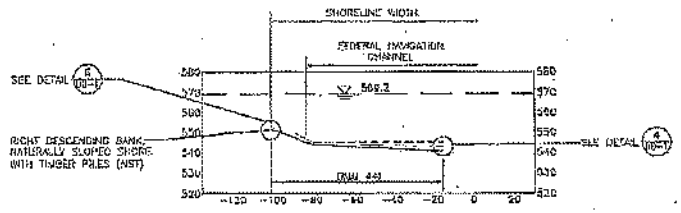
CH2MHILL

CROSS-SECTIONS 6

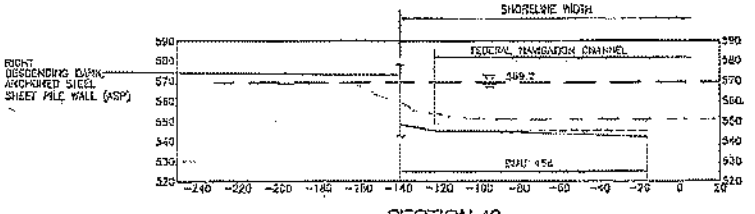
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
DATE 3-1-13
PROJ. EE-002304-0033-08-01
DWG SC-9
SHEET 27 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

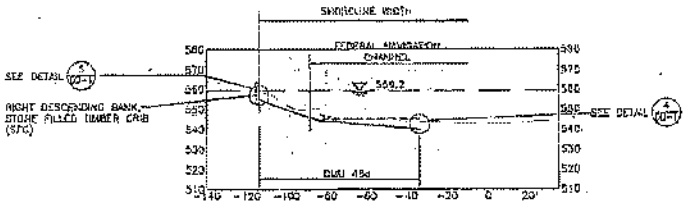
FILENAME SC-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM



SECTION 37
SCALE: 1" = 30'-0"



SECTION 40
SCALE: 1" = 30'-0"



SECTION 38
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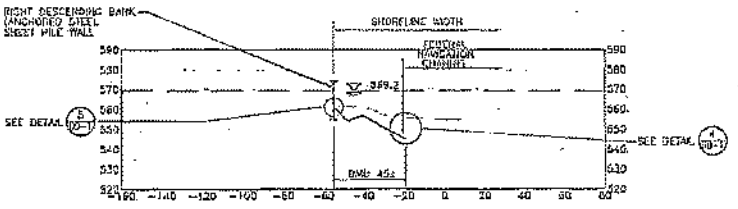
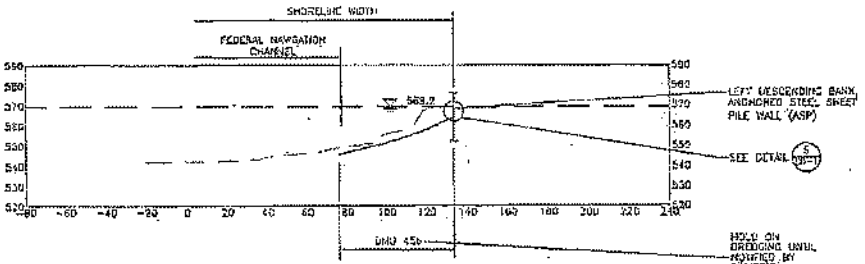


SECTION 41
SCALE: 1" = 30'-0"



SECTION 39
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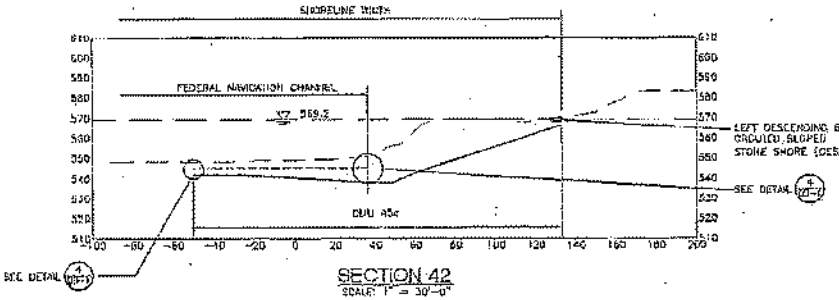

SECTION 42
SCALE: 1" = 30'-0"

SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLR PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING
- NO ENVIRONMENTAL DREDGING (N.E.D.)

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CROSS-SECTIONS 10

AS NOTED
VERIFY SCALE
DATE 3-1-13
FINAL EC-000301-0029-03-01
DWG SEC-10
SHEET 28 OF 51

FILENAME: SEC-10.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:03 PM

Honeywell International(Buffalo River Dredge)
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Erie County, New York
Quad: Buffalo NW
Sheet 88 of 111

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
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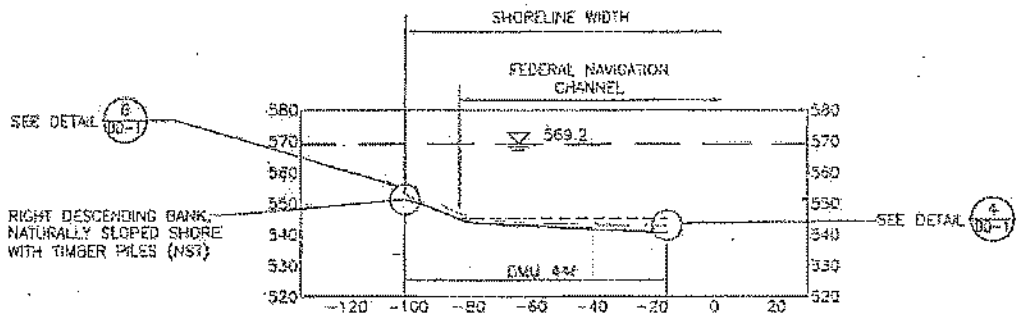

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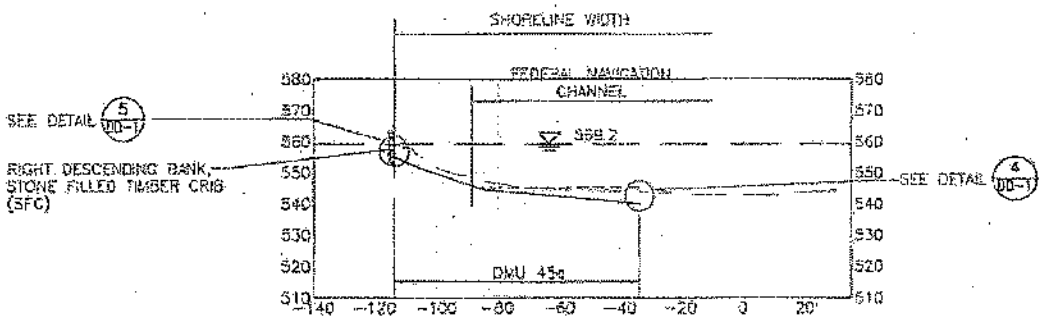

SECTION 38
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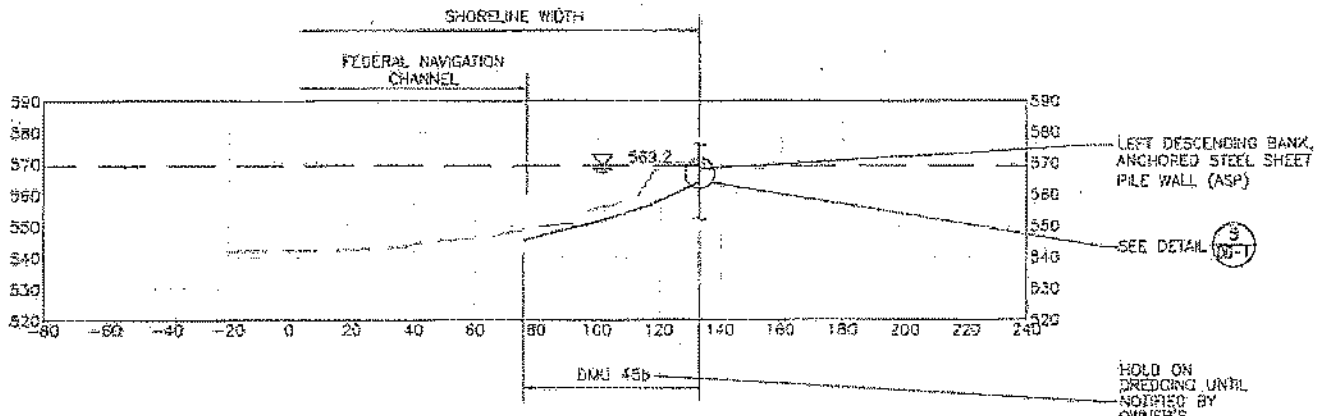
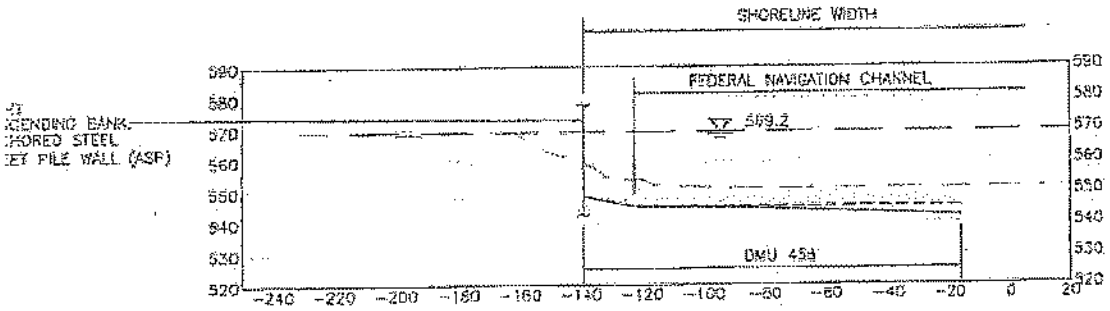


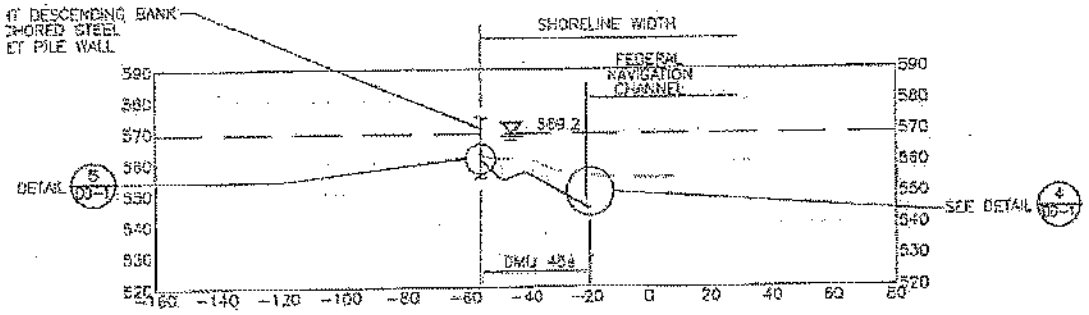
SECTION 39
SCALE: 1" = 30'-0"

SECTION LEGEND

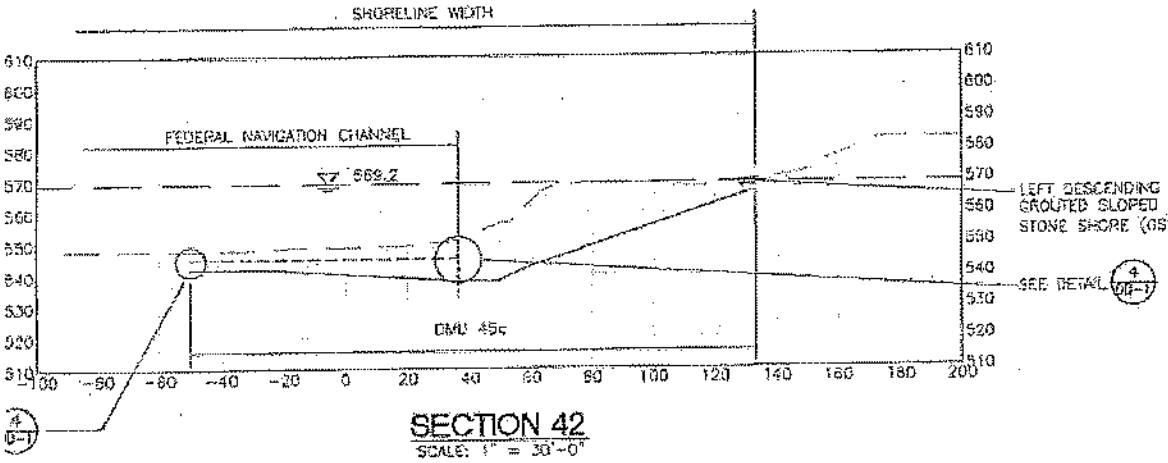
- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (GLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING



SECTION 40
SCALE: 1" = 30'-0"



SECTION 41
SCALE: 1" = 30'-0"



SECTION 42
SCALE: 1" = 30'-0"

NO ENVIRONMENTAL DREDGING (N.E.C.)

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 90(88B) of 111

NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
6	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
4	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
NO	DATE	REVISION	BY
DSGN	M. ARCIERI P.E.	DR K. KRAJEWSKI	CHK M. GILLINGS

APVD T. HIGGINS P.E.

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

CROSS-SECTIONS 10

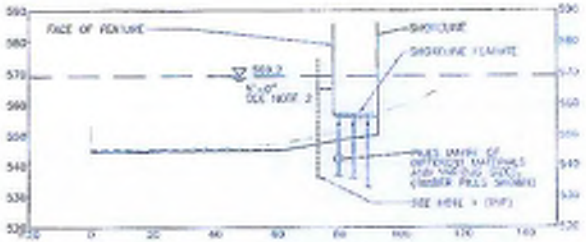
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

DATE 3-1-13
PROJ EE-005504-0023-08-01
DWG SC-10
SHEET 28 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME: SC-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM

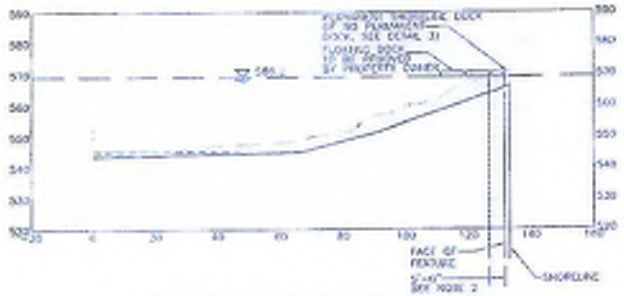
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 91 of 111



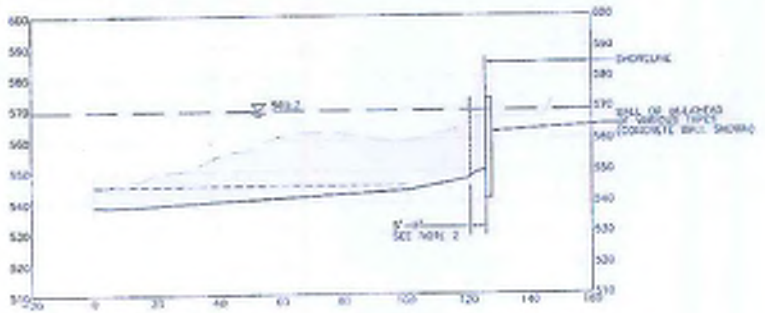
DETAIL 1 - DREDGING OPERATIONS AT SHORELINE TYPES TWTP, CCC, LD, SPC, SHPC, CPCW, AND CCT

DETAIL 4 - DREDGING OPERATIONS AT INTERFACE WITH SEDIMENT NOT TO BE DREDGED AT DMU BOUNDARY AND DREDGING LIMIT (SEE NOTE 6)

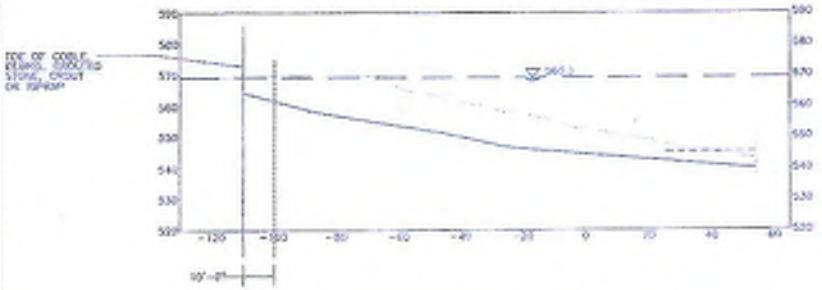
SECTION LEGEND



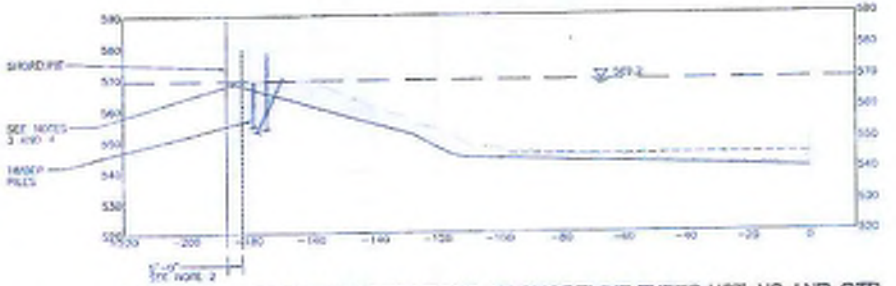
DETAIL 2 - DREDGING OPERATIONS AT SHORELINE TYPE AWB



DETAIL 5 - DREDGING OPERATIONS AT SHORELINE TYPES CW, ASP, SFC, SSPW, TB, RRA, AND AC



DETAIL 3 - DREDGING OPERATIONS AT SHORELINE TYPES NSS, GSS, GSSS, CGS, CGDS, BR AND RFRP



DETAIL 6 - DREDGING OPERATIONS AT SHORELINE TYPES NST, NS AND OTP

NOTES

1. DREDGING INCLUDES ANY SEDIMENT MATERIAL THAT SLOUGHS INTO THE AREA AT DESIGN CUT FACE.
2. 3' OFFSET IS FROM ALL THREE FACES OF ANY SHORELINE FEATURE THAT EXPOSES MORE THAN 3' INTO THE DMU.
3. FOR SHORELINE TYPES NS, NST & OTP, WHERE DEPTH OF CUT NEAR THE SHORELINES IS GREATER THAN 5' WHICH COULD CAUSE EROSION THE DREDGE PRISM PROVIDED BY THE CONTRACTOR HAS ESTABLISHED A 1H:1V MODIFIED DESIGN CUT LINE FROM START OF CUT TO INTERSECT WITH ORIGINAL DESIGN CUT LINE. DETAIL 7 (HC DC-1) DEPICTS THIS ADJUSTED DREDGE PRISM.
4. CONTRACTOR TO TREAT FALLEN TIMBER PILES AS DEBRIS. UPRIGHT (INCLUDES LEANING) TIMBERS WILL BE EXCAVATED AROUND AS BEST AS BUCKET MANEUVERABILITY WILL ALLOW AND TIMBERS LEFT IN PLACE.
5. THE SHORELINE FEATURES DEPICTED IN THESE DETAILS ARE ONLY REPRESENTATIVE OF WHAT MAY ACTUALLY BE FOUND AT ANY GIVEN POINT ON ANY SHORELINE. THESE DETAILS WERE SHOWN HERE TO CONVEY THE INTENT OF THE DREDGING PRODUCT AS THESE TYPES OF FEATURES.
6. DREDGING OF SEDIMENTS AT INTERFACE WITH SEDIMENTS NOT TO BE DREDGED OCCURS AT MORE THAN ONE DMU. SUCH AN INTERFACE CAN OCCUR AT A "CUT OF DREDGING" LINE WITHIN A DMU OR AT A DMU BOUNDARY THAT IS NOT AT A "SHORELINE" AS DEPICTED IN DETAIL 5.

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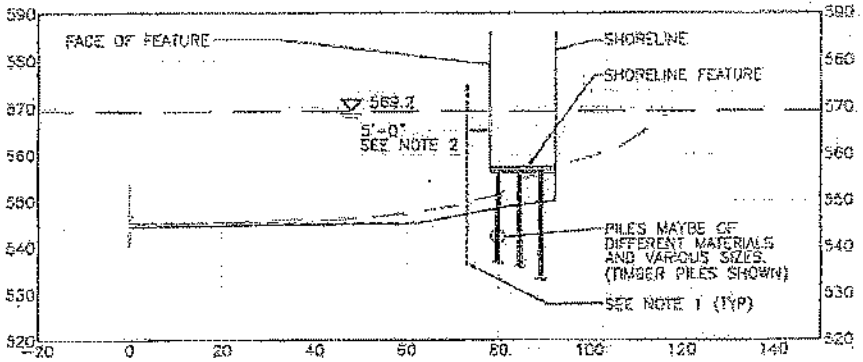
SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

DREDGING OPERATIONS DETAILS 1

AS NOTED
VERIFY SCALE

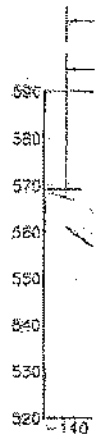
DATE 3-1-13
PROJ 338402304-0021-08-99
DWG DD-1
SHEET 29 OF 51

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW



DETAIL 1 - DREDGING OPERATIONS AT SHORELINE TYPES TWTP, CCC, LD, SPC, SHPC, CPCW, AND CCT

SCALE: 1" = 20'-0"



DE

SECTION LEGEND

EXISTING BATHYMETRY

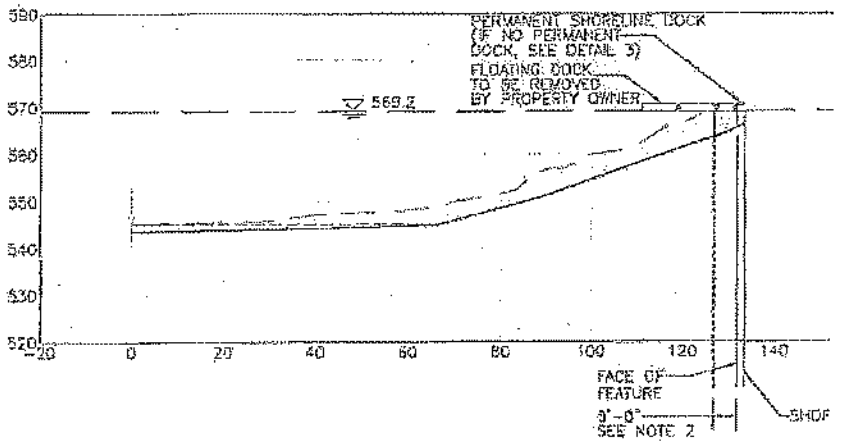
USACE DREDGE CUT LINE (OLD PROJECT)

DESIGN CUT LINE

DREDGING LIMIT

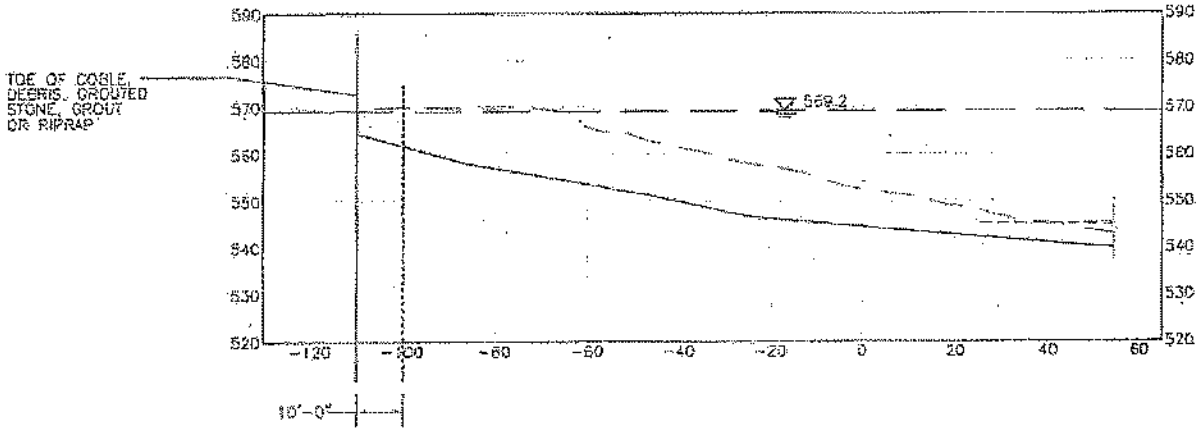
TO BE DREDGED

NO DREDGING



DETAIL 2 - DREDGING OPERATIONS AT SHORELINE TYPE AWB

SCALE: 1" = 20'-0"

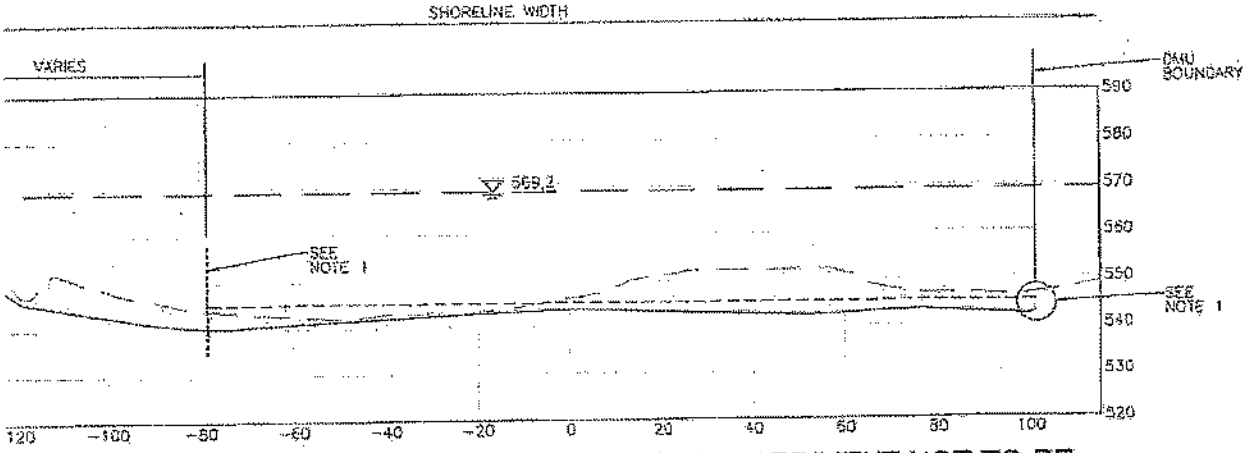


DETAIL 3 - DREDGING OPERATIONS AT SHORELINE TYPES NSS, GSS, GSSS, CGS, CGDS, BR AND RPRP

SCALE: 1" = 20'-0"

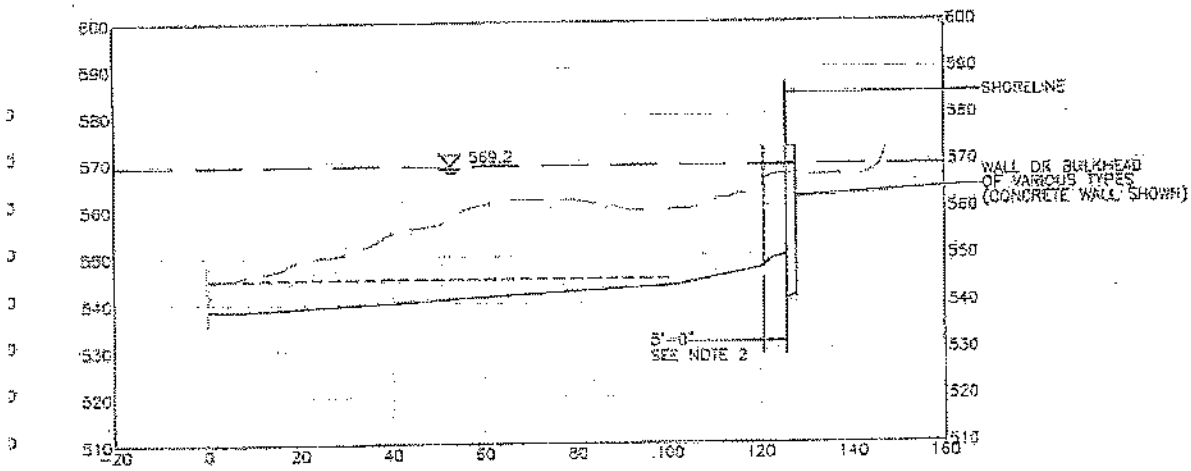
NOTES

1. DREDGING T
2. 5' OFFSET
3. FOR SHORE PRISM PRO DETAIL 7 O
4. CONTRACTO MANEUVERA
5. THE SHORE SHORELINE.
6. DREDGING A "LIMIT OF



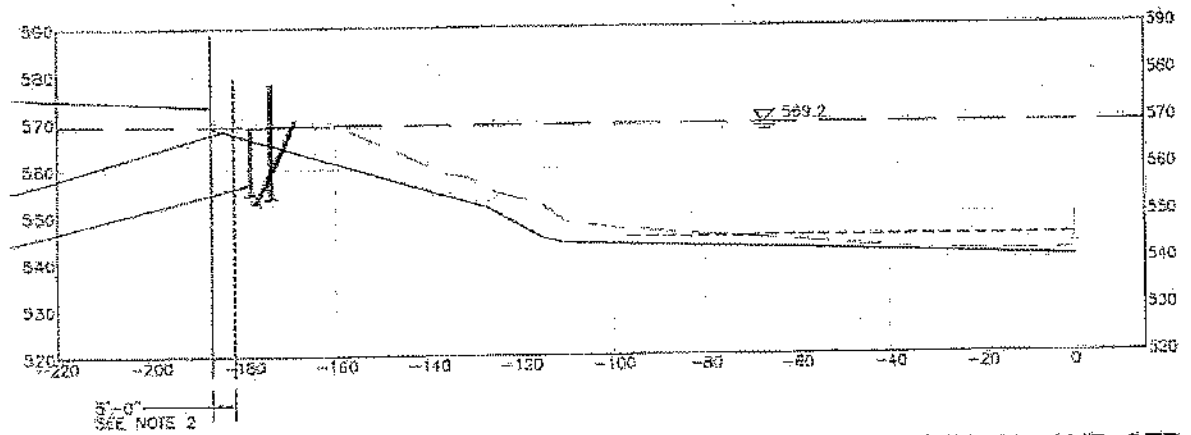
4 - DREDGING OPERATIONS AT INTERFACE WITH SEDIMENT NOT TO BE DREDGED AT DMU BOUNDARY AND DREDGING LIMIT (SEE NOTE 6)

SCALE: 1" = 20'-0"



DETAIL 5 - DREDGING OPERATIONS AT SHORELINE TYPES CW, ASP, SFC, SSPW, TB, RRA, AND AC

SCALE: 1" = 20'-0"



DETAIL 6 - DREDGING OPERATIONS AT SHORELINE TYPES NST, NS AND OTP

SCALE: 1" = 20'-0"

F ANY SEDIMENT MATERIAL THAT SLOUGHS INTO THE AREA AT DREDGE CUT FACE.

I ALL THREE FACES OF ANY SHORELINE FEATURE THAT EXTENDS MORE THAN 5' INTO THE DMU.

PES NS, NST & OTP, WHERE DEPTH OF CUT NEAR THE SHORELINES IS GREATER THAN 5' WHICH COULD CAUSE EROSION THE DREDGE
) THE CONTRACTOR HAS ESTABLISHED A 1H:1V MODIFIED DESIGN CUT LINE FROM START OF CUT TO INTERSECT WITH ORIGINAL DESIGN CUT LINE.
DEPICTS THIS ADJUSTED DREDGE PRISM.

/EAT FALLEN TIMBER PILES AS DEBRIS. UPRIGHT (INCLUDES LEANING) TIMBERS WILL BE EXCAVATED AROUND AS BEST AS BUCKET
ILL ALLOW AND TIMBERS LEFT IN PLACE.

ATURES DEPICTED IN THESE DETAILS ARE ONLY REPRESENTATIVE OF WHAT MAY ACTUALLY BE FOUND AT ANY GIVEN POINT ON ANY
DETAILS AREA SHOWN HERE TO CONVEY THE INTENT OF THIS DREDGING PROJECT AT THESE TYPES OF FEATURES.

MENTS AT INTERFACE WITH SEDIMENTS NOT TO BE DREDGED OCCURS AT MORE THAN ONE DMU, SUCH AN INTERFACE CAN OCCUR AT
ING" LINE WITHIN A DMU OR AT A DMU BOUNDARY THAT IS NOT AT A SHORELINE AS DEPICTED IN DETAIL 4.

Honeywell International(Buffalo River Dredge)
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Erie County, New York
Quad: Buffalo NW
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NO.	DESCRIPTION	DATE	DSGN	DR
0	REVISED	12-17-12	MALOIY E	
A	REVISED	4-1-13		

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

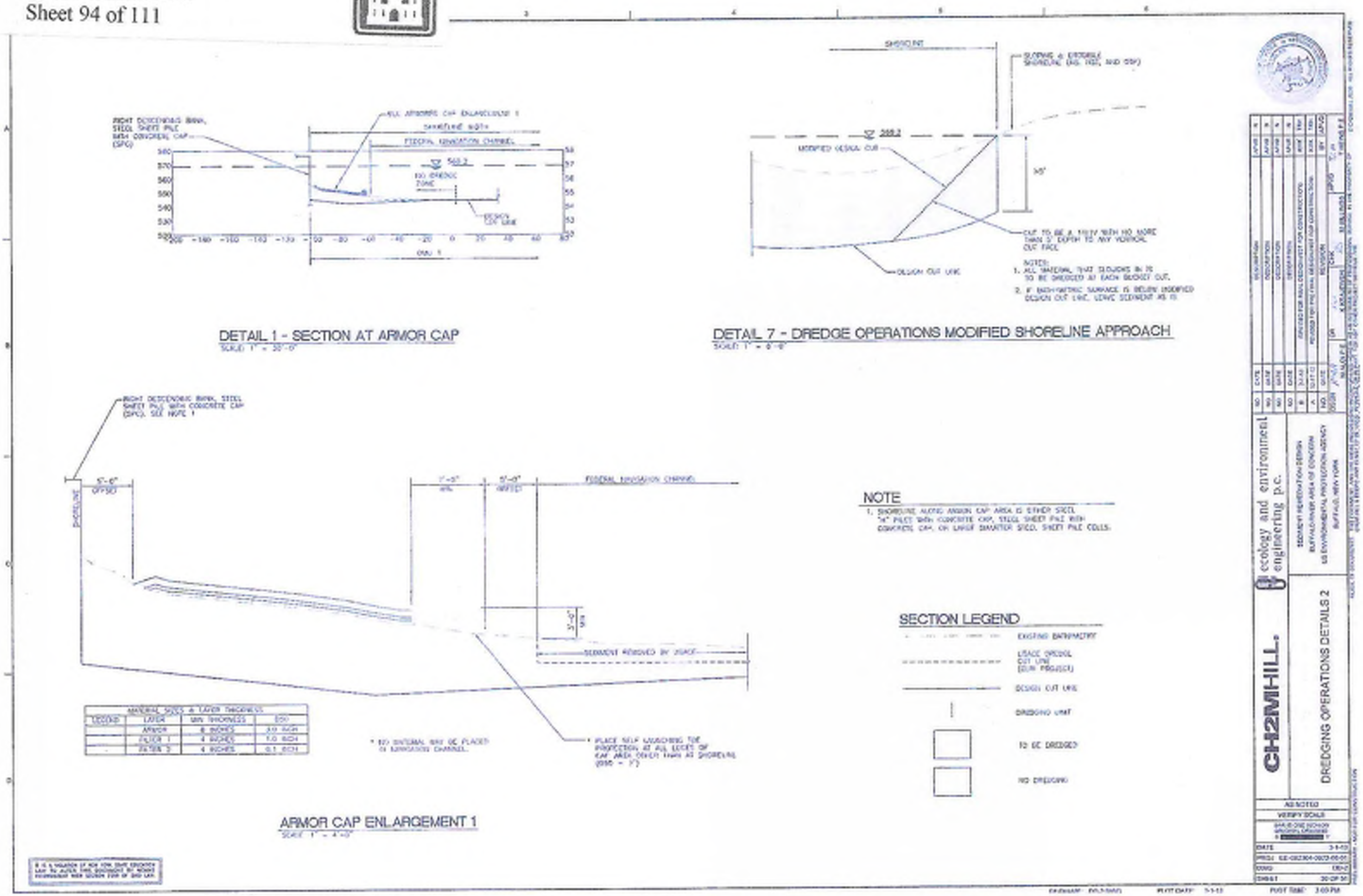
DREDGING OPERATIONS DETAILS 1

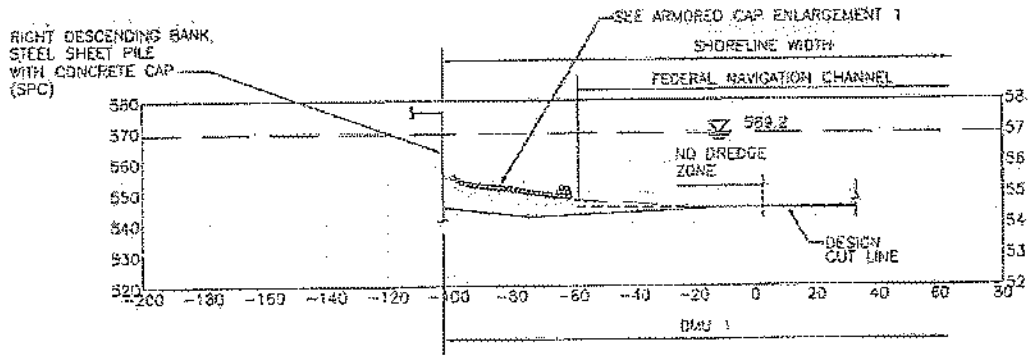
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
DATE 3-1-13
PROJ EE-002304-0023-00-01
DWG DD-1
SHEET 29 OF 51

PRELIMINARY - NOT FOR CONSTRUCTION

FILENAME: DD-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:00 PM

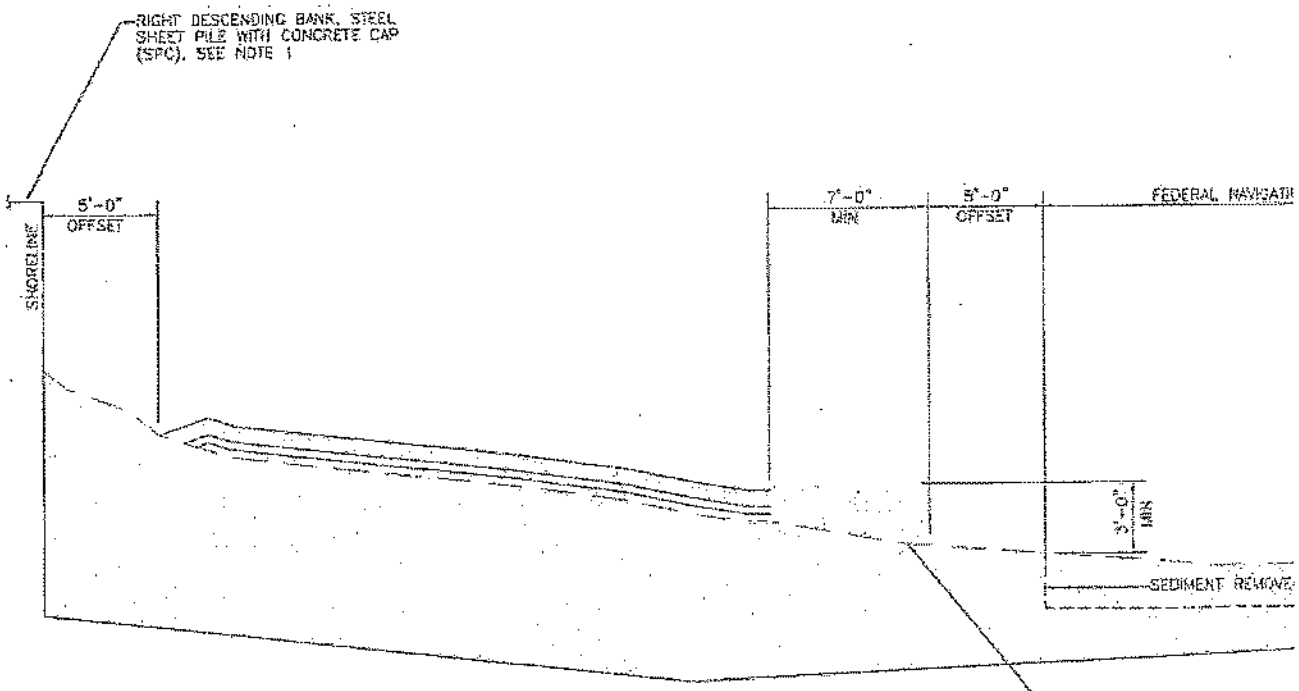
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 94 of 111





DETAIL 1 - SECTION AT ARMOR CAP

SCALE: 1" = 30'-0"

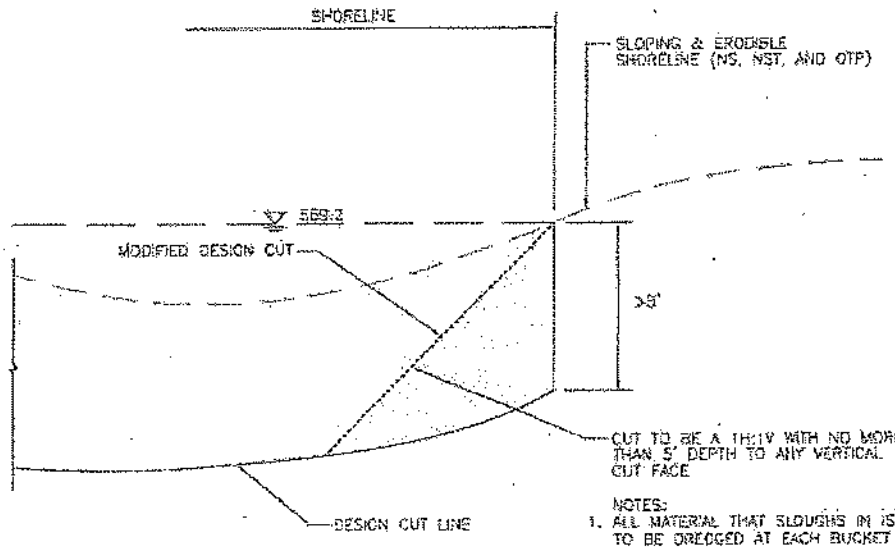


MATERIAL SIZES & LAYER THICKNESS			
LEGEND	LAYER	MIN THICKNESS	D50
	ARMOR	8 INCHES	3.0 INCH
	FILTER 1	4 INCHES	1.0 INCH
	FILTER 2	4 INCHES	0.1 INCH

* NO MATERIAL MAY BE PLACED IN NAVIGATION CHANNEL.

ARMOR CAP ENLARGEMENT 1

SCALE: 1" = 4'-0"



DETAIL 7 - DREDGE OPERATIONS MODIFIED SHORELINE APPROACH

SCALE: 1" = 5'-0"

NOTE

1. SHORELINE ALONG ARMOR CAP AREA IS EITHER STEEL "H" PILES WITH CONCRETE CAP, STEEL SHEET PILE WITH CONCRETE CAP, OR LARGE DIAMETER STEEL SHEET PILE CELLS.

SECTION LEGEND

- EXISTING BATHYMETRY
- USACE DREDGE CUT LINE (CLRI PROJECT)
- DESIGN CUT LINE
- DREDGING LIMIT
- TO BE DREDGED
- NO DREDGING

OF SHORELINE

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
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NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
NO	DATE	DESCRIPTION	APVR
B	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	MMK
A	12-17-12	REVISED FOR PRELIMINARY DESIGN (NOT FOR CONSTRUCTION)	MMK
NO.	DATE	REVISION	BY
DSGN	M ALOI, P.E.	DR K KRAJEWSKI	CHK M GILLINGS

APVD T HEINS, P.E.

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

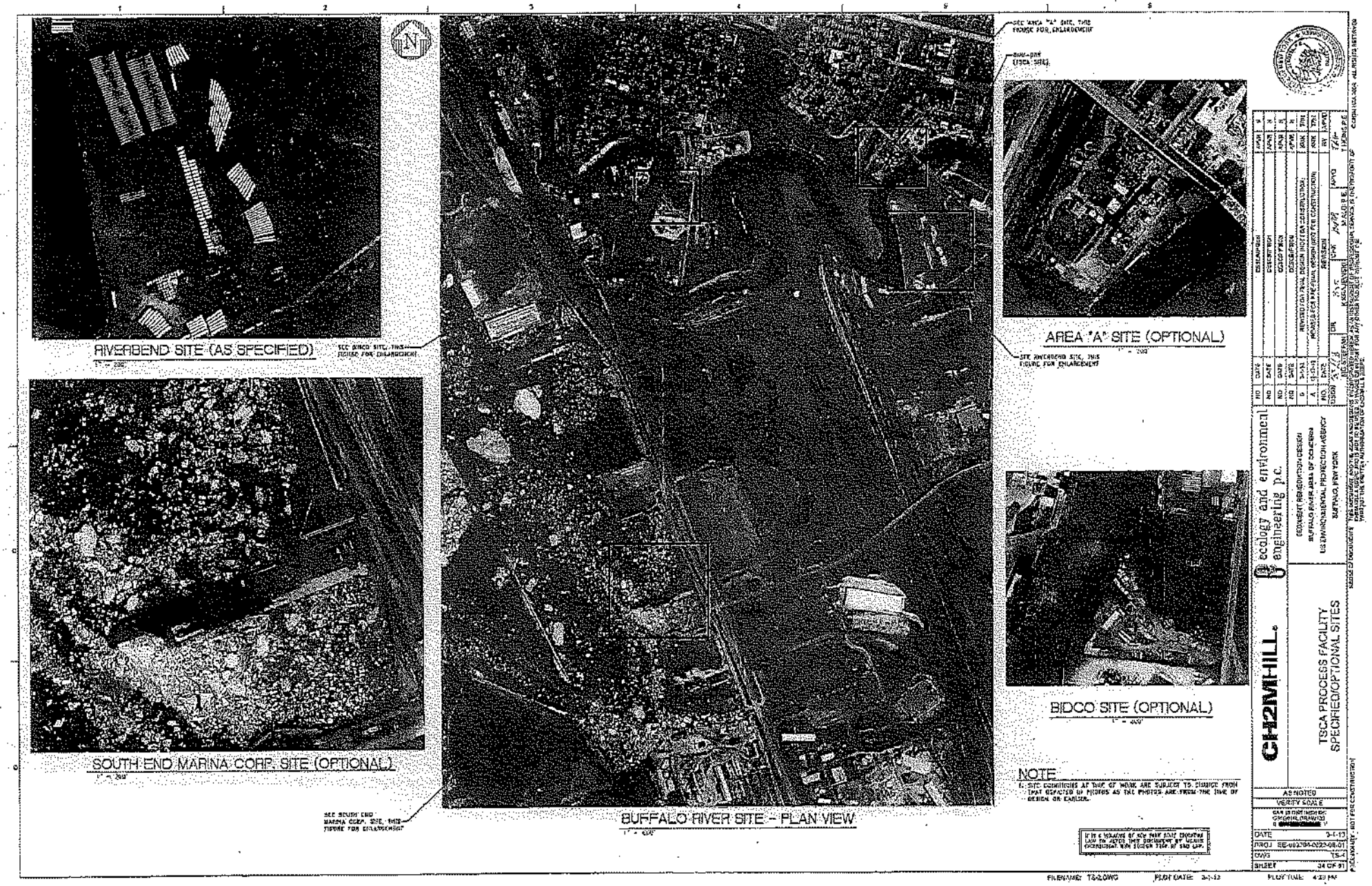
DREDGING OPERATIONS DETAILS 2

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DATE 3-1-13
PROJ EE-002504-0023.09-01
DWG DD-2
SHEET 39 OF 51

FILENAME: DD-2.DWG PLOT DATE: 3-1-13 PLOT TIME: 3:03 PM

PRELIMINARY - NOT FOR CONSTRUCTION



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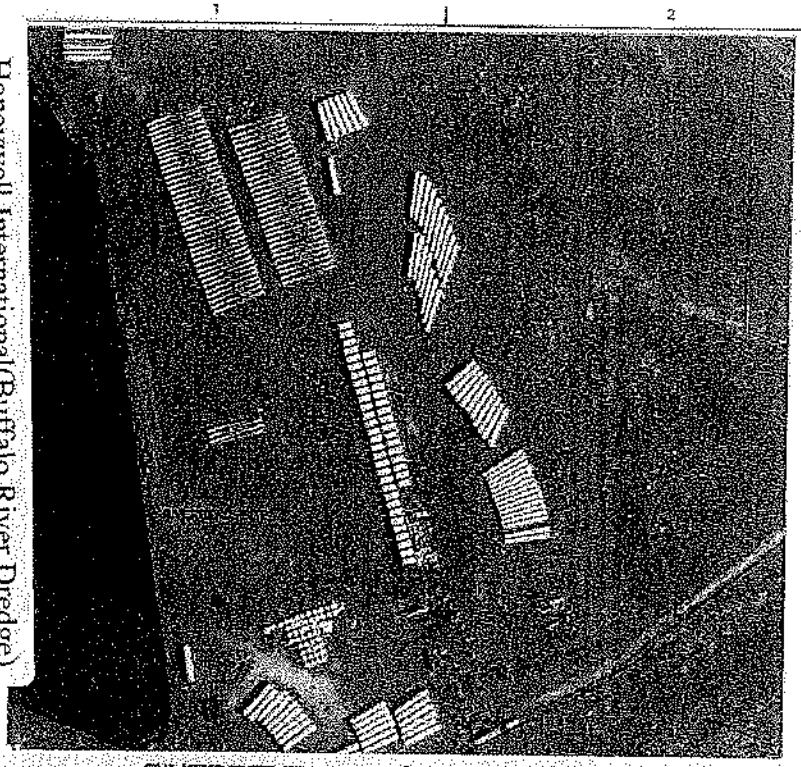
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW



RIVERBEND SITE (AS SPECIFIED)
1" = 200'

SEE RIVERBEND SITE, THIS FIGURE FOR ENLARGEMENT

SOUTH END MARINA CORP. SITE (OPTIONAL)
1" = 200'

SEE SOUTH END MARINA CORP. SITE, THIS FIGURE FOR ENLARGEMENT

BUFF
1" = 200'

RIVER SITE - PLAN VIEW

AREA "A" SITE (OPTIONAL)

1" = 200'

BIDCO SITE (OPTIONAL)

1" = 200'

NOTE

1. SITE CONDITIONS AT TIME OF WORK ARE SUBJECT TO CHANGE FROM THAT DEPICTED IN PHOTOS AS THE PHOTOS ARE FROM THE TIME OF DESIGN OR EARLIER.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

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D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 99(97B) of 111

NO	DATE	DESCRIPTION
NO.	DATE	
NO.	DATE	
NO.	DATE	REVISED
0	3-1-13	ISSUED
A	12-17-13	RE-ISSUED
DSGN:	DATE:	DR: MG STEFFAN

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

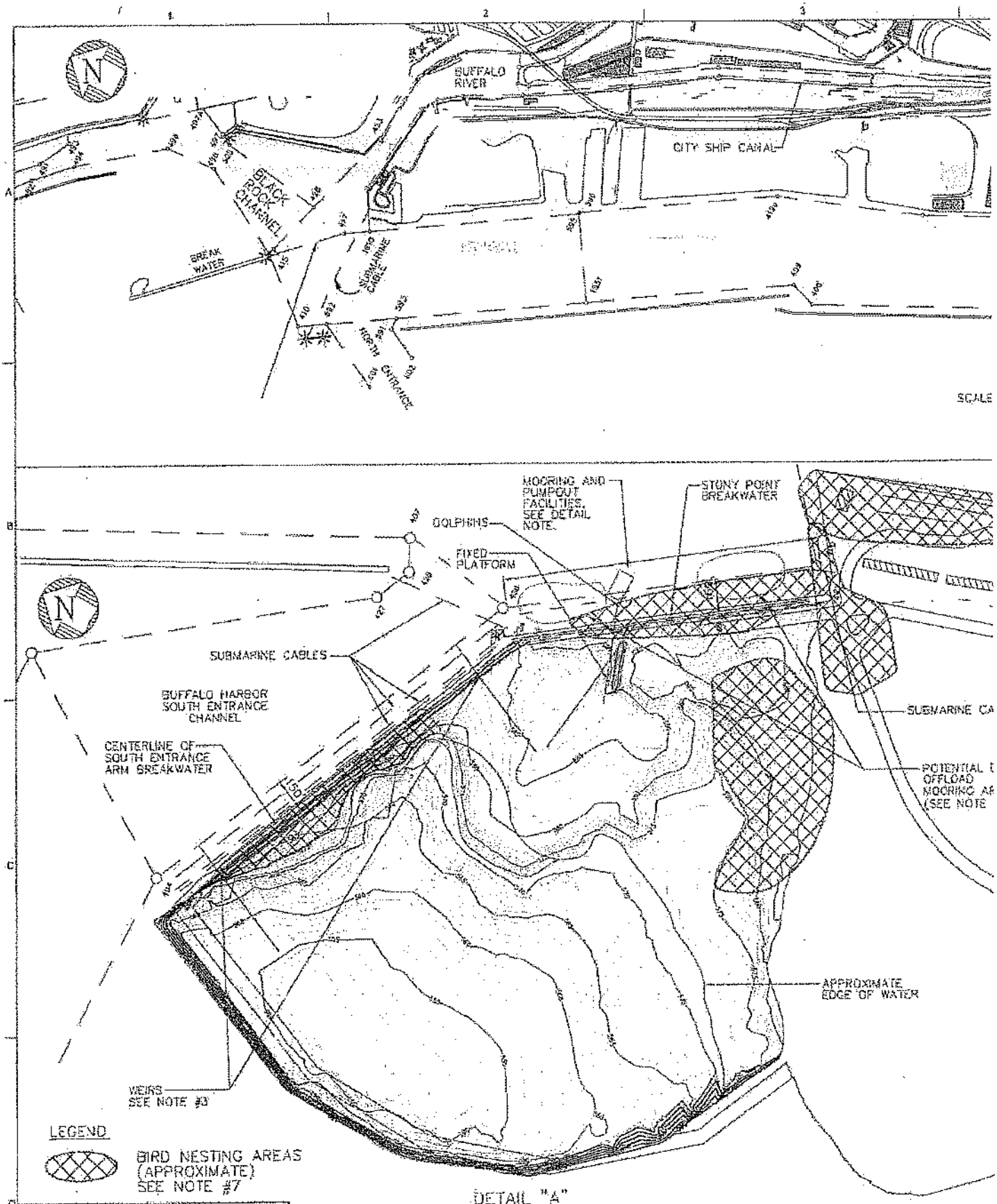
TSCA PROCESS FACILITY
SPECIFIED/OPTIONAL SITES

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALE ACCORDINGLY

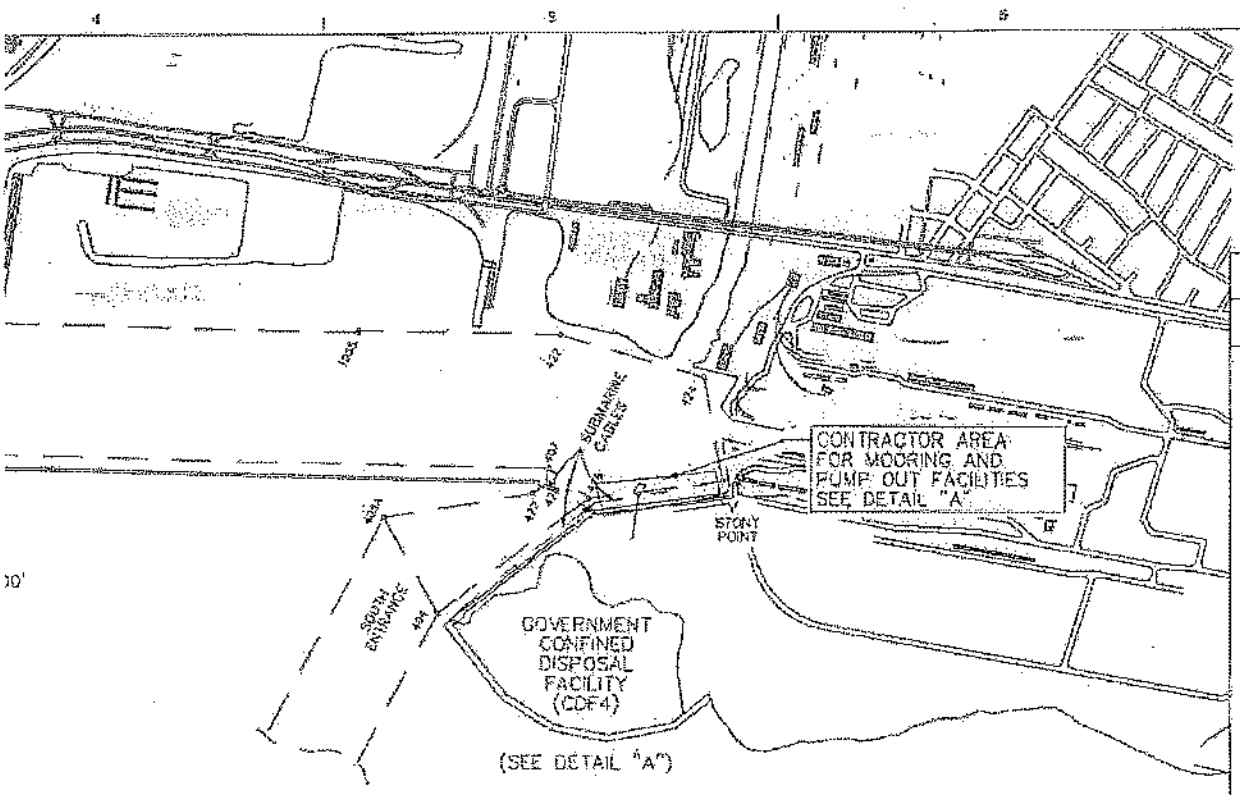
DATE	3-1-13
PROJ	EE-002304-0023-05-01
DWG	TS-4
SHEET	34 OF 51

FILENAME: TS-4.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:30 PM

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 100 of 111



Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 101(100A) of 111



GENERAL NOTES:

1. THIS DRAWING IS BASED UPON A DRAWING OBTAINED FROM USACE BUFFALO DISTRICT (C-103, JUNE 2010).
2. AS STATED IN THE USACE BUFFALO DISTRICT FILE, BASE MAP WAS TAKEN FROM NOAA CHART NO. 14830. APPROXIMATE LOCATIONS OF SUBMERGED CROSSINGS ALONG RIVER AND SHIP CANAL ARE SHOWN AS DASHED LINES.
3. THE STONY POINT BREAKWATER CONTAINS A CRIB STRUCTURE. DETAILS OF CONSTRUCTION ARE AVAILABLE AT THE USACE BUFFALO DISTRICT OFFICE. DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL EXPENSE AND TO THE SATISFACTION OF THE USACE.
4. CONTOURS WITHIN THE GOVERNMENT'S CONFINED DISPOSAL FACILITY ARE FROM A SURVEY TAKEN IN JUNE, 2006. THEY DO NOT REFLECT MATERIAL PLACED IN SUBSEQUENT DREDGING EVENTS.
5. THE CONTRACTOR SHALL NOT ALLOW WATER TO EXIT THE CDF THROUGH THE EXISTING WEIRS (INVERT ELEVATION 579.6; IGLD 1985).
6. REFER TO THE CURRENT USACE PERMIT OR APPLICATION (SEE BODR APPENDIX J) FOR USE OF THE CDF FOR ANY FURTHER RESTRICTIONS AT THE CDF.
7. MATERIAL PLACED IN THE CDF PRIOR TO JULY 1, OF ANY YEAR, SHALL NOT IMPACT ANY BIRD NESTS LOCATED WITHIN THE FACILITY. FOR PLANNING PURPOSES, IT SHOULD BE ASSUMED THAT BIRD NESTS ARE LOCATED NO LOWER THAN ELEVATION 575.0.
8. SEE FIGURE 2B FROM THE APPLICATION FOR UTILIZING THE FEDERAL CONFINED DISPOSAL FACILITY FOR ADDITIONAL INFORMATION REGARDING THE CDF. SEE SUPPLEMENT TO SPECIFICATION SECTION 35 20 23.13 ENVIRONMENTAL DREDGING.

NO	DATE	REVISION	DR	CHK	APVD
B	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH	
A	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH	
DSGN	M ALDI P.E.	DR K KRAJEWSKI	CHK M GILLINGS	APVD T HEINS P.E.	

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CONFINED DISPOSAL FACILITY
OFF LOADING AREA

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
IF NOT ONE INCH ADJUST SCALE ACCORDINGLY

DATE	3-1-13
PROJ EE-002304-0023-03-01	
DWG	CD-1
SHEET	35 OF 51

FILENAME: CD-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:39 PM

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Erie County, New York
Quad: Buffalo NW
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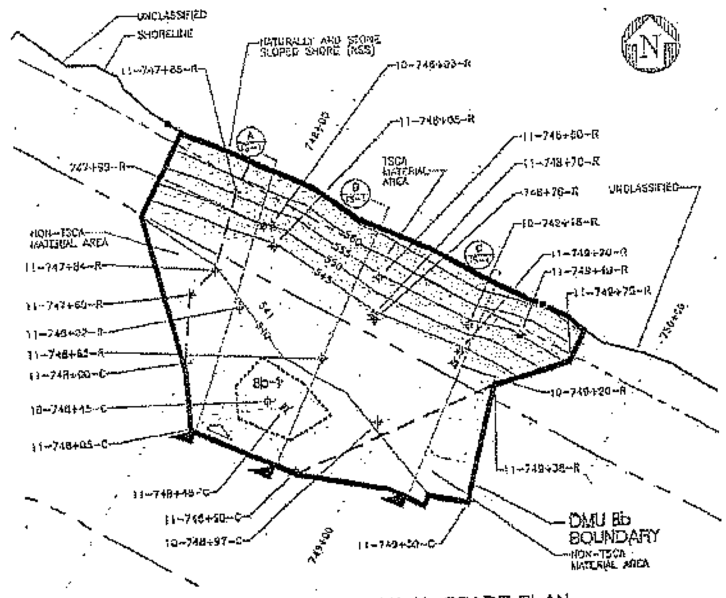


TSCA AREA DREDGING FINAL GRADE PLAN

SCALE: 1" = 30'-0"

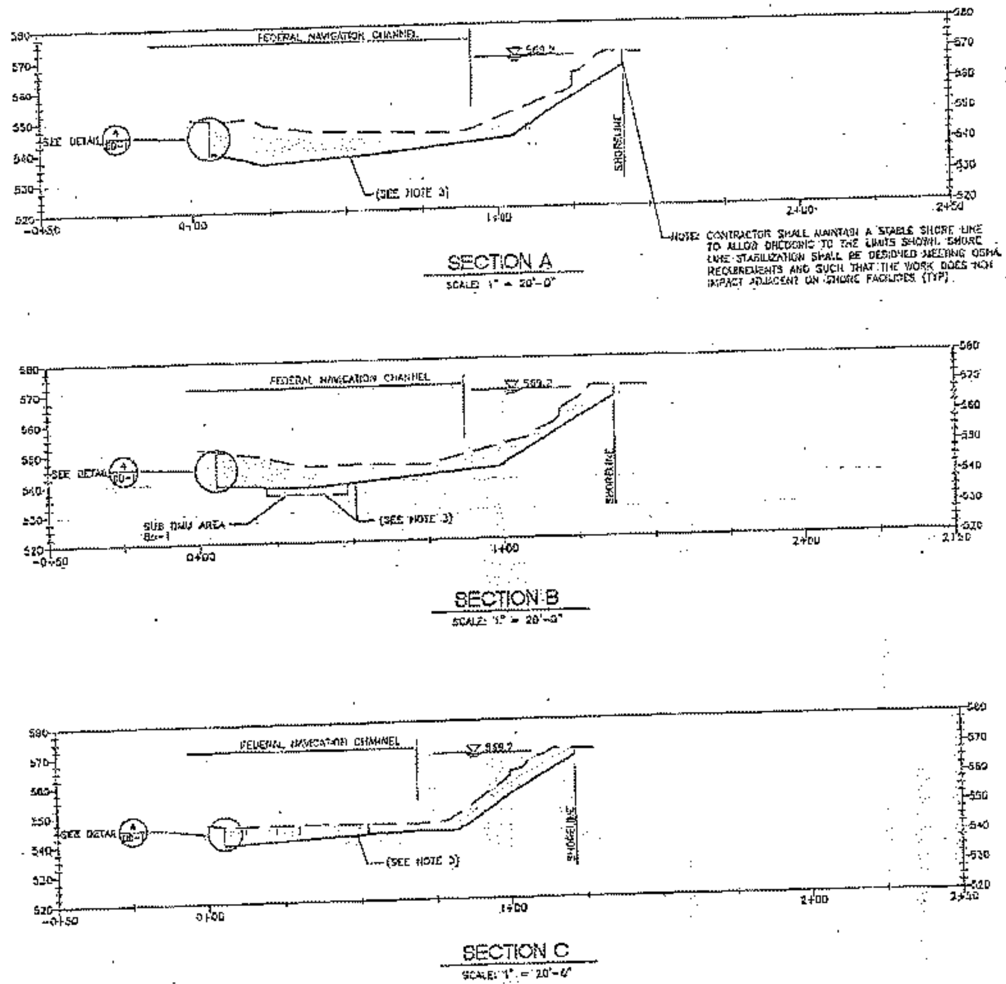
NOTE: SEE TS-2 FOR POST DREDGING CONFIRMATION SAMPLE LOCATIONS.

PLAN LEGEND

TSCA MATERIAL AREA	FEDERAL NAVIGATION CHANNEL
SUB DMU AREA (SEE NOTE 3)	CORING LOCATION
540 MAJOR DREDGE CUT CONTOUR	10-748+97-C: CHANNEL, STATION, YEAR CORING WAS PERFORMED
541 MINOR DREDGE CUT CONTOUR	

SECTION LEGEND

- EXISTING BATHYMETRY
- DESIGN CUT LINE
- TSCA SEDIMENT REMOVAL LIMITS (VERTICALLY)
- NON-TSCA SEDIMENT REMOVAL LIMITS (VERTICALLY)
- 569.2 LOW WATER DATUM ELEVATION



SECTION A
SCALE: 1" = 20'-0"

SECTION B
SCALE: 1" = 20'-0"

SECTION C
SCALE: 1" = 20'-0"

NOTES

1. THE DESIGN CUT LINE IS TO THE FILL ELEVATIONS EXCEPT IN THE SUB DMU 8b-1 AREA WHERE THE DESIGN CUT LINE IS TO ELEVATION 530 FEET.
2. THE MATERIAL IN DMU 8b THAT IS OUTSIDE OF THE TSCA MATERIAL AREA SHALL BE DREDGED AS NON TSCA SEDIMENT AND PLACED AT THE USACE CDF NO 4 (SEE DWG CD-1). THE TSCA MATERIAL SHALL BE HANDLED AS INDICATED ON TS-2 AND TS-3.

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT IN ANY MANNER.

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SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

TSCA AREA SITE PLAN AND PROFILES

NO	DATE	DESCRIPTION	BY	APVD
A		ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)		
B		REVISED FOR 90% DRAFT (NOT FOR CONSTRUCTION)		
C		REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)		
D		REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)		

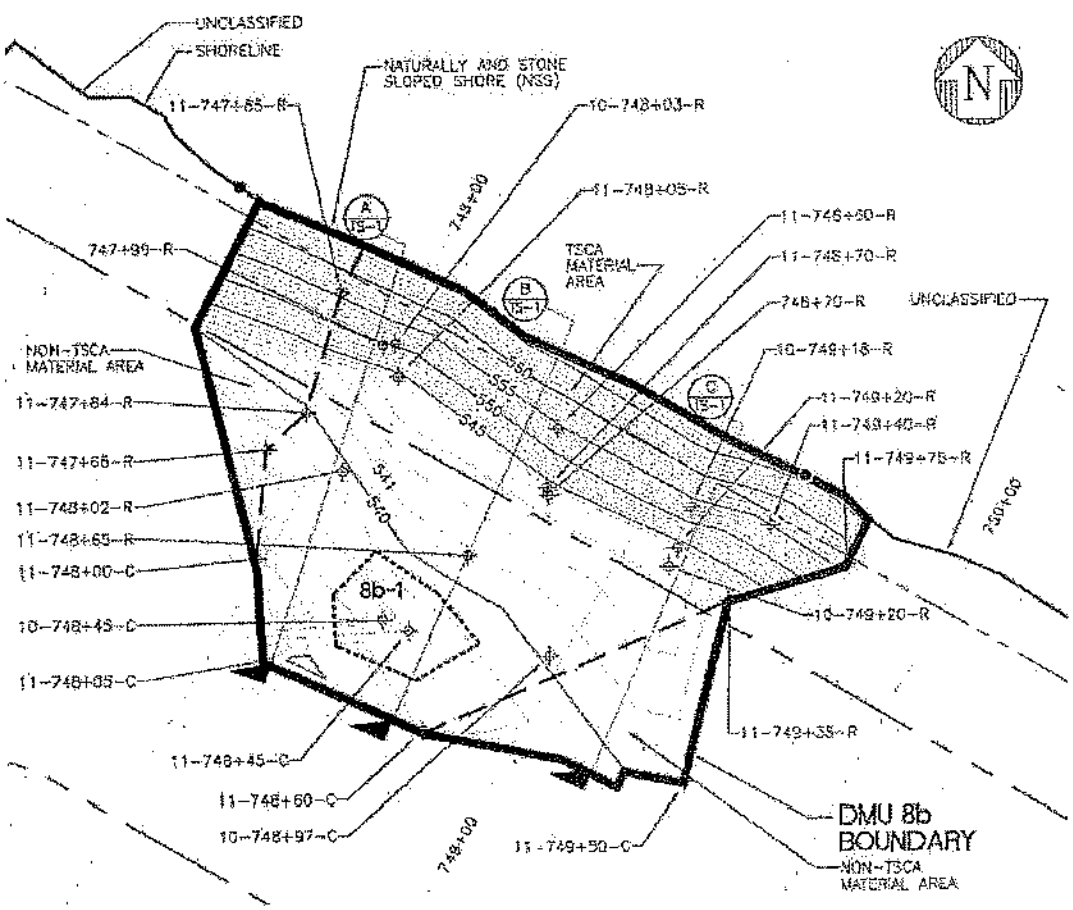
NOT TO SCALE
VERIFY SCALE

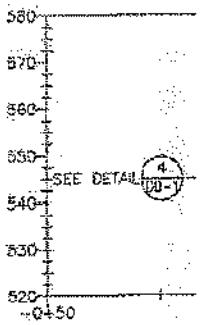
DWG TS-1

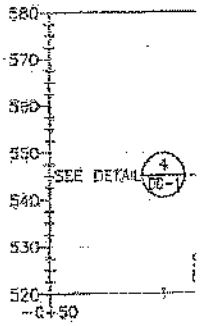
FILENAME: TS-1.DWG
PLOT DATE: 3-1-13

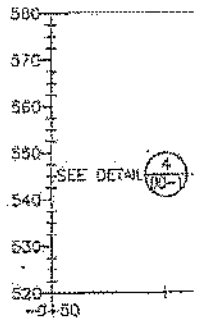
PRELIMINARY - NOT FOR CONSTRUCTION

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 103 of 111









TSCA AREA DREDGING FINAL GRADE PLAN

SCALE: 1" = 30'-0"

NOTE: SEE TS-2 FOR POST DREDGING CONFIRMATION SAMPLE LOCATIONS.

PLAN LEGEND

- TSCA MATERIAL AREA
- SUB DMU AREA (SEE NOTE 3)
- 540 MAJOR DREDGE CUT CONTOUR
- 541 MINOR DREDGE CUT CONTOUR
- FEDERAL NAVIGATION CHANNEL
- 10-748+97-C CORING LOCATION
  - CHANNEL
  - STATION
  - YEAR CORING WAS PERFORMED

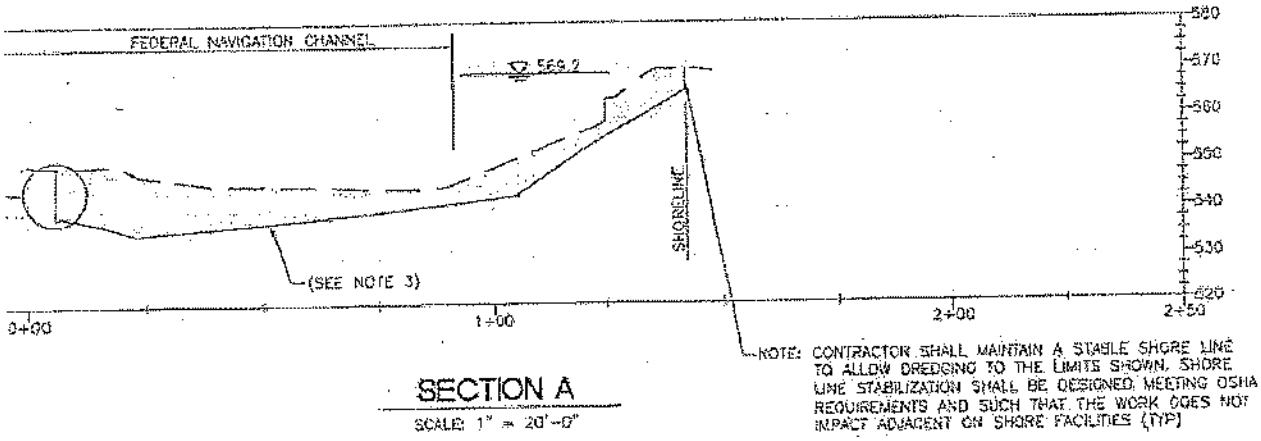
SECTION LEGEND

- EXISTING BATHYMETRY
- DESIGN CUT LINE
- TSCA SEDIMENT REMOVAL LIMITS (VERTICALLY)
- NON-TSCA SEDIMENT REMOVAL LIMITS (VERTICALLY)
- ▽ 569.2 LOW WATER DATUM ELEVATION

NOTE

1. THE
2. THE
THE

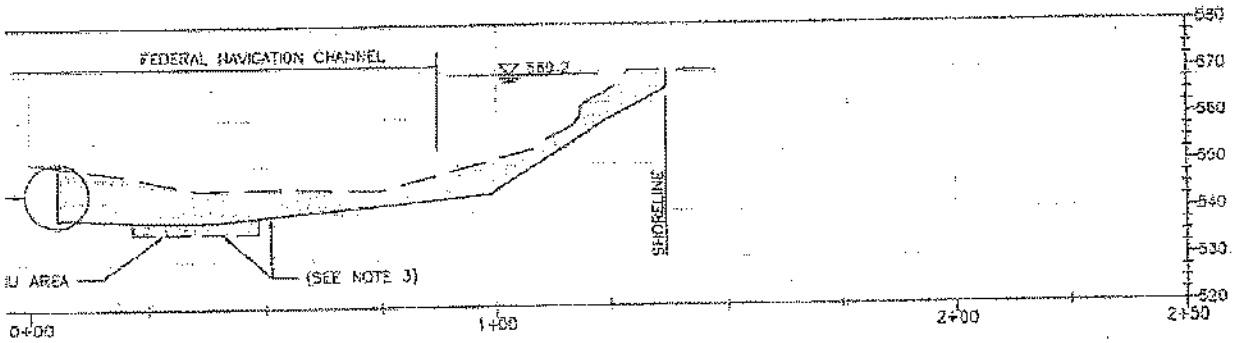
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 104(103A) of 111



NOTE: CONTRACTOR SHALL MAINTAIN A STABLE SHORE LINE TO ALLOW DREDGING TO THE LIMITS SHOWN. SHORE LINE STABILIZATION SHALL BE DESIGNED MEETING OSHA REQUIREMENTS AND SUCH THAT THE WORK DOES NOT IMPACT ADJACENT ON SHORE FACILITIES (TYP)

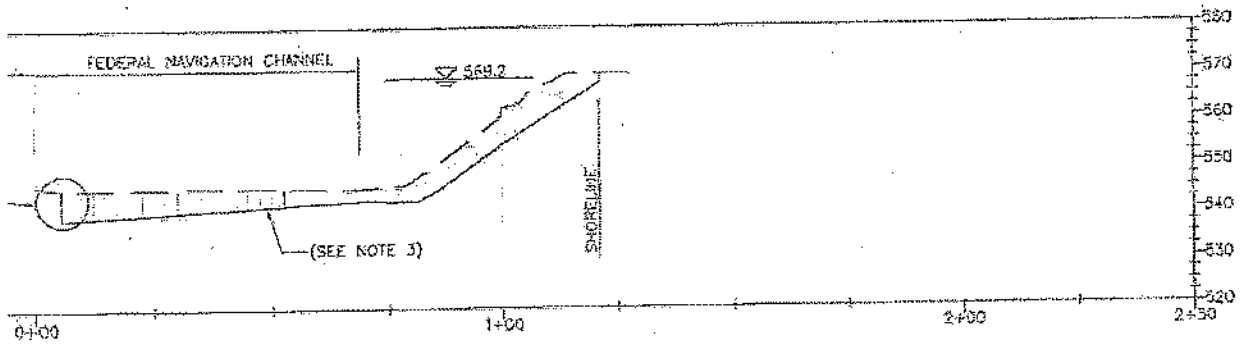
SECTION A

SCALE: 1" = 20'-0"



SECTION B

SCALE: 1" = 20'-0"



SECTION C

SCALE: 1" = 20'-0"

OUT LINE IS TO THE TRL ELEVATIONS EXCEPT IN THE SUB DMU 8b-1 AREA WHERE THE DESIGN CUT LINE IS TO ELEVATION 538 FEET.

L IN DMU 8b THAT IS OUTSIDE OF THE TSCA MATERIAL AREA SHALL BE DREDGED AS NON TSCA SEDIMENT AND PLACED AT
DF NO 4 (SEE DWG C0-1). THE TSCA MATERIAL SHALL BE HANDLED AS INDICATED ON TS-2 AND TS-3.

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 105(103B) of 111

NO	DATE	DESCRIPTION	APVD
D	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	NWK
C	12-17-12	REVISED FOR PREFINAL DESIGN (NOT FOR CONSTRUCTION)	KMK
B	12-6-11	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK
A	12-2-11	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION)	KMK
NO.	DATE	REVISION	BY

DESIGN ISR K KRAJEWSKI M ALCH P.E.
CHK M STEPPAN APVD T HEINS P.E.

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL®

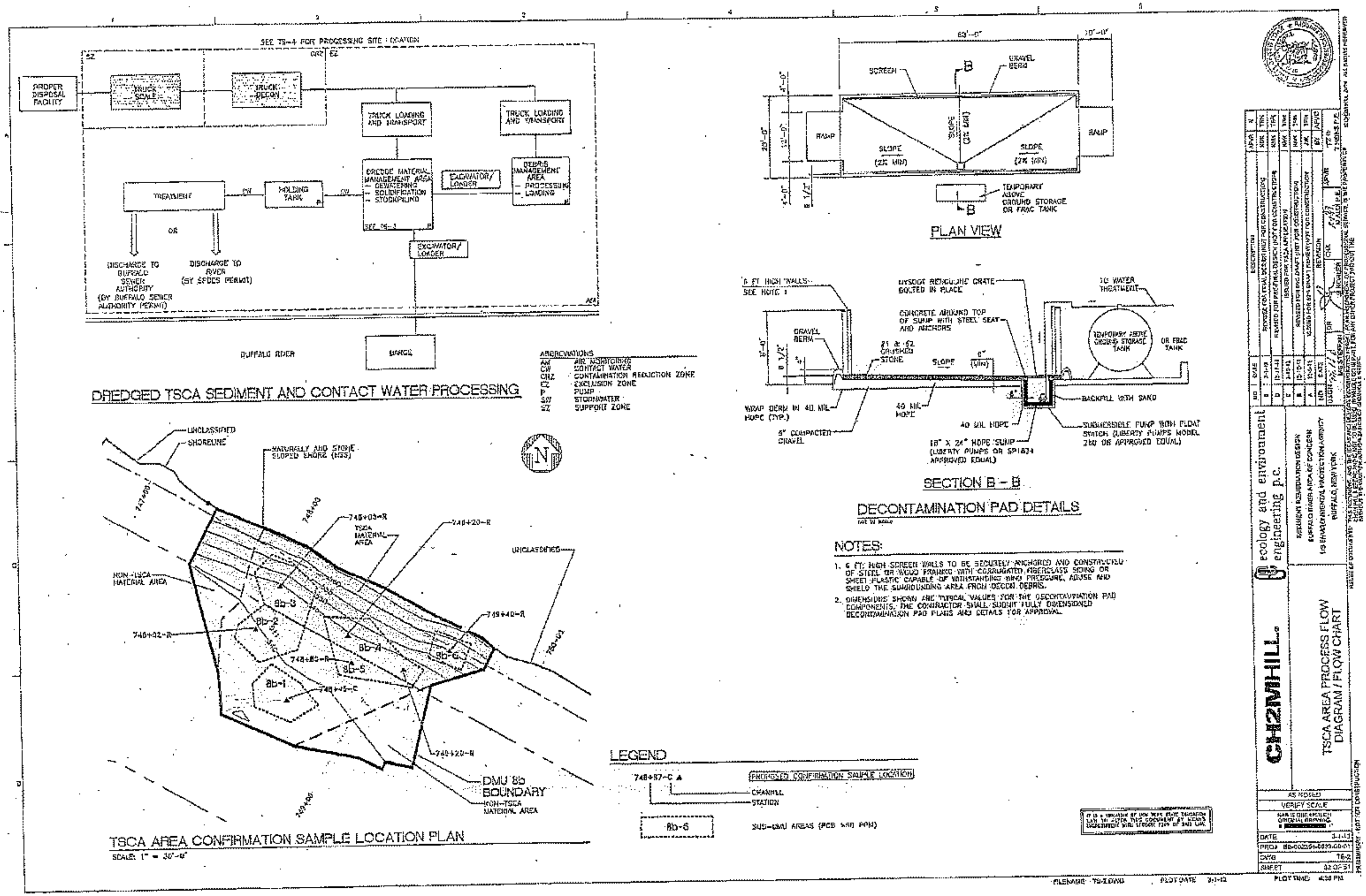
TSCA AREA SITE PLAN AND PROFILES

NOT TO SCALE
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

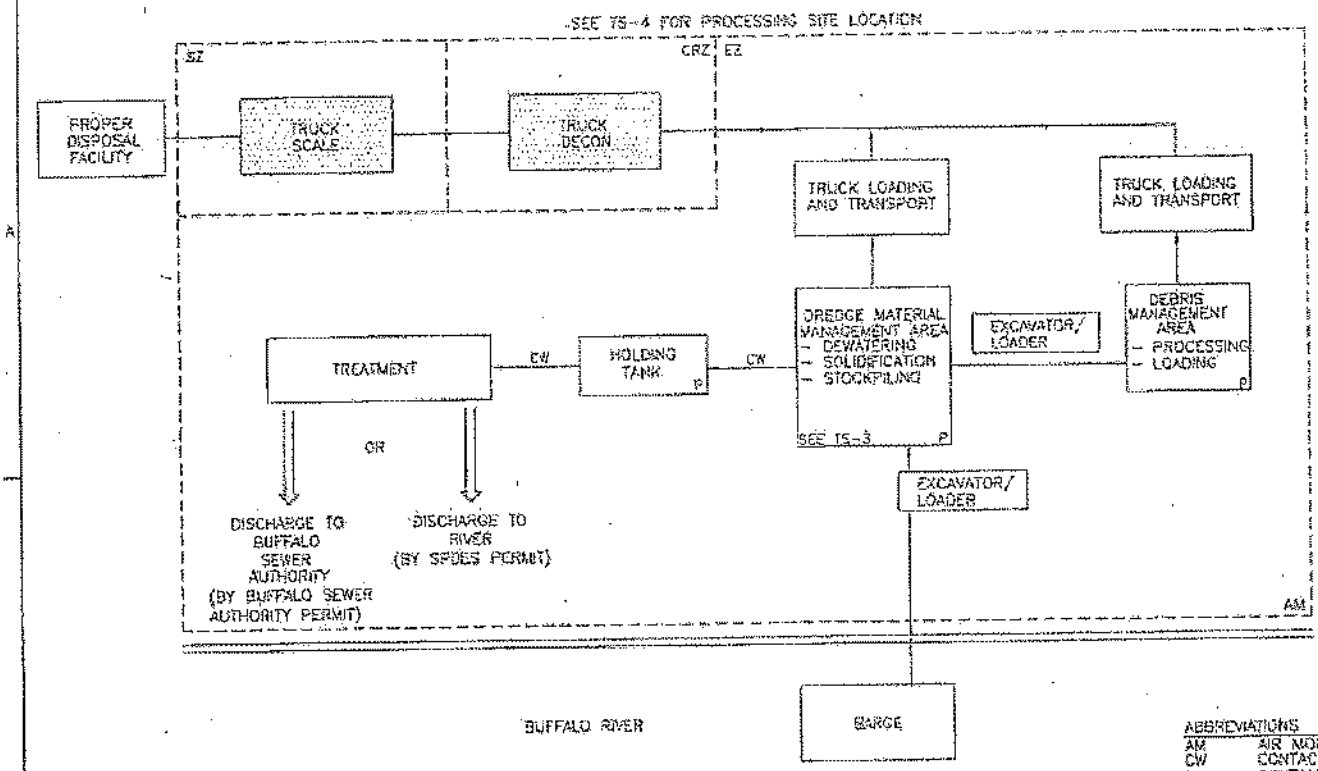
DATE 3-1-13
PROJ EE-022304.0023.05.01
DWG TS-1
SHEET 31 OF 51

FILENAME: TS-1.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:30 PM

PRELIMINARY - NOT FOR CONSTRUCTION


DREDGED TSCA SEDIMENT AND CONTACT WATER PROCESSING
SEE TS-4 FOR PROCESSING SITE LOCATION
PROPER DISPOSAL FACILITY
TRUCK SCALE
TRUCK DECON
TRUCK LOADING AND TRANSPORT
DREDGE MATERIAL MANAGEMENT AREA - DEWATERING - SOLIDIFICATION - STOCKPILING
EXCAVATOR/ LOADER
DEBRIS MANAGEMENT AREA - PROCESSING - LOADING
TREATMENT
HOLDING TANK
OR
DISCHARGE TO BUFFALO SEWER AUTHORITY (BY BUFFALO SEWER AUTHORITY PERMIT)
DISCHARGE TO RIVER (BY SPDES PERMIT)
BUFFALO RIVER
BARGE
ABBREVIATIONS
AM AIR MONITORING
CW CONTACT WATER
CRZ CONTAMINATION REDUCTION ZONE
EZ EXCLUSION ZONE
P PUMP
SW STORMWATER
SZ SUPPORT ZONE
PLAN VIEW
SCREEN
GRAVEL BERM
RAMP
SLOPE (2% MIN)
TEMPORARY ABOVE GROUND STORAGE OR FRAC TANK
SECTION B - B
6 FT. HIGH WALLS SEE NOTE 1
GRAVEL BERM
#1 & #2 CRUSHED STONE
SLOPE
WRAP BERM IN 40 MIL HDPE (TYP.)
6" COMPACTED GRAVEL
40 MIL HDPE
CONCRETE AROUND TOP OF SUMP WITH STEEL SEAT AND ANCHORS
18" X 24" HDPE SUMP (LIBERTY PUMPS OR SP1824 APPROVED EQUAL)
TO WATER TREATMENT
TEMPORARY ABOVE GROUND STORAGE TANK
OR FRAC TANK
BACKFILL WITH SAND
SUBMERSIBLE PUMP WITH FLOAT SWITCH (LIBERTY PUMPS MODEL 280 OR APPROVED EQUAL)
DECONTAMINATION PAD DETAILS
NOTES:
1. 6 FT. HIGH SCREEN WALLS TO BE SECURELY ANCHORED AND CONSTRUCTED OF STEEL OR WOOD FRAMING WITH CORRUGATED FIBERGLASS SIDING OR SHEET PLASTIC CAPABLE OF WITHSTANDING WIND PRESSURE, ABUSE AND SHIELD THE SURROUNDING AREA FROM DECON DEBRIS.
2. DIMENSIONS SHOWN ARE TYPICAL VALUES FOR THE DECONTAMINATION PAD COMPONENTS. THE CONTRACTOR SHALL SUBMIT FULLY DIMENSIONED DECONTAMINATION PAD PLANS AND DETAILS FOR APPROVAL.
TSCA AREA CONFIRMATION SAMPLE LOCATION PLAN
UNCLASSIFIED SHORELINE
NATURALLY AND STONE SLOPED SHORE (NSS)
TSCA MATERIAL AREA
NON-TSCA MATERIAL AREA
DMU 8b BOUNDARY
8b-1
8b-2
8b-3
8b-4
8b-5
8b-6
LEGEND
PROPOSED CONFIRMATION SAMPLE LOCATION
CHANNEL STATION
SUB-DMU AREAS (PCB >50 PPM)
CH2MHILL
ecology and environment engineering p.c.
TSCA AREA PROCESS FLOW DIAGRAM / FLOW CHART
BUFFALO, NEW YORK
AS NOTED
VERIFY SCALE

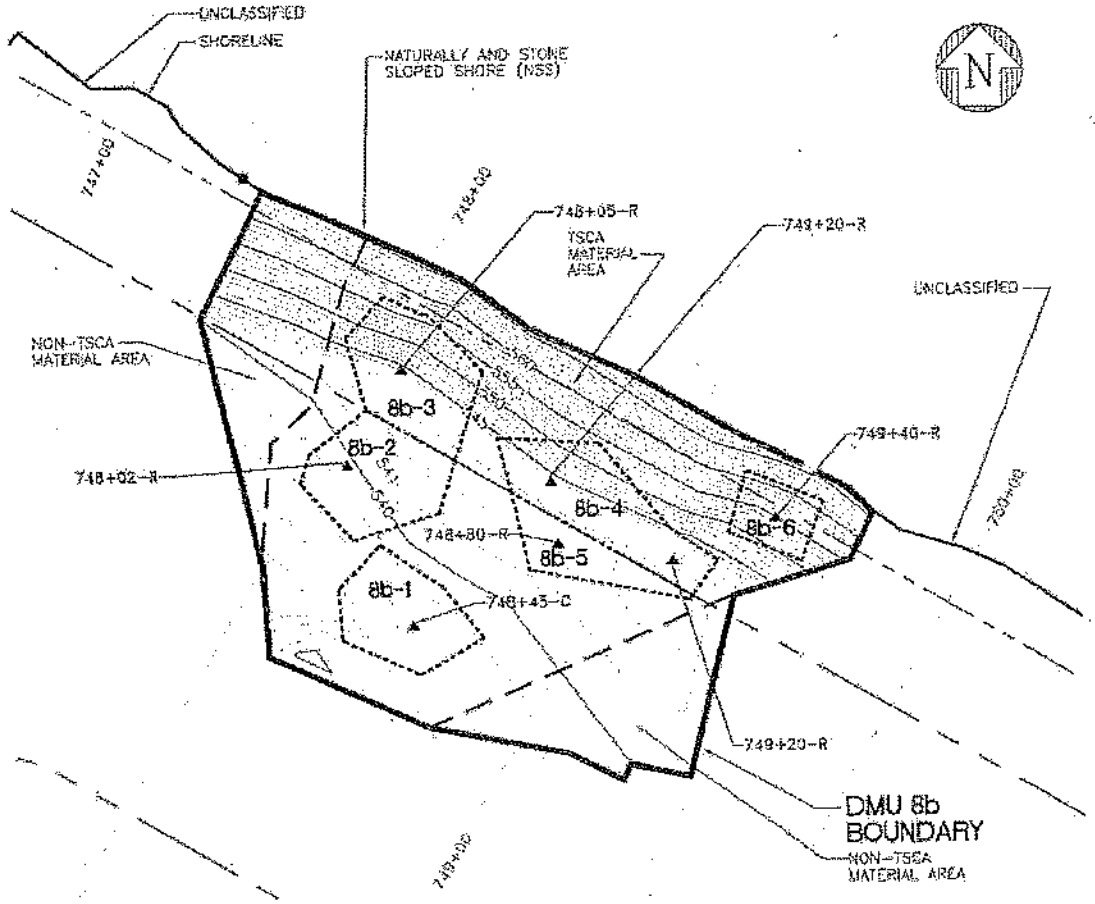
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 106 of 111



ABBREVIATIONS

AM	AIR MONITORING
CW	CONTACT WATER
CRZ	CONTAMINATION REDU
EZ	EXCLUSION ZONE
P	PUMP
SW	STORMWATER
SZ	SUPPORT ZONE

DREDGED TSCA SEDIMENT AND CONTACT WATER PROCESSING



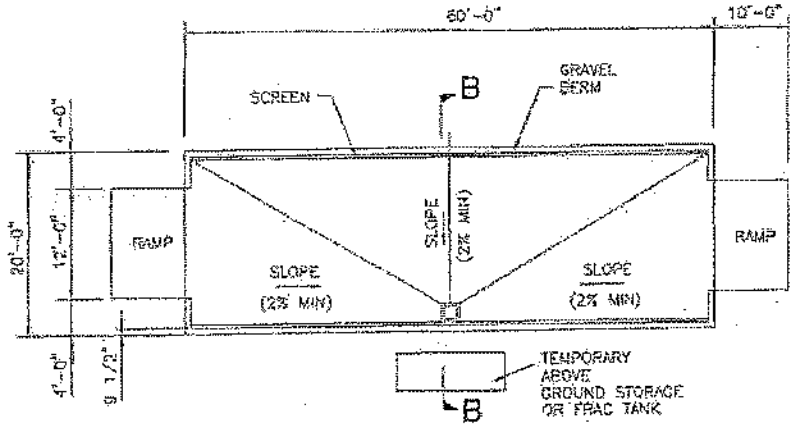
TSCA AREA CONFIRMATION SAMPLE LOCATION PLAN

SCALE: 1" = 30'-0"

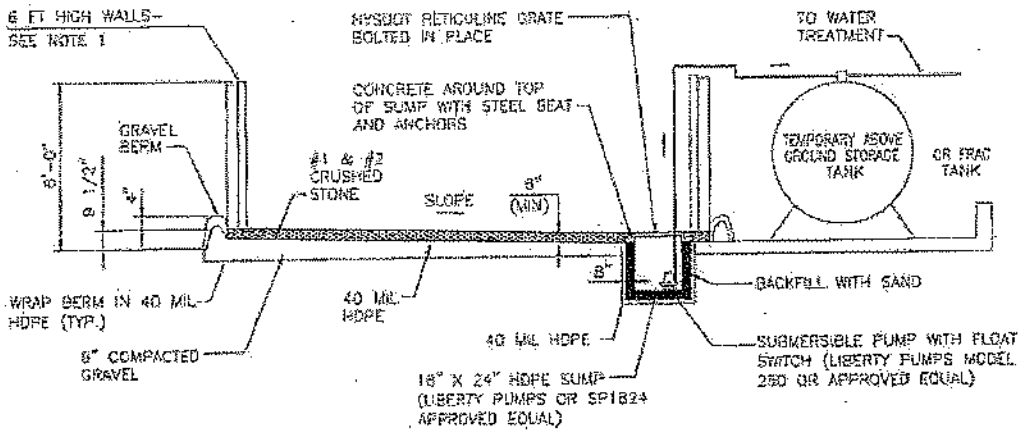
LEGEN

748+

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 107(106A) of 111



PLAN VIEW



SECTION B - B

DECONTAMINATION PAD DETAILS

NOT TO SCALE

NOTES:

1. 6 FT. HIGH SCREEN WALLS TO BE SECURELY ANCHORED AND CONSTRUCTED OF STEEL OR WOOD FRAMING WITH CORRUGATED FIBERGLASS SIDING OR SHEET PLASTIC CAPABLE OF WITHSTANDING WIND PRESSURE, ABUSE AND SHIELD THE SURROUNDING AREA FROM DECON DEBRIS.
2. DIMENSIONS SHOWN ARE TYPICAL VALUES FOR THE DECONTAMINATION PAD COMPONENTS. THE CONTRACTOR SHALL SUBMIT FULLY DIMENSIONED DECONTAMINATION PAD PLANS AND DETAILS FOR APPROVAL.

PROPOSED CONFIRMATION SAMPLE LOCATION

CHANNEL

STATION

SUB-DMU AREAS (PCB >50 PPM)

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 108(106B) of 111

NO	DATE	DESCRIPTION	APVR
E	3-1-13		
D	12-17-13		
C	3-19-12		
B	12-12-11		
A	12-9-11		
NO.	DATE		

DESIGN MG STEFFEN
DRAWN
CHECKED
APPROVED

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

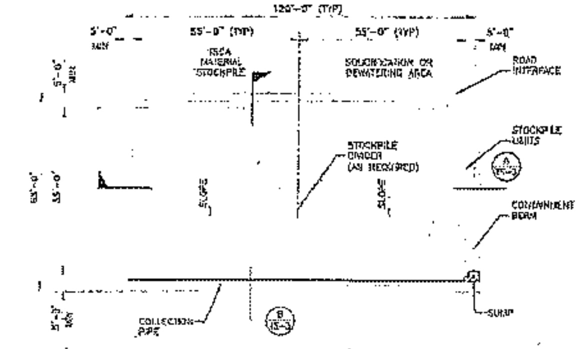
TSCA AREA PROCESS FLOW DIAGRAM / FLOW CHART

PRELIMINARY - NOT FOR CONSTRUCTION

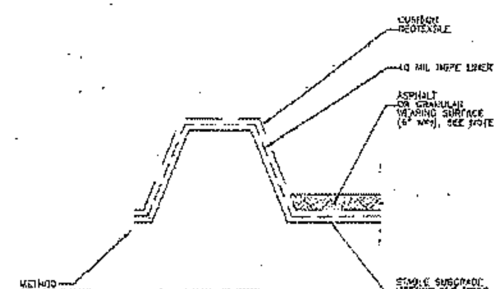
AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DATE 3-1-13
PROJ EE-002204-0023-06-01
DWG TS-2
SHEET 32 OF 51

FILENAME: TS-2.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:30 PM

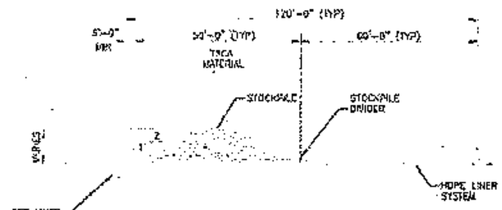


TSCA MATERIAL STOCKPILE AREA

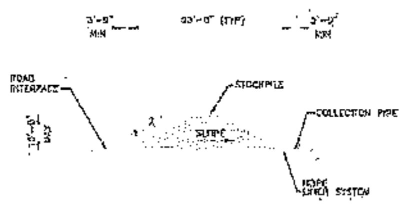


LINER DETAIL

NOT TO SCALE



SECTION A



SECTION B

NOTES

1. CONTRACTOR TO SELECT SIZE OF AREAS BASED ON WORK FLOW. SIZES SHOWN ARE MINIMUM VALUES UNLESS LABELED TYP. TYPICAL DIMENSIONS ARE FOR EXAMPLE ONLY. THE CONTRACTOR SHALL SUBMIT SOLIDIFICATION PLANS AND DETAILS INCLUDING WORK AREA SIZES WHICH SHALL MEET THE MINIMUM REQUIREMENTS.
2. CONTAINMENT BERM HEIGHT AND CONTAINMENT VOLUME SHALL BE DESIGNED BY THE CONTRACTOR TO CONTAIN THE 25 YEAR, 24 HOUR RAIN FALL STORM EVENT W/O THE SUMP PUMP BEING OPERATIONAL.
3. CONTRACTOR SHALL ADD ASPHALT OR GRANULAR FILL MATERIAL AS NEEDED OR AT DIRECTION OF ENGINEER TO PROVIDE FOR SEPARATION BETWEEN WASTE MATERIALS AND LINER SYSTEM.

CH2MHILL.

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

TSCA AREA PROCESS
DETAILS AND SECTIONS

AS NOTED

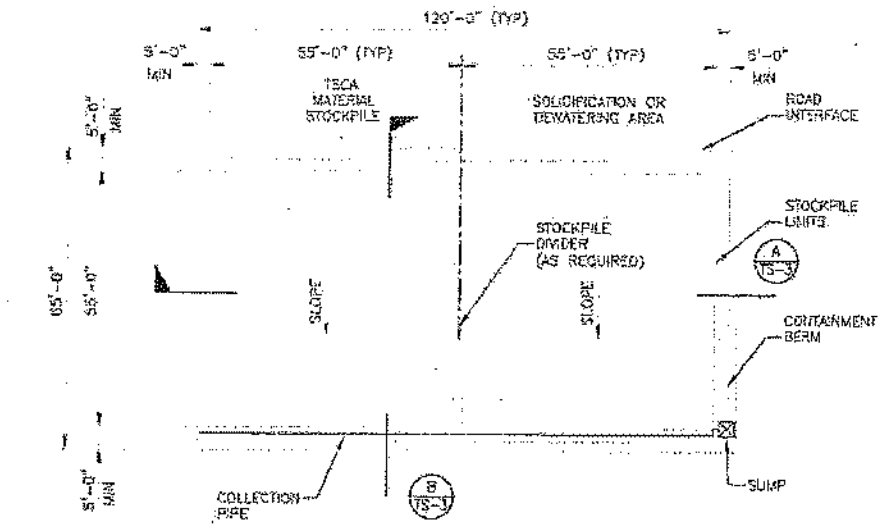
VERIFY SCALE

DATE 3-1-13

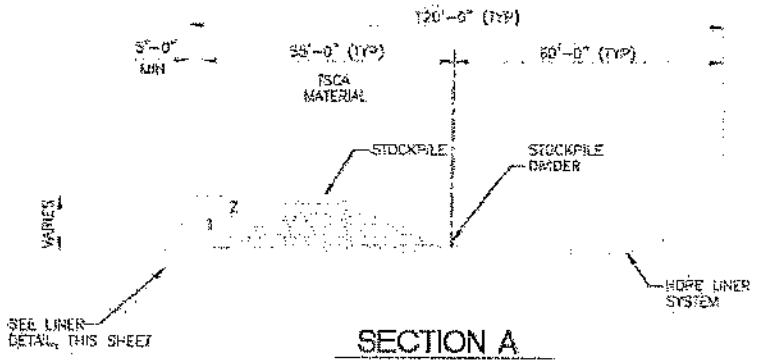
SHEET 33 OF 51

FILENAME: TS-3.DWG PLOT DATE: 3-1-13 PLOT TIME: 4:30 PM

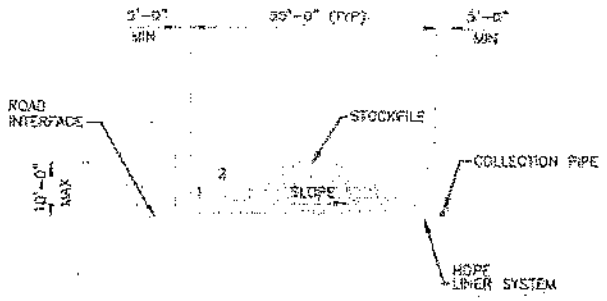
Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 109 of 111



TSCA MATERIAL STOCKPILE AREA

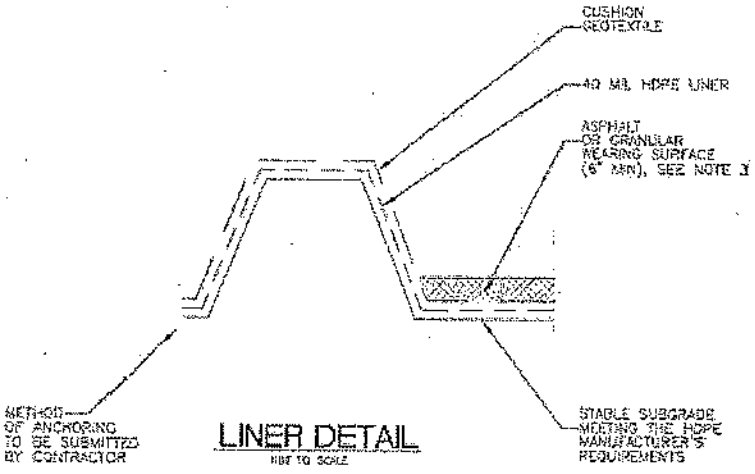


SECTION A



SECTION B

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 110(109A) of 111



LINER DETAIL

NOT TO SCALE

NOTES:

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3. CONTRACTOR SHALL ADD ASPHALT OR GRANULAR FILL MATERIAL AS NEEDED OR AT DIRECTION OF ENGINEER TO PROVIDE FOR SEPARATION BETWEEN WASTE MATERIALS AND LINER SYSTEM.

NO.	DATE	DESCRIPTION	APVR	K
NO	DATE	DESCRIPTION	APRV	K
B	3-1-13	REVISED FOR FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
C	12-17-12	REVISED FOR PRE-FINAL DESIGN (NOT FOR CONSTRUCTION)	KMK	TRH
B	12-10-12	REVISED FOR 60% DRAFT (NOT FOR CONSTRUCTION)	KMK	TRH
A	12-3-12	ISSUED FOR 60% DRAFT REVIEW (NOT FOR CONSTRUCTION	JMK	TRH
NO.	DATE	REVISION	BY	APVD

DSGN MG STEFFAN DR JJ KOHLER CHK APVD M ALGOZI P.E. T.J.H T HIGGINS P.E.

ecology and environment engineering p.c.

SEDIMENT REMEDIATION DESIGN
BUFFALO RIVER AREA OF CONCERN
US ENVIRONMENTAL PROTECTION AGENCY
BUFFALO, NEW YORK

CH2MHILL

TSCA AREA PROCESS
DETAILS AND SECTIONS

AS NOTED
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING IF [redacted] 1"

DATE 3-1-13
PROJ EE-602304-0923-03-01
DWG TS-3
SHEET 33 OF 51

Honeywell International(Buffalo River Dredge)
D/A Processing No. 2013-00814
Erie County, New York
Quad: Buffalo NW
Sheet 111(109B) of 111

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

REPLY TO
ATTENTION OF:

October 16, 2015

Regulatory Branch

SUBJECT: Transmittal of Department of the Army Permit No. 2013-00814, Nationwide Permit No. 38 as Published in the Federal Register, Volume 77, No. 34, on Tuesday, February 21, 2012, New York State Department of Environmental Conservation No. 9-1402-01094

Mr. Rich Galloway
Honeywell International, Inc.
101 Columbia Road
Morristown, New Jersey 07962

Dear Mr. Galloway:

I am writing to you in regards to the recent request by Honeywell International, Inc to dredge approximately 40,000 cubic yards of contaminated sediment throughout the Buffalo River and install approximately 220-linear feet sheet piling to prevent destabilization of a section of bank lined with concrete aprons during dredging. This dredging is additional to what was previously authorized by the Corps to dredge within the Buffalo River Area of Concern (AOC) under the U.S. EPA's Great Lakes Legacy Act (GLLA) on August 14, 2013 (Reaffirmed September 17, 2013). All dredging will take place within 6.2 miles from the mouth of the Buffalo River up to Cazenovia/Buffalo Creeks, including the 1.4 mile City Ship Canal, in the City of Buffalo, Erie County, New York.

I have evaluated the impacts associated with your proposal, and have concluded that they are authorized by the enclosed Nationwide Permit (NWP) provided that the attached conditions are satisfied.

Verification of the applicability of this NWP is valid until March 19, 2017 unless the NWP is modified, suspended, revoked, or the activity complies with any subsequent permit modification. Please note in accordance with 33 CFR part 330.6(b), that if you commence or are under contract to commence an activity in reliance of the permit prior to the date this Nationwide permit expires, is suspended or revoked, or is modified such that the activity no longer complies with the terms and conditions, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of the permit, unless the permit has been subject to the provisions of discretionary authority.

It is your responsibility to remain informed of changes to the NWP program. A public notice announcing any changes will be issued when they occur and will be available for viewing at our website: http://www.lrb.usace.army.mil/Missions/Regulatory.aspx. Finally, note that if your activity is not undertaken within the defined period or the project specifications have changed, you must immediately notify this office to determine the need for further approval or reverification.

This affirmation is limited to the attached NWP and associated WQC, and does not obviate the need to obtain any other project specific Federal, state, or local authorization. Specifically, you may need to obtain Article 15 (Protection of Water), Article 24 (Freshwater Wetland), and/or Article 34 (Coastal Erosion Management) authorization from the New York State DEC.

In addition to the general conditions attached to the NWP, your attention is directed to the following Special Conditions which are also appended at the end of the NWP General Conditions:

Administrative

1. At the request of an authorized representative of the Buffalo District, U.S. Army Corps of Engineers, the permittee shall allow access to the project site and all restoration areas to determine compliance with the conditions of this permit.

2. You are responsible for ensuring that all contractors and/or workers executing the activity(s) authorized by this permit have knowledge of the terms and conditions of the authorization and that a copy of the permit document is at the project site throughout the period that the authorized work is underway. You shall also inform all contractors of liabilities associated with non-compliance of this permit.

3. If any historic or archeological artifacts or remains are discovered while conducting work authorized by this permit, you must notify the Corps of Engineers in accordance with General Condition 21 and all work in the vicinity of the discovery must be stopped immediately, pending initiation of any required consultation under the National Historic Preservation Act.

4. Should human remains be encountered during any phase of the proposed project, such person or persons encountering the human remains must immediately cease work in the vicinity of the discovery and must not disturb or remove the remains, must protect the exposed portions of the remains from inclement weather and vandalism, and immediately notify the permittee. Continuing work on the project may result in adverse effects to the remains, which may be contrary to the National Historic Preservation Act. After discovery, the permittee must immediately notify (within 24 hours) Joseph Rowley, USACE Buffalo District, 1776 Niagara Street, Buffalo New York 14207 at (716) 879-4279 or email:

joseph.m.rowley@usace.army.mil and the New York State Office of Parks, Recreation, and Historic Preservation, Peebles Island State Park, P.O. Box 189, Waterford, New York 12188-0189, (518) 237-8643.

5. Please note, dredging in DMU-45c should be monitored by a qualified archaeologist to identify and record any structural remains that are encountered.

6. Please note, contractor is directed to keep all spuds and anchors at least 25 feet from the center of the locator point that is meant to represent sonar target BF-5. This area is adjacent to DMU-11.

7. The permittee is authorized to discharge only clean fill material that is free of fines, oil and grease, debris, wood, general refuse, plaster, broken asphalt, or other potential pollutants.

8. The Section 401 Water Quality Certification issued for this project by the State of New York is hereby part of this Department of the Army permit pursuant to Section 401(d) of the Clean Water Act. Noncompliance with any limitations or requirements stated in the certification may be a basis for suspension, revocation or modification of this permit.

Dredging

1. The permittee, including their contractors, must ensure the dredged material is not temporarily or permanently placed in Waters of the U.S., including wetlands.

2. The permitte must notify Mr. Joseph Rowley, USACE Buffalo District, 1776 Niagara Street, Buffalo New York 14207, in writing, at least two (2) weeks prior to initiating any dredging activities authorized by this permit.

3. The permittee or their contractors must have a copy of this permit on the vessel used for the authorized transportation and disposal of dredged material.

4. The permittee must install and maintain, at their expense, any safety lights and signals prescribed by the United States Coast Guard (USCG), through regulations or otherwise, on the structures or vessels being utilized for the dredging operation. The USCG may be reached at the following address: Commander (OAN), U.S. Coast Guard, Ninth Coast Guard District, 1240 East Ninth Street, Cleveland, Ohio 44199-2060, Telephone: (216) 902-6069; FAX: (216) 902-6059

5. Dredging operations must be strictly controlled to minimize spillage and re-suspension of bottom sediments.

Confined Disposal Facility

1. The permitte is responsible for abiding by the terms and conditions of the signed Memorandum of Agreement (MOA) with the Buffalo District for use of the Confined Disposal Facility (CDF). Questions in regards to the MOA should be directed to Mr. Robert Remmers, Chief, Operations and Technical Support Section, who may be contacted by calling (716) 879-4277, by e-mail: robert.w.remmers@usace.army.mil, or by writing to: Mr. Robert Remmers, Chief, Operations and Tech Support, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199.

2. Immediately upon completion of disposal operations (within 30 days) the permittee is required to submit to this office a copy of an itemized contractor's bill or statement showing the total cubic yardage deposited into the Federal Disposal Site and a description of the method used to calculate the yardage (e.g., before and after depth soundings within the dredge area). Backup information (including soundings or other survey data) must also be submitted to this office. The information must be sent to Mr. Robert Remmers as noted below and a second copy must be sent to: Mr. Harold Keppner, Chief, Monitoring and Enforcement Section, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199.

Finally, this letter contains an approved JD for the subject parcel. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal the above determination, you must submit a completed RFA form within 60 days of the date on this letter to the Great Lakes/Ohio River Division Office at the following address:

Attn: Appeal Review Officer
Great Lakes and Ohio River Division
CELRD-PD-REG
550 Main Street, Room 10032
Cincinnati, OH 45202-3222
Phone: 513-684-6212;FAX(513) 684-2460

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 C.F.R. part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by December 17, 2015.

It is not necessary to submit an RFA to the Division office if you do not object to the determination in this letter.

A copy of this correspondence has been sent to Ms. Mary Beth Giancarlo of the U.S. Environmental Protection Agency Great Lakes National Program Office.

Regulatory Branch
SUBJECT: Transmittal of Department of the Army Permit No. 2013-00814, Nationwide Permit No. 38 as Published in the Federal Register, Volume 77, No. 34, on Tuesday, February 21, 2012, New York State Department of Environmental Conservation No. 9-1402-01094

Questions pertaining to this matter should be directed to me at 716-879-4279, by writing to the following address: U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207, or by e-mail at: joseph.m.rowley@usace.army.mil

Sincerely,

Joseph Rowley
Physical Scientist

Enclosures

COMPLETION FORM / COMPLIANCE CERTIFICATION

Each permittee who receives a Nationwide Permit (NWP) verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any compensatory mitigation.

APPLICANT:	POINT OF CONTACT:	File No.: 2013-00814
Honeywell International, Inc.	Mr. Rich Galloway	File Closed: October 16, 2015
Honeywell	Honeywell	NWP No.: 38
115 Tabor Road	115 Tabor Road	
Morris Plains, NJ 07950	Morris Plains, NJ 07950	

Upon completion of the activity authorized by this permit and any required compensatory mitigation sign this certification and return it to the address listed below within 30 days of project completion.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, revocation, and/or assessment of administrative penalties.

The permittee shall certify the completion of the authorized work and mitigation:

a. The authorized work was done in accordance with the NWP authorization, including any general, regional, or activity specific conditions.

b. The implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, this certification must include the documentation required by 33 CFR 332.3(1)(3) to confirm that the permittee secured the appropriate number and resource type of credits.

_____ _____

APPLICANTS NAME Date

Permittee Telephone Number: _____

Project location: 6.2 miles from the mouth of the Buffalo River up to Cazenovia/Buffalo Creeks, including the 1.4 mile City Ship Canal, in the City of Buffalo, Erie County, New York.

Project Description: dredge approximately 40,000 cubic yards of contaminated sediment; 220-linear feet of Steel Sheet Piling

Authorized Impacts (Waters of the U.S. Impacted by Project): 6.2 miles of the Buffalo River/City Ship Canal

Waterway and/or Project Setting: Buffalo River/City Ship Canal

Return completed form to:
Mr. David Leput
Regulatory Branch
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Honeywell International, Inc.		File Number: 2013-00814	Date: Oct 9, 2015
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact:
Joseph Rowley United States Army Corps of Engineers Buffalo District 1776 Niagara Street Buffalo, NY 14207 716-879-4279 joseph.m.rowley@usace.army.mil	Attn: Appeal Review Officer Great Lakes and Ohio River Division CELRD-PD-REG 550 Main Street, Room 10032 Cincinnati, OH 45202-3222 (513) 684-6212;FAX(513) 684-2460

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, New York 14203-2915
Phone: (716) 851-7165 · **Fax:** (716) 851-7168
Website: www.dec.ny.gov

Joe Martens
Commissioner

August 22, 2013

Honeywell International Inc.
101 Columbia Road
Morristown, New Jersey 07962

Attention: Mr. John Morris

Dear Permittee:

PERMIT TRANSMITTAL LETTER
BUFFALO RIVER AOC SEDIMENT
REMEDIATION & HABITAT RESTORATION
PERMIT NO. 9-1402-01094/00001

Enclosed is your permit which was recently modified in accordance with applicable provisions of the Environmental Conservation Law. The permit is valid for only that project, activity or operation expressly authorized. Please note that this permit replaces, in its entirety, the permit issued July 24, 2013.

The DEC permit number and Program ID number, if applicable, should be retained for your records and should be referenced on all future correspondence and applications related to the permit. If modifications are desired after permit issuance, you must submit the proposed revisions and receive written approval from the Permit Administrator prior to initiating any change. If the Department determines that the modification represents a material change in the scope of the authorized project, activity, operation or permit conditions, you will be required to submit a new application for permit.

Please note the expiration date of the permit. Applications for permit renewal should be made well in advance of the expiration date (minimum of 30 days) and submitted to the Regional Permit Administrator at the above address.

PLEASE REVIEW ALL PERMIT CONDITIONS CAREFULLY. IN PARTICULAR, IDENTIFY YOUR INITIAL RESPONSIBILITIES UNDER THIS PERMIT IN ORDER TO ASSURE TIMELY ACTION IF REQUIRED. SINCE FAILURE TO COMPLY PRECISELY WITH PERMIT CONDITIONS MAY BE TREATED AS A VIOLATION OF THE ENVIRONMENTAL CONSERVATION LAW, **YOU ARE REQUESTED TO PROVIDE A COPY OF THE PERMIT TO THE PROJECT CONTRACTOR, FACILITY OPERATOR, AND OTHER PERSONS DIRECTLY RESPONSIBLE FOR PERMIT IMPLEMENTATION (IF ANY).**

If you have any questions, please contact this office at the above address.

Respectfully,
David S. Denk
Regional Permit Administrator

Enclosure
ecc: Captain Frank Lauricella, NYSDEC, Division of Law Enforcement
Mr. Martin Doster, NYSDEC, Division of Environmental Remediation
Mr. Timothy DePriest, NYSDEC, Division of Fish, Wildlife and Marine Resources
Mr. Damianos Skaros, NYSDEC, Great Lakes Programs
U.S. Department of the Army Corps of Engineers, Buffalo District Office
Honorable Bryon Brown, City of Buffalo, Mayor
Mr. Steven Stepniak, City of Buffalo, Commissioner of Public Works
Mr. David Comerford, City of Buffalo, Buffalo Sewer Authority
Mr. Brendan Mehaffy, City of Buffalo, Office of Strategic Planning
Mr. Richard Galloway, Honeywell International Inc.

PERMIT

Under the Environmental Conservation Law (ECL)

Permittee and Facility Information

Permit Issued To:
HONEYWELL INTERNATIONAL INC

101 COLUMBIA RD
MORRISTOWN, NJ 07962

Facility:
BUFFALO RIVER AOC SEDIMENT REMEDIATION & HABITAT RESTORATION
BUFFALO RIVER AND CITY SHIP CANAL
BUFFALO, NY

Facility Location: in BUFFALO in ERIE COUNTY
Facility Principal Reference Point: NYTM-E: 183.073 NYTM-N: 4754.248
Latitude: 42°52'30.2" Longitude: 78°52'48.7"

Authorized Activity: Dredge approximately 500,000 cubic yards of contaminated sediments from portions of the Buffalo River and City Ship Canal. Sediment disposal will be at the U.S. Army Corps of Engineers Confined Disposal Facility. Approximately 4,200 cubic yards of sediments regulated under the Toxic Substance Control Act will be specially handled and properly disposed. Dredge and TSCA regulated sediment volumes may change during construction. Actual volumes will be recorded and reported at the completion of the work. Some capping of sediments will be done at the head of the ship canal and in areas where dredging could compromise shoreline structures. The final phase of activities associated with the dredging and capping operation is habitat restoration at five sites as shown in the referenced plans.

Permit Authorizations

Excavation & Fill in Navigable Waters - Under Article 15, Title 5
Permit ID 9-1402-01094/00001

New Permit	Effective Date: 7/24/2013	Expiration Date: 7/23/2018
Modification # 1	Effective Date: 8/22/2013	Expiration Date: 7/23/2018

Water Quality Certification - Under Section 401 - Clean Water Act
Permit ID 9-1402-01094/00003

Modification # 0	Effective Date: 8/22/2013	Expiration Date: 7/23/2018

NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: DAVID S DENK, Regional Permit Administrator
Address: NYSDEC REGION 9 HEADQUARTERS
270 MICHIGAN AVE
BUFFALO, NY 14203 -2915

Authorized Signature: _____ Date 8/22/2013

Distribution List

Law Enforcement
Mr. John Morris, Honeywell International Inc
Mr. Rich Galloway, Honeywell International Inc
Honorable Byron Brown, City of Buffalo
Mr. Steven Stepniak, City of Buffalo Commissioner of Public Works
Mr. David Comerford, Buffalo Sewer Authority
Mr. Brendan Mehaffy, City of Buffalo Office of Strategic Planning
US ARMY CORP OF ENGINEEERS - BUFFALO DISTRICT
Mr. Martin Doster
Mr. Timothy DePriest
Mr. Damianos Skaros

Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

WATER QUALITY CERTIFICATION SPECIFIC CONDITION

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: EXCAVATION & FILL IN NAVIGABLE WATERS; WATER QUALITY CERTIFICATION

1. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by CH2M HILL and Ecology and Environment Engineering, P.C.

2. **Environmental Window for Dredging** Dredging in the following areas shall be scheduled during the following time frames ("environmental window") to avoid adverse impacts to fishing resources in those areas:

Buffalo River	-	June 15 - December 30
Buffalo Ship Canal	-	July 1 - December 30

3. **Design and Use of Dredging Bucket** The dredging method used for silty material must minimize sediment resuspension no less efficiently than an environmental bucket with the following specifications and operational restrictions. The bucket shall:

- Provide a level cut during the closing cycle.
- Completely enclose the dredged sediment and water captured.
- Be fitted with escape valves or vents that close when the bucket is withdraw from the water.
- Have a smooth-cut surface, with no digging teeth unless otherwise approved in writing by the Department.
- Be operator controlled using a global positioning system.
- Have integrated software that allows the bucket position to be monitored in real time and a horizontal accuracy of one foot and vertical accuracy of +0 inch to -six inches.
- Have operator control of bucket penetration to avoid overfilling and minimize sediment resuspension.
- Allow the operator to mark the presence of obstructions encountered prior to reaching target dredge elevation.
- If excessive loss of water and/or sediments from the bucket is observed from the time of its breaking the water surface to crossing the barge gunwale, the inspector shall halt dredging operations and inspect the bucket for defects. Operations shall be suspended until all necessary repairs or replacements are made.

4. **Inspection of Dredging Bucket** Dredging is not to commence until the Inspector has examined said bucket and determined that it is constructed as described and properly functioning.

5. **Silt Curtains** Silt curtains must be placed around the dredging locations (DMUs: 6, 8, 9, 10, 16, 17, 37, 41 and 44) as required by the River Water Monitoring Plan dated 2013 and extend at least halfway down in the water column. Silt curtain must not be allowed to contact or drag on the bottom. Silt curtains must be used in other dredging locations if is determined that Best Management Practices are not being met.

6. **Control Turbidity** Turbidity must be monitored at the dredging locations as defined in the River Water Monitoring Plan dated March 2013. If excess turbidity outside the curtain is observed, the Department must be notified and dredging stopped until the situation is corrected.

7. **Prevent Spillage of Sediment** During the dredging operation, the permittee and his contractor shall prevent spillage of sediment during excavation and haulage. Dredging shall be accomplished with a clam shell or other closed bucket equipment.

8. **Handling of Sediment** Excavated sediment shall be placed directly into the approved disposal/dewatering site or conveyance vehicle. No side-casting (double dipping) or temporary storage of dredged material is authorized (other than TSCA sediment).

9. **Non-sediment Materials at the CDF** Non-sediment materials (solid waste) which have been removed from the river and canal will be separated from sediments at the CDF and be properly disposed of at the CDF or an off-site location authorized to accept such materials.

10. **Water Treatment of TSCA Material** There shall be special measures for dealing with excess water from TSCA-level sediment. An on-site water treatment unit will be installed at the TSCA waste handling site. Following treatment, this water will be tested prior to disposal or retreatment. If treated waters meet discharge limits, the water will be discharged either to the sanitary sewer system under a Buffalo Sewer Authority permit or to the Buffalo River under a DEC State Pollutant Discharge Elimination System (SPDES) permit. Water which does not meet discharge limits will be retreated until it meets limits.

11. **Approval Needed** Department approval is needed if it becomes necessary to change the location from the specified site known as "Riverbend" where the TSCA regulated material will be handled/stabilized.

12. **Control of Dust in TSCA Handling Areas** Air monitoring will be conducted as described in the TSCA monitoring plan. Measures for the control of dust will be implemented if air quality standards are exceeded.

13. **Construction of Habitat Restoration Projects and Replacement of Plantings** The habitat restoration projects at the City Ship Canal and Katherine Street Peninsula must be constructed if the dredging and capping project authorized in this permit is undertaken. The plantings must be monitored yearly for at least four years. The permittee must ensure a minimum of 80% vegetative cover at each habitat restoration project site by the end of five growing seasons. Additional planting for replacement must be put in place by the end of the following planting season. The other three habitat restoration projects are authorized under this permit.

14. **Control of Invasive Species** The aquatic habitat restoration areas must monitored for exotic invasive species, and if necessary treated, on an annual basis for four growing seasons after initial restoration. The monitoring and treatment must result in no more than 10 percent of areal cover of exotic species in each restoration area at the end of the monitoring period.

15. **Final Residuals Monitoring Plan** The two year and five year monitoring plans detailed in The Final Residuals Monitoring Plan dated March 2013 must be completed as described in the plan if the dredging and capping project authorized in this permit is undertaken.

16. **Overflow Weir Configuration** The dredge material overflow weir and return water discharge must be configured so that water with the lowest possible turbidity is returned to the waterway. The discharge outfall shall be monitored by the permittee or his agent and, if a visible plume becomes evident, the discharge shall cease immediately until the problem is corrected.

17. **No Interference With Navigation** There shall be no unreasonable interference with navigation by the work herein authorized.

18. **State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

19. **State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

20. **State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.

21. **Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

WATER QUALITY CERTIFICATION SPECIFIC CONDITIONS

1. **Water Quality Certification** The NYS Department of Environmental Conservation hereby certifies that the subject project will not contravene effluent limitations or other limitations or standards under Sections 301, 302, 303, 306 and 307 of the Clean Water Act of 1977 (PL 95-217) provided that all of the conditions listed herein are met.

GENERAL CONDITIONS - Apply to ALL Authorized Permits:

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator
NYSDEC REGION 9 HEADQUARTERS
270 MICHIGAN AVE
BUFFALO, NY14203 -2915

4. **Submission of Renewal Application** The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Excavation & Fill in Navigable Waters, Water Quality Certification.

5. **Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

a. materially false or inaccurate statements in the permit application or supporting papers;

b. failure by the permittee to comply with any terms or conditions of the permit;

c. exceeding the scope of the project as described in the permit application;

d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;

e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

6. **Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification
The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

Item B: Permittee's Contractors to Comply with Permit
The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

Item C: Permittee Responsible for Obtaining Other Required Permits
The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

Item D: No Right to Trespass or Interfere with Riparian Rights
This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, NY 14203-2915
P: (716) 851-7165 | F: (716) 851-7168
www.dec.ny.gov

November 12, 2015

John J. Morris, P.E., Remediation Director
Honeywell International Inc.
101 Columbia Road
Morristown, New Jersey 07962

Dear Mr. Morris:

MODIFICATION OF PERMIT
BUFFALO RIVER AOC SEDIMENT REMEDIATION AND HABITAT RESTORATION
DEC NO. 9-1402-01094/00001

The Department has received the permit modification request and follow-up submittals from your consultant, Anchor QEA LLC for proposed changes to the above referenced Protection of Waters Permit / Water Quality Certification. The Department hereby modifies the subject authorization to include the Buffalo River AOC 2015 Additional Dredging construction drawings (35 sheets) dated November 6, 2015. The authorized work includes dredging within DMUs 1, 2, 5, 6a, 9, 10, 17, 18, 19, 27, 28, 38a, and 44e, backfilling following dredging in 44e, and a submerged sheetpile kneewall installation to support the removal of sediments in DMUs 9 and 10, with additional backfill following installation. In addition, turbidity monitoring shall be conducted as described in the September 4, 2015 memorandum from Mark Reemts and Ram Mohan, Anchor QEA, PLLC to Chad Staniszewski and Damianos Skaros, NYSDEC.

This letter shall be considered an official amendment to the original permit, and as such, a copy of this letter must be available along with the original permit and previous modifications at the work site to produce if requested by a DEC representative.

If you have any questions or comments about this letter or the New York State Environmental Conservation Law, please contact me at (716) 851-7165.

Sincerely,

David S. Denk
Regional Permit Administrator

DSD/dsd

ecc: Capt. Frank Lauricella, NYSDEC Division of Law Enforcement
Mr. Chad Staniszewski, NYSDEC DER
Mr. Damianos Skaros, NYSDEC
Ms. Mary Beth Giancarlo, USEPA GLNPO
Mr. Scott Cieniawski, USEPA GLNPO
Mr. Joseph Rowley, USACE
Mr. Rich Galloway, Honeywell
Mr. Mark Reemts, Anchor QEA, LLC

ANCHOR QEA

290 Elwood Davis Road, Suite 340
Liverpool, NY 13088
Phone 315.453.9009
Fax 315.453.9010
www.anchorqea.com

MEMORANDUM

To:	Chad Staniszewski and Damianos Skaros, NYSDEC	**Date:**	September 4, 2015
From:	Mark Reemts and Ram Mohan, Anchor QEA Engineering, PLLC	**Project:**	E50287-03.01
Cc:	Rich Galloway, Honeywell International Inc. Scott Cieniawski and Mary Beth Giancarlo, USEPA GLNPO		
Re:	Proposed Changes to Dredging Monitoring – 2015 USACE and Honeywell Contract DMUs		

Anchor QEA Engineering, PLLC (Anchor QEA), in support of the Project Coordination Team for the Great Lakes Legacy Act (GLLA) Buffalo River Area of Concern Remediation and Restoration Project, is currently developing revised dredge prisms for select Dredge Management Units (DMUs) for additional dredging to occur in 2015. In an effort to reduce potential schedule and river logistical conflicts, the United States Environmental Protection Agency (USEPA) is coordinating with the United States Army Corps of Engineers (USACE) to potentially contract a portion of the dredging under a USACE maintenance dredging contract. The proposal of work for USACE operations includes sediment removal within DMUs 1, 2, 5, 6a, 38a, and 101. Dredging of DMU 101 is contingent on BIDCO executing the GLLA Project Agreement by September 15, 2015. Additionally, Honeywell is proposing to perform the dredging of sediments within the DMUs at 9, 10, 17, 18, 19, 27, 28, 29, and 44e. The dredging and/or placement of a cap in DMUs 17, 18, 19, 27, 28 and 29 is contingent on CSX executing the GLLA Project Agreement by September 15 2015. Remaining sediments in DMU 8b, both non-TSCA and TSCA, will be addressed through the USEPA GLNPOCS contract. Given the differences in contract requirements between the USACE, USEPA GLNPO and Honeywell contracts, small quantities and shorter durations of work, and in an attempt to reduce potential change orders to perform the work, Anchor QEA and USACE ERDC personnel have been evaluating requirements for dredge operations to develop an optimal operations plan.

An initial evaluation was completed by USACE ERDC in June, 2015, to determine the need for silt curtain usage and dredging production modifications at DMU 6a. Previously established restrictions from the Final Design (CH2M 2013) required the use of silt curtains during dredging within select DMUs, including 6a, as well as restricted dredging rates in select areas. DMU 6a was initially restricted to a maximum of 164 cubic yards per day from a single dredge plant operating less than 3 hours per day. Following re-evaluation of the remaining sediments, and expected operations for the remaining work in DMU 6a, USACE ERDC analysis indicated that the use of silt curtains would not be required, and that production restrictions are not required in this area as well. For additional information, please see the USACE ERDC memorandum (USACE 2015). Dredging restrictions, including silt curtain usage and production rate limitations, at the remaining DMUs would remain as previously established. Accordingly, dredging in DMUs 9, 10, 17, and 44e will utilize silt curtains, and DMU 17 dredging will be limited to daily maximum of 5,038 cubic yards.

Additional monitoring requirements for dredging operations are outlined in the Final River Water Monitoring Plan, included as an appendix to the Final Design (CH2M 2013). To support evaluation of these requirements for the proposed 2015 dredging work, historical records from the previous dredging activities, including records of turbidity, Total Suspended Solids (TSS), and analytical data from water column samples, were reviewed. Records included daily, weekly, and other records spanning the duration of dredging from 2013 through 2014. Data included records from all completed DMUs, and include all but one of the proposed 2015 DMUs. Since DMU 101 was added following the 2013 and 2014 dredging operations, it has not yet been dredged; the remainder of the proposed 2015 DMUs included various levels of partial dredging during previous operations.

DISCUSSION OF OBSERVED TRENDS

During dredging operations in 2013 and 2014, infrequent spikes in turbidity measurements occurred, all associated with high flow events following storm conditions. Generally, turbidity monitoring kept within the 100 NTU upstream to downstream difference during the individual 15 minute frequency measurements, with only a single instance exceeding the 4 hour rolling average restriction outlined in the Water Monitoring Plan. Analytical results collected identified only a single TSS exceedance which did not occur at the time of the single turbidity exceedance. Outside of these two occasions, turbidity and TSS sampling did

not exceed monitoring restrictions during all remaining non-TSCA dredging. In addition to the lack of turbidity and TSS exceedances, no exceedances of targeted chemicals of concern were identified in analytical sampling during all non-TSCA dredging activities, and only trace concentrations of individual PCBs were recorded during TSCA dredging of DMU 8b.

Throughout the dredging operations, only a single exceedance of the turbidity 4 hour rolling average difference occurred on August 3, 2014, which was attributed to storm related turbidity, and not dredging operations. Occasional short term spikes in turbidity readings occurred during operations, identified in the 15 minute interval sampling, as well as some instances of debris or equipment impacting readings. These short duration events typically resulted from passing boat wakes or other short term effects, and did not cause significant rise in the rolling average. Except for the single rolling average exceedance event, the work was within turbidity criteria during all dredging operations.

A single exceedance of the TSS criteria (100 parts per million above ambient background condition) was recorded on December 12, 2013 during dredging within the City Ship Canal. The 'upstream' location, located within the City Ship Canal, recorded a TSS level of 54.4 mg/l while the 'downstream' location, located at the confluence of the Buffalo River and City Ship Canal at DMU 45c, recorded a TSS level of 426 mg/l. This single exceedance occurred following a storm event, and is likely attributable to the location of the two buoys and the effects of the backwater canal versus the more turbid flow on the main river exacerbating the difference in values, rather than direct dredging related impacts.

Recorded data provided correlation between turbidity records and TSS results; evaluations illustrated that the originally proposed and utilized 1:1 correlation for turbidity (NTU) to TSS (mg/l) was conservative and protective based on the data collected, as outlined in the summary memorandum on turbidity/TSS correlation (AECOM 2013).

SUMMARY

Given the limited scope of the 2015 dredging, the documented lack of historical exceedances of water quality criteria (specifically the lack of TSS and analytical exceedances), and the good empirical correlation between turbidity and TSS, it is proposed to utilize turbidity monitoring for water quality assessments during remaining dredging activities. Turbidity

monitoring will occur as outlined in the Final River Water Monitoring Plan, and include the use of real time buoys staged upstream and downstream of operations. Considering the small volume dredge areas proposed for 2015, and per the request of NYSDEC and GLNPO, it is proposed to implement a tiered monitoring program for 2015, consisting of an "alert level", and an "action level". Data will be recorded in 15 minute intervals, and utilize rolling 2 hour averages as the driver for implementation of BMPs to manage turbidity generation, if incurred. This two hour value will not be a compliance value, rather an early warning system, to "alert" the site staff and managers about a potential for exceedance in water quality criteria. Upon notification of exceedance of the 2-hour alert level, field crew will immediately investigate the cause of the exceedance, and implement corrective steps, as necessary. Any such exceedance shall also be promptly notified to Honeywell, GLNPO and NYSDEC, along with Anchor QEA's analysis of the situation, and summarizing the investigative/corrective measures undertaken, as appropriate.

Historic data trends indicate that current BMPs through operational restrictions will be sufficient to control the release of contaminants during dredging, if needed. Therefore, for all non-TSCA DMUs dredged under the USACE contract and Honeywell contract, no additional aliquot sampling would occur; existing correlations for TSS would be utilized to determine if dredging operations are meeting NYSDEC guidance values.

The compliance, or formal "action level" shall remain as the 4-hour rolling average value. This is the level, upon exceedance of which, formal regulatory notification and immediate corrective measures will be required.

The proposed modification would be applicable to all non-TSCA dredging under the USACE contract= (applicable to DMUs 1, 2, 5, 6a, 38a, and 101), and the Honeywell contract (applicable to DMUs 9, 10, 17, 18, 19, 27, 28, 29, and 44e). Dredging operations under the USEPA contract for DMU 8b dredging would utilize the originally outlined monitoring approach, unless further modifications are requested at a later date.

REFERENCES

AECOM, 2013. Memorandum, *Buffalo River Turbidity/TSS Correlation*. Buffalo, NY. November 2013.

CH2M, 2013. *Basis of Design Report, Buffalo River Area of Concern, Buffalo, New York. Final Design for Sediment Remediation.* Buffalo, NY. March 2013.

USACE, 2015. Memorandum, *Evaluation of Dissolved Contaminant Releases Resulting from GLLA Cleanup Dredging Work at DMU 6a in the Buffalo Ship Canal*. Buffalo, NY. June 2015.

Appendix B
Contractor Health and Safety Plans

Health, Safety, and Environmental Response Plan

For

Buffalo River AOC Capping and Habitat Restoration Project
Buffalo, New York

PREPARED BY

Paul Jung CIH, CSP
Director of Health and Safety

SEVENSON ENVIRONMENTAL SERVICES, INC.

July 19, 2014

TABLE OF CONTENTS

FIGURES

TABLES

ATTACHMENTS

Acronyms

ACGIH	American Conference of Governmental Industrial Hygienists'
AHA	Activity Hazard Analysis
ANSI	American National Standards Institute
CDF	Confined Disposal Facility
CFR	Code of Federal Regulation
CIH	Certified Industrial Hygienist
cm	Centimeter
CO	Carbon Monoxide
CPR	Cardiopulmonary resuscitation
CSP	Certified Safety Professional
dB(A)	Decibels A level
DEET	N-Diethyl-m-toluamide
EMS	Emergency Medical Service
EQM	Environmental Quality Management
ER	Engineering Requirements
GFCI	Ground Fault Circuit Interrupter
HSERP	Health, Safety and Environmental Response Plan
IDLH	Immediately Dangerous to Life and Health
lb	Pound
LEL	Lower Explosive Limit
m	Meter
MSDS	Material Safety Data Sheets
ml	Milliliter
mph	Miles per hour
NIOSH	National Institute for Occupational Safety and Health
NYSDEC	New York State Department of Environmental Conservation
OSHA	Occupational Safety and Health Administration
O_2	Oxygen gas
PCB	Polychlorinated Biphenyl
PCOC	Principal Chemicals of Concern
PEL	Permissible Exposure Limit
PID	Photo Ionization Detector
PPE	Personal Protective Equipment
ROPS	Roll Over Protective Structure
SCM	Semi-Consolidated Materials
SHC	Safety and Health Coordinator
SOPs	Standard Operating Procedures
SOR	Safety Observation Report
SPA	Safe Plan of Action
SSHO	Site Safety and Health Officer
TBD	To Be Determined
TSCA	Toxic Substance Control Act
USCG	United States Coast Guard
USEPA or EPA	United States Environmental Protection Agency

1.0 INTRODUCTION

Sevenson Environmental Services, Inc. (Sevenson), has prepared this Health, Safety and Environmental Response Plan (HSERP) for its work to be conducted at the Buffalo River AOC Capping and Habitat Restoration Project located in Buffalo, New York.

The work covered under this plan consists of mobilization/demobilization of equipment to and from the site, debris removal, capping, and habitat restoration.

1.1 Plan Objective

The objective of this HSERP is to define the requirements and designate protocols to be followed during the work at the Buffalo River AOC Capping and Habitat Restoration Project. Applicability extends to Sevenson personnel and Sevenson's subcontractors. Work performed under this contract will comply with applicable Federal, State, and Local Safety and Occupational Health laws and regulations. Through careful planning and implementation of corporate and site-specific safety protocols, Sevenson will strive for zero accidents and incidents on the project.

1.2 Safety and Health Policy Statement

Sevenson's management is committed to the safety of each and every employee. There is no place at Sevenson for an employee who will not work safely or who will endanger the safety of his fellow workers. It is essential that all Managers and Supervisors insist on the maximum safety performance and awareness of all employees under their direction by enthusiastically and consistently administering all safety rules and regulations. It is Sevenson's policy to take the necessary actions in engineering, planning, designing, assigning and supervising work operations, to create a safe work-site. Sevenson will:

- Maintain safe and healthful working conditions.
- Provide and assure the use of all necessary personal protection equipment to ensure the safety and health of site employees.
- Require that site work be planned to provide a range of protection based on the degree of hazards encountered under actual working conditions.
- Provide site workers with the information and training required to make them fully aware of known and suspected hazards that may be encountered, and of the appropriate methods for protecting themselves, their co-workers, and the public at large.

1.3 Drug and Alcohol Policy

Sevenson is committed to providing a safe, efficient, and productive work environment for all employees. Using or being under the influence of drugs or alcohol on the job may pose serious safety and health risks. To help ensure a safe and healthful working environment, employees may be asked to provide body substance samples (such as urine and/or blood) to determine the illicit or illegal use of drugs and alcohol. Refusal to submit to drug testing may result in disciplinary action, up to and including termination of employment.

Sevenson's Substance Abuse Program is located in Appendix A of this Plan.

Copies of the above drug testing policy (Sevenson's Substance Abuse Program) will be provided to **all employees**. Employees will be asked to sign an acknowledgement form indicating that they have received a copy of the drug testing policy. Questions concerning this policy or its administration should be directed to the Health and Safety Department.

1.4 Project Safety and Health Expectations

The safety and health of workers and the welfare of the public and the environment are the fundamental responsibilities assumed by Sevenson under this contract. Sevenson will:

- Promote zero at risk behaviors with an overall objective of zero accidents or illnesses.
- Manage activities in a proactive way that effectively increases the protection of site workers, the public, and the environment.
- Reduce safety and health risk by identifying and eliminating hazards from site activities.
- Carry out site activities in a manner that complies with all applicable safety, health, and environmental laws and regulations.

1.5 Project Safety and Health Compliance Program

Compliance with the requirements of applicable Federal, State, and local laws will be accomplished through a combination of written programs, employee training, workplace monitoring, and system enforcement. Continued and regular inspections by supervisors and safety personnel, as well as upper management with total involvement in the safety program will produce an atmosphere of voluntary compliance. However, disciplinary action for violations of project requirements will be taken, when necessary.

All site personnel and visitors entering the site will be required to read and verify compliance with the provisions of this HSERP and specific appendices. In addition, visitors will be expected to comply with relevant Occupational Safety and Health Administration (OSHA) requirements such as training, medical surveillance, and use of personal protective equipment. In the event that a person does not adhere to the provisions of the HSERP, he/she will be requested to leave the work area. All nonconformance incidents will be recorded in the Daily Safety and Inspection Log.

The Site Safety and Health Officer (SSHO) will conduct surveillance on a daily basis of all work areas and subcontractor's activities to ensure that safety and health is properly implemented. In addition, any reports from employees concerning unsafe work practices, acts, or conditions will be investigated promptly. Unsafe acts, practices, or conditions will be reported to the responsible supervisor at the time of inspection.

The safe and efficient work practices of this company require a spirit of teamwork and cooperation from all employees. Also required are uniform standards of expected behavior. Employees who refuse or fail to follow the standard set forth by this plan, the Sevenson Corporate Health and Safety Plan and/or regulatory standards will subject themselves to disciplinary action up to, and including discharge. In cases not specifically mentioned, employees are expected to use good judgment and refer any questions to their supervisors.

1.6 Project Safety Incentive Program

It is expected that all employees perform their assigned tasks in a safe and healthful manner. Therefore, safe work performance is a key element in an employee's review of their suitability for continued employment.

Employees will be encouraged to complete Job Safety Enhancement Program (JSEP) Form. This form gives the worker a mechanism to provide management with concerns, observations, or suggestions to enhance safety, productivity, and quality for the project. A periodic award may be given to a worker who submits an outstanding JSEP Form. This incentive will be determined by the Site Safety and Health Officer (SSHO) and Project Manager.

1.7 References

During development of this HSERP, consideration was given to current safety and health standards as defined by the United States Environmental Protection Agency (USEPA), Occupational Safety and Health Administration (OSHA), and the National Institute for Occupational Safety and Health (NIOSH), and the U.S. Army Corps of Engineers (USACOE). Specifically, the following reference sources have been utilized in the development of this HSERP:

- OSHA Regulations: General Industry, Construction, and Maritime;

In addition to the above-referenced documents, Sevenson has established a comprehensive and realistic Safety, Health, and Environmental Program based on past experience, sound engineering practice, employee training, and enforcement of Safety and Health regulations to prevent unreasonable Safety and Health risks. For specific procedures/programs associated with this project, refer to the Sevenson Corporate Health and Safety Plan. A copy of the Sevenson Corporate Health and Safety Plan will be maintained on site by the SSHO and will be made available upon request.

1.8 Health and Safety Plan Revisions

The development and preparation of this HSERP has been based on site-specific information provided to Sevenson. Should any unforeseen hazard become evident during the performance of the work, the SSHO will bring such hazard to the attention of Anchor QEA Representative both verbally and in writing for resolution as soon as possible. In the interim, Sevenson will take necessary actions to maintain safe working conditions in order to safeguard on-site personnel, visitors, the public, and the environment. Modifications of any portion or provision of the HSERP will be requested in writing by the SSHO, and authorized in writing. No changes to the HSERP will be allowed until the item has been reviewed and an addendum prepared and approved by the Safety and Health Coordinator.

1.9 Site Information

The Buffalo River AOC is located in the City of Buffalo in western New York State. The AOC includes the entire 1.4 mile stretch of the City Ship Canal that adjoins the river just upstream from the river confluence with Lake Erie, and extends upstream in the main Buffalo River approximately 6.2 miles. The remedy for the Buffalo River AOC consists of sediment removal, capping of contaminated sediment, and aquatic habitat restoration. Sediment removal activities have already begun under a separate contract.

Subaqueous capping work under this scope includes the placement of a cap within the head of the City Ship Canal and multi-layer armored cap adjacent to the ADM/Pillsbury property, also within remediation activities, habitat restoration will be conducted at five restoration sites to fulfill the remedial action objectives. The five restoration areas include Riverbend, Buffalo Color Peninsula, Ohio Street Shoreline, Katherine Street Peninsula, and the City Ship Canal.

The contract work is subdivided into Base Work and Optional Work. The Optional Work will be undertaken at the owner's discretion. The Base Work includes the following:

- ADM/Pillsbury armored cap
- City Ship Canal cap
- City Ship Canal habitat restoration
- Katherine Street Peninsula habitat restoration

The Optional Work consists of the following

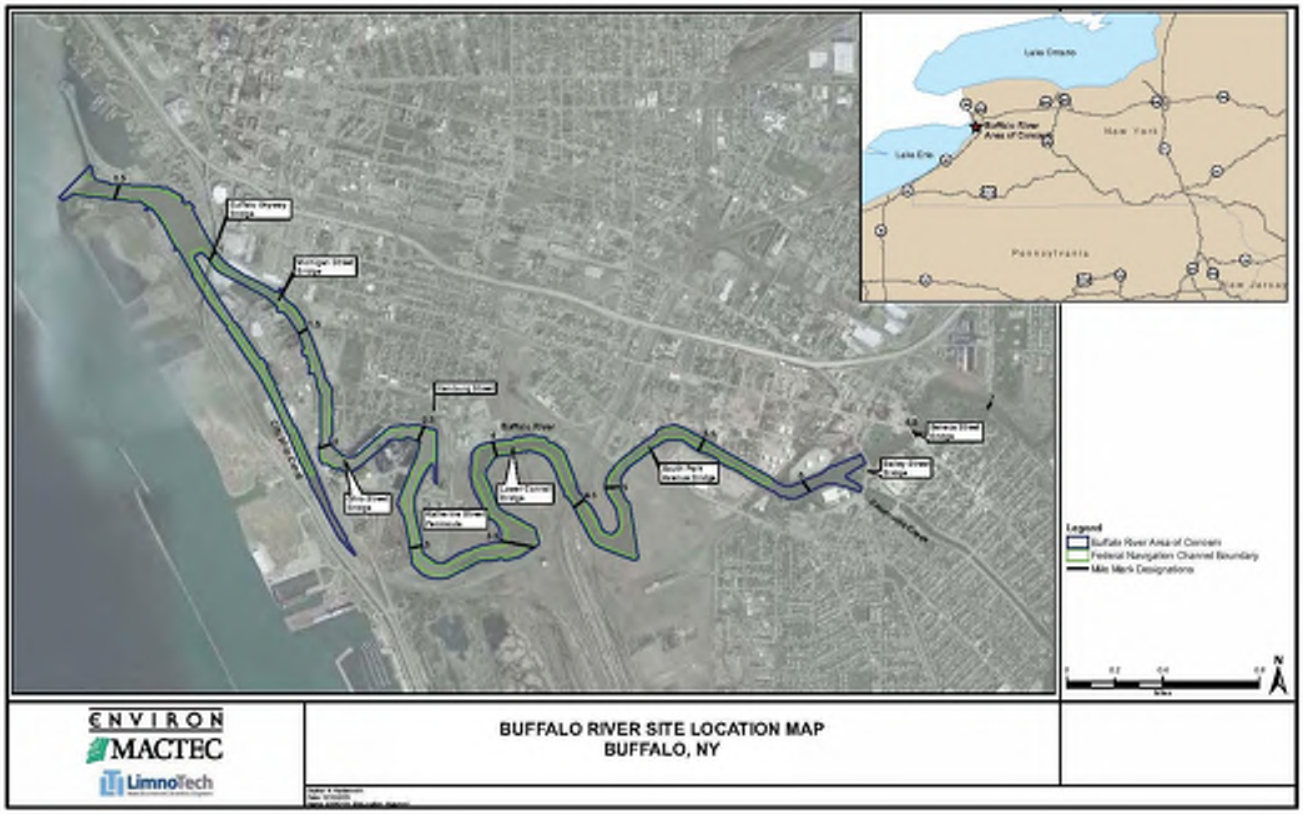
- Option 1 – Riverbend habitat restoration
- Option 2 – Buffalo Color Peninsula habitat restoration

- Option 3 – Ohio Street Shoreline habitat restoration

Work under this scope includes but is not limited to the following:

- Provide soil and sediment erosion controls
- Install a subaqueous armored cap consisting of a filter and armored layer at the ADM/Pillsbury property
- Install a subaqueous cap consisting of clean backfill materials at the City Ship Canal
- Place subgrade materials for Emergent Vegetation and Submerged Aquatic Vegetation planting beds at the City Ship Canal and Katherine Street restoration areas
- Place planting substrate material at all five restoration areas
- Install gravel spawning bed areas in the City Ship Canal
- Install riprap rock vanes and storm water outfall aprons
- Install waterway habitat structures including anchored rootwad logs, porcupine cribs, and coir buffers
- Install Emergent Vegetation and Submerged Aquatic Vegetation plants at proposed locations and densities
- Install herbivory protection measures in Emergent Vegetation planting areas
- Remove, coordinate, and transport debris that will affect the performance of the sediment cap and habitat restoration areas
- Perform additional planting as necessary in the Emergent Vegetation and Submerged Vegetation areas after one growing season.

Figure 1 – Site Map



2.0 ORGANIZATION AND RESPONSIBILITIES

While the Sevenson Safety and Health Department directs and supervises the overall Safety, Health and Environmental Program, the responsibility for Safety and Health extends throughout our organization from top management to every employee. For this reason, it is each person's duty to notify the management personnel if a hazardous condition is identified and to make a "stop work" call if the condition represents an immediate danger to life or health, until the SSHO can make a further determination. The following are the Sevenson project personnel positions and responsibilities for this project. Refer to ***Figure 2 – "Organizational Chart"***.

- **Program Manager:** Michael Crystal
- **Corporate Project Manager:** Rick Elia Jr.
- **Project Manager:** Michael Welch
- **Site Superintendent:** Rick Stein
- **Safety and Health Coordinator:** Paul Jung CIH, CSP
- **Occupational Physician:** Dr. Peter Greaney
- **Site Safety and Health Officer:** Mark Dziarnowski

2.1 Corporate Project Manager

The Corporate Project Manager directs and manages all aspects of the project in compliance with all contract and technical requirements. The Corporate Project Manager will monitor and control all subcontractors to achieve optimal performance and ensure safe, high quality performance that complies with all contract requirements.

2.2 Project Manager

The Project Manager reports to the Corporate Project Manager. His responsibilities include coordinating project activities with the Site Superintendent and serving as the primary liaison with ANCHOR QEA. The Project Manager prepares all correspondence, submittals, and other documentation required for the project; coordinates schedules; and administers the contract. The Project Manager prepares reports and documentation, supervises inspection personnel, and reviews and approves procurement and subcontract activities.

2.3 Site Superintendent

The Site Superintendent supervises and coordinates all construction crew activities relating to site preparation, dredging, capping, and restoration. The Site Superintendent has the operational responsibility for the implementation of the HSERP on this project. This includes establishing an attitude of concern for safety matters by initiating prompt corrective action of hazards brought to his attention, and ensuring that the project safety and health requirements are initiated and observed by all project personnel.

The Superintendent plans and requires that all work be performed in compliance with this HSERP, the Sevenson Corporate Health and Safety Plan and/or all applicable local, state, and federal regulations. He will impress upon all project personnel a sense of responsibility and accountability of each individual to maintain a safe workplace and to work in a safe manner.

2.4 Safety and Health Coordinator (SHC)

The Safety and Health Coordinator formulates, administers and coordinates programs for the company to reduce the risk of loss due to employee injury, regulatory non-compliance, general liability, fire, theft, or damage. The Safety and Health Coordinator develops written detailed policies and procedures

covering elements in the Safety, Health and Environmental Program. The Safety and Health Coordinator will:

- Be responsible for the development, implementation, oversight, and enforcement of the HSERP.
- Visit the site as needed to audit the effectiveness of the HSERP and be available for emergencies.
- Provide onsite consultation as needed to ensure that the HSERP is fully implemented.
- Coordinate any modifications to the HSERP with the Site Superintendent, the SSHO, and ANCHOR QEA.
- Be responsible for evaluating and recommending changes to engineering controls, work practices, and Personal Protective Equipment (PPE).

2.5 Site Safety and Health Officer (SSHO)

Under the direction of the Safety and Health Coordinator, the SSHO will be responsible for the implementation of this HSERP and for the daily coordination of safety activities with the Site Superintendent and ANCHOR QEA to ensure that the planned work objectives reflect adequate safety and health considerations. The SSHO will maintain a complete copy of this plan (and its supplements and addenda) at the site during all field activities and assure that all workers and visitors are familiar with it. He will perform site-specific training and briefing sessions for employee(s) prior to the start of field activities at the site and a briefing session each day before starting work. He will ensure the availability, proper use and maintenance of specified personal protective equipment and other safety and health equipment. He will maintain a high level of safety awareness among team members and communicate pertinent matters to them promptly. The SSHO will:

- Assist and represent the Safety and Health Coordinator in on-site training and the day-to-day on-site implementation and enforcement of the accepted HSERP.
- Be assigned to the site on a full time basis for the duration of field activities. The SSHO will have no duties other than Safety and Health related duties.
- Have the authority to ensure site compliance with specified safety and health requirements, Federal, state and OSHA regulations; and all aspects of the HSERP. This includes, but is not limited to, activity hazard analyses, use of PPE, site control, standard operating procedures used to minimize hazards, safe use of engineering controls; the emergency response plan, spill containment program, and preparation of records. This will be accomplished by performing a daily safety and health inspection and documenting results on the Daily Safety Inspection Log.
- Stop work activities if unacceptable health or safety conditions exist, and take necessary action to re-establish and maintain safe working conditions.
- Consult and coordinate any modifications to the HSERP with the Safety and Health Coordinator, the Site Superintendent and ANCHOR QEA.
- Conduct accident investigations and prepare accident reports.
- Review results of daily quality control inspections and document safety and health findings in the Daily Safety Inspection Log.
- Coordinate with Site Management and the Safety and Health Coordinator, recommend corrective actions for identified deficiencies, and oversee the corrective actions.

2.6 Subcontractors

Subcontractors utilized during activities at the Buffalo River AOC Capping and Habitat Restoration Project are covered by this HSERP and will be provided a copy of the plan prior to commencing work.

The Sevenson SSHO will verify that subcontractor employee training; medical clearance, and respirator fit test records are current and will monitor and enforce compliance with the established plan and standard operating procedures. As with all site personnel, subcontractors will be briefed on the provisions of this Plan and attend all daily toolbox safety meetings.

Sevenson will continually monitor a subcontractor's safety performance. Sevenson will observe subcontractors for hazards or unsafe practices that are both readily observable and occur in common work areas. The SSHO will note subcontractor work practices on the daily Safety and Health report. If non-compliance or unsafe conditions or practices are observed, the subcontractor safety representative will be notified and corrective action will be required. The subcontractor will determine and implement necessary controls and corrective actions. If repeat non-compliance/unsafe conditions are observed, the subcontractor will be required to stop affected work until adequate corrective measures are implemented.

3.0 HAZARD/RISK ANALYSIS

Below is a general summary of the risks that this HSERP addresses during work at the Buffalo River AOC Capping and Habitat Restoration Project. This is a summary of the major anticipated risks and is not intended to be a complete listing of all potential risks that may be encountered during the project.

1. Contact or exposure to chemicals in the process and handling of contaminated debris
2. Working around heavy equipment (struck by, caught in equipment)
3. Exposure to hazards associated with working on or near water (drowning)
4. Materials handling and transfer (ergonomic issues)
5. Heavy lifting (strains, sprains)
6. Biological hazards (plants, animals, insects)
7. Pressure systems (hydraulic lines)
8. High noise levels
9. Cuts/lacerations (saws, wire rope, utility knives, etc.)
10. Exposure to temperature extremes (heat / cold stress)
11. Severe weather conditions (high winds, precipitation, and lightning)
12. Hazards associated with watercraft such as boats, barges, work platforms (falling overboard, collisions with other watercraft and stationary objects)

3.1 Site Tasks and Operations

Sevenson has developed an Activity Hazard Analysis (AHA) for the major phases of the work. A major phase of work is defined as an operation involving a type of activity presenting hazards not experienced in previous operations, or where a new subcontractor or work crew is to perform the specified phase. The analysis will define the activity being performed and identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard. An AHA will also be prepared when new tasks are added; job situations change, or when it becomes necessary to alter safety requirements; refer to ***Appendix B - "Activity Hazard Analysis".*** Work will not proceed on a particular task/work area until the AHA has been reviewed and site personnel understand the hazards and controls of the activity to be performed.

Additionally, Sevenson has a real-time hazard identification program known as the Safe Plan of Action (SPA), which is found in ***Appendix C – "Health and Safety Forms"***. While the AHA is used as a training/auditing tool, the SPA is a planning tool for the work crew to address the details of a work

process or activity and any potential changing conditions. The superintendent or foreman as well as the work crew participate in developing the SPA at the daily tailgate meeting.

To support the SPA Program Sevenson will implement its Job Safety Enhance Program (JSEP). JSEP utilizes education, identification, and participation to facilitate Sevenson's behavior based safety program. It is comprised of an education segment that provides photographs of the various site hazards workers need to be aware of. Each day there will be a different hazard of the day presented at the morning safety meeting. The picture of the daily hazard will be posted at each door of the worker's designated break trailer so it can be seen by the workers as they exit the trailer. A "Wall of Hazards" will also be established in the designated break trailer as a visual aid to workers so they can identify the particular hazard in the field. The participation part of the program is performed during the development and review of the SPA and Take 2 moments at the work site. It is expected that the workers on a particular crew shall work together in determining how they are going to perform their work as a group to abate or eliminate an identified hazard. Photos of the specific hazards shall also be included as part of the SPA as they are identified.

Sevenson will also utilize a JSEP Form. This form is for all site personnel and provides a mechanism for workers to identify a workplace condition, good or at risk behavior(s), or recommend a hazard for the Hazard of the Day. The JSEP Form will be logged on a tracking log. If corrective action is required, a responsible person will be assigned to investigate and correct it. A completion date is assigned as well as a supervisor responsible for ensuring the corrective action is complete and effective. The item is discussed at the daily safety meeting. In this way Sevenson hopes to obtain worker buy in to its safety program and employ all available resources to detect unsafe conditions or at risk behaviors. The JSEP Form and tracking log is in Appendix C ***-"Health and Safety Forms".***

Sevenson's "Take 2 Program" will also be in effect. A worker before he begins any task is to review how it is to be accomplished, the hazards present, and the safety and health controls that are to be implemented. If there is any question that the specific task cannot be safely accomplished, he is to stop and ask his foreman the proper steps to be followed.

3.2 Hazards

The following potential hazards may be encountered during the work activities at the project.

3.2.1 Safety/Physical Hazards

Potential safety hazards include: working on or near water, electrical, heavy equipment/vehicle traffic, material handling, hand and power tools, noise exposure, slip/trips/falls, heat stress, and falls from elevation. Safety/Physical hazards associated with the project are presented below.

3.2.1.1 Electrical

Overhead power lines, downed electrical wires, and buried cables all pose a danger of shock or electrocution if contacted or severed during site operations. A minimum distance of 10 feet will be present between overhead wires and equipment. This distance will vary according to voltage, the greater the voltage, the greater the clearance between any part of the equipment and the power line; refer to ***Table 1 - Minimum Clearance from Energized Overhead Electrical Lines***. When required, a spotter will be utilized to maintain a safe distance between equipment and overhead wires. The basic rule is, "Don't locate equipment in a position where it can come in contact with overhead power lines." Maintain the required distance from the lines. Overhead electrical power lines will be considered energized unless the person owning such line, or operating officials of the electrical utility supplying the line assures that it is not energized and it has been visibly grounded.

Table 1 – Minimum Clearance From Energized Overhead Electrical Lines	
Nominal System Voltage	**Minimum Rated Clearance**
0 to 50 kV	10 Feet (3 m)
51 to 200 kV	15 Feet (4.5 m)
201 to 350 kV	20 Feet (6 m)
351 to 500 kV	25 Feet (7.5 m)
501 to 650 kV	30 Feet (9.1 m)
651 to 800 kV	35 Feet (10.7 m)
801 to 950 kV	40 Feet (12.2 m)
951 to 1100 kV	45 Feet (13.7 m)
Clearance values calculated using: (Initial kV-50kV)x(4 inches/10kV)x(1 foot/12 inches) = increased distance (feet) over 10 feet. Add this value to 10 feet to yield minimum rated clearance	

Table 11-1 USACE EM-385-1-1 (Sept 2008)

There are various means of insulating the wires, as well as barriers and alarms that may be available to reduce the risk of injury to workers, but the use of such devices does not change the requirements of any other applicable standards or laws. In addition, these and other measures (such as grounding the equipment itself) may not be fully effective and may create a false sense of security. Only the utility company is authorized to de-energize, insulate, or handle the lines. No one else may attempt these operations.

Electrical equipment used on-site may also pose a hazard to workers. Whenever possible, Sevenson will use low-voltage equipment with ground-fault interrupters and watertight, corrosion-resistant connecting cables to help minimize this hazard. In addition, lightning is a hazard during outdoor operations, particularly for workers handling metal containers or equipment. In the event of an electrical storm, all operations will cease for the duration of the storm.

No employee will be permitted to work in the proximity of any part of an electrical power circuit unless the person is protected against electric shock by de-energizing the circuit and grounding it, or it has been locked and tagged out. These procedures will be utilized when work has to be performed on energized equipment.

All electrical wiring and equipment will be intrinsically safe for use in potentially explosive environments and atmospheres. Ground-fault circuit interrupters are standard for use at the site.

Utilities that cross under the river will be identified prior to the start of intrusive water work. If underwater utilities are located in the work area they shall be marked with buoys or other acceptable means to alert work crews of their location. No intrusive work will be allowed within 5 feet of an underwater utility unless approved in advance by the ANCHOR QEA Representative.

3.2.1.2 Heavy Equipment/Vehicle Traffic

Considerations for controlling the movement of personnel and equipment in a construction area are vitally important to any project as injuries may occur while working with or adjacent to such equipment. This category includes all operations that utilize moving heavy equipment: excavators, loaders, dozers, cranes, and trucks. Sevenson will take every precaution necessary to ensure the safety of on-site personnel during traffic movement operations.

All workers will adhere to all applicable standards and regulations while operating heavy equipment at the site. Operators will be trained and experienced in the use and maintenance of the equipment they are operating. Equipment will be inspected on a daily basis to identify any worn parts, and/or unsafe conditions. Inspections will be documented using the Equipment Checklist; refer to ***Appendix C –***

Safety and Health Forms. Any unsafe equipment will be removed from service until safety defects can be corrected. Equipment operators will not leave their machine unattended while it is running. All equipment will have electronic backup alarms. Each piece of equipment will be equipped with an 1A:10B:C fire extinguisher. No vehicles or equipment will be operated in a careless or unsafe manner. Personnel will wear high visibility clothing when working around equipment/vehicles. All personnel will stay a minimum of four feet clear of the operational area of the equipment. Workers who are exposed public vehicle traffic up to 35 mph and night operations shall wear ANSI Class 2 high visibility reflective garments. Unprotected workers (physical barriers i.e., concrete jersey barriers or vehicle guardrails) shall wear ANSI Class 3 high visibility garments. The SSHO may require ANSI Class 2 or 3 high visibility reflective garments during periods of reduced natural illumination (i.e., night operations, heavy fog, rain, snow, or high hazard operations with limited visibility).

During construction activities, it is often necessary to have a worker direct the operator. In these cases, close communication between the operator and the laborer is of critical importance. One designated person will give signals to the operator of both equipment and vehicles in the work area, any worker may give the "STOP" command to the operator. Workers should not take any action unless they have made eye contact with the operator and clearly communicated their intentions. In addition, all machines are equipped with back-up alarms, which are checked daily and repaired immediately. Truck traffic will be controlled by a flagger/spotter, as required.

Maintenance and inspection of vehicles and heavy equipment is a vital part of the overall safety program. Sevenson has a fully staffed equipment maintenance shop that handles all preventative and overhaul work for our entire vehicle and equipment fleet. As part of the preventative maintenance, all equipment is checked for properly functioning safety devices (e.g., backup alarms, brakes, lights, fire extinguishers, etc.). Before each piece of equipment leaves the shop it must pass a safety checklist. All rental equipment is subjected to a similar inspection when delivered to the job site. Any piece of rental equipment that fails the inspection must be repaired by the vendor before it is accepted for use. In addition, all equipment is inspected in the field prior to the start of each day's activities. If a superintendent, operator, or safety officer detects a defect, the equipment is taken out of service and a properly qualified mechanic is dispatched from the shop to make the repairs on-site. All heavy equipment used at the site will be equipped with rollover protective structures (ROPS).

3.2.1.3 Material Handling

Various materials and equipment may be handled manually during project operations. Care should be taken when lifting and handling heavy or bulky items to avoid back injuries. The following fundamentals address the proper lifting techniques that are essential in preventing back injuries:

- The size, shape, and weight of the object to be lifted must first be considered. Multiple employees or the use of mechanical lifting devices are required for heavy objects.
- The anticipated path to be taken by the lifter should be considered for the presence of slip, trip, and fall hazards.
- The feet will be placed far enough apart for good balance and stability (typically shoulder width).
- The worker will get as close to the load as possible. The legs will be bent at the knees.
- The back will be kept as straight as possible and abdominal muscles should be tightened.
- Twisting motions should be avoided when performing manual lifts.
- To lift the object, the legs are straightened from their bending position.
- A worker will never carry a load that cannot be seen over or around.

When placing an object down, the stance and position are identical to that for lifting. The legs are bent at the knees and the object lowered. When two or more workers are required to handle the same object, workers will coordinate the effort so that the load is lifted uniformly and that the weight is equally divided between the individuals carrying the load. When carrying the object, each worker, if possible, will face the direction in which the object is being carried. In handling bulky or heavy items, the following guidelines will be followed to avoid injury to the hands and fingers:

- A firm grip on the object is essential; leather gloves will be used if necessary.
- The hands and object will be free of oil, grease, and water which might prevent a firm grip, and the fingers will be kept away from any points that could cause them to be pinched or crushed, especially when setting the object down.
- The item will be inspected for metal slivers, jagged edges, burrs, and rough or slippery surfaces prior to being lifted.

3.2.1.4 Hand and Power Tools

Hand and power tools are used for various site activities. Procedures for using hand and power tools are as follows:

- Persons using power tools will be trained in their use.
- All tools must be double insulated or used with a ground fault circuit interrupter.
- Only tools in good condition will be used.
- Tools will be kept clean.
- Guards and shields will be kept on all tools.
- Air couplings will be secured.
- Proper eye protection is critical when using power tools. At a minimum, safety glasses will be required during site operations. Where appropriate, full-face shields will be utilized in addition to the glasses. Ground Fault Circuit Interrupters (GFCIs) protection shall be used with all power tools.

3.2.1.5 Noise Exposure

Noise is generated during construction activities in such operations as transportation of materials and operation of heavy construction equipment. Noise has been defined as unwanted sounds. The human ear can tolerate a certain amount of sound without any harmful effects. Personnel will be provided protection against the effects of hazardous noise exposure whenever sound-pressure levels exceed 85 dB(A) steady-state expressed as a time-weighted average (TWA) or 140 dB(A) impulse.

It is usually safe to assume that if you need to shout to be heard at arm's length, the noise level is at 90 dB (A) or above. Personnel operating or working around construction equipment will utilize hearing protection. Sevenson personnel are enrolled in a Hearing Conservation Program that meets the requirements of OSHA regulation 29 CFR 1910.95.

3.2.1.6 Slip/Trip/Fall

Slip/trip/hit/fall injuries are the most frequent of all injuries to workers. They occur for a wide variety of reasons, but all injuries can be prevented by the following prudent practices:

- Spot-check the work area to identify hazards.
- Establish and utilize a pathway, which is most free of slip and trip hazards.
- Beware of trip hazards such as wet floors, slippery floors, and uneven surfaces or terrain.

- Carry only loads that you can see over.
- Keep work areas clean and free of clutter, especially in storage areas and walkways.
- Communicate hazards to on-site personnel.
- Secure all loose clothing, ties, and remove jewelry while around machinery.
- Report and/or remove hazards.
- Keep a safe buffer zone between workers using equipment and tools.

3.2.1.7 Heat Stress

Heat stress may be a hazard for workers wearing protective clothing even if the temperature is moderate. The same protective materials that shield the body from chemical exposure prevent heat and moisture from dissipating. Personal protective clothing can therefore create a hazardous condition. Depending on the ambient temperature and the work being performed, heat stress can occur very rapidly - within as little as 15 minutes.

In its early stages, heat stress can cause discomfort and inattention, resulting in impaired functional abilities that can threaten the safety of both the individual and his co-workers. Personnel will be instructed to recognize the symptoms of the onset of heat stress. While it is not anticipated that heat stress monitoring will be required for this project, the SSHO may periodically check all personnel working in thermal stress areas to ensure that the symptoms are recognized. Frequency of heat stress monitoring and checks for symptoms of heat stress will increase with rises in air temperature, humidity, and the degree of exposure to high temperature areas.

An ambient temperature of 72.5°F will be used as an action level to implement pulse monitoring, oral temperatures, and administrative controls, including rest breaks and work rotation to prevent employees from experiencing heat-related health effects including weight loss. The guidance for workers wearing permeable clothing is specified in the current version of the ACGIH Threshold Limit Values for Heat Stress. If actual clothing differs from the ACGIH standard ensemble in insulation value and/or wind and vapor permeability, changes should be made to the monitoring requirements and work rest period to account for these differences. ***Table 2 – "Frequency of Physiological Monitoring***" provides the suggested frequency of physiological monitoring for fit and acclimatized workers.

Table 2 – Frequency of Physiological Monitoring

Adjusted Temperature Calculation	Normal Work Clothing	Impermeable Clothing
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work
87.5 - 90.0°F (30.8 – 32.2°C)	After each 60 minutes of work	After each 30 minutes of work
82.5 - 87.5°F (28.1 – 30.8°C)	After each 90 minutes of work	After each 60 minutes of work
77.5 - 82.5°F (25.3 - 28.1°C)	After each 120 minutes of work	After each 90 minutes of work
72.5 - 77.5°F (22.5 - 25.3°C)	After each 150 minutes of work	After each 120 minutes of work

The following parameters should be used when monitoring workers:

Heart rate - Count the radial pulse as early as possible in the rest period to ensure a more accurate reading. If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period at the same length. If, at the end of the following work period, the heart rate still exceeds 110 beats per minute, shorten the work period again by one-third.

Oral Temperature - The utilization of oral temperature applies to the time immediately after the worker leaves the contamination reduction zone. Using a clinical thermometer, take the temperature

for three minutes. If the oral temperature exceeds 99.6ºF (37.6ºC), shorten the next work cycle by one-third, without a change to the rest period. If the oral temperature still exceeds 99.6ºF (37.6ºC) at the end of the following work period, shorten the next work cycle by one-third. Do not permit a worker to perform duties requiring a semi permeable or impermeable garment if the oral temperature exceeds 100.6ºF (38.1ºC). Ear canal readings are a valid method to monitor the temperature of workers who remain in the contamination reduction zone.

The oral temperature shall not exceed 100.4°F. If an employee's pulse rate exceeds the maximum age-adjusted heart rate (0.7(220-AGE)), and/or the oral temperature exceeds 100.4ºF, the employee shall be required to stop work and rest at the work site or move to an air-conditioned room after proper decontamination. The affected employee may be allowed to return to work after his/her pulse rate has dropped below 100 beats per minute. The SSHO in consultation with the affected employee, and medical personnel if necessary, shall determine whether an employee is ready to return to work. Fluids shall be provided and rest breaks will be taken. The frequency of breaks will increase with the temperature. Such things as cooling vests, portable fans, and breaks in air-conditioned areas shall be used if necessary.

When practicable, the most labor-intensive tasks should be carried out during the coolest part of the day. If necessary, a work/rest regimen will be instituted. The work/rest regimen consists of alternating periods of work and rest. The duration of these alternating periods will depend on the environmental conditions at the job site, such as, the Wet Bulb Globe Temperature, duration, and type of activities performed.

A worker who becomes irrational or confused, or collapses on the job should be considered a heat stroke victim and medical help should be called immediately. Early recognition of symptoms and prompt emergency treatment is the key to aiding someone with heat stroke. While awaiting the ambulance, begin efforts to cool the victim down by performing the following:

- Move the victim to a cooler environment and remove outer clothing.
- Wet the skin with water, and fan vigorously or repeatedly apply cold packs or immerse the victim in a tub of cool (not ice) water.
- If no water is available, fanning will help promote cooling.

Any individual showing susceptibility to heat stress will be referred to a physician for evaluation. In addition, the use of prescription drugs can also contribute to the effects of heat stress and will be considered during the assignment of work. Cool (50°-60°F) water or a sport drink, such as Gatorade, will be made available to workers and encourage them to drink small amounts frequently, (e.g., one cup every 20 minutes). Ample supplies of liquids will be placed close to the work area.

3.2.1.8 Cold Stress

Cold injury (frostbite and hypothermia) and impaired ability to work are hazards to persons working outdoors in low temperatures at or below freezing. Extreme cold for a short time may cause severe injury to exposed body surfaces (frost nip or frostbite), or result in profound generalized cooling (hypothermia). Areas of the body which have high surface area-to-volume ratio such as fingers, toes, and ears, are the most susceptible to frost nip or frostbite.

Two factors influence the development of a cold weather injury: ambient temperature and the velocity of the wind. Wind chill is used to describe the chilling effect of moving air in combination with low temperature. As a general rule, the greatest incremental increase in wind chill occurs when a wind of 5 mph increases to 10 mph. Additionally, water conducts heat 240 times faster than air. Thus, the body cools suddenly when chemical-protective equipment is removed if the clothing underneath is perspiration soaked. The wind chill factor is the cooling effect of any combination of temperature and

wind velocity or air movement. ***Table 3 – Wind Chill Index*** should be consulted when planning for exposure to low temperatures and wind. The wind chill index does not take into account the specific part of the body exposed to cold; the level of activity, which affects body heat production; or the amount of clothing being worn.

When practicable, the most sedentary tasks should be carried out during the warmest part of the day. If necessary, a light-work rotation schedule should be instituted or the work area heated. Heavy work that will cause heavy sweating resulting in wet clothing must also be monitored. The work/rest regimen consists of alternating periods of work and rest. The duration of these alternating periods will depend on the environmental conditions at the job site, (i.e., the Wind Chill Temperature, duration, and type of activities performed).

Table 3 – Wind Chill Index

Wind (mph)	Actual Temperature (°F)												
	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25
	Equivalent Temperature (°F)												
5	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40
10	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47
15	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51
20	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55
25	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58
30	22	16	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60
35	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62
40	20	13	6	-1	-8	-15	-22	-29	-36	-42	-50	-57	-64

Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V0.16) + 0.4275T(V0.16)
T = Air Temperature (°F)
V = Wind Speed (mph)

Frostbite occurs in 15 minutes or less

Table 4 - Maximum Daily Time Limits for Exposure at Low Temperatures gives the recommended time limits for working in various low temperature ranges.

Table 4 – Maximum Daily Time Limits for Exposure at Low Temperatures

Temperature Range (°F)	Maximum Daily Exposure
30 to 0	No limit, providing that the person is properly clothed.
0 to -30	Total work time: 4 hours. Alternate 1 hour in and 1 hour out of the low-temperature area.
-30 to -70	Two periods of 30 minutes each at least 4 hours apart. Total low temperature work time allowed is 1 hour.
-70 to -100	Maximum permissible work time is 5 minutes during an 8-hour working day. At these extreme temperatures, completely enclosed headgear, equipped with a breathing tube running under the clothing and down the leg to preheat the air, is recommended.

Table 5 - Work/Warm-up Schedule applies to any 4-hour work period with moderate to heavy work activity, warm-up periods of ten (10) minutes in a warm location and an extended break (e.g., lunch) at the end of the 4-hour period in a warm location. For light-to-moderate work (limited physical movement) apply schedule one step lower. For example, at -35°C (-30°F) with no noticeable wind, a worker at a job with little physical movement should have a maximum work period of 40 minutes with four breaks in a 4-hour period.

Table 5 – Work/Warm-up Schedule											
Air Temperature - Sunny Sky		No Noticeable Wind		5 mph Wind		10 mph wind		15 mph wind		20 mph wind	
°C (approx.)	°F (approx.)	Max Work Period	No. of Breaks	Max Work Period	No. of Breaks	Max Work Period	No. of Breaks	Max Work Period	No. of Breaks	Max Work Period	No. of Breaks
-26 to –28	-15 to –19	(Norm. Breaks) 1		(Norm. Breaks) 1		75 min	2	55 min	3	40 min	4
-29 to –31	-20 to –24	(Norm. Breaks) 1		75 min	2	55 min	3	40 min	4	30 min	5
-32 to –34	-25 to –29	75 min	2	55 min	3	40 min	4	30 min	5	Non-Emergency Work Should Cease	
-35 to –37	-30 to –34	55 min	3	40 min	4	30 min	5	Non-Emergency Work Should Cease			
-38 to –39	-35 to –39	40 min	4	30 min	5	Non-Emergency Work Should Cease					
-40 to -42	-40 to -44	30 min	5	Non-Emergency Work Should Cease							
-43 & below	-45 & below	Non-Emergency Work Should Cease									

To guard against cold injuries, workers should wear appropriate clothing and use warm shelters for removing personal protective equipment. The personnel decontamination trailer will be used as a warm shelter when required. The SSHO may periodically monitor workers' physical conditions, specifically checking for symptoms of frostbite.

Wet clothing can reduce the body's core temperature faster than just cold air alone. Rain gear will be made available to workers at the Site to prevent their clothing from becoming wet during rain events or performing activities where they could get wet. Employees will be encouraged to bring extra clothing to change into in the event they become wet. Employees who become soaked with water will be required to change into dry clothing before they can return to work.

Cold stress controls for diving activities will be detailed in the Dive Operations Plan as determined by the designated person in charge of diving operations.

3.2.1.9 Fires/Explosions Hazard

When required, the SSHO will establish areas approved for welding, cutting, and other hot work. Hot work (welding, burning, cutting, etc.) conducted on-site must comply with the following Hot Work Procedures. A Hot Work Permit will be obtained from the SSHO. All personnel will be protected from welding radiation, flashes, sparks, molten metal, and slag. All welding, burning, and cutting equipment will be inspected daily by the operator. Defective equipment will be tagged and removed from service, replaced or repaired, and re-inspected before again being placed in service. All welders will be properly trained in the safe operation of their equipment, safe welding/cutting practices, and welding/cutting respiratory and fire protection.

Cutting or welding will NOT be permitted in the presence of explosive atmospheres (mixtures of flammable/combustible gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside un-cleaned or improperly prepared drums, tanks, or other containers, and equipment which has previously contained such materials.

Where practical, all combustible material will be relocated at least 35 feet away from the hot work site. Where relocation is impractical, combustibles will be protected with flame-proofed covers or otherwise shielded. At a minimum, two fully charged and operable fire extinguishers appropriate for the type of possible fire (4A:80B:C), will be available at the work area.

A hot work permit will be completed by the SSHO, reviewed with personnel who will perform the hot work, and posted near the work area. The hot work permit is good only for the date issued and is valid only for the work shift for which it is issued. If at any time during the hot work operation a change in conditions at the work site is suspected, such as a release of flammable gases or vapors in the work area, work will be stopped immediately and the SSHO will be notified. Such work stoppage invalidates the hot work permit, and a new permit will be completed after inspections and tests have been performed by the SSHO; ***refer to Appendix C – Safety and Health Forms for the Hot Work Permit.***

3.2.1.10 Fall from Elevation

To prevent falls and injuries when employees work in areas where fall hazards cannot be eliminated by reasonable means, personnel will be required to use a full body harness and shock-absorbing lanyard. Personnel will make maximum use of primary fall protection systems, such as scaffolding and scissors lifts. These systems will be equipped with standard guardrails and safe means of access/egress.

Before any employee attempts to work in an area where a risk of falls exists, they must equip themselves with suitable fall-arresting equipment. Personnel riding on or working from a man lift or scissors lift must secure their safety lanyards to the basket at all times.

The fall protection equipment will be properly fitted and will not restrict the movements of the worker. Full safety harnesses are required for any work performed over six (6) feet in elevation unless work is being performed from a ladder. Work from portable ladders or fixed ladders less than 24 feet in height that are set up and properly used do not require fall protection. However, if fall protection can be properly utilized, it will be.

Self-retractable lifelines (SRLs) shall be used in lieu of the traditional 6-foot shock absorbing lanyard. SRLs typically only allow a maximum fall distance of two feet when the attachment point is located at the same height or higher than the D-ring on the full body harness.

Working over or near water and exposed to falls greater than 6-feet have special considerations. Please refer to section 7.17 for policies regarding these types of situations.

3.2.1.11 Working On or Near Water

During the course of the project a significant amount of the work will be conducted on or around water. Prior to commencement of any activities on the water, watercraft will be inspected, radio communication with shore personnel will be established, rescue procedures reviewed, and Coast Guard approved personal flotation devices (PFDs) issued to workers. All equipment and operating personnel will meet or exceed U.S. Coast Guard requirements for safety. Prior to performing work on the water a float plan and applicable AHAs will be completed and reviewed by boating personnel. (see section 7.17)

3.2.1.12 Night Work Lighting Requirements

Operations conducted at night need to be properly illuminated. Table 6 defines the minimum lighting requirements for the project.

Table 6 – Minimum Illumination Intensities in Foot-Candles	
Foot-Candles	**Area or Operation**
5	General construction area lighting.
3	General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas.
5	Indoors: warehouses, corridors, hallways, and exit ways.
30	First aid stations, infirmaries, and offices.

3.2.2 Chemical Hazards

3.2.2.1 Operational Chemical Hazards

Operational chemicals will be brought to the project-site for use in activities supporting the construction activities. For example, some of these chemicals are used for the treatment and stabilization of contaminated material. The use of operational chemicals is regulated by OSHA under the Hazard Communication Standard (29 CFR 1910.1200). Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDS) for operational chemicals are kept on file in the project office trailer. An inventory list of the anticipated operational chemicals (Hazardous Chemical Inventory List) for use at the site will be maintained at the site and updated as new material is received. As these chemicals are brought on site, controls will be implemented to protect workers from their effects. MSDSs or SDSs shall be submitted to the EAM Representative. Any substance that contains an extremely hazardous substance (EHS) shall have prior approval of the ANCHOR QEA Representative prior to being brought onsite.

3.2.2.2 Contaminate Chemical Hazards

Remediation of the Buffalo River has been conducted during a previous contract. The likelihood of workers being exposed to these contaminates in significant concentrations is very unlikely and no special protocols are required. However, under Right to Know, the primary chemical of concern remediated was polychlorinated biphenyls (PCBs). PCBs are considered to be a suspected human carcinogen. PCBs also affect the liver, skin, and eyes.

3.2.3 Biological Hazards

Since the project occurs at a plant location and on the water there is a limited potential for encountering biological hazards such as bites from ticks, spiders, rodents, and snakes, and exposure to poison ivy and oak. However, flying insects such as mosquitoes, wasps, hornets, and bees may be encountered while project activities occur. Mosquito bites can be effectively prevented by the use of insect repellants containing DEET. Please note that there are some concerns with the use of DEET on skin and associated potential adverse health effects. Treatment for insect bites and bee stings can be affected by the use of commercially prepared ointments. Personnel who are allergic to stinging insects shall notify the SSHO prior to working on the project.

4.0 SAFETY AND HEALTH TRAINING

4.1 Site-Specific Training

All personnel working at the Site during construction activities will review this HSERP with the SSHO. Personnel will sign an acknowledgment form to document their review and agreement to comply with the provisions of the HSERP. All visitors must sign the Visitor's Log and wait in the Sevenson field office for a briefing before entering the Site.

The SSHO will be responsible for ensuring Site visitors are trained in the hazards associated with the Site, to explain emergency procedures, and instruct them in the use of protective gear required during

the visit. Vendors who specialize in electrical, hydraulics, or mechanical equipment may enter the exclusion zone to perform maintenance on equipment when escorted by a competent person.

4.1.1 Initial Session

Prior to commencement of onsite field activities, all site employees will attend a site-specific safety and health training session. This session will be conducted by the SSHO or designee, to ensure that personnel are familiar with the requirements of this HSERP. The initial session will consist of the contents of this HSERP and specific procedures developed for the project. The SSHO or designee will also provide initial site-specific training for replacement employees.

As a minimum the site-specific training will include:

- Honeywell safety expectations.
- Explanation of the Overall HSERP.
- Health and Safety Personnel and Organization.
- Substance Abuse Program and project rules
- Physical hazards associated with the project.
- Selection, use, and limitations of available safety equipment and proper procedures for its use.
- PPE fitting to determine proper size for individuals.
- Site rules and regulations.
- Work zone establishment and markings.
- Site communication and the "Buddy System".
- Emergency preparedness procedures.
- Review applicable Sevenson Standard Operating Procedures.
- Site Specific Hazard Communication.
- Review of PCB health effects, potential for exposure, and PCB control program.
- Boating/water safety rules and procedures.
- Heat and cold stress programs.

4.1.2 Periodic Sessions

Periodic training will be provided at least weekly and prior to each change of operation. The training will address safety and health procedures, work practices, any changes to HSERP, review activity hazard analysis, work task or schedule, and review of safety discrepancies and accidents.

4.2 Safety Meetings

A well-ordered flow of information is essential to a good safety program. Sevenson, through a program of safety meetings at all levels, intends to accomplish the goals of safety awareness, education, and participation.

The SSHO will conduct daily safety meetings with ALL on-site personnel. An opportunity will be provided for employees to voice safety-related concerns. The SSHO will submit a synopsis of each meeting including topics covered, safety-related concerns, action items to be addressed, status of previous items, and a signed attendance list.

4.3 Hazard Communication Training

OSHA's standard for hazard communication requires that all workers be informed of potentially hazardous materials used in their work area. Sevenson provides employees with information and training on hazardous chemicals at their work site at the time of their initial assignment, annually, and whenever a new chemical is introduced into their work site that could present a potential hazard. Personnel are briefed on the general requirements of the OSHA hazard communication standard and duty-specific hazards by their immediate supervisor before they begin any duties on the work site. Personnel transferred from another site are also briefed on the duty-specific hazards by their immediate supervisor before they begin any duties on the work site.

4.4 HAZWOPER Training

Personnel who work in the Exclusion Zone and have the potential to come into contact with contaminated material must have participated in a 40-hour HAZWOPER training course as outlined in OSHA regulations 29 CFR 1910.120 and 1926.65. In addition to the initial 40-hour course personnel are required to have an 8-hour annual refresher course. Supervisors will have completed an 8-hour supervisory course.

NOTE: Not all personnel working on this project are required to have this training. Sevenson's Site Superintendent, SSHO, and foreman shall have the required HAZWOPER Training and shall be responsible for identifying project operations that may require workers to have HAZWOPER Training.

4.5 First Aid/CPR Training

At least one site person will be required to complete first aid and cardiopulmonary resuscitation (CPR) training and receive the appropriate certification. First aid/CPR training certificates shall be approved by the American Red Cross, the American Heart Association, the National Safety Council, or be certified by a medical professional. Additionally, First Aid/CPR qualified personnel will have received blood borne pathogen training as required by 29 CFR 1910.1030.

All members of a dive team are required to be certified in first aid and CPR. The diving subcontractor shall be responsible for providing this training to their divers. Divers certification cards shall be submitted to Sevenson's SSHO prior to the start of dive operations.

5.0 INJURY/MEDICAL SUPPORT

If the injury or illness is life threatening, immediately call 911. If not life threatening, Sevenson utilizes WorkCare Injury Intervention to provide the appropriate care for our workers. In the event a worker presents with a minor injury or symptoms of an illness, WorkCare Injury Intervention will be notified at 1-888-449-7787. A registered nurse who specializes in occupational injury and illness will interview the worker and assess their condition over the phone. The register nurse may transfer the call to a physician for additional consult or may provide a series of first aid recommendations for the employee to try to improve their condition or they may recommend the worker be evaluated at a local clinic or emergency room.

Sevenson's medical consultant has established a relationship with Healthworks (2075 Sheridan Drive, Kenmore, New York) which is a local occupational clinic. All minor, non-emergency injuries will be treated at this clinic. Through the use of this clinic it is anticipated that there will be no unnecessary treatment of injuries. When injured workers are released back to work with restrictions, these restrictions will be accommodated so that unnecessary lost workday cases are avoided.

6.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)

This section provides an outline of the PPE and guidelines that will be implemented to minimize chemical, physical, and biological exposures and accidents during construction activities. Where

engineering and administrative controls do not eliminate all job hazards, employees will (where appropriate) wear PPE.

These include items such as, hard hats, face shields, safety goggles, glasses, hearing protection, foot guards, gloves, etc. The SSHO will ensure that equipment selected will meet the following requirements:

- It will be appropriate for the particular hazard.
- It will be maintained in good condition.
- It will be properly stored when not in use to prevent damage or loss.
- It will be kept clean, fully functional, and sanitary.
- Must meet all applicable ANSI standards.

Personal clothing and jewelry can present additional safety hazards. Supervisors will ensure that workers wear appropriate clothing, which will not interfere with the PPE. Sevenson will provide proper PPE to all employees.

6.1 PPE Hazard Assessment

Selection of the appropriate PPE is a complex process, which should take into consideration a variety of factors. Key factors involved in this process are identification of the hazards, or suspected hazards, and the performance of the PPE materials in providing a barrier to these hazards. The amount of protection provided by PPE is hazard specific. It is anticipated that the following levels of protection will be utilized at this site.

- **Level D:** provides minimal protection against chemical hazards. A work uniform consisting of coveralls and/or long pants and sleeves may be worn in any area without the potential for significant respiratory or skin contact hazards.
- **Modified Level D**: provides protection against skin contact of chemical hazards. It entails Level D protection plus gloves, boots, and protective coveralls.
- **Level C**: provides protection against inhalation hazards from chemicals. It entails Modified Level D protection plus an air purifying respirator.

Level Modified D and Level C PPE is not anticipated to be utilized at during the project unless an offsite product MSDS or SDS requires its use. Personal Protective Equipment alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound work practices.

6.1.1 Head Protection

All personnel will wear a hard hat that meets the requirements and specifications in ANSI Safety Requirements for Industrial Head Protection Z89.1. Exceptions to this requirement are personnel in the site office, inside vehicles or equipment equipped with falling object protection structures (FOPS), and rest/eating areas.

6.1.2 Hand Protection

Hand protection for construction activities will be required. The appropriate glove will be determined by the SSHO for a specific work task. Chemical resistant gloves will be selected using appropriate chemical degradation guides. Leather or cut resistant work gloves will be worn when work activities require the handling of sharp and rough-surfaced objects. Welder's gloves will be required for all Hot Work activities.

6.1.3 Eye/Face Protection

All personnel on site will wear eye protection. All eye/face protection provided will be ANSI Z87 approved.

6.1.4 Footwear

Footwear will meet ASTM F2413-11 and will be worn for all field activities.

6.2 Levels of Protection

The level of protection must correspond to the level of hazards known or suspected for the specific work activity. The anticipated level of protection for work in which there will be no contact with sediment is Level D Where there is the potential for exposure to or inhalation of commercial based products material above the action limit or as recommended by the manufacturer, modified Level D or Level C PPE may be required.

6.2.1 Level D

Level D equipment, used as appropriate, is as follows:

- Work uniform (Long pants and Shirt)
- Hard hat
- Steel-toed safety boots
- Safety glasses
- Leather or heavy cloth gloves (as needed)
- High visibility clothing
- Class I, III, or V personal flotation device (water work)

6.2.2 Modified Level D

Level D equipment with a protective coverall and/or chemical resistant glove (MSDS or SDS specific)

6.2.2 Level C

Level C equipment, used as appropriate, is as follows:

- Same as Level D or Modified Level D plus
- Air purifying respirator with appropriate cartridge as required by the MSDS or SDS.

7.0 ACCIDENT PREVENTION PROCEDURES/PRACTICES

7.1 Medical and First Aid Requirements

Applicable Standards:

OSHA 29 CFR 1926.23, & 1926.50

First-aid kits/stations and required contents are maintained in a serviceable condition. Unit-type kits have all items in the first-aid kit individually wrapped, sealed, and packaged in comparable sized packages. First-aid stations will be located as close as practicable to the highest concentration of personnel. First-aid stations will be well-marked and available to personnel during all working hours. First-aid stations will be equipped with a first-aid kit, the size of which will be dependent upon the number of personnel normally employed at the work site.

Emergency telephone numbers and Route to the Area Hospital will be clearly posted and easily visible at all times. There should be OSHA posters prominently displayed and warning signs posted for any known or potential hazard(s) present. MSDSs or SDSs must be available on the job site at all times.

7.2 Hazardous Substances

Applicable Standards:

OSHA 29 CFR 1926.53 & 1910.1200

When hazardous substances are used in the workplace, the hazard communication program dealing with MSDSs/SDSs, labeling, and employee training will be in operation. MSDS/SDSs materials will be readily available for each hazardous substance used. A training program, plus regular question and answer sessions on dealing with hazardous materials will be given to keep employees informed. The program will include an explanation of what an MSDS/SDS is and how to use and obtain one; MSDS/SDS contents for each hazardous substance or class of substances; explanation of the "Right to Know"; what the different signal words and pictograms mean on the SDS; identification of where employees can see the employer's written hazard communication program and where hazardous substances are present in their work area; the health hazards of substances in the work area, how to detect their presence, and specific protective measures to be used; as well as informing them of hazards of non-routine tasks.

Sevenson's Hazardous Communication Program is located in Appendix D of this Plan.

7.3 Fall Protection

Applicable Standards:

OSHA 29 CFR 1926.500, 501, 502, 503; 1926.106

To access high and low places on jobsites a variety of equipment may be used such as ladders, scaffolding, suspended platforms, aerial lifts, stairways, and climbing lines. The use of these access systems often presents fall hazards. In addition, employees may be exposed to falls while working on elevated structures, climbing onto and off of equipment, and even while walking by falling through holes or by slipping or tripping.

To protect employees when they are exposed to fall hazards, some form of fall protection must be used. The most common forms of fall protection are guardrails, personal fall arrest systems, hole covers, and safety nets. Any one, or all of these forms of fall protection may be used on construction worksites. The current OSHA standards also require that employees receive training regarding fall protection issues, and that the training is documented. An alternate fall arrest program may be implemented in cases where none of the traditional methods of fall protection are feasible. Components of our fall protection plans are listed below:

Personal Fall Arrest System - The three main parts of a personal fall arrest system are the body belt or harness, the SRL or lanyard, and a suitable anchorage. Particular attention must be paid to the anchorage point(s) to ensure that they are capable of supporting 5,000 lb. (22.2 kN) or two times the maximum load on an engineered system.

Guardrail Systems - Guardrail systems consist of a top rail, mid rail, and if necessary a toe board. Guardrail systems can be made of various materials.

Training - All employees must receive training on the nature of the fall hazards at the site and on how to avoid falls. Employees should be familiar with the use of all personal fall arrest systems and must wear the equipment when necessary.

The requirements of all applicable OSHA regulations notwithstanding, the minimum fall protection requirements on our projects may include the following:

- All fall protection systems must meet the requirements of Part 1926, Subpart M.
- For situations where SRLs cannot be used because they are interrupted, double lanyards are necessary to ensure that the worker is continuously protected from falling by attaching one lanyard ahead of the discontinuity prior to unhooking the trailing lanyard.
- Climbing on forms, false work, or the structure to gain access to work areas is expressly prohibited. However, it is not intended to prohibit the use of ladders for access to work areas, provided the operation is in compliance with OSHA Part 1926 Subpart X and other relevant requirements.
- Where scaffolds are necessary to provide temporary access to work areas, they must be in compliance with §1926.451. Scaffolds must include a toprail, midrail, and toeboard in compliance with 1926.451, on all open sides and ends. Personal fall arrest systems meeting the criteria of Part 1926 Subpart M are required to protect workers during installation and removal of the railings, and in situations where physical restrictions preclude installation of a standard railing.
- Fall protection is required for open sides or ends of roofs and for openings in floors, as required in Part 1926 Subpart M. In no case will a height of fall 6 feet (1829 mm) or greater from the side, end, or opening in a floor remain unprotected.
- All workers in approved personnel aerial lifts must use a personal fall arrest system meeting the criteria of Part 1926 Subpart M, with the lanyard attached to the boom or basket, as required by OSHA 1926.556.
- Instances in which it is impossible to provide fall protection for workers are rare. Where an individual worker must rig the fall protection system, and it cannot be accomplished from an aerial lift or by tying-off to the existing structure, momentary exposure to a fall hazard may be unavoidable. It is essential that adequate planning of construction procedures minimize such occurrence of unprotected exposure to fall hazards. It is equally essential that the fall protection systems utilized actually enhance safety, rather than creating a secondary hazard.
- Where workers are exposed to falls greater than 6 feet while working over water special considerations are required. Please refer to Section 7.17 for additional guidance.

Sevenson's Fall Protection Program is located in Appendix E of this Plan.

7.4 Electrical

Applicable Standards:

OSHA 29 CFR 1926.400 through 449, 1910.301 through 399, 1926.550(a)(15)

Electricity is a serious workplace hazard that must be respected at all times. It is important to remember that exposure to even a little electric current can kill! The best protection around electricity is distance -- ample distance between the worker and the conductive materials. The following safe work practices and procedures will help prevent electrical accidents on the jobsite.

Workers should observe and strictly obey all warning and danger signs around electrical apparatus. They should never close a switch that has a danger tag on it signed by or placed there by someone else. Untrained people must not open any electrical enclosures. The one exception is that the door on a circuit breaker panel board may be opened to operate the switches, but other types of electrical enclosures should not be opened.

Extension cords or any power tools or equipment must not be used when the cords are frayed, worn out, or the wires are bare. Defective equipment should be reported to the supervisor and turned in for repair. Report all unguarded or broken light bulbs. Do not hang lights by their cords unless the light was designed to be suspended in that manner.

Installation Safety Requirements: Live parts of electrical equipment operating at 50 volts or more must be guarded against accidental contact. Entrance to rooms and other guarded locations containing exposed live parts must be marked with conspicuous warning signs forbidding unqualified persons from entering. All pull boxes and breaker boxes must be labeled to indicate the equipment they switch. Electric installations that exceed 600 volts and that are open to unqualified persons must be made with metal-enclosed equipment or enclosed in a vault or area controlled by a lock. In addition, equipment must be marked with appropriate caution signs.

Conductors and equipment must be protected from overcurrent in accordance with their ability to safely conduct current, and the conductors must have sufficient current carrying capacity to carry the load. Fuses and circuit breakers must also be located or shielded so that employees will not be burned or otherwise injured by their operation.

All wiring components and utilization equipment in hazardous locations must be maintained in an explosion-proof condition without loose or missing screws, gaskets, threaded connections, seals, or other impairments to a tight condition. Unless identified for use in the operating environment, no conductors or equipment can be located:

- In damp or wet locations.
- Where exposed to gases, fumes, vapors, liquids, or other agents having a deteriorating effect on the conductors or equipment.
- Where exposed to excessive temperatures.

Ground Fault Circuit Interrupters To ensure electrical safety from shocks on all construction sites, all 120-volt, single-phase, 15- and 20-amp receptacle outlets must be protected by ground fault circuit interrupters (GFCIs), or assured equipment grounding conductor program must be established. In an assured equipment-grounding program, one or more **competent persons** must be designated to implement and enforce the following assured equipment grounding safety procedures at all construction jobsites.

Each 120-volt extension cord, tool, piece of equipment, and receptacle needs to be inspected and tested before first use, before equipment is returned to service following repairs, and before equipment is used after any incident that can be reasonably suspected to have caused damage.

Each extension cord, tool, or piece of equipment should be visually inspected by the user before each day's use to determine signs of damage. Equipment found to be damaged or defective (frayed or damaged insulation, crushed cable, loose or missing covers or screws, and missing ground prong on plugs, etc.) must not be used until repaired. Equipment suspected to be damaged or defective should be inspected and tested prior to use.

Overhead Transmission and Distribution Lines - A significant hazard on construction jobsites is the accidental contact of moving equipment with live overhead power distribution and service lines. Where work must be done near live lines, the movement of all equipment such as cranes, excavators and other equipment must be guided by an observer who can observe the clearance of the equipment from energized lines and give timely warning to equipment operators. The minimum clearance between live lines and any jobsite equipment is 10 feet (3.0 m), and the clearance increases with increasing line voltages. See Table 1 for minimum clearance from energized overhead transmission lines.

7.5 Lockout and Tagout

Applicable Standards:

OSHA 29 CFR 1926.417 & 1910.147

Whenever maintenance, servicing, or repairs are done to equipment, tools and machinery, there is a potential for injury from the accidental energization or movement of the equipment. Prior to beginning any work on equipment, steps must be taken to identify the energy sources present in the equipment, and to ensure that the energy sources are neutralized.

Hazardous energy sources fall into categories such as electrical, pneumatic, hydraulic, and potential (gravity, springs, etc.). One simple control in the construction industry has been to unplug cord-connected equipment. Vehicles and other motorized equipment can be protected from accidental starting by disconnecting the battery. Other controls include the use of identifiable padlocks on disconnects, breaker switches, and valves. Stored energy has the potential for release with great kinetic force and potential for injury.

All machinery or equipment capable of movement must be de-energized or disengaged and blocked or locked out during cleaning, servicing, adjusting or setting up operations, whenever required. The lockout procedure requires that stored energy (i.e. mechanical, hydraulic, air) be released or blocked before equipment is locked out for repairs. Appropriate employees are provided with individually keyed personal safety locks. Employees are required to keep personal control of their key(s) while they have safety locks in use. Employees must check the safety of the lockout by attempting a start up after making sure no one is exposed. Where the power disconnector does not also disconnect the electrical control circuit, the appropriate electrical enclosures must be identified. The control circuit can also be disconnected and locked out.

Temporary electrical service installation will be performed by a qualified electrician. Work may only be performed on de-energized equipment. Lockout/Tagout procedures will be implemented to assure the safety of personnel during electrical work activities.

Underground electric lines will be located and clearly marked. These utilities will be protected, removed, or relocated as needed to do the work safely. The excavation work will not be allowed to endanger the underground utility or the people doing the work. Barricades, shoring, or other supports as needed, will protect utilities left in place that are exposed by the excavation.

7.6 Motor Vehicles and Mechanized Equipment

Applicable Standards:

OSHA 29 CFR 1926.600 through 606, 1926.1000 through 1003

Many potential hazards are associated with the use of motor vehicles and mechanized equipment on construction projects. Motor vehicles may be involved in accidents due to mechanical failures or operator errors, resulting in injuries to operators themselves or to bystanders. To minimize accidents resulting from the use of motor vehicles, the following safety procedures need to be implemented and enforced on all company projects:

- All equipment left unattended at night, adjacent to highways or construction areas should have lights, reflectors, and/or barricades to identify location of the equipment.
- Supervisory personnel will ensure that all machinery and equipment is inspected prior to each use to verify that it is in safe operating condition.
- Rated load capacities and recommended rules of operation must be conspicuously posted on all equipment at the operator's station.

- Wire rope must be taken out of service when one of the following conditions exist:
  - In running ropes, six random distributed broken wires in one lay or three broken wires in one strand or one lay.
  - Wear of one-third the original diameter or outside individual wires.
  - Kinking, crushing, hoist caging, heat damage, or any other damage resulting in distortion of the rope structure.
  - In standing ropes, more than two broken wires in one lay in sections beyond connections, or more than one broken wire at an end connection.
- A 1A:10B:C rated fire extinguisher or higher should be available at all operator stations.
- When vehicles or mobile equipment are stopped or parked, the parking brake must be set. Equipment on inclines must have the wheels chocked as well as the parking brake set.
- All vehicles or combinations of vehicles must have in operable condition at least:
  - Two headlights.
  - Two taillights.
  - Brake lights.
  - Audible warning device at operator's station.
  - Seat belts properly installed.
  - Appropriate number of seats for occupants.
  - Service, parking, and emergency brake system.
- Operators should not travel in reverse with motor equipment having an obstructed rear view unless:
  - The vehicle is equipped with an audible, functioning reverse signal alarm.
  - The vehicle is backed up only under the guidance of an observer who says that it is safe to do so.
- Only those trained in the use of a specific type of machinery should be allowed to operate the machinery. Operators of heavy equipment and trucks greater than 26,000 lbs (11,794 kg) gross vehicle weight used in traffic must have a commercial driver's license.
- Materials handling equipment such as scrapers, front-end loaders, dozers, and similar equipment must be provided with Rollover Protective Structures (ROPS).
- Accessible areas within the swing radius of cranes, backhoes, and other rotating machinery need to be barricaded to prevent employees from being struck or crushed by the rotating parts of the machinery or their loads.
- Employees should not ride on or in motor vehicles unless seats with seat belts are provided.

7.7 Hand and Power Tools

Applicable Standards:

OSHA 29 CFR 1926.300 through 307

Tools are such a common part of construction work that it is difficult to remember that they may pose hazards. Workers must learn to recognize the hazards associated with the different types of tools and the safety precautions necessary to prevent injuries from those hazards. To prevent accidents resulting

from the use of hand- and power-operated hand tools, management personnel need to implement and enforce the following safe work procedures on all construction jobsites.

Broken, defective, burned, or mushroomed tools should not be used. They should be reported and turned in for replacement. The proper tool and equipment should be selected and used for each task. For example, a wrench should not be used as a hammer or a screwdriver as a chisel. Leaving tools on scaffolds, ladders, or any overhead working surfaces is hazardous because they may fall. Racks, bins, hooks, or other suitable storage space must be provided to permit convenient arrangement of tools. Striking two hardened steel surfaces together is hazardous because pieces of metal may break off (i.e., two hammers, or a hammer and hardened steel shafts should not be struck together). The practice of throwing tools from one location to another, from one employee to another, or dropping them to lower levels will be prohibited. When it is necessary to pass tools or material under the above conditions, suitable containers and/or ropes must be used.

Wooden tool handles must be sound, smooth, in good condition and securely fastened to the tool. Sharp-edged or pointed tools should never be carried in employee's pockets. Only non-sparking tools will be used in locations where sources of ignition may cause a fire or explosion. Tools requiring heat-treating should be tempered, formed, dressed, and sharpened by workmen experienced in these operations. Tools designed to accommodate guards must be equipped with such guards when in use.

All rotating, reciprocating or moving parts of equipment (belts, gears, shafts, flywheels, etc.) must be guarded to prevent contact by employees using such equipment. Guarding must meet requirements set forth in ANSI B15.1. All hand-held power tools (e.g., circular saws, chain saws, and percussion tools) without a positive accessory holding means must be equipped with a constant pressure switch that will shut off the power when pressure is released. A positive "on-off" control must be provided on platen sanders, grinders with wheels 2-inches in diameter or less, routers, planers, laminate trimmers, nibblers, shears, scroll saws, and jigsaws with blade shanks ¼-inch wide or less.

A momentary contact "on-off" control must be provided on all hand-held powered drills, tapers, fasteners drivers, horizontal, vertical and angle grinders with wheels greater than 2-inches in diameter. Besides safety hazards, the use of power tools sometimes creates potential health hazards as well. The use of jackhammer and chiseling equipment often results in silica and nuisance dust exposures that can sometimes be controlled by wetting the work surfaces. Many times, however, the use of dust/mist respirators is required to prevent overexposures.

In addition to dust hazards, the hand vibration inherent in the use of some power tools may result in a restriction of blood flow to the hands and fingers, causing numbness or tingling. If workers consistently experience these symptoms after the use of power tools, they should contact their supervisor so that steps may be taken to prevent further harm to the nerves and blood vessels in their hands. The use of a different tool, changes to the offending tool to reduce vibrations, and/or the use of special gloves may be recommended to deal with the vibration problems.

Electric Tools - Electric tools present several dangers to the user; the most serious is the possibility of electrocution. The following safe work procedures for electric tools must be implemented and enforced at all company construction projects. Tools must (1) have a three-wire cord with ground and be grounded, or (2) be double insulated, or (3) be powered by a low-voltage isolation transformer. A Ground Fault Circuit Interrupter (GFCI) must be used or the tool must be double insulated to prevent the worker from electrical shock hazards. Never remove the third prong from the plug. Electric tools should be operated within their design limitations.

In general, gloves and safety footwear are recommended during use of electric tools. However, gloves should not be worn when they are a potential entanglement hazard with reciprocating or rotating tools.

When not in use, tools should be stored in a dry place. Electric tools should not be used in damp or wet locations.

Powered Abrasive Wheel Tools - Power abrasive wheel tools present a special safety problem because they may throw off flying fragments. The following safe work procedures for powered abrasive wheel tools need to be implemented and enforced at all company construction projects. Portable grinding tools must be equipped with safety guards to protect workers from flying fragments as well as the moving wheel surface. Inspecting and sound- or ring-testing abrasive wheels prior to mounting is required to ensure that they are free from cracks or defects. Checking to ensure that the abrasive wheel RPM rating is appropriate for the tool will also help prevent wheel failures. The following work rules are appropriate for using a powered grinder:

- Always use eye protection and a face shield.
- Turn off the power when not in use.
- Never clamp a hand-held grinder in a vise.
- To prevent the wheel from cracking, the user should ensure that it fits freely on the spindle.
- Grinding wheel users should never stand directly in front of the wheel during start-up because there is always a possibility that the wheel may disintegrate (explode) when accelerating to full speed.

Pneumatic Tools - Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders. The following safe work procedures for pneumatic tools must be implemented and enforced at all company construction projects. Pneumatic tools that shoot nails, rivets, or staples and operate at pressures more than 100 psi must be equipped with a special device to keep fasteners from being ejected unless the muzzle is pressed against the work surface. Eye protection is required and face protection recommended for employees working with pneumatic tools.

Hearing protection is required when working with noisy tools such as jackhammers. When using pneumatic tools, users should check to see that the tools are fastened securely to the hose to prevent the hose from becoming disconnected. All hoses exceeding ½-inch inside diameter must have a safety device at the supply source or branch line to reduce pressure in the event of hose failure.

Airless spray guns that atomize paints and fluids at high pressures (1,000 + psi) must be equipped with automatic or visual manual safety devices that will prevent pulling the trigger until the safety device is manually released. Workers operating a jackhammer are required to wear safety glasses, safety footwear, and hearing protection. Compressed air guns should never be pointed toward anyone. A safety clip or retainer must be installed to prevent attachments from being unintentionally shot from the barrel of the tool.

Liquid-Fueled Tools - Liquid-fueled tools are usually powered by gasoline. Vapors that can burn or explode and give off dangerous exhaust gases are the most serious hazards associated with liquid-fuel tools. The following safe work procedures for liquid-fueled tools need to be implemented and enforced at all company construction projects.

Gas or fuel should be handled, transported, and stored in approved flammable liquid containers. These containers, also known as safety cans, are no more than 5 gallons in capacity and have a spring-closing lid and spout cover that will safely relieve internal pressure when subjected to fire exposure. Before refilling the tank for a fuel-powered tool, the user must shut down the engine and allow it to cool to prevent accidental ignition of hazardous vapors. Effective ventilation and/or personal protective equipment is necessary when using a fuel-powered tool inside a closed area. Fire extinguishers must be readily available in the work area.

7.8 Fire Protection and Prevention

Applicable Standards:

OSHA 29 CFR 1926.150 through 159

Fire on construction projects is a constant hazard that can cause loss of life, equipment and material. To assist in preventing fires on construction projects, all personnel must comply with the following safe work practices and procedures:

Fire Protection **-** Access to all available firefighting equipment must be maintained at all times. Firefighting equipment must be inspected monthly and maintained in operating condition. Defective or exhausted equipment must be replaced immediately. All firefighting equipment should be conspicuously located at each jobsite. Employees should not remove or tamper with fire extinguishers installed on equipment or vehicles or in other locations unless authorized to do so or in case of fire. After using a fire extinguisher, it must be recharged or replaced with another fully charged extinguisher. Extinguishers must be selected based on the anticipated fire hazards. To aid in the proper selection of fire extinguishers, the classes of fires are as follows:

- Class A (wood, paper, trash) - use water, dry chemical, or foam extinguisher.
- Class B (flammable liquids, gas, oil, paints, grease) - use foam, carbon dioxide, or dry chemical extinguisher.
- Class C (electrical) - use carbon dioxide or dry chemical extinguisher.

Fire Prevention - Internal combustion engine-powered equipment should be located so that exhausts are away from combustible materials. Smoking is prohibited at all projects. Project will be conspicuously posted, "No Smoking or Open Flame." Portable battery-powered lighting equipment must be approved for the type of hazardous locations encountered. Combustible materials must be piled no higher than 20 feet (6.1 m). Depending on the stability of the material being piled, this height may be reduced.

Portable fire extinguishing equipment, suitable for anticipated fire hazards on the jobsite, must be provided at convenient, conspicuously accessible locations. Firefighting equipment must be kept free from obstacles, equipment, materials, and debris that could delay emergency use of such equipment. Employees should familiarize themselves with the location and use of the project's firefighting equipment. All oily rags, wastes, and similar combustible materials must be placed in metal containers. The containers must be emptied on a daily basis. Storage of flammable substances on equipment or vehicles should be prohibited unless such unit has adequate storage area designed for such use.

Flammable and Combustible Liquids **-** Explosive liquids, such as gasoline, will not be used as cleaning agents. Gasoline and similar combustible liquids must be stored, transported, and handled in approved and labeled containers in well-ventilated areas free from heat sources. Approved wooden or metal storage cabinets must be labeled in conspicuous lettering, "Flammable-Keep Fire Away." Storage in an approved storage cabinet should not exceed 60 gallons of flammable, or 120 gallons of combustible liquids. Storage of containers will not exceed 1,100 gallons in any one pile or area. Separate piles or groups of containers by a 5 feet clearance. Never place a pile or group within 20 feet of a building. A 12-feet wide access way must be provided within 200-feet of each container pile to permit approach of fire control apparatus.

The use of flammable liquids and spray finishing needs to conform to the requirements of 1926.66 and 1926.152. Paints and reducers should be stored away from heat sources and out of the sun. Airless spray-painting apparatus should be of a type approved for hazardous locations. Any electrically or fuel-powered equipment used to mix, convey, and spray flammable and combustible liquids must carry

an approval from a nationally recognized testing laboratory. Pneumatically operated equipment is usually suitable for use with flammable and combustible finishes.

Fire Extinguishers - Portable fire extinguishers are provided in adequate number and type (4A:80B:C) and are located throughout the site. Fire extinguishers are located in readily accessible locations. Fire extinguishers are recharged regularly and the date of last inspection noted on their tags. Extinguishers should be placed free from obstructions or blockage. All extinguishers must be fully charged and in their designated places unless in use. All employees are periodically instructed in the use of extinguishers and fire protection procedures. Fire Extinguishers will be located in the following areas:

- ***Work area or barge:*** (1) 4A:80B:C multipurpose dry chemical type fire extinguishers.
- ***Equipment:*** All of Sevenson's heavy equipment will be supplied with ABC multipurpose dry chemical type fire extinguishers.

7.9 Sanitation

Applicable Standard:

OSHA 29 CFR 1926.51

Employees should not be required to perform work under unsanitary conditions. Adequate supplies of potable water will be provided at the jobsite. Containers used for drinking water will be clearly marked and not used for any other purpose. Cups must not be shared by employees. Outlets for non-potable water (i.e., firefighting purposes) are not to be used by employees for drinking, washing, or cooking purposes. All construction projects must have an adequate number of toilets on the jobsite Hand washing facilities need to be provided in near proximity to the jobsite. Hand washing facilities should also be present when employees are applying paints, coatings, herbicides, and insecticides or in other operations where contaminants may be harmful to the employees.

7.10 Confined Space Entry

Applicable Standards:

OSHA 29 CFR 1910.146, 1926.21(b)(6)

A confined space is a space that is large enough and so configured that an employee can physically enter and perform assigned work, has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits) and is not designed for continuous employee occupancy. Simply working in a confined space is not necessarily a hazard. However, if certain hazardous conditions exist prior to, or are created during entry, then the confined space must be treated with utmost care.

Conditions that make a confined space especially dangerous (i.e., make it a permit-required space) are:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains a material that has the potential for engulfing an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard.

A hazardous atmosphere includes spaces that may expose employees to flammable gases, vapors, mists, or dusts; to an oxygen deficiency (<19.5 percent) or oxygen enriched environment (>23.5 percent); to air contaminants in excess of the PEL, or to any other atmospheric condition that is an immediate danger to life and health (IDLH).

When a permit-required space is present, the following hierarchy of controls should be used on the space:

- Avoid entry.
- Eliminate the hazards that make the confined space a permit-required space. Ventilation, lockout/tagout, block and bleed, and other procedures can be used to eliminate hazards. Hazard elimination must be verified by air monitoring and other test procedures.
- Eliminate the hazards to the point that only atmospheric hazards remain. Use the "atmospheric hazard only" procedures entry system discussed in 1910.146(c)(5).
- Minimize and control hazards to the fullest extent possible, and enter only after the requirements of a full permit entry have been satisfied.

Employees must receive training on confined spaces so that they will acquire the understanding, knowledge, and skills necessary for a safe entry into the confined space. Confined space training should be documented.

Sevenson's Confined Space Program is located in Appendix F of this Plan.

7.11 Welding and Cutting

Applicable Standards:

OSHA 29 CFR 1926.350 through 354

Welding and cutting operations present various safety and health hazards. Welding and cutting operations on lead-painted surfaces often create lead fumes by "boiling off" the lead. These lead fumes may cause lead poisoning if inhaled or ingested in excessive amounts. Other metal fumes such as iron oxide, chromium, zinc, manganese, and cadmium may also be present during welding and cutting operations. Safety hazards such as fire may result in fatalities, serious injuries, and/or property damage. Therefore, in an effort to eliminate or reduce the hazards associated with welding and cutting operations, the following rules and procedures should be included and enforced in any welding safety program.

Welding and Cutting - Only qualified welders should be authorized to do welding, heating, or cutting. Inspect work areas for fire hazards and proper ventilation before welding or cutting. Avoid welding or cutting sparks and hot slag. Be alert to hot surfaces and avoid touching metal surfaces until they have cooled. Place compressed gas cylinders in an upright position and secure in place to prevent dropping or falling. Handle with extreme care and do not store near any sources of heat. Remove any combustibles when welding or cutting must be done. If removal is not feasible, cover combustibles with a noncombustible material. When welding near any combustible material, another employee must be posted to serve as a fire watch. Make sure this person has a fire extinguisher available and keep him/her in the area after welding/cutting is completed until all danger of fire is past.

A hot-work permit is required for any activity that produces excessive heat, open flame or spark. An example of the Hot Work Permit is located in Appendix C. When working in the vicinity of welding operations, wear approved eyewear and avoid looking directly at the flash as serious flash burns could result. When opening valves on tanks that have regulators installed, be sure the pressure adjustment screw is all the way out and do not stand in front of the regulator. An internal failure could rupture the regulator and cause the adjustment screw to become a missile.

Primers, paints, and other coatings should be removed, where feasible, from the area to be heated and for at least 4-inches on all sides.

Gas Welding and Cutting - When transporting, moving, and storing compressed gas cylinders, always ensure that the valve protection caps are in place and secured. Secure cylinders on a cradle, sling

board, or pallet when hoisting. Never hoist or transport the cylinders by means of magnet or choker slings. Move cylinders by tilting and rolling them on their bottom edges. Do not allow cylinders to be dropped, struck, or come into contact with other cylinders violently. Secure cylinders in an upright (vertical) position when transporting by powered vehicles. Do not hoist cylinders by lifting on the valve protection caps. Do not use bars under valves or valve protection caps to pry cylinders loose when frozen. Use warm, not boiling, water to thaw cylinders loose.

Remove regulators and secure valve protection caps prior to moving cylinders, unless cylinders are firmly secured on a special carrier intended for transport. Close the cylinder valve when work is finished, when cylinders are empty, or when cylinders are moved at any time. Secure compressed gas cylinders in an upright position (vertical) except when cylinders are actually being hoisted or carried. Oxygen cylinders should be stored at least 20 feet from other combustible materials such as acetylene. Alternatively, oxygen and fuel gas cylinders may be separated by a 5 feet-high non-combustible barrier with at least a 30-minute fire resistance rating.

Arc Welding and Cutting **-** Use only manual electrode holders that are specifically designed for arc welding and cutting. All current-carrying parts passing through the portion of the holder must be fully insulated against the maximum voltage encountered to ground. All arc welding and cutting cables must be completely insulated, flexible type, and capable of handling the maximum current requirements of the work in progress. Employees should report any defective equipment to their supervisor immediately and refrain from using such equipment. Shield all arc welding and cutting operations, whenever feasible, by noncombustible or flameproof screens to protect employees and other persons working in the vicinity from the direct rays of the arc.

Fire Prevention **-** Welders should locate the nearest fire extinguisher in their work area in case of a fire emergency. Fire extinguishing equipment must be immediately available in the work area. Never use matches or cigarette lighters to light torches. Use only friction lighters to light torches. Never strike an arc on gas cylinders. Move objects to be welded, cut, or heated to a designated safe location. If the objects cannot be readily moved, then all movable fire hazards in the vicinity must be taken to a safe place or otherwise protected. Fuel lines should have flashback arrestors. Do not weld, cut, or heat where the application of flammable paints or the presence of other flammable compounds, or heavy dust concentrations creates a hazard. Additional employees must be assigned to guard against fire while the actual welding, cutting, or heating is being performed when the operation is such that normal fire prevention precautions are not sufficient. Prior to applying heat to a drum, container, or hollow structure, provide a vent or opening to release any built-up pressure during the application of heat. Never cut, weld, or heat on drums, tanks, process lines, or containers that have contained flammable liquids until they have been purged and cleaned.

A Hot Work Permit is required for any activity that involves welding, torch cutting, or generates sparks. Hot Work Permits are issued by the SSHO.

7.12 Stairways and Ladders

Applicable Standards:

OSHA 29 CFR 1926.1050 through 1060

Stairways and ladders are a major source of injuries and fatalities among construction workers. Because of the potential hazards involved in using stairways and ladders, the following safety practices and procedures need to be implemented and enforced at all construction projects. Ladders that project into passageways or doorways where they could be struck by personnel, moving equipment, or materials being handled must be secured to prevent accidental displacement or be protected by barricades. Workers should always face the ladder and use both hands when going up and down ladders. Materials and tools should be lowered or raised by a rope or other mechanical means.

Hold on to the railing on stairways. The areas around the top and base of ladders must be free of tripping hazards such as loose materials, trash, and electrical cords. The same holds true for the bottom of stairways and on stairway platforms.

Ladders **-** Ladders must be capable of supporting four times the maximum intended load. Ladder rungs, cleats, and steps must be parallel, level, and uniformly spaced (not less than 10" nor more than 14"). Do not tie or fasten ladders together to provide longer sections unless they are specifically designed for such use. All stepladders must be equipped with a metal spreader or locking device. Do not paint wooden ladders, except to stencil for identification. Maintain ladders free from oil, grease, and other slipping hazards. Ladders must extend at least 3 feet above the upper landing surface and be secured. The horizontal distance for the base of the ladder should extend 1 foot for every 4 feet in vertical distance. Wood job-made ladders must be used at an angle so that the horizontal distance is one-eighth the working length of the ladder. Do not use ladders on slippery surfaces unless they have been properly secured or provided with slip-resistant feet. Do not move, shift, or extend ladder while occupied. Never stand on the top step of a stepladder.

A competent person on a periodic basis and after any occurrence that could affect their performance must inspect ladders. Ladders with structural defects must be tagged with "Do Not Use" or similar language and withdrawn from service until repaired. Never use a metal ladder when working on electrical equipment or near electrical equipment where contact is possible. Any employee who uses a ladder or stairway must receive training by a **competent person** in the following areas:

- Types of fall hazards.
- Correct procedures for erecting, securing, maintaining, and disassembling fall protection systems.
- Proper construction (man-made), use, placement, and handling.
- Maximum intended load-carrying capacities.
- Requirements contained within 29 CFR 1926 Subpart X.

Stairways **-** Stairways that are not permanent parts of the structure must have landings of not less than 30 inches in the direction of travel. A platform must be provided where doors or gates open directly on a stairway. Metal pan landings and metal pan treads must be filled in with wood or other materials if they are to be used prior to being finished. Maintain all parts of stairways free from hazardous projections, such as protruding nails. Eliminate slippery conditions on stairways before the stairways are used to reach other levels.

7.13 Materials Handling, Storage, Use, and Disposal

Applicable Standards:

OSHA 29 CFR 1926.250 through 252

In the handling of materials, employees must know the following: There must be safe clearance for equipment through aisles and doorways. Vehicles must be shut off and brakes must be set prior to loading or unloading. Containers of combustibles or flammables, when stacked while being moved, must be separated by dunnage sufficient to provide stability. Trucks and trailers will be secured from movement during loading and unloading operations. Hand trucks must be maintained in safe operating condition. Chutes must be equipped with sideboards of sufficient height to prevent the handled materials from falling off. At the delivery end of rollers or chutes, provisions must be made to brake the movement of the handled materials. Hooks with safety latches or other arrangements will be used when hoisting materials, so that slings or load attachments won't accidentally slip off the hoist hooks. Securing chains, ropes, chokers, or slings must be adequate for the job to be performed. When hoisting

material or equipment, provisions must be made to assure no one will be passing under the suspended loads.

Stack, rack, block, interlock, or otherwise secure all materials and supplies to prevent sliding, falling, or collapse. Post the maximum safe load limits for floors within buildings and structures in a conspicuous location. Never exceed the maximum safe load limit. Keep aisles and passageways clear to provide for the free and safe movement of material handling equipment and employees. Use ramps, blocking, or grading when a difference in road or working levels exists to ensure the safe movement of vehicles between the two levels. Do not place material within 6-feet of any hoistway or floor opening inside buildings under construction, nor within 10-feet of an exterior wall that does not extend above the material being stored. Stack bagged materials by stepping back the layers and cross-keying the bags at least every 10 bags high. Do not store materials on scaffolds or runways in excess of supplies needed for immediate operations. Remove all nails from used lumber prior to stacking. Stack lumber on level and solidly supported sills. Do not stack lumber higher than 20-feet (16-feet if handled manually).

Stack and block structural steel, poles, pipe, bar stock, and other cylindrical materials, unless racked, so as to prevent spreading or tilting. Attach handles or holders to the load to reduce the possibility of pinching or smashing fingers. Unload materials close to the point of final use to avoid unnecessary lifting. Do not stack non-compatible materials in the same pile.

Manual Materials Handling - Employees working alone should not attempt to lift or move a load that is too heavy for one person - get help! When working with materials stored in silos, hoppers, tanks, or similar storage areas, be aware that confined spaces may exist. Attach handles or holders to the load to reduce the possibility of pinching or smashing fingers. Wear protective gloves and clothing (i.e., aprons), if necessary, when handling loads with sharp or rough edges. When pulling or prying objects, workers should be properly positioned. Riding loads, slings, the ball, crane hook, or other material hoisting equipment is prohibited.

Engineering Controls - Engineering controls should be used, if feasible, to redesign the job so that the lifting task becomes less hazardous. This includes reducing the size or weight of the object lifted, changing the height of a pallet or shelf, or installing a mechanical lifting aid.

OSHA standard 1926.251 provides guidance about the limitations and uses of slings used in conjunction with other material handling equipment for the movement of material by hoisting. Slings covered by this standard include those made of alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope, and synthetic web (nylon, polyester, and polypropylene). Some general work practices related to rigging include:

- Rigging equipment must be inspected prior to use on each shift and during its use to ensure that it is safe. Defective rigging equipment will be removed from service.
- Rigging equipment must not be loaded in excess of its recommended safe working load. The standard provides load capacity tables for various types of slings and associated hardware.
- Rigging equipment, when not in use, must be removed from the immediate work area.
- Custom rigging must be marked to indicate the safe working loads and will be proof-tested prior to use to 125 percent of their rated load.

In addition to these general guidelines, the standard has specific requirements related to alloy steel chains, wire rope, natural and synthetic rope, and synthetic webbing. Employees performing rigging work should be adequately trained in the safety and functional aspects of rigging for materials handling operations.

7.14 Signs, Signals, and Barricades

Applicable Standards:

OSHA 29 CFR 1026.200 – 203

The use of signs, signals, and barricades is essential to make employees aware that an immediate or potential hazard exists. Both traffic and health hazards such as airborne lead are examples of hazards on bridge renovation/demolition sites that require signs and other devices. The following sections discuss the primary ways that employees are made aware of hazards in their work areas.

Accident Prevention Signs/Tags - Signs, signals, regulated areas, and barricades must be used on each construction project as appropriate.

Danger Signs are used wherever an immediate hazard (i.e., exposed electrical conductor) exists. The danger signs must have red as the predominant color in the upper panel and a white lower panel for additional sign wording.

Caution Signs are used to warn against potential hazards or to caution against unsafe practices. The caution signs must have yellow as the predominant color with a black upper panel (yellow lettering of "caution" on the upper panel) and a yellow lower panel for additional sign wording.

Exit Signs, when required, should be in legible red ¾-inches (1.9 cm) stroke letters, not less than 6-inches (15.2 cm) high, on a white field.

Safety Instruction Signs, when used, must be white with a green upper panel and white lettering to convey the principal message. Any additional wording must be in black lettering on the white background.

Directional Signals must be white with a black panel and a white directional symbol. Any additional wording must be in black lettering on the white background.

Traffic Signs must be posted at points of hazards in all construction areas. All traffic control signs or devices must conform to the DOT MUTCD, *Manual on Uniform Traffic Control Devices for Streets and Highways.*

Accident Prevention Tags are used as a temporary means of warning employees of an existing hazard, such as defective tools, equipment, etc.

Out of Order Tags are used to designate equipment that requires repair or maintenance. Equipment with such a tag may not be used until the tag is removed.

Signaling - Flagmen or other appropriate traffic controls must be provided for operations where signs, signals, and barricades do not provide the necessary protection on or adjacent to a highway or street. Signaling directions must conform to DOT MUTCD. Stop/Slow sign paddles must be used by flagmen when hand signaling. Red flags, at least 18 in^2, may be temporarily used in traffic control. Flagmen are required to wear a red or orange reflective warning vest and a hard hat while flagging. Required signs and symbols must be visible at all times when work is being done, and removed or covered promptly when the hazard no longer exists.

Cones, Barrels, Barricades, and Barriers - Channeling devices such as cones, barrels, or barricades are required for jobsite roadways presenting a hazard to motorized equipment or vehicles. Barriers may also provide a greater degree of work zone protection. Consult traffic control resources such as the DOT MUTCD for guidance on establishing and working in road construction work zones.

7.15 Cranes and Hoists

Applicable Standards:

OSHA 29 CFR 1926.1400 - 1501

The target goal of a crane safety program is zero crane accidents. To achieve this goal, the following safe work procedures must be implemented and enforced at all company projects:

- Crane operators are required to comply with crane manufacturer's specifications and limitations applicable to the operation of any and all cranes, derricks, and hoists.
- Rated load limits and recommended operating speeds, special hazard warnings, or instructions must be posted on all equipment.
- Hand signals to crane and derrick operators must conform to the applicable ANSI standard for the type of crane being used.
- A **competent person** who is knowledgeable in proper crane setup and operation activities must inspect all machinery and equipment prior to each use, and during use, to ensure it is in safe operating condition.
- Any defective parts must be repaired or replaced before use.
- A **competent person** who is knowledgeable in crane inspection techniques must perform an annual inspection of the hoisting machinery and provide a copy of the dates and results of inspections for each hoisting machine and piece of equipment to the site superintendent.
- All moving parts or equipment (belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheel, etc.) must be guarded to prevent contact by employees.
- Accessible areas within the swing radius of the rotating superstructure of the crane must be barricaded to prevent an employee from being struck or crushed by the crane.
- Exhaust pipes must be guarded or insulated to prevent contact by employees.
- Windows in cabs must be of safety glass, or equivalent, that introduces no visible distortions.
- Where necessary, a ladder or steps must be provided to allow access to a cab roof.
- Platforms and walkways must have anti-skid surfaces.
- A 3A:40B:C rated fire extinguisher must be accessible at all operator stations or cabs of equipment. No part of a crane or load is permitted within 10 feet (3.0 m) of electric power lines, except where electrical distribution and transmission lines have been de-energized and visibly grounded. A person will be designated to observe clearance of the equipment and provide timely warning to the crane operator.
- No employee is permitted to work beneath a suspended load.
- Employees that are required to work with in the fall zone of an operation such as sheet pile threading, shall have completed a Fall Zone Training course.

As part of a crane safety program, site superintendents will develop a working knowledge of the client's requirements for operating construction cranes, derricks, or hoists on project property. Interview prospective crane operators prior to site employment to ascertain competence and qualifications and check the prospective crane operator's past experience with previous employers, if possible. The Superintendent or his designee will conduct daily inspections to observe compliance with established company and client crane and rigging procedures and immediately shut down any crane operations that jeopardize the safety of any jobsite personnel.

7.16 Housekeeping

Applicable Standard:

29 CFR 1910.25

A policy of trash removal and the maintenance of good housekeeping practices should be implemented on all jobsites. The accumulation of construction debris may pose a significant fire hazard in addition to tripping and falling hazards.

Good housekeeping practices are the result of planning and organization. All personnel on the site must work together to maintain a clean worksite. The prompt removal of waste materials will permit a free flow of traffic through the work areas. Daily, or more frequent, inspections will be conducted by the general contractor to verify that the housekeeping controls are in place and being enforced.

Housekeeping activities in themselves may pose health hazards such as exposures to dusts, biological agents, and discarded chemicals. Liquid and solid waste chemicals must be placed in leak-proof containers for proper disposal.

7.17 Working On or Over Water

Applicable Standard:

29 CFR 1926.106

Some of the work conducted during this scope of work will be performed on or around water. This presents unique hazards and will be thoroughly addressed in all AHAs and Safe Plans of Actions; consideration will be given to the elements of 29 CFR 1926.106, and any applicable Coast Guard Regulations.

Personnel shall use Coast Guard approved Type I, III, or V PFDs while working over or on water where a drowning hazard exists.

Type II PFDs are not approved to be worn during activities at this project because the capability of a Type II PFD for turning unconscious wearers to a face-up position is not as effective as a Type I PFD.

Most Type III and V PFDs are not as effective as Type I in turning an unconscious wearer face up, but they are generally less bulky and restrictive, and are typically the PFD of choice in a marine work environment.

The use of inflatable PFDs is discouraged due to questionable reliability and maintenance requirements. In any case, the SSHO is available to help users select the appropriate type and style for the particular activity being conducted. The SSHO has the authority to prohibit the use of a particular PFD if it is damaged or otherwise not fit for use.

Each watercraft or work platform shall be equipped with at least one Type IV PFD, designed to be thrown to a person in the water and grasped and held by the user until retrieved from the water. Life rings or horseshoe buoys are two common examples of a Type IV PFD. The SSHO prior to use must approve each style of Type IV PFD. Type IV PFDs shall have at least 90 feet of 3/8-inch solid braid polypropylene line, or equivalent attached to it.

For on shore areas or docks where PFDs are required, at least one Type IV PFD with 90 feet of 3/8-inch solid braid polypropylene line, or equivalent attached to it, shall be at intervals of not more than 200 feet.

At least one lifesaving skiff (a powered John Boat or other smaller boat used in emergencies), shall be immediately available at locations where employees are working over or adjacent to water (based on an assessment by the SSHO for adjacent work).

OSHA has established the following criteria for determining when a lifesaving skiff is to be considered ‘immediately available’:

- The skiff must be in the water or capable of being quickly launched by one person.

- There must be at least one person present and specifically designated to respond to water emergencies and operate the skiff at all times when there are employees above water.
- When the operator is on break, another operator must be designated to provide the requisite coverage while employees are above water.

The designated operator must either man the skiff at all times or remain in the immediate area such that the operator can quickly reach the skiff and get underway.

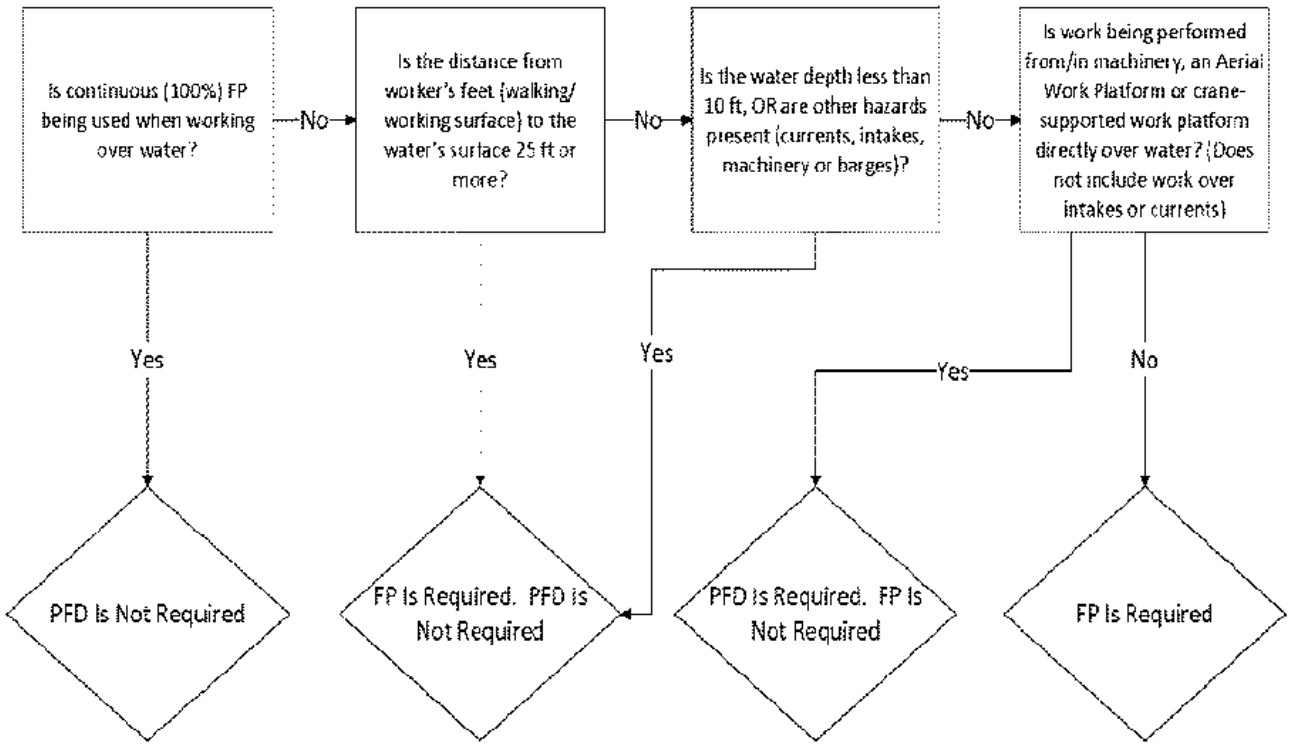
PFDs are required when working over water unless the following conditions exist.

- When continuous fall protection is used to prevent workers from falling into water and the drowning hazard has been effectively removed, PFDs are not required
- When working over or near water where the distance from falling/working surface to the water surface is greater than 25 feet or more, workers shall be protected from falling by the use of fall prevention or fall protection systems. PFDs are not required if worker will not enter the water.
- When working over or near water where the distance from the walking/working surface is less than 25 feet but greater than 6 feet and the water depth is LESS than 10 feet the use of fall protection prevention or fall protection systems are required. PFDs are not required if worker will not enter the water.
- When working from/in machinery, aerial lift equipment or other movable work platforms/crane directly over water and the water depth is greater than 10 feet in depth, fall protection is not required, however, a PFD is.
- When there are hazards from currents, intakes, dangerous machinery or equipment, or barges, etc., fall prevention/protection shall be required regardless of the fall distance and PFDs are not required unless the worker will enter the water.

See Figure 2 for a decision flow diagram for fall protection versus personal floatation device use when working over or near water.

If utilizing a PFD with a full body harness, the full body harness shall be worn under the PFD. The type of PFD shall not interfere with proper use of the full body harness and lanyard.

Figure 2 –
Fall Protection versus PFD Use When Working Over or Near Water



7.18 Severe Weather

7.18.1 High Winds

If high winds are forecast, work on the River shall stop before the winds become hazardous. Workers shall go to an appropriate shelter. In the event that a Small Craft Advisory is issued by the National Weather Service, work onboard vessel(s) will be halted and the vessel(s) will return to shore as quickly as possible. If a Small Craft Advisory is issued before work commences, work will be rescheduled following lifting of the advisory. Work from a vessel will be conducted at the discretion of the vessel operator/Captain and will cease if Force 6 winds (Strong Breeze) as defined on the Beaufort Wind scale (20 to 33 knots and waves 5 to 7 feet with whitecaps) are reported by National Weather Service. If an evacuation is enacted, an account for all persons will be conducted before leaving the Site.

7.18.2 Lightning

Work will not be permitted on the Buffalo River, open areas, near trees or other equipment outside during lightning storms. A Spectrum Electronics Thunderbolt[1] lightning detection instrument (or equivalent) will monitor for weather conditions that may cause lightning at the Site. This instrument has the capability to detect conditions that may produce lightning from as far as 75 miles away. The instrument will continually update the distance of the storm from the Site and will provide a warning settings include; when the storm is local (within 8 miles) from the Site as well as the time (in minutes) until the storm has cleared the Site.

The following controls will be implemented for severe weather:

- When the storm is within 20 miles of the Site all Site personnel will be notified that severe weather is approaching. Any work being performed above ground level will be stopped.

[1] http://www.spectrumthunderbolt.com/

Employees will take precautions to secure items that could become airborne from high winds at this time.

- When the storm becomes localized (within 8 miles of the Site) all work will be stopped, equipment secured, and workers will make their way to a designated shelter area.

Work will not resume until the storm has cleared the Site for a minimum of 30 minutes.

7.18.3 Tornadoes

In the event of a tornado watch/warning all activities will be immediately suspended and workers brought to shore. In the event of a tornado warning all site activities will be suspended immediately and all workers will seek appropriate shelter.

8.0 MEDICAL SURVEILLANCE

All workers who enter the Exclusion Zone and have the potential to come into contact with contaminated material will participate in Sevenson's medical surveillance program. The content of the medical examination will be determined by Sevenson's occupational physician. The program consists of an initial examination with annual follow up examinations.

9.0 SITE CONTROL MEASURES

9.1 Site Entry and Exit Control Log

All site personnel on this project will undergo safety orientation by the SSHO prior to starting work at the site. This training will include general site safety rules, hazardous locations, personal protective equipment guidelines, and onsite emergency procedures. All site personnel will satisfy the following requirements before initiating work onsite within the Exclusion or Contamination Reduction Zones:

- Receive a briefing on all aspects of the HSERP.
- Complete
- Are properly dressed, equipped, and trained in accordance with all personal protective guidelines.
- Complete the entry / exit log.

9.2 Personal Hygiene and Sanitation

An adequate supply of potable water will be provided to the employees working at the Site. Clearly labeled potable containers will be used to dispense drinking water. Containers will be cleaned at the beginning of each day. The containers will be equipped with taps to access the water. Clean disposable cups will be provided daily.

Portable toilet facilities will be provided on-site for employees and will be located in the Support Zone. There will also be facilities for washing hands and face after exit from the Exclusion Zone and prior to eating, drinking, or smoking.

Shower facilities will be provided so that personnel working in exclusion zones will have the opportunity to shower and change into their street clothes prior to leaving the site.

10.0 EMERGENCY CONTINGENCY PLAN

This section describes the emergency response plan that will be implemented by Sevenson employees to handle emergencies. The nature of the project and the activities planned for the site are such that there is little potential for an emergency, which would result in a significant release of hazardous substances, and in any way threaten the adjoining community. However, there is always the potential at any construction site for emergency situations to occur which threaten the on-site workers. Possible examples of emergency situations during construction activities include man overboard, equipment

fires or contact of equipment with overhead power lines. In all of these cases, procedures will be implemented to minimize the possibility of an emergency situation. The procedures outlined below are designed to ensure that the workforce reacts quickly and appropriately to emergency situations, thereby protecting the health and wellbeing of the individual workers. It is expected that modifications may be necessary upon actual site set-up and conditions.

NOTE: In the event of a serious or life threatening emergency the primary consideration is the immediate health of the individual rather than routine contamination controls. Standard contamination control protocols shall not interfere with the prompt medical attention required of a seriously injured worker.

10.1 Pre-Emergency Planning

During the site safety briefings held daily, all employees will be informed of the location of this plan, the procedures outlined in this plan, and the communication systems and evacuation routes to be used during an emergency.

On a continual basis, individual personnel should be constantly alert for indicators of potentially hazardous situations and for signs and symptoms in themselves and others that warn of hazardous conditions and exposures. Rapid recognition of dangerous situations can avert an emergency.

10.2 Personnel Responsibilities

All on-site employees have a role in mitigating an emergency incident. The Site Superintendent has primary responsibility for responding to and directing emergency response operations to correct emergency situations. This includes taking appropriate measures to ensure the safety of site personnel and the public. He is additionally responsible for ensuring that corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. The SSHO will assist and advise the Site Superintendent, and will direct any emergency medical responses.

The following is an outline of job titles and corresponding responsibilities during an emergency.

- The Site Superintendent directs emergency response activities and serves as liaison with appropriate Client representative's personnel and subcontractors. In the event of an emergency the Site Superintendent will be the Incident Commander.
- The SSHO recommends that work be stopped if any operation threatens worker or public health or safety and advises the Project Manager of emergency procedures if necessary. Provides emergency medical care on site. Notifies emergency services. The SSHO will assume the responsibility of Incident Commander if the Site Superintendent is off-site.

10.3 Evacuation Routes and Procedures

In the event of an emergency that necessitates an evacuation of the Site, on-site personnel will be notified by hand-held or mobile two-way radios to leave the area by immediate emergency exit. An alternate method of communication will be the use of a portable air horn sounded in regularly spaced, repeated blasts. During an evacuation, all non-emergency radio transmissions will cease. The SSHO, in conjunction with the Site Superintendent, will control the scene until the appropriate municipal and state agencies arrive. Since site conditions, (i.e., wind direction, precipitation, and work location), change often, the SSHO will determine the appropriate evacuation procedures.

All personnel will assemble/muster at the Contamination Reduction Zone or Support Zone. Access to the site will be restricted.

10.4 Medical Treatment/First Aid

The SSHO and dive team members will be trained in CPR and First Aid and have first aid kits for use in a medical emergency. First Aid Kits will be located in the main support area and at the work

activity locations. Eyewash stations (as required by MSDS/SDS) will provide a minimum of 15-minutes of constant flow. On-site employees have a basic knowledge of first aid and will assist the Site Superintendent and SSHO. Community emergency services (EMS, Fire, and Police) will be notified immediately if their resources are needed on site.

If necessary, the injured or sick party will be taken to Buffalo General Hospital – Please refer to ***Figures 3 and 4 – "Route to Hospital Map"***, for directions to the area hospital. Route to the area hospital will be posted and easily visible at all times.

10.5 Emergency Alarms/Notifications and Procedures

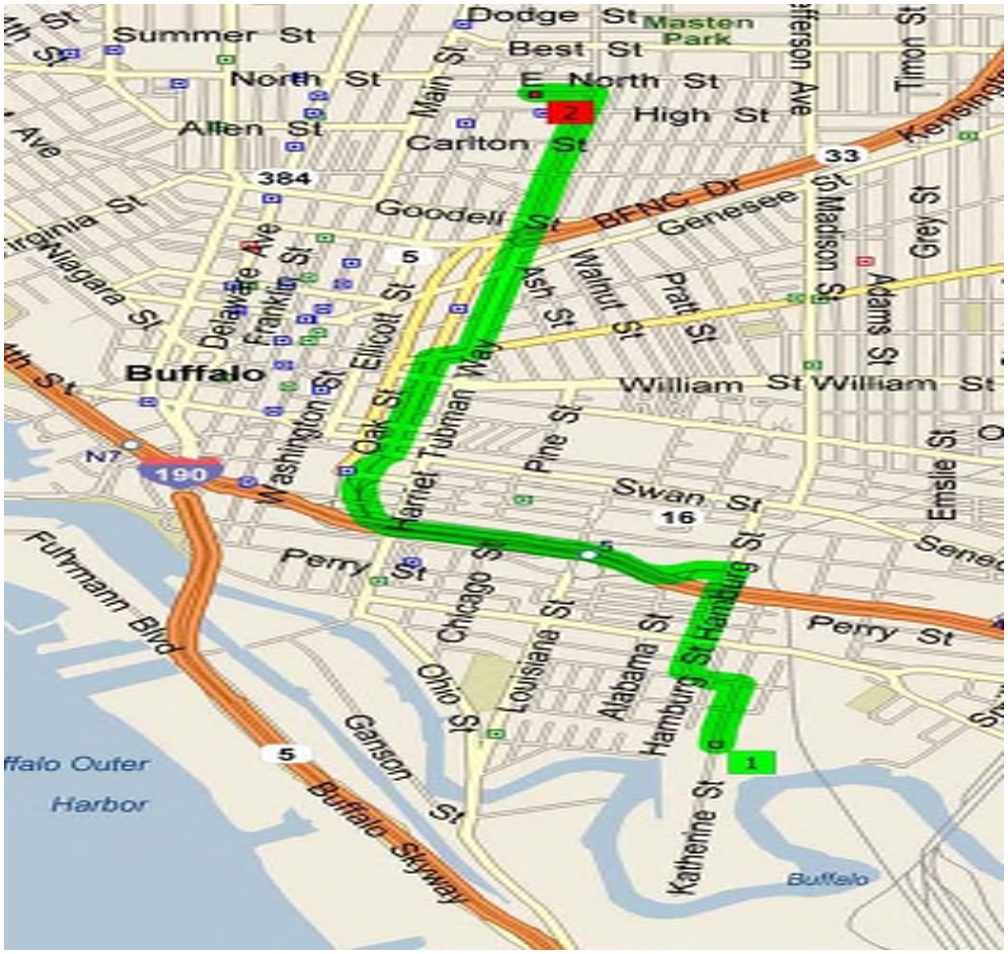
When any emergency occurs on-site the SSHO and Site Superintendent will be notified immediately. The Site Superintendent or the SSHO will notify the client and his representatives. Please refer to the ***Table 7 – "Emergency Telephone Numbers"*** for emergency telephones. Emergency Telephones will be posted and easily visible at all times.

To notify any site workers of an emergency, workers can be signaled by way of hand held or mobile two-way radios or as a backup, the use of an emergency alarm (portable air horn).

Primary emergency communications will flow through the radio network. A secondary Site evacuation alarm may consist of one long blast on a horn, every 10 seconds. Any time an alarm system is activated Site personnel will extinguish any nearby ignition source and prepare for emergency response activities.

The observer of the emergency condition will brief the responding personnel as to the nature and location of the event. When the Site Superintendent or SSHO have assessed the situation, a decision whether or not to implement emergency contingency procedures will be made. If Emergency Contingency Procedures are not implemented, supervisory personnel will give the "All Clear" verbally. The "All Clear" will be used to indicate a return to normal (non-emergency) conditions following emergency response activities.

Figure 3 – Route to Hospital Map from Katherine Street



1. Depart Site and head NORTH on Katherine Street
2. Turn LEFT onto Mackinaw Street
3. Turn RIGHT onto Hamburg Street
4. Turn LEFT onto ramp towards I-190/Peace Bridge
5. Take Ramp on right onto I-190 North
6. Take Exit 6, turn RIGHT onto ramp towards Elm Street
7. Take Ramp (LEFT) onto SR-33 (Elm Street)
8. Bear RIGHT onto SR-130 (Broadway Street)
9. Make Immediate LEFT onto Harriet Tubman Way (Michigan Ave)
10. Turn LEFT onto Goodrich Street
11. Arrive at Buffalo General Hospital

Figure 4 – Route to Hospital Map from Ohio Street

1. Depart Site and head NORTH on Ohio Street (river should be on your left if you are headed north)
2. Turn RIGHT onto Harriet Tubman Way (Michigan Ave)
3. Keep STRAIGHT onto Harriet Tubman Way (Jesse Clipper Square)
4. Keep STRAIGHT onto Harriet Tubman Way (Michigan Ave)
5. Turn LEFT onto High Street
6. Arrive at Buffalo General Hospital

Figure 5 – Route to Hospital Map from the Sand Corporation

1. Depart Site and head SOUTH to Fuhrmann Blvd
2. Head NORTH on Fuhrmann Blvd
3. Take ramp on LEFT onto SR-5 (Buffalo Skyway)
4. Turn RIGHT onto Church Street
5. Bear RIGHT onto South Division Street
6. Turn LEFT onto Elicott Street
7. Turn LEFT onto Goodell Street
8. Turn RIGHT onto Main Street
9. Turn RIGHT onto High Street
10. Arrive at Buffalo General Hospital

Table 7 – Emergency Telephone List	
Police	911; 716-851-4415
Ambulance	911
Fire	911; 716-851-5333
Hospital – Buffalo General Hospital	716-859-5600
Dr. Greaney – Occupational Physician (Work Care)	714-456-2154
WorkCare Injury Intervention	888-449-7787
Occupational Clinic Health Works 2075 Sheridan Drive, Kenmore, NY	716-447-6474
EPA	
Scott Cieniawski	312-353-9184
Sevenson Environmental Services, Inc.	
Paul Jung – Safety and Health Coordinator	716-284-0431(office) 716-609-1767(cell)
Michael Crystal – Program Manager	716-284-0431 (office) 716-998-8410 (cell)
Rick Elia Jr. – Corporate Project Manager	716-284-0431 (office)
Michael Welch – Project Manager	716-940-2410 (cell)
Rick Stein – Site Superintendent	716- 570-0492(cell)
Mark Dziarnowski – Site Safety Officer	716-609-1903(cell)
Anchor QEA	
Mark Reemts	410-980-7995 (cell)
Brian Murphy	716-510-4618
Regulatory Agencies	
USACE	TBD
NYSDEC	TBD
US Coast Guard, Buffalo	716-856-8143
NYSDEC Spill Hotline	800-457-7362
National Response Center	800-424-8802
CHEMTREC	800-424-9300

10.6 Implementation of the Plan

There is a logical sequence of steps to follow in responding to emergencies, which should be followed by site personnel. This sequence involves identifying the emergency, investigating the extent of the emergency, deciding on the proper initial course of action, taking corrective action to rectify the situation, and following up with a post-emergency investigation.

Equipment breakdowns, power failures, injuries, and natural disasters are usually rather dramatic and will capture the individual's attention immediately upon occurrence. In other cases, the individual may have prior warning of impending emergencies through weather reports in the case of natural disasters and trends in equipment performance in the case of some breakdowns.

Some emergency situations exist long before the operator is aware that an emergency exists. These cases may produce situations, which then become immediate and obvious. For example, unattended equipment may have minor breakdowns which go unnoticed; further operation thus leading to complete breakdown of the equipment resulting in possible injury to the unwary bystander.

In the event of a fire, explosion, accidental material release, or any other emergency, response activities will be initiated following the evaluation of the event. An assessment of the situation will be performed by the SSHO immediately upon notification. The Superintendent/SSHO is authorized to commit resources to the extent detailed in this plan. If it is determined that an emergency situation exists, he will then implement the appropriate emergency response activities.

10.6.1 Conditions for Implementation

The contingency plan will be activated by the Superintendent/SSHO immediately in the event of a fire or explosion, or emissions of toxic chemicals in excess of limits set forth by Federal, State, and local agencies. In the event of a spill or material release, it will be up to the Superintendent/SSHO to make a determination as to when emergency conditions exist, as opposed to routine maintenance of the site. His determination will depend upon the location of the spill, the size of the spill, weather conditions and the proximity of the release to workers, the community and environmental receptors.

Once it becomes apparent that an emergency situation exists or that a disaster is impending, the Site Superintendent or his designee should immediately be notified and an immediate investigation conducted. Assessment of the emergency should include assessing the severity of the situation and collecting enough information to make an initial action decision.

Assessing the emergency should include identifying injured persons (if any), damage to buildings and equipment, noting potential impending damage if corrective action is not taken immediately, and itemizing resources required to correct the situation.

10.6.1.1 Fire or Explosion

Although the potential for fire or explosion is minimal, sources of risk do exist. These sources include welding gases, gasoline for portable equipment, diesel fuel for the heavy equipment and combustible debris. In the event of an explosion, possible emergency conditions would exist. Unless extinguished immediately, a fire or explosion will trigger implementation of these procedures.

10.6.1.2 Material Spills

Material spills could occur during truck loading and from vehicle accidents. Additionally, equipment fueling operations could produce spills. Ultimately, a spill could contaminate receiving surface water or cause a release of vapors to the air. A spill of fuel could also ignite. A small spill should be cleaned up immediately, but should not trigger activation of these procedures. Should an on site spill occur, the immediate response will include closing off the source of the spill, if possible, application of the sorbent material or sand bagging, and street sweeping, as appropriate. Any spill that results in a

discharge to offsite surface water will be contained with sorbent booms as needed. All spills will be investigated, and a written report will be provided to the regulatory agencies in accordance with applicable regulations.

10.6.2 Initial Action

Once the extent of the emergency is known, the Superintendent and the SSHO will make an immediate decision as to what initial steps should be taken to remedy the emergency situation. This first action, in the case of large-scale emergencies, usually consists of notifying responsible authorities and/or calling for the necessary assistance in order of priority.

The individual(s) should not unduly endanger him or herself or others by attempting tasks for which the proper equipment is not available or with which he or she is unfamiliar. In all cases, if in doubt, wait until qualified help arrives before taking action.

10.6.3 Corrective Action

When help arrives, the site superintendent/SSHO should immediately inform those called of the pertinent details of the situation. Corrective action should be continued until the situation is either under control or completely rectified. If corrective actions will take considerable time, a long-term effort to complete the task should be developed.

10.6.4 Follow-through

After the situation is corrected, the cause of the emergency event is to be determined and review of the corrective actions taken, etc. In the case of equipment failure, if negligence was not a factor, then revising maintenance procedures would be the most likely first preventive step. For natural disasters that cannot be prevented from recurring, the procedures followed in dealing with them can be reviewed to develop more effective action plans. The entire event, along with all of the responses, will be thoroughly documented for review by management and project supervisory personnel.

10.7 Spill Response and Control Plan

The purpose of this section is to define practices and procedures for the prevention, containment, and cleanup of accidental discharges of hazardous substances during the project. These substances include construction materials typically found on any construction site, such as lubricating fluids, diesel fuel, gasoline, etc.

Spill prevention applies to all types of spills and can be described as the first and simplest approach to spill control. Human error is a major contributing factor to spills and releases. An awareness of spill consequences, preventive measures, and countermeasures will greatly reduce spill occurrences. A sound prevention program includes careful work practices, constant inspection, and immediate notification and correction of deficiencies. In the event that a spill does occur, proper containment and cleanup procedures must then be followed in order to reduce the effect of the spill.

10.7.1 Prevention

Prevention of unnecessary spills is of first priority. Prevention measures include:

- Operators and drivers will exercise extreme caution when transporting material around the site.
- When removing hoses from machines an appropriate and adequate supply of absorbents will be on hand. A supply of the following absorbents will be kept on-site, oil sorbent booms, rolls and pillows, universal towels and sheets, and vermiculite.
- Hoses will be capped when not connected to their appropriate fitting.
- All containers will be inspected daily for decay. No open container will be exposed to rainfall, snowfall, etc. without being emptied and cleaned of residue.

- All equipment will be inspected for leaks before and after service.
- Storage of material such as fuels, oils, and solvents on-site will be limited to the minimum required. All fluids will be stored in individual fluid containers appropriate and approved for the material. Most of the individual fluids containers will be further secured by storage in large, locked tool and equipment storage containers. Drums or other containers too large to be stored in containers will be stored raised off the ground on a liner and covered by plastic.

10.7.2 Reporting

All spills will be reported immediately to appropriate field and office management personnel. The sequence of reporting will be as follows:

- Notification by workers to the Site Superintendent or SSHO.
- The Site Superintendent or SSHO will immediately notify ANCHOR QEA regardless of the size of the spill.
- Sevenson and ANCHOR QEA will jointly determine the nature of the spill, its size, direction of travel, if anyone has been injured as a result of the spill and whether it requires immediate notification to regulatory agencies.
- ANCHOR QEA will have primary responsibility for notifying the regulatory agencies. Sevenson will have follow-up responsibility to verify that the notification is made in a timely manner. A full list of emergency contacts and telephone numbers is included this plan. This list includes Sevenson personnel, as well as federal, state and local authorities. This list will be posted in all trailers on-site.

Upon notification of a spill, all project activity will be immediately suspended and all necessary equipment and personnel will be diverted to spill control and containment. In the event of a spill, and regardless of the size, a Spill Incident Report will be submitted to with a copy to ANCHOR QEA within 48 hours of the incident.

10.7.3 Spill Response Equipment

Given the nature of this project, all the necessary equipment and personnel necessary to deal with a release of hazardous substances will be available on site. In addition to the heavy equipment and personal protective equipment, which is critical to spill control, Sevenson will have on hand an ample amount of sorbent materials, UN1A2 open top drums and over packs.

10.7.4 Confinement and Containment

Prior to entering a spill area, all workers must be protected from any adverse effects of the spilled material. No one will enter any spill area alone. The SSHO will determine the level of protection required for response activities. To the extent practicable, the area will immediately be cordoned off and, if appropriate, exclusion, contamination reduction, and support zones will be established.

The decision to use confinement techniques such as diversion, diking and retention, are generally based on time, personnel, equipment, and supplies. As mentioned above, all necessary resources will be available on-site at all times. To the extent the nature of the material is known, the decision should be made based upon a review of the harmful effects of the material. In the event of a large migrating spill, an unlikely circumstance, diversion techniques, such as placing a soil wall or absorbent boom ahead of the spill, will be implemented first. Subsequently, diking techniques, such as using material such as sand covered with liner material (PVC, hypalon) should be implemented.

10.7.5 Cleanup

Once a spill has been contained and the source of the spill corrected and controlled, cleanup can begin. Spill cleanup can proceed at the same time as containment if feasible. Supervisory personnel will determine the appropriate cleanup methods. The SSHO will determine the appropriate level of protection depending upon the nature of the material.

- The first action will be to absorb free liquids with absorbent pads, booms, pillows, or clay. The absorbent material will be placed in drums and moved to an appropriate storage location. Subsequent to the removal of free liquids, soil believed to be contaminated will be excavated and containerized in drums or stockpiled on poly sheeting and covered for further testing.
- Dry spills, while posing less of a risk of migration, will still require appropriate and immediate action. The nature of the spilled material will be ascertained. The spilled material will be recovered for reuse if appropriate. Material, which cannot be recovered, and residual contaminated soil, will be shoveled into 55-gallon drums, placed in the drum storage area, and sampled and analyzed for waste characterization and disposal.
- Once containerized, Sevenson Environmental will provide for the appropriate sampling and analysis for waste characterization and disposal facility acceptance. Results of waste characterization analysis, waste profiles, and manifests will be provided to the Construction Representative for review.
- All spilled material and visually contaminated soil will be excavated and containerized in the initial spill response. If there appears to be a possibility that contaminants have migrated into the surrounding soil, post-construction sampling will be initiated. Soil samples will be taken from the areas of suspected contamination and analyzed for the compounds, which were released.

Personnel Decontamination - In general, all spill response operations will be performed in accordance with the provisions of the approved HSERP.

10.8 Report/Review

A written report will be made within 24 hours of incident resolution. The Construction Manager will be provided with a copy. In addition, all key personnel will have a meeting within 48 hours of the incident to discuss and critique all of the aspects of the Emergency Contingency Plan according to new site conditions and lessons learned.

11.0 WORKING ON OR NEAR WATER

While working on the Buffalo River, Marine Safety procedures will be followed as directed by the boat captain and in accordance with the OSHA requirements at 1926.106. The following precautions will be taken:

- Work in a boat will be performed by at least a two-person team. Flotation devices, such as life vests, will be worn at all times. If work is performed at times when water temperatures are less than 38º F, it is recommended, but not necessary, that personnel wear float coats.
- If the work requires reaching, stretching, etc., from the boat, the worker will be equipped with a harness and lifeline. The lifeline will be attached to the boat.
- Footwear will have sufficient traction to reduce the risk of slipping.
- The deck of each boat must be rinsed to remove any visible river sediments.
- Any surface on the vessel that is visibly contaminated with soil or sediment will be rinsed off. Generation of airborne dust will be limited by adherence to this requirement.
- Vessels are required to have functioning navigational lights for any required dusk or night work.

In the event the National Weather Service issues a Small Craft Advisory, work onboard vessel(s) will be suspended and the vessel(s) will return to shore as soon as possible. If a Small Craft Advisory is issued before work commences, work will be rescheduled following the termination of the advisory. Work from a vessel will be conducted at the discretion of the vessel operator/captain.

11.1 Definitions

Barge	A manned or unmanned floating vessel that has a continuous, flat main deck. It is used to carry cargo. These vessels are not self-propelled.
Class A	A boat less than 16 feet long. Class A has the greatest numbers of boats. They can all be car topped or trailered. Due to their lightness and small size, many can become unstable if weight in them is excessive or carelessly loaded. Too much weight makes these boats sluggish, reduces their freeboard (the height of their sides above water) and can swamp (flood) them.
Class 1	A motorized boat from 16 feet to less than 26 feet in length. Though heavier and more powerful than Class A craft, most are still trailerable.
Class 2	A motorized boat from 26 feet to less than 40 feet in length.
Class 3	A motorized boat from 40 feet to less than 65 feet in length.
Type III Floatation Aid	Generally the most comfortable, have at least 15.5 lbs of buoyancy in the adult size. They do not turn the wearer face-up and can be jackets or vests.
Type IV Throwable Devices	These include the horseshoe, rung, and cushion. They have at least 16.5 lbs of buoyancy and must offer immediate access.

11.2. Small Boat Operation

When boarding be sure that the boat is secure. With one hand on the boat, quickly lower yourself straight down into the center of the boat. A life preserver should be worn. If others are boarding, have them step along the fore-and-aft centerline of the boat while you hold the boat in place along the pier. Avoid carrying anything aboard. Step down into the boat and load the items off the pier, or have someone had them to you one by one.

When loading a small boat, the amount and location of weight (persons and gear: the movable ballast) is critical for capsize protection. In a small utility boat, keep weight toward the middle, both fore-and-aft and side-to-side. If you see waves approaching, take them on the bow. Overloading a small boat inhibits its ability to rise to oncoming waves. Less freeboard means less clearance above the water's surface to prevent swamping. All craft must be operated within the boat manufacturer's weigh limits.

11.3. Class A and Class 1 Boats

- All persons on the boat will wear a US Coast Guard approved Type I, III, or V personal flotation vest. The type II vests (typically orange chest type) are not recommended because they are difficult to work in. In addition, throwable Type IV devices will be readily available for use.
- At least one B-1 Type US Coast Guard approved hand-held portable fire extinguisher (1A:10B:C) will be on the boat, readily available for use.
- Visual Distress Signal Flares and a battery operated light will be in good working order and readily available on the boat.
- A sound-producing distress signal; either a bell, whistle, or horn, will be in good working order and readily available on the boat.

- A first aid kit will be available on the boat.
- All boat fuel (gasoline) will be contained in engine manufacturer's approved containers that supply fuel to the engine via neoprene fuel lines. No fuel transfers between containers are to be conducted aboard the boat.
- A secondary means of propulsion will be available on the boat (oars or paddle).
- A boat hook, anchors, and proper mooring lines will be available on the boat.
- At least two extra sets of PPE for each person will be kept on the boats at all times or it shall be replaced immediately upon the next shore visit if PPE is utilized.

11.4. Boat Safety Equipment for Class 2, Class 3, Boats and Barges

- Wear safety shoes or boots with slip-resistant soles.
- Keep shoes / boots clean of mud, snow, ice, spilled liquids, and debris.
- All persons will wear a US Coast Guard Approved Type III personal flotation vest and at least one ring life buoy will be readily available for use.
- At least two type B-I (1A:10B:C) or one type B-II (4A:80B:C) fire extinguisher will be on board, readily available for use.
- Visual distress signal flares and a battery operated light will be on board, readily available for use.
- A sound-producing distress signal will be on board, readily available for use.
- A first aid kit will be available on board.
- At least two extra sets of PPE for each person will be kept on the boats at all times or it shall be replaced immediately upon the next shore visit if PPE is utilized.

11.5. Safe Boating Operations for Class A and Class 1 Boats

- All boats will be properly registered for use in waterways of local, state, and federal jurisdictions.
- All boat trailers and towing vehicles will be properly licensed and in good working order.
- The boat will only be operated by experienced personnel. The US Coast Guard Auxiliary and other organizations regularly sponsor boating safety courses. In addition to basic boating safety, the courses cover navigation regulations and emergency procedures. The training is recommended, even for experienced boat operators.
- The boat will be operated in a safe manner and all waterway regulations will be obeyed.
- No smoking or alcoholic beverages are permitted on the boat.
- No recreational equipment for fishing, hunting, water skiing, or self-contained underwater breathing apparatus (SCUBA) diving will be allowed on the boat unless specifically authorized as part of the work-related equipment.

11.6. Safe Boating Operations for Class 2 and Class 3 Boats and Barges

- Boats and barges will be operated in a safe manner and all waterway regulations will be obeyed.
- No smoking or alcoholic beverages are permitted on board.
- Keep all walking and working surfaces clean, dry, and unobstructed.
- Keep all areas free of debris.
- Clean up and report any spill immediately.

- Stack materials in a stable manner.
- Secure gear and equipment that is not in use.
- Repair leaks from hoses, pipelines and valves immediately.
- Have de-icing procedures in place when necessary.
- Walk at a normal rate. Do not run.
- Do not jump from one boat / barge to another.
- Avoid walking along an unguarded edge of a barge.
- Be cautious of working in reduced visibility due to poor lighting and weather conditions. Be sure there is adequate lighting (e.g., flashlights, headlights, light towers).
- All deck holes, openings and hatches should be covered or guarded.
- Stay clear when a hoist is being used. Never stand under a load or boom with a suspended load.
- Never stand in the bight of a line.

11.7. Boating Accidents

Coast Guard regulations, as well as state regulations, require accident reports if significant injuries or property damage occurs. It is normally best to stay with the boat in case of an accident and use signal flares or a distress horn to summon help. Hypothermia (loss of body heat) is a significant risk for those involved in boating accidents due to the rapid conduction of body heat by cold water.

12.0 INSPECTION AND REPORTING

12.1 Safety and Health Inspections

Safety and Health inspections will be conducted to discover, through specific, methodical auditing, checking, or inspection procedures, conditions and work practice that lead to job accidents and illnesses.

The Health and Safety Manager shall be responsible for ensuring that inspections are conducted at the frequency stated, reviewing the Daily Safety and Inspection Logs for completeness, thoroughness, and trends; performing monthly project inspections; and training site personnel on proper inspection techniques. The SSHO shall be responsible for ensuring that daily inspections are conducted, reviewing the inspections findings and corrective actions for applicability and thoroughness, and providing the site management personnel with a summary of inspection findings each month.

12.2 Daily Safety and Inspections Log

The SSHO will insure that all aspects of the HSERP are complied with on a daily basis. Only one warning will be given to individuals not complying with the HSERP. The SSHO has the authority to shut the work down and ban any individual from the Site. If deficiencies are noted, they will be recorded on the Daily Safety and Inspection Log and will be corrected immediately. The Daily Safety and Inspection Log will be attached to the Daily Quality Control Report. The Daily Safety and Inspection Log will include the date, work area, employees present at the work area, PPE and work equipment in each area, specific safety and health issues, and notes and the signature of the preparer. Refer to ***Appendix C – Safety and Health Forms for the Daily Safety and Inspection Log.***

12.3 Certification of Worker/Visitor Acknowledgment

A Certification of Worker/Visitor Acknowledgment will be submitted to ANCHOR QEA's representative prior to initial entry onto the Site. The certification/acknowledgment will include both formal, field and site-specific training received, personal protective equipment supplied and trained in

use, and medical certification. Certificates and Medical certification will be kept on file at the site. Refer to ***Appendix C – Safety and Health Forms for the Certificate of Worker/Visitor Acknowledgement.***

12.4 Incident Reports

Incident reporting will ensure an immediate report on all incident/accidents and provide an effective follow-up for corrective action in order to eliminate unsafe practices and unsafe conditions. An **Incident/Accident Form** must be completed within 24 hours of the Incident/Accident. This report is utilized in the event of injuries, off-site releases, utility breaks, or accidents. Immediately following the incident/accident, the Site Superintendent and the SSHO will initiate an Incident/Accident Investigation. An Accident Report will be completed submitted to ANCHOR QEA within two business days. ***Refer to Appendix C – Safety and Health Forms for the Incident/Accident Form.***

"Near misses" will be documented by the SSHO and discussed at the morning safety briefings to educate the work force to potentially hazardous operations or practices.

Copies of Sevenson's OSHA 300 Log that summarize recordable injuries and lost-time accidents will be submitted to the ANCHOR QEA's representative monthly. ***Appendix C – Safety and Health Forms for the OSHA 300 Log.***

12.5 Weekly Safety Meeting/Daily Tool Box Talks

As part of Sevenson's Corporate Health and Safety Program, a Weekly Safety Meeting is conducted on Monday mornings in conjunction with Daily Toolbox Talks. This safety meeting outlines current industry safety issues and allows for discussion of job-specific issues. In addition, a daily site briefing will be held to discuss current work activities and hazards for the day. The SSHO/Superintendent will conduct Daily Tool Box Talks and Weekly Safety Meetings with ALL on-site personnel Refer to ***Attachment 2 – Safety and Health Forms for Daily Toolbox Safety Meetings.***

In addition to the daily toolbox safety meeting, Sevenson will conduct monthly project management safety meetings. All site management, including sub-contractor personnel, is required to attend. Topics of discussion will include hazards identified and abated during the previous month, any outstanding action, new tasks to be performed, site concerns etc. The SSHO will submit a synopsis of each meeting including topics covered, safety-related concerns, action items to be addressed, status of previous items, and a signed attendance list.

12.6 Monthly Exposure Report

A Monthly Exposure Report will be prepared by the Safety and Health Coordinator and submitted to ANCHOR QEA. This report will include a compilation of man-hours worked each month for the project (both Sevenson and subcontractors), the number of accidents, severity, class of accident, and lost time for each month.

12.7 Safety and Health Phase-Out Report

The Safety and Health Phase-Out Report will be completed at the end of the project. The following information will be included:

- A description of significant events, exposures, incidents, First Aid cases and actions taken to prevent their occurrence.
- A copy of the OSHA 300 log for site work.

WORK SAFELY!

Installation of New Steel Sheet Pile Kneewall

WORK AND SAFETY PLAN (WSP)

REV 0 November 2, 2015

Prepared for:

Ontario Specialty Contracting
Former Buffalo Color Site on Buffalo River
Buffalo, NY

Prepared by:
Eric M. Chenevert, PE; Project Manager

Reviewed by:
Mark C. Judd; President & Chief Safety Officer
Russ Harris; Superintendent

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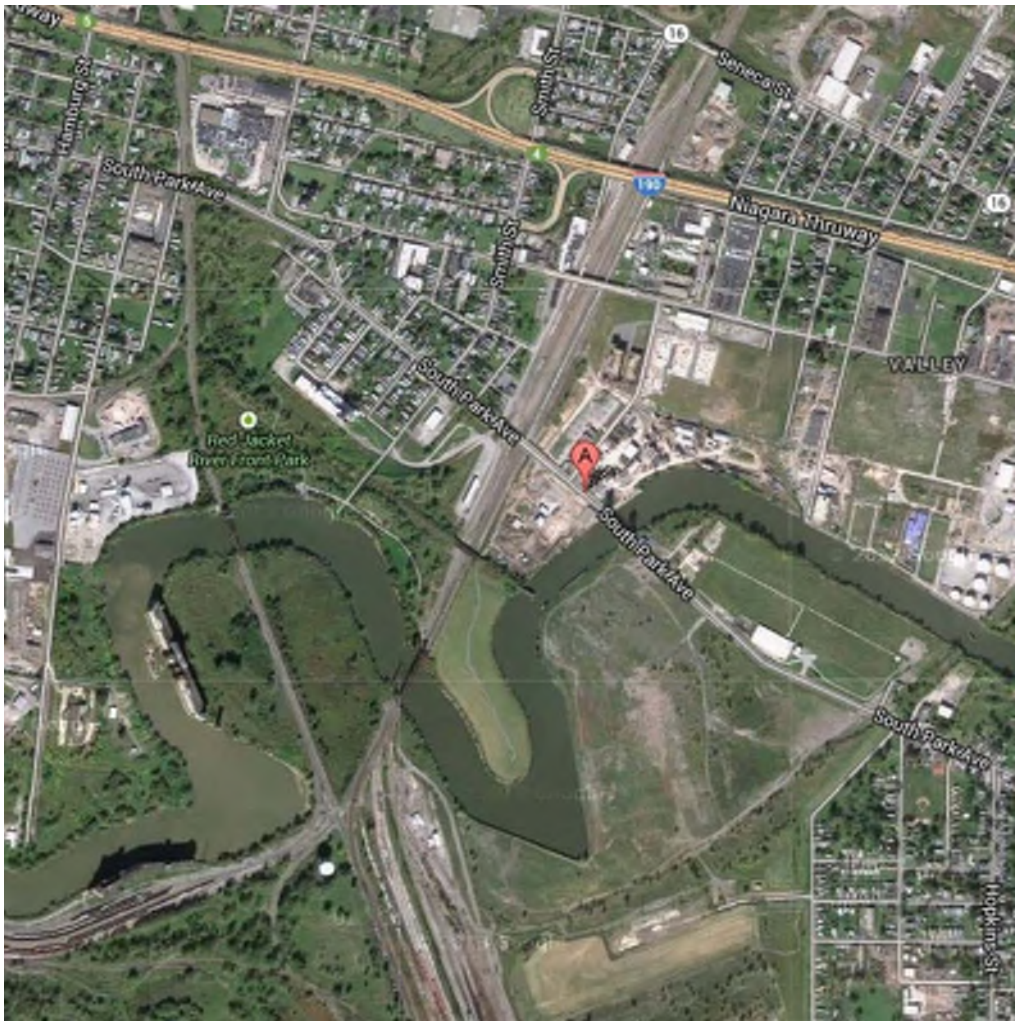
INTRODUCTION

Safety is the number one priority for all BIDCO operations.

BIDCO Marine Group Inc. (BIDCO) under an agreement with Ontario Specialty Contracting Inc. (OSC) will be installing steel sheet piling with an anchored tie-back system along an existing river wall on the Buffalo River. The work area is referred to in remediation design documents as Segment 6.

This plan serves to detail work operations (crew, equipment, and schedule, etc.), identify hazards associated with the work on a task by task basis, and then to determine specific methods and means for minimizing the risks associated with our work.

Project Location:



ATTACHMENTS TO WORK SAFETY PLAN

-A- BIDCO Company Safety Manual
-B- Job Safety and Hazard Analysis Worksheets
-C- BIDCO Dive Operations Manual

KEY PROJECT PERSONS & CONTACT NOS.

BIDCO Marine Group Inc. (Main Office No. 716-847-1111)

Mr. Russ Harris, General Superintendent
Cell No. (716) 870-7342

Mr. Eric Chenevert, Project Manager
Cell No. (716) 353-1213

Mr. Mark Judd, President & Co. Safety Officer
Cell No. (716) 570-8248

Ontario Specialty Contracting (Main Office No. 716-856-3333)

Mr. Dan Flannigan, Site Project Manager
Cell No. (716) 560-3006

Mr. John Yensen, President
Cell No. (716) 583-4400

Anchor QEA (Baltimore Office No. 410-715-0824)

Mr. Brian Murphy, Construction Manager
Cell No. (716) 510-4618

Mr. Mark Reemts, Project Manager
Cell No. (410) 980-7995

Mr. Ram Mohan, Program Manager
Cell No. (215) 756-5030

Honeywell

Mr. Rich Galloway, Project Manager
Phone No. (973) 455-4640

GENERAL SITE SAFETY PRACTICES

The items discussed in this section are included in general terms in the BIDCO Company Safety Manual, however this section intends to emphasize the importance of such routines and to add specificity to their implementation so as to promote a safe and productive project and worksite.

Pre-job briefing of project personnel:

The BIDCO Site Supervisor shall review the scope of work for the project and this project-specific HASP with all personnel that will be working on the project. The pre-job briefing not only covers the details of the work, but will cover site specific protocols regarding safety, security, incident reporting, and environmental protection measures. The primary purpose of the pre-job briefing is to emphasize communication and safety throughout the project.

For this particular project, the pre-job briefing will emphasize:

- Drug and alcohol-free workplace
- Working over or on water
- Surface-supplied air diving operations (if applicable)
- Fall prevention and fall protection
- General Housekeeping
- Emergency action and rescue procedures
- Rigging and material handling
- Personal protective equipment (PPE)

Personal Protective Equipment (PPE):

All personnel working on site are required to wear hard hats, work gloves, safety footwear, and safety glasses. As this job involves pile driving and compressor-driven directional drilling, hearing protection (muffs or earplugs) are also required.

A US Coast Guard approved personal floatation device (PFD) will be provided and shall be worn by every crew member working with 6' of the water's edge that is not protective by some form of fall prevention.

Daily Tool Box Talk:

BIDCO believes that the start of a SAFE WORKDAY begins with a "Toolbox Talk" or "Tailgate Meeting". Each day, before any work begins, the Project Supervisor or his designee will assemble the crew and conduct a brief safety talk covering a subject applicable to the work ahead.

The tool box talk serves to reinforce general safety awareness, is an opportunity to review the plan of the day, and will cover task-specific hazards that the crew may encounter. The talk shall emphasize specific means to prevent accidents or incidents that could result in injury to personnel or damage to property and or the environment.

The toolbox talk shall be documented in writing with each member of the crew signing on as attendees. Other project personnel (owner's representatives, subcontract personnel, etc.) are encouraged to attend and participate in the talk.

Accounting of Personnel

BIDCO personnel shall sign-in and sign-out at the work site in accordance with the site protocols established by OSC. BIDCO shall maintain an account of all persons throughout the work day including work breaks, lunches, etc.

BIDCO maintains a daily running log, which will note personnel entering and leaving its work area including vendors / suppliers / subcontractors, client representatives, and others.

A muster point in the case of emergency will be established between BIDCO and OSC. The muster point will be communicated to all personnel working on site.

THE MUSTER POINT IS: _____ *(complete in field)*

BIDCO shall conform to the client's facility emergency action plan if one has been established.

Safety Audits:

As part of the daily startup routine, the Site Supervisor will survey the work area looking for any hazards and to ensure good housekeeping practices are maintained. The supervisor shall verify that all crew members are fit for work, that proper PPE is available and is being used correctly, and that task specific safety measures (fall protection, life rings, PFD, proper tools, equipment protection, safety barriers, etc.) are in place.

Accident and Incident Reporting:

All accidents or incidents that impact safety will be reported as per written company health and safety policy.

BIDCO will report any accident or safety to the Client's Project Representative. A verbal report will be made immediately and a written report provided within 24 hours of the incident.

BIDCO shall complete and address incident reports as may be required by the client.

Spill Prevention and Response Planning:

Spill Prevention and Response Planning will be in lawful compliance and with client's standards.

It is the policy of this company to protect the land and marine environment from harm from the accidental discharge of hazardous materials into the ecosystem. This section has been prepared to set forth the methods and means by which accidental release of hazardous materials will first try to be avoided, however if such a release does occur, this section details how the environmental impacts will be mitigated and responsibly reported.

Pre-emptive Measures:

Certain activities will be undertaken in the course of normal construction practices to minimize the spread of hazardous materials spilled on the project and effectuate the prompt reporting and cleanup of the spill.

1) Inspection of all tanks, vessels, containers, and conveyances (i.e. hoses) for mechanical defects that could lead to rupture and spillage. This inspection is routine and takes place during routine maintenance activities and prior to mobilizing equipment to a work site.

2) Using all due caution during fueling operations, or topping off oil or coolant levels of all equipment.

3) Having a sufficient supply of various absorbent products (boom, absorbent pads, and clay absorbents), and lined drums at the ready to clean up and contain a 'modest' spill.

4) Train field leadership and project personnel in reporting procedures in the event of a spill.

5) Train field leadership and project personnel proper procedures for calling out-side assistance in the event of a "major" spill created onsite.

In the event of a spill

1) Anyone witnessing a spill should immediately notify the BIDCO Supervisor and make every reasonable action to stop the source of the pollutant and contact the site supervisor.

2) The site supervisor will immediately order the assemblage and use of all onsite personnel and materials available to further contain and begin cleaning up of the affected area.

3) The onsite supervisor will notify the Client's Project Representative along with BIDCO's corporate safety director and president, Mark Judd. BIDCO will complete and submit an incident report to the Client's Project Representative.

4) All contaminated materials generated in the cleanup effort will be placed in suitable roll off boxes or drummed depending on quantities generated, and then labeled, and properly disposed of, including proper documentation from the disposal facility.

5) Notifications:

a.	Dan Flanigan, OSC Project Manager	(716) 560-3006
b.	Mark Judd, BIDCO Marine Group President	(716) 560-8248
c.	National Response Center	(800) 424-8802
d.	NYSDEC – NYS Spill Hotline	(800) 457-7362

EMERGENCY PHONE NUMBERS

EMERGENCY RESPONSE SERVICES

Call 911

LOCATION: Former Buffalo Color site
1052 South Park Ave.
Buffalo, NY 14210

SITE SUPERVISOR: Russ Harris (716) 870-7342

LOCAL MEDICAL FACILITIES

Nearest Hospital:

Mercy Hospital
565 Abbott Rd
Buffalo, NY 14220
Ph: (716) 826-7000

(Route map and directions are attached)

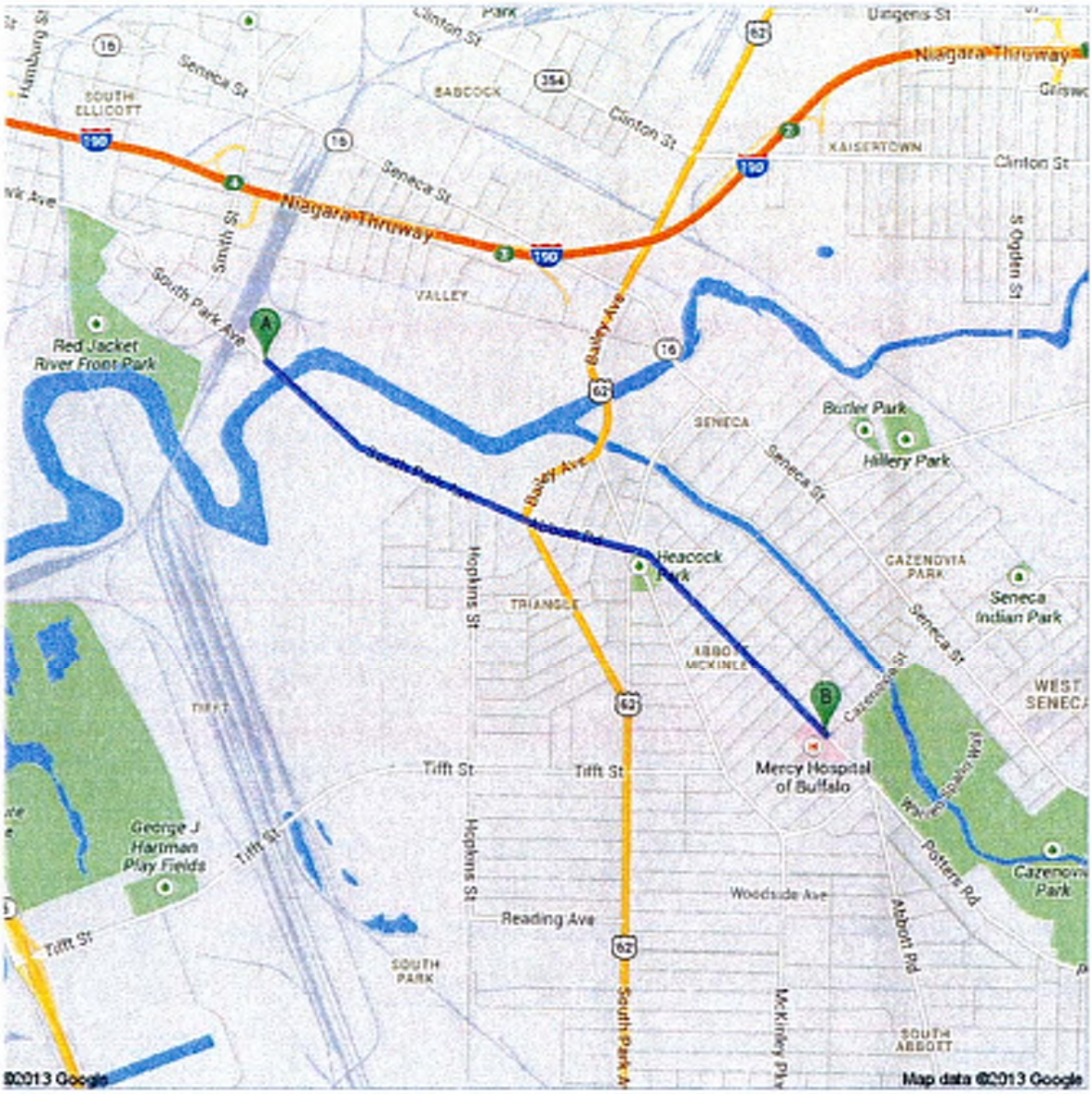
BIDCO EMERGENCY CONTACT INFO:

BIDCO Main Office	(716) 847-1111
Russ Harris, Project Supt.	(716) 870-7342
Eric Chenevert, VP/GM	(716) 353-1213
Mark Judd, Pres.	(716) 570-8248

ATTACHMENT
MAP ROUTE TO HOSPITAL
MERCY HOSPITAL – BUFFALO, NY

Google

Directions to Mercy Hospital of Buffalo
565 Abbott Rd, Buffalo, NY 14220
1.9 mi – about 5 mins



A 1052 S Park Ave, Buffalo, NY 14210

1. Head **southeast** on **South Park Ave** toward **Bertha Pl**
   About 2 mins
2. Continue onto **Abbott Rd**
   Destination will be on the right
   About 2 mins

B **Mercy Hospital of Buffalo**
565 Abbott Rd, Buffalo, NY 14220

PROJECT EQUIPMENT

Major equipment components for this job will include:

1. 37.5 x 75 x 4 Flexifloat spud barge
2. Linkbelt LS98A 40-ton crawler crane
3. 30 x 60 x 4 Flexifloat material barge
4. Vibratory pile driving equipment
    - ICE 14C Hammer (manufacturer's info attached)
    - Hydraulic power unit
5. Push boat
6. Safety boat
7. Welding and burning gear
8. Tool air compressor with CP hoses & pneumatic tools (impact wrench, drills, and bits)
9. Rigging and miscellaneous tools and supplies
10. Portable fuel storage tanks with secondary containment
11. Turbidity curtain
12. Absorbent boom
13. Spill kit (oil-absorbent pads, etc.) will be maintained on site during construction

CREW

The work will be performed by a "pile gang" consisting of a full time superintendent, pile driver foreman, pile drivers, crane operator, and oiler. The pile drivers within the pile gang are also certified surface-supplied air commercial divers and will provide underwater support during construction as needed.

SCOPE OF WORK

The result of the work will be a new steel sheet pile wall "kneewall" constructed at the toe of the riverbank slope approximately 15' below normal water level. The completed wall will measure approximately 235 linear feet including two 18 foot return walls at the north and south ends of the new wall. The wall is a cantilever design that will be driven to the top of rock. The tips of the sheet pile will be fitted with driving shoes pre-welded to the sheets prior to delivery.

The work is planned as follows:

MOBILIZATION

1. Assemble floating equipment at BIDCO yard on the Buffalo River
2. Load pile driving and other project equipment on to barge
3. Receive sheet pile materials at BIDCO and load on to material barge
4. File Notice to Mariners with USCG prior to mobilization
5. Travel up the Buffalo River to the Honeywell / Buffalo Color work site
    a. Coordinate bridge openings with…

i. City of Buffalo
ii. CSX Transportation

6. Place / install turbidity curtain to encompass the immediate work area. Turbidity curtain may require maintenance and relocation from time to time during construction.

PILE DRIVING SEQUENCE OF WORK

1. Hours of work will generally be between 0700 and 1530 Mon-Fri. Overtime may be worked at the discretion of the BIDCO superintendent, eg to finish up a task in progress. No weekend work is planned.
2. Employ survey to verify and establish survey control for the project. Key elements for this project include:
    a. Horizontal and vertical control
    b. Location of existing structures, e.g. armor mattress, utilities (Call DigSafe NY 811)
    c. Location of federal channel (new sheet pile kneewall is to stay out of the channel)
3. Conduct brief diving inspection to verify location of the armor mattress and assist survey to layout plan for sheet pile installation as required.
4. With the guidance of site survey, BIDCO will set HP12x53 piling and horizontal framing to establish the driveline template for installation the sheet piling. Divers may be required for quality control verification and protection of existing features.
    a. HP12x53 to be driven to bedrock and toed in using vibratory hammer
    b. Lookouts will be attached to the HP12x53
    c. An HP12x53 will be placed to rest horizontally between the guide piles on the lookouts. The horizontal beam will serve as the driveline template for installation of the sheet piling.
    d. The driveline template will be relocated (leapfrogged) as the construction of the wall progresses and changes in alignment are called for. The template will generally span a particular “run” of sheeting as per the pile layout previously submitted. Where a particular run of sheeting is longer, this run may be done with two separate setups of the driveline template.
    e. Note; vibratory monitoring and slope monitoring by others.
5. Hoist, set, and rive sheet piling in pairs using vibratory hammer
    a. The proposed pile layout has been submitted previously (pending review / approval)
    b. Special piles details (two 90 degree fabricated corners) have been submitted previously and are pending review / approval).
    c. Sheet piling will initially be driven 15 to 20 into the river bottom and then tacked to the template
        i. Note; according to borings, sheet piling may need very little influence to go down to grade and therefore may have to be held partially embedded in the soil and above the water for successive sheet piles to be threaded and partially driven

d. Hoist, thread, and drive successive sheets – tack weld to drive template as required
e. After a line of sheet is established within the scope of the template, the crew will drop back and begin driving the sheet piling to refusal (bedrock).

6. During the pile driving, the wall layout will be layout will be checked (quality control) with the assistance of divers as needed.
7. Cutting tops of sheet piling to grade
    a. The proposed top of sheet pile elevation is shown to be elevation 556.5
    b. Survey will be used to establish the top of the sheet piling at several locations along the wall. The locations with known elevations will be marked and recorded.
    c. Divers will use these known elevations to measure down and mark the point at which the sheet piling is to be cut off. A level will then be used to translate this marked elevation to adjacent pairs of sheeting
    d. The pile crew will then partially extract pairs of sheeting so that the cut off point is above the water
    e. The pile will then be secured and then the top cut off using an oxy-acetylene torch
    f. The sheet pile will then be re-driven to grade.
    g. Steps (d) through (f) will be repeated to trim the entire wall to the correct elevation.

RECORDS AND AS-BUILT DOCUMENTATION

1. When the sheet piling is completed, BIDCO surveyor will record the as-built sheet piling wall (X-Y-Z) to document the final alignment and top elevation of the wall.
2. Survey data will be used to update or "red line" the contract drawings
3. Pile records; the superintendent will create and maintain a log of each pair (or individual sheet, as applicable). The log will include:
    a. Dates of work
        i. Initial placement
        ii. Cut off and re-drive
    b. List of pile driving equipment
    c. Pile driving crew
    d. Pile (or pile pair) identification
    e. Length of in-place sheet after cutoff
    f. Notes and remarks on the pile and its pile installation
4. BIDCO will perform an underwater inspection of the completed wall for quality control / quality assurance purposes. The general contractor, engineer, owner, and or their designated site representatives are welcome to participate during the inspection by observing the diving inspection in real time from the dive control shack and monitoring the video / audio feed from the diver. The representative is invited to engage the diver with questions or direction during the inspection. The inspection will be documented on video if visibility in the river permits. A copy of the inspection video will be provided to OSC on DVD.

5. Certified test reports for steel sheet piling are provided upon material delivery. Copies of the test reports will be provided separately.

CONTINGENCY FOR REMOVAL OF BURIED OBSTRUCTIONS

1. BIDCO will deploy its diving team to relax the tension on the temporary cable supports allowing the cables to re-settle back towards their pre-existing positions (likely near the toe of the new sheet piling.
2. BIDCO will then cover the cables with surrounding riverbed material by hand jetting
3. Diving operations will be done in a HAZMAT mode, i.e. full encapsulation by dry suits with sealed neck rings, wrist and ankle cuffs.
4. Tenders will be equipped with tyvek suits and prepared to wash off divers at the conclusion of their work with mild detergent and water

CONTINGENCIES & EMERGENCY ACTION PLANS

ACCIDENT INVOLVING PERSONAL INJURY THAT REQUIRES EMS

1. Work will stop and attention focused on getting the injured person appropriate care as soon as possible.
2. **Supervisor will call 911.**
3. Supervisor shall designate someone from the crew to go out to South Park Ave and assist EMS by directing them to the scene.
4. Stabilize the injured person(s) to the best of their ability
    a. *NOTE All BIDCO personnel are trained in First Aid, CPR, and the administration of medical O2*
5. If an ambulance service is not needed, but medical attention is required, the injured person(s) will be driven to the hospital (approximately 5 minutes away). The nearest Hospital is Mercy Hospital located on Abbott Rd
    a. *See the directions to the hospital included with this plan.*
6. Prior to resuming work, a root cause analysis of the incident will be completed and corrective measures implemented.
7. The incident shall be reported in accordance with BIDCO Policies and Procedures.
    a. *NOTE Additional reporting will be made as required by contract with the Client and the Owner*

ADVERSE WEATHER

1. ***LIGHTNING***: Immediately cease work operations and
    a. Get crew under cover; divers out of the water; preferably shelter indoors
        i. Inside break conex
        ii. Inside company vehicles
        iii. Inside project trailer
    b. Crew supervisor and crew will observe the weather and determine when or if it is safe to continue the work. However, operations may not resume sooner than 30 minutes after the last lightning strike is observed.
2. Gale force winds, tornado, or other severe weather will be cause to postpone or cease operations. This determination will be made by the crew supervisor. In the event work is in progress during severe weather or its imminent approach the:
    a. Crew shall take shelter
    b. Divers out of the water
    c. Crane boom positioned in down position (as possible)

STANDARD CONTINGENCY AND EMERGENCY ACTION PROCEDURES FOR DIVING

1. Dive operations including emergency action procedures are governed by BIDCO Dive Operations Manual
2. Standard contingencies and action plans include:
    a. Loss of communication with diver
        i. Dive is aborted and the diver is brought to the surface
    b. Loss of primary air source, e.g., dive compressor shuts down

i. Switch to HP bottled air (backup or secondary air supply)
ii. The third source of air is the divers' bail out bottle that is carried on the back of the divers' harness. This air source is independent of the primary and secondary air sources and is plumbed directly into the divers' helmet.
iii. In any instance, when the primary air source is unexpectedly lost, the dive is aborted, the diver brought to the surface, and the situation analyzed with all personnel on deck.

c. Loss of thermal protection, e.g. diver's hot water supply is lost
    i. Dive aborted and the diver is brought to the surface

ASSISTANCE / RESCUE OF INJURED OR UNCONSCIOUS DIVER

1. First aid kit and supplies are kept on the dive van. All personnel on the crew are trained in First Aid, CPR, and the administration of medical oxygen.
2. Divers are continuously tended and hard-wire communications are maintained between the diver and the dive supervisor.
3. A standby diver will be dressed out and ready to enter the water to assist the primary diver or take charge in rescuing him.
4. The standby diver on this project will likely already be in the water tending the primary diver from outside of the gate house structure.
5. If communications are lost or if any diver becomes unresponsive, the divers will be brought to the surface.
6. Onshore tenders will pull the diver to shore and the rescue diver will monitor the injured or unconscious diver to ensure that his umbilical does not get fouled.
7. Once at the shore, the rescue diver along with the tenders will bring the injured or unconscious diver on shore where a first aid evaluation of him will be made.
8. The diver supervisor will determine the next course of action as to whether EMS should be called or if the diver should be taken directly to the hospital.

Appendix C
DMUs 9 and 10 Shoreline Sheetpile Wall Pre-Construction Submittals

Ontario Specialty Contracting, Inc.
333 Ganson Street
Buffalo, NY 14203
Phone No. (716) 856-3333 / Fax No. (716) 842-1630

Contract / Package Associated with this submittal: PO TBD

SUBMITTAL NUMBER: 01

DATE: 10/28/15

TYPE OF SUBMITTAL:

Shop Drawing ____ Schedule ____ Sample _____ Other _____

Product Data _X_ Certificate ____ Color Samples ____ Other _____

Test Report ____ Warranty ____ O&M Manual _____ Other _____

DESCRIPTION:

Submittal Subject: SKZ 24 Cold Rolled Sheet Pile

Spec Section No.: 35 31 06

Paragraph:

Manufacturer:

Supplier: Skyline Steel

Contractor's Comments:

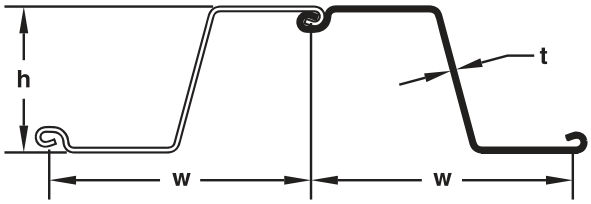
Contractors Review: By:

This submittal has been checked for compliance with the drawings and specifications. Corrections or comments made on this submittal during this review do not relieve subcontractors' from compliance with the requirements of the drawings and specifications.

___Review ___Rejected ____Revise and Resubmit ____Make Corrections Noted

SCZ/SKZ

SCZ/SKZ Cold Formed Steel Sheet Pile



SECTION	Width (w) in (mm)	Height (h) in (mm)	Thickness (t) in (mm)	Cross Sectional Area in²/ft (cm²/m)	WEIGHT		SECTION MODULUS		Moment of Inertia in⁴/ft (cm⁴/m)	COATING AREA	
					Pile lb/ft (kg/m)	Wall lb/ft² (kg/m²)	Elastic in³/ft (cm³/m)	Plastic in³/ft (cm³/m)		Both Sides ft²/ft (m²/m)	Coating Area ft²/ft² (m²/m²)
SCZ 14	28.50 723.9	10.00 254.0	0.250 6.4	4.18 88.48	33.81 50.31	14.23 69.50	14.36 772	16.32 877.4	71.82 9808	6.10 1.86	1.28 1.28
SCZ 16	28.50 723.9	10.00 254.0	0.276 7.0	4.62 97.79	37.37 55.61	15.73 76.82	15.75 847	17.97 965.9	78.73 10751	6.10 1.86	1.28 1.28
SCZ 17N	28.50 723.9	10.00 254.0	0.295 7.5	4.95 104.78	40.03 59.58	16.86 82.32	16.87 907	19.21 1033	84.35 11519	6.10 1.86	1.28 1.28
SCZ 18N	28.50 723.9	10.00 254.0	0.317 8.1	5.31 112.39	42.94 63.91	18.08 88.28	18.10 973	20.61 1108	90.48 12356	6.10 1.86	1.28 1.28
SCZ 21N	28.50 723.9	10.00 254.0	0.375 9.5	6.29 133.06	50.84 75.66	21.41 104.54	21.43 1152	24.40 1312	107.13 14629	6.10 1.86	1.28 1.28
SKZ 20	28.50 723.9	16.00 406.4	0.315 8.0	6.00 127.00	48.24 71.79	20.31 99.17	31.69 1704	36.66 1970.97	253.51 34618	7.60 2.32	1.60 1.60
SKZ 22	28.50 723.9	16.00 406.4	0.335 8.5	6.30 133.35	51.30 76.34	21.60 105.46	33.43 1797	38.94 2093.55	267.40 36515	7.60 2.32	1.60 1.60
SKZ 23	28.50 723.9	16.00 406.4	0.354 9.0	6.70 141.82	54.20 80.66	22.82 111.42	35.61 1915	41.12 2210.75	284.90 38905	7.60 2.32	1.60 1.60
SKZ 24	28.50 723.9	16.00 406.4	0.375 9.5	7.10 150.28	57.43 85.47	24.18 118.06	37.73 2028	43.52 2339.78	301.80 41213	7.60 2.32	1.60 1.60
SKZ 25	28.50 723.9	16.00 406.4	0.399 10.1	7.60 160.87	61.10 90.93	25.73 125.61	40.14 2158	46.24 2486.02	321.12 43851	7.60 2.32	1.60 1.60
SKZ 31	28.50 723.9	18.00 457.2	0.450 11.4	9.07 192.04	73.82 109.85	31.08 151.75	51.56 2772	60.51 3253.29	464.05 63369	8.06 2.46	1.70 1.70
SKZ 33	28.50 723.9	18.00 457.2	0.475 12.1	9.40 198.97	77.64 115.54	32.69 159.61	54.89 2951	63.57 3417.68	494.03 67462	8.06 2.46	1.70 1.70
SKZ 34	28.50 723.9	18.00 457.2	0.500 12.7	9.89 209.25	81.42 121.17	34.28 167.38	57.62 3098	66.86 3594.60	518.62 70821	8.06 2.46	1.70 1.70
SKZ 36	28.50 723.9	18.00 457.2	0.535 13.6	10.78 228.10	86.81 129.19	36.55 178.46	60.71 3264	71.58 3848.17	546.43 74619	8.06 2.46	1.70 1.70
SKZ 38	28.50 723.9	18.00 457.2	0.550 14.0	11.07 234.42	88.95 132.37	37.45 182.85	62.32 3350	73.52 3952.44	560.85 76588	8.06 2.46	1.70 1.70

Interlock Compatibility

	SCZ 14	SCZ 16	SCZ 17N	SCZ 18N	SCZ 21N	SKZ 20	SKZ 22	SKZ 23	SKZ 24	SKZ 25	SKZ 31	SKZ 33	SKZ 34	SKZ 36	SKZ 38
SCZ 14	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SCZ 16	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SCZ 17N	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SCZ 18N	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SCZ 21N	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SKZ 20	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SKZ 22	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SKZ 23	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SKZ 24	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SKZ 25	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○
SKZ 31	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●
SKZ 33	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●
SKZ 34	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●
SKZ 36	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●
SKZ 38	○	○	○	○	○	○	○	○	○	○	●	●	●	●	●

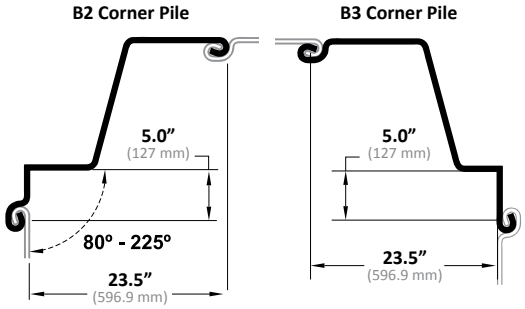
SCZ/SKZ

SCZ/SKZ Cold Formed Steel Sheet Pile

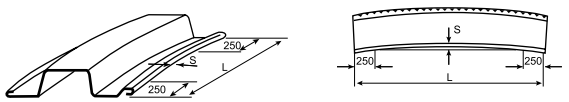
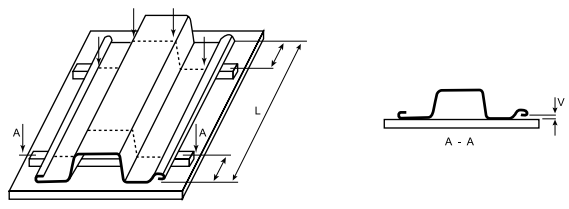
Available Steel Grades					
ASTM	YIELD STRENGTH		ASTM	YIELD STRENGTH	
	(ksi)	(MPa)		(ksi)	(MPa)
A 572 Grade 50	50	345	A 572 Grade 65 (Mod)**	80	555
A 572 Grade 55	55	380	A 588	50	345
A 572 Grade 60	60	415	A 690	50	345
A 572 Grade 65*	65	450			

*Not available for thicknesses ≥ 0.375" (9.525mm). **Not available for thicknesses > 0.276" (7.0mm).

Corner Piles



Delivery Conditions & Tolerances

	ASTM A6		EN 10249-2	
Mass	± 2.5%		± 7%	
Length	+ 5 inches	– 0 inches	± 50 mm	
Straightness				
Bending (S)			0.25% of the length	
Curving (C)			0.25% of the length	
Twisting (V)			2% of the length	

Maximum Rolled Lengths*

SKZ	70 feet	(21.3 m)

* Longer lengths may be possible upon request.

Ontario Specialty Contracting, Inc.
333 Ganson Street
Buffalo, NY 14203
Phone No. (716) 856-3333 / Fax No. (716) 842-1630

Contract / Package Associated with this submittal: PO TBD

SUBMITTAL NUMBER: 02

DATE: 10/28/15

TYPE OF SUBMITTAL:

Shop Drawing X Schedule ____ Sample _____ Other _____

Product Data _____ Certificate ____ Color Samples ____ Other _____

Test Report ____ Warranty ____ O&M Manual _____ Other _____

DESCRIPTION:

Submittal Subject: Skyline Steel Layout

Spec Section No.: 35 31 06

Paragraph: _____

Manufacturer: _____

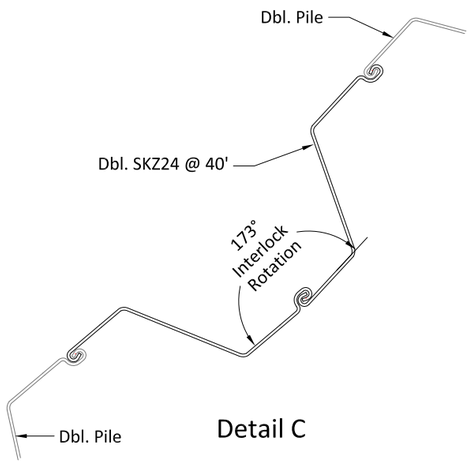
Supplier: Skyline Steel

Contractor's Comments:

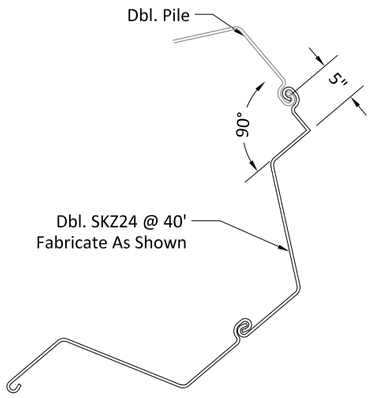
Contractors Review: By: _____

This submittal has been checked for compliance with the drawings and specifications. Corrections or comments made on this submittal during this review do not relieve subcontractors' from compliance with the requirements of the drawings and specifications.

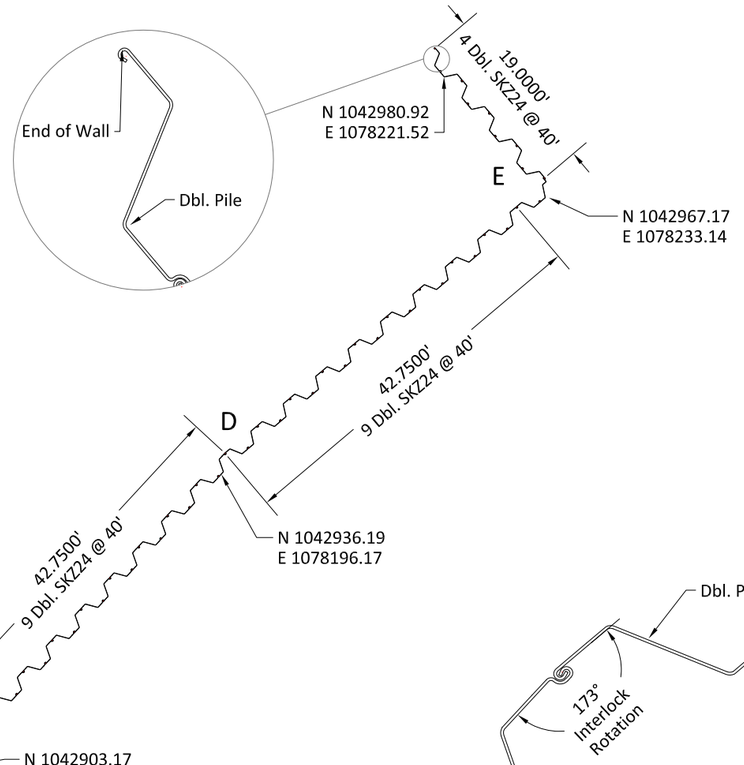
___Review ___Rejected ____Revise and Resubmit ____Make Corrections Noted

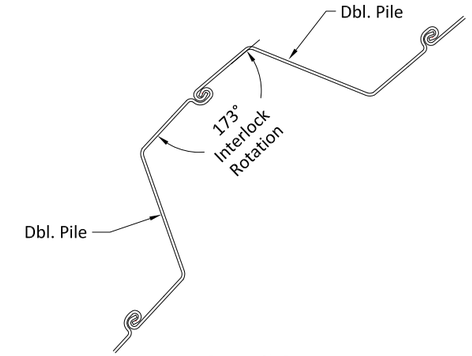


Detail C

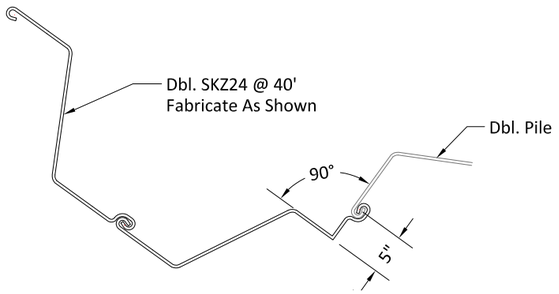


Detail E

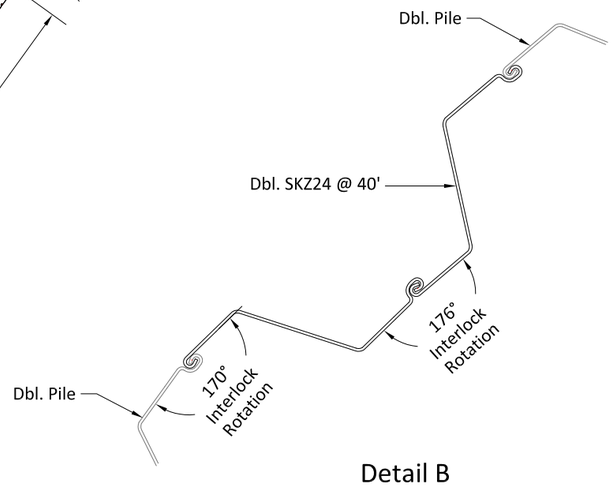




Detail D



Detail A



Detail B

skylinesteelI
a NUCOR company
8 WOODHOLLOW RD, PARSIPPANY, NJ 07054 TEL: (973) 428-6100 FAX: (973) 428-7399

REV.	DESCRIPTION	DWB By	Date	CKD By
1	Released For Approval	JA	10/26/15	KL
0	Released For Approval	DY	10/23/15	

PROJECT: Buffalo River Kneewall — Buffalo, New York

CONTRACTOR: OSC, Inc.

DATE: 10/23/15
SCALE: N.T.S.
DRAWN BY: D.Yagunich
PROJECT NO. 5433
SHEET: L—1
REV. 1

Ontario Specialty Contracting, Inc.
333 Ganson Street
Buffalo, NY 14203
Phone No. (716) 856-3333 / Fax No. (716) 842-1630

Contract / Package Associated with this submittal: PO TBD

SUBMITTAL NUMBER: 09

DATE: 11/18/15

TYPE OF SUBMITTAL:

Shop Drawing ____ Schedule ____ Sample _____ Other _____

Product Data X Certificate ____ Color Samples ____ Other _____

Test Report ____ Warranty ____ O&M Manual _____ Other _____

DESCRIPTION:

Submittal Subject: Sheet Pile Mill Certs

Spec Section No.: 35 31 06

Paragraph: _____

Manufacturer: _____

Supplier: Skyline Steel

Contractor's Comments:

Contractors Review: By: _____

This submittal has been checked for compliance with the drawings and specifications. Corrections or comments made on this submittal during this review do not relieve subcontractors' from compliance with the requirements of the drawings and specifications.

___Review ___Rejected ____Revise and Resubmit ____Make Corrections Noted

skylinesteel I
a NUCOR company

Skyline Steel, LLC
12355 State Route 7
Belpre, OH 45714
Tel: 740 423-8544
Fax: 740 423-8541

No: CST 27586
Ship Date 05Nov15 at 14:26 From CFG
Prebill
Via FRT VENDOR
FOB BELPRE, OH 2846224
Frt COLLECT
Route 0-- 0 Manifest
Vhcle Trailer
Slo MIKE CHEFREN
Sold To: (34)
SKYLINE MID-ATLANTIC (PA)
300 MT. LEBANON BLVD. SUITE 2211
PITTSBURGH, PA 15234

Consigned To: (000)
BIDCO MARINE GROUP
C/O ONTARIO SPECIALTY CONSTRACTING
220 KATHERINE STREET
BUFFALO, NY 14210
Tel: Fax:

25821-4351Aw

B I L L O F L A D I N G

1) Our Order CST- 7042-- 1 Your PO # B28462
Part # Rel # 41P
SKZ SHEET PILE A 572 GR 50 10 Pcs 45944 LBS
SKZ24 DOUBLES X 40'

	Pcs	Wt LBS
TOTAL:	10	45944

Heat Number *** Chemical Analysis ***
253487 C=<.06> Mn=<.610> P=<.009> S=<.003> Si=<.012> TEN=<69100>
YLD=<57300> ELONG=<34> Cu=<.05S>

STANDARD CERTIFIED TEST REPORT
"MELTED & MANUFACTURED IN U.S.A."

FREIGHT CHARGES: ☐ PREPAID ☐ COLLECT

NOTE- Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
[SIGNATURE OF CONSIGNOR]

C.O.D. AMOUNT: $
C.O.D. FEE: $ ☐ PP ☐ CC
TOTAL CHARGES: $

SEE TERMS AND CONDITIONS ON REVERSE SIDE OF THIS FORM

SHIPPER PER
CARRIER PER
DATE 11-5-15

skylinesteel I
a NUCOR company

Skyline Steel, LLC
12355 State Route 7
Belpre, OH 45714

Tel: 740 423-8544
Fax: 740 423-8541

No: CST 27578
Ship Date 03Nov15 at 13:37 From CF6
Probill
Via FRT VENDOR
FOB BELPRE, OH
Frt COLLECT
Route 0-- 0 Manifest
Vhcle Trailer
Slp MIKE CHEFREN
Sold To: (34)
SKYLINE MID-ATLANTIC (PA)
300 MT. LEBANON BLVD. SUITE 2211
PITTSBURGH, PA 15234

284462.3

Consigned To: (000)
BIDCO MARINE GROUP
C/O ONTARIO SPECIALTY CONTRACTING
220 KATHERINE STREET
BUFFALO, NY 14210
Tel: Fax:

25811-438 Ap

B I L L O F L A D I N G

1) Our Order CST-- 7042-- 1 Your PO # B28462
Part # Rel # 41P
SKZ SHEET PILE A 572 GR 50 9 Pcs 41350 LBS
SKZ24 DOUBLES X 40'

	Pcs	Wt LBS
TOTAL:	9	41350

Heat Number *** Chemical Analysis ***
253486 C=<.05> Mn=<.620> P=<.007> S=<.001> Si=<.012> TEN=<70000>
YLD=<56200> ELONG=<35> Cu=<.048>

STANDARD CERTIFIED TEST REPORT
"MELTED & MANUFACTURED IN U.S.A."

FREIGHT CHARGES ☐ PREPAID ☐ COLLECT

NOTE- Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(SIGNATURE OF CONSIGNOR)

C.O.D. AMOUNT: $
C.O.D. FEE: $ ☐ PF ☐ CC
TOTAL CHARGES: $

SEE TERMS AND CONDITIONS ON REVERSE SIDE OF THIS FORM

SHIPPER PER
CARRIER PER
DATE

skylinesteel I
a NUCOR company

Skyline Steel, LLC
12355 State Route 7
Belpre, OH 45714
Tel: 740 423-8544
Fax: 740 423-8541

No: CST 27579
Ship Date 03Nov15 at 13:48 From CFG
Probill
Via FRT VENDOR 284627-2
FOB BELPRE, OH
Frt COLLECT
Route 0- 0 Manifest
Vhcle Trailer
Slp MIKE CHEFREN
Sold To: (34)
SKYLINE MID-ATLANTIC (PA)
300 MT. LEBANON BLVD. SUITE 2211
PITTSBURGH, PA 15234

Consigned To: (000)
BIDCO MARINE GROUP
C/O ONTARIO SPECIALTY CONTRACTING
220 KATHERINE STREET
BUFFALO, NY 14210
Tel: Fax:

25812-4348 Aw

B I L L O F L A D I N G

1) Our Order CST- 7042- 1 Your PO # B28462
Part # Rel # 41P

SKZ SHEET PILE A 572 GR 50	9 Pcs	41350 LBS
SKZ24 DOUBLES X 40'		

	Pcs	Wt LBS
TOTAL:	9	41350

Heat Number *** Chemical Analysis ***
159191 C=<.04> Mn=<.660> P=<.013> S=<.002> Si=<.017> TEN=<69500>
YLD=<56800> ELONG=<35> Cu=<.047>

STANDARD CERTIFIED TEST REPORT
"MELTED & MANUFACTURED IN U.S.A."

FREIGHT CHARGES ☐ PREPAID ☐ COLLECT
Page: 1 ... Last

NOTE- Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(SIGNATURE OF CONSIGNOR)

C.O.D. AMOUNT: $
C.O.D. FEE: $ ☐ PPI ☐ CO
TOTAL CHARGES: $

SEE TERMS AND CONDITIONS ON REVERSE SIDE OF THIS FORM

SHIPPER PER
CARRIER PER
DATE 11/3/15

skylinesteelI
a NUCOR company

Skyline Steel, LLC
12355 State Route 7
Belpre, OH 45714

Tel: 740 423-8544
Fax: 740 423-8541

No: CST 27576
Ship Date 03Nov15 at 12:00 From CFG Prohill
Via FKT VENDOR
FOB BELPRE, OH
Frt COLLECT
Route 0- 0 Manifest
Vhcle Trailer
Slp MIKE CHEFREN
Sold To: (34)
SKYLINE MID-ATLANTIC (PA)
300 MT. LEBANON BLVD. SUITE 2211
PITTSBURGH, PA 15234

284G2-1

Consigned To: (000)
BIDCO MARINE GROUP
C/O ONTARIO SPECIALITY CONTRACTING
220 KATHERINE STREET
BUFFALO, NY 14210
Tel: Fax:

25813-4348 Aw

B I L L O F L A D I N G

1) Our Order CST- 7042- 1 Your PO # B28462
Part # Rel # 41P
SKZ SHEET PILE A 572 GR 50 8 Pcs 36755 LBS
SKZ24 DOUBLES X 40'

2) Our Order CST- 7042- 2 Your PO # B28462
Part # Rel # 41P
SKZ CORNER A 572 GR 50 1 Pcs 2297 LBS
SKZ24 B2 CORNERS X 40'

3) Our Order CST- 7042- 3 Your PO # B28462
Part # Rel # 41P
SKZ CORNER A 572 GR 50 1 Pcs 2297 LBS
SKZ24 B2 CORNERS X 40'

	Pcs	Wt LBS
TOTAL:	10	41349

Heat Number
253486

*** Chemical Analysis ***
C=<.05> Mn=<.620> P=<.007> S=<.001> Si=<.012> TEN=<70000> YLD=<56200> ELONG=<35> Cu=<.048>

STANDARD CERTIFIED TEST REPORT
"MELTED & MANUFACTURED IN U.S.A."

FREIGHT CHARGES ☐ PREPAID ☐ COLLECT

NOTE- Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(SIGNATURE OF CONSIGNOR)

C.O.D. AMOUNT: $
C.O.D. FEE: $ ☐ PP ☐ CC
TOTAL CHARGES: $

SEE TERMS AND CONDITIONS ON REVERSE SIDE OF THIS FORM

SHIPPER PER
CARRIER PER
DATE

STANDARD CERTIFIED TEST REPORT

SKYLINE STEEL COLD FORM, LLC

BELPRE, OHIO

Customer Name	**Bidco Marine Group** **c/o Ontario Specialty Contracting** **220 Katherine Street**
Address	
City, State	**Buffalo, NY** **14210**

Date 10/21/2015

Job # 28462

Specification ASTM A572 GR50 SKZ 24

"Melted & Manufactured in U.S.A."

				MECHANICAL PROPERTIES			CHEMICAL ANALYSIS (%)							
HEAT NO.	SIZE	THICKNESS	TEST	Yield Strength KSI Point	Tensile Strength KSI	Elong. In 2" (%)	C	Mn	P	S	Si	Cu	Cr	Cb
159191	SKZ 24	0.375	1	56,800	69,500	35.0	0.04	0.66	0.013	0.002	0.017	0.047		
253486	SKZ 24	0.375	1	56,200	70,000	35.0	0.05	0.62	0.007	0.001	0.012	0.048		

The undersigned hereby certifies that the above materials have been manufactured, inspected and tested in accordance with the methods prescribed in the applicable specifications and results of such test shown above. In determining properties or characteristics for which no methods of inspection and testing are prescribed by said specifications, the standard mill inspection and testing practices of this Corporation have been applied, unless specified otherwise in the results of such inspection and tests shown above. The undersigned believes that said materials conform to said specifications. "" Manufactured in the U.S.A.""

skylinesteelI
• NUCOR company

Tim Carpenter
Skyline Steel Cold Form , LLC - Belpre, Oh

skylinesteelI
a NUCOR company

Skyline Steel, LLC
12355 State Route 7
Belpre, OH 45714
Tel: 740 423-8544
Fax: 740 423-8541

55

No: CST 27646
Ship Date 19Nov15 at 11:53 From CFS
Prohill
Via FRT VENDOR
FOB BELPRE, OH
Frt COLLECT
Route 0- 0 Manifest
Vhcle Trailer
Slp MIKE CHEFREN
Sold To: (34)
SKYLINE MID-ATLANTIC (PA)
300 MT. LEBANON BLVD. SUITE 2211
PITTSBURGH, PA 15234

28462-5

Consigned To: (000)
ONTARIO SPECIALTY CONTRACTING, INC
C/O FORMER BUFFALO COLOR SITE
1337 SOUTH PARK AVE
BUFFALO, NY 14210
Tel: Fax:

25884-43666 Lw

B I L L O F L A D I N G

1) Our Order CST- 7042- 1 Your PO # B28462
Part # Rel # 41P
SKZ SHEET PILE A 572 GR 50 8 Pcs 36755 LBS
SKZ24 DOUBLES X 40'

	Pcs	Wt LBS
TOTAL:	8	36755

Heat Number *** Chemical Analysis ***
159191 C=<.04> Mn=<.660> P=<.013> S=<.002> Si=<.017> TEN=<69500>
YLD=<56800> ELONG=<35> Cu=<.047>

STANDARD CERTIFIED TEST REPORT
"MELTED & MANUFACTURED IN U.S.A."

FREIGHT CHARGES: ☐ PREPAID ☐ COLLECT

NOTE- Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
SIGNATURE OF CONSIGNOR

C.O.D. AMOUNT: $
C.O.D. FEE: $ ☐ PPD ☐ COL
TOTAL CHARGES: $

SEE TERMS AND CONDITIONS ON REVERSE SIDE OF THIS FORM

SHIPPER PER
CARRIER PER
DATE 11-15-15

skylinesteel I
a NUCOR company

Skyline Steel, LLC
12355 State Route 7
Belpre, OH 45714
Tel: 740 423-8544
Fax: 740 423-8541

55

No: CST 27647
Ship Date 19Nov15 at 12:53 From CFG
Prabill
Via FRT VENDOR
FOB BELPRE, OH
Frt COLLECT
Route O-- 0 Manifest
Vhcle Trailer
Slp MIKE CHEFREN
Sold To: (34)
SKYLINE MID-ATLANTIC (PA)
300 MT. LEBANON BLVD. SUITE 2211
PITTSBURGH, PA 15234

28462-6

Consigned To: (000)
ONTARIO SPECIALTY CONTRACTING, INC
C/O FORMER BUFFALO COLOR SITE
1337 SOUTH PARK AVE
BUFFALO, NY 14210
Tel: Fax:

25885-43ele Rev

B I L L O F L A D I N G

1) Our Order CST-- 7042- 1 Your PO # B28462
Part # Rel # 41P
SKZ SHEET PILE A 572 GR 50 8 Pcs 36755 LBS
SKZ24 DOUBLES X 40'

	Pcs	Wt LBS
TOTAL:	8	36755

Heat Number *** Chemical Analysis ***
159191 C=<.04> Mn=<.660> P=<.013> S=<.002> Si=<.017> TEN=<69500>
YLD=<56800> ELONG=<35> Cu=<.047>

STANDARD CERTIFIED TEST REPORT
"MELTED & MANUFACTURED IN U.S.A."

FREIGHT CHARGES ☐ PREPAID ☐ COLLECT

NOTE- Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(SIGNATURE OF CONSIGNOR)

C.O.D. AMOUNT: $
C.O.D. FEE: $ ☐ PPI ☐ CO
TOTAL CHARGES: $

SEE TERMS AND CONDITIONS ON REVERSE SIDE OF THIS FORM

SHIPPER PER

CARRIER PER

DATE 11-19-15

Appendix D
Daily Construction Manager Reports

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 17, 2015
REPORT NO.: 155
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 35, partly cloudy		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 61, sunny Precip. 0.00 inches Avg. wind speed E 9.1 mph; gusts 20 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	07:00	to	18:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (2) Operators	SES	10 hours 8 hours 8 hours 12 hours 18 hours
Tim Kibby (Superintendent) 8 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	12 hours 96 hours (Day shift) 12 hours 24 hours (Night Shift)
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	4 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 44.5 hours
2 Surveyors	GPI	14 hours
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	12 hours 11 hours

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	DMU 44e	Commencement of dredging at DMU 44e
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	Buffalo River	No activity

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 17, 2015
REPORT NO.: 155
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Offloading at the CDF – Ryba (EPA)	CDF	No activity
Debris removal	DMU 44e	Woody debris / fallen tree removal
Capping	N/A	No activity
Sheetpile installation - BIDCO	DMUs 9/10	Survey layout and falsework
Survey	DMUs 9/10	GPI Survey Controls / falsework layout
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMU 44e	Silt curtain deployment, oil boom deployment, turbidity monitoring buoy deployment and monitoring

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was "Housekeeping".
07:00	BIDCO	AQEA attends health and safety meeting for sheeting operations. The safety topic was 'pinch points'.
07:30-08:30	Buffalo Color, DMU 44e	AQEA inspects current site conditions.
07:50	Buffalo Color	AQEA observed OSC commencing inclinometer readings at DMUs 9/10. AQEA observed BIDCO at Solar City sheetpile wall preparing for mobilization to DMUs 9/10.
08:10	South End Marina	AQEA met with Luedtke to discuss mobilization of dredge no. 12 to DMU 44e, dredging schedule, and coordination with SES.
09:00-15:00	Buffalo River	AQEA conducted site tour with EPA. Site inspections included, Premier towing, Katherine Street, Buffalo Color, Riverbend, City Ship Canal, CDF, South End Marina, Ryba dredging at mouth of Buffalo River, Ohio Street and DMU 44e.
09:50	Buffalo Color	AQEA observed positioning of BIDCO crane barge at the most downstream end of the marine mattress in DMU 10.
10:00	Buffalo Color	BIDCO informed AQEA that the surveyors believe there is a discrepancy on drawing between the Northing/Easting data and the azimuth/distance data. AQEA to look into.
10:30-10:50	DMU 44e	AQEA, SES, and Luedtke conducted 44e dredging preparation meeting. Topics discussed included, BMPs, scheduling, and direction of dredging.
11:20	Premier Towing	AQEA conducted SES laydown area equipment check. Equipment was checked against the equipment listed in SES DPR 159.
12:00	Buffalo Color	AQEA observed BIDCO set position at DMUs 9/10 and drop spud anchors.
12:30	Buffalo Color	BIDCO and AQEA agree to utilize the Northing/Easting data for false work layout.
13:25	Buffalo Color	AQEA observed BIDCO diving operation and marking of the submerged edge of marine mattress. Mattress marked with buoys along the southern edge parallel to the Federal Navigation Channel in DMUs 9/10.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 17, 2015
REPORT NO.: 155
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
13:30	DMU 44e	First bucket of woody debris / fallen trees removed and placed in hopper barge on the deck of dredge no. 12
15:05	DMU 44e	AQEA observed woody debris / fallen trees transferred from hopper barge to moored scow for eventual transport to CDF.
16:10	Premier Towing	AQEA updated Honeywell on project progress.
16:30	Premier Towing	AQEA daily report generation.
17:40	DMU 44e	AQEA observed dredging activities. Luedtke progressing from toe of Ohio Street bridge toward the river.
18:30	DMU 44e	AQEA depart from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
09:00	Survey Discrepancy, Buffalo Color Peninsula	A discrepancy between the azimuths and coordinates of proposed sheetpile wall at DMUs 9/10 was discovered during survey control operations by GPI Surveying. Additional QA/QC of azimuths and coordinates is currently underway.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
-	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	-	Tons	Truck loads	0 Tons
Armor Stone	-	Tons	Truck loads	0 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	-	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

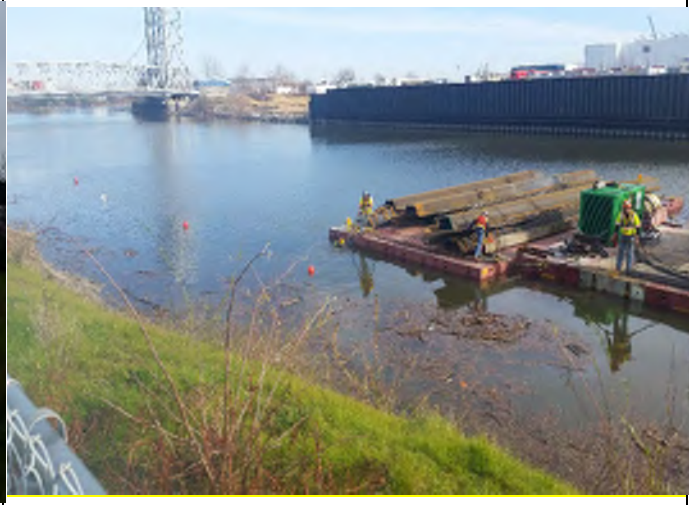
Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 17, 2015
REPORT NO.: 155
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: BIDCO crane barge positioning at DMUs 9/10.



Comment: Diver assisted buoy placement along edge of marine mattress.

Comment: View of debris located in DMU 44e.

Comment: Removal of debris from DMU 44e.

Field Representative Signature: _____ Date: November 17, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 18, 2015
REPORT NO.: 156
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 48, overcast		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 65, overcast Precip. 0.00 inches Avg. wind speed S 17.9 mph; gusts 48 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	07:00	to	18:00
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 2 Operators	SES	10 hours 10 hours 9 hours 12 hours 16 hours
Tim Kibby (Superintendent) 8 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	12 hours 96 hours (Day shift) 12 hours 24 hours (Night Shift)
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 40 hours
2 Surveyors	GPI	-
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	12 hours 11 hours

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	DMU 44e	Completed dredging at DMU 44e; 480 cy removed today totaling 725cy
Offloading at the CDF – Luedtke	CDF	No activity

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 18, 2015
REPORT NO.: 156
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Ryba (EPA dredging)	Buffalo River	No activity
Offloading at the CDF – Ryba (EPA)	CDF	No activity
Debris removal	N/A	No activity
Capping	N/A	No activity
Sheetpile installation - BIDCO	DMUs 9/10	Ongoing sheetpile installation
Survey	DMUs 9/10	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMU 44e	Continuous turbidity monitoring via monitoring buoys

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “The Buddy System”.
07:00	BIDCO	AQEA attends health and safety meeting for sheeting operations. The safety topic was “weather”.
07:45-08:45	USACE CDF	AQEA inspection of CDF including observation of the Lucille T, pipelines, disposal areas, and ongoing breakwater improvement.
07:50	USACE CDF	AQEA met with Luedtke to discuss progress of 11/17 night shift dredging, anticipated future dredging schedule, and preparations for protection of equipment and safety procedures during impending wind event.
08:50	Buffalo Color	BIDCO drives SP-1 down to approximately 4’ above the false work while verifying square and level.
09:25	DMU 44e	AQEA observed ongoing dredging operation at DMU 44e.
09:30 – 10:00	Premier Towing	AQEA joins the Buffalo River coordination team conference call
09:45 – 10:30	Katherine Street Peninsula	Buffalo Niagara Riverkeeper performing a RFP site walk at the Katherine Street Peninsula for future riparian project.
09:45	Buffalo Color	AQEA observed sheetpile driving at DMUs 9/10.
10:30 – 11:00	Premier Towing	AQEA hosts the Buffalo Color sheetpile construction team meeting.
10:25	DMU 44e	AQEA met with Luedtke to discuss dredging progress and resolution of ongoing Clamvision computer issues. AQEA observed recommencement of DMU 44e dredging after resolution of dredge no. 12 computer issues.
11:10	Buffalo Color	AQEA observed ongoing sheetpile driving at DMUs 9/10. Sheetpile installation continuing along edge of marine mattress toward the upstream direction.
11:45	DMU 44e	AQEA observed dredging operation at DMU 44e.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 18, 2015
REPORT NO.: 156
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
13:15-14:30	Buffalo River, DMUs 9/10, 44e	AQEA performs inspections via pontoon boat at project areas DMUs 9/10 and 44e. AQEA met with BIDCO concerning sheetpile surveys and corner joints of sheetpiling. AQEA observed dredging operation at DMU 44e, relocation of dredge no. 12 to scow moored near Ganson St., and locations of upstream and downstream water quality monitoring buoys.
14:30	Premier Towing	The USACE informs AQEA that Ryba's EPA dredging may not happen this week, but this will be verified tomorrow.
16:25	DMU 44e	AQEA met with Luedtke concerning dredging progress. Luedtke expected to complete dredging area during night shift.
16:45	South End Marina	AQEA performed equipment check at South End Marina. Equipment was checked against equipment listed on the SES DPR 160.
17:10	Premier Towing	AQEA daily report generation.
18:00	Premier Towing	AQEA demobilized from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
-	-	-

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
09	OSC submitted - Steel Mill Certifications for steel sheetpiles

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	-	Tons	Truck loads	0 Tons
Armor Stone	-	Tons	Truck loads	0 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	-	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

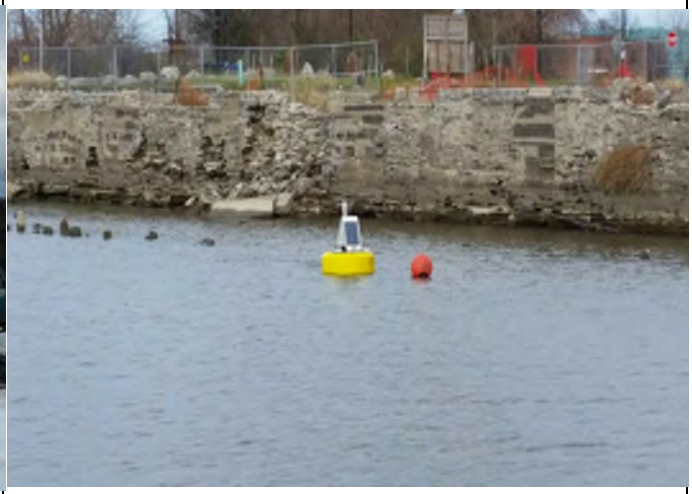
Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 18, 2015
REPORT NO.: 156
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Ongoing dredging at DMU 44e.



Comment: Water quality monitoring buoy deployed upstream of DMU 44e.

Comment: Dredge no. 12 leaving DMU 44e heading to unload hopper scow.

Comment: Ongoing sheetpile installation at DMUs 9/10

Field Representative Signature: _____ Date: November 18, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 19, 2015
REPORT NO.: 157
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	High 64, overcast		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	Low 45, Sunny Precip. 0.02 inches Avg. wind speed S 20.7 mph; gusts 50 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	07:00	to	18:00
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 2 Operators	SES	10 hours 8 hours 8 hours 11 hours 16 hours
Tim Kibby (Superintendent) 8 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	12 hours 96 hours (Day shift) 12 hours 24 hours (Night Shift)
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 40 hours
2 Surveyors	GPI	6 hours
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	12 hours 11 hours

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	DMU 44e, DMU 38a	Preliminary completion of dredging at DMU 44e during night shift. Commencement of dredging at DMU 38a during day shift.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 19, 2015
REPORT NO.: 157
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	Buffalo River	No activity
Offloading at the CDF – Ryba (EPA)	CDF	No activity
Debris removal	N/A	No activity
Capping	N/A	No activity
Sheetpile installation - BIDCO	DMUs 9/10	Ongoing sheetpile installation
Survey	DMUs 9/10	GPI assist BIDCO with falsework layout.
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMU 44e/38a	Continuous turbidity monitoring via monitoring buoys

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Equipment Checks”.
07:00	BIDCO	AQEA attends health and safety meeting for sheetpile operations. The safety topic was ”high winds and smoking procedures”.
07:15	Premier Towing	AQEA daily report generation.
08:00 - 08:30	Buffalo Color	BIDCO moving the false work to the next section upstream. AQEA observes OSC taking daily inclinometer readings. AQEA is working with the design engineers to verify depth of return sheets and intent of the design.
08:30	DMU 44e	Luedtke preliminary single beam post dredge survey complete.
09:15	DMUs 9/10	AQEA observed BIDCO preparation for sheetpile corner install at most downstream corner of sheetpile.
09:30	DMU 44e	AQEA observed Luedtke dredge no. 12 staged along with scow on riverbank adjacent to Ganson Street. Met with SES concerning status of preliminary survey of DMU 44e and plans for dredge repositioning to DMU 38a.
10:35	Buffalo Color	AQEA observed ongoing sheetpile installation. BIDCO installed additional falsework along edge of submerged marine mattress and installation of sheeting continued in the upstream direction within DMUs 9 and 10.
10:50	Buffalo River	AQEA observed Luedtke dredge no. 12 near the Ohio St. bridge relocating upstream to DMU 38a with assistance from the tug Krista S.
11:00	Buffalo Color	GPI Surveying arrived onsite to assist BIDCO with setting control points for additional falsework to be installed in the upstream direction from existing installed sheetpiling.
11:15	Premier Towing	AQEA daily report generation.
13:40	Buffalo Color	AQEA observed GPI and BIDCO setting control points for additional falsework and installation of falsework in upstream direction along edge of marine mattress.
14:40	DMU 38a	AQEA observed dredging operation at DMU 38a and observed turbidity monitoring buoys installed upstream and downstream from dredging operation.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 19, 2015
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ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
15:20	Buffalo Color	AQEA observed BIDCO departed site for the day. BIDCO added a total of 8 sheets throughout the day.
15:45	DMU 38a	AQEA observed Luedtke dredging at DMU 38a moving from channel side inward. Observed dredge no. 12 placing material directly into large barge scow moored alongside.
17:15	Premier Towing	AQEA Equipment Inventory log development.
18:00	Premier Towing	AQEA demobilized from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
09:00	Sheet pile return wall/Buffalo Color	Barton & Loguidice confirmed that the sheets on the return wall that extend into the rising slope do not need to extend to the bedrock for support reasons. Therefore the existing 40' sheets can be driven to mudline.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	-	Tons	Truck loads	0 Tons
Armor Stone	-	Tons	Truck loads	0 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	-	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF

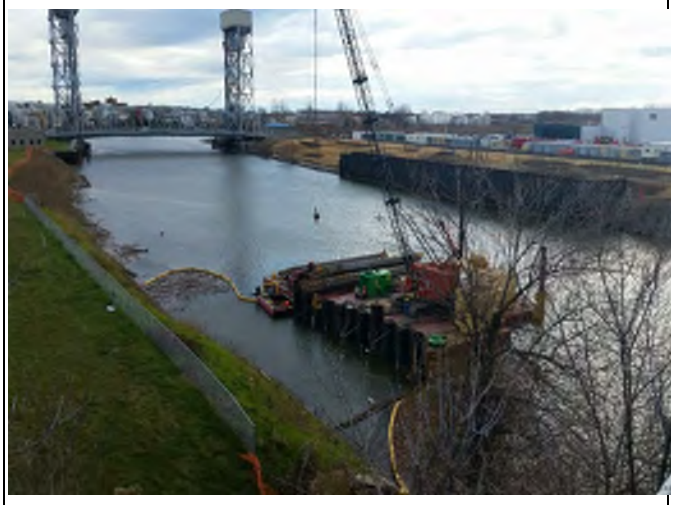
ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 19, 2015
REPORT NO.: 157
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS



Comment: View of sheetpile installation progress at DMUs 9/10.

Comment: Installation of sheetpiling falsework at DMUs 9/10.

Comment: Dredge no. 12 moving upstream near the Ohio St. bridge to DMU 38a.

Comment: Luedtke dredge no. 12 at DMU 38a placing material in scow.

Field Representative Signature: _____ Date: November 18, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 20, 2015
REPORT NO.: 158
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 33, overcast		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 45, partly cloudy Precip. 0.00 inches Avg. wind speed WSW 12.0 mph; gusts 41 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	07:00	to	17:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 2 Operators	SES	8 hours 8 hours 0 hours 12 hours 16 hours
Tim Kibby (Superintendent) 8 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	12 hours 96 hours (Day shift) 12 hours 24 hours (Night Shift)
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 5.5 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	5 hours 25 hours
2 Surveyors	GPI	2 hours
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	8 hours 10.5 hours
Damianos Skaros	DEC	1 hours

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
11:45	High winds / Buffalo Color	Due to high winds BIDCO ceased the sheeting installation for the day.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 20, 2015
REPORT NO.: 158
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	DMU 44e, DMU 38a	Preliminary completion of dredging at DMU 38a. Clean-up dredging at DMU 44e.
Offloading at the CDF – Luedtke	CDF	Hydraulic offload of dredging scow no. 59
Dredging – Ryba (EPA dredging)	Buffalo River	No activity
Offloading at the CDF – Ryba (EPA)	CDF	No activity
Debris removal	N/A	No activity
Capping	N/A	No activity
Sheetpile installation - BIDCO	DMUs 9/10	Ongoing sheetpile installation. 9 sheets installed today for a total of 27.
Survey	DMUs 9/10	Layout of false work
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMUs 44e, 38a	Continuous turbidity monitoring via monitoring buoys
Equipment Delivery	DMU 44e	SES mobilized dozer D51

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Accident Reporting”.
07:00	BIDCO	AQEA attends health and safety meeting for sheetpile operations. The safety topic was “high winds”.
07:05	BIDCO	(2) Semi-trucks loaded with sheets were staged on Katherine Street for delivery to the BIDCO yard.
07:15	Premier Towing	AQEA daily report generation.
07:35	City Ship Canal	AQEA notes that Ryba’s dredging and pump out gear was inactive and staged in the City Ship Canal.
08:10	DMUs 9/10	AQEA observed ongoing sheetpile installation by BIDCO. Installation continued in the upstream direction along the edge of the submerged marine mattress. OSC continued inclinometer readings of slope stability.
08:45	USACE CDF	AQEA inspected operations at the CDF. Inspection of Lucille T pumping dredged material into CDF. Met with Luedtke crew concerning sediment composition and pumping details. Observed discharge into CDF.
9:40	USACE CDF	AQEA met with Luedtke concerning dredging schedule and progress in DMU 38a and plans to move back to 44e for clean-up pass.
10:40	DMUs 9/10	AQEA observed ongoing sheetpile installation by BIDCO. BIDCO installed additional falsework upstream of existing installed sheetpiles and continued installation of steel sheetpiles along marine mattress.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 20, 2015
REPORT NO.: 158
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
11:20	DMU 44e	AQEA met with Luedtke concerning dredging progress at 44e. Observed Luedtke attaching bucket to dredge and commencement of dredging. Dredging proceeded from top of slope near Ohio St downward toward the river to the toe of slope. Confirmed turbidity monitoring buoys were in place.
11:40	Buffalo Color	OSC informed AQEA that BIDCO shut down operations for the day due to high winds.
12:12	DMU 44e	Damianos Skaros of the DEC at DMU 44e observing the dredging operations. Slight water spray due to high winds was observed from the bucket decanting which was corrected at the DEC request.
12:55	Premier Towing	AQEA daily report generation.
14:15	DMU 44e	AQEA observed dredge no. 12 dredging material along slope at DMU 44e near Ohio St. Observed repositioning of dredge down slope toward river with assistance from the Krista S.
16:30	DMU 44e	AQEA observed transfer of dredged material from hopper barge to scow staged in the Buffalo River adjacent to Ganson St.
16:50	Premier Towing	AQEA, SES, and Luedtke met to discuss completion of clean up pass at DMU 44e and movement of dredge no. 12 to DMU 38a for clean-up dredging. Confirmed that monitoring buoys were in place before commencement of dredging. Luedtke to use a digging bucket for the clean-up dredging due to hard material.
17:30	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
08:45	Premier Towing	AQEA informs Daminaos Skaros that there were a few water quality exceedances between 03:30 and 06:00 on the upstream unit that after SES inspection resulted from high winds blowing the meters towards shore resulting in sediment/debris collecting on the sampling unit. The meters was cleaned and re-positioned.
12:15	Water spray	Damianos Skaros of the DEC observed water spray resulting from high winds blowing at the decanting dredge bucket. The dredge crew was informed and the operator changed operations so that the bucket was decanted close to the water surface to prevent transport of spray.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
-	SES submitted 44e sand fill analytical results to AQEA
-	SES submitted a revised drawing for DMUs 17,18 & 19 with the 10' utility offset to AQEA

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 20, 2015
REPORT NO.: 158
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	-	Tons	Truck loads	0 Tons
Armor Stone	-	Tons	Truck loads	0 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	-	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

PHOTOGRAPHS

Comment: View of sheetpile installation progress at DMUs 9/10.

Comment: Continued installation of sheetpiling at DMUs 9/10.

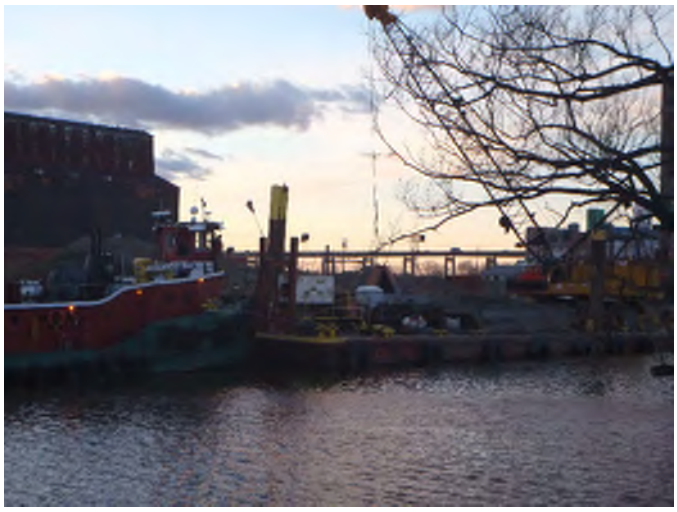
Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 20, 2015
REPORT NO.: 158
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: View of scow pumping operation onboard the Lucille T discharging into the CDF.



Comment: Luedtke dredge no. 12 transferring dredged material into scow moored adjacent to Ganson St.

Field Representative Signature: _____ Date: November 20, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 21, 2015
REPORT NO.: 159
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 34, overcast		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 48, partly cloudy Precip. 0.01 inches Avg. wind speed SSW 7.9 mph; gusts 45 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	07:00	to	16:45
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 2 Operators	SES	0 hours 4 hours 0 hours 12 hours 0 hours
Tim Kibby (Superintendent) 8 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	12 hours 96 hours (Day shift) 12 hours 24 hours (Night Shift)
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	- -
Russell Harris (General Superintendent) 5 Crew	BIDCO	- -
2 Surveyors	GPI	-
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	- 10 hours

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	DMU 44e, DMU 38a	Completion of dredging at DMU 38a. Transfer of scows at the CDF. Transport of dredge to DMU 17.
Offloading at the CDF – Luedtke	CDF	Pump out of scow. Exchange of scows at CDF.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 21, 2015
REPORT NO.: 159
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Ryba (EPA dredging)	Buffalo River	No activity
Offloading at the CDF – Ryba (EPA)	CDF	No activity
Debris removal	N/A	No activity
Capping	N/A	No activity
Sheetpile installation - BIDCO	DMUs 9/10	No activity
Survey	DMUs 9/10	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMUs 44e, 38a	Continuous turbidity monitoring via monitoring buoys

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:45	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was "Overhead Powerline Safety".
07:45	Premier Towing	AQEA observed Luedtke dredge no. 12 moving upstream to DMU 17, assisted by the Krista S.
08:15	Premier Towing	AQEA daily report generation.
08:30	Premier Towing	AQEA met with SES and Luedtke concerning the work plan for the day. Luedtke moving loaded scow to CDF and exchanging for the unloaded scows. Unloaded scow to be pushed upriver and secured with dredge at DMU 17.
10:10	DMU 17	AQEA observed Luedtke dredge no. 12 staged at DMU 17 and turbidity monitoring buoys in place upstream and downstream.
10:20	Premier Towing	SES informs AQEA that Luedtke does not intend to work 11/22 due to forecasted inclement weather for the area.
13:45-14:20	USACE CDF	AQEA confirmed that the scows had been switched at the CDF. AQEA observed pumping operation from the loaded scow (#60) and discharge into the CDF.
14:25	Premier Towing	AQEA met with SES to discuss progress of scow staging and continued work plan for the day.
15:45	Buffalo River	AQEA and SES take boat tour to observe dredge no. 12 staged at DMU 17 and progress of scow transport.
16:30	Buffalo River	AQEA met with SES and Luedtke concerning progress of transporting scow to DMU 17. Luedtke informed AQEA that due to railroad bridge mechanical issue, scow was unable to be staged at DMU 17. Bridge operation staff was unable to provide a timeline for eventual repairs to the bridge. The scow was staged downstream of the bridge and secured for the weekend. Transport to DMU 17 will be attempted again on 11/23.
16:45	Premier Towing	AQEA departed from site.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 21, 2015
REPORT NO.: 159
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
-	-	-

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	-	Tons	Truck loads	0 Tons
Armor Stone	-	Tons	Truck loads	0 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	-	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

PHOTOGRAPHS

Comment: Dredge no. 12 moving upstream to DMU 17.

Comment: Luedtke “Lucille T” pumping from loaded scow at USACE CDF.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 21, 2015
REPORT NO.: 159
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Luedtke scow waiting for railroad bridge to open near DMU 17.

Comment: Luedtke dredge no. 12 staged at DMU 17.

Field Representative Signature: _____ Date: November 21, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 23, 2015
REPORT NO.: 160
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 23, overcast		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 37, overcast Precip. 0.00 inches Avg. wind speed SW 7.9 mph; gusts 22 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	07:00	to	17:00
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 2 Operators	SES	11 hours 0 hours 6 hours 10 hours 16 hours
Tim Kibby (Superintendent) 8 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	12 hours 96 hours (Day shift) 12 hours 24 hours (Night Shift)
Surveyor	Thew	10 hours
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 44 hours
2 Surveyors	GPI	6 hours
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	12 hours 10 hours

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	DMU 17 & 18	Commencement of dredging at DMU 17 and 18.
Offloading at the CDF – Luedtke	CDF	Pump out of scow.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 23, 2015
REPORT NO.: 160
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Ryba (EPA dredging)	Buffalo River	Dredging in Ship Channel near ADM.
Offloading at the CDF – Ryba (EPA)	CDF	Ongoing
Debris removal	N/A	No activity
Capping	DMU 44e	SES preparing the rowing club property for backfill operations.
Sheetpile installation - BIDCO	DMUs 9/10	Continued sheetpile wall installation. 14 sheetpiles placed today in upstream direction along marine mattress.
Survey	DMUs 44e & 38a	Thew completed post-dredge hydrographic survey of DMUs 44e and 38a.
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMU 17 & 18	Continuous turbidity monitoring via monitoring buoys

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:45	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Proper Lifting Techniques”.
07:00	BIDCO	AQEA attends health and safety meeting for sheeting operations. The safety topic was “slippery decks/conditions”.
07:30	Premier Towing	AQEA daily report generation.
08:25	Premier Towing	AQEA observed disposal of protective poly material removed from area adjacent to DMU 44e.
08:35	Buffalo Color	AQEA observed ongoing sheetpile installation by BIDCO in upstream direction along submerged edge of marine mattress. GPI Surveying was onsite to assist in the installation of falsework for continued sheetpile installation in the upstream direction.
08:40	Buffalo Color	AQEA observed BIDCO barge return to BIDCO yard for remaining sheetpiles.
09:00	DMU 17	AQEA observed Luedtke dredge no. 12 staged at DMU 17 and awaiting the arrival of a scow.
10:45	DMU 44e	AQEA observed Thew performing post-dredging survey at DMU 44e.
10:50	DMU 44e	AQEA observed SES grading area adjacent to DMU 44e in preparation for material stockpiling and staging of equipment for sand and stone cover operations.
11:15	Premier Towing	AQEA updated Honeywell on project progress via telephone conversation.
11:20	Buffalo Color	AQEA observed BIDCO installing falsework in the upstream direction along the submerged marine mattress. Falsework to extend to most upstream corner of sheetpiling.
11:25	DMU 17	AQEA observed Luedtke dredge no. 12 dredging in DMU 17.
11:45	BIDCO Yard	AQEA observed BIDCO loading steel sheets onto barge for transport to DMUs 9/10 for installation

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 23, 2015
REPORT NO.: 160
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
12:30	Ship Canal	AQEA observed Ryba dredging in Ship Canal near ADM building and placing dredged material in an adjacent scow. Dredging proceeding Northward.
14:20	Buffalo Color	AQEA observed ongoing sheetpiling installation by BIDCO.
15:15	Buffalo Color	AQEA observes the BIDCO crew leaving the jobsite heading back to their dock.
15:30	Premier Towing	AQEA directs SES to implement erosion control measures at upland area adjacent to DMU 44e.
16:00	Premier Towing	AQEA reviewed photos and plans as secondary check on location of the downstream corner/return wall.
16:30	Buffalo River	Luedtke informs AQEA that an undetermined minor hydraulic or mechanical issue is slowing dredging progress. Luedtke to attempt to determine the source of the problem and repair or replace relevant equipment, if necessary.
17:00	Premier Towing	AQEA departs from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
09:21	Water Quality – DMU 38a	AQEA responds to the DEC email sent from Chad Staniszewsky on November 20th at 4:47 PM discussing BMP related concerns while dredging in DMU 44e

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	-	Tons	Truck loads	0 Tons
Armor Stone	-	Tons	Truck loads	0 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	-	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 23, 2015
REPORT NO.: 160
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: View of progress of sheetpile installation.

Comment: Additional steel sheets being transported upriver from the BIDCO yard to DMUs 9/10.

Comment: Luedtke dredge no. 12 dredging at DMU 17.

Comment: Thew Surveying performing hydrographic survey at DMU 44e.

Field Representative Signature: _____ Date: November 23, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 24, 2015
REPORT NO.: 161
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 30, overcast		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 42, overcast Precip. 0.01 inches Avg. wind speed SW 7.0 mph; gusts 18 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	07:00	to	16:15
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 2 Operators	SES	10 hours 0 hours 8 hours 11 hours 16 hours
Tim Kibby (Superintendent) 8 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	12 hours 96 hours (Day shift) 12 hours 24 hours (Night Shift)
Surveyor	Thew	-
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 40 hours
2 Surveyors	GPI	-
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	11 hours 9.5 hours

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	DMUs 17 & 18	Preliminary completion of dredging at DMU 17 and commencement of dredging at DMU 18.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 24, 2015
REPORT NO.: 161
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Offloading at the CDF – Luedtke	CDF	Pumping out of scow.
Dredging – Ryba (EPA dredging)	Buffalo River	Dredging in Ship Channel near General Mills.
Offloading at the CDF – Ryba (EPA)	CDF	Pumping out of scow.
Debris removal	N/A	No activity
Capping	N/A	No activity
Sheetpile installation - BIDCO	DMUs 9/10	Continued sheetpile wall installation.
Survey	DMUs 9/10	SES and AQEA record top of sheets before being driven to grade with a GPS rover.
Miscellaneous Material Delivery	DMU 44e	84.09 tons of crusher stone was delivered to the upland area adjacent to DMU 44e for the creation of an access pad for staging cover material to be placed into DMU 44e.
Environmental Monitoring	DMU 17 & 18	Continuous turbidity monitoring via monitoring buoys

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:45	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Site Awareness”.
07:00	BIDCO	AQEA attends health and safety meeting for sheeting operations. The safety topic was “ice and cutting safety”.
08:20	Buffalo Color	AQEA observed ongoing sheetpile knee wall installation by BIDCO and inclinometer readings by OSC. Sheetpile construction proceeded in the upstream direction along the submerged marine mattress.
08:30	Premier Towing	Luedtke informs AQEA of hydraulic or mechanical problem encountered with dredge no. 12.
09:15	DMU 44e	AQEA observed SES personnel grading and preparing upland area adjacent to DMU 44e for staging of cover materials during installation of DMU 44e cover.
08:35	Buffalo Color	AQEA observed ongoing sheetpile installation by BIDCO in upstream direction along submerged edge of marine mattress. GPI Surveying was onsite to assist in the installation of falsework for continued sheetpile installation in the upstream direction.
10:30	Premier Towing	AQEA observed Luedtke staging dredge no. 12 near the Premier Towing dock area for troubleshooting and possible repair work.
11:00	USACE	AQEA performed inspection of the CDF area and discharge including observation of ongoing seawall improvements. AQEA observed Ryba pumping dredged material out of scow and discharging into CDF.
13:15 – 14:10	DMUs 9/10	AQEA and SES perform QA/QC coordinate check by collecting as built locations using a GPS rover from the sections of sheetpile wall that have been installed.
14:45	Premier Towing	AQEA daily report generation.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 24, 2015
REPORT NO.: 161
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
16:00	DMU 44e	AQEA observed SES sectional barge with 450 Excavator staged at DMU 44e in preparation for cover installation to begin 11/25.
16:10	Premier Towing	AQEA met with SES to discuss upcoming work schedule and update on Luedtke dredge no. 12 troubleshooting process. Luedtke transported dredge to South Side Marine for additional troubleshooting and repairs.
16:15	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
08:30	Dredge no. 12, Buffalo River	Luedtke informed SES and AQEA that they encountered a problem with dredge no. 12. Problem is presumed to be related to a failed brake assembly on the hoist drum. Dredge is currently out of operation while troubleshooting process is ongoing. No. 12 dredge will be staged at South End Marina for repair.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	-	Tons	Truck loads	0 Tons
Armor Stone	-	Tons	Truck loads	0 Tons
Staging Area Stone	84.09	Tons	Truck Loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	-	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF
Staging Area Stone	84.09	Tons	Truck Loads	84.09

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 24, 2015
REPORT NO.: 161
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: View of progress of sheetpile installation.

Comment: Luedtke dredge no. 12 staged at Premier Towing for troubleshooting.

Comment: SES grading upland area adjacent to DMU 44e in preparation for cover material staging.

Comment: SES 450 excavator staged on sectional barge at DMU in preparation for installation of cover material.

Field Representative Signature: _____ Date: November 24, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 25, 2015
REPORT NO.: 162
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 29		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 53, Precip. 0.00 inches Avg. wind speed S 7.2 mph; gusts 17 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:00
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 2 Operators	SES	8 hours 0 hours 8 hours 9 hours 16 hours
Tim Kibby (Superintendent) 5 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	8 hours 40 hours (Day shift) - -
Surveyor	Thew	-
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 44 hours
2 Surveyors	GPI	-
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	9 hours -
Damianos Skaros	DEC	1 hour

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 25, 2015
REPORT NO.: 162
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	N/A	No dredging took place due to dredge no. 12 out of service for repairs.
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	N/A	EPA dredging complete.
Offloading at the CDF – Ryba (EPA)	N/A	No activity
Debris removal	N/A	No activity
Capping	DMU 44e	SES received 525.56 tons of sand at the Rowing Club staging area adjacent to DMU 44e.
Sheetpile installation - BIDCO	DMUs 9/10	Continued sheetpile wall installation.
Survey	N/A	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	N/A	No turbidity monitoring due to cessation of dredging for repairs to dredge no. 12. Replacement parts have been ordered and are expected to arrive 12/2/15.

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
06:50	BIDCO	AQEA attends health and safety meeting for sheeting operations. The safety topic was “Over-head hazards”.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Over-head hazards”.
08:30 – 09:00	Premier Towing	AQEA hosts the weekly Buffalo Color sheetpile construction team meeting.
09:00 – 10:05	Premier Towing	AQEA joins the weekly Buffalo River project coordination team conference call.
10:45	Buffalo Color	AQEA observed BIDCO cutting sheets in two places at the same time near the upstream corner.
12:50	Premier Towing	SES informs AQEA that Luedtke anticipated the required parts for the no. 12 crane to be delivered on 12/02/15.
13:45	Buffalo Color	Damianos Skaros of the DEC performs a site inspection at the sheetpile operations. No issues were reported.
15:00	Buffalo Color	AQEA observed BIDCO preparing/securing the equipment for the Holiday break.
16:00	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
12:50	Dredge no. 12 repairs	Luedtke informs SES and AQEA that parts for dredge no. 12 repair are estimated to arrive on 12/2/15 and a mechanic will be on-site 12/3/15 for installation and repairs.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 25, 2015
REPORT NO.: 162
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	525.56	Tons	Truck loads	525.56 Tons
Armor Stone	-	Tons	Truck loads	0 Tons
Staging Area Stone	0	Tons	Truck loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	0	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

PHOTOGRAPHS

Comment: View of progress of sheetpile installation at DMUs 9/10 at Buffalo Color.

Comment: BIDCO cutting and driving sheets at DMUs 9/10.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 25, 2015
REPORT NO.: 162
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: SES stockpiled cover material at DMU 44e.

Comment: SES 450 excavator staged on sectional barge at DMU in preparation for installation of cover material.

Field Representative Signature: _____ Date: November 25, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 30, 2015
REPORT NO.: 163
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 29		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 45 Precip. 0.00 inches Avg. wind speed NE 7.2 mph; gusts 15 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 2 Operators	SES	10 hours 0 hours 8 hours 10 hours 16 hours
Tim Kibby (Superintendent) 5 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	- - - -
Surveyor	Thew	-
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 44 hours
2 Surveyors	GPI	-
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours -

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	N/A	No dredging took place due to dredge no. 12 out of service for repairs.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 30, 2015
REPORT NO.: 163
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	Buffalo River	No activity
Offloading at the CDF – Ryba (EPA)	CDF	No activity
Debris removal	N/A	No activity
Capping	DMU 44e	No activity
Sheetpile installation - BIDCO	DMUs 9/10	Continued sheetpile wall installation. A total of 19 pairs of sheetpiles were driven to depth along the submerged marine mattress parallel to the shoreline at DMUs 9/10. Obstructions were encountered at sheetpiles number 22, 23 and 24.
Survey	N/A	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	N/A	No turbidity monitoring due to cessation of dredging for repairs to dredge no. 12. Replacement parts have been ordered and are expected to arrive 12/2/15

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
06:40	BIDCO	AQEA attends health and safety meeting for sheeting operations. The safety topic was “hot work”.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “General Safety”.
07:30	Premier Towing	SES gathering and wrapping up silt curtain out of the Buffalo River at Premier Towing.
07:50 – 08:30	Buffalo Color	AQEA observed inclinometer readings by OSC. BIDCO is cutting sheets in two (2) places at a time in preparation to be driven to grade.
09:00	Premier Towing	SES relocates the Honeywell pontoon boat from the BIDCO slip to Premier Towing. Once on its trailer the top was secured in place utilizing the front end loader.
11:00	Buffalo Color	AQEA observed Sheets no. 22, 23 and 24 driven to refusal above the design template by approximately 4’. BIDCO to pull up the sheets, cut off at adjusted elevation and re-drive to refusal so that the top elevations match the design.
13:00	Premier Towing	AQEA observed SES performing ongoing site maintenance.
14:00	South End Marina	AQEA observed Luedtke performing maintenance on dredge no. 12.
15:00	Buffalo Color	AQEA observed the ongoing sheetpile installation operation. BIDCO cut 22 pair of sheets today with 19 being driven to depth.
15:45	Premier Towing	AQEA daily report generation.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 30, 2015
REPORT NO.: 163
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
--	-	N/A

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	OSC submits sheetpile steel mill certifications to AQEA

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	525.56 Tons
Armor Stone	-	Tons	Truck loads	0 Tons
Staging Area Stone	0	Tons	Truck loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	0	LF	Contractor estimate	0 LF
Armor Stone	-	LF	Contractor estimate	0 LF
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: November 30, 2015
REPORT NO.: 163
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: BIDCO installing sheets at DMUs 9/10.

Comment: BIDCO cutting sheets in preparation to be driven to grade.

Comment: Preparation of Honeywell's pontoon boat for winter storage.

Comment: OSC taking daily inclinometer readings.

Field Representative Signature: _____ Date: November 30, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 1, 2015
REPORT NO.: 164
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 39		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 53 Precip. 0.10 inches Avg. wind speed SW 7.7 mph; gusts 25 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 3 Operators	SES	10 hours 0 hours 8 hours 11 hours 25.5 hours
Tim Kibby (Superintendent) 5 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	- - - -
Surveyor	Thew	-
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 40 hours
2 Surveyors	GPI	-
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours -

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	N/A	No dredging took place due to dredge no. 12 out of service for repairs.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 1, 2015
REPORT NO.: 164
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	Buffalo River	No activity
Offloading at the CDF – Ryba (EPA)	CDF	No activity
Debris removal	N/A	No activity
Capping	DMU 44e	SES continued to received and stockpile sand at the rowing club property adjacent to DMU 44e and commenced installation of the sand layer at DMU 44e.
Sheetpile installation - BIDCO	DMUs 9/10	Continued sheetpile wall installation. A total of 12 pairs of sheetpiles were driven to depth along the submerged marine mattress parallel to the shoreline at DMUs 9/10.
Survey	N/A	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	N/A	No turbidity monitoring due to cessation of dredging for repairs to dredge no. 12. Replacement parts have been ordered and are expected to arrive 12/2/15

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
06:40	BIDCO	AQEA attends health and safety meeting for sheeting operations. The safety topic was “general safety”.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “eye protection”.
08:30	Buffalo Color	AQEA observed BIDCO repairing a small hydraulic line on the hammer utilizing absorbent pads if needed. Secondary crew is continuing to cut off sheets to be driven to final grade. OSC is taking daily inclinometer readings.
09:00	DMU 44e	AQEA observed SES starting backfill/cover operations starting at the top of slope closest to Ohio Street. SES is utilizing a front end loader to shuttle/stockpile cover material close to the long stick excavator for placement. Minor sheen is observed at the head of the slip with absorbent boom in place at the mouth of the slip.
09:30	Buffalo Color	AQEA observed ongoing cutting of sheetpile. A new 50’ section of hydraulic hose for the hammer is being delivered.
10:15	DMU 44e	AQEA observed ongoing backfill operations.
11:00	Premier Towing	AQEA receives update from Luedtke that the parts to repair the No. 12 dredge are still scheduled to arrive on Wednesday, 12/02/15 with dredging anticipated to commence on Friday.
12:30	DMU 44e	AQEA observed continued backfill operations. Approximately half of the imported/staged material has been placed.
12:50	DMU 44e	AQEA observed tandem trucks dumping imported backfill material on the rowing club property.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 1, 2015
REPORT NO.: 164
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
13:00	Buffalo Color	AQEA observed ongoing sheetpile operations. Two (2) sheets hit refusal before the design elevation and will need to be cut off and re-driven to refusal.
15:00	Buffalo Color	AQEA observed BIDCO wrapping up sheetpile operations for the day. OSC is taking the last inclinometer readings.
16:30	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
-	-	N/A

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	285.17	Tons	Truck loads	810.73 Tons
Armor Stone	-	Tons	Truck loads	0 Tons
Staging Area Stone	0	Tons	Truck loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	650	Tons	Contractor estimate	650 Tons
Armor Stone	-	LF	Contractor estimate	0 LF
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

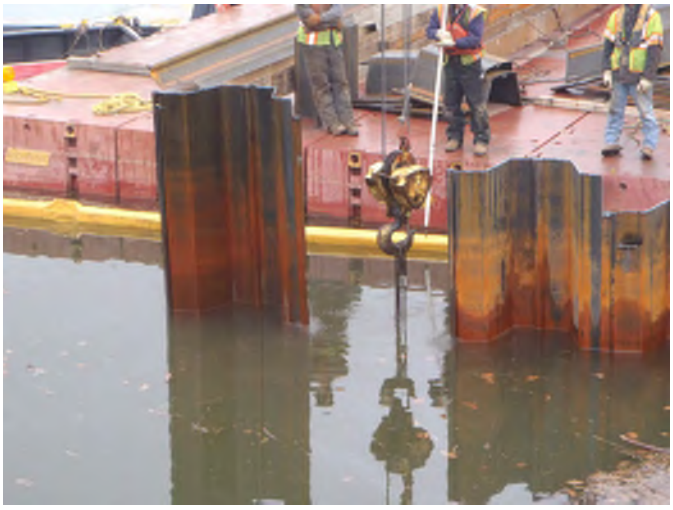
Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 1, 2015
REPORT NO.: 164
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Remaining sheets to be driven to bedrock at DMUs 9/10



Comment: BIDCO driving sheets to bedrock at DMUs 9/10

Comment: Backfill operations at DMU 44e

Comment: Import of backfill material at DMU 44e

Field Representative Signature: _____ Date: December 1, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 2, 2015
REPORT NO.: 165
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low 34		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High 49 Precip. 0.02 inches Avg. wind speed SW 6.6 mph; gusts 21 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) 3 Operators	SES	10 hours 0 hours 8 hours 8 hours 24 hours
Tim Kibby (Superintendent) 5 Crew J. Tondu (Night Foreman) 2 Crew	Luedtke	- - - -
Surveyor	Thew	-
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	2 hours 8 hours
Russell Harris (General Superintendent) 5 Crew	BIDCO	8 hours 40 hours
2 Surveyors	GPI	3.5 hours
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours -

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
-	-	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	N/A	No activity
Offloading at the CDF – Luedtke	CDF	No activity

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 2, 2015
REPORT NO.: 165
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Ryba (EPA dredging)	Buffalo River	No activity
Offloading at the CDF – Ryba (EPA)	CDF	No activity
Debris removal	N/A	No activity
Capping	DMU 44e	SES continued to receive and stockpile cover material at the rowing club property adjacent to DMU 44e and continued installation of the cover layer at DMU 44e, approximately 400 tons of sand was placed.
Sheetpile installation - BIDCO	DMUs 9/10	Completed sheetpile wall installation. A total of 6 pairs of sheetpiles were driven to depth along the submerged marine mattress at DMUs 9/10. All sheetpiles were driven to depth and all project materials, barges, boats, and boom were removed from the area and demobilized to the BIDCO yard.
Survey	N/A	GPI surveying was on site to assist BIDCO to confirm final elevations.
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	N/A	No activity

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:20	Premier Towing	AQEA on site.
06:40	BIDCO	AQEA attends health and safety meeting for sheeting operations. The safety topic was “Slips, trips and falls”. Paying attention during demobilization activities was also discussed.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Site Awareness”.
08:00	Premier Towing	Update call with Honeywell
08:30 – 08:50	Premier Towing	AQEA hosts the weekly Buffalo Color sheetpile construction team meeting.
09:20	DMU 44e	AQEA observed a tandem dump truck unloading cover material with ongoing cover placement operations.
09:30 – 10:00	Premier Towing	AQEA joined the Buffalo River project coordination team conference call.
10:00	Premier Towing	AQEA observed SES staging AECOM water quality buoys for loading/transport.
10:05	Buffalo Color	AQEA observed GPI and BIDCO shooting in the final elevations of the installed sheetpile. Current shot revealed a top elevation of 565.8
11:00	Premier Towing	AQEA observed AECOM removing four (4) water quality buoys and miscellaneous sampling equipment that was previously staged for EQM contract DMU 8b dredging.
13:00	OSC shop	AQEA meets with OSC to arrange winter storage of the Honeywell pontoon boat.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 2, 2015
REPORT NO.: 165
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
14:00	DMU 44e	AQEA observed SES performing cover elevation/thickness varication with a GPS rover from the Blue Wave support boat.
15:00	Premier Towing	AQEA receives update from Luedtke that crane parts arrived and are only for a re-build and not replacement. An update will be provided once the mechanic accesses the situation.
16:30	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
-	-	N/A

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Qty.Delivered This Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	536.75	Tons	Truck loads	1347.48 Tons
Armor Stone	-	Tons	Truck loads	0 Tons
Staging Area Stone	0	Tons	Truck loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Qty.Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	400	Tons	Contractor estimate	1050 Tons
Armor Stone	-	LF	Contractor estimate	0 LF
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

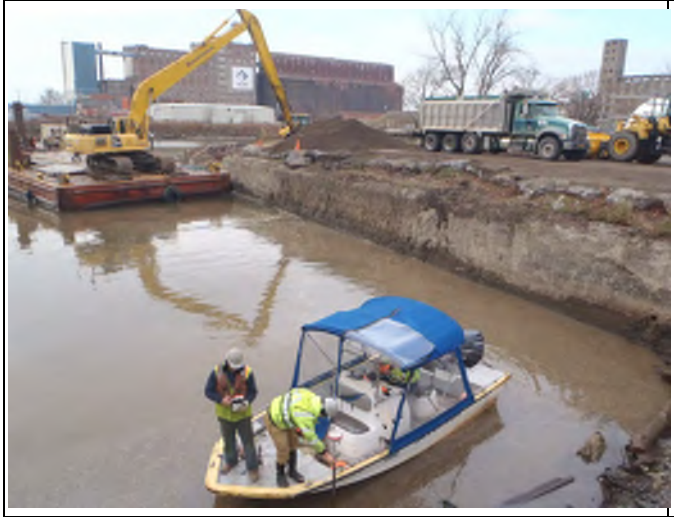
CONTRACT NO.: 140287-04.01
REPORT DATE: December 2, 2015
REPORT NO.: 165
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: BIDCO demobilizing from DMUs 9/10.

Comment: BIDCO and GPI surveyors performing elevation as-built surveys of completed sheetpile.



Comment: SES performing cover placement thickness/elevations.

Comment: SES placing cover material in DMU 44e

Field Representative Signature: _____ Date: December 2, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 3, 2015
REPORT NO.: 166
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low: 33		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High: 44 Precip.: 0.01 inches Avg. wind speed: W 11.4 mph, gusts 28 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (3) Operators	SES	10 hours 0 hours 8 hours 11 hours 24 hours
Tim Kibby (Superintendent) (5) Crew J. Tondu (Night Foreman) (2) Crew	Luedtke	-- -- -- --
Surveyor	Thew	10 hours
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	-- --
Russell Harris (General Superintendent) (5) Crew	BIDCO	-- --
Two Surveyors	GPI	--
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours --

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
--	--	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	N/A	No activity
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	Buffalo River	No activity
Offloading at the CDF – Ryba (EPA)	CDF	No activity

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 3, 2015
REPORT NO.: 166
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Debris removal	N/A	No activity
Capping	DMU 44e	SES place approximately 190 tons of sand at DMU 44e, completing installation of the cover layer. SES also began receiving and stockpiling armor stone at the rowing club property adjacent to DMU 44e from a stockpile at Premier Towing.
Sheetpile installation - BIDCO	DMUs 9/10	Sheetpile installation completed.
Survey	DMUs 9/10 and 44e	Thew performed pre-dredging and post-sheetpile installation survey at DMUs 9/10.
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	N/A	No turbidity monitoring due to cessation of dredging for repairs to dredge no. 12.

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Common Sense”.
07:21	Premier Towing	Two tandem dump trucks were on site to transfer staged riprap to the rowing club adjacent to DMU 44e.
08:25	Premier Towing	AQEA has an update call with Honeywell.
08:30	Buffalo Color	AQEA observed the water quality buoys in place up and downstream of DMUs 9/10.
09:00	DMU 44e	AQEA observed SES stockpiling remaining cover material while the long stick excavator places cover in surveyed low spots.
09:15	Premier Towing	AQEA reviews the draft SES progress payment to be submitted to Honeywell.
10:00	Premier Towing	AQEA observed SES utilizing a front end loader to load the two staged tandem dump trucks.
10:30	Buffalo Color	AQEA observed Thew performing a pre-dredge and post-sheetpile installation multi-beam survey.
11:00	DMU 44e	AQEA observed SES performing elevations of placed cover material utilizing GPS.
11:10	South End Marina	Luedtke provides an update that the brake parts received were correct but the existing housing/assembly cannot be reused. Luedtke is tracking down additional parts and will provide an update.
11:54	CDF	AQEA and Jim Boyle of USACE inspect the CDF to determine a location for Luedtke to dispose of collected debris.
13:30	Buffalo River	SES relocated the silt curtain from Premier Towing to be stages near DMUs 9/10.
14:15	BIDCO	AQEA observed that the crane and most of the miscellaneous equipment from the sheetpile operation have been removed from the flexi-floats.
15:00	Premier Towing	SES states that a total of eighteen tandem dump truck loads of riprap were transferred from Premier Towing to the rowing club adjacent to DMU 44e.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 3, 2015
REPORT NO.: 166
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
16:15	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
11:54	Debris – CDF	Jim Boyle of the USACE stated that Luedtke's dredging woody debris can be placed in a pit to be excavated by SES just South of a recently covered pit utilized by Ryba. The USACE, SES and Anchor will agree on a quantity and then SES can backfill the pit when complete.
14:00	No. 12 repairs – South End Marina	SES provides an update that Luedtke has secured the required brake parts that will be coming used from an existing crane currently located in Milwaukee. Luedtke will have parts chartered to arrive this evening.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Quantity Delivered this Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	1347.48 Tons
Armor Stone	360*	Tons	Truck loads	360 Tons
Staging Area Stone	0	Tons	Truck loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Quantity Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	190	Tons	Contractor estimate	1240 Tons
Armor Stone	-	LF	Contractor estimate	0 LF
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 3, 2015
REPORT NO.: 166
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Thew performing a multi-beam survey in DMUs 9/10.

Comment: Existing conditions at the CDF to be utilized for Luedtke's wood debris.

Comment: SES performing elevation checks in DMU 44e.

Comment: SES loading tandem truck with riprap at Premier Towing.

Field Representative Signature: _____ Date: December 3, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 4, 2015
REPORT NO.: 167
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low: 38		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High: 44 Precip.: 0.00 inches Avg. wind speed: W 11.7 mph, gusts 37 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (3) Operators	SES	-- -- 10 hours 11 hours 30 hours
Tim Kibby (Superintendent) (8) Crew J. Tondu (Night Foreman) (2) Crew	Luedtke	12 hours 96 hours -- --
Surveyor	Thew	--
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	-- --
Russell Harris (General Superintendent) (5) Crew	BIDCO	-- --
(2) Surveyors	GPI	--
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours --

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
--	--	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 4, 2015
REPORT NO.: 167
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	Buffalo River	Completed repairs to the crane and towed crane upriver for staging for the night near the project dock located at the Premier Towing property. Preparing to commence dredging at DMUs 9/10 on December 5, 2015. SES installed turbidity curtain and oil boom at DMUs 9/10 in preparation for commencement of dredging.
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	Buffalo River	Complete
Offloading at the CDF – Ryba (EPA)	CDF	Complete
Debris removal	N/A	No activity
Capping	DMU 44e	SES commenced placement of armor stone at DMU 44e. Approximately 180 tons of armor stone was placed.
Sheetpile installation - BIDCO	DMUs 9/10	Sheetpile installation completed.
Survey	N/A	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	N/A	No activity

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Lock out/tag out”.
07:20	Premier Towing	AQEA verifies with BIDCO that no upstream work is scheduled upstream of DMUs 9/10 that would require SES to move turbidity curtain during dredging.
07:45	Premier Towing	AQEA reviews the preliminary data verifying the cover thickness at DMU 44e.
08:00	DMU 44e	SES removing the push boat cab to allow access under the railroad bridges without the need to be lifted.
09:00	South End Marina	AQEA observed ongoing repairs of the no. 12 dredge.
09:20	Premier Towing	AQEA approves the cover thickness at DMU 44e.
10:30	DMU 44e	AQEA observed SES commencing placement of stages riprap armor. SES verified GPS template made sense with existing surface conditions.
11:00	CDF	SES loads cleaned 55 drums from geotechnical evaluation, which are to be taken to the SES yard.
12:45	DMU 44e	AQEA observed SES continuing placement of riprap while front end loader stockpiles material.
13:00	South End Marina	Luedtke replacement part is installed on the no. 12 dredge, and fluids are being replaced.
13:30	Premier Towing	Luedtke informs AQEA that the no. 12 barge will be pushed up river, staged across from Premier Towing tonight, and then moved to DMUs 9/10 in the morning.
14:30	DMUs 9/10	SES staging silt curtain and absorbent boom at DMUs 9/10.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 4, 2015
REPORT NO.: 167
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
16:15	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
09:20	DMU 44e cover thickness	AQEA approves the cover thickness at DMU 44e.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	SES submits the pre-dredge multi-beam survey to AQEA for review.

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Quantity Delivered this Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	1347.48 Tons
Armor Stone	0	Tons	Truck loads	360 Tons
Staging Area Stone	0	Tons	Truck loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Quantity Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	0	Tons	Contractor estimate	1240 Tons
Armor Stone	180	Tons	Contractor estimate	180 Tons
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 4, 2015
REPORT NO.: 167
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Ongoing repairs of the no. 12 dredge at South End Marina.

Comment: Placing riprap armor in DMU 44e.

Comment: SES utilizing a front end loader to stockpile riprap at DMU 44e.

Comment: SES using GPS on long stick excavator to verify riprap placement.

Field Representative Signature: _____ Date: December 4, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 5, 2015
REPORT NO.: 168
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low: 31		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High: 45 Precip.: 0.00 inches Avg. wind speed: SW 4.9 mph, gusts 16 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (3) Operators	SES	0 hours 0 hours 0 hours 12 hours 0 hours
Tim Kibby (Superintendent) (8) Crew J. Tondu (Night Foreman) (2) Crew	Luedtke	12 hours 96 hours -- --
Surveyor	Thew	--
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	-- --
Russell Harris (General Superintendent) (5) Crew	BIDCO	-- --
(2) Surveyors	GPI	--
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours --

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
--	--	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Luedtke	Buffalo River	Luedtke commenced dredging at DMUs 9/10 and removed approximately 680 in place yards.
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	Buffalo River	Complete

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 5, 2015
REPORT NO.: 168
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Offloading at the CDF – Ryba (EPA)	CDF	Complete
Debris removal	CDF	No activity
Capping	DMU 44e	No activity
Sheetpile installation - BIDCO	DMUs 9/10	Complete
Survey	N/A	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMUs 9/10	Turbidity monitoring buoys were reinstalled, and they provided continuous turbidity monitoring.

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
06:45	Premier Towing	SES inspects trailers and job site after an apparent overnight break-in.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “General Safety”.
07:30	Premier Towing	Luedtke starts to relocate the no. 12 dredge upriver to DMUs 9/10.
07:45	Buffalo River	AQEA observed the no. 12 dredge in-between railroad bridges waiting for upstream bridge to lift.
08:00	Premier Towing	City of Buffalo Police arrived on site after SES reported overnight theft. A laptop computer and two hot spots were stolen, and a police report was completed. SES is to replace all locks on site with different keys.
08:20	Premier Towing	AQEA observed Luedtke loading an extra absorbent boom, which is to be transferred to the no. 12 dredge, onto a workboat.
08:30	Premier Towing	AQEA has a prepatory meeting with Luedtke to discuss DMUs 9/10 dredging.
08:45	Buffalo Color	AQEA observed OSC taking inclinometer readings.
09:00	Premier Towing	Luedtke is relocating an empty scow from Premier Towing to DMUs 9/10.
09:30	DMUs 9/10	AQEA has a prepatory meeting with the no. 12 crew and crane operator to discuss the dredging procedures at DMUs 9/10.
10:10	DMUs 9/10	Tim Kibby of Luedtke is resetting clam vision on the no. 12 dredge.
10:15	DMUs 9/10	An empty scow arrives at the no. 12 dredge with a crane operator verifying clam vision template with dredge bucket in water.
10:30	Buffalo River	Luedtke changing batteries on the tide gauge.
11:15	DMUs 9/10	Dredging commences in DMUs 9/10 at upstream corner. Riprap and concrete debris is encountered.
11:30	Buffalo River	Luedtke tug is staging an empty scow in the turning basin.
11:40	DMUs 9/10	Dredge no. 12 is repositioning downriver.
12:30	DMUs 9/10	Luedtke is placing an additional absorbent boom at each end of the no. 12 dredge to contain sheen.
13:10	Buffalo Color	AQEA observed two Heritage Ltd. owners observing the dredging.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 5, 2015
REPORT NO.: 168
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
14:00	DMU 44e	AQEA observed the staged equipment. The barge with the long stick excavator was staged along the bulkhead across from DMU 44 with material hopper now on deck.
14:30	DMUs 9/10	AQEA observed ongoing dredging.
16:00	DMUs 9/10	A luedtke tug swaps the full scow for an empty scow. The full scow will be staged in the turning basin to be transported to the CDF in the morning.
16:30	Premier Towing	AQEA is off site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
--	--	N/A

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Quantity Delivered this Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	1347.48 Tons
Armor Stone	0	Tons	Truck loads	360 Tons
Staging Area Stone	0	Tons	Truck loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Quantity Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	0	Tons	Contractor estimate	1240 Tons
Armor Stone	0	Tons	Contractor estimate	180 Tons
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

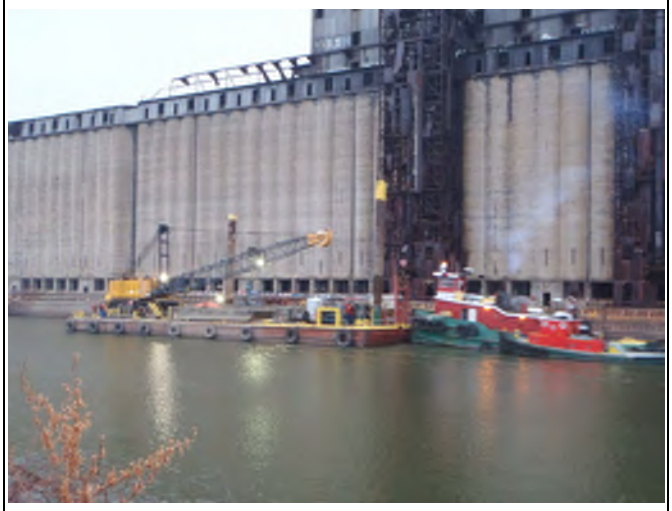
ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 5, 2015
REPORT NO.: 168
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS



Comment: Luedtke relocating the no. 12 dredge from Premier Towing to DMUs 9/10.

Comment: Scow no. 24 with debris build up before dredging started in DMUs 9/10.

Comment: Dredging in DMUs 9/10.

Comment: Overview of dredging in DMUs 9/10 with silt curtain and water quality buoys.

Field Representative Signature: _____ Date: December 5, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 6, 2015
REPORT NO.: 169
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low: 28		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High: 45 Precip.: 0.00 inches Avg. wind speed: SW 5.9 mph, gusts 15 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (3) Operators	SES	0 hours 0 hours 0 hours 12 hours 0 hours
Tim Kibby (Superintendent) (8) Crew J. Tondu (Night Foreman) (2) Crew	Luedtke	12 hours 96 hours -- --
Surveyor	Thew	--
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	-- 8 hours
Russell Harris (General Superintendent) (5) Crew	BIDCO	-- --
(2) Surveyors	GPI	--
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours --

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
--	--	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Luedtke	Buffalo River	Luedtke continued dredging at DMUs 9/10 and removed approximately 345 in-place yards.
Offloading at the CDF – Luedtke	CDF	No activity
Dredging – Ryba (EPA dredging)	Buffalo River	Complete

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 6, 2015
REPORT NO.: 169
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Offloading at the CDF – Ryba (EPA)	CDF	Complete
Debris removal	CDF	No activity
Capping	DMU 44e	No activity
Sheetpile installation - BIDCO	DMUs 9/10	Sheetpile installation completed
Survey	N/A	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMUs 9/10	Continuous turbidity monitoring via monitoring buoys

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA is on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was "General Safety".
07:10	DMUs 9/10	Luedtke relocating additional absorbent boom at upstream corner of dredge no. 12.
07:20	DMUs 9/10	Luedtke securing the silt curtain with an absorbent boom across the river at the downstream limits of dredging.
07:25	DMUs 9/10	Luedtke resumed dredging in DMUs 9/10.
07:30	DMUs 9/10	AQEA observed OSC taking inclinometer readings.
07:40	DMUs 9/10	Crane operator lowers crane boom onto scow so deckhand can adjust the GPS sending unit and cables.
08:30	DMUs 9/10	Luedtke dredge no. 12 adjusting position downstream.
09:00	DMUs 9/10	Tug Krista transporting full scow to the CDF.
09:50	DMUs 9/10	Luedtke dredge no. 12 adjusting position downstream with scow adjacent to the abandoned railroad bridge.
10:30	CDF	AQEA observed the Lucille T hydraulically offloading full material scow no. 24 at the CDF.
11:00	DMUs 9/10	AQEA observed dredge no. 12 and scow repositioned out of dredge prism to allow for a Luedtke progress single beam survey.
12:45	Buffalo Color	AQEA and Luedtke review draft single beam cross sections of dredging and decide that material remains above design template and an additional clean-up dredging pass will be necessary with the digging bucket.
13:05	DMUs 9/10	Luedtke encountered a very large piece of a concrete block, in the dredging prism at the upstream corner, after attempts to remove block noted to be too large for current equipment and left in place. Luedtke is to not redredge if it is revealed as a high spot during survey.
13:45	DMUs 9/10	AQEA observed ongoing dredging.
14:50	DMUs 9/10	AQEA observed ongoing dredging with some sheen contained with absorbent boom.
15:30	DMUs 9/10	Luedtke continuing dredging in DMUs 9/10.
16:15	Premier Towing	AQEA departed from site.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 6, 2015
REPORT NO.: 169
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
12:45	Dredge progress at DMUs 9/10	Luedtke and AQEA review draft single beam survey data, which reveals 1 to 2 feet of material over the design template. Luedtke will perform additional dredging with a digging bucket.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Quantity Delivered this Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	1347.48 Tons
Armor Stone	0	Tons	Truck loads	360 Tons
Staging Area Stone	0	Tons	Truck loads	84.09 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Quantity Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	0	Tons	Contractor estimate	1240 Tons
Armor Stone	0	Tons	Contractor estimate	180 Tons
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 6, 2015
REPORT NO.: 169
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Luedtke dredging in DMUs 9/10.

Comment: Lucille T hydraulically pumping out scow no. 24 at the CDF.

Comment: Luedtke performing single beam progress survey at DMUs 9/10.

Comment: Luedtke dredging a clean-up pass with the digging bucket at DMUs 9/10.

Field Representative Signature: _____ Date: December 6, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 7, 2015
REPORT NO.: 170
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low: 31		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High: 41 Precip.: 0.00 inches Avg. wind speed: NW 3.4 mph, gusts 12 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Note: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (3) Operators	SES	10 hours 0 hours 0 hours 12 hours 24 hours
Tim Kibby (Superintendent) (8) Crew J. Tondu (Night Foreman) (2) Crew	Luedtke	12 hours 96 hours -- --
Surveyor	Thew	--
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	-- --
Russell Harris (General Superintendent) (5) Crew	BIDCO	-- --
(2) Surveyors	GPI	--
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours --

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
--	--	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 7, 2015
REPORT NO.: 170
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging - Luedtke	Buffalo River	Luedtke removed 150 in-place yards from DMUs 9/10 and completed dredging operations there. Dredge no. 12 was repositioned to DMU 19, and dredging recommenced. Approximately 398 in-place yards were removed from DMU 19.
Offloading at the CDF – Luedtke	CDF	Scow no. 59 pumped out.
Dredging – Ryba (EPA dredging)	Buffalo River	Complete
Offloading at the CDF – Ryba (EPA)	CDF	Complete
Debris removal	CDF	No activity
Capping	DMU 44e	SES completed armor stone installation at DMU 44e and prepared for mobilization of capping barge to DMUs 9/10 for commencement of capping operations.
Sheetpile installation - BIDCO	DMUs 9/10	Complete
Survey	N/A	No activity
Miscellaneous Material Delivery	Rowing Club Property	SES received 125.33 tons of cover material to be utilized behind the sheetpile wall, staged at the Rowing Club property adjacent to DMU 44e. 21.82 tons of light stone were delivered to be placed as armor in identified low spots in DMU 44e.
Environmental Monitoring	DMUs 9/10	Continuous turbidity monitoring via monitoring buoys occurred. Buoys were repositioned to coincide with the repositioning of the Luedtke dredge no. 12.

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Footing and Use of Buddy System.”
07:30	DMUs 9/10	AQEA observed Luedtke performing clean-up dredging currently at the downstream corner of DMUs 9/10.
08:00	Buffalo Color	AQEA receives an update call from Luedtke stating that a post-dredge single beam survey will be completed later this morning with the no. 12 dredge, which is to be move to DMUs 17, 18, and 19 when complete with DMUs 9/10.
08:30	DMUs 9/10	AQEA observed Luedtke opening the downstream silt curtain to allow the Krista tug boat to prepare to transport the full material scow to the CDF.
08:40	DMUs 9/10	AQEA observed clay on the digging bucket teeth during dredging.
09:30	DMUs 9/10	Luedtke finishing second and final passes of dredging in DMUs 9/10.
10:00	DMU 44e	A representative of the Rowing Club was observing armor placement activities.
10:15	Buffalo Color	AQEA observed Luedtke placing armor stone utilizing a long stick excavator.
10:30	DMUs 9/10	AQEA observed the no. 12 dredge being relocated to DMUs 17, 18, and 19.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 7, 2015
REPORT NO.: 170
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
11:00	Buffalo River	SES was relocating the water quality buoys to the proper upstream and downstream locations for dredging in DMUs 17, 18, and 19.
12:00	DMUs 17, 18, and 19	AQEA observed the no. 12 dredge in position for dredging with scow no. 60.
12:10	Buffalo River	Luedtke full scow no. 59 observed being transported past the no. 12 dredge in DMUs 17, 18, and 19 on route to the CDF.
12:30	South End Marina	SES was loading and transporting PC400 excavator and crane mats for return to the SES yard.
13:00	DMUs 17, 18, and 19	AQEA observed ongoing dredging.
14:00	DMU 44e	SES was utilizing GPS to verify the riprap armor thickness. Isolated low spots were identified and marked for the operator to place additional material to achieve design elevations.
14:30	CDF	AQEA observed the Krista tug relocating empty scow no. 24 to be staged at South End Marina. Full scow no. 59, currently staged at South End Marina, will be transported to the Lucille T for pump out.
15:10	Premier Towing	A Connex box that was staged at South End Marina arrives on site to be loaded with miscellaneous equipment for transport to the SES yard.
16:15	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
14:00	Outfall at DMU 44e	SES discovered a concrete outfall with flow at the upper limits of the armor design template. The final elevation of the armor stone was modified to allow proper flow and will be noted on the survey.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Quantity Delivered this Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	1347.48 Tons
Armor Stone	0	Tons	Truck loads	360 Tons
Staging Area Stone	21.82	Tons	Truck loads	105.91 Tons

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 7, 2015
REPORT NO.: 170
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Quantity Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	0	Tons	Contractor estimate	1240 Tons
Armor Stone	201.82	Tons	Contractor estimate	381.82 Tons*
Staging Area Stone	0	Tons	Contractor estimate	84.09tons

Note: *Number does not match the reported delivery tonnage.

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

PHOTOGRAPHS

Comment: Concrete outfall discovered in DMU 44e.

Comment: Swapping material scows at the CDF.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 7, 2015
REPORT NO.: 170
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Completing dredging in DMUs 9/10.

Comment: No. 12 dredge in position in DMUs 17, 18, and 19.

Field Representative Signature: _____ Date: December 7, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 8, 2015
REPORT NO.: 171
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low: 28		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High: 44 Precip.: 0.00 inches Avg. wind speed: S 6.4 mph, gusts 18 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (3) Operators	SES	10 hours -- -- 12 hours 24 hours
Tim Kibby (Superintendent) (8) Crew J. Tondu (Night Foreman) (2) Crew	Luedtke	11 hours 88 hours -- --
Surveyor	Thew	8 hours
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	-- --
Russell Harris (General Superintendent) (5) Crew	BIDCO	-- --
(2) Surveyors	GPI	--
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours --

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
--	--	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Luedtke	DMUs 18 & 19	Luedtke removed 475 in-place yards from DMUs 18 and 19.
Offloading at the CDF – Luedtke	CDF	Scow DPS059 was towed to the USACE CDF for pump out.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 8, 2015
REPORT NO.: 171
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Ryba (EPA dredging)	Buffalo River	Complete
Offloading at the CDF – Ryba (EPA)	CDF	Complete
Debris removal	CDF	No activity
Capping	DMUs 9/10	SES commenced capping operations at DMUs 9/10.
Sheetpile installation - BIDCO	DMUs 9/10	Complete
Survey	DMUs 9/10 & 44e	Thew completed the post-dredge survey of DMUs 9/10 and the post-cap survey at DMU 44e.
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMUs 18 & 19	Continuous turbidity monitoring via monitoring buoys.

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA is on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was "Stay Focused on Job Tasks."
07:30	Premier Towing	A Pariso flatbed semi-truck is on site to load out barge and miscellaneous materials.
07:50	Premier Towing	Thew is on site to prepare to survey.
08:00	DMUs 18 and 19	AQEA observed ongoing dredging.
08:30	Premier Towing	AQEA observed the tug boat Krista heading upriver.
09:00	DMUs 18 and 19	AQEA observes the no. 11 barge with the long stick excavator being transported downstream while the no. 12 continues dredging.
10:00	DMUs 9/10	Thew performs a post-dredge multi-beam survey.
11:00	DMUs 9/10	AQEA observed SES commencing backfill operations behind the sheetpile wall utilizing a long stick excavator.
11:20	DMU 9/10	SES adjusts the template on the GPS on long stick excavator.
11:30	DMUs 18 and 19	AQEA observed ongoing dredging.
11:40	Premier Towing	AQEA observed the tug Krista transporting the full scow no. 60 to the CDF.
11:45	DMUs 18 and 19	SES informed AQEA that Luedtke dredged and severed a 3-inch conduit containing a 1-inch line. Project personnel immediately notified of incident, Luedtke staff contacting railroad operators to verify signal operations as first check.
12:00	Premier Towing	AQEA/Honeywell project update call.
12:30	DMUs 18 and 19	Luedtke re-positions dredge no. 12 to continue dredging in DMU 18.
12:45	DMUs 9/10	AQEA observed ongoing capping operations.
14:00	Railroad	AQEA and Luedtke meet with CSX and Norfolk Southern to discuss the damaged utility line. CSX states that they do not have any utilities in that area. Norfolk Southern does not have any active utilities in the area and conclude that it must be an old abandoned line. Both entities confirmed no interruptions to their signal lines and all operations running without incident.
15:15	DMU 18	Luedtke continues dredging.

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 8, 2015
REPORT NO.: 171
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
16:30	Premier Towing	AQEA is off site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
11:45	Utility - DMUs 18 and 19	Luedtke dredged and severed a 3-inch conduit containing a 1-inch line. Luedtke immediately contacted CSX to insure that there were no signal/communication issues with CSX reporting that all equipment was in working order. SES/Luedtke to provide a detailed summary report. AQEA directs SES to maintain a 20-foot offset from the discovered utility.
14:30	Buffalo Color	SES relays information that the U.S. Coast Guard visited the treatment plant operator at the former Buffalo Color site to investigate a reported potential spill/sheen near our capping operations. No spill or sheen existed, and no further information was provided by the Coast Guard.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Quantity Delivered this Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	1347.48 Tons
Armor Stone	0	Tons	Truck loads	360 Tons
Staging Area Stone	0	Tons	Truck loads	105.91 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Quantity Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	105	Tons	Contractor estimate	1345 Tons
Armor Stone	0	Tons	Contractor estimate	381.82 Tons
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 8, 2015
REPORT NO.: 171
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Placing cap material behind the sheetpile wall at DMUs 9/10.

Comment: CSO outlet in DMU 44e surrounded by armor stone.

Comment: Dredging in DMU 19.

Comment: Transporting the no. 11 barge to DMUs 9/10 for backfill operations.

Field Representative Signature: _____ Date: December 8, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 9, 2015
REPORT NO.: 172
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low: 37		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High: 56 Precip.: 0.02 inches Avg. wind speed: S 10.5 mph, gusts 26 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)		
Name (or Labor Category)	**Organization**	**Notes**
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (3) Operators	SES	10 hours -- 8 hours 12 hours 24 hours
Tim Kibby (Superintendent) (8) Crew J. Tondu (Night Foreman) (2) Crew	Luedtke	12 hours 96 hours -- --
Surveyor	Thew	--
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	-- --
Russell Harris (General Superintendent) (5) Crew	BIDCO	-- --
(2) Surveyors	GPI	--
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours --

HEALTH AND SAFETY INFORMATION		
Time	**Topic and Location**	**Description**
--	--	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Dredging – Luedtke	DMUs 18 and 19	Luedtke removed 389 in-place yards from DMUs 18 and 19 and completed dredging activities
Offloading at the CDF – Luedtke	CDF	Luedtke towed scow to the USACE CDF for pumpout.
Dredging – Ryba (EPA dredging)	Buffalo River	Complete

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 9, 2015
REPORT NO.: 172
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Offloading at the CDF – Ryba (EPA)	CDF	Complete
Debris removal	CDF	No activity
Capping	DMUs 9/10	SES continued capping operations at DMUs 9/10.
Sheetpile installation - BIDCO	DMUs 9/10	Complete
Survey	N/A	No activity
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	DMUs 18 and 19	Continuous turbidity monitoring via monitoring buoys

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA is on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was "Weather."
07:25	DMUs 18 and 19	AQEA observed the no. 12 dredging.
07:45	DMU 44e	Backfill material for DMUs 9/10 is being loaded into a hopper on the no. 11 barge utilizing a long-stick excavator.
08:00	Premier Towing	AQEA/Honeywell project update call.
08:30	Premier Towing	AQEA hosts the weekly Buffalo Color sheetpile construction team meeting.
09:30	Premier Towing	AQEA joins the Buffalo River project coordination team conference call.
10:15	DMUs 18 and 19	AQEA observed the no. 12 dredge repositioned out of the navigation channel to allow the no. 11 backfilling barge, being transported by the tug Krista, to pass on the way to DMUs 9/10.
10:30	DMUs 9/10	SES positioned the no. 11 barge with a long stick excavator to continue backfill operations behind the sheetpile wall.
11:00	CDF	Luedtke continues to excavate a pit for debris disposal, as approved by the USACE. The Lucille T was inactive at this time.
11:30	DMUs 18 and 19	AQEA observed the no. 12 dredge at the South corner in DMU 18 near the CSX bridge after switching the scow to the opposite side of the dredge to allow proper access.
11:45	DMUs 9/10	SES relocates the no. 11 barge to allow an interim GPS survey, utilizing a push boat to verify backfill placement.
12:15	Premier Towing	SES informed AQEA that preliminary GPS data reveals that backfill material is not staying on some of the 1:1 slopes behind the sheetpile wall.
12:50	DMUs 18 and 19	Dredging is complete. The tug Krista transports the no. 12 dredge with full material scow downstream of the railroad bridges.
13:30	Premier Towing	AQEA observed a SES cube arriving on site to transport miscellaneous material to the SES yard.
13:45	Premier Towing	AQEA observed the tug Krista transporting the no. 12 dredge with full material scow downriver.
14:30	Premier Towing	AQEA prepares daily reports.

Honeywell ANCHOR QEA

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DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
16:00	Premier Towing	AQEA has update calls with Honeywell and USEPA related to USACE reported odor at the CDF.
16:30	Premier Towing	AQEA is off site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
08:57	CDF odor	An email is received from the USEPA outlining observed odor while pumping out at the CDF.
12:30	Backfill at DMUs 9/10	AQEA informs SES that no more backfill material should be placed behind the sheetpile wall and that the situation will be analyzed further after the multi-beam survey data is reviewed.

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
10	OSC submits the final sheetpile as-built drawing with driving logs to AQEA.

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Quantity Delivered this Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	1347.48 Tons
Armor Stone	0	Tons	Truck loads	360 Tons
Staging Area Stone	0	Tons	Truck loads	105.91 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Quantity Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	0	Tons	Contractor estimate	1355 Tons
Armor Stone	0	Tons	Contractor estimate	381.82 Tons
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 9, 2015
REPORT NO.: 172
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Dredging in DMU 18.

Comment: SES placing additional backfill behind the sheetpile wall at DMUs 9/10.

Comment: Luedtke excavating the debris pit at the CDF.

Comment: SES performing GPS backfill placement verification at DMUs 9/10.

Field Representative Signature: _____ Date: December 9, 2015

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 10, 2015
REPORT NO.: 173
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

Report Submitted		Contractor Name and Contact		Weather Temp. and Precip.			
To:	Rich Galloway	General:	Sevenson Environmental Services (SES) Ontario Specialty Contracting (OSC) Ryba Marine Construction (Ryba)	AM:	Low: 44		
cc:	Bill Hague	Subs:	Luedtke Engineering (Luedtke)	PM:	High: 54 Precip.: 0.00 inches Avg. wind speed: S 11.8 mph, gusts 29 mph		
	John Morris		Thew Associates PLLC (Thew)	**Times of Site Visits**			
	Ram Mohan		Buffalo Industrial Diving Company (BIDCO)	From:	06:30	to	16:30
	Mark Reemts			From:		to	

Notes: Weather temperature and precipitation obtained from NOAA National Weather Service http://www.nws.noaa.gov/climate/index.php?wfo=buf

PERSONNEL ON SITE (ESTIMATE)

Name (or Labor Category)	Organization	Notes
Mike Welch (Project Manager) Wayne Kostuk (General Superintendent) Rick Korpolinski (Superintendent) Ryan Killian (QA/QC Manger) (3) Operators	SES	10 hours -- 8 hours 8 hours 24 hours
Tim Kibby (Superintendent) (8) Crew J. Tondu (Night Foreman) (2) Crew	Luedtke	12 hours 96 hours -- --
Surveyor	Thew	8 hours
Dan Flanigan (Project Manager) Max Parker (Foreman)	OSC	-- --
Russell Harris (General Superintendent) (5) Crew	BIDCO	-- --
(2) Surveyors	GPI	--
Brian Murphy Rick Coupe	Anchor QEA (AQEA)	10 hours --

HEALTH AND SAFETY INFORMATION

Time	Topic and Location	Description
--	--	N/A

PROJECT DAILY CONSTRUCTION ACTIVITY LIST

Construction Task	Location	General Notes
Dredging - Luedtke	Buffalo River	Complete
Offloading at the CDF – Luedtke	CDF	Luedtke continued pumpout of scow DPS024.
Dredging – Ryba (EPA dredging)	Buffalo River	Complete
Offloading at the CDF – Ryba (EPA)	CDF	Complete

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 10, 2015
REPORT NO.: 173
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PROJECT DAILY CONSTRUCTION ACTIVITY LIST		
Construction Task	**Location**	**General Notes**
Debris removal	CDF	Ongoing debris consolidation and cleaning in scows for offlaod/transport to the debris pit.
Capping	DMU 44e	SES continued capping operations at DMU 44e.
Sheetpile installation - BIDCO	DMUs 9/10	Complete
Survey	DMUs 9/10,17,18,19	Thew performed post dredge survey of DMUs 17,18, and 19 as well as post cap survey of DMUs 9/10.
Miscellaneous Material Delivery	N/A	No activity
Environmental Monitoring	Buffalo River	Complete

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
06:30	Premier Towing	AQEA on site.
07:00	Premier Towing	SES daily health and safety meeting was conducted. The safety topic was “Gloves and hand safety”.
07:30	Premier Towing	AQEA observed SES operators gathering and removing silt curtain utilizing a push boat and a front end loader.
08:25	Premier Towing	AQEA has an update call with Honeywell.
08:30	DMUs 17, 18 and 19	AQEA observed the water quality buoys in place. SES to transport to Premier Towing next week.
08:35	DMUs 9/10	AQEA observed Thew performing a multi-beam survey after backfilling operations were completed behind the sheetpile wall.
09:00	CDF	AQEA inspected ongoing pump out of material scows utilizing the Lucille T. An excavator is being utilized to excavate a debris pit. A front end loader and off road dump truck are staged for the debris transport.
09:57	Premier Towing	AQEA informed SES that additional riprap armor material will be needed in DMUs 44e to fill the remaining low areas.
10:45	Premier Towing	Tug Krista transporting scow no. 59 downriver.
10:30	Buffalo Color	AQEA observed Thew performing a pre-dredge and post-sheetpile installation multi-beam survey.
11:00	DMU 44e	AQEA observed SES performing elevations of placed cover material utilizing GPS.
11:10	South End Marina	Luedtke provides an update that the brake parts received were correct but the existing housing/assembly cannot be reused. Luedtke is tracking down additional parts and will provide an update.
11:54	CDF	AQEA and Jim Boyle of USACE inspect the CDF to determine a location for Luedtke to dispose of collected debris.
13:30	Buffalo River	SES relocated the silt curtain from Premier Towing to be stages near DMUs 9/10.
14:15	BIDCO	AQEA observed that the crane and most of the miscellaneous equipment from the sheetpile operation have been removed from the flexi-floats.
15:00	Premier Towing	SES states that a total of eighteen tandem dump truck loads of riprap were transferred from Premier Towing to the rowing club adjacent to DMU 44e.

Honeywell ANCHOR QEA

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PROJECT NAME/LOCATION: Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

CHRONOLOGICAL CONSTRUCTION OBSERVATIONS AND QA/QC ACTIVITIES		
Time	**Topic and Location**	**Description of Field Activity, Observations, or Recommendations to Owner**
16:15	Premier Towing	AQEA departed from site.

KEY DECISIONS (SCHEDULE/DESIGN CHANGES, AGENCY/CLIENT DIRECTIVES, CONTRACTOR PROPOSED CHANGES)		
Time	**Topic and Location**	**Description of Decision/Issue**
--	--	N/A

SUBCONTRACTOR SUBMITTALS REVIEWED	
Submittal No.	**Description**
--	N/A

MATERIAL DELIVERY SUMMARY TO DATE				
Material	**Quantity Delivered this Date**	**Units**	**Delivery Verification Method**	**Total Delivered to Date**
Cap material	0	Tons	Truck loads	1347.48 Tons
Armor Stone	153.60	Tons	Truck loads	513.6 Tons
Staging Area Stone	0	Tons	Truck loads	105.91 Tons

MATERIAL PLACEMENT SUMMARY TO DATE				
Material	**Quantity Placed this Date**	**Units**	**Verification Method**	**Total Placed to Date**
Cap material	0	Tons	Contractor estimate	1355 Tons
Armor Stone	65.93	Tons	Contractor estimate	447.75 Tons
Staging Area Stone	0	Tons	Contractor estimate	84.09 tons

ATTACHMENTS	
Attachment No.	**Description**
N/A	N/A

Honeywell ANCHOR QEA

CONTRACT NO.: 140287-04.01
REPORT DATE: December 10, 2015
REPORT NO.: 173
ANCHOR QEA CM: Brian Murphy
PROJECT NAME/LOCATION Buffalo River Area of Concern/Buffalo, New York

DAILY FIELD ACTIVITY REPORT

PHOTOGRAPHS

Comment: Thew performing a multi-beam survey in DMUs 9/10.

Comment: Existing conditions at the CDF to be utilized for Luedtke's wood debris.

Comment: SES performing elevation checks in DMU 44e.

Comment: SES loading tandem truck with riprap at Premier Towing.

Field Representative Signature: _____ Date: December 10, 2015

Appendix E
Contractor Daily Progress Reports

BUFFALO RIVER AOC CAPPING AND HABITAT RESTORATION, NEW YORK

Weather		Report No.	Project No.	Work Date:	Day of Week:
Low	High	172	1119	12/4/2015	Friday
38	44				

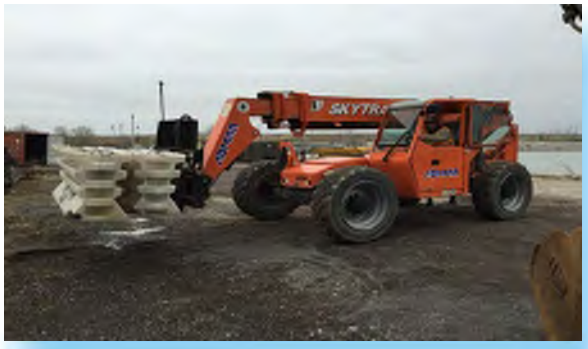
CLOUDY

Daily Progress Report

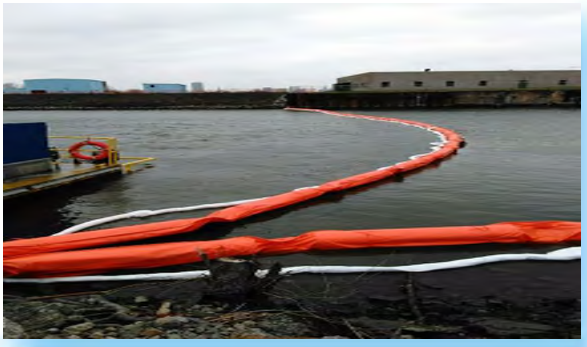
Weather conditions: Cloudy; Winds: W @ 12 mph

1 Managing armor stone stockpile at DMU 44E.

2 Armor stone capping operations at DMU 44E.



3 Loading out plastic jersey barriers for return to SES yard.



4 Turbidity curtain and oil boom installed upstream of DMU's 9 and 10.

5 Armor stone capping operations at DMU 44E.

6 Loading cleaned oil drums for return to SES yard.

WORK PERFORMED BY SEVENSON

- A total of 2,554 CY have been removed to date.
- Commenced armor stone capping operations at DMU 44E, placing approximately 180 tons.
- Loaded out cleaned oil drums and plastic jersey barriers for return to SES yard.
- Installed turbidity curtains and oil boom at DMU's 9 & 10.

MATERIAL/EQUIPMENT DELIVERED TO SITE

- None.

WORK PERFORMED BY SUBCONTRACTORS

- Luedtke completed crane repairs and pushed crane barge up to Ensign St.
- Luedtke cleaned and placed a scow on the capping barge to prepare for DMU's 9&10 capping.

REMARKS

DEVIATIONS FROM SPECIFICATIONS:

- None.

ITEMS THAT MAY IMPEDE PROJECT PROGRESSION:

- None.

SAFETY REMARKS

- Sevenson performed the daily tailgate safety meeting at 7:00 AM. All site personnel were required to sign in. Hard hats, safety glasses, steel toe boots, and reflective work vests were required to perform site work. PFD's were utilized when within 6 feet of the water.

- Total Safe Man Hours: 25,386.5 (Estimated for safety only)

Sevenson's Planned Activities

- Complete capping operations at DMU 44e.
- Complete dredging operations at DMU 17/18/19.
- Initiate dredging operations at DMU 9/10.
- Initiate capping operations at DMU 9/10.

PRODUCTION

ITEM DESCRIPTION	Bid Item #	ESTIMATED QUANTITIES	UNIT	DAILY QUANTITY		QUANTITY TO DATE		TOTAL PERCENT COMPLETE
Base Bid - Work Plans, Submittal, Schedule and Permits	1.1	1	LS	0	%	100	%	100.00%
Base Bid - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Base Bid - Surveying	2.2	1	LS	0	%	100	%	100.00%
Base Bid - Katherine Street Peninsula Habitat Subgrade	6.1	1	LS	0	%	100	%	100.00%
Base Bid - Planting Substrate	6.2	196,000	SF	0	SF	194177	SF	99.07%
Base Bid - Gravel Spawning Area Gravel	6.3	1	LS	0	%	100	%	100.00%
Base Bid - Riprap Rock Vanes	6.4	1	LS	0	%	100	%	100.00%
Base Bid - Outfall Scour Protection	6.5	930	SF	0.00	SF	935.51	SF	100.59%
Base Bid - ADM/Pillsbury Armored Cap	7.1	1	LS	0	%	15	%	15.00%
Base Bid - City Ship Canal Cap: In-water Fill	7.2	1	LS	0	%	100.00%	%	100.00%
Base Bid - Debris Removal, Loading, Transport and Disposal	7.3	30	CY	0.00	CY	0.00	CY	0.00%
Base Bid - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Base Bid - Porcupine Crib Installation	13.2	1	LS	0	%	100	%	100.00%
Base Bid - Emergent Vegetation Installation	13.4	1	LS	0	%	100.0%	%	100.00%
Base Bid - Emergent Vegetation Warranty	13.5	55	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Base Bid - Submerged Aquatic Vegetation Warranty	13.7	190	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Herbivory Protection	13.8	44,200	SF	0	SF	73019.00	SF	165.20%
Base Bid - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Base Bid - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Riverbend - Work Plan, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Riverbend - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Riverbend - Surveying	2.2	1	LS	0	%	100	%	100.00%
Riverbend - Planting Substrate	6.2	59,200	SF	0.00	SF	41521.80	SF	70.14%
Riverbend - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Riverbend - Outfall Scour Protection	6.5	140	SF	0.00	SF	195.90	SF	139.93%
Riverbend - Debris Removal, Loading, Trans, Disp.	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Riverbend - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Riverbend - Coir Bank Buffer Installation	13.3	2,870	LF	0.00	LF	1180.00	LF	41.11%
Riverbend - Emergent Vegetation Installation	13.4	1	LS	0.00	%	100.00	%	100.00%
Riverbend - Emergent Vegetation Warranty	13.50	48	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Submerged Aquatic Vegetation Installation	13.6	1	LS	0.0	%	100	%	100.00%
Riverbend - Submerged Aquatic Vegetation Warranty	13.7	26	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Herbivory Protection	13.8	38,500	SF	0.00	SF	16989.00	SF	44.13%
Riverbend - Demobilization	15.1	1	LS	0.0	%	100	%	100.00%
Riverbend - Additive for Performance and Payment Bonds	16.1	1	LS	0.0	%	0	%	0.00%
Buffalo Color - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Surveying	2.2	1	LS	0	%	100	%	100.00%
Buffalo Color - Planting Substrate	6.2	69,400	SF	0	SF	67186.00	SF	96.81%
Buffalo Color - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Buffalo Color - Outfall Scour Protection	6.5	50	SF	0.00	SF	0.00	SF	0.00%
Buffalo Color - Debris Removal, Loading, Trans & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Buffalo Color - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Coir Bank Buffer Installation	13.3	1,650	LF	0.00	LF	1790.00	LF	108.48%
Buffalo Color - Emergent Vegetation Installation	13.40	1	LS	0	%	51.93	%	51.93%
Buffalo Color - Emergent Vegetation Warranty	13.5	64	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Buffalo Color - Submerged Aquatic Vegetation Warranty	13.7	23	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Herbivory Protection	13.8	51,100	SF	0.00	SF	26186.00	SF	51.24%
Buffalo Color - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Ohio Street - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Ohio Street - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Ohio Street - Surveying	2.2	1	LS	0	%	100	%	100.00%
Ohio Street - Planting Substrate	6.2	2,100	SF	0	SF	2119.23	SF	100.92%
Ohio Street - Debris Removal, Loading, Transport & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Ohio Street - Coir Bank Buffer Installation	13.3	270	LF	0.00	LF	140.00	LF	51.85%
Ohio Street - Emergent Vegetation Installation	13.4	1	LS	0	%	100	%	100.00%
Ohio Street - Emergent Vegetation Warranty	13.5	3	EA	0.00	EA	0.00	EA	0.00%
Ohio Street - Herbivory Protection	13.8	1	LS	0	%	100	%	100.00%
Ohio Street - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Ohio Street - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
TOTAL								**90.46%**

***Chart is estimated and shall not be utilized for any billing purposes**

CITY SHIP CANAL RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Day Shift)	0	0.00	1,035	64,563	39,720	81.27%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Night Shift)	0	0.00	0	0	39,720		
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	165	4408	3,791	116.28%	
ADM / Pillsbury Armored Cap	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
	0	0.00	12	480	3,308	14.51%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
ADM / Pillsbury Filter Layer	0	0.00	0	0	1,905	0.00%	
	Loads	Tons	Loads	Tons	Tons		
Gravel Spawning Beds	0	0.00	28	440	346	127.17%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		21885		26,789	81.69%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		14181		9,039	156.89%	
	Each		Each		Each		
Porcupine Cribs	0		12		12	100.00%	
	Each		Each		Each		
Anchored Rootwad	0		20		20	100.00%	

KATHERINE STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Habitat Subgrade	0	0.00	687	26,473.38	19,017	139.21%	
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	22	1,869.44	2,306	81.07%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	9	759.00	771	98.44%	
	Each		Each		Each		
Anchored Rootwad	0		8		8	100.00%	
	Each		Each		Each		
Log Poles	0		9		9	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		10850		11,108	97.68%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4230		1,960	215.79%	

RIVERBEND RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	19	1,596.00	2,579	61.88%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	8.5	692.00	524	132.06%	
	Each		Each		Each		
Anchored Rootwad	0		15		15	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		5457		5,227	104.40%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4328		9,583	45.16%	

BUFFALO COLOR RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	27.5	2,310.00	3,023	76.41%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	7.5	1,879.00	1,753	107.19%	
	Each		Each		Each		
Anchored Rootwad	0		10		10	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		7886		4,574	172.42%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		6617		12,741	51.93%	

OHIO STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	3	252.00	91	276.92%	Based on Tons not SF as indicated in the above Chart
	Each		Each		Each		
Emergent Vegetation (EV)	0		154		545	28.28%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		325		-	100.00%	

PHASE II DREDGING - BASE BID

	Estimated Quantity Removed Today		Estimated Quantity Removed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 9 &10	0	0.00	0	0.00	1,100	0.00%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 38A	0	0.00	1	1,000.00	960	104.17%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 44E	0	0.00	3	825.00	700	117.86%	

PHASE II CAPPING - BASE BID

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
DMU 9 & 10	0	0.00	0	0.00	50	0.00%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Sand)	0	0.00	3	1,240.00	1,640	75.61%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Armor Layer)	1	180.00	1	180.00	365	49.32%	

PHASE II DREDGING - OPTION 1

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 17, 18 & 19	0	0.00	1	729.00	6,100	11.95%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 27, 28 & 29	0	0.00	0	-	6,700	0.00%	

PHASE II DREDGING - OPTION 2

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 101	0	0.00	0	0.00	2,500	0.00%	

Verbal Directives From Anchor / Honeywell:

- None.

Miscellaneous Information:

- None.

Clarifications to Previous Daily Reports:

- None.

DAY: Friday
DATE: 12/4/2015

Site Personnel
Total = 14

Hours Worked Today
159

Personnel	Labor	Hours
0	President	0
0	Vice President	0
0	General Superintendent	0
1	Superintendent	10
0	Foreman	0
0	Corporate Project Manager	0
0	Project Manager	0
0	Health & Safety Director	0
0	Health & Safety Officer	0
1	QA/QC Manager	11
3	Operators	30
	SES Subcontractors	
9	Luedtke	108

SES Equipment	Quantity	Rental Equipment
(3) Connex Boxes	1	8x28' Office Trailer (Will Scot)
PC-400LC8 Komatsu LF Excavator	1	8x32' Engineer Trailer (Will Scot)
WA-380-6 Komatsu Loader	1	8x28' Break Trailer (Will Scot)
PC-450LC8 LF Komatsu Excavator	2	Porta-Johns (Ball)
J-Boat Utility Push Boat 4	2	Light Plants (Admar)
Scow Open #4 11'2" x 41'x 6'		
Ford F-250 Crew Cab		
Blue Wave Boat & Trailer		
(2) Open Top Scows		
D51 Dozer		

Onsite Personnel

SES Personnel:	Union Laborers & Operators:	Subcontractors:
Ryan Killian	Gerry Freedenburg	Wally Eljahmi
Rick Korpolinski	Henry Olrogge	George Herro
	Ray Vesotski	Tim Kibby
		Steve Szymanksi
		Ed Carlson
		Kurt Schober
		Dale Leonard
		Sal Elmathil
		Todd Gleason

DERRICKBOAT #12

Daily Dredge Report Form

DATE: 12/11/2015 DAY #: 184

Project: Buffalo River Environmental Phase: 1

Number of Shifts: 1 Hours per Shift: 12.0 day

Dredging Hours Shift #1: 0.0 Dredging Hours Shift #2: 0.0

Standby Hours Shift #1: 0.0 Standby Hours Shift #2: 0.0

Total Hours Dredging: 0.0 Hours Dredging to Date: 111.0

Standby Hours: 0.0 Standby Hours to Date: 2.5

Total Hours Worked: 12.0 Hours Worked to Date: 257.0

CREW: Total Number of Crew: 9

Day Shift

Name: T .Kibby, A. Eljahmi	Title: Management		
Name: T. Gleason	Title: Foreman		
Name: D. Leonard	Title: Captain		
Name: G. Herro, K. Schober	Title: Operator		
Name: S.Szymanski, E.Carlson	Title: Operator		
Name: S. Elmathil	Title: Deckhand		

Night Shift:

Name:	Title: Foreman		
Name:	Title: Operator		
Name: Steve Martens (Days)	Title: Operator		
Name:	Title: Captain		
Name:	Title: Deckhand		
Name:	Title: Operator		

Equipment Utilized:

Derrickboat #12, Tug Krista, Tug Gretchen, Lucille T, Spud barge #14, Workboat #6.

DPS024, DPS023, DPS059, DPS060. Linkbilt 350 Excavator. JD 450 Dozer, Off road Dump truck..

Work Performed:

Consolidate debris in scows #59, #60 and #24. Pump out soft materials remaining in scows. Remove debris and load into off road truck for disposal. Dump debris into pit and sort tires and steel for separate disposal.

Safety Performed: Perform daily safety meetings at the start of each shift. Monitor working conditions, weather and PPE use at all times.

Weather: Partly Cloudy Temp: Min. 46 Max. 58 Wind: SW 15 -25

Dredge Information:

Cut: Starting Chainage: Starting chain:

Distance: Ending Chainage: Ending chain:

Ave. Cut Width: Ave. Cut Depth: Ave. Tide Reading: +2.2'

Bucket Used: Orange peel for consolidation of debris.

In Place Yards: 0 CY In Place Yards To Date: 4,991 CY

Scow Yards: 0 CY Scow Yards To Date: 6,400 CY

NOTES: Will continue to remove debris and pump scows to remove all dredge material, taking care not to spill any materials on shore. This process will continue through Sunday.

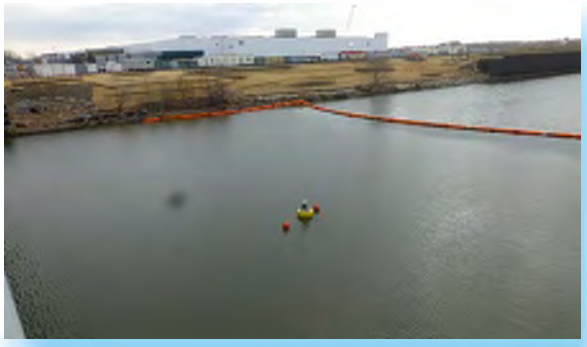
Signature:

BUFFALO RIVER AOC CAPPING AND HABITAT RESTORATION, NEW YORK

Weather	Report No.	Project No.	Work Date:	Day of Week:
Low 31 / High 45 — PARTLY CLOUDY	173	1119	12/5/2015	Saturday

Daily Progress Report

Weather conditions: Partly Cloudy; Winds: SSW @ 5 mph



1 Turbidity buoy, curtain, and oil boom in place at DMU's 9 and 10.

2 Sediment removal in DMU's 9 and 10.

3 Loading dredged material into scow.

4 Dredging operations at DMU's 9 and 10.

5 Luedtke adjusting oil boom at DMU's 9 and 10.

6 Sediment removal in DMU's 9 and 10.

WORK PERFORMED BY SEVENSON

- Luedtke removed approximately 680 CY from DMU's 9 & 10. A total of 2,554 CY have been removed to date.
- Luedtke transported dredging barge and scow upstream to DMU's 9 & 10.
- SES continued to monitor turbidity around dredge zone.

MATERIAL/EQUIPMENT DELIVERED TO SITE

- None.

WORK PERFORMED BY SUBCONTRACTORS

- Luedtke resumed dredging activities in DMU's 9 and 10.

REMARKS

DEVIATIONS FROM SPECIFICATIONS:

- None.

ITEMS THAT MAY IMPEDE PROJECT PROGRESSION:

- None.

SAFETY REMARKS

- Sevenson performed the daily tailgate safety meeting at 7:00 AM. All site personnel were required to sign in. Hard hats, safety glasses, steel toe boots, and reflective work vests were required to perform site work. PFD's were utilized when within 6 feet of the water.

- Total Safe Man Hours: 25,506.5 (Estimated for safety only)

Sevenson's Planned Activities

- Complete capping operations at DMU 44e.
- Complete dredging operations at DMU 17/18/19.
- Complete dredging operations at DMU 9/10.
- Initiate capping operations at DMU 9/10.

PRODUCTION

ITEM DESCRIPTION	Bid Item #	ESTIMATED QUANTITIES	UNIT	DAILY QUANTITY		QUANTITY TO DATE		TOTAL PERCENT COMPLETE
Base Bid - Work Plans, Submittal, Schedule and Permits	1.1	1	LS	0	%	100	%	100.00%
Base Bid - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Base Bid - Surveying	2.2	1	LS	0	%	100	%	100.00%
Base Bid - Katherine Street Peninsula Habitat Subgrade	6.1	1	LS	0	%	100	%	100.00%
Base Bid - Planting Substrate	6.2	196,000	SF	0	SF	194177	SF	99.07%
Base Bid - Gravel Spawning Area Gravel	6.3	1	LS	0	%	100	%	100.00%
Base Bid - Riprap Rock Vanes	6.4	1	LS	0	%	100	%	100.00%
Base Bid - Outfall Scour Protection	6.5	930	SF	0.00	SF	935.51	SF	100.59%
Base Bid - ADM/Pillsbury Armored Cap	7.1	1	LS	0	%	15	%	15.00%
Base Bid - City Ship Canal Cap: In-water Fill	7.2	1	LS	0	%	100.00%	%	100.00%
Base Bid - Debris Removal, Loading, Transport and Disposal	7.3	30	CY	0.00	CY	0.00	CY	0.00%
Base Bid - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Base Bid - Porcupine Crib Installation	13.2	1	LS	0	%	100	%	100.00%
Base Bid - Emergent Vegetation Installation	13.4	1	LS	0	%	100.0%	%	100.00%
Base Bid - Emergent Vegetation Warranty	13.5	55	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Base Bid - Submerged Aquatic Vegetation Warranty	13.7	190	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Herbivory Protection	13.8	44,200	SF	0	SF	73019.00	SF	165.20%
Base Bid - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Base Bid - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Riverbend - Work Plan, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Riverbend - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Riverbend - Surveying	2.2	1	LS	0	%	100	%	100.00%
Riverbend - Planting Substrate	6.2	59,200	SF	0.00	SF	41521.80	SF	70.14%
Riverbend - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Riverbend - Outfall Scour Protection	6.5	140	SF	0.00	SF	195.90	SF	139.93%
Riverbend - Debris Removal, Loading, Trans, Disp.	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Riverbend - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Riverbend - Coir Bank Buffer Installation	13.3	2,870	LF	0.00	LF	1180.00	LF	41.11%
Riverbend - Emergent Vegetation Installation	13.4	1	LS	0.00	%	100.00	%	100.00%
Riverbend - Emergent Vegetation Warranty	13.50	48	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Submerged Aquatic Vegetation Installation	13.6	1	LS	0.0	%	100	%	100.00%
Riverbend - Submerged Aquatic Vegetation Warranty	13.7	26	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Herbivory Protection	13.8	38,500	SF	0.00	SF	16989.00	SF	44.13%
Riverbend - Demobilization	15.1	1	LS	0.0	%	100	%	100.00%
Riverbend - Additive for Performance and Payment Bonds	16.1	1	LS	0.0	%	0	%	0.00%
Buffalo Color - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Surveying	2.2	1	LS	0	%	100	%	100.00%
Buffalo Color - Planting Substrate	6.2	69,400	SF	0	SF	67186.00	SF	96.81%
Buffalo Color - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Buffalo Color - Outfall Scour Protection	6.5	50	SF	0.00	SF	0.00	SF	0.00%
Buffalo Color - Debris Removal, Loading, Trans & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Buffalo Color - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Coir Bank Buffer Installation	13.3	1,650	LF	0.00	LF	1790.00	LF	108.48%
Buffalo Color - Emergent Vegetation Installation	13.40	1	LS	0	%	51.93	%	51.93%
Buffalo Color - Emergent Vegetation Warranty	13.5	64	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Buffalo Color - Submerged Aquatic Vegetation Warranty	13.7	23	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Herbivory Protection	13.8	51,100	SF	0.00	SF	26186.00	SF	51.24%
Buffalo Color - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Ohio Street - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Ohio Street - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Ohio Street - Surveying	2.2	1	LS	0	%	100	%	100.00%
Ohio Street - Planting Substrate	6.2	2,100	SF	0	SF	2119.23	SF	100.92%
Ohio Street - Debris Removal, Loading, Transport & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Ohio Street - Coir Bank Buffer Installation	13.3	270	LF	0.00	LF	140.00	LF	51.85%
Ohio Street - Emergent Vegetation Installation	13.4	1	LS	0	%	100	%	100.00%
Ohio Street - Emergent Vegetation Warranty	13.5	3	EA	0.00	EA	0.00	EA	0.00%
Ohio Street - Herbivory Protection	13.8	1	LS	0	%	100	%	100.00%
Ohio Street - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Ohio Street - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
TOTAL								**90.46%**

***Chart is estimated and shall not be utilized for any billing purposes**

CITY SHIP CANAL RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Day Shift)	0	0.00	1,035	64,563	39,720	81.27%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Night Shift)	0	0.00	0	0	39,720		
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	165	4408	3,791	116.28%	
ADM / Pillsbury Armored Cap	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
	0	0.00	12	480	3,308	14.51%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
ADM / Pillsbury Filter Layer	0	0.00	0	0	1,905	0.00%	
	Loads	Tons	Loads	Tons	Tons		
Gravel Spawning Beds	0	0.00	28	440	346	127.17%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		21885		26,789	81.69%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		14181		9,039	156.89%	
	Each		Each		Each		
Porcupine Cribs	0		12		12	100.00%	
	Each		Each		Each		
Anchored Rootwad	0		20		20	100.00%	

KATHERINE STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Habitat Subgrade	0	0.00	687	26,473.38	19,017	139.21%	
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	22	1,869.44	2,306	81.07%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	9	759.00	771	98.44%	
	Each		Each		Each		
Anchored Rootwad	0		8		8	100.00%	
	Each		Each		Each		
Log Poles	0		9		9	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		10850		11,108	97.68%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4230		1,960	215.79%	

RIVERBEND RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	19	1,596.00	2,579	61.88%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	8.5	692.00	524	132.06%	
	Each		Each		Each		
Anchored Rootwad	0		15		15	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		5457		5,227	104.40%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4328		9,583	45.16%	

BUFFALO COLOR RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	27.5	2,310.00	3,023	76.41%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	7.5	1,879.00	1,753	107.19%	
	Each		Each		Each		
Anchored Rootwad	0		10		10	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		7886		4,574	172.42%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		6617		12,741	51.93%	

OHIO STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	3	252.00	91	276.92%	Based on Tons not SF as indicated in the above Chart
	Each		Each		Each		
Emergent Vegetation (EV)	0		154		545	28.28%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		325		-	100.00%	

PHASE II DREDGING - BASE BID

	Estimated Quantity Removed Today		Estimated Quantity Removed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 9 &10	1	680.00	1	680.00	1,100	61.82%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 38A	0	0.00	1	1,000.00	960	104.17%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 44E	0	0.00	3	825.00	700	117.86%	

PHASE II CAPPING - BASE BID

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
DMU 9 & 10	0	0.00	0	0.00	50	0.00%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Sand)	0	0.00	3	1,240.00	1,640	75.61%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Armor Layer)	1	180.00	1	180.00	365	49.32%	

PHASE II DREDGING - OPTION 1

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 17, 18 & 19	0	0.00	1	729.00	6,100	11.95%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 27, 28 & 29	0	0.00	0	-	6,700	0.00%	

PHASE II DREDGING - OPTION 2

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 101	0	0.00	0	0.00	2,500	0.00%	

Verbal Directives From Anchor / Honeywell:

- None.

Miscellaneous Information:

- None.

Clarifications to Previous Daily Reports:

- None.

DAY: Saturday
DATE: 12/5/2015

Site Personnel
Total = 10

Hours Worked Today
120

Personnel	Labor	Hours
0	President	0
0	Vice President	0
0	General Superintendent	0
0	Superintendent	0
0	Foreman	0
0	Corporate Project Manager	0
0	Project Manager	0
0	Health & Safety Director	0
0	Health & Safety Officer	0
1	QA/QC Manager	12
0	Operators	0
	SES Subcontractors	
9	Luedtke	108

SES Equipment
(3) Connex Boxes
PC-400LC8 Komatsu LF Excavator
WA-380-6 Komatsu Loader
PC-450LC8 LF Komatsu Excavator
J-Boat Utility Push Boat 4
Scow Open #4 11'2" x 41'x 6'
Ford F-250 Crew Cab
Blue Wave Boat & Trailer
(2) Open Top Scows
D51 Dozer

Quantity	Rental Equipment
1	8x28' Office Trailer (Will Scot)
1	8x32' Engineer Trailer (Will Scot)
1	8x28' Break Trailer (Will Scot)
2	Porta-Johns (Ball)
2	Light Plants (Admar)

Onsite Personnel

SES Personnel:	Union Laborers & Operators:	Subcontractors:
Ryan Killian		Wally Eljahmi
		George Herro
		Tim Kibby
		Steve Szymanksi
		Ed Carlson
		Kurt Schober
		Dale Leonard
		Sal Elmathil
		Todd Gleason

DERRICKBOAT #12

UEOTKE ENGINEERING CO.

Daily Dredge Report Form

DATE: 12/04/2015 DAY #: 177

Project: Buffalo River Environmental Phase: 1

Number of Shifts: 1 Hours per Shift: 12.0 day

Dredging Hours Shift #1: 0.0 Dredging Hours Shift #2: 0.0

Standby Hours Shift #1: 0.0 Standby Hours Shift #2: 0.0

Total Hours Dredging: 0.0 Hours Dredging to Date: 67.0

Standby Hours: 0.0 Standby Hours to Date: 0.0

Total Hours Worked: 12.0 Hours Worked to Date: 174.0

CREW: Total Number of Crew: 9

Day Shift

Name: T .Kibby, A. Eljahmi Title: Management

Name: T. Gleason Title: Foreman

Name: D. Leonard Title: Captain

Name: G. Herro, K. Schober Title: Operator

Name: S.Szymanski, E.Carlson Title: Operator

Name: S. Elmathil Title: Deckhand

Night Shift:

Name: Title: Foreman

Name: Title: Operator

Name: Title: Operator

Name: Title: Captain

Name: Title: Deckhand

Name: Title: Operator

Equipment Utilized:

Derrickboat #12, Tug Krista, Tug Gretchen, Lucille T, Spud barge #14, Workboat #6.

DPS024, DPS023, DPS059, DPS060.

Work Performed:

Complete repairs to crane. Clean small scow to be placed on DBT011. Tow to DMU 44e and place small scow on deck of DBT011. Tow up to Concrete Central for the night. Plan to tow to DMU 9/10 in the morning, bridges notified.

Safety Performed: Perform daily safety meetings at the start of each shift. Monitor working conditions, weather and PPE use at all times.

Weather: Mostly Cloudy Temp: Min. 38 Max. 45 Wind: W 15 -25

Dredge Information:

Cut: DMU 9/10 Starting Chainage: Sta 0+00 Starting chain: 0

Distance: 0' Ending Chainage: Sta 0+00 Ending chain: 0

Ave. Cut Width: 0' Ave. Cut Depth: 0' Ave. Tide Reading: N/A

Bucket Used: 8.0 CY Cablearm bucket

In Place Yards: 0 CY In Place Yards To Date: 2,554 CY

Scow Yards: 0 CY Scow Yards To Date: 3,150 CY

NOTES: Dredging to commence Saturday, Dec. 5 in DMU 9/10, then move to DMU 18/19 for completion. Anticipate completing dredging operations on Tuesday, Dec. 8. Will consolidate debris and off load at the CDF for disposal.

Signature:

DAILY TURBIDITY REPORT

DMU's 9/10	Upstream - SITE 1				Downstream - SITE 2					
Time (EST)	Battery	Temperature	Sp Cond	Turbidity+	Battery2	Temperature2	Sp Cond2	Turbidity+2	Turbidity	DMU
Time (EST)	V	F	usS/cm	NTU+	V	F	uS/cm	NTU+	Delta	DMU
12/5/2015 0:00	12.6	41.34	439	6.4	12.4	41.76	443	5.4	-1	NA
12/5/2015 0:15	12.6	41.34	439	6.3	12.4	41.65	444	5.8	-0.5	NA
12/5/2015 0:30	12.5	41.29	438	6.5	12.4	41.58	444	5.8	-0.7	NA
12/5/2015 0:45	12.6	41.16	438	7.1	12.4	41.61	443	5.3	-1.8	NA
12/5/2015 1:00	12.6	40.95	438	6.9	12.4	41.59	445	6	-0.9	NA
12/5/2015 1:15	12.5	40.95	434	7.4	12.4	41.5	444	5.8	-1.6	NA
12/5/2015 1:30	12.5	41.05	434	7.3	12.4	41.43	442	6.1	-1.2	NA
12/5/2015 1:45	12.6	40.84	434	7.2	12.4	41.5	443	5.7	-1.5	NA
12/5/2015 2:00	12.6	40.84	433	7.2	12.4	41.34	443	7	-0.2	NA
12/5/2015 2:15	12.6	40.75	435	7.6	12.4	41.49	443	5.6	-2	NA
12/5/2015 2:30	12.6	40.71	434	8	12.4	41.5	444	5.7	-2.3	NA
12/5/2015 2:45	12.6	40.77	431	7.2	12.4	41.52	442	6.2	-1	NA
12/5/2015 3:00	12.6	40.64	430	7.6	12.4	41.49	442	5.7	-1.9	NA
12/5/2015 3:15	12.6	40.62	428	7.3	12.4	41.32	441	6.5	-0.8	NA
12/5/2015 3:30	12.6	40.59	427	7.9	12.4	41.18	439	6.3	-1.6	NA
12/5/2015 3:45	12.6	40.59	427	7.7	12.4	41.13	439	6.3	-1.4	NA
12/5/2015 4:00	12.6	40.59	427	7.8	12.4	41.14	439	6.5	-1.3	NA
12/5/2015 4:15	12.6	40.68	425	8	12.4	41.11	439	5.9	-2.1	NA
12/5/2015 4:30	12.6	40.87	423	7.7	12.4	41.25	437	5.8	-1.9	NA
12/5/2015 4:45	12.6	40.68	424	8.1	12.4	41.05	440	6.8	-1.3	NA
12/5/2015 5:00	12.6	41.05	418	6.9	12.4	41.27	430	6.5	-0.4	NA
12/5/2015 5:15	12.6	40.96	419	7.7	12.4	41.31	433	6.3	-1.4	NA
12/5/2015 5:30	12.6	40.82	424	10	12.4	41.27	432	6.1	-3.9	NA
12/5/2015 5:45	12.6	40.86	423	7.2	12.4	41.23	433	6.5	-0.7	NA
12/5/2015 6:00	12.6	40.91	422	7.7	12.4	41.23	433	6.1	-1.6	NA
12/5/2015 6:15	12.6	40.98	422	7.8	12.4	41.22	429	6	-1.8	NA
12/5/2015 6:30	12.6	40.87	422	7.6	12.4	41	429	7.2	-0.4	NA
12/5/2015 6:45	12.6	40.51	420	6.7	12.4	41	432	6.5	-0.2	NA
12/5/2015 7:00	12.6	40.5	419	7.4	12.4	41.04	431	6.3	-1.1	NA
12/5/2015 7:15	12.6	40.66	418	6.7	12.4	41.09	432	6.5	-0.2	NA
12/5/2015 7:30	12.6	40.66	418	7.4	12.4	41.09	432	6.4	-1	NA
12/5/2015 7:45	12.6	40.98	418	6.9	12.4	41.05	431	6.1	-0.8	NA
12/5/2015 8:00	12.6	40.98	420	7.7	12.4	41.14	426	6.1	-1.6	NA
12/5/2015 8:15	12.6	41.04	420	7.3	12.4	41.16	428	6.5	-0.8	NA
12/5/2015 8:30	12.6	41.09	422	7.1	12.4	41.05	427	6.5	-0.6	NA
12/5/2015 8:45	12.6	41.07	421	7.5	12.4	41.05	427	6.7	-0.8	NA
12/5/2015 9:00	12.6	40.98	422	7.5	12.5	41.07	429	7.9	0.4	NA
12/5/2015 9:15	12.6	40.95	421	7.4	12.5	41.09	430	8.3	0.9	NA
12/5/2015 9:30	12.6	41.43	420	7.3	12.5	41.05	432	10	2.7	NA
12/5/2015 9:45	12.6	41.54	420	7.4	12.6	41.09	430	10	2.6	NA
12/5/2015 10:00	12.7	41.47	422	7.1	12.6	41.07	428	8	0.9	NA
12/5/2015 10:15	12.7	41.2	422	7.5	12.7	41.09	429	8.4	0.9	9/10
12/5/2015 10:30	12.7	41.56	422	7.9	12.7	41.13	428	7.5	-0.4	9/10
12/5/2015 10:45	12.7	41.38	424	7.5	12.7	41.13	428	10.2	2.7	9/10
12/5/2015 11:00	12.7	41.52	422	7.7	12.8	41.14	429	15.3	7.6	9/10
12/5/2015 11:15	12.8	41.59	421	7.4	12.8	41.16	428	10	2.6	9/10
12/5/2015 11:30	12.8	41.54	421	7.5	12.8	41.16	428	9.8	2.3	9/10
12/5/2015 11:45	12.8	41.31	422	7.1	12.9	41.18	428	9.7	2.6	9/10
12/5/2015 12:00	12.8	41.45	422	7	12.9	41.2	428	8.6	1.6	9/10
12/5/2015 12:15	12.8	41.38	423	7.1	12.9	41.13	428	9.7	2.6	9/10
12/5/2015 12:30	12.8	41.49	421	6.9	13	41.16	428	9.5	2.6	9/10
12/5/2015 12:45	12.8	41.04	419	6.6	13	41.13	427	10.2	3.6	9/10
12/5/2015 13:00	12.9	41	422	6.5	13	41.13	427	9	2.5	9/10
12/5/2015 13:15	12.9	41	423	6.4	13.1	41.14	428	11.4	5	9/10
12/5/2015 13:30	13.4	41.04	423	6.7	13.6	41.2	427	10.9	4.2	9/10
12/5/2015 13:45	13.5	41.09	425	6.9	13.7	41.2	427	9.5	2.6	9/10
12/5/2015 14:00	13.5	41.22	425	7.1	13.7	41.2	427	10.7	3.6	9/10
12/5/2015 14:15	13.5	41.36	422	6.7	13.7	41.22	428	9.7	3	9/10
12/5/2015 14:30	13.5	41.41	423	6.9	13.8	41.23	427	10.1	3.2	9/10
12/5/2015 14:45	13.5	41.61	422	6.5	13.8	41.34	427	10.1	3.6	9/10
12/5/2015 15:00	13.5	41.09	425	6.4	13.8	41.38	427	8.9	2.5	9/10
12/5/2015 15:15	13.5	41.14	424	6.6	13.8	41.43	427	9.8	3.2	9/10
12/5/2015 15:30	13.3	41.29	424	6.4	13.3	41.43	426	8.2	1.8	9/10
12/5/2015 15:45	13.4	40.98	425	6.4	13.4	41.45	426	8.3	1.9	9/10
12/5/2015 16:00	13.4	41	425	6.5	13.3	41.43	426	6.6	0.1	9/10
12/5/2015 16:15	13.3	41	425	6.2	13	41.38	427	9.9	3.7	9/10
12/5/2015 16:30	13.1	41.2	423	6.2	13	41.4	427	11.5	5.3	9/10
12/5/2015 16:45	13	40.87	424	6.5	12.9	41.58	425	6.6	0.1	9/10
12/5/2015 17:00	13	40.95	423	6.5	12.8	41.41	427	8.6	2.1	9/10
12/5/2015 17:15	13	41.02	422	6.1	12.9	41.41	427	8.9	2.8	9/10
12/5/2015 17:30	13	40.91	418	5.8	12.9	41.41	428	11.4	5.6	9/10
12/5/2015 17:45	12.9	40.89	428	9	12.8	41.32	428	12.8	3.8	9/10
12/5/2015 18:00	12.9	40.82	431	9	12.8	41.27	429	26.8	17.8	NA
12/5/2015 18:15	12.9	40.71	420	5.6	12.8	41.25	429	19.7	14.1	NA
12/5/2015 18:30	12.9	40.93	415	5.8	12.8	41.23	429	20.5	14.7	NA
12/5/2015 18:45	12.9	41	415	5.6	12.8	41.23	429	19.1	13.5	NA
12/5/2015 19:00	12.9	41	416	6.8	12.8	41.23	429	18.6	11.8	NA
12/5/2015 19:15	12.9	41.02	416	5.9	12.8	41.23	429	21.6	15.7	NA
12/5/2015 19:30	12.9	41	414	5.7	12.8	41.23	429	20.6	14.9	NA
12/5/2015 19:45	12.9	40.87	414	5.4	12.8	41.2	428	14.1	8.7	NA
12/5/2015 20:00	12.8	40.73	421	6.1	12.8	41.18	429	16	9.9	NA
12/5/2015 20:15	12.9	40.53	429	6.2	12.8	41.16	428	11.8	5.6	NA
12/5/2015 20:30	12.8	40.68	421	5.7	12.8	41.18	429	11.6	5.9	NA
12/5/2015 20:45	12.8	40.87	418	5.8	12.8	41.2	427	12.2	6.4	NA
12/5/2015 21:00	12.8	40.71	422	5.6	12.8	41.14	428	11.8	6.2	NA
12/5/2015 21:15	12.8	40.84	418	5.8	12.8	41.09	429	13.6	7.8	NA
12/5/2015 21:30	12.8	40.89	423	6.4	12.7	41.14	428	11.4	5	NA
12/5/2015 21:45	12.8	40.95	426	6.4	12.7	41.32	424	8.3	1.9	NA
12/5/2015 22:00	12.8	40.95	421	5.7	12.7	41.23	428	10.6	4.9	NA
12/5/2015 22:15	12.8	41.2	419	5.5	12.7	41.31	421	7.6	2.1	NA
12/5/2015 22:30	12.8	41.11	419	7.7	12.7	41.29	425	12.1	4.4	NA
12/5/2015 22:45	12.8	41.13	421	5.9	12.7	41.27	424	10.4	4.5	NA
12/5/2015 23:00	12.8	41.16	422	6.2	12.7	41.27	424	8.6	2.4	NA
12/5/2015 23:15	12.8	41.22	424	6.6	12.7	41.29	424	9.3	2.7	NA
12/5/2015 23:30	12.8	41.2	424	6.5	12.7	41.27	422	8.2	1.7	NA
12/5/2015 23:45	12.8	41.27	419	5.8	12.7	41.34	420	7.4	1.6	NA

BUFFALO RIVER AOC CAPPING AND HABITAT RESTORATION, NEW YORK

Weather	Report No.	Project No.	Work Date:	Day of Week:
Low 28 / High 45	174	1119	12/6/2015	Sunday

Daily Progress Report

SUNNY

Weather conditions: Sunny; Winds: SSW @ 6 mph

1 **Sediment removal operations at DMU's 9 and 10.**

2 **Loading sediment into scow at DMU's 9 and 10.**

3 **Dredging in DMU's 9 and 10.**

4 **Sediment removal operations at DMU's 9 and 10.**

5 **Dredging in DMU's 9 and 10.**

6 **Loading sediment into scow at DMU's 9 and 10.**

WORK PERFORMED BY SEVENSON

- Luedtke removed approximately 345 CY from DMU's 9 & 10. A total of 3,579 CY have been removed to date.
- SES continued to monitor turbidity around dredge zone.

MATERIAL/EQUIPMENT DELIVERED TO SITE

- None.

WORK PERFORMED BY SUBCONTRACTORS

- Luedtke continued dredging activities in DMU's 9 and 10.

REMARKS

DEVIATIONS FROM SPECIFICATIONS:

- None.

ITEMS THAT MAY IMPEDE PROJECT PROGRESSION:

- None.

SAFETY REMARKS

- Sevenson performed the daily tailgate safety meeting at 7:00 AM. All site personnel were required to sign in. Hard hats, safety glasses, steel toe boots, and reflective work vests were required to perform site work. PFD's were utilized when within 6 feet of the water.

- Total Safe Man Hours: 25,626.5 (Estimated for safety only)

Sevenson's Planned Activities

- Complete capping operations at DMU 44e.
- Complete dredging operations at DMU 17/18/19.
- Complete dredging operations at DMU 9/10.
- Initiate capping operations at DMU 9/10.

PRODUCTION

ITEM DESCRIPTION	Bid Item #	ESTIMATED QUANTITIES	UNIT	DAILY QUANTITY		QUANTITY TO DATE		TOTAL PERCENT COMPLETE
Base Bid - Work Plans, Submittal, Schedule and Permits	1.1	1	LS	0	%	100	%	100.00%
Base Bid - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Base Bid - Surveying	2.2	1	LS	0	%	100	%	100.00%
Base Bid - Katherine Street Peninsula Habitat Subgrade	6.1	1	LS	0	%	100	%	100.00%
Base Bid - Planting Substrate	6.2	196,000	SF	0	SF	194177	SF	99.07%
Base Bid - Gravel Spawning Area Gravel	6.3	1	LS	0	%	100	%	100.00%
Base Bid - Riprap Rock Vanes	6.4	1	LS	0	%	100	%	100.00%
Base Bid - Outfall Scour Protection	6.5	930	SF	0.00	SF	935.51	SF	100.59%
Base Bid - ADM/Pillsbury Armored Cap	7.1	1	LS	0	%	15	%	15.00%
Base Bid - City Ship Canal Cap: In-water Fill	7.2	1	LS	0	%	100.00%	%	100.00%
Base Bid - Debris Removal, Loading, Transport and Disposal	7.3	30	CY	0.00	CY	0.00	CY	0.00%
Base Bid - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Base Bid - Porcupine Crib Installation	13.2	1	LS	0	%	100	%	100.00%
Base Bid - Emergent Vegetation Installation	13.4	1	LS	0	%	100.0%	%	100.00%
Base Bid - Emergent Vegetation Warranty	13.5	55	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Base Bid - Submerged Aquatic Vegetation Warranty	13.7	190	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Herbivory Protection	13.8	44,200	SF	0	SF	73019.00	SF	165.20%
Base Bid - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Base Bid - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Riverbend - Work Plan, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Riverbend - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Riverbend - Surveying	2.2	1	LS	0	%	100	%	100.00%
Riverbend - Planting Substrate	6.2	59,200	SF	0.00	SF	41521.80	SF	70.14%
Riverbend - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Riverbend - Outfall Scour Protection	6.5	140	SF	0.00	SF	195.90	SF	139.93%
Riverbend - Debris Removal, Loading, Trans, Disp.	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Riverbend - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Riverbend - Coir Bank Buffer Installation	13.3	2,870	LF	0.00	LF	1180.00	LF	41.11%
Riverbend - Emergent Vegetation Installation	13.4	1	LS	0.00	%	100.00	%	100.00%
Riverbend - Emergent Vegetation Warranty	13.50	48	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Submerged Aquatic Vegetation Installation	13.6	1	LS	0.0	%	100	%	100.00%
Riverbend - Submerged Aquatic Vegetation Warranty	13.7	26	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Herbivory Protection	13.8	38,500	SF	0.00	SF	16989.00	SF	44.13%
Riverbend - Demobilization	15.1	1	LS	0.0	%	100	%	100.00%
Riverbend - Additive for Performance and Payment Bonds	16.1	1	LS	0.0	%	0	%	0.00%
Buffalo Color - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Surveying	2.2	1	LS	0	%	100	%	100.00%
Buffalo Color - Planting Substrate	6.2	69,400	SF	0	SF	67186.00	SF	96.81%
Buffalo Color - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Buffalo Color - Outfall Scour Protection	6.5	50	SF	0.00	SF	0.00	SF	0.00%
Buffalo Color - Debris Removal, Loading, Trans & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Buffalo Color - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Coir Bank Buffer Installation	13.3	1,650	LF	0.00	LF	1790.00	LF	108.48%
Buffalo Color - Emergent Vegetation Installation	13.40	1	LS	0	%	51.93	%	51.93%
Buffalo Color - Emergent Vegetation Warranty	13.5	64	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Buffalo Color - Submerged Aquatic Vegetation Warranty	13.7	23	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Herbivory Protection	13.8	51,100	SF	0.00	SF	26186.00	SF	51.24%
Buffalo Color - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Ohio Street - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Ohio Street - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Ohio Street - Surveying	2.2	1	LS	0	%	100	%	100.00%
Ohio Street - Planting Substrate	6.2	2,100	SF	0	SF	2119.23	SF	100.92%
Ohio Street - Debris Removal, Loading, Transport & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Ohio Street - Coir Bank Buffer Installation	13.3	270	LF	0.00	LF	140.00	LF	51.85%
Ohio Street - Emergent Vegetation Installation	13.4	1	LS	0	%	100	%	100.00%
Ohio Street - Emergent Vegetation Warranty	13.5	3	EA	0.00	EA	0.00	EA	0.00%
Ohio Street - Herbivory Protection	13.8	1	LS	0	%	100	%	100.00%
Ohio Street - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Ohio Street - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
TOTAL								**90.46%**

***Chart is estimated and shall not be utilized for any billing purposes**

CITY SHIP CANAL RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Day Shift)	0	0.00	1,035	64,563	39,720	81.27%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Night Shift)	0	0.00	0	0	39,720		
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	165	4408	3,791	116.28%	
ADM / Pillsbury Armored Cap	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
	0	0.00	12	480	3,308	14.51%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
ADM / Pillsbury Filter Layer	0	0.00	0	0	1,905	0.00%	
	Loads	Tons	Loads	Tons	Tons		
Gravel Spawning Beds	0	0.00	28	440	346	127.17%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		21885		26,789	81.69%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		14181		9,039	156.89%	
	Each		Each		Each		
Porcupine Cribs	0		12		12	100.00%	
	Each		Each		Each		
Anchored Rootwad	0		20		20	100.00%	

KATHERINE STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Habitat Subgrade	0	0.00	687	26,473.38	19,017	139.21%	
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	22	1,869.44	2,306	81.07%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	9	759.00	771	98.44%	
	Each		Each		Each		
Anchored Rootwad	0		8		8	100.00%	
	Each		Each		Each		
Log Poles	0		9		9	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		10850		11,108	97.68%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4230		1,960	215.79%	

RIVERBEND RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	19	1,596.00	2,579	61.88%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	8.5	692.00	524	132.06%	
	Each		Each		Each		
Anchored Rootwad	0		15		15	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		5457		5,227	104.40%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4328		9,583	45.16%	

BUFFALO COLOR RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	27.5	2,310.00	3,023	76.41%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	7.5	1,879.00	1,753	107.19%	
	Each		Each		Each		
Anchored Rootwad	0		10		10	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		7886		4,574	172.42%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		6617		12,741	51.93%	

OHIO STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	3	252.00	91	276.92%	Based on Tons not SF as indicated in the above Chart
	Each		Each		Each		
Emergent Vegetation (EV)	0		154		545	28.28%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		325		-	100.00%	

PHASE II DREDGING - BASE BID

	Estimated Quantity Removed Today		Estimated Quantity Removed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 9 &10	1	345.00	2	1,025.00	1,100	93.18%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 38A	0	0.00	1	1,000.00	960	104.17%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 44E	0	0.00	3	825.00	700	117.86%	

PHASE II CAPPING - BASE BID

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
DMU 9 & 10	0	0.00	0	0.00	50	0.00%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Sand)	0	0.00	3	1,240.00	1,640	75.61%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Armor Layer)	0	0.00	1	180.00	365	49.32%	

PHASE II DREDGING - OPTION 1

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 17, 18 & 19	0	0.00	1	729.00	6,100	11.95%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 27, 28 & 29	0	0.00	0	-	6,700	0.00%	

PHASE II DREDGING - OPTION 2

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 101	0	0.00	0	0.00	2,500	0.00%	

Verbal Directives From Anchor / Honeywell:

- None.

Miscellaneous Information:

- None.

Clarifications to Previous Daily Reports:

- None.

DAY: Sunday
DATE: 12/6/2015

Site Personnel
Total = 10

Hours Worked Today
120

Personnel	Labor	Hours
0	President	0
0	Vice President	0
0	General Superintendent	0
0	Superintendent	0
0	Foreman	0
0	Corporate Project Manager	0
0	Project Manager	0
0	Health & Safety Director	0
0	Health & Safety Officer	0
1	QA/QC Manager	12
0	Operators	0
	SES Subcontractors	
9	Luedtke	108

SES Equipment
(3) Connex Boxes
PC-400LC8 Komatsu LF Excavator
WA-380-6 Komatsu Loader
PC-450LC8 LF Komatsu Excavator
J-Boat Utility Push Boat 4
Scow Open #4 11'2" x 41'x 6'
Ford F-250 Crew Cab
Blue Wave Boat & Trailer
(2) Open Top Scows
D51 Dozer

Quantity	Rental Equipment
1	8x28' Office Trailer (Will Scot)
1	8x32' Engineer Trailer (Will Scot)
1	8x28' Break Trailer (Will Scot)
2	Porta-Johns (Ball)
2	Light Plants (Admar)

Onsite Personnel

SES Personnel:	Union Laborers & Operators:	Subcontractors:
Ryan Killian		Wally Eljahmi
		George Herro
		Tim Kibby
		Steve Szymanksi
		Ed Carlson
		Kurt Schober
		Dale Leonard
		Sal Elmathil
		Todd Gleason

DERRICKBOAT #12

UEOTKE ENGINEERING CO.

Daily Dredge Report Form

DATE: 12/04/2015 DAY #: 177

Project: Buffalo River Environmental Phase: 1

Number of Shifts: 1 Hours per Shift: 12.0 day

Dredging Hours Shift #1: 0.0 Dredging Hours Shift #2: 0.0

Standby Hours Shift #1: 0.0 Standby Hours Shift #2: 0.0

Total Hours Dredging: 0.0 Hours Dredging to Date: 67.0

Standby Hours: 0.0 Standby Hours to Date: 0.0

Total Hours Worked: 12.0 Hours Worked to Date: 174.0

CREW: Total Number of Crew: 9

Day Shift

Name: T .Kibby, A. Eljahmi Title: Management

Name: T. Gleason Title: Foreman

Name: D. Leonard Title: Captain

Name: G. Herro, K. Schober Title: Operator

Name: S.Szymanski, E.Carlson Title: Operator

Name: S. Elmathil Title: Deckhand

Night Shift:

Name: Title: Foreman

Name: Title: Operator

Name: Title: Operator

Name: Title: Captain

Name: Title: Deckhand

Name: Title: Operator

Equipment Utilized:

Derrickboat #12, Tug Krista, Tug Gretchen, Lucille T, Spud barge #14, Workboat #6.

DPS024, DPS023, DPS059, DPS060.

Work Performed:

Complete repairs to crane. Clean small scow to be placed on DBT011. Tow to DMU 44e and place small scow on deck of DBT011. Tow up to Concrete Central for the night. Plan to tow to DMU 9/10 in the morning, bridges notified.

Safety Performed: Perform daily safety meetings at the start of each shift. Monitor working conditions, weather and PPE use at all times.

Weather: Mostly Cloudy Temp: Min. 38 Max. 45 Wind: W 15 -25

Dredge Information:

Cut: DMU 9/10 Starting Chainage: Sta 0+00 Starting chain: 0

Distance: 0' Ending Chainage: Sta 0+00 Ending chain: 0

Ave. Cut Width: 0' Ave. Cut Depth: 0' Ave. Tide Reading: N/A

Bucket Used: 8.0 CY Cablearm bucket

In Place Yards: 0 CY In Place Yards To Date: 2,554 CY

Scow Yards: 0 CY Scow Yards To Date: 3,150 CY

NOTES: Dredging to commence Saturday, Dec. 5 in DMU 9/10, then move to DMU 18/19 for completion. Anticipate completing dredging operations on Tuesday, Dec. 8. Will consolidate debris and off load at the CDF for disposal.

Signature:

DAILY TURBIDITY REPORT

DMU's 9/10	Upstream - SITE 1				Downstream - SITE 2					
Time (EST)	Battery	Temperature	Sp Cond	Turbidity+	Battery2	Temperature2	Sp Cond2	Turbidity+2	Turbidity	DMU
Time (EST)	V	F	usS/cm	NTU+	V	F	uS/cm	NTU+	Delta	DMU
12/6/2015 0:00	12.8	41.25	421	5.9	12.7	41.31	426	11.6	**5.7**	NA
12/6/2015 0:15	12.8	41.05	419	6.2	12.7	41.31	426	11.3	**5.1**	NA
12/6/2015 0:30	12.7	41.04	422	5.7	12.7	41.2	422	8.4	**2.7**	NA
12/6/2015 0:45	12.7	41.04	423	5.7	12.7	41.2	423	9.1	**3.4**	NA
12/6/2015 1:00	12.7	41.14	420	5.7	12.6	41.27	424	11.4	**5.7**	NA
12/6/2015 1:15	12.7	41.16	420	6.3	12.7	41.23	426	10	**3.7**	NA
12/6/2015 1:30	12.7	41.13	422	6.3	12.7	41.27	425	10.7	**4.4**	NA
12/6/2015 1:45	12.7	41.23	421	5.9	12.7	41.05	419	5.2	**-0.7**	NA
12/6/2015 2:00	12.7	41.05	419	5.5	12.7	41.22	424	8.5	**3**	NA
12/6/2015 2:15	12.7	40.8	420	5.4	12.7	41.25	423	8.2	**2.8**	NA
12/6/2015 2:30	12.7	40.6	422	5.6	12.7	41.22	424	7.7	**2.1**	NA
12/6/2015 2:45	12.7	40.6	422	5.3	12.6	41.22	423	7.5	**2.2**	NA
12/6/2015 3:00	12.7	40.66	421	5.4	12.6	41.22	423	8.2	**2.8**	NA
12/6/2015 3:15	12.7	40.93	421	6.6	12.6	41.2	423	8.3	**1.7**	NA
12/6/2015 3:30	12.7	40.96	425	6.1	12.6	41.22	421	7.5	**1.4**	NA
12/6/2015 3:45	12.7	40.68	421	5.4	12.6	41.29	421	6.1	**0.7**	NA
12/6/2015 4:00	12.7	40.66	419	6.2	12.6	41.22	424	6.8	**0.6**	NA
12/6/2015 4:15	12.7	40.55	422	5.4	12.6	41.16	426	7	**1.6**	NA
12/6/2015 4:30	12.7	40.37	420	5.2	12.6	41.23	423	5.9	**0.7**	NA
12/6/2015 4:45	12.6	40.55	420	5.1	12.6	41.18	424	5.8	**0.7**	NA
12/6/2015 5:00	12.6	40.48	421	5.1	12.6	41.27	421	5.1	**0**	NA
12/6/2015 5:15	12.6	40.3	422	5.3	12.6	41.11	421	4.5	**-0.8**	NA
12/6/2015 5:30	12.6	40.39	423	5.5	12.6	41.05	423	5.8	**0.3**	NA
12/6/2015 5:45	12.6	40.06	426	4.7	12.6	41.04	426	6.1	**1.4**	NA
12/6/2015 6:00	12.6	39.94	425	4.8	12.6	41.04	426	6	**1.2**	NA
12/6/2015 6:15	12.6	40.46	425	5.2	12.6	41.04	423	5.2	**0**	NA
12/6/2015 6:30	12.6	40.23	426	5.1	12.6	41.04	422	4.7	**-0.4**	9/10
12/6/2015 6:45	12.6	40.3	427	5.4	12.6	41	423	5.1	**-0.3**	9/10
12/6/2015 7:00	12.6	40.41	427	5.4	12.6	41.05	423	4.7	**-0.7**	9/10
12/6/2015 7:15	12.6	40.26	429	5.7	12.6	41.05	423	5.6	**-0.1**	9/10
12/6/2015 7:30	12.6	40.32	428	5.6	12.6	41.02	423	5	**-0.6**	9/10
12/6/2015 7:45	12.6	40.19	430	5.7	12.6	40.87	424	5	**-0.7**	9/10
12/6/2015 8:00	12.7	40.12	429	5.2	12.7	40.89	424	4.8	**-0.4**	9/10
12/6/2015 8:15	12.9	40.12	429	5.7	13.2	40.96	424	5.5	**-0.2**	9/10
12/6/2015 8:30	13.1	40.35	428	5.6	13.3	40.93	425	5.6	**0**	9/10
12/6/2015 8:45	13.2	40.46	428	5.6	13.4	40.87	425	5.5	**-0.1**	9/10
12/6/2015 9:00	13.4	40.6	428	5.8	13.7	40.84	425	5.2	**-0.6**	9/10
12/6/2015 9:15	13.3	40.77	426	5.6	13.4	40.8	425	4.7	**-0.9**	9/10
12/6/2015 9:30	13.4	40.69	428	5.9	13.7	40.82	424	5	**-0.9**	9/10
12/6/2015 9:45	13.5	40.66	428	5.7	14.1	40.8	424	7	**1.3**	9/10
12/6/2015 10:00	13.4	41.13	424	6	13.7	40.77	425	4.6	**-1.4**	9/10
12/6/2015 10:15	13.6	41.13	424	6.3	14.5	40.78	426	6	**-0.3**	9/10
12/6/2015 10:30	13.5	41.29	423	5.8	14.1	40.86	425	4.9	**-0.9**	9/10
12/6/2015 10:45	13.5	40.6	427	5.8	14.5	40.95	425	4.9	**-0.9**	9/10
12/6/2015 11:00	13.4	40.55	425	5.5	13.7	40.91	425	5.4	**-0.1**	9/10
12/6/2015 11:15	13.5	40.5	426	5.7	14.1	40.78	427	5.1	**-0.6**	9/10
12/6/2015 11:30	13.5	40.69	425	5.4	14.5	40.91	427	5.2	**-0.2**	9/10
12/6/2015 11:45	13.4	41.04	424	5.7	14	40.77	429	9	**3.3**	9/10
12/6/2015 12:00	13.5	40.71	427	6.3	14.5	40.73	428	12	**5.7**	9/10
12/6/2015 12:15	13.5	40.69	426	6.1	14	40.84	427	10.6	**4.5**	9/10
12/6/2015 12:30	13.5	40.3	430	6.5	14.1	40.84	426	10.2	**3.7**	9/10
12/6/2015 12:45	13.5	40.55	428	22.6	14.1	40.89	426	6.8	**-15.8**	9/10
12/6/2015 13:00	13.5	40.8	426	6.1	14.2	40.86	427	10.2	**4.1**	9/10
12/6/2015 13:15	13.4	40.91	425	12.1	14.2	40.91	428	11.4	**-0.7**	9/10
12/6/2015 13:30	13.4	41.02	424	8.7	14.2	40.93	427	10.9	**2.2**	9/10
12/6/2015 13:45	13.3	41.09	423	6.5	13.8	40.96	427	10.9	**4.4**	9/10
12/6/2015 14:00	13.2	41.04	423	7.7	13.5	40.96	427	9.9	**2.2**	9/10
12/6/2015 14:15	13.2	40.68	424	5.6	13.4	41.04	427	10.3	**4.7**	9/10
12/6/2015 14:30	13.2	41.36	421	5.5	13.4	41.05	427	12.2	**6.7**	9/10
12/6/2015 14:45	13.2	41.32	421	5.6	13.5	41.04	428	14.2	**8.6**	9/10
12/6/2015 15:00	13.2	41.09	424	5.5	13.4	41.02	428	13.4	**7.9**	9/10
12/6/2015 15:15	13.2	40.87	425	6.2	13.3	41.05	427	10.6	**4.4**	9/10
12/6/2015 15:30	13.1	40.89	424	6.3	13.2	41.02	427	13.2	**6.9**	9/10
12/6/2015 15:45	13.1	40.89	425	5.7	13.1	41.07	427	9.2	**3.5**	9/10
12/6/2015 16:00	13	41.59	421	5.6	13.1	41.07	427	11.6	**6**	9/10
12/6/2015 16:15	13	41.31	423	6	13	41.09	427	11.2	**5.2**	9/10
12/6/2015 16:30	13	41.11	424	6	12.9	41.09	427	12.3	**6.3**	9/10
12/6/2015 16:45	13	41.2	424	5.7	12.9	41.05	428	11.5	**5.8**	9/10
12/6/2015 17:00	13	41.27	424	6.1	12.9	41.05	428	11.9	**5.8**	9/10
12/6/2015 17:15	12.9	41.09	425	6.2	12.9	41.07	427	12	**5.8**	9/10
12/6/2015 17:30	12.9	41	426	5.9	12.9	41.05	427	10.5	**4.6**	9/10
12/6/2015 17:45	12.9	40.8	427	5.6	12.9	41.02	428	10.6	**5**	9/10
12/6/2015 18:00	12.9	41.16	424	5.2	12.9	40.98	428	9	**3.8**	9/10
12/6/2015 18:15	12.9	41.04	426	5.9	12.9	41.02	428	9.1	**3.2**	NA
12/6/2015 18:30	12.9	41.18	426	5.6	12.9	40.98	428	10.8	**5.2**	NA
12/6/2015 18:45	12.9	40.84	428	6.4	12.9	41	428	11.5	**5.1**	NA
12/6/2015 19:00	12.9	41.13	425	5.8	12.9	41	428	11	**5.2**	NA
12/6/2015 19:15	12.9	41.27	425	5.1	12.9	41.04	428	9.1	**4**	NA
12/6/2015 19:30	12.9	41.2	427	5	12.8	41.11	427	9.7	**4.7**	NA
12/6/2015 19:45	12.9	41.4	425	5	12.8	41.23	427	7.5	**2.5**	NA
12/6/2015 20:00	12.9	41.18	424	5	12.8	41.18	428	10	**5**	NA
12/6/2015 20:15	12.9	40.89	429	5.1	12.8	41.25	427	4.4	**-0.7**	NA
12/6/2015 20:30	12.9	41.02	428	5.7	12.8	41.11	428	9.1	**3.4**	NA
12/6/2015 20:45	12.8	40.91	430	5.8	12.8	41.05	429	6.5	**0.7**	NA
12/6/2015 21:00	12.9	40.82	430	5.3	12.8	41.11	429	10.7	**5.4**	NA
12/6/2015 21:15	12.9	41.09	426	4.8	12.8	41.05	429	11.3	**6.5**	NA
12/6/2015 21:30	12.9	41	426	4.9	12.8	41.07	428	10.2	**5.3**	NA
12/6/2015 21:45	12.9	41.09	427	4.9	12.8	41.11	428	8.7	**3.8**	NA
12/6/2015 22:00	12.9	40.93	428	4.8	12.8	41.09	428	12.4	**7.6**	NA
12/6/2015 22:15	12.9	41.14	428	5	12.8	41.09	428	9.7	**4.7**	NA
12/6/2015 22:30	12.9	40.91	427	4.8	12.8	41.13	427	9.7	**4.9**	NA
12/6/2015 22:45	12.8	40.98	427	5.4	12.8	41.13	429	7.5	**2.1**	NA
12/6/2015 23:00	12.8	41.38	425	4.6	12.8	41.22	429	7	**2.4**	NA
12/6/2015 23:15	12.8	40.71	428	4.8	12.8	41.16	429	7.8	**3**	NA
12/6/2015 23:30	12.8	40.32	431	5.2	12.8	41.11	430	7.4	**2.2**	NA
12/6/2015 23:45	12.8	41.16	425	5	12.8	41.11	430	5.8	**0.8**	NA

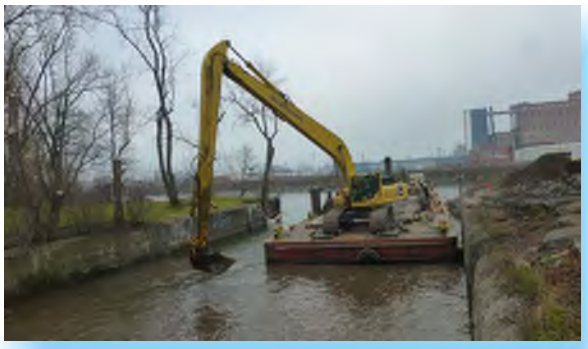
BUFFALO RIVER AOC CAPPING AND HABITAT RESTORATION, NEW YORK

Weather		Report No.	Project No.	Work Date:	Day of Week:
Low	High				
31	41	175	1119	12/7/2015	Monday

PARTLY CLOUDY

Daily Progress Report

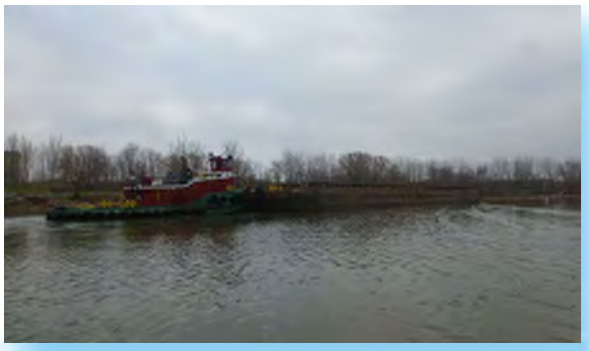
Weather conditions: Partly Cloudy; Winds: WSW @ 3 mph



1 Armor stone capping at DMU 44E.

2 Demobilizing crane mats from South End Marina to SES yard.

3 Sediment removal operations in DMU's 9 and 10.



4 Transporting scow for dredging in DMU's 18 and 19.

5 Repositioning turbidity monitoring buoys for dredging in DMU's 18 and 19.

6 Sediment removal operations in DMU's 18 and 19.

WORK PERFORMED BY SEVENSON

- Luedtke removed approximately 548 CY. A total of 4,127 CY have been removed to date.
- SES continued to monitor turbidity around dredge zone.
- PC400 and crane mats loaded out for return to SES yard.
- Completed armor stone cap in DMU 44E and prepared capping barge for transport to DMU's 9 & 10.

MATERIAL/EQUIPMENT DELIVERED TO SITE

- Buffalo Crushed delivered 21.82 tons (1 load) of light stone fill to the Rowing Club property.
- Gernatt delivered 125.33 tons (5 loads) of planting substrate to the Rowing Club property.

WORK PERFORMED BY SUBCONTRACTORS

- Luedtke completed dredging activities in DMU's 9 and 10.
- Luedtke commenced dredging activities in DMU's 18 & 19.

REMARKS

DEVIATIONS FROM SPECIFICATIONS:

- None.

ITEMS THAT MAY IMPEDE PROJECT PROGRESSION:

- None.

SAFETY REMARKS

- Sevenson performed the daily tailgate safety meeting at 7:00 AM. All site personnel were required to sign in. Hard hats, safety glasses, steel toe boots, and reflective work vests were required to perform site work. PFD's were utilized when within 6 feet of the water.

- Total Safe Man Hours: 25,780.5 (Estimated for safety only)

Sevenson's Planned Activities

- Complete dredging operations at DMU 17/18/19.
- Initiate capping operations at DMU 9/10.
- Complete demobilization activities.

PRODUCTION

ITEM DESCRIPTION	Bid Item #	ESTIMATED QUANTITIES	UNIT	DAILY QUANTITY		QUANTITY TO DATE		TOTAL PERCENT COMPLETE
Base Bid - Work Plans, Submittal, Schedule and Permits	1.1	1	LS	0	%	100	%	100.00%
Base Bid - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Base Bid - Surveying	2.2	1	LS	0	%	100	%	100.00%
Base Bid - Katherine Street Peninsula Habitat Subgrade	6.1	1	LS	0	%	100	%	100.00%
Base Bid - Planting Substrate	6.2	196,000	SF	0	SF	194177	SF	99.07%
Base Bid - Gravel Spawning Area Gravel	6.3	1	LS	0	%	100	%	100.00%
Base Bid - Riprap Rock Vanes	6.4	1	LS	0	%	100	%	100.00%
Base Bid - Outfall Scour Protection	6.5	930	SF	0.00	SF	935.51	SF	100.59%
Base Bid - ADM/Pillsbury Armored Cap	7.1	1	LS	0	%	15	%	15.00%
Base Bid - City Ship Canal Cap: In-water Fill	7.2	1	LS	0	%	100.00%	%	100.00%
Base Bid - Debris Removal, Loading, Transport and Disposal	7.3	30	CY	0.00	CY	0.00	CY	0.00%
Base Bid - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Base Bid - Porcupine Crib Installation	13.2	1	LS	0	%	100	%	100.00%
Base Bid - Emergent Vegetation Installation	13.4	1	LS	0	%	100.0%	%	100.00%
Base Bid - Emergent Vegetation Warranty	13.5	55	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Base Bid - Submerged Aquatic Vegetation Warranty	13.7	190	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Herbivory Protection	13.8	44,200	SF	0	SF	73019.00	SF	165.20%
Base Bid - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Base Bid - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Riverbend - Work Plan, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Riverbend - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Riverbend - Surveying	2.2	1	LS	0	%	100	%	100.00%
Riverbend - Planting Substrate	6.2	59,200	SF	0.00	SF	41521.80	SF	70.14%
Riverbend - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Riverbend - Outfall Scour Protection	6.5	140	SF	0.00	SF	195.90	SF	139.93%
Riverbend - Debris Removal, Loading, Trans, Disp.	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Riverbend - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Riverbend - Coir Bank Buffer Installation	13.3	2,870	LF	0.00	LF	1180.00	LF	41.11%
Riverbend - Emergent Vegetation Installation	13.4	1	LS	0.00	%	100.00	%	100.00%
Riverbend - Emergent Vegetation Warranty	13.50	48	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Submerged Aquatic Vegetation Installation	13.6	1	LS	0.0	%	100	%	100.00%
Riverbend - Submerged Aquatic Vegetation Warranty	13.7	26	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Herbivory Protection	13.8	38,500	SF	0.00	SF	16989.00	SF	44.13%
Riverbend - Demobilization	15.1	1	LS	0.0	%	100	%	100.00%
Riverbend - Additive for Performance and Payment Bonds	16.1	1	LS	0.0	%	0	%	0.00%
Buffalo Color - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Surveying	2.2	1	LS	0	%	100	%	100.00%
Buffalo Color - Planting Substrate	6.2	69,400	SF	0	SF	67186.00	SF	96.81%
Buffalo Color - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Buffalo Color - Outfall Scour Protection	6.5	50	SF	0.00	SF	0.00	SF	0.00%
Buffalo Color - Debris Removal, Loading, Trans & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Buffalo Color - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Coir Bank Buffer Installation	13.3	1,650	LF	0.00	LF	1790.00	LF	108.48%
Buffalo Color - Emergent Vegetation Installation	13.40	1	LS	0	%	51.93	%	51.93%
Buffalo Color - Emergent Vegetation Warranty	13.5	64	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Buffalo Color - Submerged Aquatic Vegetation Warranty	13.7	23	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Herbivory Protection	13.8	51,100	SF	0.00	SF	26186.00	SF	51.24%
Buffalo Color - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Ohio Street - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Ohio Street - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Ohio Street - Surveying	2.2	1	LS	0	%	100	%	100.00%
Ohio Street - Planting Substrate	6.2	2,100	SF	0	SF	2119.23	SF	100.92%
Ohio Street - Debris Removal, Loading, Transport & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Ohio Street - Coir Bank Buffer Installation	13.3	270	LF	0.00	LF	140.00	LF	51.85%
Ohio Street - Emergent Vegetation Installation	13.4	1	LS	0	%	100	%	100.00%
Ohio Street - Emergent Vegetation Warranty	13.5	3	EA	0.00	EA	0.00	EA	0.00%
Ohio Street - Herbivory Protection	13.8	1	LS	0	%	100	%	100.00%
Ohio Street - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Ohio Street - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
TOTAL								**90.46%**

*Chart is estimated and shall not be utilized for any billing purposes

CITY SHIP CANAL RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Day Shift)	0	0.00	1,035	64,563	39,720	81.27%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Night Shift)	0	0.00	0	0	39,720		
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	165	4408	3,791	116.28%	
ADM / Pillsbury Armored Cap	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
	0	0.00	12	480	3,308	14.51%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
ADM / Pillsbury Filter Layer	0	0.00	0	0	1,905	0.00%	
	Loads	Tons	Loads	Tons	Tons		
Gravel Spawning Beds	0	0.00	28	440	346	127.17%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		21885		26,789	81.69%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		14181		9,039	156.89%	
	Each		Each		Each		
Porcupine Cribs	0		12		12	100.00%	
	Each		Each		Each		
Anchored Rootwad	0		20		20	100.00%	

KATHERINE STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Habitat Subgrade	0	0.00	687	26,473.38	19,017	139.21%	
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	22	1,869.44	2,306	81.07%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	9	759.00	771	98.44%	
	Each		Each		Each		
Anchored Rootwad	0		8		8	100.00%	
	Each		Each		Each		
Log Poles	0		9		9	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		10850		11,108	97.68%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4230		1,960	215.79%	

RIVERBEND RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	19	1,596.00	2,579	61.88%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	8.5	692.00	524	132.06%	
	Each		Each		Each		
Anchored Rootwad	0		15		15	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		5457		5,227	104.40%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4328		9,583	45.16%	

BUFFALO COLOR RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	27.5	2,310.00	3,023	76.41%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	7.5	1,879.00	1,753	107.19%	
	Each		Each		Each		
Anchored Rootwad	0		10		10	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		7886		4,574	172.42%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		6617		12,741	51.93%	

OHIO STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	3	252.00	91	276.92%	Based on Tons not SF as indicated in the above Chart
	Each		Each		Each		
Emergent Vegetation (EV)	0		154		545	28.28%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		325		-	100.00%	

PHASE II DREDGING - BASE BID

	Estimated Quantity Removed Today		Estimated Quantity Removed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 9 &10	1	150.00	3	1,175.00	1,100	106.82%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 38A	0	0.00	1	1,000.00	960	104.17%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 44E	0	0.00	3	825.00	700	117.86%	

PHASE II CAPPING - BASE BID

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
DMU 9 & 10	0	0.00	0	0.00	50	0.00%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Sand)	0	0.00	3	1,240.00	1,640	75.61%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Armor Layer)	1	201.82	1	381.82	365	104.61%	

PHASE II DREDGING - OPTION 1

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 17, 18 & 19	1	398.00	2	1,127.00	6,100	18.48%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 27, 28 & 29	0	0.00	0	-	6,700	0.00%	

PHASE II DREDGING - OPTION 2

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 101	0	0.00	0	0.00	2,500	0.00%	

Verbal Directives From Anchor / Honeywell:

- None.

Miscellaneous Information:

- None.

Clarifications to Previous Daily Reports:

- None.

DAY: Monday
DATE: 12/7/2015

Site Personnel
Total = 14

Hours Worked Today
154

Personnel	Labor	Hours	SES Equipment	Quantity	Rental Equipment
0	President	0	(3) Connex Boxes	1	8x28' Office Trailer (Will Scot)
0	Vice President	0	PC-400LC8 Komatsu LF Excavator	1	8x32' Engineer Trailer (Will Scot)
0	General Superintendent	0	WA-380-6 Komatsu Loader	1	8x28' Break Trailer (Will Scot)
0	Superintendent	0	PC-450LC8 LF Komatsu Excavator	2	Porta-Johns (Ball)
0	Foreman	0	J-Boat Utility Push Boat 4	2	Light Plants (Admar)
0	Corporate Project Manager	0	Scow Open #4 11'2" x 41'x 6'		
1	Project Manager	10	Ford F-250 Crew Cab		
0	Health & Safety Director	0	Blue Wave Boat & Trailer		
0	Health & Safety Officer	0	(2) Open Top Scows		
1	QA/QC Manager	12	D51 Dozer		
3	Operators	24			
	SES Subcontractors				
9	Luedtke	108			

Onsite Personnel

SES Personnel:	Union Laborers & Operators:	Subcontractors:
Ryan Killian	Gerry Freedenburg	Wally Eljahmi
Mike Welch	Henry Olrogge	George Herro
	Ray Vesotski	Tim Kibby
		Steve Szymanksi
		Ed Carlson
		Kurt Schober
		Dale Leonard
		Sal Elmathil
		Todd Gleason

DERRICKBOAT #12

UEOTKE ENGINEERING CO.

Daily Dredge Report Form

DATE: 12/04/2015 DAY #: 177

Project: Buffalo River Environmental Phase: 1

Number of Shifts: 1 Hours per Shift: 12.0 day

Dredging Hours Shift #1: 0.0 Dredging Hours Shift #2: 0.0

Standby Hours Shift #1: 0.0 Standby Hours Shift #2: 0.0

Total Hours Dredging: 0.0 Hours Dredging to Date: 67.0

Standby Hours: 0.0 Standby Hours to Date: 0.0

Total Hours Worked: 12.0 Hours Worked to Date: 174.0

CREW: Total Number of Crew: 9

Day Shift

Name: T .Kibby, A. Eljahmi Title: Management

Name: T. Gleason Title: Foreman

Name: D. Leonard Title: Captain

Name: G. Herro, K. Schober Title: Operator

Name: S.Szymanski, E.Carlson Title: Operator

Name: S. Elmathil Title: Deckhand

Night Shift:

Name: Title: Foreman

Name: Title: Operator

Name: Title: Operator

Name: Title: Captain

Name: Title: Deckhand

Name: Title: Operator

Equipment Utilized:

Derrickboat #12, Tug Krista, Tug Gretchen, Lucille T, Spud barge #14, Workboat #6.

DPS024, DPS023, DPS059, DPS060.

Work Performed:

Complete repairs to crane. Clean small scow to be placed on DBT011. Tow to DMU 44e and place small scow on deck of DBT011. Tow up to Concrete Central for the night. Plan to tow to DMU 9/10 in the morning, bridges notified.

Safety Performed: Perform daily safety meetings at the start of each shift. Monitor working conditions, weather and PPE use at all times.

Weather: Mostly Cloudy Temp: Min. 38 Max. 45 Wind: W 15 -25

Dredge Information:

Cut: DMU 9/10 Starting Chainage: Sta 0+00 Starting chain: 0

Distance: 0' Ending Chainage: Sta 0+00 Ending chain: 0

Ave. Cut Width: 0' Ave. Cut Depth: 0' Ave. Tide Reading: N/A

Bucket Used: 8.0 CY Cablearm bucket

In Place Yards: 0 CY In Place Yards To Date: 2,554 CY

Scow Yards: 0 CY Scow Yards To Date: 3,150 CY

NOTES: Dredging to commence Saturday, Dec. 5 in DMU 9/10, then move to DMU 18/19 for completion. Anticipate completing dredging operations on Tuesday, Dec. 8. Will consolidate debris and off load at the CDF for disposal.

Signature:

DAILY TURBIDITY REPORT

DMU 9/10 & 18/19	Upstream - SITE 1				Downstream - SITE 2					
Time (EST)	Battery	Temperature	Sp Cond	Turbidity+	Battery2	Temperature2	Sp Cond2	Turbidity+2	Turbidity	DMU
Time (EST)	V	F	usS/cm	NTU+	V	F	uS/cm	NTU+	Delta	DMU
12/7/2015 0:00	12.8	40.95	426	5.1	12.8	41.11	430	6.1	1	NA
12/7/2015 0:15	12.8	41.05	426	4.6	12.7	41.11	430	6.1	1.5	NA
12/7/2015 0:30	12.8	40.89	427	5.1	12.8	41.14	429	6.7	1.6	NA
12/7/2015 0:45	12.8	40.73	429	5.4	12.8	41.14	429	9.2	3.8	NA
12/7/2015 1:00	12.8	41.2	425	4.7	12.8	41.09	429	6.2	1.5	NA
12/7/2015 1:15	12.8	41.29	424	4.8	12.8	41.04	430	5.7	0.9	NA
12/7/2015 1:30	12.8	41.45	423	4.8	12.7	41.05	430	5.6	0.8	NA
12/7/2015 1:45	12.8	41.4	423	5.3	12.8	41.04	430	6.2	0.9	NA
12/7/2015 2:00	12.8	41.07	425	5.9	12.8	41.05	430	5.5	-0.4	NA
12/7/2015 2:15	12.8	41.13	425	4.8	12.8	41.05	430	5.8	1	NA
12/7/2015 2:30	12.8	41.38	423	5	12.8	41.02	430	5.3	0.3	NA
12/7/2015 2:45	12.8	40.71	425	5.1	12.7	40.98	430	5.4	0.3	NA
12/7/2015 3:00	12.8	40.73	424	4.9	12.7	40.87	433	5.4	0.5	NA
12/7/2015 3:15	12.8	40.28	427	4.8	12.7	40.91	431	6.3	1.5	NA
12/7/2015 3:30	12.8	40.39	426	4.8	12.7	40.86	433	5.6	0.8	NA
12/7/2015 3:45	12.8	40.6	426	5	12.7	40.84	433	5.2	0.2	NA
12/7/2015 4:00	12.8	40.69	427	5.5	12.7	40.82	433	5.2	-0.3	NA
12/7/2015 4:15	12.8	40.51	427	5.1	12.7	40.96	431	4.5	-0.6	NA
12/7/2015 4:30	12.8	40.32	429	5.2	12.7	40.89	432	6.1	0.9	NA
12/7/2015 4:45	12.8	40.21	428	5	12.7	40.93	432	6	1	NA
12/7/2015 5:00	12.8	40.21	427	4.8	12.7	40.96	431	5.4	0.6	NA
12/7/2015 5:15	12.8	40.55	425	5.2	12.7	40.93	432	6	0.8	NA
12/7/2015 5:30	12.8	40.55	424	4.9	12.7	40.93	432	5.8	0.9	NA
12/7/2015 5:45	12.8	40.6	424	5.1	12.7	40.93	432	5.3	0.2	NA
12/7/2015 6:00	12.8	40.42	424	4.6	12.7	41	430	5.3	0.7	NA
12/7/2015 6:15	12.8	39.99	428	4.9	12.7	40.96	430	4.7	-0.2	NA
12/7/2015 6:30	12.8	39.72	431	5.4	12.7	40.98	431	6	0.6	9/10
12/7/2015 6:45	12.7	39.61	432	5.1	12.7	41.02	429	4.9	-0.2	9/10
12/7/2015 7:00	12.7	40.19	428	5.3	12.6	40.98	430	5.1	-0.2	9/10
12/7/2015 7:15	12.7	40.6	425	4.9	12.7	40.96	430	4.8	-0.1	9/10
12/7/2015 7:30	12.7	40.53	426	5.2	12.7	40.95	430	5.2	0	9/10
12/7/2015 7:45	12.7	39.92	429	5.3	12.7	40.96	429	4.3	-1	9/10
12/7/2015 8:00	12.7	40.59	427	4.9	12.7	40.78	432	7.2	2.3	9/10
12/7/2015 8:15	12.7	40.33	428	5.2	12.7	40.96	428	6	0.8	9/10
12/7/2015 8:30	12.7	39.88	431	5	12.7	40.69	430	8.1	3.1	9/10
12/7/2015 8:45	12.8	39.87	431	5	12.8	40.86	430	5.9	0.9	9/10
12/7/2015 9:00	12.8	40.03	430	6.2	12.8	40.89	430	5.3	-0.9	9/10
12/7/2015 9:15	12.8	40.08	430	7.1	12.9	40.91	430	5.7	-1.4	9/10
12/7/2015 9:30	12.8	39.97	430	5.4	12.9	40.87	430	6.4	1	9/10
12/7/2015 9:45	12.8	39.97	431	4.8	12.9	40.82	430	7.1	2.3	9/10
12/7/2015 10:00	12.8	39.88	432	5	12.9	40.77	430	9.5	4.5	9/10
12/7/2015 10:15	12.8	39.72	433	5	12.8	40.46	431	24.5	19.5	Transport
12/7/2015 10:30	12.8	39.56	434	4.7	12.9	40.5	431	23.9	19.2	Transport
12/7/2015 10:45	12.8	39.38	435	5.8	12.9	40.5	431	18.8	13	Transport
12/7/2015 11:00	12.8	40.71	429	8.2	12.9	40.82	432	7.9	-0.3	Transport
12/7/2015 11:15	12.9	40.77	430	12	12.9	40.87	431	16.6	4.6	Transport
12/7/2015 11:30	12.9	40.77	431	11.4	13.1	40.84	431	14.3	2.9	Transport
12/7/2015 11:45	13	40.77	429	9.4	13.1	40.89	431	14.5	5.1	18/19
12/7/2015 12:00	13	40.8	429	9.5	13.1	40.86	431	13.8	4.3	18/19
12/7/2015 12:15	13	40.8	429	9.3	13.2	40.87	431	15.1	5.8	18/19
12/7/2015 12:30	13	40.8	429	9.6	13.2	40.91	431	18	8.4	18/19
12/7/2015 12:45	13	40.8	428	14.4	13.1	40.89	431	16.6	2.2	18/19
12/7/2015 13:00	13	40.82	428	14.1	13.1	40.91	431	19	4.9	18/19
12/7/2015 13:15	13	40.82	428	13.3	13.1	40.95	432	16.9	3.6	18/19
12/7/2015 13:30	13.2	40.82	428	14.4	13.5	40.93	432	16.7	2.3	18/19
12/7/2015 13:45	13.4	40.84	428	12.1	14.5	40.93	431	14.6	2.5	18/19
12/7/2015 14:00	13.4	40.89	428	12.5	13.8	40.96	431	18	5.5	18/19
12/7/2015 14:15	13.3	40.82	428	11.6	13.4	40.98	431	14.6	3	18/19
12/7/2015 14:30	13.2	40.84	428	13.9	13.3	40.93	431	15.9	2	18/19
12/7/2015 14:45	13.2	40.82	428	14.8	13.3	40.91	431	14.7	-0.1	18/19
12/7/2015 15:00	13.5	40.87	428	12.6	14.6	40.91	431	14.1	1.5	18/19
12/7/2015 15:15	13.3	40.84	428	12.5	13.5	40.91	431	15.3	2.8	18/19
12/7/2015 15:30	13.2	40.84	428	13.5	13.3	40.95	431	15.4	1.9	18/19
12/7/2015 15:45	13.1	40.84	428	12.7	13.1	40.98	431	14.2	1.5	18/19
12/7/2015 16:00	13.1	40.84	428	12.9	13	41	432	15.6	2.7	18/19
12/7/2015 16:15	13	40.84	428	12.8	13	40.95	431	15.2	2.4	18/19
12/7/2015 16:30	13	40.84	428	13.7	12.9	40.95	431	14.4	0.7	18/19
12/7/2015 16:45	12.9	40.84	428	12.8	12.9	40.93	431	14.2	1.4	18/19
12/7/2015 17:00	12.9	40.84	428	13.5	12.9	40.96	432	14.1	0.6	18/19
12/7/2015 17:15	12.9	40.84	428	11.4	12.9	40.96	431	14.7	3.3	18/19
12/7/2015 17:30	12.9	40.87	428	11.7	12.8	40.93	431	13.7	2	18/19
12/7/2015 17:45	12.8	40.86	428	12.1	12.8	40.93	431	14.6	2.5	18/19
12/7/2015 18:00	12.9	40.86	428	12	12.8	40.93	432	12.3	0.3	18/19
12/7/2015 18:15	12.8	40.86	428	12	12.8	40.95	432	14.8	2.8	18/19
12/7/2015 18:30	12.8	40.86	428	12.2	12.8	40.91	432	12.5	0.3	18/19
12/7/2015 18:45	12.8	40.84	428	14.5	12.8	40.95	432	14.4	-0.1	18/19
12/7/2015 19:00	12.8	40.84	428	12.7	12.8	41	433	14	1.3	18/19
12/7/2015 19:15	12.8	40.82	428	13	12.8	41	432	13.4	0.4	18/19
12/7/2015 19:30	12.8	40.82	428	12.3	12.7	40.95	432	15	2.7	18/19
12/7/2015 19:45	12.8	40.84	428	12.5	12.8	41	433	13.4	0.9	18/19
12/7/2015 20:00	12.8	40.78	428	12.9	12.8	40.91	432	13.5	0.6	18/19
12/7/2015 20:15	12.8	40.8	428	16	12.8	40.89	432	14	-2	18/19
12/7/2015 20:30	12.8	40.8	428	12.3	12.7	40.89	432	14	1.7	18/19
12/7/2015 20:45	12.8	40.75	428	11.5	12.7	40.95	432	14.6	3.1	18/19
12/7/2015 21:00	12.7	40.75	428	11.4	12.7	40.93	432	14.6	3.2	18/19
12/7/2015 21:15	12.7	40.77	428	11.4	12.7	40.96	433	15	3.6	18/19
12/7/2015 21:30	12.7	40.73	429	12.6	12.7	40.89	431	12.8	0.2	18/19
12/7/2015 21:45	12.7	40.77	428	14.1	12.7	40.91	432	13.5	-0.6	18/19
12/7/2015 22:00	12.7	40.69	428	13	12.7	40.91	431	15.7	2.7	18/19
12/7/2015 22:15	12.7	40.68	429	14.5	12.7	40.89	432	14.4	-0.1	18/19
12/7/2015 22:30	12.7	40.68	429	12.1	12.7	40.89	431	14	1.9	18/19
12/7/2015 22:45	12.7	40.69	429	14.8	12.6	40.91	432	15.6	0.8	18/19
12/7/2015 23:00	12.7	40.69	429	12.7	12.7	40.91	432	14.3	1.6	18/19
12/7/2015 23:15	12.7	40.66	429	12.9	12.7	40.87	432	14.1	1.2	18/19
12/7/2015 23:30	12.7	40.55	429	11.2	12.7	40.82	431	12.2	1	18/19
12/7/2015 23:45	12.7	40.51	429	12.5	12.7	40.91	432	13.7	1.2	18/19

BUFFALO RIVER AOC CAPPING AND HABITAT RESTORATION, NEW YORK

Weather	Report No.	Project No.	Work Date:	Day of Week:
Low 28 / High 44	176	1119	12/8/2015	Tuesday

PARTLY CLOUDY

Daily Progress Report

Weather conditions: Partly Cloudy; Winds: S @ 6 mph

1 Capping operations at DMU's 9 and 10.

2 Sediment removal operations in DMU's 18 and 19.

3 Dredging in DMU's 18 and 19.

4 Capping operations at DMU's 9 and 10.

5 Demobilizing floating dock for return to SES yard.

6 Sediment removal operations in DMU's 18 and 19.

WORK PERFORMED BY SEVENSON

- Luedtke removed approximately 475 CY. A total of 4,602 CY have been removed to date.
- SES continued to monitor turbidity around dredge zone.
- Floating dock and barge loaded out for return to SES yard.
- Commenced capping in DMU's 9 and 10.

MATERIAL/EQUIPMENT DELIVERED TO SITE

- None.

WORK PERFORMED BY SUBCONTRACTORS

- Luedtke continued dredging activities in DMU's 18 & 19.
- Thew performed post-dredge survey of DMU's 9 & 10 and post-cap survey of DMU 44E.

REMARKS

DEVIATIONS FROM SPECIFICATIONS:

- None.

ITEMS THAT MAY IMPEDE PROJECT PROGRESSION:

- None.

SAFETY REMARKS

- Sevenson performed the daily tailgate safety meeting at 7:00 AM. All site personnel were required to sign in. Hard hats, safety glasses, steel toe boots, and reflective work vests were required to perform site work. PFD's were utilized when within 6 feet of the water.

- Total Safe Man Hours: 25,933,.5 (Estimated for safety only)

Sevenson's Planned Activities

- Complete dredging operations at DMU 17/18/19.
- Complete capping operations at DMU 9/10.
- Complete demobilization activities.

PRODUCTION

ITEM DESCRIPTION	Bid Item #	ESTIMATED QUANTITIES	UNIT	DAILY QUANTITY		QUANTITY TO DATE		TOTAL PERCENT COMPLETE
Base Bid - Work Plans, Submittal, Schedule and Permits	1.1	1	LS	0	%	100	%	100.00%
Base Bid - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Base Bid - Surveying	2.2	1	LS	0	%	100	%	100.00%
Base Bid - Katherine Street Peninsula Habitat Subgrade	6.1	1	LS	0	%	100	%	100.00%
Base Bid - Planting Substrate	6.2	196,000	SF	0	SF	194177	SF	99.07%
Base Bid - Gravel Spawning Area Gravel	6.3	1	LS	0	%	100	%	100.00%
Base Bid - Riprap Rock Vanes	6.4	1	LS	0	%	100	%	100.00%
Base Bid - Outfall Scour Protection	6.5	930	SF	0.00	SF	935.51	SF	100.59%
Base Bid - ADM/Pillsbury Armored Cap	7.1	1	LS	0	%	15	%	15.00%
Base Bid - City Ship Canal Cap: In-water Fill	7.2	1	LS	0	%	100.00%	%	100.00%
Base Bid - Debris Removal, Loading, Transport and Disposal	7.3	30	CY	0.00	CY	0.00	CY	0.00%
Base Bid - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Base Bid - Porcupine Crib Installation	13.2	1	LS	0	%	100	%	100.00%
Base Bid - Emergent Vegetation Installation	13.4	1	LS	0	%	100.0%	%	100.00%
Base Bid - Emergent Vegetation Warranty	13.5	55	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Base Bid - Submerged Aquatic Vegetation Warranty	13.7	190	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Herbivory Protection	13.8	44,200	SF	0	SF	73019.00	SF	165.20%
Base Bid - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Base Bid - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Riverbend - Work Plan, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Riverbend - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Riverbend - Surveying	2.2	1	LS	0	%	100	%	100.00%
Riverbend - Planting Substrate	6.2	59,200	SF	0.00	SF	41521.80	SF	70.14%
Riverbend - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Riverbend - Outfall Scour Protection	6.5	140	SF	0.00	SF	195.90	SF	139.93%
Riverbend - Debris Removal, Loading, Trans, Disp.	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Riverbend - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Riverbend - Coir Bank Buffer Installation	13.3	2,870	LF	0.00	LF	1180.00	LF	41.11%
Riverbend - Emergent Vegetation Installation	13.4	1	LS	0.00	%	100.00	%	100.00%
Riverbend - Emergent Vegetation Warranty	13.50	48	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Submerged Aquatic Vegetation Installation	13.6	1	LS	0.0	%	100	%	100.00%
Riverbend - Submerged Aquatic Vegetation Warranty	13.7	26	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Herbivory Protection	13.8	38,500	SF	0.00	SF	16989.00	SF	44.13%
Riverbend - Demobilization	15.1	1	LS	0.0	%	100	%	100.00%
Riverbend - Additive for Performance and Payment Bonds	16.1	1	LS	0.0	%	0	%	0.00%
Buffalo Color - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Surveying	2.2	1	LS	0	%	100	%	100.00%
Buffalo Color - Planting Substrate	6.2	69,400	SF	0	SF	67186.00	SF	96.81%
Buffalo Color - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Buffalo Color - Outfall Scour Protection	6.5	50	SF	0.00	SF	0.00	SF	0.00%
Buffalo Color - Debris Removal, Loading, Trans & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Buffalo Color - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Coir Bank Buffer Installation	13.3	1,650	LF	0.00	LF	1790.00	LF	108.48%
Buffalo Color - Emergent Vegetation Installation	13.40	1	LS	0	%	51.93	%	51.93%
Buffalo Color - Emergent Vegetation Warranty	13.5	64	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Buffalo Color - Submerged Aquatic Vegetation Warranty	13.7	23	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Herbivory Protection	13.8	51,100	SF	0.00	SF	26186.00	SF	51.24%
Buffalo Color - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Ohio Street - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Ohio Street - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Ohio Street - Surveying	2.2	1	LS	0	%	100	%	100.00%
Ohio Street - Planting Substrate	6.2	2,100	SF	0	SF	2119.23	SF	100.92%
Ohio Street - Debris Removal, Loading, Transport & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Ohio Street - Coir Bank Buffer Installation	13.3	270	LF	0.00	LF	140.00	LF	51.85%
Ohio Street - Emergent Vegetation Installation	13.4	1	LS	0	%	100	%	100.00%
Ohio Street - Emergent Vegetation Warranty	13.5	3	EA	0.00	EA	0.00	EA	0.00%
Ohio Street - Herbivory Protection	13.8	1	LS	0	%	100	%	100.00%
Ohio Street - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Ohio Street - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
TOTAL								**90.46%**

***Chart is estimated and shall not be utilized for any billing purposes**

CITY SHIP CANAL RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Day Shift)	0	0.00	1,035	64,563	39,720	81.27%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Night Shift)	0	0.00	0	0	39,720		
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	165	4408	3,791	116.28%	
ADM / Pillsbury Armored Cap	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
	0	0.00	12	480	3,308	14.51%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
ADM / Pillsbury Filter Layer	0	0.00	0	0	1,905	0.00%	
	Loads	Tons	Loads	Tons	Tons		
Gravel Spawning Beds	0	0.00	28	440	346	127.17%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		21885		26,789	81.69%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		14181		9,039	156.89%	
	Each		Each		Each		
Porcupine Cribs	0		12		12	100.00%	
	Each		Each		Each		
Anchored Rootwad	0		20		20	100.00%	

KATHERINE STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Habitat Subgrade	0	0.00	687	26,473.38	19,017	139.21%	
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	22	1,869.44	2,306	81.07%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	9	759.00	771	98.44%	
	Each		Each		Each		
Anchored Rootwad	0		8		8	100.00%	
	Each		Each		Each		
Log Poles	0		9		9	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		10850		11,108	97.68%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4230		1,960	215.79%	

RIVERBEND RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	19	1,596.00	2,579	61.88%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	8.5	692.00	524	132.06%	
	Each		Each		Each		
Anchored Rootwad	0		15		15	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		5457		5,227	104.40%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4328		9,583	45.16%	

BUFFALO COLOR RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	27.5	2,310.00	3,023	76.41%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	7.5	1,879.00	1,753	107.19%	
	Each		Each		Each		
Anchored Rootwad	0		10		10	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		7886		4,574	172.42%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		6617		12,741	51.93%	

OHIO STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	3	252.00	91	276.92%	Based on Tons not SF as indicated in the above Chart
	Each		Each		Each		
Emergent Vegetation (EV)	0		154		545	28.28%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		325		-	100.00%	

PHASE II DREDGING - BASE BID

	Estimated Quantity Removed Today		Estimated Quantity Removed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 9 &10	1	150.00	3	1,175.00	1,100	106.82%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 38A	0	0.00	1	1,000.00	960	104.17%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 44E	0	0.00	3	825.00	700	117.86%	

PHASE II CAPPING - BASE BID

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
DMU 9 & 10	1	105.00	1	105.00	50	210.00%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Sand)	0	0.00	3	1,240.00	1,640	75.61%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Armor Layer)	0	0.00	2	381.82	365	104.61%	

PHASE II DREDGING - OPTION 1

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 17, 18 & 19	1	475.00	3	1,602.00	6,100	26.26%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 27, 28 & 29	0	0.00	0	-	6,700	0.00%	

PHASE II DREDGING - OPTION 2

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 101	0	0.00	0	0.00	2,500	0.00%	

Verbal Directives From Anchor / Honeywell:

- None.

Miscellaneous Information:

- During dredging operations at DMU 19, Luedtke encountered an unknown utility running in a north and south direction. Luedtke was dredging approximately 20 feet downstream of the 10 foot offset that was projected north from the anomaly discovered in the southern section of DMU 19 during the preconstruction bathymetric survey. The dredge operator viewed what appeared to be a 3" conduit with a 1" wire as the bucket exited the water.

Luedtke contacted their local CSX contact to see if they had any adverse effects on their switchboard. They indicated that everything was in working order and nothing was out of the ordinary. We described the area and the CSX rep indicated that it may be an abandoned utility from the decommissioned Norfolk Southern Line. We are currently trying to touch base with Norfolk Southern representatives to see if they are familiar with this line or if they are experiencing any technical difficulties that may be associated with this line.

Based on the fact that this utility was not on any of our mark out requests and the local railroads are not showing any issues, we are lead to believe that this is likely an abandoned utility. That being said, we will try to gather additional information for closure to this incident.

Clarifications to Previous Daily Reports:

- None.

DAY: Tuesday
DATE: 12/8/2015

Site Personnel
Total = 15

Hours Worked Today
153

Personnel	Labor	Hours
0	President	0
0	Vice President	0
0	General Superintendent	0
0	Superintendent	0
0	Foreman	0
0	Corporate Project Manager	0
1	Project Manager	10
0	Health & Safety Director	0
0	Health & Safety Officer	0
1	QA/QC Manager	12
3	Operators	24
	SES Subcontractors	
9	Luedtke	99
1	Thew	8

SES Equipment
(3) Connex Boxes
D51 Dozer
WA-380-6 Komatsu Loader
PC-450LC8 LF Komatsu Excavator
J-Boat Utility Push Boat 4
Scow Open #4 11'2" x 41'x 6'
Ford F-250 Crew Cab
Blue Wave Boat & Trailer
(2) Open Top Scows

Quantity	Rental Equipment
1	8x28' Office Trailer (Will Scot)
1	8x32' Engineer Trailer (Will Scot)
1	8x28' Break Trailer (Will Scot)
2	Porta-Johns (Ball)
1	Light Plants (Admar)

Onsite Personnel

SES Personnel:	Union Laborers & Operators:	Subcontractors:
Ryan Killian	Gerry Freedenburg	Wally Eljahmi
Mike Welch	Henry Olrogge	George Herro
	Ray Vesotski	Tim Kibby
		Steve Szymanksi
		Ed Carlson
		Kurt Schober
		Dale Leonard
		Sal Elmathil
		Todd Gleason
		Mark Williams

DERRICKBOAT #12

UEOTKE ENGINEERING CO.

Daily Dredge Report Form

DATE: 12/04/2015 DAY #: 177

Project: Buffalo River Environmental Phase: 1

Number of Shifts: 1 Hours per Shift: 12.0 day

Dredging Hours Shift #1: 0.0 Dredging Hours Shift #2: 0.0

Standby Hours Shift #1: 0.0 Standby Hours Shift #2: 0.0

Total Hours Dredging: 0.0 Hours Dredging to Date: 67.0

Standby Hours: 0.0 Standby Hours to Date: 0.0

Total Hours Worked: 12.0 Hours Worked to Date: 174.0

CREW: Total Number of Crew: 9

Day Shift

Name: T .Kibby, A. Eljahmi Title: Management

Name: T. Gleason Title: Foreman

Name: D. Leonard Title: Captain

Name: G. Herro, K. Schober Title: Operator

Name: S.Szymanski, E.Carlson Title: Operator

Name: S. Elmathil Title: Deckhand

Night Shift:

Name: Title: Foreman

Name: Title: Operator

Name: Title: Operator

Name: Title: Captain

Name: Title: Deckhand

Name: Title: Operator

Equipment Utilized:

Derrickboat #12, Tug Krista, Tug Gretchen, Lucille T, Spud barge #14, Workboat #6.

DPS024, DPS023, DPS059, DPS060.

Work Performed:

Complete repairs to crane. Clean small scow to be placed on DBT011. Tow to DMU 44e and place small scow on deck of DBT011. Tow up to Concrete Central for the night. Plan to tow to DMU 9/10 in the morning, bridges notified.

Safety Performed: Perform daily safety meetings at the start of each shift. Monitor working conditions, weather and PPE use at all times.

Weather: Mostly Cloudy Temp: Min. 38 Max. 45 Wind: W 15 -25

Dredge Information:

Cut: DMU 9/10 Starting Chainage: Sta 0+00 Starting chain: 0

Distance: 0' Ending Chainage: Sta 0+00 Ending chain: 0

Ave. Cut Width: 0' Ave. Cut Depth: 0' Ave. Tide Reading: N/A

Bucket Used: 8.0 CY Cablearm bucket

In Place Yards: 0 CY In Place Yards To Date: 2,554 CY

Scow Yards: 0 CY Scow Yards To Date: 3,150 CY

NOTES: Dredging to commence Saturday, Dec. 5 in DMU 9/10, then move to DMU 18/19 for completion. Anticipate completing dredging operations on Tuesday, Dec. 8. Will consolidate debris and off load at the CDF for disposal.

Signature:

DAILY TURBIDITY REPORT

DMU's 18/19	Upstream - SITE 1				Downstream - SITE 2					
Time (EST)	Battery	Temperature	Sp Cond	Turbidity+	Battery2	Temperature2	Sp Cond2	Turbidity+2	Turbidity	DMU
Time (EST)	V	F	usS/cm	NTU+	V	F	uS/cm	NTU+	Delta	DMU
12/8/2015 0:00	12.7	40.57	429	12.7	12.7	40.87	432	12.2	**-0.5**	NA
12/8/2015 0:15	12.7	40.59	429	12.9	12.7	40.86	432	12.9	**0**	NA
12/8/2015 0:30	12.7	40.46	429	11.9	12.7	40.91	432	16	**4.1**	NA
12/8/2015 0:45	12.7	40.46	429	11.5	12.7	40.87	432	15	**3.5**	NA
12/8/2015 1:00	12.7	40.46	429	11.1	12.7	40.91	432	17.7	**6.6**	NA
12/8/2015 1:15	12.7	40.48	429	13.9	12.7	40.86	432	14.2	**0.3**	NA
12/8/2015 1:30	12.7	40.51	429	13.1	12.6	40.84	432	13.6	**0.5**	NA
12/8/2015 1:45	12.7	40.5	429	12.3	12.6	40.82	432	15.3	**3**	NA
12/8/2015 2:00	12.7	40.46	429	13.1	12.6	40.84	432	13.7	**0.6**	NA
12/8/2015 2:15	12.7	40.44	430	12.3	12.6	40.84	432	13.4	**1.1**	NA
12/8/2015 2:30	12.7	40.41	430	11.8	12.6	40.86	432	15.4	**3.6**	NA
12/8/2015 2:45	12.7	40.37	430	11.5	12.6	40.84	432	14.6	**3.1**	NA
12/8/2015 3:00	12.6	40.21	431	9.8	12.6	40.84	433	16.3	**6.5**	NA
12/8/2015 3:15	12.7	40.1	432	8.9	12.6	40.86	432	17.1	**8.2**	NA
12/8/2015 3:30	12.7	40.15	431	10.7	12.6	40.84	432	16.4	**5.7**	NA
12/8/2015 3:45	12.7	40.3	430	11.9	12.6	40.86	432	17	**5.1**	NA
12/8/2015 4:00	12.6	40.3	430	10.8	12.6	40.86	432	14.9	**4.1**	NA
12/8/2015 4:15	12.6	40.14	431	9.2	12.6	40.77	432	13.9	**4.7**	NA
12/8/2015 4:30	12.6	40.03	432	8.1	12.6	40.8	433	15.2	**7.1**	NA
12/8/2015 4:45	12.6	39.97	433	8.3	12.6	40.8	432	15.1	**6.8**	NA
12/8/2015 5:00	12.6	39.92	433	8.4	12.6	40.73	433	13.2	**4.8**	NA
12/8/2015 5:15	12.6	39.92	433	10.8	12.6	40.77	433	15.1	**4.3**	NA
12/8/2015 5:30	12.6	39.96	434	9.6	12.6	40.8	432	16.5	**6.9**	NA
12/8/2015 5:45	12.6	40.08	432	11.4	12.6	40.82	433	15.8	**4.4**	NA
12/8/2015 6:00	12.6	40.24	431	8.3	12.6	40.86	435	14.1	**5.8**	NA
12/8/2015 6:15	12.6	40.05	432	8.1	12.6	40.75	432	15.6	**7.5**	NA
12/8/2015 6:30	12.6	39.87	434	7.7	12.6	40.69	432	15	**7.3**	18/19
12/8/2015 6:45	12.6	39.79	434	7.2	12.6	40.78	433	16.2	**9**	18/19
12/8/2015 7:00	12.6	39.76	435	7.7	12.6	40.77	433	15.3	**7.6**	18/19
12/8/2015 7:15	12.6	39.63	436	7.7	12.6	40.69	433	14.6	**6.9**	18/19
12/8/2015 7:30	12.6	39.72	435	7.6	12.6	40.59	433	13.9	**6.3**	18/19
12/8/2015 7:45	12.6	39.79	435	7.4	12.6	40.73	433	19.1	**11.7**	18/19
12/8/2015 8:00	12.6	39.81	435	7.6	12.6	40.77	433	18.1	**10.5**	18/19
12/8/2015 8:15	12.6	39.79	435	7.7	12.6	40.71	433	16.7	**9**	18/19
12/8/2015 8:30	12.6	39.79	435	7.3	12.6	40.66	433	14.3	**7**	18/19
12/8/2015 8:45	12.6	39.7	435	7.3	12.7	40.71	433	18.3	**11**	18/19
12/8/2015 9:00	12.7	39.65	435	7.3	12.7	40.6	433	13.8	**6.5**	18/19
12/8/2015 9:15	12.7	39.61	436	7.3	12.7	40.57	434	14.6	**7.3**	18/19
12/8/2015 9:30	12.7	39.65	436	7.1	12.7	40.59	434	17.6	**10.5**	18/19
12/8/2015 9:45	12.7	39.7	436	6.9	12.8	40.62	433	15	**8.1**	18/19
12/8/2015 10:00	12.7	39.7	436	7	12.8	40.66	434	14.1	**7.1**	18/19
12/8/2015 10:15	12.8	39.52	437	6.8	12.9	40.69	434	15.6	**8.8**	18/19
12/8/2015 10:30	12.8	39.51	437	7.1	12.8	40.71	434	14.2	**7.1**	18/19
12/8/2015 10:45	12.8	39.56	437	7.3	13	40.71	434	17.1	**9.8**	18/19
12/8/2015 11:00	12.9	39.61	436	7.2	13.1	40.69	434	16.7	**9.5**	18/19
12/8/2015 11:15	13.1	39.61	436	7	13.4	40.69	434	16.4	**9.4**	18/19
12/8/2015 11:30	13.1	39.67	436	7.4	13.3	40.69	434	15.4	**8**	18/19
12/8/2015 11:45	13.2	39.6	436	7.5	13.3	40.66	434	17.6	**10.1**	18/19
12/8/2015 12:00	13.1	39.63	436	7.4	13.3	40.66	434	17.2	**9.8**	18/19
12/8/2015 12:15	13.2	39.61	436	7	13.3	40.68	434	16.7	**9.7**	18/19
12/8/2015 12:30	13.2	39.58	437	7.6	13.4	40.71	434	16.8	**9.2**	18/19
12/8/2015 12:45	13.3	39.49	438	7.1	13.5	40.73	434	16.3	**9.2**	18/19
12/8/2015 13:00	13.3	39.58	437	7.3	13.4	40.71	434	15.4	**8.1**	18/19
12/8/2015 13:15	13.3	39.63	436	7.6	13.6	40.69	434	15.8	**8.2**	18/19
12/8/2015 13:30	13.4	39.65	436	8.2	13.6	40.69	434	15.2	**7**	18/19
12/8/2015 13:45	13.9	39.7	436	7.3	14.6	40.71	434	15.4	**8.1**	18/19
12/8/2015 14:00	13.5	39.63	436	7.2	14.3	40.69	434	17.3	**10.1**	18/19
12/8/2015 14:15	13.5	39.52	438	6.7	14.4	40.68	434	18.4	**11.7**	18/19
12/8/2015 14:30	13.5	39.38	439	6.9	14.4	40.62	434	20.2	**13.3**	18/19
12/8/2015 14:45	13.3	39.38	439	6.6	13.5	40.68	434	16.3	**9.7**	18/19
12/8/2015 15:00	13.2	39.49	438	7	13.3	40.71	434	16.4	**9.4**	18/19
12/8/2015 15:15	13.1	39.51	438	6.9	13.1	40.68	434	17.1	**10.2**	18/19
12/8/2015 15:30	13.1	39.49	438	7.2	13	40.71	434	17.2	**10**	18/19
12/8/2015 15:45	13	39.42	439	6.5	13	40.64	434	18.9	**12.4**	18/19
12/8/2015 16:00	13	39.16	441	6.1	12.9	40.44	436	19.7	**13.6**	18/19
12/8/2015 16:15	12.9	39.24	440	6.2	12.9	40.33	436	16.9	**10.7**	18/19
12/8/2015 16:30	12.9	39.13	441	6	12.8	40.48	436	17.4	**11.4**	18/19
12/8/2015 16:45	12.9	39.22	441	6.8	12.9	40.41	436	18.7	**11.9**	18/19
12/8/2015 17:00	12.9	39.25	440	6.3	12.9	40.57	436	17.6	**11.3**	18/19
12/8/2015 17:15	12.8	39.31	440	6.6	12.8	40.62	435	17.7	**11.1**	18/19
12/8/2015 17:30	12.9	39.38	440	7.2	12.8	40.71	434	17.4	**10.2**	18/19
12/8/2015 17:45	12.9	39.31	440	6.1	12.8	40.66	435	17.3	**11.2**	18/19
12/8/2015 18:00	12.9	39.22	441	5.8	12.8	40.5	437	18	**12.2**	18/19
12/8/2015 18:15	12.8	39.16	441	5.8	12.8	40.41	436	17.2	**11.4**	18/19
12/8/2015 18:30	12.8	39.11	442	6.3	12.8	40.39	436	18.6	**12.3**	18/19
12/8/2015 18:45	12.8	39.18	441	5.9	12.8	40.44	437	17.7	**11.8**	18/19
12/8/2015 19:00	12.8	39.24	441	6.9	12.8	40.48	437	18.2	**11.3**	18/19
12/8/2015 19:15	12.8	39.22	441	6.2	12.8	40.44	436	18.6	**12.4**	18/19
12/8/2015 19:30	12.8	39.16	441	5.8	12.8	40.42	436	17.9	**12.1**	18/19
12/8/2015 19:45	12.8	39.11	442	6.2	12.8	40.42	436	19.4	**13.2**	18/19
12/8/2015 20:00	12.8	39.18	441	6.2	12.8	40.39	436	19.2	**13**	18/19
12/8/2015 20:15	12.8	39.18	441	6.6	12.8	40.44	436	19.6	**13**	18/19
12/8/2015 20:30	12.8	39.16	441	6.4	12.8	40.44	436	19.5	**13.1**	18/19
12/8/2015 20:45	12.8	39.13	441	6.4	12.8	40.46	436	18.8	**12.4**	18/19
12/8/2015 21:00	12.8	39.11	442	5.9	12.7	40.35	437	18.3	**12.4**	18/19
12/8/2015 21:15	12.7	39	443	6.3	12.7	40.21	437	17.9	**11.6**	18/19
12/8/2015 21:30	12.7	39.02	443	6.1	12.7	40.21	437	18.3	**12.2**	18/19
12/8/2015 21:45	12.7	39	443	7.2	12.7	40.14	438	17.3	**10.1**	18/19
12/8/2015 22:00	12.7	39.09	442	6.2	12.7	40.14	438	18	**11.8**	18/19
12/8/2015 22:15	12.7	39.09	442	6.1	12.7	40.24	438	17.3	**11.2**	18/19
12/8/2015 22:30	12.7	39.09	442	5.7	12.7	40.21	438	16.5	**10.8**	18/19
12/8/2015 22:45	12.7	39.09	442	6	12.7	40.06	438	15.9	**9.9**	18/19
12/8/2015 23:00	12.7	39.02	443	6.4	12.7	39.97	439	13.4	**7**	18/19
12/8/2015 23:15	12.7	39	443	6.5	12.7	40.05	438	16.3	**9.8**	18/19
12/8/2015 23:30	12.7	39	443	7.4	12.7	39.96	439	14.4	**7**	18/19
12/8/2015 23:45	12.7	39.11	442	7.3	12.7	40.03	439	13	**5.7**	18/19

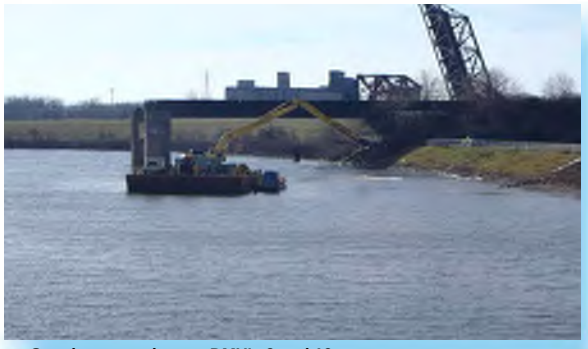
BUFFALO RIVER AOC CAPPING AND HABITAT RESTORATION, NEW YORK

Weather	Report No.	Project No.	Work Date:	Day of Week:
Low 37 / High 56	177	1119	12/9/2015	Wednesday

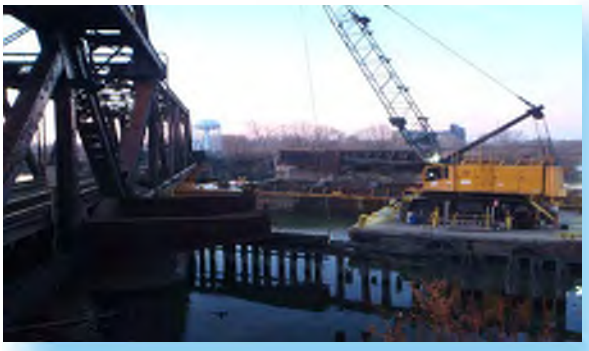
PARTLY CLOUDY

Daily Progress Report

Weather conditions: Partly Cloudy; Winds: S @ 11 mph

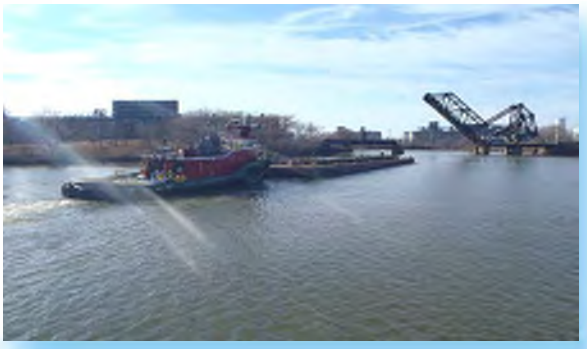


1 Capping operations at DMU's 9 and 10.



2 Sediment removal operations in DMU's 18 and 19.

3 Dredging in DMU's 18 and 19.



4 Luedtke transporting scow to CDF.

5 Demobilizing dredging barge to South End Marina.

6 Sediment removal operations in DMU's 18 and 19.

WORK PERFORMED BY SEVENSON

- Luedtke removed approximately 389 CY. A total of 4,991 CY have been removed to date.
- SES continued to monitor turbidity around dredge zone.
- Continued demobilization activities.
- Completed capping at DMU's 9 & 10.

MATERIAL/EQUIPMENT DELIVERED TO SITE

- None.

WORK PERFORMED BY SUBCONTRACTORS

- Luedtke Completed dredging activities in DMU's 18 & 19.

REMARKS

DEVIATIONS FROM SPECIFICATIONS:

- None.

ITEMS THAT MAY IMPEDE PROJECT PROGRESSION:

- None.

SAFETY REMARKS

- Sevenson performed the daily tailgate safety meeting at 7:00 AM. All site personnel were required to sign in. Hard hats, safety glasses, steel toe boots, and reflective work vests were required to perform site work. PFD's were utilized when within 6 feet of the water.

- Total Safe Man Hours: 26,095,.5 (Estimated for safety only)

Sevenson's Planned Activities

- Complete demobilization activities.

PRODUCTION

ITEM DESCRIPTION	Bid Item #	ESTIMATED QUANTITIES	UNIT	DAILY QUANTITY		QUANTITY TO DATE		TOTAL PERCENT COMPLETE
Base Bid - Work Plans, Submittal, Schedule and Permits	1.1	1	LS	0	%	100	%	100.00%
Base Bid - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Base Bid - Surveying	2.2	1	LS	0	%	100	%	100.00%
Base Bid - Katherine Street Peninsula Habitat Subgrade	6.1	1	LS	0	%	100	%	100.00%
Base Bid - Planting Substrate	6.2	196,000	SF	0	SF	194177	SF	99.07%
Base Bid - Gravel Spawning Area Gravel	6.3	1	LS	0	%	100	%	100.00%
Base Bid - Riprap Rock Vanes	6.4	1	LS	0	%	100	%	100.00%
Base Bid - Outfall Scour Protection	6.5	930	SF	0.00	SF	935.51	SF	100.59%
Base Bid - ADM/Pillsbury Armored Cap	7.1	1	LS	0	%	15	%	15.00%
Base Bid - City Ship Canal Cap: In-water Fill	7.2	1	LS	0	%	100.00%	%	100.00%
Base Bid - Debris Removal, Loading, Transport and Disposal	7.3	30	CY	0.00	CY	0.00	CY	0.00%
Base Bid - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Base Bid - Porcupine Crib Installation	13.2	1	LS	0	%	100	%	100.00%
Base Bid - Emergent Vegetation Installation	13.4	1	LS	0	%	100.0%	%	100.00%
Base Bid - Emergent Vegetation Warranty	13.5	55	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Base Bid - Submerged Aquatic Vegetation Warranty	13.7	190	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Herbivory Protection	13.8	44,200	SF	0	SF	73019.00	SF	165.20%
Base Bid - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Base Bid - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Riverbend - Work Plan, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Riverbend - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Riverbend - Surveying	2.2	1	LS	0	%	100	%	100.00%
Riverbend - Planting Substrate	6.2	59,200	SF	0.00	SF	41521.80	SF	70.14%
Riverbend - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Riverbend - Outfall Scour Protection	6.5	140	SF	0.00	SF	195.90	SF	139.93%
Riverbend - Debris Removal, Loading, Trans, Disp.	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Riverbend - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Riverbend - Coir Bank Buffer Installation	13.3	2,870	LF	0.00	LF	1180.00	LF	41.11%
Riverbend - Emergent Vegetation Installation	13.4	1	LS	0.00	%	100.00	%	100.00%
Riverbend - Emergent Vegetation Warranty	13.50	48	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Submerged Aquatic Vegetation Installation	13.6	1	LS	0.0	%	100	%	100.00%
Riverbend - Submerged Aquatic Vegetation Warranty	13.7	26	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Herbivory Protection	13.8	38,500	SF	0.00	SF	16989.00	SF	44.13%
Riverbend - Demobilization	15.1	1	LS	0.0	%	100	%	100.00%
Riverbend - Additive for Performance and Payment Bonds	16.1	1	LS	0.0	%	0	%	0.00%
Buffalo Color - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Surveying	2.2	1	LS	0	%	100	%	100.00%
Buffalo Color - Planting Substrate	6.2	69,400	SF	0	SF	67186.00	SF	96.81%
Buffalo Color - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Buffalo Color - Outfall Scour Protection	6.5	50	SF	0.00	SF	0.00	SF	0.00%
Buffalo Color - Debris Removal, Loading, Trans & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Buffalo Color - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Coir Bank Buffer Installation	13.3	1,650	LF	0.00	LF	1790.00	LF	108.48%
Buffalo Color - Emergent Vegetation Installation	13.40	1	LS	0	%	51.93	%	51.93%
Buffalo Color - Emergent Vegetation Warranty	13.5	64	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Buffalo Color - Submerged Aquatic Vegetation Warranty	13.7	23	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Herbivory Protection	13.8	51,100	SF	0.00	SF	26186.00	SF	51.24%
Buffalo Color - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Ohio Street - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Ohio Street - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Ohio Street - Surveying	2.2	1	LS	0	%	100	%	100.00%
Ohio Street - Planting Substrate	6.2	2,100	SF	0	SF	2119.23	SF	100.92%
Ohio Street - Debris Removal, Loading, Transport & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Ohio Street - Coir Bank Buffer Installation	13.3	270	LF	0.00	LF	140.00	LF	51.85%
Ohio Street - Emergent Vegetation Installation	13.4	1	LS	0	%	100	%	100.00%
Ohio Street - Emergent Vegetation Warranty	13.5	3	EA	0.00	EA	0.00	EA	0.00%
Ohio Street - Herbivory Protection	13.8	1	LS	0	%	100	%	100.00%
Ohio Street - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Ohio Street - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
TOTAL								**90.46%**

***Chart is estimated and shall not be utilized for any billing purposes**

CITY SHIP CANAL RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Day Shift)	0	0.00	1,035	64,563	39,720	81.27%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Night Shift)	0	0.00	0	0	39,720		
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	165	4408	3,791	116.28%	
ADM / Pillsbury Armored Cap	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
	0	0.00	12	480	3,308	14.51%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
ADM / Pillsbury Filter Layer	0	0.00	0	0	1,905	0.00%	
	Loads	Tons	Loads	Tons	Tons		
Gravel Spawning Beds	0	0.00	28	440	346	127.17%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		21885		26,789	81.69%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		14181		9,039	156.89%	
	Each		Each		Each		
Porcupine Cribs	0		12		12	100.00%	
	Each		Each		Each		
Anchored Rootwad	0		20		20	100.00%	

KATHERINE STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Habitat Subgrade	0	0.00	687	26,473.38	19,017	139.21%	
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	22	1,869.44	2,306	81.07%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	9	759.00	771	98.44%	
	Each		Each		Each		
Anchored Rootwad	0		8		8	100.00%	
	Each		Each		Each		
Log Poles	0		9		9	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		10850		11,108	97.68%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4230		1,960	215.79%	

RIVERBEND RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	19	1,596.00	2,579	61.88%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	8.5	692.00	524	132.06%	
	Each		Each		Each		
Anchored Rootwad	0		15		15	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		5457		5,227	104.40%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4328		9,583	45.16%	

BUFFALO COLOR RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	27.5	2,310.00	3,023	76.41%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	7.5	1,879.00	1,753	107.19%	
	Each		Each		Each		
Anchored Rootwad	0		10		10	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		7886		4,574	172.42%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		6617		12,741	51.93%	

OHIO STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	3	252.00	91	276.92%	Based on Tons not SF as indicated in the above Chart
	Each		Each		Each		
Emergent Vegetation (EV)	0		154		545	28.28%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		325		-	100.00%	

PHASE II DREDGING - BASE BID

	Estimated Quantity Removed Today		Estimated Quantity Removed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 9 &10	0	0.00	3	1,175.00	1,100	106.82%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 38A	0	0.00	1	1,000.00	960	104.17%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 44E	0	0.00	3	825.00	700	117.86%	

PHASE II CAPPING - BASE BID

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
DMU 9 & 10	0	0.00	1	105.00	50	210.00%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Sand)	0	0.00	3	1,240.00	1,640	75.61%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Armor Layer)	0	0.00	2	381.82	365	104.61%	

PHASE II DREDGING - OPTION 1

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 17, 18 & 19	1	389.00	4	1,991.00	6,100	32.64%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 27, 28 & 29	0	0.00	0	-	6,700	0.00%	

PHASE II DREDGING - OPTION 2

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 101	0	0.00	0	0.00	2,500	0.00%	

Verbal Directives From Anchor / Honeywell:

- None.

Miscellaneous Information:

- None.

Clarifications to Previous Daily Reports:

- None.

DAY:	**Wednesday**	**Site Personnel**	**Hours Worked Today**
DATE:	**12/9/2015**	**Total = 15**	**162**

Personnel	Labor	Hours	SES Equipment	Quantity	Rental Equipment
0	President	0	(3) Connex Boxes	1	8x28' Office Trailer (Will Scot)
0	Vice President	0	D51 Dozer	1	8x32' Engineer Trailer (Will Scot)
0	General Superintendent	0	WA-380-6 Komatsu Loader	1	8x28' Break Trailer (Will Scot)
1	Superintendent	8	PC-450LC8 LF Komatsu Excavator	2	Porta-Johns (Ball)
0	Foreman	0	J-Boat Utility Push Boat 4	1	Light Plants (Admar)
0	Corporate Project Manager	0	Scow Open #4 11'2" x 41'x 6'		
1	Project Manager	10	Ford F-250 Crew Cab		
0	Health & Safety Director	0	Blue Wave Boat & Trailer		
0	Health & Safety Officer	0	(2) Open Top Scows		
1	QA/QC Manager	12			
3	Operators	24			
	SES Subcontractors				
9	Luedtke	108			

Onsite Personnel

SES Personnel:	Union Laborers & Operators:	Subcontractors:
Ryan Killian	Gerry Freedenburg	Wally Eljahmi
Mike Welch	Henry Olrogge	George Herro
Rick Korpolinski	Ray Vesotski	Tim Kibby
		Steve Szymanksi
		Ed Carlson
		Kurt Schober
		Dale Leonard
		Sal Elmathil
		Todd Gleason

DERRICKBOAT #12

UEOTKE ENGINEERING CO.

Daily Dredge Report Form

DATE: 12/04/2015 DAY #: 177

Project: Buffalo River Environmental Phase: 1

Number of Shifts: 1 Hours per Shift: 12.0 day

Dredging Hours Shift #1: 0.0 Dredging Hours Shift #2: 0.0

Standby Hours Shift #1: 0.0 Standby Hours Shift #2: 0.0

Total Hours Dredging: 0.0 Hours Dredging to Date: 67.0

Standby Hours: 0.0 Standby Hours to Date: 0.0

Total Hours Worked: 12.0 Hours Worked to Date: 174.0

CREW: Total Number of Crew: 9

Day Shift

Name: T .Kibby, A. Eljahmi Title: Management

Name: T. Gleason Title: Foreman

Name: D. Leonard Title: Captain

Name: G. Herro, K. Schober Title: Operator

Name: S.Szymanski, E.Carlson Title: Operator

Name: S. Elmathil Title: Deckhand

Night Shift:

Name: Title: Foreman

Name: Title: Operator

Name: Title: Operator

Name: Title: Captain

Name: Title: Deckhand

Name: Title: Operator

Equipment Utilized:

Derrickboat #12, Tug Krista, Tug Gretchen, Lucille T, Spud barge #14, Workboat #6.

DPS024, DPS023, DPS059, DPS060.

Work Performed:

Complete repairs to crane. Clean small scow to be placed on DBT011. Tow to DMU 44e and place small scow on deck of DBT011. Tow up to Concrete Central for the night. Plan to tow to DMU 9/10 in the morning, bridges notified.

Safety Performed: Perform daily safety meetings at the start of each shift. Monitor working conditions, weather and PPE use at all times.

Weather: Mostly Cloudy Temp: Min. 38 Max. 45 Wind: W 15 -25

Dredge Information:

Cut: DMU 9/10 Starting Chainage: Sta 0+00 Starting chain: 0

Distance: 0' Ending Chainage: Sta 0+00 Ending chain: 0

Ave. Cut Width: 0' Ave. Cut Depth: 0' Ave. Tide Reading: N/A

Bucket Used: 8.0 CY Cablearm bucket

In Place Yards: 0 CY In Place Yards To Date: 2,554 CY

Scow Yards: 0 CY Scow Yards To Date: 3,150 CY

NOTES: Dredging to commence Saturday, Dec. 5 in DMU 9/10, then move to DMU 18/19 for completion. Anticipate completing dredging operations on Tuesday, Dec. 8. Will consolidate debris and off load at the CDF for disposal.

Signature:

DAILY TURBIDITY REPORT

DMU's 18/19	Upstream - SITE 1				Downstream - SITE 2					
Time (EST)	Battery	Temperature	Sp Cond	Turbidity+	Battery2	Temperature2	Sp Cond2	Turbidity+2	Turbidity	DMU
Time (EST)	V	F	usS/cm	NTU+	V	F	uS/cm	NTU+	Delta	DMU
12/9/2015 0:00	12.7	39.09	442	6.1	12.7	40.05	439	14.7	**8.6**	NA
12/9/2015 0:15	12.7	39.09	442	6.2	12.7	39.94	439	12.3	**6.1**	NA
12/9/2015 0:30	12.7	38.91	443	6.4	12.7	39.96	439	14.1	**7.7**	NA
12/9/2015 0:45	12.7	38.8	444	6.8	12.7	40.1	437	16.3	**9.5**	NA
12/9/2015 1:00	12.6	38.8	445	7.2	12.7	40.15	438	16.8	**9.6**	NA
12/9/2015 1:15	12.7	38.79	445	6.9	12.7	40.15	437	18.7	**11.8**	NA
12/9/2015 1:30	12.7	38.77	445	7.5	12.6	40.06	438	17.6	**10.1**	NA
12/9/2015 1:45	12.6	38.77	445	8.5	12.6	39.94	438	14.5	**6**	NA
12/9/2015 2:00	12.6	38.8	445	5.9	12.6	39.97	439	14.2	**8.3**	NA
12/9/2015 2:15	12.6	38.79	444	6.8	12.6	39.96	439	13.7	**6.9**	NA
12/9/2015 2:30	12.6	38.75	445	7.1	12.6	40.03	438	15.6	**8.5**	NA
12/9/2015 2:45	12.6	38.73	445	7.3	12.6	40.05	438	15.6	**8.3**	NA
12/9/2015 3:00	12.6	38.7	446	7	12.6	40.08	438	18.8	**11.8**	NA
12/9/2015 3:15	12.6	38.75	445	7.9	12.6	40.05	437	16.2	**8.3**	NA
12/9/2015 3:30	12.6	38.75	445	6.9	12.6	39.99	438	14.3	**7.4**	NA
12/9/2015 3:45	12.6	38.68	445	7.7	12.6	40.01	438	14.8	**7.1**	NA
12/9/2015 4:00	12.6	38.73	445	6.9	12.6	40.14	438	17	**10.1**	NA
12/9/2015 4:15	12.6	38.7	445	7.4	12.6	40.14	438	16.1	**8.7**	NA
12/9/2015 4:30	12.6	38.62	446	7.1	12.6	39.52	443	9.6	**2.5**	NA
12/9/2015 4:45	12.6	38.66	446	7.4	12.6	39.63	441	11.3	**3.9**	NA
12/9/2015 5:00	12.6	38.68	446	7.8	12.6	39.61	441	10.3	**2.5**	NA
12/9/2015 5:15	12.6	38.64	446	7.2	12.6	39.65	441	11	**3.8**	NA
12/9/2015 5:30	12.6	38.62	446	7.1	12.6	39.74	440	12.9	**5.8**	NA
12/9/2015 5:45	12.6	38.61	446	7	12.6	39.85	439	13.8	**6.8**	NA
12/9/2015 6:00	12.6	38.59	447	7.1	12.6	39.81	440	12.7	**5.6**	NA
12/9/2015 6:15	12.6	38.59	447	7	12.6	39.72	440	12.8	**5.8**	NA
12/9/2015 6:30	12.6	38.43	449	6.7	12.6	39.51	442	9.4	**2.7**	18/19
12/9/2015 6:45	12.6	38.46	448	7.3	12.6	39.51	442	8.6	**1.3**	18/19
12/9/2015 7:00	12.6	38.48	448	6.2	12.6	39.52	443	9.1	**2.9**	18/19
12/9/2015 7:15	12.6	38.46	448	6.7	12.6	39.69	441	12	**5.3**	18/19
12/9/2015 7:30	12.6	38.41	449	6.6	12.6	39.79	441	13.4	**6.8**	18/19
12/9/2015 7:45	12.6	38.41	449	6.6	12.6	39.15	446	6.4	**-0.2**	18/19
12/9/2015 8:00	12.9	38.43	449	6.6	13	39.18	446	7.1	**0.5**	18/19
12/9/2015 8:15	13.2	38.46	448	7	13.4	39.33	445	7.8	**0.8**	18/19
12/9/2015 8:30	13.4	38.43	448	6.5	13.6	39.29	444	8.1	**1.6**	18/19
12/9/2015 8:45	13.5	38.43	448	6.4	13.9	39.31	444	8.5	**2.1**	18/19
12/9/2015 9:00	13.7	38.43	448	7.2	14.5	39.33	444	8.5	**1.3**	18/19
12/9/2015 9:15	13.8	38.44	448	7	14.6	39.31	445	8.1	**1.1**	18/19
12/9/2015 9:30	14	38.44	448	6.8	14.4	39.34	444	8.5	**1.7**	18/19
12/9/2015 9:45	14.6	38.43	448	6.7	14.4	39.45	443	8.9	**2.2**	18/19
12/9/2015 10:00	14.7	38.43	449	6.6	14.6	39.54	443	9.9	**3.3**	18/19
12/9/2015 10:15	14.7	38.43	450	6.3	14.4	39.51	445	9.2	**2.9**	18/19
12/9/2015 10:30	14.7	38.41	450	6.5	14.4	39.33	445	7.6	**1.1**	18/19
12/9/2015 10:45	14.7	38.41	451	6.7	14.4	39.42	445	9.1	**2.4**	18/19
12/9/2015 11:00	14	38.44	452	6.5	14.6	39.45	445	8.8	**2.3**	18/19
12/9/2015 11:15	14.6	38.35	454	5.9	14.2	39.4	446	10	**4.1**	18/19
12/9/2015 11:30	14.6	38.41	454	6.3	14.1	39.24	447	15.2	**8.9**	18/19
12/9/2015 11:45	14.7	38.32	454	6.3	14.2	39.29	447	12	**5.7**	18/19
12/9/2015 12:00	14.3	38.41	454	6.3	14.1	39.49	447	9.7	**3.4**	18/19
12/9/2015 12:15	14.3	38.55	451	7.3	14.1	39.63	446	9.1	**1.8**	18/19
12/9/2015 12:30	14.3	38.62	450	8.8	14.1	39.7	445	11.5	**2.7**	18/19
12/9/2015 12:45	14.3	38.66	450	7.7	14.1	39.76	445	11	**3.3**	18/19
12/9/2015 13:00	14.1	38.61	451	7.2	14.1	39.74	446	9.9	**2.7**	18/19
12/9/2015 13:15	13.8	38.57	453	6.3	14.1	39.56	447	11.7	**5.4**	18/19
12/9/2015 13:30	14.3	38.53	454	6.8	14.2	39.4	447	11.8	**5**	18/19
12/9/2015 13:45	14.7	38.59	452	8.3	14.1	39.47	447	11.7	**3.4**	18/19
12/9/2015 14:00	13.9	38.62	452	8.7	14.1	39.67	447	10.6	**1.9**	18/19
12/9/2015 14:15	14.7	38.75	450	11.9	14.1	39.83	445	11.9	**0**	18/19
12/9/2015 14:30	14	38.82	449	13.9	14.2	39.81	446	10.6	**-3.3**	18/19
12/9/2015 14:45	14.7	38.79	450	13.3	14.1	39.81	445	11.6	**-1.7**	18/19
12/9/2015 15:00	14.1	38.62	453	8.5	14.1	39.58	447	12.1	**3.6**	18/19
12/9/2015 15:15	13.5	38.64	454	6.2	14.1	39.33	448	15.7	**9.5**	18/19
12/9/2015 15:30	13.4	38.62	455	5.9	14.1	39.34	448	13.8	**7.9**	18/19
12/9/2015 15:45	13.3	38.62	455	6.1	13.3	39.25	449	15	**8.9**	18/19
12/9/2015 16:00	13.1	38.62	454	6.8	13	39.34	448	16.4	**9.6**	18/19
12/9/2015 16:15	13.1	38.75	452	11	13	39.63	447	12.6	**1.6**	18/19
12/9/2015 16:30	13.1	38.86	450	14	12.9	40.03	444	12.5	**-1.5**	18/19
12/9/2015 16:45	13.1	38.82	451	10.3	12.9	40.12	443	11.6	**1.3**	18/19
12/9/2015 17:00	13	38.82	451	13.1	12.9	39.94	445	11.9	**-1.2**	18/19
12/9/2015 17:15	13	38.79	452	10.3	12.9	39.69	449	11.3	**1**	18/19
12/9/2015 17:30	13	38.7	454	7.8	12.9	39.43	448	13.1	**5.3**	18/19
12/9/2015 17:45	13	38.71	455	7.3	12.9	39.33	449	15.7	**8.4**	18/19
12/9/2015 18:00	13	38.71	455	7.8	12.9	39.33	449	13.6	**5.8**	18/19
12/9/2015 18:15	13	38.7	455	8.3	12.9	39.49	449	12.8	**4.5**	18/19
12/9/2015 18:30	13	38.77	453	9.3	12.8	39.58	448	13.3	**4**	18/19
12/9/2015 18:45	13	38.79	453	9.8	12.9	39.61	448	12.8	**3**	18/19
12/9/2015 19:00	13	38.73	454	8.3	12.8	39.54	448	13	**4.7**	18/19
12/9/2015 19:15	13	38.73	456	7.6	12.8	39.52	448	12.6	**5**	18/19
12/9/2015 19:30	13	38.71	456	8.4	12.8	39.34	449	14.3	**5.9**	18/19
12/9/2015 19:45	13	38.71	456	8.1	12.8	39.27	449	15.6	**7.5**	18/19
12/9/2015 20:00	13	38.75	456	6	12.8	39.25	450	15.4	**9.4**	18/19
12/9/2015 20:15	13	38.75	455	7.5	12.8	39.47	448	11.7	**4.2**	18/19
12/9/2015 20:30	12.9	38.77	454	9.8	12.8	39.47	448	11.5	**1.7**	18/19
12/9/2015 20:45	13	38.73	455	8.2	12.8	39.63	447	11.2	**3**	18/19
12/9/2015 21:00	12.9	38.73	455	7.7	12.8	39.67	447	11.1	**3.4**	18/19
12/9/2015 21:15	12.9	38.73	455	7.9	12.8	39.63	447	11.6	**3.7**	18/19
12/9/2015 21:30	12.9	38.77	455	7.6	12.8	39.47	448	12.7	**5.1**	18/19
12/9/2015 21:45	12.9	38.79	457	8	12.8	39.29	451	10.9	**2.9**	18/19
12/9/2015 22:00	12.9	38.75	457	8.4	12.8	39.15	452	11.7	**3.3**	18/19
12/9/2015 22:15	12.9	38.75	457	8.1	12.8	39.13	452	12.6	**4.5**	18/19
12/9/2015 22:30	12.9	38.77	458	9.1	12.8	39.11	452	12.2	**3.1**	18/19
12/9/2015 22:45	12.9	38.77	457	9.5	12.8	39.11	452	10.5	**1**	18/19
12/9/2015 23:00	12.9	38.77	458	8.4	12.8	39.24	451	11.3	**2.9**	18/19
12/9/2015 23:15	12.9	38.75	457	8.5	12.8	39.45	449	11.4	**2.9**	18/19
12/9/2015 23:30	12.9	38.79	457	9.2	12.8	39.58	448	11.8	**2.6**	18/19
12/9/2015 23:45	12.9	38.8	456	8.5	12.8	39.51	449	11.5	**3**	18/19

BUFFALO RIVER AOC CAPPING AND HABITAT RESTORATION, NEW YORK

Weather	Report No.	Project No.	Work Date:	Day of Week:
Low 34 / High 54	178	1119	12/10/2015	Thursday

Daily Progress Report

PARTLY CLOUDY

Weather conditions: Partly Cloudy; Winds: SSW @ 12 mph

1 **Capping operations at DMU 44E.**

2 **Luedtke pumping sediment at the CDF.**

3 **Luedtke preparing debris pit at the CDF.**

4 **Removing turbidity curtain from the river at Ensign St.**

5 **Thew performing bathymetric survey of DMU's 17/18/19.**

6 **Capping operations at DMU 44E.**

WORK PERFORMED BY SEVENSON

- Continued capping operations at DMU 44E.
- Removed turbidity curtain from the river.
- Continued demobilization activities.

MATERIAL/EQUIPMENT DELIVERED TO SITE

- Buffalo crushed delivered 153.60 tons (7 loads) of armor stone to Rowing Club Property.

WORK PERFORMED BY SUBCONTRACTORS

- Luedtke continued demobilization activities and consolidated debris.
- Thew performed post dredge survey of DMU's 17/18/19 and post cap survey of DMU's 9/10.

REMARKS

DEVIATIONS FROM SPECIFICATIONS:

- None.

ITEMS THAT MAY IMPEDE PROJECT PROGRESSION:

- None.

SAFETY REMARKS

- Sevenson performed the daily tailgate safety meeting at 7:00 AM. All site personnel were required to sign in. Hard hats, safety glasses, steel toe boots, and reflective work vests were required to perform site work. PFD's were utilized when within 6 feet of the water.

- Total Safe Man Hours: 26,261.5 (Estimated for safety only)

Sevenson's Planned Activities

- Complete demobilization activities.

PRODUCTION

ITEM DESCRIPTION	Bid Item #	ESTIMATED QUANTITIES	UNIT	DAILY QUANTITY		QUANTITY TO DATE		TOTAL PERCENT COMPLETE
Base Bid - Work Plans, Submittal, Schedule and Permits	1.1	1	LS	0	%	100	%	100.00%
Base Bid - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Base Bid - Surveying	2.2	1	LS	0	%	100	%	100.00%
Base Bid - Katherine Street Peninsula Habitat Subgrade	6.1	1	LS	0	%	100	%	100.00%
Base Bid - Planting Substrate	6.2	196,000	SF	0	SF	194177	SF	99.07%
Base Bid - Gravel Spawning Area Gravel	6.3	1	LS	0	%	100	%	100.00%
Base Bid - Riprap Rock Vanes	6.4	1	LS	0	%	100	%	100.00%
Base Bid - Outfall Scour Protection	6.5	930	SF	0.00	SF	935.51	SF	100.59%
Base Bid - ADM/Pillsbury Armored Cap	7.1	1	LS	0	%	15	%	15.00%
Base Bid - City Ship Canal Cap: In-water Fill	7.2	1	LS	0	%	100.00%	%	100.00%
Base Bid - Debris Removal, Loading, Transport and Disposal	7.3	30	CY	0.00	CY	0.00	CY	0.00%
Base Bid - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Base Bid - Porcupine Crib Installation	13.2	1	LS	0	%	100	%	100.00%
Base Bid - Emergent Vegetation Installation	13.4	1	LS	0	%	100.0%	%	100.00%
Base Bid - Emergent Vegetation Warranty	13.5	55	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Base Bid - Submerged Aquatic Vegetation Warranty	13.7	190	EA	0.00	EA	0.00	EA	0.00%
Base Bid - Herbivory Protection	13.8	44,200	SF	0	SF	73019.00	SF	165.20%
Base Bid - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Base Bid - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Riverbend - Work Plan, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Riverbend - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Riverbend - Surveying	2.2	1	LS	0	%	100	%	100.00%
Riverbend - Planting Substrate	6.2	59,200	SF	0.00	SF	41521.80	SF	70.14%
Riverbend - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Riverbend - Outfall Scour Protection	6.5	140	SF	0.00	SF	195.90	SF	139.93%
Riverbend - Debris Removal, Loading, Trans, Disp.	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Riverbend - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Riverbend - Coir Bank Buffer Installation	13.3	2,870	LF	0.00	LF	1180.00	LF	41.11%
Riverbend - Emergent Vegetation Installation	13.4	1	LS	0.00	%	100.00	%	100.00%
Riverbend - Emergent Vegetation Warranty	13.50	48	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Submerged Aquatic Vegetation Installation	13.6	1	LS	0.0	%	100	%	100.00%
Riverbend - Submerged Aquatic Vegetation Warranty	13.7	26	EA	0.00	EA	0.00	EA	0.00%
Riverbend - Herbivory Protection	13.8	38,500	SF	0.00	SF	16989.00	SF	44.13%
Riverbend - Demobilization	15.1	1	LS	0.0	%	100	%	100.00%
Riverbend - Additive for Performance and Payment Bonds	16.1	1	LS	0.0	%	0	%	0.00%
Buffalo Color - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Surveying	2.2	1	LS	0	%	100	%	100.00%
Buffalo Color - Planting Substrate	6.2	69,400	SF	0	SF	67186.00	SF	96.81%
Buffalo Color - Riprap Rock Vanes	6.4	1	LS	0	%	100.00%	%	100.00%
Buffalo Color - Outfall Scour Protection	6.5	50	SF	0.00	SF	0.00	SF	0.00%
Buffalo Color - Debris Removal, Loading, Trans & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Buffalo Color - Anchored Rootwad Log Installation	13.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Coir Bank Buffer Installation	13.3	1,650	LF	0.00	LF	1790.00	LF	108.48%
Buffalo Color - Emergent Vegetation Installation	13.40	1	LS	0	%	51.93	%	51.93%
Buffalo Color - Emergent Vegetation Warranty	13.5	64	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Submerged Aquatic Vegetation Installation	13.6	1	LS	0	%	100	%	100.00%
Buffalo Color - Submerged Aquatic Vegetation Warranty	13.7	23	EA	0.00	EA	0.00	EA	0.00%
Buffalo Color - Herbivory Protection	13.8	51,100	SF	0.00	SF	26186.00	SF	51.24%
Buffalo Color - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Buffalo Color - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
Ohio Street - Work Plans, Submittals, Schedules and Permits	1.1	1	LS	0	%	100	%	100.00%
Ohio Street - Mobilization, Temporary Facilities and Controls	2.1	1	LS	0	%	100	%	100.00%
Ohio Street - Surveying	2.2	1	LS	0	%	100	%	100.00%
Ohio Street - Planting Substrate	6.2	2,100	SF	0	SF	2119.23	SF	100.92%
Ohio Street - Debris Removal, Loading, Transport & Disposal	7.3	5	CY	0.00	CY	0.00	CY	0.00%
Ohio Street - Coir Bank Buffer Installation	13.3	270	LF	0.00	LF	140.00	LF	51.85%
Ohio Street - Emergent Vegetation Installation	13.4	1	LS	0	%	100	%	100.00%
Ohio Street - Emergent Vegetation Warranty	13.5	3	EA	0.00	EA	0.00	EA	0.00%
Ohio Street - Herbivory Protection	13.8	1	LS	0	%	100	%	100.00%
Ohio Street - Demobilization	15.1	1	LS	0	%	100	%	100.00%
Ohio Street - Additive for Performance and Payment Bonds	16.1	1	LS	0	%	0	%	0.00%
TOTAL								**90.46%**

***Chart is estimated and shall not be utilized for any billing purposes**

CITY SHIP CANAL RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Day Shift)	0	0.00	1,035	64,563	39,720	81.27%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
In-Water Fill (Night Shift)	0	0.00	0	0	39,720		
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	165	4408	3,791	116.28%	
ADM / Pillsbury Armored Cap	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
	0	0.00	12	480	3,308	14.51%	
	Loads	Cubic Yards	Loads	Cubic Yards	Cubic Yards		
ADM / Pillsbury Filter Layer	0	0.00	0	0	1,905	0.00%	
	Loads	Tons	Loads	Tons	Tons		
Gravel Spawning Beds	0	0.00	28	440	346	127.17%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		21885		26,789	81.69%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		14181		9,039	156.89%	
	Each		Each		Each		
Porcupine Cribs	0		12		12	100.00%	
	Each		Each		Each		
Anchored Rootwad	0		20		20	100.00%	

KATHERINE STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Habitat Subgrade	0	0.00	687	26,473.38	19,017	139.21%	
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	22	1,869.44	2,306	81.07%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	9	759.00	771	98.44%	
	Each		Each		Each		
Anchored Rootwad	0		8		8	100.00%	
	Each		Each		Each		
Log Poles	0		9		9	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		10850		11,108	97.68%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4230		1,960	215.79%	

RIVERBEND RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	19	1,596.00	2,579	61.88%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	8.5	692.00	524	132.06%	
	Each		Each		Each		
Anchored Rootwad	0		15		15	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		5457		5,227	104.40%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		4328		9,583	45.16%	

BUFFALO COLOR RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	27.5	2,310.00	3,023	76.41%	Based on Tons not SF as indicated in the above Chart
	Loads	Tons	Loads	Tons	Tons		
Rip Rap Rock Vanes	0	0.00	7.5	1,879.00	1,753	107.19%	
	Each		Each		Each		
Anchored Rootwad	0		10		10	100.00%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		7886		4,574	172.42%	
	Each		Each		Each		
Emergent Vegetation (EV)	0		6617		12,741	51.93%	

OHIO STREET RESTORATION

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
Planting Substrate	0	0.00	3	252.00	91	276.92%	Based on Tons not SF as indicated in the above Chart
	Each		Each		Each		
Emergent Vegetation (EV)	0		154		545	28.28%	
Submerged Aquatic Vegetation (SAV)	Each		Each		Each		
	0		325		-	100.00%	

PHASE II DREDGING - BASE BID

	Estimated Quantity Removed Today		Estimated Quantity Removed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 9 &10	0	0.00	3	1,175.00	1,100	106.82%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 38A	0	0.00	1	1,000.00	960	104.17%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 44E	0	0.00	3	825.00	700	117.86%	

PHASE II CAPPING - BASE BID

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Tons	Loads	Tons	Tons		
DMU 9 & 10	0	0.00	1	105.00	50	210.00%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Sand)	0	0.00	3	1,240.00	1,640	75.61%	
	Loads	Tons	Loads	Tons	Tons		
DMU 44E (Armor Layer)	1	65.93	3	447.75	365	122.67%	

PHASE II DREDGING - OPTION 1

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 17, 18 & 19	0	0.00	4	1,991.00	6,100	32.64%	
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 27, 28 & 29	0	0.00	0	-	6,700	0.00%	

PHASE II DREDGING - OPTION 2

	Estimated Quantity Installed Today		Estimated Quantity Placed to Date		Estimated Bid Quantity	Estimated Percent Complete	Additional Remarks
	Loads	Cubic Yards	Loads	Cubic Yards	CY		
DMU 101	0	0.00	0	0.00	2,500	0.00%	

Verbal Directives From Anchor / Honeywell:

- None.

Miscellaneous Information:

- None.

Clarifications to Previous Daily Reports:

- None.

DAY: Thursday
DATE: 12/10/2015

Site Personnel
Total = 16

Hours Worked Today
166

Personnel	Labor	Hours
0	President	0
0	Vice President	0
0	General Superintendent	0
1	Superintendent	8
0	Foreman	0
0	Corporate Project Manager	0
1	Project Manager	10
0	Health & Safety Director	0
0	Health & Safety Officer	0
1	QA/QC Manager	8
3	Operators	24
	SES Subcontractors	
9	Luedtke	108
1	Thew	8

SES Equipment
(3) Connex Boxes
D51 Dozer
WA-380-6 Komatsu Loader
PC-450LC8 LF Komatsu Excavator
J-Boat Utility Push Boat 4
Scow Open #4 11'2" x 41'x 6'
Ford F-250 Crew Cab
Blue Wave Boat & Trailer
(2) Open Top Scows

Quantity	Rental Equipment
1	8x28' Office Trailer (Will Scot)
1	8x32' Engineer Trailer (Will Scot)
1	8x28' Break Trailer (Will Scot)
2	Porta-Johns (Ball)
1	Light Plants (Admar)

Onsite Personnel

SES Personnel:	Union Laborers & Operators:	Subcontractors:
Ryan Killian	Gerry Freedenburg	Wally Eljahmi
Mike Welch	Henry Olrogge	George Herro
Rick Korpolinski	Ray Vesotski	Tim Kibby
		Steve Szymanksi
		Ed Carlson
		Kurt Schober
		Dale Leonard
		Sal Elmathil
		Todd Gleason
		Mark Williams

DERRICKBOAT #12

UEOTKE ENGINEERING CO.

Daily Dredge Report Form

DATE: 12/04/2015 DAY #: 177

Project: Buffalo River Environmental Phase: 1

Number of Shifts: 1 Hours per Shift: 12.0 day

Dredging Hours Shift #1: 0.0 Dredging Hours Shift #2: 0.0

Standby Hours Shift #1: 0.0 Standby Hours Shift #2: 0.0

Total Hours Dredging: 0.0 Hours Dredging to Date: 67.0

Standby Hours: 0.0 Standby Hours to Date: 0.0

Total Hours Worked: 12.0 Hours Worked to Date: 174.0

CREW: Total Number of Crew: 9

Day Shift

Name: T .Kibby, A. Eljahmi Title: Management

Name: T. Gleason Title: Foreman

Name: D. Leonard Title: Captain

Name: G. Herro, K. Schober Title: Operator

Name: S.Szymanski, E.Carlson Title: Operator

Name: S. Elmathil Title: Deckhand

Night Shift:

Name: Title: Foreman

Name: Title: Operator

Name: Title: Operator

Name: Title: Captain

Name: Title: Deckhand

Name: Title: Operator

Equipment Utilized:

Derrickboat #12, Tug Krista, Tug Gretchen, Lucille T, Spud barge #14, Workboat #6.

DPS024, DPS023, DPS059, DPS060.

Work Performed:

Complete repairs to crane. Clean small scow to be placed on DBT011. Tow to DMU 44e and place small scow on deck of DBT011. Tow up to Concrete Central for the night. Plan to tow to DMU 9/10 in the morning, bridges notified.

Safety Performed: Perform daily safety meetings at the start of each shift. Monitor working conditions, weather and PPE use at all times.

Weather: Mostly Cloudy Temp: Min. 38 Max. 45 Wind: W 15 -25

Dredge Information:

Cut: DMU 9/10 Starting Chainage: Sta 0+00 Starting chain: 0

Distance: 0' Ending Chainage: Sta 0+00 Ending chain: 0

Ave. Cut Width: 0' Ave. Cut Depth: 0' Ave. Tide Reading: N/A

Bucket Used: 8.0 CY Cablearm bucket

In Place Yards: 0 CY In Place Yards To Date: 2,554 CY

Scow Yards: 0 CY Scow Yards To Date: 3,150 CY

NOTES: Dredging to commence Saturday, Dec. 5 in DMU 9/10, then move to DMU 18/19 for completion. Anticipate completing dredging operations on Tuesday, Dec. 8. Will consolidate debris and off load at the CDF for disposal.

Signature:

Appendix F
Pre-Dredge Bathymetric Survey

General Notes:

1. This survey is referenced horizontally to the North American Datum of 1983, 2007 adjustment (NAD83/2007) and projected on the New York State Plane Coordinate System (West Zone) and vertically the International Great Lakes Datum of 1985 (IGLD85).
2. North arrow as shown indicates Grid North referenced to NAD83/2007 and projected on the New York State Plane Coordinate System (West Zone).
3. The reference horizontal and vertical control station is a Federal Base Network Control Station designated as "906 3020 H" (PID AH9234). 906 3020 H was established by GPS observations and adjusted by the National Geodetic Survey in February 2007. Elevation = 578.95 feet (IGLD85).
4. Elevations and contours shown reference the IGLD85.
5. Location of spot elevation is indicated by the tick "+" mark located adjacent to the elevation.
6. Contours shown hereon were generated from a Digital Terrain Model utilizing Autodesk Civil 3D Surveying and Engineering software.
7. The bathymetric information shown hereon was collected utilizing multi beam acoustical methods.
8. The bathymetric survey was completed on November 3, 2015.

Legend:

- 550 — Major Contour Line
- 551 — Minor Contour Line
- Proposed Remaining Dredging Limits
- Federal Navigation Channel Limits

Reference Drawings:

1. Titled "Map Showing Existing Bathymetric Conditions, Canal Cap Area, Buffalo River", dated December 10, 2010, prepared by Thew Associates PE-LS, PLLC, and distinguished as Project No. CK8135-10-10.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

REV	DESCRIPTION	DATE

PROJECT NUMBER: CK3566-07-14

DRAWN:

CHECKED:

SCALE: 1" = 10'

DATE: 11.09.2015

Map Showing
Existing Bathymetric Conditions
DMU 9 and DMU 10
Buffalo River

City of Buffalo
County of Erie
State of New York

P.O. Box 463
6431 US Highway 11
Canton, New York 13617
T: 315/386-2776
F: 315/386-1012

Thew Associates
LAND SURVEYORS
www.ThewAssociates.com

9478 River Road
Marcy, New York 13403
T: 315/733-7278
F: 315/797-1957

Appendix H
Backfill Material Chemical and Physical Laborato Testing Data

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #1 **Project:** Buffalo River
Lab ID: P1609-01 **Collection Date:** 11/04/15 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8151A -- Chlorinated Herbicides by GC-ECD							**SW8151_S**
2,4,5-TP (Silvex)	ND		3.5	ug/Kg	1	11/11/2015 22:08	83516
Surrogate: DCAA	70.6		50-130	%REC	1	11/11/2015 22:08	83516

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #2 **Project:** Buffalo River
Lab ID: P1609-02 **Collection Date:** 11/04/15 14:13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8151A -- Chlorinated Herbicides by GC-ECD							**SW8151_S**
2,4,5-TP (Silvex)	ND		3.5	ug/Kg	1	11/11/2015 22:27	83516
Surrogate: DCAA	52.9		50-130	%REC	1	11/11/2015 22:27	83516

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #3 **Project:** Buffalo River
Lab ID: P1609-03 **Collection Date:** 11/04/15 14:18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8151A -- Chlorinated Herbicides by GC-ECD							**SW8151_S**
2,4,5-TP (Silvex)	2.9	J	3.5	ug/Kg	1	11/11/2015 22:47	83516
Surrogate: DCAA	72.7		50-130	%REC	1	11/11/2015 22:47	83516

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #1
Lab ID: P1609-01
Project: Buffalo River
Collection Date: 11/04/15 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 7196A -- CR+ by Colorimetric Method							**SW7196_S**
Chromium, Hexavalent	ND	U	0.42	mg/Kg	1	11/10/2015 7:44	SUBBED

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #2
Lab ID: P1609-02
Project: Buffalo River
Collection Date: 11/04/15 14:13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 7196A -- CR+ by Colorimetric Method							**SW7196_S**
Chromium, Hexavalent	ND	U	0.42	mg/Kg	1	11/10/2015 7:44	SUBBED

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #3
Lab ID: P1609-03
Project: Buffalo River
Collection Date: 11/04/15 14:18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 7196A -- CR+ by Colorimetric Method							**SW7196_S**
Chromium, Hexavalent	ND	U	0.42	mg/Kg	1	11/10/2015 7:44	SUBBED

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #1 **Project:** Buffalo River
Lab ID: P1609-01 **Collection Date:** 11/04/15 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							**SW6010_S**
Arsenic	8.0		0.74	mg/Kg	1	11/11/2015 8:44	83518
Barium	26		7.4	mg/Kg	1	11/11/2015 8:44	83518
Beryllium	0.26		0.18	mg/Kg	1	11/11/2015 8:44	83518
Cadmium	0.38		0.18	mg/Kg	1	11/11/2015 8:44	83518
Chromium	6.6		0.74	mg/Kg	1	11/11/2015 8:44	83518
Copper	30		1.1	mg/Kg	1	11/11/2015 8:44	83518
Lead	11		0.37	mg/Kg	1	11/11/2015 8:44	83518
Manganese	610		1.8	mg/Kg	1	11/11/2015 8:44	83518
Nickel	16		1.8	mg/Kg	1	11/11/2015 8:44	83518
Selenium	0.55	J	1.1	mg/Kg	1	11/11/2015 8:44	83518
Silver	ND		1.1	mg/Kg	1	11/11/2015 8:44	83518
Zinc	80		1.8	mg/Kg	1	11/11/2015 8:44	83518
SW846 7471B -- Mercury by FIA							**SW7471**
Mercury	0.014	J	0.042	mg/Kg	1	11/11/2015 11:26	83519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #2 **Project:** Buffalo River
Lab ID: P1609-02 **Collection Date:** 11/04/15 14:13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							**SW6010_S**
Arsenic	5.9		0.91	mg/Kg	1	11/11/2015 8:47	83518
Barium	33		9.1	mg/Kg	1	11/11/2015 8:47	83518
Beryllium	0.24		0.23	mg/Kg	1	11/11/2015 8:47	83518
Cadmium	0.46		0.23	mg/Kg	1	11/11/2015 8:47	83518
Chromium	6.4		0.91	mg/Kg	1	11/11/2015 8:47	83518
Copper	27		1.4	mg/Kg	1	11/11/2015 8:47	83518
Lead	7.1		0.46	mg/Kg	1	11/11/2015 8:47	83518
Manganese	540		2.3	mg/Kg	1	11/11/2015 8:47	83518
Nickel	19		2.3	mg/Kg	1	11/11/2015 8:47	83518
Selenium	ND		1.4	mg/Kg	1	11/11/2015 8:47	83518
Silver	ND		1.4	mg/Kg	1	11/11/2015 8:47	83518
Zinc	91		2.3	mg/Kg	1	11/11/2015 8:47	83518
SW846 7471B -- Mercury by FIA							**SW7471**
Mercury	0.017	J	0.040	mg/Kg	1	11/11/2015 11:28	83519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #3 **Project:** Buffalo River
Lab ID: P1609-03 **Collection Date:** 11/04/15 14:18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							**SW6010_S**
Arsenic	7.7		0.80	mg/Kg	1	11/11/2015 8:51	83518
Barium	32		8.0	mg/Kg	1	11/11/2015 8:51	83518
Beryllium	0.26		0.20	mg/Kg	1	11/11/2015 8:51	83518
Cadmium	0.37		0.20	mg/Kg	1	11/11/2015 8:51	83518
Chromium	7.8		0.80	mg/Kg	1	11/11/2015 8:51	83518
Copper	25		1.2	mg/Kg	1	11/11/2015 8:51	83518
Lead	9.3		0.40	mg/Kg	1	11/11/2015 8:51	83518
Manganese	460		2.0	mg/Kg	1	11/11/2015 8:51	83518
Nickel	17		2.0	mg/Kg	1	11/11/2015 8:51	83518
Selenium	ND		1.2	mg/Kg	1	11/11/2015 8:51	83518
Silver	ND		1.2	mg/Kg	1	11/11/2015 8:51	83518
Zinc	77		2.0	mg/Kg	1	11/11/2015 8:51	83518
SW846 7471B -- Mercury by FIA							**SW7471**
Mercury	0.017	J	0.040	mg/Kg	1	11/11/2015 11:29	83519

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #1 **Project:** Buffalo River
Lab ID: P1609-01 **Collection Date:** 11/04/15 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							**SW8082_S**
Aroclor-1016	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Aroclor-1221	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Aroclor-1232	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Aroclor-1242	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Aroclor-1248	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Aroclor-1254	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Aroclor-1260	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Aroclor-1262	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Aroclor-1268	ND		35	ug/Kg	1	11/11/2015 19:16	83515
Surrogate: Tetrachloro-m-xylene	51.0		34-147	%REC	1	11/11/2015 19:16	83515
Surrogate: Decachlorobiphenyl	64.7		60-125	%REC	1	11/11/2015 19:16	83515

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #2
Lab ID: P1609-02
Project: Buffalo River
Collection Date: 11/04/15 14:13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							**SW8082_S**
Aroclor-1016	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Aroclor-1221	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Aroclor-1232	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Aroclor-1242	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Aroclor-1248	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Aroclor-1254	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Aroclor-1260	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Aroclor-1262	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Aroclor-1268	ND		35	ug/Kg	1	11/11/2015 19:33	83515
Surrogate: Tetrachloro-m-xylene	56.7		34-147	%REC	1	11/11/2015 19:33	83515
Surrogate: Decachlorobiphenyl	72.5		60-125	%REC	1	11/11/2015 19:33	83515

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #3
Lab ID: P1609-03
Project: Buffalo River
Collection Date: 11/04/15 14:18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8082A -- PCB by GC-ECD							**SW8082_S**
Aroclor-1016	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Aroclor-1221	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Aroclor-1232	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Aroclor-1242	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Aroclor-1248	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Aroclor-1254	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Aroclor-1260	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Aroclor-1262	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Aroclor-1268	ND		35	ug/Kg	1	11/11/2015 19:50	83515
Surrogate: Tetrachloro-m-xylene	53.8		34-147	%REC	1	11/11/2015 19:50	83515
Surrogate: Decachlorobiphenyl	68.7		60-125	%REC	1	11/11/2015 19:50	83515

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/17/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #1 **Project:** Buffalo River
Lab ID: P1609-01 **Collection Date:** 11/04/15 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8081B -- Organochlorine Pesticides by GC-ECD							**SW8081_S**
alpha-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
beta-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
delta-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
gamma-BHC (Lindane)	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
Heptachlor	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
Aldrin	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
Endosulfan I	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
Dieldrin	ND		3.5	ug/Kg	1	11/16/2015 11:25	83514
4,4´-DDE	ND		3.5	ug/Kg	1	11/16/2015 11:25	83514
Endrin	ND		3.5	ug/Kg	1	11/16/2015 11:25	83514
Endosulfan II	ND		3.5	ug/Kg	1	11/16/2015 11:25	83514
4,4´-DDD	ND		3.5	ug/Kg	1	11/16/2015 11:25	83514
Endosulfan sulfate	ND		3.5	ug/Kg	1	11/16/2015 11:25	83514
4,4´-DDT	ND		3.5	ug/Kg	1	11/16/2015 11:25	83514
alpha-Chlordane	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
gamma-Chlordane	ND		1.8	ug/Kg	1	11/16/2015 11:25	83514
Surrogate: Tetrachloro-m-xylene	55.6		14-113	%REC	1	11/16/2015 11:25	83514
Surrogate: Decachlorobiphenyl	59.8		55-130	%REC	1	11/16/2015 11:25	83514

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/17/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #2 **Project:** Buffalo River
Lab ID: P1609-02 **Collection Date:** 11/04/15 14:13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8081B -- Organochlorine Pesticides by GC-ECD							**SW8081_S**
alpha-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
beta-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
delta-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
gamma-BHC (Lindane)	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
Heptachlor	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
Aldrin	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
Endosulfan I	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
Dieldrin	ND		3.4	ug/Kg	1	11/16/2015 11:42	83514
4,4´-DDE	ND		3.4	ug/Kg	1	11/16/2015 11:42	83514
Endrin	ND		3.4	ug/Kg	1	11/16/2015 11:42	83514
Endosulfan II	ND		3.4	ug/Kg	1	11/16/2015 11:42	83514
4,4´-DDD	ND		3.4	ug/Kg	1	11/16/2015 11:42	83514
Endosulfan sulfate	ND		3.4	ug/Kg	1	11/16/2015 11:42	83514
4,4´-DDT	ND		3.4	ug/Kg	1	11/16/2015 11:42	83514
alpha-Chlordane	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
gamma-Chlordane	ND		1.8	ug/Kg	1	11/16/2015 11:42	83514
Surrogate: Tetrachloro-m-xylene	67.8		14-113	%REC	1	11/16/2015 11:42	83514
Surrogate: Decachlorobiphenyl	68.8		55-130	%REC	1	11/16/2015 11:42	83514

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/17/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #3 **Project:** Buffalo River
Lab ID: P1609-03 **Collection Date:** 11/04/15 14:18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8081B -- Organochlorine Pesticides by GC-ECD							**SW8081_S**
alpha-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
beta-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
delta-BHC	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
gamma-BHC (Lindane)	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
Heptachlor	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
Aldrin	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
Endosulfan I	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
Dieldrin	ND		3.5	ug/Kg	1	11/16/2015 11:59	83514
4,4´-DDE	ND		3.5	ug/Kg	1	11/16/2015 11:59	83514
Endrin	ND		3.5	ug/Kg	1	11/16/2015 11:59	83514
Endosulfan II	ND		3.5	ug/Kg	1	11/16/2015 11:59	83514
4,4´-DDD	ND		3.5	ug/Kg	1	11/16/2015 11:59	83514
Endosulfan sulfate	ND		3.5	ug/Kg	1	11/16/2015 11:59	83514
4,4´-DDT	ND		3.5	ug/Kg	1	11/16/2015 11:59	83514
alpha-Chlordane	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
gamma-Chlordane	ND		1.8	ug/Kg	1	11/16/2015 11:59	83514
Surrogate: Tetrachloro-m-xylene	50.9		14-113	%REC	1	11/16/2015 11:59	83514
Surrogate: Decachlorobiphenyl	43.9	S	55-130	%REC	1	11/16/2015 11:59	83514

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #1 **Project:** Buffalo River
Lab ID: P1609-01 **Collection Date:** 11/04/15 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8270D -- SVOA by GC-MS							**SW8270_S**
Phenol	ND		350	ug/Kg	1	11/11/2015 16:40	83513
2-Methylphenol	ND		350	ug/Kg	1	11/11/2015 16:40	83513
4-Methylphenol	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Naphthalene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Acenaphthylene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Acenaphthene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Dibenzofuran	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Fluorene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Hexachlorobenzene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Pentachlorophenol	ND		710	ug/Kg	1	11/11/2015 16:40	83513
Phenanthrene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Anthracene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Fluoranthene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Pyrene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Benzo(a)anthracene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Chrysene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Benzo(b)fluoranthene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Benzo(k)fluoranthene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Benzo(a)pyrene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Indeno(1,2,3-cd)pyrene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Dibenzo(a,h)anthracene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Benzo(g,h,i)perylene	ND		350	ug/Kg	1	11/11/2015 16:40	83513
Surrogate: Nitrobenzene-d5	54.0		35-100	%REC	1	11/11/2015 16:40	83513
Surrogate: 2-Fluorobiphenyl	56.3		45-105	%REC	1	11/11/2015 16:40	83513
Surrogate: Terphenyl-d14	67.1		30-125	%REC	1	11/11/2015 16:40	83513
Surrogate: Phenol-d5	53.9		40-100	%REC	1	11/11/2015 16:40	83513
Surrogate: 2-Fluorophenol	58.6		35-105	%REC	1	11/11/2015 16:40	83513
Surrogate: 2,4,6-Tribromophenol	60.7		35-125	%REC	1	11/11/2015 16:40	83513

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #2 **Project:** Buffalo River
Lab ID: P1609-02 **Collection Date:** 11/04/15 14:13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8270D -- SVOA by GC-MS							**SW8270_S**
Phenol	ND		340	ug/Kg	1	11/11/2015 17:06	83513
2-Methylphenol	ND		340	ug/Kg	1	11/11/2015 17:06	83513
4-Methylphenol	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Naphthalene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Acenaphthylene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Acenaphthene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Dibenzofuran	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Fluorene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Hexachlorobenzene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Pentachlorophenol	ND		700	ug/Kg	1	11/11/2015 17:06	83513
Phenanthrene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Anthracene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Fluoranthene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Pyrene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Benzo(a)anthracene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Chrysene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Benzo(b)fluoranthene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Benzo(k)fluoranthene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Benzo(a)pyrene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Indeno(1,2,3-cd)pyrene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Dibenzo(a,h)anthracene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Benzo(g,h,i)perylene	ND		340	ug/Kg	1	11/11/2015 17:06	83513
Surrogate: Nitrobenzene-d5	48.9		35-100	%REC	1	11/11/2015 17:06	83513
Surrogate: 2-Fluorobiphenyl	49.3		45-105	%REC	1	11/11/2015 17:06	83513
Surrogate: Terphenyl-d14	62.2		30-125	%REC	1	11/11/2015 17:06	83513
Surrogate: Phenol-d5	47.9		40-100	%REC	1	11/11/2015 17:06	83513
Surrogate: 2-Fluorophenol	51.1		35-105	%REC	1	11/11/2015 17:06	83513
Surrogate: 2,4,6-Tribromophenol	55.5		35-125	%REC	1	11/11/2015 17:06	83513

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #3 **Project:** Buffalo River
Lab ID: P1609-03 **Collection Date:** 11/04/15 14:18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8270D -- SVOA by GC-MS							**SW8270_S**
Phenol	ND		350	ug/Kg	1	11/11/2015 17:32	83513
2-Methylphenol	ND		350	ug/Kg	1	11/11/2015 17:32	83513
4-Methylphenol	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Naphthalene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Acenaphthylene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Acenaphthene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Dibenzofuran	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Fluorene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Hexachlorobenzene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Pentachlorophenol	ND		700	ug/Kg	1	11/11/2015 17:32	83513
Phenanthrene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Anthracene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Fluoranthene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Pyrene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Benzo(a)anthracene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Chrysene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Benzo(b)fluoranthene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Benzo(k)fluoranthene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Benzo(a)pyrene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Indeno(1,2,3-cd)pyrene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Dibenzo(a,h)anthracene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Benzo(g,h,i)perylene	ND		350	ug/Kg	1	11/11/2015 17:32	83513
Surrogate: Nitrobenzene-d5	55.6		35-100	%REC	1	11/11/2015 17:32	83513
Surrogate: 2-Fluorobiphenyl	56.9		45-105	%REC	1	11/11/2015 17:32	83513
Surrogate: Terphenyl-d14	69.0		30-125	%REC	1	11/11/2015 17:32	83513
Surrogate: Phenol-d5	56.0		40-100	%REC	1	11/11/2015 17:32	83513
Surrogate: 2-Fluorophenol	59.4		35-105	%REC	1	11/11/2015 17:32	83513
Surrogate: 2,4,6-Tribromophenol	60.2		35-125	%REC	1	11/11/2015 17:32	83513

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #1 **Project:** Buffalo River
Lab ID: P1609-01 **Collection Date:** 11/04/15 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500 -- CR III by Colorimetric Method							**SM3500_CR_III_S**
Chromium, Trivalent	9.7		4.0	mg/Kg	1	11/11/2015 0:00	R91942

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #2 **Project:** Buffalo River
Lab ID: P1609-02 **Collection Date:** 11/04/15 14:13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500 -- CR III by Colorimetric Method							**SM3500_CR_III_S**
Chromium, Trivalent	7.3		4.0	mg/Kg	1	11/11/2015 0:00	R91942

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #3
Lab ID: P1609-03
Project: Buffalo River
Collection Date: 11/04/15 14:18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 3500 -- CR III by Colorimetric Method							**SM3500_CR_III_S**
Chromium, Trivalent	10		4.0	mg/Kg	1	11/11/2015 0:00	R91942

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #1 **Project:** Buffalo River
Lab ID: P1609-01 **Collection Date:** 11/04/15 14:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_LOW_S**
Vinyl chloride	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,1-Dichloroethene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Acetone	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Methylene chloride	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
trans-1,2-Dichloroethene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Methyl tert-butyl ether	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,1-Dichloroethane	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
2-Butanone	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
cis-1,2-Dichloroethene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Chloroform	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,1,1-Trichloroethane	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Carbon tetrachloride	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,2-Dichloroethane	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Benzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Trichloroethene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Toluene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Tetrachloroethene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Chlorobenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Ethylbenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
Xylene (Total)	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
n-Propylbenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,3,5-Trimethylbenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
tert-Butylbenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,2,4-Trimethylbenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
sec-Butylbenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,3-Dichlorobenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,4-Dichlorobenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
n-Butylbenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,2-Dichlorobenzene	ND	UJL	4.9	ug/Kg	1	11/09/2015 16:31	83509
1,4-Dioxane	ND	UJL	98	ug/Kg	1	11/09/2015 16:31	83509
Surrogate: Dibromofluoromethane	99.7		76-128	%REC	1	11/09/2015 16:31	83509
Surrogate: 1,2-Dichloroethane-d4	106		88-110	%REC	1	11/09/2015 16:31	83509
Surrogate: Toluene-d8	105		85-115	%REC	1	11/09/2015 16:31	83509
Surrogate: Bromofluorobenzene	93.7		85-120	%REC	1	11/09/2015 16:31	83509

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #2 **Project:** Buffalo River
Lab ID: P1609-02 **Collection Date:** 11/04/15 14:13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_LOW_S**
Vinyl chloride	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,1-Dichloroethene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Acetone	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Methylene chloride	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
trans-1,2-Dichloroethene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Methyl tert-butyl ether	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,1-Dichloroethane	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
2-Butanone	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
cis-1,2-Dichloroethene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Chloroform	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,1,1-Trichloroethane	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Carbon tetrachloride	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,2-Dichloroethane	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Benzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Trichloroethene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Toluene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Tetrachloroethene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Chlorobenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Ethylbenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
Xylene (Total)	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
n-Propylbenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,3,5-Trimethylbenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
tert-Butylbenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,2,4-Trimethylbenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
sec-Butylbenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,3-Dichlorobenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,4-Dichlorobenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
n-Butylbenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,2-Dichlorobenzene	ND	UJL	4.6	ug/Kg	1	11/09/2015 16:57	83509
1,4-Dioxane	ND	UJL	92	ug/Kg	1	11/09/2015 16:57	83509
Surrogate: Dibromofluoromethane	99.7		76-128	%REC	1	11/09/2015 16:57	83509
Surrogate: 1,2-Dichloroethane-d4	105		88-110	%REC	1	11/09/2015 16:57	83509
Surrogate: Toluene-d8	101		85-115	%REC	1	11/09/2015 16:57	83509
Surrogate: Bromofluorobenzene	92.7		85-120	%REC	1	11/09/2015 16:57	83509

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Eurofins Spectrum Analytical, Inc. -- ESAI-RI

11/12/2015

Client: Sevenson Environmental Services Inc.
Client Sample ID: CHAFFEE #3 **Project:** Buffalo River
Lab ID: P1609-03 **Collection Date:** 11/04/15 14:18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS							**SW8260_LOW_S**
Vinyl chloride	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,1-Dichloroethene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Acetone	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Methylene chloride	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
trans-1,2-Dichloroethene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Methyl tert-butyl ether	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,1-Dichloroethane	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
2-Butanone	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
cis-1,2-Dichloroethene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Chloroform	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,1,1-Trichloroethane	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Carbon tetrachloride	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,2-Dichloroethane	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Benzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Trichloroethene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Toluene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Tetrachloroethene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Chlorobenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Ethylbenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
Xylene (Total)	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
n-Propylbenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,3,5-Trimethylbenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
tert-Butylbenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,2,4-Trimethylbenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
sec-Butylbenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,3-Dichlorobenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,4-Dichlorobenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
n-Butylbenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,2-Dichlorobenzene	ND	UJL	4.5	ug/Kg	1	11/09/2015 17:23	83509
1,4-Dioxane	ND	UJL	89	ug/Kg	1	11/09/2015 17:23	83509
Surrogate: Dibromofluoromethane	101		76-128	%REC	1	11/09/2015 17:23	83509
Surrogate: 1,2-Dichloroethane-d4	107		88-110	%REC	1	11/09/2015 17:23	83509
Surrogate: Toluene-d8	103		85-115	%REC	1	11/09/2015 17:23	83509
Surrogate: Bromofluorobenzene	97.6		85-120	%REC	1	11/09/2015 17:23	83509

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

eurofins | Spectrum Analytical

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Report Date:
12-Nov-15 17:07

Laboratory Report

Eurofins Spectrum Analytical, Inc.
646 Camp Ave.
North Kingstown, RI 02852
Attn: Agnes Huntley

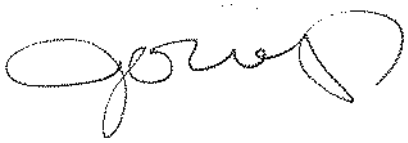
Project: Buffalo River
Project #: P1609

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC14645-01	CHAFFEE #1	Soil	04-Nov-15 14:10	05-Nov-15 15:43
SC14645-02	CHAFFEE #2	Soil	04-Nov-15 14:13	05-Nov-15 15:43
SC14645-03	CHAFFEE #3	Soil	04-Nov-15 14:18	05-Nov-15 15:43

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00098
USDA # S-51435

Authorized by:



June O'Connor
Laboratory Director

Eurofins Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 8 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our 'Quality' web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the RDL. This report includes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the detection limit are reported as "<" (less than) the detection limit in this report.

The samples were received 2.1 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Acceptance Check Form

Client:	Eurofins Spectrum Analytical, Inc. - RI
Project:	Buffalo River / P1609
Work Order:	SC14645
Sample(s) received on:	11/5/2015

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☐	☑	☐
Were custody seals intact?	☐	☐	☑
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples refrigerated upon transfer to laboratory representative?	☑	☐	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☐	☑	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Summary of Hits

Lab ID: **Client ID:**

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method

No hits detected.

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification
CHAFFEE #1
SC14645-01

Client Project #	Matrix	Collection Date/Time	Received
P1609	Soil	04-Nov-15 14:10	05-Nov-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	% Solids	92.3		%			1	SM2540 G Mod.	09-Nov-15	09-Nov-15	DT	1521328	
57-12-5	Cyanide (total)	< 0.447	U	mg/kg dry	0.447	0.396	1	SW846 9012B	10-Nov-15	10-Nov-15	RLT	1521463	X

Sample Identification
CHAFFEE #2
SC14645-02

Client Project #	Matrix	Collection Date/Time	Received
P1609	Soil	04-Nov-15 14:13	05-Nov-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	% Solids	95.8		%			1	SM2540 G Mod.	09-Nov-15	09-Nov-15	DT	1521328	
57-12-5	Cyanide (total)	< 0.424	U	mg/kg dry	0.424	0.375	1	SW846 9012B	10-Nov-15	10-Nov-15	RLT	1521463	X

Sample Identification
CHAFFEE #3
SC14645-03

Client Project #	Matrix	Collection Date/Time	Received
P1609	Soil	04-Nov-15 14:18	05-Nov-15

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
	% Solids	95.7		%			1	SM2540 G Mod.	09-Nov-15	09-Nov-15	DT	1521328	
57-12-5	Cyanide (total)	< 0.466	U	mg/kg dry	0.466	0.413	1	SW846 9012B	12-Nov-15	12-Nov-15	RLT	1521599	X

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1521463 - General Preparation										
Blank (1521463-BLK1)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	< 0.500	U	mg/kg wet	0.500						
Blank (1521463-BLK2)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	< 0.500	U	mg/kg wet	0.500						
LCS (1521463-BS1)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**21.1**		mg/kg wet	0.500	20.0		106	90-110		
LCS (1521463-BS2)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**22.3**	QC3	mg/kg wet	0.500	20.0		112	90-110		
Calibration Blank (1521463-CCB1)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**0.000890**		mg/kg wet							
Calibration Blank (1521463-CCB2)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**0.000896**		mg/kg wet							
Calibration Blank (1521463-CCB3)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**0.000612**		mg/kg wet							
Calibration Check (1521463-CCV1)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**30.5**		mg/kg wet	0.500	30.0		102	90-110		
Calibration Check (1521463-CCV2)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**30.0**		mg/kg wet	0.500	30.0		100	90-110		
Calibration Check (1521463-CCV3)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**30.1**		mg/kg wet	0.500	30.0		100	90-110		
Reference (1521463-SRM1)						Prepared & Analyzed: 10-Nov-15				
Cyanide (total)	**98.1**		mg/kg wet	1.88	117		84	36.75-135		
Batch 1521599 - General Preparation										
Blank (1521599-BLK1)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	< 0.500	U	mg/kg wet	0.500						
Blank (1521599-BLK2)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	< 0.500	U	mg/kg wet	0.500						
LCS (1521599-BS1)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**19.7**		mg/kg wet	0.500	20.0		98	90-110		
LCS (1521599-BS2)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**21.0**		mg/kg wet	0.500	20.0		105	90-110		
Calibration Blank (1521599-CCB1)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**0.00129**		mg/kg wet							
Calibration Blank (1521599-CCB2)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**0.000787**		mg/kg wet							
Calibration Blank (1521599-CCB3)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**0.00123**		mg/kg wet							
Calibration Check (1521599-CCV1)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**29.0**		mg/kg wet	0.500	30.0		97	90-110		
Calibration Check (1521599-CCV2)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**28.3**		mg/kg wet	0.500	30.0		94	90-110		
Calibration Check (1521599-CCV3)						Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**28.2**		mg/kg wet	0.500	30.0		94	90-110		
Duplicate (1521599-DUP1)			**Source: SC14645-03**			Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	< 0.510	U	mg/kg dry	0.510		BRL				35
Matrix Spike (1521599-MS1)			**Source: SC14645-03**			Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**8.46**		mg/kg dry	0.423	8.47	BRL	100	90-110		
Matrix Spike Dup (1521599-MSD1)			**Source: SC14645-03**			Prepared & Analyzed: 12-Nov-15				
Cyanide (total)	**9.17**		mg/kg dry	0.449	8.99	BRL	102	90-110	8	35
Reference (1521599-SRM1)						Prepared & Analyzed: 12-Nov-15				

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1521599 - General Preparation										
Reference (1521599-SRM1)					Prepared & Analyzed: 12-Nov-15					
Cyanide (total)	**84.5**		mg/kg wet	1.58	117		72	36.75-135		

Notes and Definitions

QC3	The spike recovery is outside acceptable limits for the LCS. The batch was accepted based upon the MS and/or MSD meeting the LCS limits criteria.
U	Analyte included in the analysis, but not detected at or above the MDL.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
June O'Connor
Kimberly LaPlante

SC 1460453641

SPECTRUM ANALYTICAL, INC.

CHAIN-OF-CUSTODY RECORD

WorkOrder : P1609
Project: Buffalo River
Report Type : ASP-B
Due Date : 11/17/2015
FAX Due Date : 11/12/2015
Report To : Agnes R Huntley
Purchase Order : P1609
EDD Types : **Please generate a Little PEL EDD**

Subcontractor:
Eurofins Spectrum Analytical, Inc. - MA
11 Almgren Drive
Agawam, Massachusetts 01001

Phone: (413) 789-9018

EQuISFacilityCode: N/A

= number of containers

Requested Test

Client Sample ID	Collection Date	#	Matrix	DUP/MS/MSD	Mitkem Sample ID	SW9012_S
CHAFFEE #1 SC1460453-01	11/04/2015 14:10	1	Soil		P1609-01C	X
CHAFFEE #2 02	11/04/2015 14:13	1	Soil		P1609-02C	X
CHAFFEE #3 03	11/04/2015 14:18	1	Soil		P1609-03C	X

1) SW9012_S, TOTAL CYANIDE

Use 'Client Sample IDs' when reporting data. If needed, truncate 'Client Sample IDs' to fit on reports. Use full 'Client Sample ID' when generating EDD.

Comments:

		Date/Time			Date/Time
Relinquished by:	Agnes R Huntley		**Received by:**		11/5/15 1343
Relinquished by:		11/5/15 13:15	**Received by:**		11/5/15 1543

11/05/2015

2.1 / 0 / 2.1 / 0 2

X REFRIG.

646 Camp Ave * North Kingstown * RI * 028524008 * 401-732-3400 * 401-732-3499
www.spectrum-analytical.com

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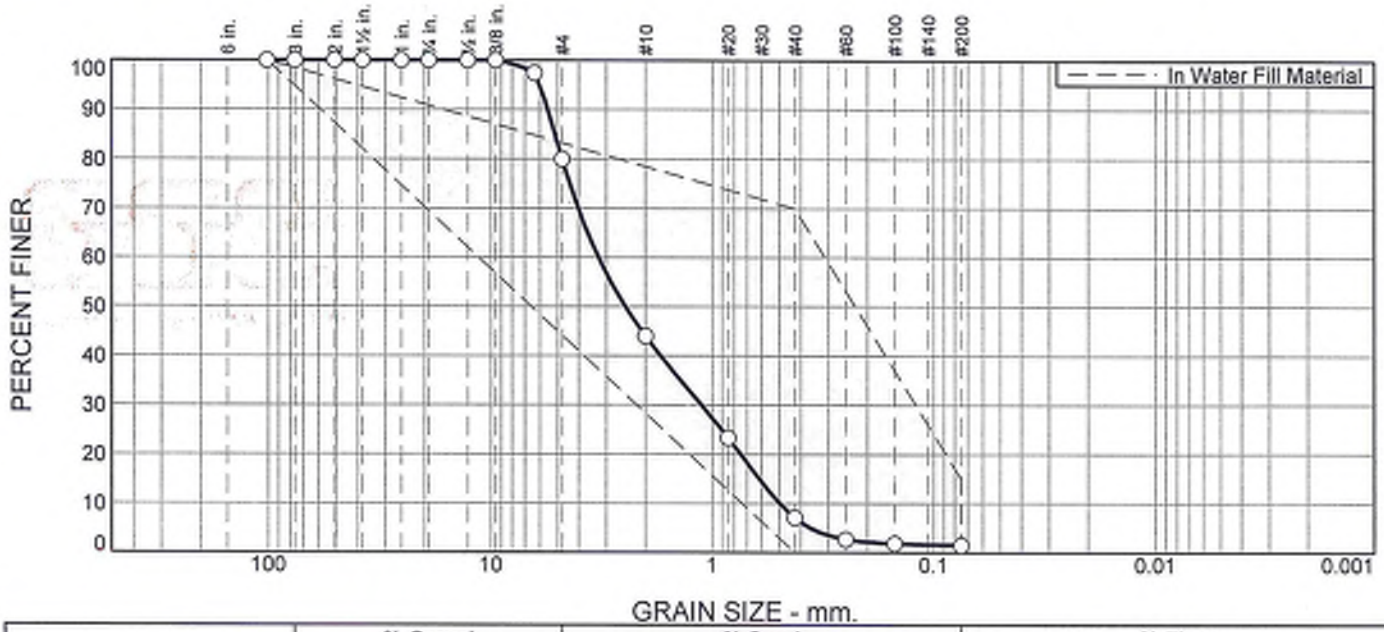
GRAIN SIZE ANALYSIS
ASTM D-422

Project: Buffalo River AOC Capping and Habitat Restoration **Project No.:** 13-1133C

Client: Sevenson Environmental Services, Inc.

Location: Chaffee #3
Sample Number: 15-03 **Depth:** Unknown **Date:** 11.10.15



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	20.0	36.0	36.9	5.5	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
4"	100.0	100.0 - 100.0	
3"	100.0		
2"	100.0		
1-1/2"	100.0		
1-0"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	97.4		
#4	80.0		
#10	44.0		
#20	23.4		
#40	7.1	0.0 - 70.0	
#60	2.7		
#100	1.9		
#200	1.6	0.0 - 15.0	

* In Water Fill Material

Material Description

Chaffee #3
poorly graded sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{85}= 5.1169 D_{60}= 3.2556 D_{50}= 2.4689
D_{30}= 1.1199 D_{15}= 0.6145 D_{10}= 0.4958
C_u= 6.57 C_c= 0.78

Classification

USCS= SP AASHTO= A-1-a

Remarks

Organic Content = 1.6 %

Figure

GLYNN GEOTECHNICAL ENGINEERING
415 South Transit Street, Lockport, New York 14094
voice 716.625.6933 / fax 716.625.6983
www.glynngroup.com

Reported/Reviewed by

Civil • Structural • Geotechnical • Materials Testing • Consulting

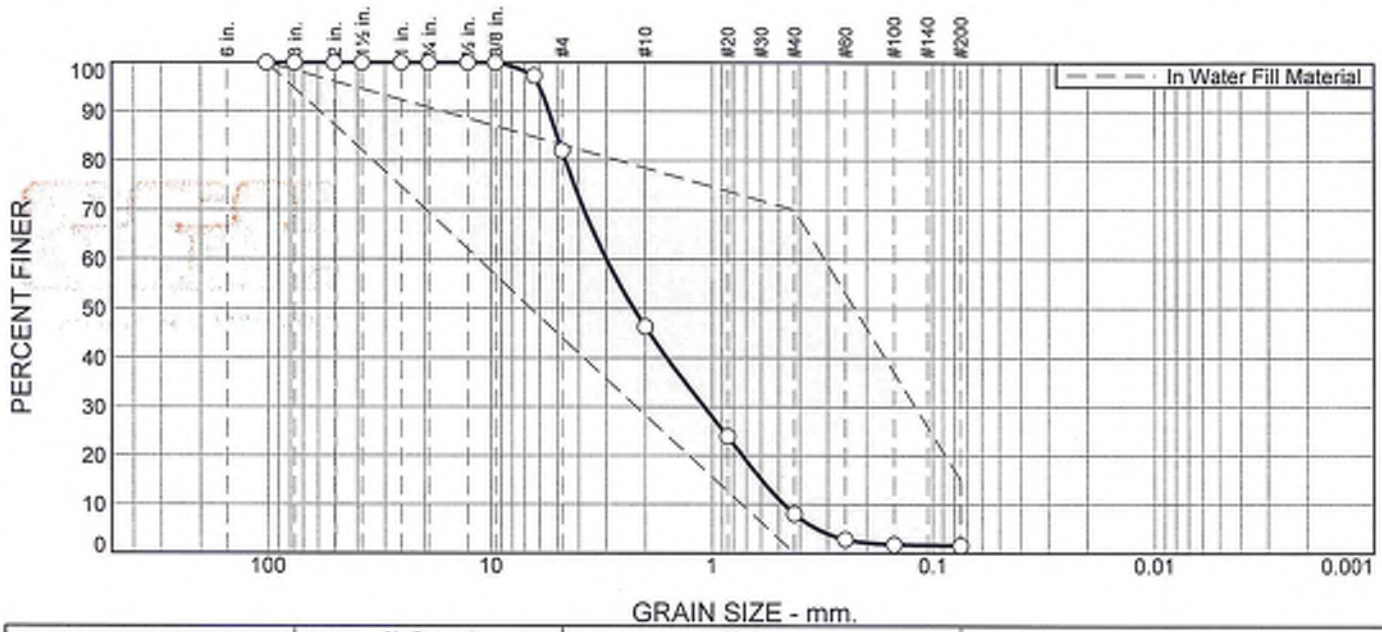
a member of the GLYNN GROUP

GRAIN SIZE ANALYSIS
ASTM D-422

Project: Buffalo River AOC Capping and Habitat Restoration **Project No.:** 13-1133C

Client: Sevenson Environmental Services, Inc.

Location: Chaffee #2
Sample Number: 15-02 **Depth:** Unknown **Date:** 11.10.15



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	18.0	35.7	38.3	6.4	1.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
4"	100.0	100.0 - 100.0	
3"	100.0		
2"	100.0		
1-1/2"	100.0		
1-0"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	97.3		
#4	82.0		
#10	46.3		
#20	23.9		
#40	8.0	0.0 - 70.0	
#60	2.9		
#100	1.8		
#200	1.6	0.0 - 15.0	

* In Water Fill Material

Material Description

Chaffee #2
poorly graded sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{85}= 4.9946 D_{60}= 2.9992 D_{50}= 2.2545
D_{30}= 1.0831 D_{15}= 0.5962 D_{10}= 0.4742
C_u= 6.33 C_c= 0.82

Classification

USCS= SP AASHTO= A-1-a

Remarks

Organic Content = 1.4 %

Figure

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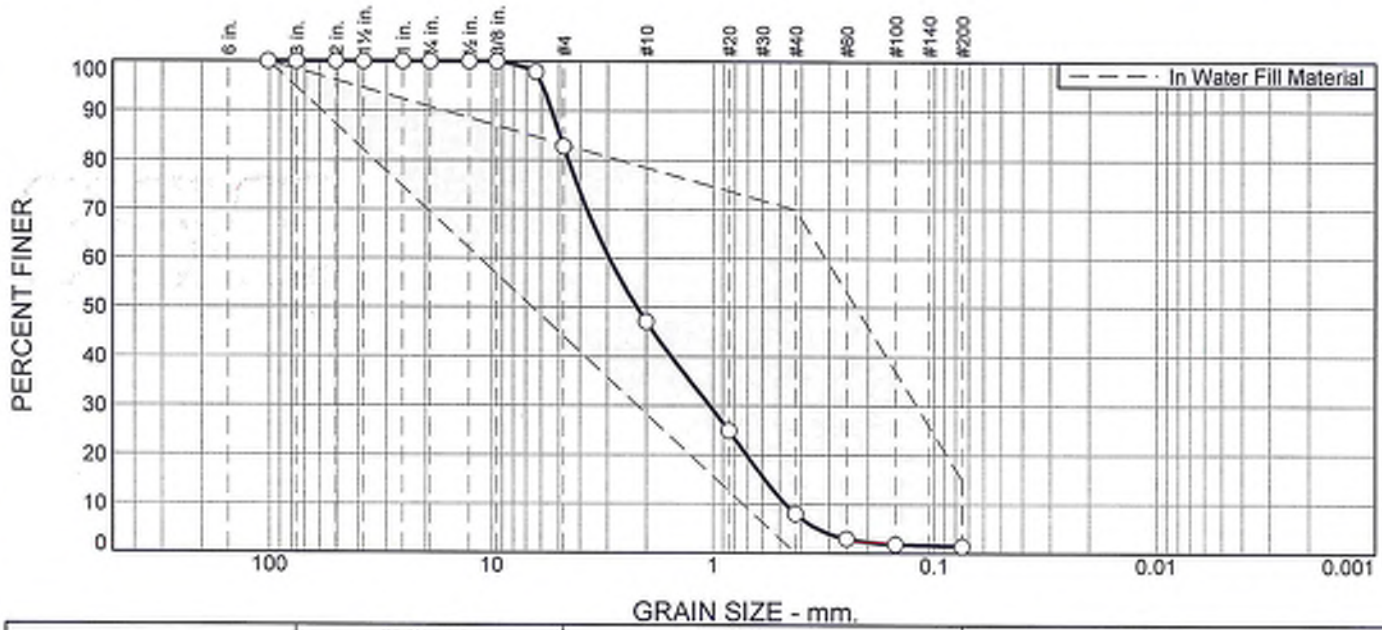
GRAIN SIZE ANALYSIS
ASTM D-422

Project: Buffalo River AOC Capping and Habitat Restoration **Project No.:** 13-1133C

Client: Sevenson Environmental Services, Inc.

Location: Chaffee #1
Sample Number: 15-01 **Depth:** Unknown **Date:** 11.10.15



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	17.2	35.8	38.9	6.6	1.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
4"	100.0	100.0 - 100.0	
3"	100.0		
2"	100.0		
1-1/2"	100.0		
1-0"	100.0		
3/4"	100.0		
1/2"	100.0		
3/8"	100.0		
1/4"	97.9		
#4	82.8		
#10	47.0		
#20	25.0		
#40	8.1	0.0 - 70.0	
#60	3.0		
#100	1.9		
#200	1.5	0.0 - 15.0	

* In Water Fill Material

Material Description

Chaffe #1
poorly graded sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{85}= 4.9275 D_{60}= 2.9433 D_{50}= 2.2064
D_{30}= 1.0364 D_{15}= 0.5845 D_{10}= 0.4712
C_u= 6.25 C_c= 0.77

Classification

USCS= SP AASHTO= A-1-a

Remarks

Organic Content = 1.4 %

Figure

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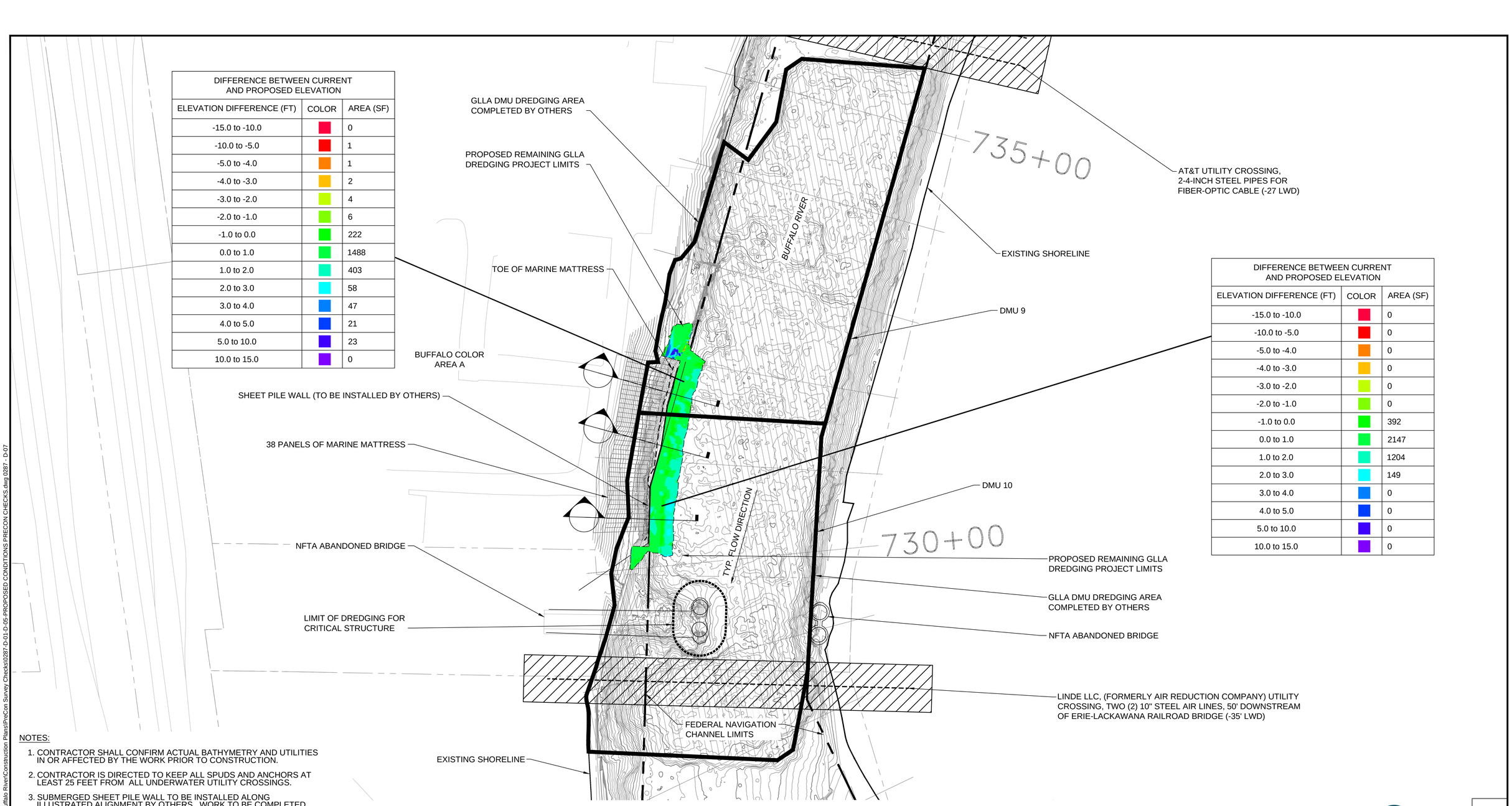
Reported/Reviewed by

Appendix G
Comparison of Design Drawing Survey to Pre-Dredge Survey

DIFFERENCE BETWEEN CURRENT AND PROPOSED ELEVATION		
ELEVATION DIFFERENCE (FT)	COLOR	AREA (SF)
-15.0 to -10.0		0
-10.0 to -5.0		1
-5.0 to -4.0		1
-4.0 to -3.0		2
-3.0 to -2.0		4
-2.0 to -1.0		6
-1.0 to 0.0		222
0.0 to 1.0		1488
1.0 to 2.0		403
2.0 to 3.0		58
3.0 to 4.0		47
4.0 to 5.0		21
5.0 to 10.0		23
10.0 to 15.0		0



DIFFERENCE BETWEEN CURRENT AND PROPOSED ELEVATION		
ELEVATION DIFFERENCE (FT)	COLOR	AREA (SF)
-15.0 to -10.0		0
-10.0 to -5.0		0
-5.0 to -4.0		0
-4.0 to -3.0		0
-3.0 to -2.0		0
-2.0 to -1.0		0
-1.0 to 0.0		392
0.0 to 1.0		2147
1.0 to 2.0		1204
2.0 to 3.0		149
3.0 to 4.0		0
4.0 to 5.0		0
5.0 to 10.0		0
10.0 to 15.0		0

NOTES:

1. CONTRACTOR SHALL CONFIRM ACTUAL BATHYMETRY AND UTILITIES IN OR AFFECTED BY THE WORK PRIOR TO CONSTRUCTION.
2. CONTRACTOR IS DIRECTED TO KEEP ALL SPUDS AND ANCHORS AT LEAST 25 FEET FROM ALL UNDERWATER UTILITY CROSSINGS.
3. SUBMERGED SHEET PILE WALL TO BE INSTALLED ALONG ILLUSTRATED ALIGNMENT BY OTHERS. WORK TO BE COMPLETED PRIOR TO START OF DREDGING. TOP OF SHEETING ANTICIPATED TO RANGE FROM 550.0 TO 555.0 FT, ACTUAL ALIGNMENT AND ELEVATION TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO DREDGING.

SOURCE: Basemap from CH2MHill. Bathymetry from CH2MHill (2012), USACE (2013), Ocean Surveys, Inc. (2014) and Aquatic Sciences (2013, 2014)
HORIZONTAL DATUM: New York State Plane West, NAD83, U.S. Feet.
VERTICAL DATUM: International Great Lakes Datum of 1985 (IGLD85).

NORTH

0 50 100
SCALE IN FEET

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

ANCHOR QEA

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION

DESIGNED BY: S. BAGNULL
DRAWN BY: B. HURRY
CHECKED BY: M. REEMTS
APPROVED BY: R. MOHAN
SCALE: AS NOTED
DATE: NOVEMBER 10, 2015

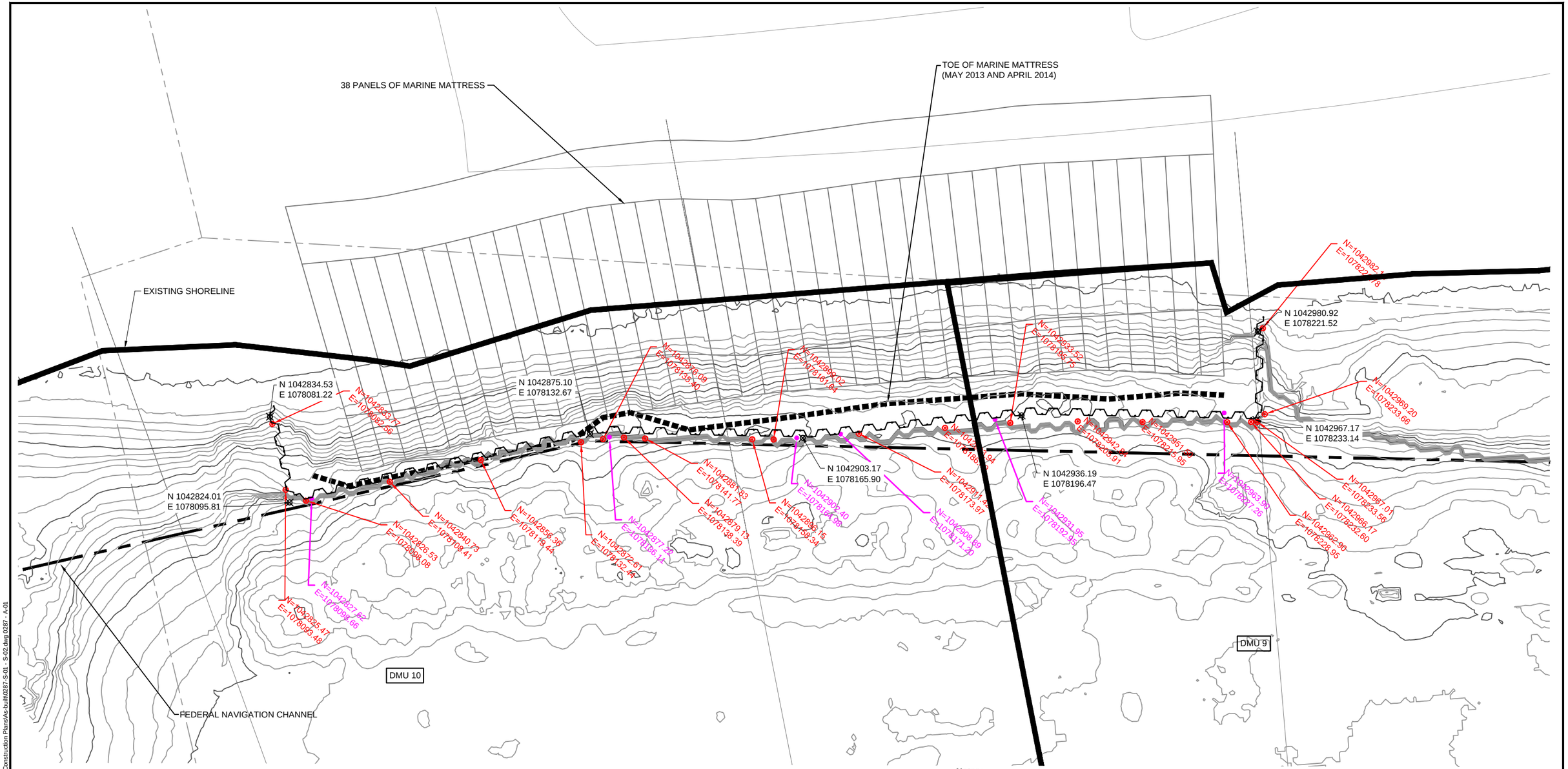
BUFFALO RIVER AOC 2015 ADDITIONAL DREDGING

PROPOSED CONDITIONS - DMU 9 AND DMU 10

D-07

SHEET NO. 16 OF 35

Appendix I
DMUs 9 and 10 Shoreline Sheetpile Wall As-Built Documentation



SOURCE: Basemap from CH2MHill. Bathymetry from CH2MHill (2012), and Thew Associates PLLC (2015).
HORIZONTAL DATUM: New York State Plane West, NAD83, U.S. Feet.
VERTICAL DATUM: International Great Lakes Datum of 1985 (IGLD85).

IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW TO ALTER THIS DOCUMENT BY MEANS INCONSISTENT WITH SECTION 7209 OF SAID LAW.

LEGEND:

- APPROVED ALTERNATE SHEET PILE LAYOUT
- POST CONSTRUCTION CONTOUR MAJOR (5 FT)
- POST CONSTRUCTION CONTOUR MAJOR (5 FT)
- DESIGN ALIGNMENT CONTROL POINTS
- QA/QC CHECKPOINTS DURING CONSTRUCTION
- AS-BUILT SURVEY VERIFICATION POINTS

Notes:

1. Original design sheet pile alignment presented in B&L and Anchor QEA drawings dated September 24, 2015.
2. Approved alternate sheet pile layout shown as accepted by submittal from Skyline Steel, LLC dated October 26, 2015.
3. QA/QC check points collected via GPS rover by Sevenson Environmental Services during construction.
4. As-built survey verification points as provided in record location drawing by GPI Engineering & Surveying, LLP dated November 23, 2015.

NORTH
0 10 20
SCALE IN FEET

ONE INCH AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

H:\Syracuse\CAD Projects\130287 - Buffalo River\Construction Plans\As-built\0287-S-01 - S-02.dwg 0287 - A-01
Feb 09, 2016 8:33am lshurry

BARTON & LOGUIDICE, D.P.C.
290 ELWOOD DAVIS ROAD
LIVERPOOL, NY 13088

ANCHOR QEA ENGINEERING, PLLC
290 ELWOOD DAVIS ROAD
LIVERPOOL, NY 13088

CLIENT: HONEYWELL INTERNATIONAL

REVISIONS

REV	DATE	BY	APP'D	DESCRIPTION

DESIGNED BY: -
DRAWN BY: -
CHECKED BY: -
APPROVED BY: -
SCALE: AS NOTED
DATE: NOVEMBER 6, 2015

BUFFALO RIVER AOC 2015
ADDITIONAL DREDGING

DMU 9 AND 10 SHEET PILE WALL AS-BUILT

A-01

SHEET NO. 1 OF 1

Ontario Specialty Contracting, Inc.
333 Ganson Street
Buffalo, NY 14203
Phone No. (716) 856-3333 / Fax No. (716) 842-1630

Contract / Package Associated with this submittal: PO#4500165400

SUBMITTAL NUMBER: 10

DATE: 12/09/15

TYPE OF SUBMITTAL:

Shop Drawing ____ Schedule ____ Sample _____ Other _x_

Product Data _____ Certificate ____ Color Samples ____ Other _____

Test Report ____ Warranty ____ O&M Manual _____ Other _____

DESCRIPTION:

Submittal Subject: As-Built Drawing & Pile Driving Log

Spec Section No.: 35 31 06 / 02 21 00

Paragraph: _____

Manufacturer: _____

Supplier: _____

Contractor's Comments:

Contractors Review: By: _____

This submittal has been checked for compliance with the drawings and specifications. Corrections or comments made on this submittal during this review do not relieve subcontractors' from compliance with the requirements of the drawings and specifications.

___Review ___Rejected ____Revise and Resubmit ____Make Corrections Noted

BIDCO Marine Group, Inc.

220 Katherine St.
Buffalo, NY 14210

716-847-1111 www.bidcomarine.com FAX: 716-847-1112

Letter of Transmittal

To:	Mr. Dan Flannigan
	Ontario Specialty Contracting, Inc.
	333 Ganson St.
	Buffalo, NY 14203

Date	12/9/15	Job:	1533
Project	Buffalo Color Shoreline		
	Steel Sheet Pile Kneewall		

I am sending you: ☒ Enclosed ☐ Under separate cover via _____

☐ Scope Of Work (SOW)	☐ Addendum	☐ Copy Of Letter
☒ Drawings	☐ Supplement	☐ Ditto Sheets
☐ Sketches	☐ PM Manuals/Videos	☒ Submittal
☐ Specifications	☐ Application For Payment /Invoice	☐ Prevailing Wage Rates
☐ Contract Agreement	☐ Request for Subcontractor Proposal	☐ Bid Form

Copies	Date	Submittal #	Ref #	Title/Description
3	11/23/15			GPI Survey Record Location Survey (embossed)
3	11/23/15			BIDCO Pile Driving Record - Final

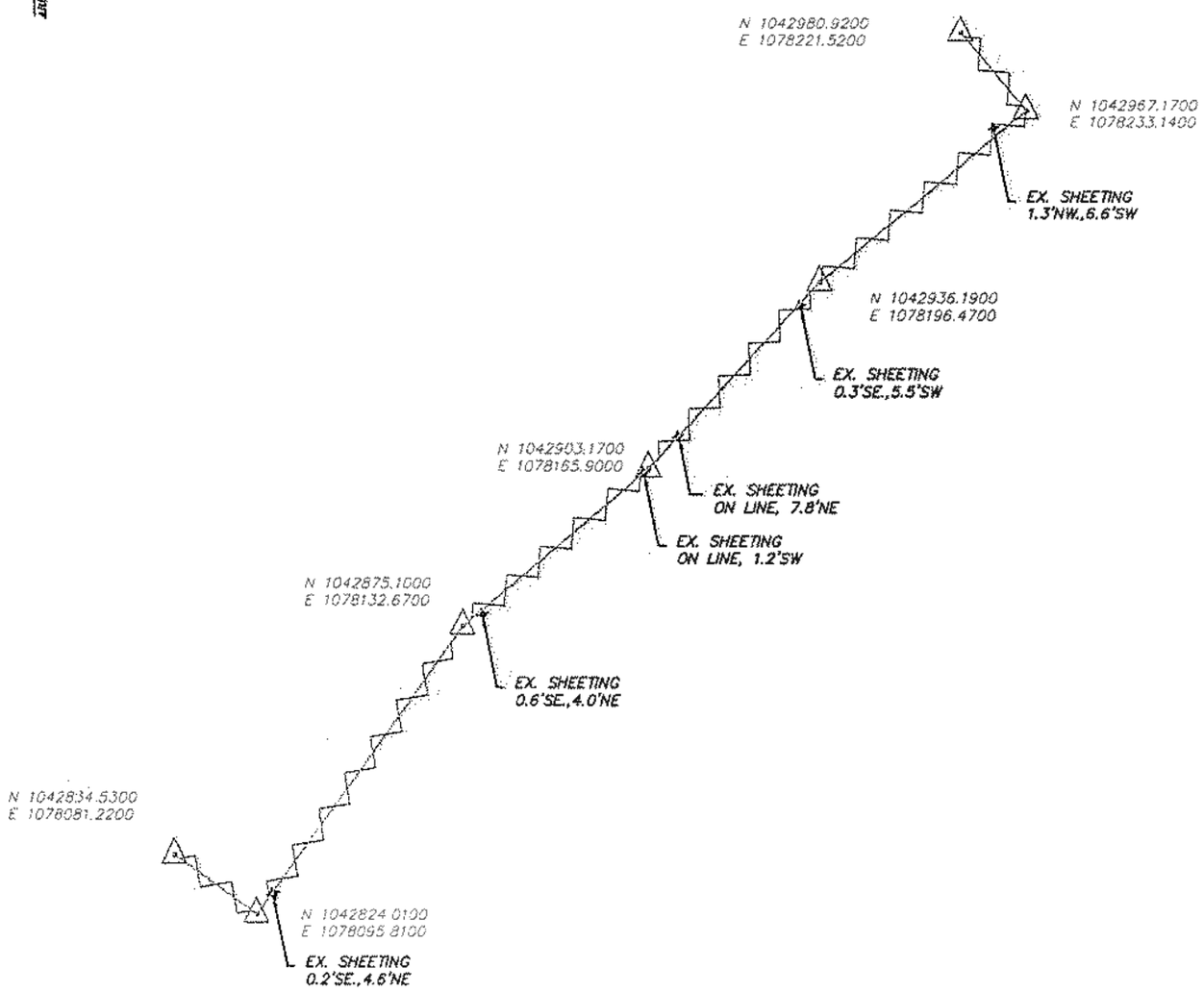
THESE TRANSMITTALS ARE ☒ Submitted, ☐ Returned, ☐ Issued, as checked below:

☐ For APPROVAL	☐ For Your Comment	☐ Disapproved
☐ As Requested	☐ For Estimate	☐ Preparation of Shop Drawings
☐ Approved for Construction	☐ For Bids	☒ For Your Info/Files/Use
☐ For Signature	☐ For Correction	☐ For NY State P.E. Stamp
☐ As Revised	☐ For Final Approval	☐ Procedure
☐ Approved as Noted	☐ Subcontractor Proposal(s)	☐

REMARKS:

cc: Job file 1533

Signed: _____
Eric M. Chenevert, PE



RECORD LOCATION
EXISTING SHEET PILE
1037 SOUTH PARK AVENUE
CITY OF BUFFALO, ERIE COUNTY, NEW YORK

DATE	REVISION/TYPE

GPI ENGINEERING & SURVEYING, LLP
FORMERLY PRATT & HUTH ASSOCIATES, LLP
ENGINEERING • SURVEYING • PLANNING
4950 GENESEE STREET, SUITE 100
BUFFALO, NEW YORK 14225
(716) 633-4844 FAX 633-4940

Job No. 5605 Date: NOVEMBER 23, 2015
Scale 1" = 30' TAX No.

BUFFALO COLOR SHEET PILE DRIVING LOG

SHEET #		DATE	TOP OF MUD LINE FROM WATER (1)	Ordered Length of Sheet Pile	Sheet pile Cut-off	Driven Length of Sheet Pile	Design Top of Sheet Pile	As-Built Top of Sheet Pile	As-Built Tip of Sheet pile	COMMETS
Units		Days	Feet	Feet	Feet	Feet	Elevation	Elevation	Elevation	
SP-	1	11/19/15	8'	40	0	40	Mud Line	560.64	520.64	Driven to Mud Line
SP-	2	11/19/15	12'	40	0	40	Mud Line	558.78	518.78	Driven to Mud Line
SP-	3	11/18/15	19'	40	3.2	36.8	556.5	556.97	520.17	Driven to Bed Rock
SP-	4	11/18/15	19'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	5	11/18/15	19'	40	3.2	36.8	556.5	556.81	520.01	Corner (on Bed Rock)
SP-	6	11/18/15	19'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	7	11/18/15	19'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	8	11/18/15	19'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	9	11/18/15	19'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	10	11/18/15	19'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	11	11/18/15	19'	40	3.2	36.8	556.5	556.8	520.00	Driven to Bed Rock
SP-	12	11/18/15	19'	40	3.2	36.8	556.5	556.8	520.00	Driven to Bed Rock
SP-	13	11/18/15	19'	40	3.2	36.8	556.5	556.8	520.00	Driven to Bed Rock
SP-	14	11/18/15	19'	40	3.2	36.8	556.5	556.8	520.00	Driven to Bed Rock
SP-	15	11/18/15	18.5'	40	3.2	36.8	556.5	556.8	520.00	Driven to Bed Rock
SP-	16	11/19/15	18.5'	40	3.2	36.8	556.5	556.8	520.00	Driven to Bed Rock
SP-	17	11/19/15	18.5'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	18	11/19/15	18.5'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	19	11/19/15	18.5'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	20	11/19/15	18.5'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	21	11/19/15	18.5'	40	3.2	36.8	556.5	556.81	520.01	Driven to Bed Rock
SP-	22	11/19/15	18.5'	40	6	34	556.5	556.81	522.81	Hit an Obstruction
SP-	23	11/19/15	18.5'	40	7.5	32.5	556.5	556.81	524.31	Hit an Obstruction
SP-	24	11/20/15	18.5'	40	7.5	32.5	556.5	556.81	524.31	Hit an Obstruction
SP-	25	11/20/15	18.5'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP-	26	11/20/15	18.5'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP-	27	11/20/15	18.5'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP-	28	11/20/15	18.5'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP-	29	11/20/15	18.5'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP-	30	11/20/15	18.5'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock

Notes:

1 Top of Mudline from Water; this column is for reference only...water elevation in river is not constant

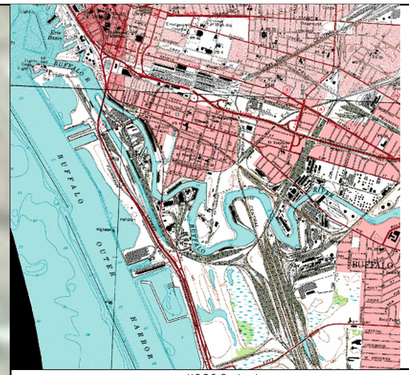
BUFFALO COLOR SHEET PILE DRIVING LOG

SHEET #	DATE	TOP OF MUD LINE FROM WATER (1)	Ordered Length of Sheet Pile	Sheet pile Cut-off	Driven Length of Sheet Pile	Design Top of Sheet Pile	As-Built Top of Sheet Pile	As-Built Tip of Sheet pile	COMMETS
Units	Days	Feet	Feet	Feet	Feet	Elevation	Elevation	Elevation	
SP- 31	11/20/15	18.5'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP- 32	11/20/15	18.5'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP- 33	11/23/15	18'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP- 34	11/23/15	18'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP- 35	11/23/15	18'	40	2.75	37.25	556.5	556.87	519.62	Driven to Bed Rock
SP- 36	11/23/15	18'	40	2.75	37.25	556.5	556.76	519.51	Driven to Bed Rock
SP- 37	11/23/15	18'	40	2.75	37.25	556.5	556.76	519.51	Driven to Bed Rock
SP- 38	11/23/15	18'	40	2.75	37.25	556.5	556.76	519.51	Driven to Bed Rock
SP- 39	11/23/15	18'	40	2.75	37.25	556.5	556.76	519.51	Driven to Bed Rock
SP- 40	11/23/15	18'	40	2.75	37.25	556.5	556.76	519.51	Driven to Bed Rock
SP- 41	11/23/15	18'	40	2.75	37.25	556.5	556.76	519.51	Driven to Bed Rock
SP- 42	11/23/15	18'	40	2.75	37.25	556.5	556.85	519.60	Driven to Bed Rock
SP- 43	11/23/15	18'	40	2.75	37.25	556.5	556.85	519.60	Driven to Bed Rock
SP- 44	11/23/15	18'	40	2.75	37.25	556.5	556.85	519.60	Driven to Bed Rock
SP- 45	11/23/15	18'	40	2.75	37.25	556.5	556.85	519.60	Driven to Bed Rock
SP- 46	11/23/15	18'	40	2.75	37.25	556.5	556.85	519.60	Driven to Bed Rock
SP- 47	11/24/15	18.5'	40	2.75	37.25	556.5	556.85	519.60	Driven to Bed Rock
SP- 48	11/24/15	18.5'	40	2.75	37.25	556.5	556.85	519.60	Driven to Bed Rock
SP- 49	11/24/15	18.5'	40	2.75	37.25	556.5	556.85	519.60	Corner (on Bed Rock)
SP- 50	11/24/15	18.5'	40	2.75	37.25	556.5	556.89	519.64	Driven to Bed Rock
SP- 51	11/24/15	14'	40	2.75	37.25	556.5	556.89	519.64	Driven to Bed Rock
SP- 52	11/24/15	9'	40	0	40.00	Mud Line	557.8	517.80	Driven to Mud Line
SP- 53	11/24/15	6'	40	0	40.00	Mud Line	558.84	518.84	Driven to Mud Line

Notes:

1 Top of Mudline from Water; this column is for reference only...water elevation in river is not constant

Appendix J
Post-Dredge Bathymetric Survey



U.S.G.S. Quadrangle
Buffalo SE, New York

Proposed Remaining Dredging Limits

Submerged Sheet Pile Wall

DMU 10

Federal Navigation Channel Limits

DMU 9

Proposed Remaining Dredging Limits

Buffalo River

General Notes:

1. This survey is referenced horizontally to the North American Datum of 1983, 2007 adjustment (NAD83/2007) and projected on the New York State Plane Coordinate System (West Zone) and vertically the International Great Lakes Datum of 1985 (IGLD85).
2. North arrow as shown indicates Grid North referenced to NAD83/2007 and projected on the New York State Plane Coordinate System (West Zone).
3. The reference horizontal and vertical control station is a Federal Base Network Control Station designated as "906 3020 H" (PID AH9234). 906 3020 H was established by GPS observations and adjusted by the National Geodetic Survey in February 2007. Elevation = 578.95 feet (IGLD85).
4. Elevations and contours shown reference the IGLD85.
5. Location of spot elevation is indicated by the tick "+" mark located adjacent to the elevation.
6. Contours shown hereon were generated from a Digital Terrain Model utilizing Autodesk Civil 3D Surveying and Engineering software.
7. The bathymetric information shown hereon was collected utilizing multi beam acoustical methods.
8. The bathymetric survey was completed on December 8, 2015.
9. The water surface elevation at the time of the survey was 571.2 feet.

Reference Drawings:

1. Titled "Map Showing Existing Bathymetric Conditions, Canal Cap Area, Buffalo River", dated December 10, 2010, prepared by Thew Associates PE-LS, PLLC, and distinguished as Project No. CK8135-10-10.

Legend:

- Major Contour Line
- Minor Contour Line
- Proposed Remaining Dredging Limits
- Federal Navigation Channel Limits
- Submerged Sheet Pile Wall
- Underdredged Area
- Overdredged Area

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

REV	DESCRIPTION	DATE

DRAWN:

CHECKED:

SCALE: 1" = 10'

DATE: 12.08.2015

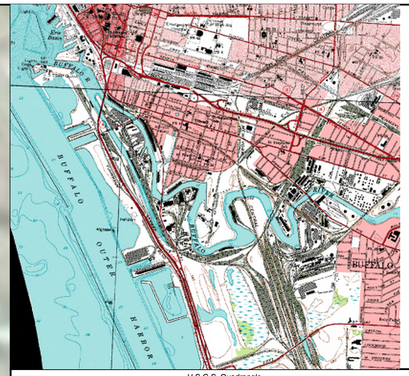
PROJECT NUMBER: CK3566-07-14

Map Showing Post Dredge Bathymetric Conditions DMU 9 and DMU 10 Buffalo River

City of Buffalo
County of Erie
State of New York

Thew Associates LAND SURVEYORS
www.ThewAssociates.com
P.O. Box 463
6431 US Highway 11
Canton, New York 13617
T: 315/386-2776
F: 315/386-1012
9478 River Road
Marcy, New York 13403
T: 315/733-7278
F: 315/797-1927

Appendix K
Post-Backfill Bathymetric Survey



U.S.G.S. Quadrangle
Buffalo SE, New York

Proposed Remaining Dredging Limits

Submerged Sheet Pile Wall

Federal Navigation Channel Limits

DMU 10

DMU 9

Buffalo River

General Notes:

1. This survey is referenced horizontally to the North American Datum of 1983, 2007 adjustment (NAD83/2007) and projected on the New York State Plane Coordinate System (West Zone) and vertically the International Great Lakes Datum of 1985 (IGLD85).
2. North arrow as shown indicates Grid North referenced to NAD83/2007 and projected on the New York State Plane Coordinate System (West Zone).
3. The reference horizontal and vertical control station is a Federal Base Network Control Station designated as "906 3020 H" (PID AH9234). 906 3020 H was established by GPS observations and adjusted by the National Geodetic Survey in February 2007. Elevation = 578.95 feet (IGLD85).
4. Elevations and contours shown reference the IGLD85.
5. Location of spot elevation is indicated by the tick "+" mark located adjacent to the elevation.
6. Contours shown hereon were generated from a Digital Terrain Model utilizing Autodesk Civil 3D Surveying and Engineering software.
7. The bathymetric information shown hereon was collected utilizing multi beam acoustical methods.
8. The bathymetric survey was completed on December 10, 2015.
9. The water surface elevation at the time of the survey was 571.2 feet.

Reference Drawings:

1. Titled "Map Showing Existing Bathymetric Conditions, Canal Cap Area, Buffalo River", dated December 10, 2010, prepared by Thew Associates PE-LS, PLLC, and distinguished as Project No. CK8135-10-10.

Legend:

- 550 — Major Contour Line
- 551 — Minor Contour Line
- Proposed Remaining Dredging Limits
- Federal Navigation Channel Limits
- Submerged Sheet Pile Wall

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)

1 inch = 10 ft.

REV	DESCRIPTION	DATE

PROJECT NUMBER: CK3566-07-14

DRAWN:

CHECKED:

SCALE: 1" = 10'

DATE: 12.10.2015

Map Showing
Post Cap Bathymetric Conditions
DMU 9 and DMU 10
Buffalo River

City of Buffalo
County of Erie
State of New York

Thew Associates LAND SURVEYORS
www.ThewAssociates.com
P.O. Box 463
6431 US Highway 11
Canton, New York 13617
T: 315/386-2776
F: 315/386-1012
9478 River Road
Marcy, New York 13403
T: 315/733-7278
F: 315/797-1957