

Post-Closure Long-Term Care Plan

**Burnham Canal Superfund Alternative Site
Milwaukee, Milwaukee County, Wisconsin
WDNR BRRTS #: 02-41-246029
EPA ID: WIN000510222**

Prepared For: Miller Compressing Company

April 2, 2019



APRIL 2, 2019 | PROJECT #67830

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Prepared for:

Miller Compressing Company



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1 INTRODUCTION

This document contains the Long-Term Care Plan (LTCP) prepared on behalf of Miller Compressing Company (Miller) for the Burnham Canal (described in more detail below) that addresses three capped areas: the Subaqueous Engineering Control Area, the Unpaved Engineering Control Area, and the Paved Engineering Control Area. Both the Paved Engineering Control Area and Unpaved Engineering Control Area address soil areas. The Subaqueous Engineering Control Area addresses sediment as defined by Wis. Stat. § 292.01.17g. While this LTCP addresses all three areas, only the Subaqueous Engineering Control Area requires a specific plan tied to financial assurance under Wis. Stat. §§ 292.12(2)(d), (5m)(a)1. The Record of Decision/Explanation of Significant Differences (ROD/ESD) cap and betterment are to be constructed at the Burnham Canal Site (Site) in the Menomonee Valley, Milwaukee, Wisconsin (Figure 1).

1.1 LONG-TERM CARE PLAN OVERVIEW

This LTCP is based on a 30-year monitoring approach consistent with the timeframe utilized in Wis. Admin. Code ch. NR 520 for closed solid waste facilities. Provision is made for modification or cessation of the LTCP in the event the portion of the Burnham Canal is converted to a wetland. An overview of long-term monitoring is provided below, with detail provided in subsequent sections.

- Annual Visual Inspection of the Paved Engineering Control Area
- Scheduled Visual Inspection of the Unpaved Engineering Control Area
- Scheduled Poling Survey Verification of Subaqueous Engineering Control Area
- Maintenance, as needed

The following additional storm event related monitoring will occur from closure to post-closure Year 10:

- After rainfall events greater than the 25-year, 24-hour storm
- Rationale and detail for the event related monitoring is provided in Section 3.3.

At any time after the 10-year monitoring event, a request may be made of the Wisconsin Department of Natural Resources (WDNR) to modify or cease monitoring based on site-specific conditions. In addition, as noted above, should the anticipated wetland be constructed on top of the Betterment, the LTCP will cease due to the substantial additional fill material added to the Burnham Canal in order to construct the wetland. For purposes of the cost estimate and financial assurance, it is assumed the full 30 years of the LTCP will occur. Should WDNR approve modification or termination of the LTCP, the financial assurance will be correspondingly reduced.

1.2 SITE BACKGROUND

The Burnham Canal was historically a federally authorized navigation channel dredged and maintained to a depth of 21 feet below Lake Michigan Low Water Datum (i.e., 556.5 feet IGLD 85 or 557.36 feet NVGD 29) by the United States Army Corps of Engineers (USACE). The canal was dredged regularly while it was maintained by the USACE in order to maintain a depth conducive for shipping. In the mid-1980s as industrial activities decreased in the Menomonee Valley, dredging became less frequent with no dredging taking place since the fall of 1987. During this period, the west portion of the channel (i.e., from the 11th Street Bridge to the west) was federally delisted (1986) and the 11th Street Bridge was built, effectively blocking ship traffic from moving upstream. East of the 11th Street Bridge, the canal was further deauthorized on June 10, 2014 to allow for potential construction of an urban wetland in the Burnham Canal. The canal is approximately 1,500 feet from west to east and ranges from approximately 95 feet to 125 feet in width. Water depths in the canal range from a few feet on the western boundary and up to 10 to 15 feet at some locations.

1.3 PURPOSE AND SCOPE

This LTCP addresses the existing paved area (Paved Engineering Control Area), the canal itself (Subaqueous Engineering Control Area) from the western terminus and extending east to the 11th Street Bridge as shown on

Figure 2, and the Unpaved Engineering Control Area, which consists of cover material placed on upland soils above the ordinary high-water mark (OHWM) at the western end of the canal. All three of these areas are addressed in the ROD/ESD; however, only the Subaqueous Engineering Control Area requires financial assurance under Wis. Stat. §§ 292.12(2)(d), (5m)(a)1. This report sets forth the anticipated long-term care requirements based on the remedial design, ROD/ESD, and the Chapter 30 betterment approach. It is understood that the final long-term care plan under Wis. Stat. 292.12(d)(1) for the Subaqueous Engineering Control Area and the Unpaved Engineering Control Area will be issued at the time WDNR approves closure under Wis. Admin. Code ch. NR 726. Since the Burnham Canal Site is subject to U.S. EPA 5-year reviews and plans approved by U.S. EPA, this LTCP is designed to be implemented in conjunction with the Institutional Control Implementation and Assurance Plan (ICIAP) for maintenance and monitoring of institutional controls (IC) and, as such, addresses all three capped areas.

The Purpose of this LTCP is to outline the necessary post-closure actions in order to maintain, monitor, and properly respond to any changes in the caps that may pose a threat to human health or the environment. As noted above, three cap areas exist, as listed below (Figure 2):

- Paved Engineering Control Area (west of the canal, in the historic location of the wire reclamation furnace)
- Unpaved Engineering Control Area (between the Paved Engineering Control Area and the Subaqueous Engineering Control Area, including the 12-inch Scrape area and the western bank of the canal above the OHWM)
- Subaqueous Engineering Control Area (from the 11th Street Bridge to the west terminus of the canal)

The Paved Engineering Control Area is currently paved with asphalt. This area will remain as is, since it meets the requirements of the existing Cap Maintenance and Hard Surface Sampling Plan approved by the WDNR on September 1, 2009 (Appendix A), and will be monitored to ensure that the existing asphalt cap integrity is not compromised. Future monitoring will be performed in accordance with this approved plan.

The Unpaved Engineering Control Area consists of a small area between the Paved Engineering Control Area and the Subaqueous Engineering Control Area as shown on Figure 2. When the remedial action (RA) described in the Construction Quality Assurance Project Plan in Appendix C of the Final Design Report (CQAPP) is implemented, unsaturated soil will be excavated and backfilled with clean material to re-establish preconstruction grades. The Unpaved Engineering Control Area will consist of a soil cover and seeding, as well as riprap underlain by nonwoven geotextile on the reconstructed west bank of the Canal to prevent erosion. Post-closure monitoring of the Unpaved Engineering Control Area will be visual and focus on erosion control.

The largest area associated with this LTCP is the Subaqueous Engineering Control Area. Prior to capping activities, contaminated sediment will be dredged from the West End of the canal to remove the highest concentrations of contaminants of concern (COCs) in this area. After dredging to the design elevations, capping activities will be initiated within the canal and include the dredge area. The functions of the Subaqueous Engineering Control are to provide an isolation layer between possible receptors (e.g., benthic community) and the underlying contaminated sediments, as well as to prevent migration of the COCs (metals and PAHs) into the water column.

This document describes post-closure monitoring and maintenance activities that will be performed for the Paved Engineering Control Area, the Unpaved Engineering Control Area, and the Subaqueous Engineering Control Area considering the Betterment Project. Maintenance and monitoring will be performed in order to ensure that the caps remain intact, physically stable, and protective over time.

Also, a cost projection of the LTCP activities for the Unpaved Engineering Control Area and the Subaqueous Engineering Control Area is provided as part of the request for technical assistance to estimate long-term care costs associated with these two components of the LTCP.

2 ROD/ESD CAP AND BETTERMENT DESIGN SUMMARY

2.1 UNPAVED ENGINEERING CONTROL AREA - SUMMARY

Soil will be excavated at the western terminus of the canal. Clean imported cover soil will be placed as backfill along the western bank and will be seeded. Riprap will be placed along the western canal slope for stability purposes.

2.2 PAVED ENGINEERING CONTROL AREA – SUMMARY

The Paved Engineering Control Area already meets the requirements of the existing Cap Maintenance and Hard Surfacing Plan approved by the WDNR on September 1, 2009. As such, the requirements of the approved plan are incorporated into the LTCP.

2.3 SUBAQUEOUS ENGINEERING CONTROL AREA - SUMMARY

Sediment in the canal will be capped using imported aggregate to achieve an average thickness of 12 inches or more, across the entire canal area, with no areas less than 9-inches thick. Prior to placement of the ROD/ESD cap, a stabilization layer will be installed over the canal sediment area. The stabilization layer may consist of up to 48 inches of aggregate to provide a base for constructing the ROD/ESD cap as described in the CQAPP.

There are two combined sewer outfalls (CSO) in the canal. The outfall discharges are identified as CSO 193 (formerly CSO-210) and CSO 194 (formerly CSO-211), as shown on Figure 2. At outfall CSO-193, a riprap apron is unnecessary due to the significant water column depth between the CSO invert and top of Betterment that will dissipate discharge velocity from the CSO. For erosion protection at CSO-194, a riprap apron will be constructed at the outfall. As shown in the Final Design Report plans, the riprap apron at outfall CSO-194 will be 19.5 feet wide at the outfall, extend 36 feet from the outlet, and widen to approximately 41 feet at the end of the riprap apron.

An additional five feet of imported aggregate will be placed on top of the ROD/ESD cap in most areas and, in areas near CSO 194 at the west end of the canal, two feet of riprap or material meeting the Wisconsin Department of Transportation (WisDOT) Select Crushed Material Specification (Select Crushed) underlain by nonwoven geotextile will be placed on top of the ROD/ESD cap. The design specifics for the Betterment work in the canal are set forth in the Chapter 30 permit application for the Betterment Project. The following is a summary of the key aspects of the design that relate to the LTCP:

1. To accommodate both the Betterment Project fill placement at the west end of the canal and flow from the CSO 194 (formerly CSO 211), a subaqueous conveyance channel will be constructed on top of the ROD/ESD cap in the western portion of the canal, as shown in Appendix B. The channel will extend approximately 200 feet downstream of the CSO 194 (formerly CSO 211) riprap apron, which will also be constructed on top of the ROD/ESD cap. The channel cross-section will be trapezoidal, with a base width and elevation approximately equal to that of the riprap apron. The channel will be lined with two feet of riprap or Select Crushed, and underlain by nonwoven geotextile, placed on top of the ROD/ESD cap, throughout its cross-section. The channel sides will slope upwards at 4H:1V, terminating at the elevation of the betterment fill material (Appendix B).
2. Based on the most recent United States Army Corps of Engineers (ACE) survey of the surface of the canal (2017), the sediment surface elevation is greater on the west end than the elevation observed during the remedial investigation (2008) and used in the remedial design. To allow for flow from CSO 194 (formerly CSO 211), up to seven feet of sediment will be relocated and capped (ROD/ESD cap) to build the subaqueous conveyance channel. The relocation will be conducted pursuant to Wis. Admin. Code ch. NR 718. WDNR approved relocation of sediment associated with subaqueous conveyance channel construction in an August 31, 2018 letter to Miller (Appendix C). U.S. EPA confirmed in an April 30, 2018 email to OBG that the sediment relocation associated with subaqueous conveyance channel construction is not considered a design change by U.S. EPA (Appendix C).

3 POST-CLOSURE CAP MONITORING AND MAINTENANCE PLAN

Long-term post-closure monitoring and contingency response actions are required for the cap areas that make up the site. The three monitoring and maintenance areas include:

- Paved Engineering Control Area (west of the canal, in the historic location of the wire reclamation furnace)
- Unpaved Engineering Control Area (between the Paved Engineering Control Area and the Subaqueous Engineering Control Area, including the 12-inch Scrape area and the western bank of the canal above the OHWM)
- Subaqueous Engineering Control Area (from the 11th Street Bridge to the west terminus of the canal)

Results of monitoring efforts will be recorded and provided to the WDNR in Post-Closure Monitoring Reports. Monitoring activities and responses are described in the following sections for each of the areas.

3.1 PAVED ENGINEERING CONTROL AREA MONITORING

The Site includes a Paved Engineering Control Area at the west end of the canal. The condition of the Paved Engineering Control Area will be documented through visual inspection of the area. Since regular facility operations in this area will continue following closure, future monitoring will be performed in accordance with the existing facility-wide Cap Maintenance and Hard Surfacing Plan approved by WDNR on September 1, 2009 (Appendix A). Annual inspection and maintenance logs will be maintained per the example provided in Exhibit A to the Cap Maintenance and Hard Surfacing Plan.

3.2 UNPAVED ENGINEERING CONTROL AREA MONITORING

The Site includes an unpaved upland soil cap at the west end of the canal. The condition of the Unpaved Engineering Control Area will be documented through visual inspection. No operations occur in this area; therefore, reviews will be performed during the monitoring events for the Subaqueous Engineering Control Area as described in Section 3.3.

Monitoring will verify the status of the two main components of the Unpaved Engineering Control Area: the vegetative area and the west end Canal slope riprap above the OHWM. In the vegetative zone, monitoring will identify potential erosion and verify vegetative growth. The riprap zone above the OHWM on the west bank of the canal will be inspected to identify potential erosion and any loss of riprap into the canal. If needed, the riprap will be repaired in accordance with the Technical Specifications, provided in Appendix H of the Final Design Report.

3.3 SUBAQUEOUS ENGINEERING CONTROL AREA MONITORING

Monitoring events associated with the construction phase of the project are described in the CQAPP. The post-construction, pre-closure monitoring events are described in the revised COMMP. The post-closure monitoring events will be conducted as described by this LTCP and reported to the WDNR within 180 days following the monitoring event. An approval request for cessation of long-term monitoring will be submitted to the WDNR if monitoring sufficiently demonstrates protectiveness and/or additional fill material is added to the canal above the Betterment (i.e. wetland construction) as part of an approved program.

Subaqueous Engineering Control Area and erosion monitoring will be performed every 5 years for 30 years (6 events). These monitoring events will be coordinated with the U.S. EPA “5-year” review process (to the extent an active review is undertaken). In addition, monitoring will be conducted following abnormal weather events (e.g., rainfall greater than the 25-yr, 24-hr storm event) in post-closure Years 1 through 10. The 25-year, 24-hour storm events will be defined by the National Oceanic and Atmospheric Administration (NOAA) Precipitation Frequency Data Server (PFDS) at the time of the event (currently >4.56 inches of rainfall within 24 hours). Storm-related monitoring events will occur within 60 days of the storm event, weather conditions permitting. Storm-based monitoring will cease after post-closure Year 10 if no corrective action occurred due to storm events based on the following rationale:

1. Likelihood of storm events occurring within the 10-year monitoring period to sufficiently demonstrate protectiveness. Based on daily precipitation data from NOAA's National Weather Service Forecast Office, two 25-yr, 24-hr storm events have occurred in the area of the Canal between 2008 and 2018. One of these events also met the criteria for a 50-yr, 24-hr storm event. Given the fact that two storm events that would have triggered monitoring events occurred in the most recent period of approximately 10 years, it can be reasonably assumed that a significant storm event will occur in the area of the Canal within 10 years following closure, providing opportunities to demonstrate that the cap remains intact, physically stable, and protective following storm events.
2. Low peak flow velocity from CSO 194. The October 6, 2017 USACE Design Documentation Report for the Burnham Canal (USACE Report) states that the peak flow through CSO 194 associated with a 100-yr storm event at canal water elevation of -4 City of Milwaukee Datum (CMD) is 383 cubic feet per second (cfs). Conservatively considering the conveyance channel cross-sectional area of flow at -4 CMD results in a flow velocity through the conveyance channel of approximately 1.7 feet per second (fps). An aggregate mix consisting of at least 50% stone retained by a 1.3-inch sieve (1.3-inch D₅₀) is calculated to be suitable to withstand the scour potential associated with a flow velocity of 1.7 fps. Here, a coarser, more stable aggregate with minimum 1.5-inch D₅₀ will be used for conveyance channel lining material. The use of the coarser material provides a 15% greater safety factor than the 1.3-inch D₅₀ material. Also, data provided by MMSD indicates two CSO overflow events in 2018 caused flow from CSO 194 into the canal, including 0.1 million gallons from June 18th through June 20th, and 0.2 million gallons from August 27th through August 29th. The June and August discharges each occurred over a period of three days. To exceed the design flow on which the channel lining material was conservatively specified, the discharge volumes associated with the two previous discharge events would need to be released from CSO 194 in approximately one minute or less, which is highly unlikely.
3. Expectation that consolidation will occur well within the 10-year period. The USACE Report states that 95% of estimated settlement is expected to occur within 5 years of aggregate placement; settlement is not anticipated to affect the stability and protectiveness of the cap. Performing storm-based monitoring for 10 years following Site closure assures that the cap remains intact, physically stable, and protective following storm events, taking into account any settlement that affects the geometry of the top layer of the fill material.

The results of any additional monitoring events between the 5-year events will be reported to the WDNR in a Post-Closure Monitoring Report. An additional Subaqueous Engineering Control Area monitoring event is currently scheduled to occur 2 years following closure.

3.3.1 Purpose

Post-closure monitoring is designed to verify the remedial action cap remains in place by examining the betterment material placed on top of the remedial action cap. Verification of the presence of the betterment material will confirm that the ROD/ESD cap is in place and, thus, the ROD/ESD remedy remains protective of human health and the environment. Following documentation of construction completion, poling surveys, as described below, will be the primary method to demonstrate that material placed is intact.

3.3.2 Poling Surveys

Bathymetric surveys will have been completed for the ROD/ESD cap during construction, as required by the U.S. EPA approved design. These surveys also will include the Betterment fill. The purpose of the bathymetric surveys is to document the as-built elevations of the ROD/ESD cap and Betterment fill to obtain WDNR approval of construction. The survey methods and results will be incorporated into both the Construction Documentation Report to be submitted and reviewed by WDNR under the Negotiated Agreement and the final closure documentation request under Wis. Admin. Code ch. NR 726.

The purpose of post-closure surveys is to demonstrate that the ROD/ESD cap remains in place. Since the ROD/ESD cap will be buried beneath the Betterment Project fill material, a post-closure bathymetric survey of

the ROD/ESD cap is not a feasible verification method. The post-closure monitoring requirement will be met by demonstrating that Betterment Project fill material remains in place. If the Betterment Project fill material remains in place, then the ROD/ESD cap also remains in place.

Post-closure verification monitoring events will consist of a poling survey of the Betterment Project fill material, the conveyance channel, and the CSO 194 (formerly CSO 211) riprap apron at approximately 25 verification locations, as shown in Figure 3 of the COMMP. A real-time kinematic (RTK) global positioning system (GPS) will be used to navigate to proposed locations and log actual poling locations. The poling rod will be used to confirm the presence of riprap or Select Crushed atop the geotextile in the CSO-194 apron and conveyance channel, and confirm the presence of Select Crushed throughout the rest of the Subaqueous Engineering Control Area. As described in the Technical Specifications included in the Chapter 30 Permit Application for the Betterment project, the majority of Betterment fill material to be placed on top of the ROD/ESD cap will consist of aggregates that entirely pass the 1.5-inch sieve. However, the top few inches of the Betterment fill material (Betterment topping) will consist of coarser aggregate that is equivalent to the WisDOT Spec 312 for Select Crushed Material. If poling indicates that riprap or Select Crushed is not present atop the geotextile in the CSO-194 apron and conveyance channel (bare geotextile), additional evaluation or potential corrective action will be conducted, as necessary. Similarly, if poling indicates the absence of Betterment topping (Select Crushed) in the Subaqueous Engineering Control Area outside of the conveyance channel, additional evaluation or potential corrective action will be conducted, as necessary. A flowchart outlining the requirements for poling survey verification of fill material is provided as Figure 4.

The poling rod will also be used to measure canal water depth atop the voluntary betterment fill material. Water depth will be subtracted from canal water elevation to determine the elevation of the top of the Betterment Project material. Canal water elevation will be measured using a gaging station to be installed during construction. The elevations of the top of Betterment Project material will be compared to the elevations provided in the bathymetric and poling survey(s) completed during construction in the same or similar locations.

Post-Closure Monitoring Reports will be submitted to the WDNR following each monitoring event to document the poling survey results. If the presence of riprap or Select Crushed is not verified at all poling locations, additional evaluation conducted to demonstrate that betterment material remains will be discussed in these reports. If additional evaluation indicates the absence of betterment material, corrective actions, likely to include placement of additional aggregate fill materials in the affected areas, will be discussed in these reports. Inspection logs for the Unpaved Engineering Control Area, as discussed in Section 3.2, will be attached to each Post-Closure Monitoring Report.

3.4 POST-CLOSURE PLAN MODIFICATION PROCESS

Given the potential for additional fill material to be added to the canal above the Betterment (i.e. wetland construction), as well as the expectation that post-closure maintenance and monitoring activities will demonstrate that the caps remain intact, physically stable, and protective over time, LTCP modifications will likely be appropriate as the monitoring occurs. Alternative monitoring and documentation activities associated with the Unpaved Engineering Control Area and the Subaqueous Engineering Control Area, and/or frequency of these activities, may be proposed, as warranted, through a post-closure modification submitted to the WDNR. Proposed alternative LTCP activities and/or schedules would continue to confirm the stability and protectiveness of the caps.

4 POST-CLOSURE CAP MONITORING AND MAINTENANCE COST ESTIMATE

Miller entered into a Memorandum of Understanding (MOU) with the MMSD under which MMSD intends to construct an urban wetland on top of the Betterment. As part of the MOU, MMSD will conduct the LTCP activities associated with the Unpaved Engineering Control Area and the Subaqueous Engineering Control Area following site closure. Miller's MOU with the MMSD requires technical assistance from the WDNR in reviewing the post-closure activities to be undertaken by MMSD for the maintenance of the engineering controls and associated costs projected to conduct these activities. Costs associated with Unpaved Engineering Control Area and Subaqueous Engineering Control Area LTCP activities are estimated to extend up to thirty years following closure, per WDNR correspondence and consistent with Wis. Admin. Code ch. NR 520. Post-closure long-term care costs are described below and, excluding those associated with the Paved Engineering Control Area (Site owner responsibility), are summarized in Table 1 - Fill & Cap Monitoring and Maintenance Cost Estimate. As discussed in Section 3.3, if monitoring sufficiently demonstrates protectiveness, a request for modifying or ceasing long-term monitoring will be submitted to the WDNR. Also, if MMSD constructs an urban wetland on top of the Betterment, the LTCP will cease to be implemented due to the substantial additional fill material added to the Burnham Canal.

4.1 ANNUAL VISUAL INSPECTION OF PAVED ENGINEERING CONTROL AREA

Maintenance of the existing hard surface area will be governed by the existing Cap Maintenance and Hard Surfacing Plan approved by the WDNR on September 1, 2009 (Appendix A). Miller is not seeking technical assistance with respect to the maintenance of this area. The inspection requirements specified in the Cap Maintenance and Hard Surfacing Plan will continue to apply and will be the responsibility of the Site owner, rather than the responsibility of the MMSD. As such, costs associated with these inspections are not included in this long-term care cost estimate.

4.2 VISUAL INSPECTION OF UNPAVED ENGINEERING CONTROL AREA

As stated in Section 3.2, since no operations occur in the Unpaved Engineering Control Area, visual inspections of this area will be performed during monitoring events for the Subaqueous Engineering Control Area. Seven scheduled visual inspections are to occur, concurrent with each poling survey verification event, at post-closure Year 2, 5, 10, 15, 20, 25, and 30. Additionally, monitoring events will be performed following abnormal weather events (e.g., rainfall greater than 25-yr, 24-hr storm event at the time of the event) in post-closure Years 1 through 10. As discussed in Section 3.3, two such events have occurred in the area of the canal within the last 11 years. A more frequent recurrence of 3 events over the ten-year post-closure storm-based monitoring period is assumed and is included in the long-term care cost estimate, for a total of 10 budgeted monitoring events.

Visual inspection of the Unpaved Engineering Control Area, including the 12-inch Scrape area and the western bank of the canal above the OHWM, will be completed by one individual in one day. A truck and a camera will be required. A modified version of WDNR Form 4400-305 (Appendix D) will be prepared and completed for each inspection event and submitted to the WDNR as an attachment to the Post-Closure Monitoring Reports discussed in Section 3.3. Each inspection log is anticipated to require professional services from field staff, technical professionals, and/or the project manager. The estimated cost to complete each visual inspection and associated documentation is \$1,000. However, as the Unpaved Engineering Control Area is classified as a soil cap rather than a sediment cap due to being located above the OHWM, financial assurance for visual inspection of this area is not required by the WDNR.

4.3 POLING SURVEY VERIFICATION OF SUBAQUEOUS ENGINEERING CONTROL AREA

As stated in Section 4.2, a total of 10 monitoring events (7 scheduled and 3 event-based) were budgeted. Field labor for two personnel for one day is assumed to complete each poling survey. Field preparation includes professional services from field staff, technicians, GIS professionals, technical professionals, and/or the project manager. Required equipment and supplies include health and safety equipment, an RTK GPS, poling and survey rods, a john boat, a truck, and per-diem meals. The total estimated cost of each poling survey is \$6,600.

Post-Closure Monitoring Reports will be submitted to the WDNR following each post-closure monitoring event to document the poling survey results and any necessary additional evaluation or corrective action measures. Inspection logs for the Unpaved Engineering Control Area, as discussed in Section 4.2, will be attached to each Post-Closure Monitoring Report. Each report is anticipated to require professional services from field staff, GIS professionals, administrative staff, technical professionals, and/or the project manager to produce and submit. A \$700 fee for WDNR technical review is also budgeted for each report. The total estimated cost of each Post-Closure Monitoring Report is \$6,600. The Subaqueous Engineering Control Area includes a sediment cap and, as such, financial assurance for the poling survey verification of riprap or Select Crushed will be required by the WDNR.

4.4 MAINTENANCE

Maintenance of the ROD/ESD cap is not anticipated given the placement of Betterment Project fill material on top of the cap. However, a \$40,000 maintenance budget is included in the LTCP cost estimate as a contingency. The \$40,000 budget is estimated to allow for possible replacement of approximately 400 cubic yards of riprap and/or Select Crushed. This quantity is approximately 25% of the riprap and/or Select Crushed planned to be placed for the construction of the CSO 194 (formerly CSO 211) apron and conveyance channel. The maintenance budget includes costs of associated materials, equipment, and labor. As discussed in Section 3.3, the need to replace riprap apron and/or conveyance channel materials is highly unlikely.

4.5 WIS. ADMIN. CODE CH. NR 520 CONTINGENCY AND TOTAL POST-CLOSURE CAP MONITORING AND MAINTENANCE COST ESTIMATE

Utilizing the applicable provisions of Wis. Admin. Code ch. NR 520, per previous correspondence with the WDNR, a 10% contingency consistent with NR 520.07(3) is applied, resulting in a total post-closure cap monitoring and maintenance cost estimate of \$200,000 over the 30-year period. The portion of this cost estimate for which the WDNR will require financial assurance is approximately \$189,000, associated with the post-closure monitoring and maintenance of the Subaqueous Engineering Control Area.



Tables

Table 1 - Fill & Cap Monitoring and Maintenance Cost Estimate

Burnham Canal Superfund Alternative Site
 Miller Compressing Co., Milwaukee, Wisconsin

OBG PROJECT NO.: 67830

BY: MDW

CHKD BY:

DATE: 4/2/19

TAL/LLP 4/2/19

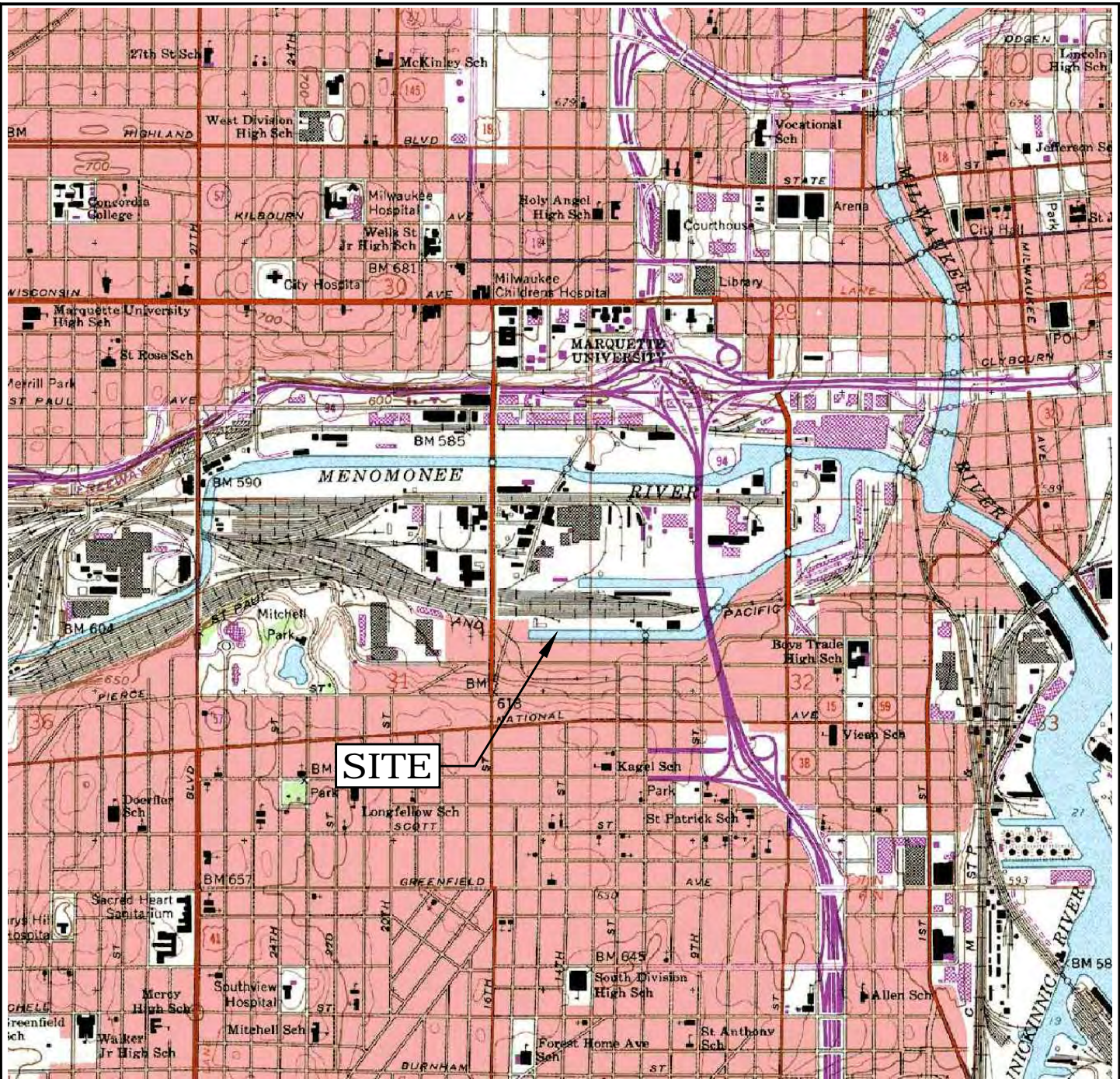
ITEM #	MONITORING AND MAINTENANCE COSTS	QUANTITY	UNIT	UNIT COST	TOTAL COST
<i>Alternative Subaqueous Aggregate Monitoring Cost- with betterment ⁽¹⁾</i>					
1	Poling Survey Verification of Subaqueous Engineering Control Area Fill Material ⁽²⁾	10	EACH	\$6,600	\$66,000
2	Poling Survey Verification Report ⁽³⁾	10	EACH	\$6,600	\$66,000
3	Unpaved Engineering Control Area Visual Inspection ⁽⁴⁾	10	EACH	\$1,000	\$10,000
4	Maintenance	1	LS	\$40,000	\$40,000
	Subtotal				\$182,000
	Contingency			10% ⁽⁵⁾	\$18,200
	Subtotal ⁽⁶⁾				\$200,000

BASIS OF ESTIMATE

- 1) Site owner will be responsible for annual visual inspections of upland paved areas (Paved Engineering Control Area) and maintenance of upland paved areas as needed. Associated costs are not included in this LTC estimate.
- 2) Post-Closure Poling Survey Verifications to be completed at Post-WDNR Closure Years 2, 5, 10, 15, 20, 25, and 30, as well as after rainfall greater than the 25-year, 24-hour storm event (currently greater than 4.56 inches within 24 hours) in Post-WDNR Closure Years 1 through 10. Storm-based monitoring will cease after Post-WDNR Closure Year 10.
- 3) To be completed following each poling survey verification event. Includes WDNR review fee for each report.
- 4) To be completed during each poling survey verification event. Financial assurance for visual inspection of this soil cap will not be required by the WDNR.
- 5) Per NR 520.07 (3) Long-Term Care Cost Estimate requirements.
- 6) Subtotal rounded to nearest thousand dollars.



Figures



SITE

SOURCE: EARTHVISIONS U.S. TERRAIN SERIES,
 © EARTHVISIONS, INC. 603-433-8500.
 USGS 7.5 MINUTE QUADRANGLE,
 MILWAUKEE. DATED 1958.
 PHOTOREVISED 1971.



0 2000 4000



SCALE IN FEET

CONTOUR INTERVAL 10 FEET

SITE LOCATION MAP

PROJECT NO.
21177.1

BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 CAP OPERATIONS, MAINTENANCE, AND MONITORING PLAN
 REVISION 3
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN

DRAWING NO.
2117-7-A01

FIGURE NO.
1

DRAWN: DMD DATE: 05/04/15 CHK'D: Y_Z DATE: 02/02/16 APP'D: RJB DATE: 02/02/16

Apr 20, 2017 4:16pm PLOTTED BY: Millie AM SAVED BY: boetjen
 Y: Mapping\Projects\21177\CAD\7-1\Appendix F COMMP\2117-7-A01.dwg Layout1
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 REFERENCES:



Jul 12, 2017 2:12pm PLOTTED BY: MillispAM SAVED BY: MillispAM
 Y: Mapping\Projects\21\2117\CAD\7-1\Appendix F COMP\2117-7.1-B02.dwg Layout1
 IMAGES: Y: \ACADData\Projects\18\1858\SOURCE\Milwaukee\Aerial-Topo_2.tif
 REFPS:



DRAWN BY:	DMD	DATE:	07/29/16
CHECKED BY:	Y_Z	DATE:	07/29/16
APPROVED BY:	RJB	DATE:	07/29/16
DRAWING NO:		2117-7.1-B02	
REFERENCE: See Info Block			

**BURNHAM CANAL
 SITE LAYOUT**
 CAP OPERATIONS, MAINTENANCE AND MONITORING PLAN
 REVISION 3
 BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN



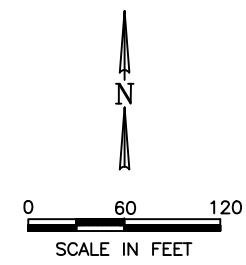
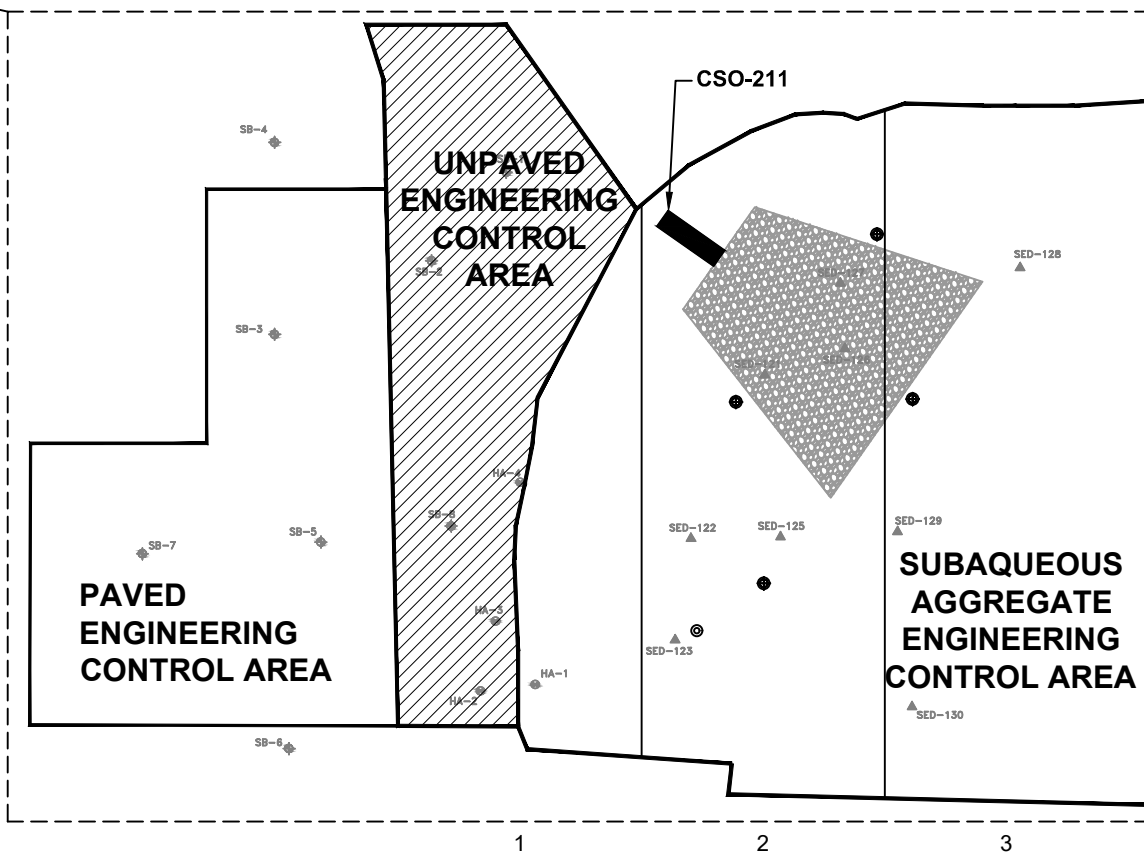
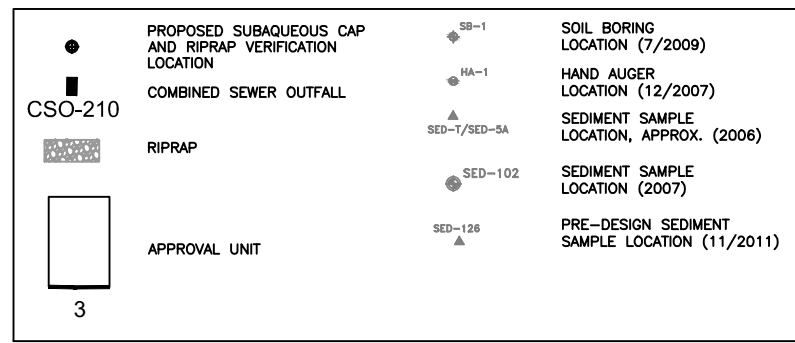
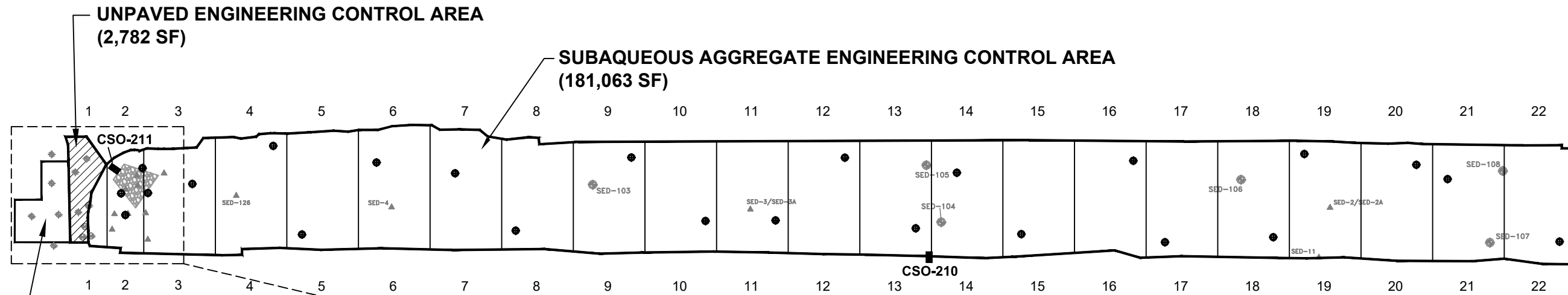
	COMBINED SEWER OUTFALL
	RIPRAP
	SUBAQUEOUS AGGREGATE ENGINEERING CONTROL

SOURCE NOTES:
 1. THE DIGITAL DRAWING IMAGE WAS CREATED FROM BING MAPS FOR ARCGIS DESKTOP. (c) 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS.
 2. COORDINATES BASED ON MILWAUKEE COUNTY COORDINATE REFERENCE SYSTEM NAD 83(97).

SCALE IN FEET
 0 60 120

PROJECT NO.	21177.1
FIGURE NO.	2

Jul 12, 2017 2:22pm PLOTTED BY: MillspAM SAVED BY: MillspAM
 Y:\Mapping\Projects\2117\CAD\7-1\Appendix F COMP\2117-7.1-B03.dwg Layout1
 WRCFS



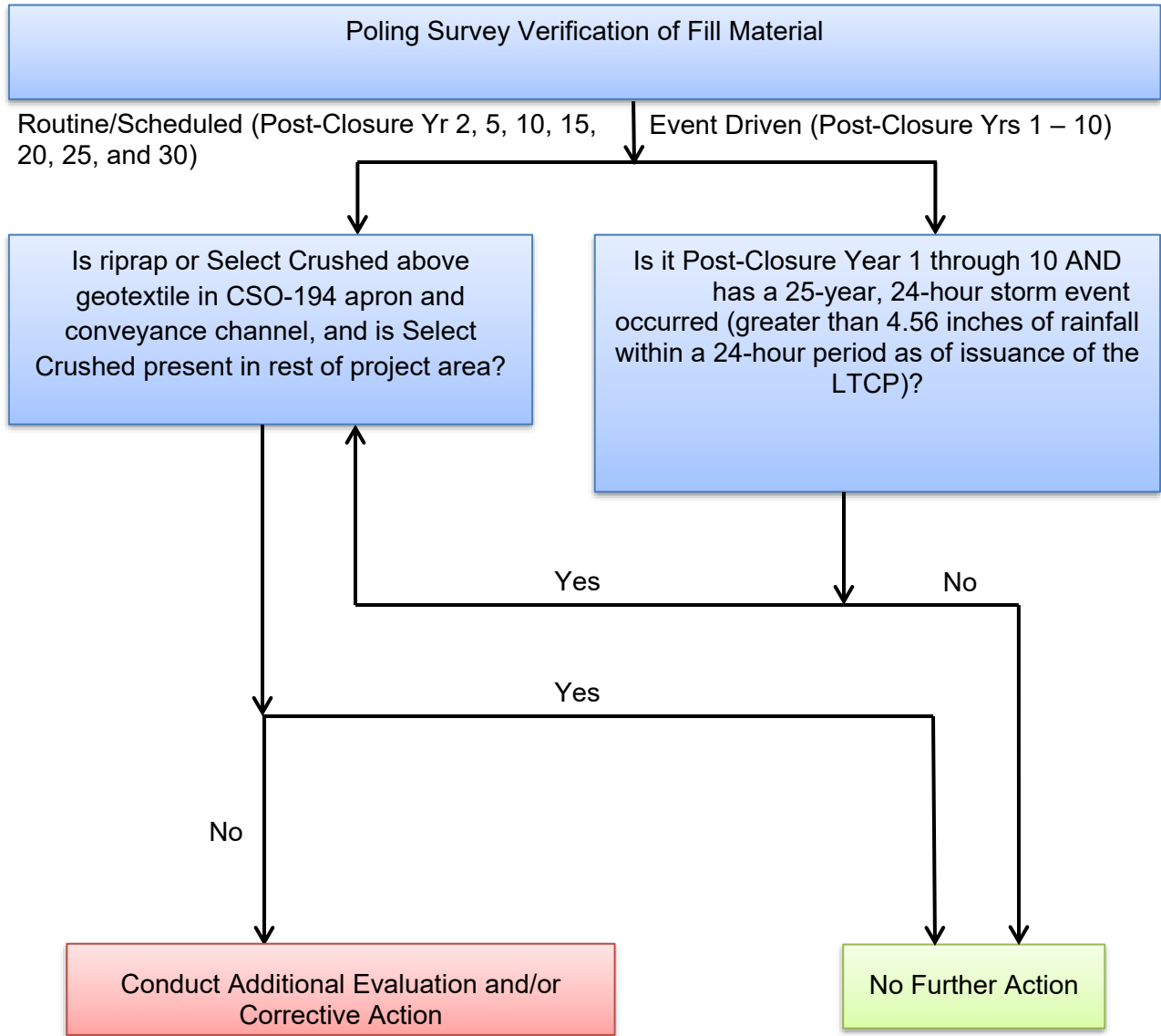
SOURCE NOTES:
 1. COORDINATES BASED ON MILWAUKEE COUNTY COORDINATE REFERENCE SYSTEM NAD 83(97).

DRAWN BY:	DMD	DATE:	07/29/16
CHECKED BY:	Y_Z	DATE:	07/29/16
APPROVED BY:	RJB	DATE:	07/29/16
DRAWING NO: 2117-7.1-B03		REFERENCE: See Info Block	

**BURNHAM CANAL
 SAMPLE LOCATION PLAN**
 CAP OPERATIONS, MAINTENANCE AND MONITORING PLAN
 REVISION 3
 BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN



PROJECT NO.	21177.1
FIGURE NO.	3

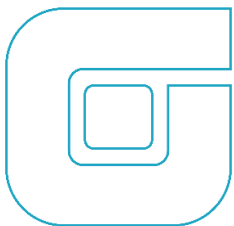


Notes:

Flowchart developed to summarize Long-Term Care Plan Section 3.3.2

Event-driven monitoring will cease after post-closure Year 10

Flowchart may be revised with WDNR approval of post-closure modification, per Long-Term Care Plan Section 3.4



POLING SURVEY VERIFICATION OF FILL MATERIAL FLOWCHART

BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
MILLER COMPRESSING COMPANY
MILWAUKEE, WISCONSIN

PROJECT NO.
67830.830

FIGURE NO.
4



Appendix A
Cap Maintenance and
Hard Surfacing Plan



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128
FAX 414-263-8606
Telephone 414-263-8500
TTY Access via relay - 711

September 1, 2009

In Reply, Refer to: FID# 241213720
BRRTS# 02-41-246029
BRR/ERP

Mr. Joe Kovacich
Vice President-Administration
Miller Compressing
Post Office Box 369
Milwaukee, WI 53201

Re: Remedial Action / Hard Surfacing Plan Approval for Miller Compressing Site –
Bruce Street Facility, 1640 W Bruce Street, Milwaukee, WI

Dear Mr. Kovacich:

As requested by Miller Compressing, the Wisconsin Department of Natural Resources (Department) has reviewed the Hard Surfacing Plan you submitted, dated June 15, 2009. We also received a request from your attorney, Mark Thimke at Foley and Lardner LLP, dated April 9, 2009. The require review fee was received.

You have requested Department approval of a plan to conduct the capping work in a logical, step-wise fashion consistent with Miller Compressing's business plans and activities. Further, the capping work is intended to address soil contamination impacts associated with scrap operations. The Plan contains a set of capping alternatives for areas that Miller Compressing elects to bring into the hard surfacing program at the Bruce Street facility. A copy of the Cap Maintenance / Hard Surfacing Plan (Plan) including a map (Exhibit B) of the areas that are subject to this letter is attached to this letter.

Background

In 1993, an inspector visiting the Miller Compressing property observed that a customer released liquids onto the ground in the area known as the "West Yard." Miller Compressing investigated and remediated the area in which the release occurred. Following that work, a meeting was held with the Department on January 10, 1996, to discuss the entire West Yard. At the meeting, Miller Compressing proposed to address other portions of the West Yard by hard surfacing/capping the yard as operations would allow. Plans for the hard surfacing/capping work were submitted to the Department on July 1, 1997. As opportunities arose, Miller Compressing undertook work consistent with the 1997 plans. On July 13, 2007, the Department issued a "Plan Approval" letter for hard surfacing of the "West Yard". On December 16, 2008, the Department received documentation that hard surfacing of the "West Yard" had been completed.

Department Concurrence

Over the last several years, the Department has worked closely with Wisconsin metal recyclers to develop a cooperative program for addressing soil contamination associated with historic operations at these sites. The Department acknowledges the importance of recycling operations

in the process of recycling and reusing valuable resources that would otherwise be landfilled. At the same time, the industry recognizes the need to take reasonable actions consistent with the nature of metal recycling to protect the environment. The West Yard is a continuing example of this cooperative effort.

Miller Compressing now plans to install hard surfacing on other portions of the site as the opportunity to complete the hard surfacing/capping work arises in those areas. The hard surface cap will be constructed as follows:

1. Currently unpaved operating areas would meet a specification of 5 inches of hard surfacing (concrete or asphalt) in addition to a minimum of 4 to 7 inches of stone base. This specification is similar to that approved by the Department in July 2007 for the "West Yard."
2. Existing hard surfaced areas will be improved, if necessary, so as to have a 9 to 12 inch cap. This cap will be a combination of existing hard surfacing and crushed stone base. Existing hard surfaced areas will be improved, if necessary, so as to have a minimum of 5 inches of hard surfacing, asphalt or concrete.
3. Landscape areas. There are several landscape areas at the Bruce Street facility. Most of these areas are located along the entrance to the Bruce Street/Greenwood Scale and near Mitchell Park. These areas were not used for scrap operations and will continue to be maintained with mulch, plantings and vegetation.

The Department concurs with the approach of hard surfacing/capping the areas shown on Exhibit B of the Plan. Hard surfacing/capping provides a barrier to direct contact with contaminants that may be found in the soil.

GIS Registry

This site will be listed on the Remediation and Redevelopment Program's GIS Registry. The specific reasons are summarized below:

- Residual soil contamination exists that must be properly managed should it be excavated or removed
- Before the land use may be changed from a metal recycling facility, additional environmental work **may be required to** be completed
- Pavement, an engineered cover or a soil barrier must be maintained over contaminated soil and the state must approve any changes to this barrier

This letter and information that was submitted with your Remedial Action / Hard Surfacing Plan will be included on the GIS Registry. To review the sites on the GIS Registry web page, visit the RR Sites Map page at <http://dnr.wi.gov/org/aw/rr/gis/index.htm>. If the property is listed on the GIS Registry because of remaining contamination and you intend to construct or reconstruct a well, you will need prior Department approval in accordance with s. NR 812.09(4)(w), Wis. Adm. Code. To obtain approval, Form 3300-254 needs to be completed and submitted to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line <http://dnr.wi.gov/org/water/dwg/3300254.pdf> or at the web address listed above for the GIS Registry.

Please be aware that pursuant to s. 292.12 Wisconsin Statutes, compliance with the requirements of this letter is a responsibility to which you and any subsequent property owners must adhere.

You must pass on the information about these continuing obligations to the next property owner or owners. If these requirements are not followed or if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, welfare, or the environment, the Department may take enforcement action under s. 292.11 Wisconsin Statutes to ensure compliance with the specified requirements, limitations or other conditions related to the property or this case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code. The Department intends to conduct inspections in the future to ensure that the conditions included in this letter including compliance with referenced maintenance plans are met.

Cover or Barrier

Pursuant to s. 292.12(2)(a), Wis. Stats., the pavement or other impervious cap that currently exists in the location shown on the attached map shall be maintained in compliance with the **attached maintenance plan** in order to minimize the infiltration of water and prevent groundwater contamination that would violate the groundwater quality standards in ch. NR 140, Wis. Adm. Code, and to prevent direct contact with residual soil contamination that might otherwise pose a threat to human health. If soil in the specific locations described above is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner at the time of excavation will need to determine whether the material is considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable statutes and rules. In addition, all current and future owners and occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken during excavation activities to prevent a health threat to humans.

The attached maintenance plan and inspection log are to be kept up-to-date and on-site. Please submit the inspection log to the Department upon request.

Conditions

The Department's concurrence with the hard surfacing/capping program for the West Yard is specifically conditioned on the following:

1. The site will continue to be utilized as part of a metal recycling facility;
2. Capping of areas of the Bruce Street facility will occur when operations allow for the work to proceed. Some operations are not readily amenable to capping due to the existing placement of equipment. As opportunities allow for capping to occur (for example, relocation of operations, change in activities or an ownership change), Miller Compressing will move ahead with the work.
3. The cap will be constructed and documented according to the Plan.
4. It is anticipated that the cap design may vary depending upon the nature of the operations in the area being addressed. The cap should be designed to withstand the anticipated use(s) of the area and minimize premature cap degradation.
5. Miller Compressing may, on a case-by-case basis, submit area-specific cap designs that vary from the approved designs or which incorporate newly available capping materials. These case-by-case designs will require Departmental pre-approval before they may be used by Miller Compressing.
6. Capping activities will be self-implementing. Once completed, Miller Compressing will notify the Department of the area that was capped and the cap design utilized in the area

- (including the type and amount of material that has been added and the pre-existing pavement conditions present prior to final capping).
7. For the capped areas, Miller Compressing will comply with the GIS Registry requirements noted above and will notify the next property owner of the requirements set forth in this letter.
 8. Closure of the site will not be granted until all environmental media are addressed, but for purposes of direct contact risk, capping will be considered sufficient.
 9. Additional investigation of soil and/or groundwater may be required before this site can be closed per NR 726.

Please note that this letter is not intended to address any issues related to investigation, remediation or any other issues related to the contamination that is the subject of the Superfund Alternatives Program which you are working on with the Environmental Protection Agency (EPA) and Margaret Brunette of the Department.

The Department appreciates efforts to restore the environment at this site. If you have any questions or concerns regarding this letter, please contact Andy Boettcher at (414) 263-8541.

Sincerely,



James A Schmidt
SER Remediation & Redevelopment Team Supervisor

CC: Mark Thimke, Foley and Lardner, 777 East Wisconsin Avenue, Milwaukee, WI 53202

Attachment: 1) Cap Maintenance / Hard Surfacing Plan (Plan), dated September 2009

Cap Maintenance / Hard Surfacing Plan

Miller Compressing Company
1640 W. Bruce Street
Milwaukee, Wisconsin 53201

FID # 241213720
BRRT# 02-41-246029

This document is the Cap Maintenance / Hard Surfacing Plan (herein referred to as the "Plan") for Miller Compressing's Bruce Street operation in accordance with the requirements of s NR 724.13(2), Wisconsin Administrative Code. The maintenance activities relate to the Plan established with the Wisconsin Department of Natural Resources (WDNR) to cap former/existing scrap handling/processing operations at this location.

More site-specific information about this property may be found in:

- Case file in the WDNR Southeastern regional office (FID# 241213720)
- BRRTS on the Web (<http://dnr.wi.gov/org/aw/rr/brrts/index.htm>)
- GIS Registry PDF file for further information on the nature and extent of contamination
- The WDNR project manager for Milwaukee County

Description of Contamination

Past scrap handling/processing operations along with past heavy industrial use resulted in elevated levels of RCRA metals, PAHs, petroleum products, PCBs and chlorinated solvents in near surface soils (2-4 feet below ground surface). The purpose of this Plan is to outline the requirements that Miller Compressing Company must follow when it requests that an area be added to the Plan and to describe the inspection and maintenance requirements for the "capped" areas of the site. Miller Compressing must document the compliance with the Plan and must maintain the Hard Surface Cap (herein referred to as the "Cap") agreed to with the WDNR.

Description of Hard Surface Cap

The extent of the Site is outlined on the attached map (Exhibit B) and the extent of the Cap is outlined on the subsequent exhibits designated starting with B (such as B-1, B-2, etc.) as areas are added into the Plan. The Cap will be 9-12 inches thick, consisting of 4-7 inches of suitable sub grade material and a minimum of 5 inches of hard surfacing which maybe asphalt or concrete. A more detailed description of the Cap is described in the WDNR letter dated September 1, 2009.

The proposed Cap over the soil contamination serves as a barrier to prevent direct human contact with residual soil contamination that might otherwise pose a threat to human health. This Cap will also act as a partial infiltration barrier to minimize future soil to groundwater contamination migration that would violate the groundwater standards in ch NR 140, Wisconsin Administrative Code.

Based on the current and future use of the property as a scrap processing facility, the barrier should function as intended unless disturbed.

Annual Inspection

All areas included in the Plan must be inspected annually, preferably in the spring after all snow and ice has melted and should identify deterioration, cracks or other potential problems that can cause exposure to underlying soils and evaluate damage due to settling, exposure to the weather, wear from traffic or operations, increasing age and other factors. Any area where soils have become or are likely to become exposed will be documented in an inspection log which will include recommendations for necessary repairs and the documentation of the completion of those repairs. The inspections will be performed by Miller Compressing or their designated representative. The Hard Surface Cap Inspection and Maintenance Log is attached as Exhibit A. The inspection log will be kept at Miller Compressing Company and available for submittal or inspection by the WDNR representative upon their request during normal business hours.

Maintenance Activities

If problems are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. Repairs may include patching and filling or larger resurfacing or construction activities. In the event that necessary maintenance activities expose the underlying soil, Miller Compressing Company must inform maintenance workers of the direct contact exposure hazard and provide them with appropriate personal protection equipment ("PPE"). Miller Compressing Company must notify the WDNR prior to any excavation activities. All soils being removed from the site must be treated, stored and disposed of by Miller Compressing Company in accordance with applicable local, state and federal law.

In the event the Cap overlying the contaminated soils is removed or replaced, the replacement Cap must meet the specifications stated in the WDNR letter dated September 1, 2009. Any replacement Cap will be subject to the same maintenance and inspection guidelines as stated in this Plan unless indicated otherwise by the WDNR or its successor.

The property owner, in order to maintain the integrity of the Cap, will maintain a copy of this Plan on-site and make it available to all interested parties (i.e. employees, contractors, future property owners, etc.) for viewing.

Prohibition of Activities and Notification of WDNR Prior to Actions Affecting the Cap

The following activities are prohibited on any portion of the property that Miller Compressing Company has selected to include in the Hard Surface Plan, unless prior notification to the WDNR has been made: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; or 6) construction or placement of a building or other structure which causes disturbance of the Cap.

Amendment or Withdrawal of Cap Maintenance Plan

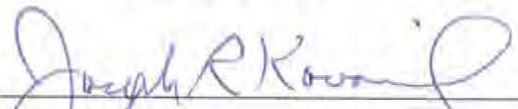
This Maintenance Plan can be amended or withdrawn by the property owner and its successors with the written approval of the WDNR

Contact Information

September 2009

Site Owner and Operator: Miller Compressing Company
1640 W. Bruce Street
Milwaukee, Wisconsin 53204
414-671-5980

Signature:



Name:

JOSEPH R KOVACICH


Title:

VICE PRESIDENT

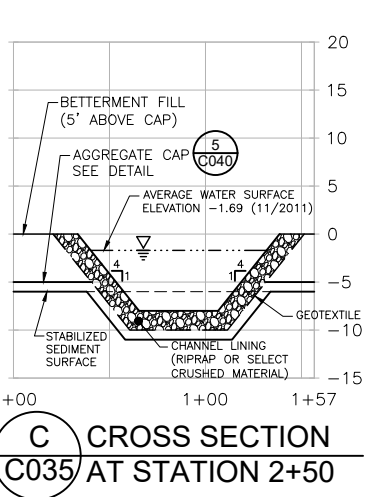
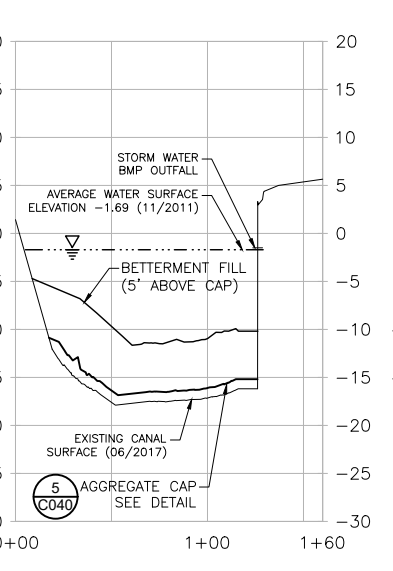
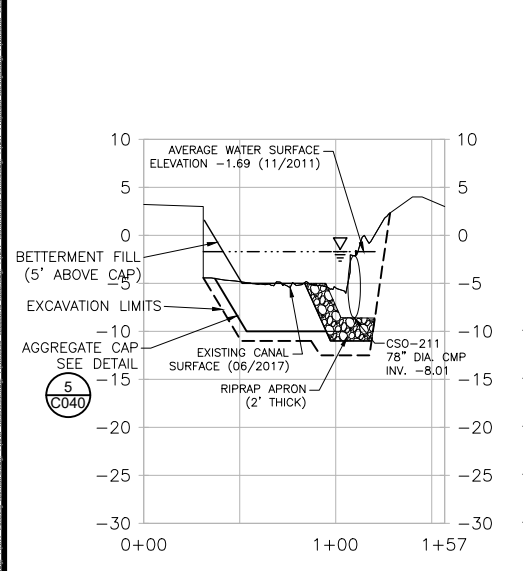
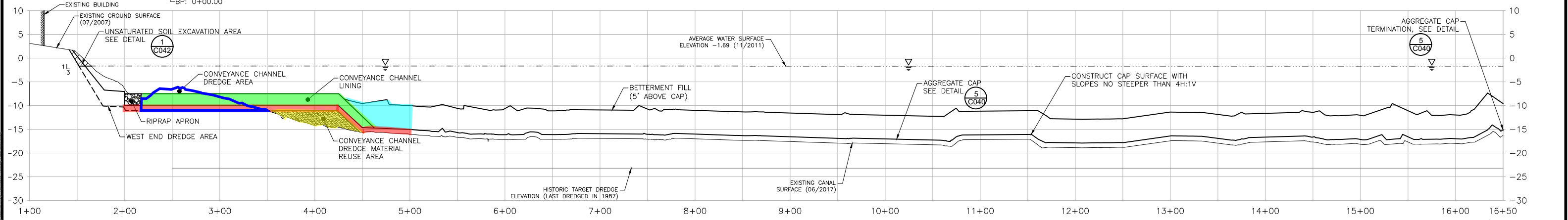
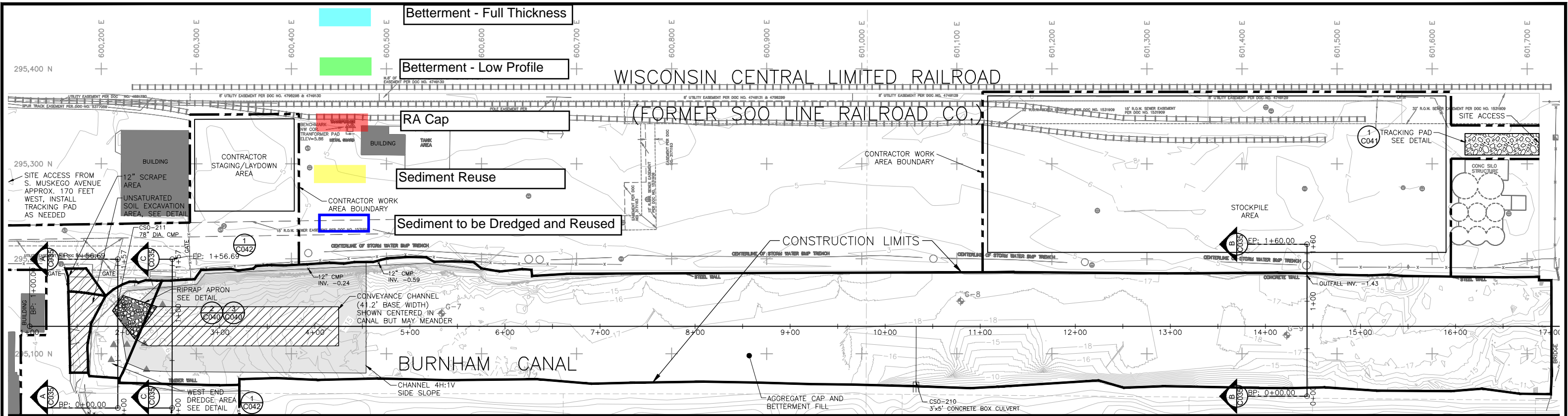
9/1/09

WDNR:

Andrew Boettcher
WDNR SE Regional Office
2300 N. MLK Jr Drive
Milwaukee, Wisconsin 53212-3128



Appendix B
Sheet C035 and Reuse
Cross-Sections from NR
718.15 Low Hazard
Exemption Request



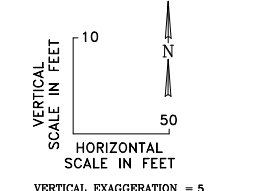
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- - - -	RIGHT-OF-WAY (R.O.W.)/ PARCEL LINE	● G-6	GEOTECHNICAL SAMPLE LOCATION (2007)	— G-7 —	PRE-DESIGN GEOTECHNICAL SAMPLE LOCATION (11/2011)
- - - -	SECTION LINE	● G-7	PRE-DESIGN GEOTECHNICAL SAMPLE LOCATION (11/2011)	▲	PRE-DESIGN SEDIMENT SAMPLE LOCATION (11/2011)
— — — —	CONTRACTOR WORK AREA	— x —	FENCE	— S —	SANITARY SEWER
~ ~ ~ ~	TREES & BRUSH	— B —	BUILDING	— STH —	STORM SEWER
●	SOIL BORING LOCATION (7/2009)	— OHW —	OVERHEAD WIRE	○	MANHOLE
◆ SW-01	SURFACE WATER SAMPLE LOCATION (12/2007)	— TEL —	TELEPHONE	●	CATCH BASIN
◆ HA-4	HAND AUGER LOCATION (12/2007)	— ELC —	ELECTRIC	—	RAILROAD TRACKS
▲ SED-T/SED-5A	SEDIMENT SAMPLE LOCATION, APPROX. (2006)	— W —	WATER MAIN		

CONSTRUCTION NOTES:

1. THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.
2. LIMITS OF WEST END UNSATURATED SOIL AND DREDGE AREA DEPENDENT ON WATER ELEVATION, TO BE VERIFIED PRIOR TO WORK.

SOURCE NOTES:

1. EXISTING CONDITIONS NORTH AND WEST OF THE BURNHAM CANAL APPROXIMATE EDGE OF WATER CREATED FROM DIGITAL BASE FILE TM601D50.DWG/TM601D50RED, SURVEYED BY NATIONAL SURVEY & ENGINEERING ON 07/18/2007.
2. EXISTING CONTOURS WITHIN THE BURNHAM CANAL BASED ON BATHYMETRY SURVEY COMPLETED BY THE U.S. ARMY CORPS OF ENGINEERS ON 06/27/2017.
3. COORDINATE SYSTEM IS BASED ON NAD 83 HARN WISCONSIN MILWAUKEE COUNTY FEET. THE VERTICAL DATUM IS EQUAL TO THE NGVD 1929 ELEVATION MINUS 580.603.
4. CONTOURS SOUTH OF THE CANAL FROM MCAMLIUS (MILWAUKEE COUNTY AUTOMATED MAPPING AND LAND INFORMATION SYSTEM) DATA TYPE: ARCGIS MAP SERVICE, SERVER: [HTTP://MAPS.MILWAUKEECOUNTY.ORG/ARCGIS/SERVICES](http://MAPS.MILWAUKEECOUNTY.ORG/ARCGIS/SERVICES).



CONTACT DIGGERS' HOTLINE PRIOR TO ANY UNDERGROUND WORK ON-SITE
CALL 811 OR (800) 242-8511
(262) 432-7910
(877) 500-9592 (EMERGENCY ONLY)

A CROSS SECTION C035 AT STATION 1+93

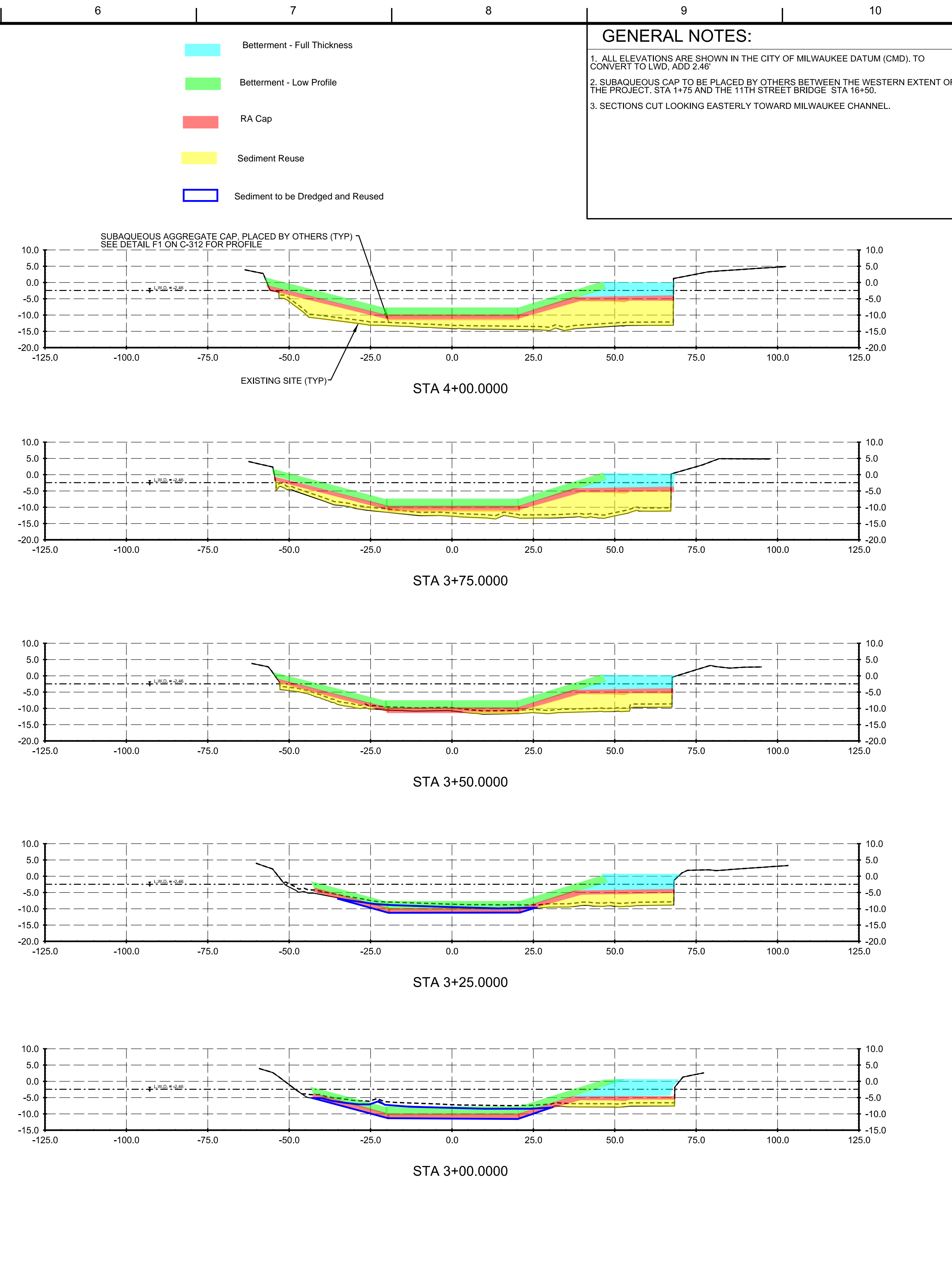
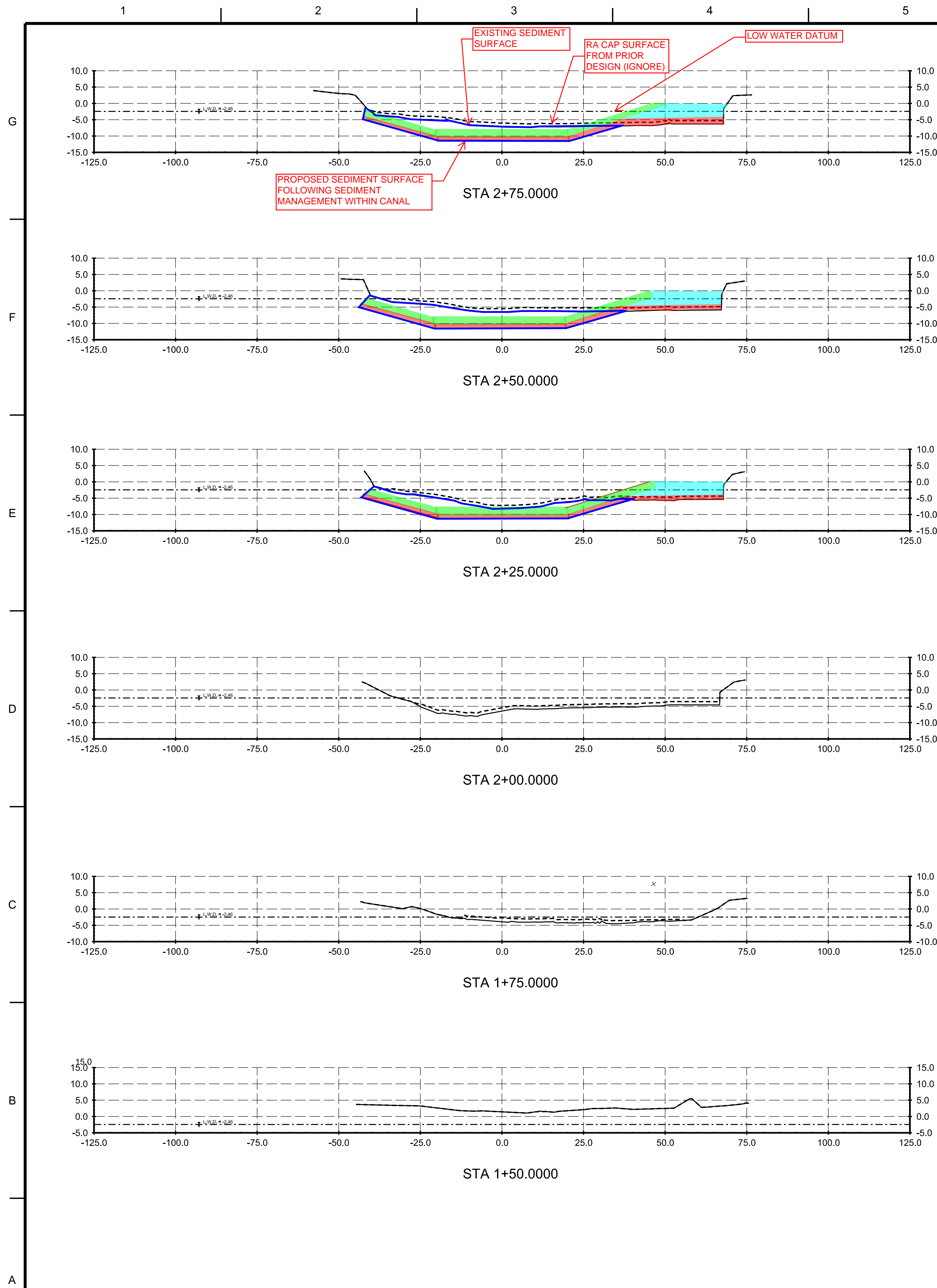
B CROSS SECTION C035 AT STATION 14+44

C CROSS SECTION C035 AT STATION 2+50

6.			
5.	VOL. BETTERMENT MOD. ISSUED FOR AGENCY REVIEW	DRAFT	
4.	ISSUED FOR AGENCY REVIEW	07/29/16	RJB
3.	ISSUED FOR AGENCY REVIEW	02/02/16	RJB
2.	ESD MODIFICATIONS ISSUED FOR AGENCY REVIEW	01/15/15	RJB
1.	ISSUED TO ADDRESS AGENCY COMMENTS	07/19/13	RJB
0.	ISSUED FOR AGENCY REVIEW	03/29/13	RJB
REVISION:		DATE:	APP'D BY:

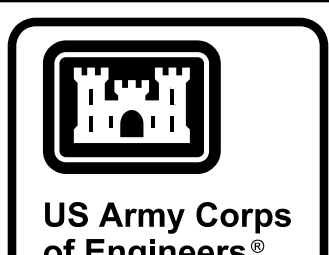


PROJECT NO. 67830/910	PROFILE AND CROSS SECTIONS	BURNHAM CANAL REMEDIATION VOLUNTARY BETTERMENT AGGREGATE FILL MATERIAL PLACEMENT REVISION MILLER COMPRESSING COMPANY CITY OF MILWAUKEE, WISCONSIN	SHEET NO. C035
DRAWN BY: DMD 05/04/15			
CHECKED BY: Y_Z 02/02/16	DRAWING NO: D2117C035-04.DWG		
APPROVED BY: RJB 02/02/16	REFERENCE: SEE INFO BLOCK		



GENERAL NOTES:

- ALL ELEVATIONS ARE SHOWN IN THE CITY OF MILWAUKEE DATUM (CMD), TO CONVERT TO LWD, ADD 2.46'
- SUBAQUEOUS CAP TO BE PLACED BY OTHERS BETWEEN THE WESTERN EXTENT OF THE PROJECT, STA 1+75 AND THE 11TH STREET BRIDGE STA 16+50.
- SECTIONS CUT LOOKING EASTERLY TOWARD MILWAUKEE CHANNEL.



MARK	DESCRIPTION	DATE

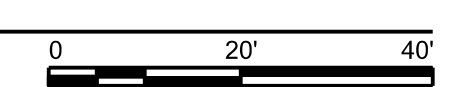
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CHECKED BY: B. MELBY	DESIGNED BY: B. MELBY	CONTRACT NO.: W911XK-XX-XXXX	CONTRACT NO.: W911XK-XX-XXXX	CONTRACT NO.: W911XK-XX-XXXX	SCALE: %A0P1%
CHECKED BY: N. ZAGER	DESIGNED BY: N. ZAGER	CONTRACT NO.: W911XK-XX-XXXX	CONTRACT NO.: W911XK-XX-XXXX	CONTRACT NO.: W911XK-XX-XXXX	SCALE: %A0P1%
DATE: 10/5/17	DESIGNED BY: PHILLIP ROSS	CONTRACT NO.: W911XK-XX-XXXX	CONTRACT NO.: W911XK-XX-XXXX	CONTRACT NO.: W911XK-XX-XXXX	SCALE: %A0P1%
DATE: 10/5/17	DESIGNED BY: PHILLIP ROSS	CONTRACT NO.: W911XK-XX-XXXX	CONTRACT NO.: W911XK-XX-XXXX	CONTRACT NO.: W911XK-XX-XXXX	SCALE: %A0P1%

U.S. ARMY CORPS OF ENGINEERS
 DETROIT DISTRICT
 STREET ADDRESS
 CITY, STATE ZIP

MILWAUKEE COUNTY
 MILWAUKEE CITY, BURHAM CANAL
 ESTUARY AREA OF CONCERN
 ECOSYSTEM RESTORATION

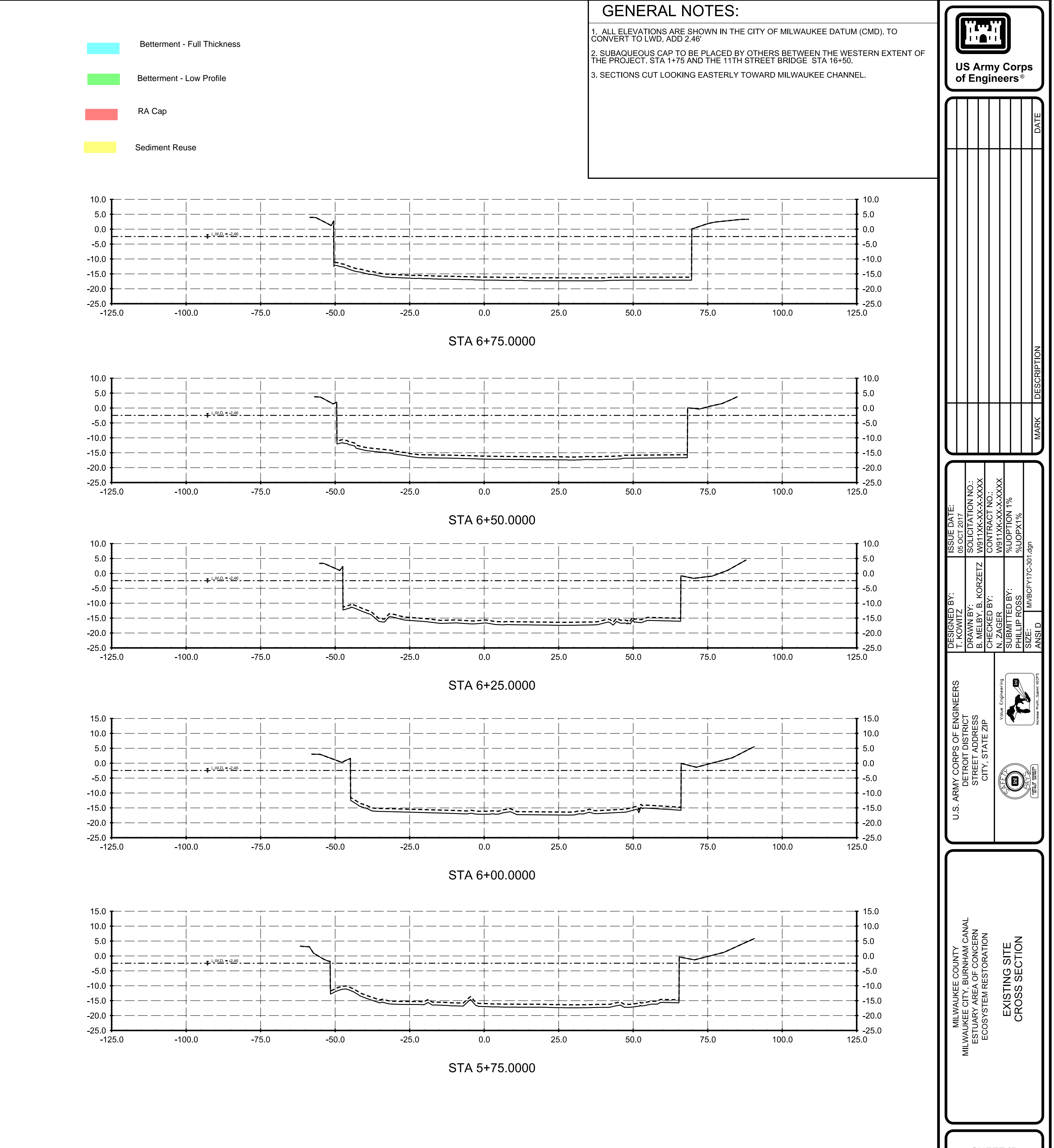
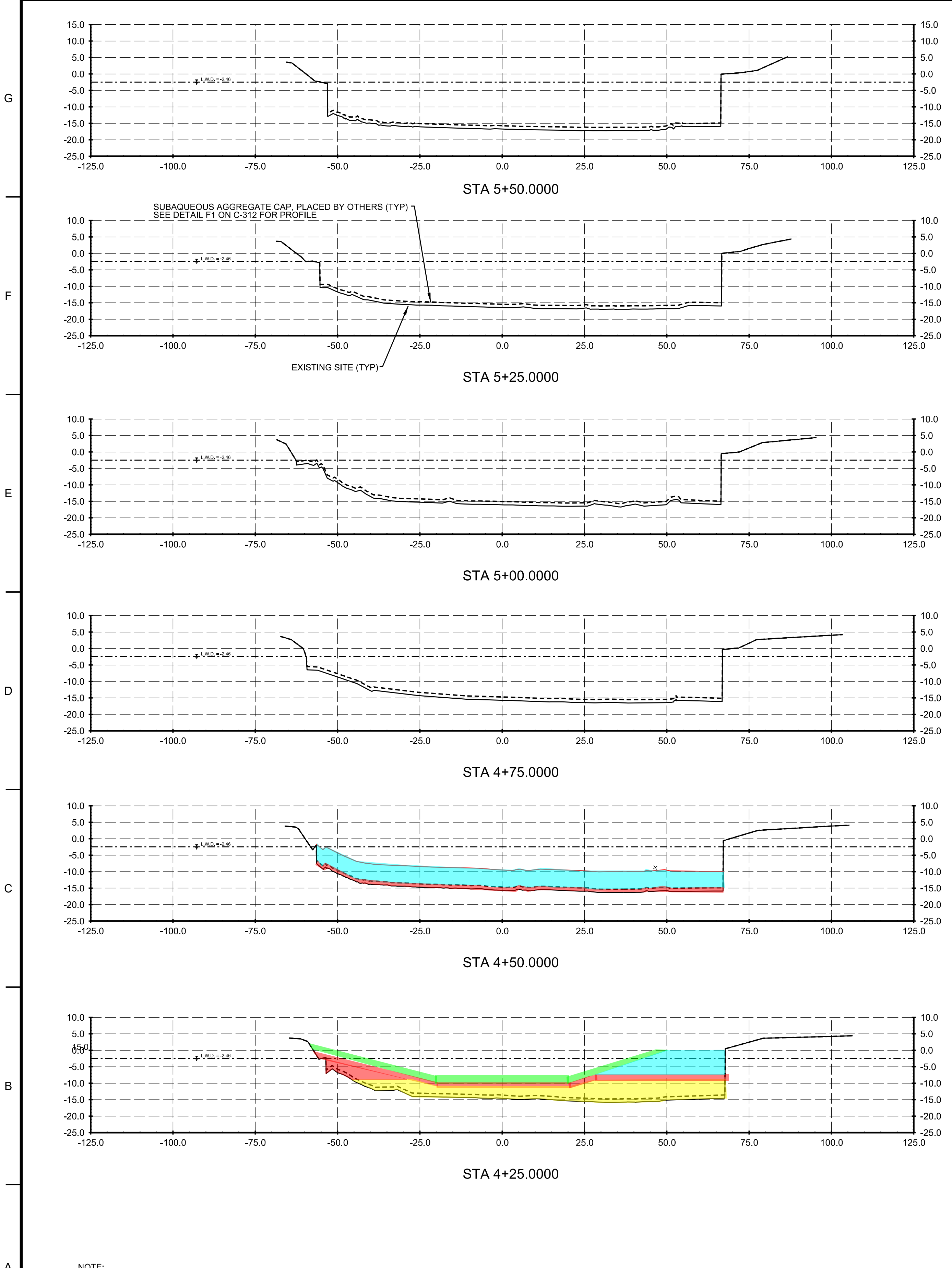
EXISTING SITE
 CROSS SECTION

A1
 C-100
A1
 EXISTING SITE CROSS SECTIONS
 SCALE: 1"=20'

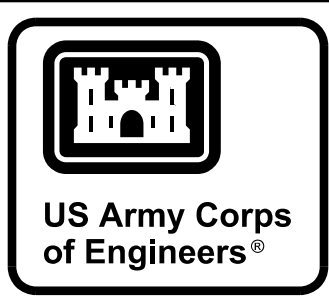


SHEET ID
C-300

CERTIFIED FINAL



GENERAL NOTES:
 1. ALL ELEVATIONS ARE SHOWN IN THE CITY OF MILWAUKEE DATUM (CMD), TO CONVERT TO LWD, ADD 2.46'
 2. SUBAQUEOUS CAP TO BE PLACED BY OTHERS BETWEEN THE WESTERN EXTENT OF THE PROJECT, STA 1+75 AND THE 11TH STREET BRIDGE STA 16+50.
 3. SECTIONS CUT LOOKING EASTERLY TOWARD MILWAUKEE CHANNEL.



MARK	DESCRIPTION	DATE

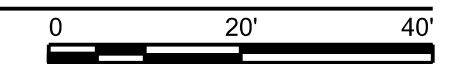
DESIGNED BY: B. MELBY	ISSUE DATE: 05-OCT-2017
CHECKED BY: B. MELBY	PROJECT NO.: 1611XK-XX-XXXX
BY: N. ZAGER	CONTRACT NO.: 1611XK-XX-XXXX
SUBMITTED BY: PHILLIP ROSS	%ALLOCATION 1%: %UOPX1%
SIZE: 14.25x21.75	FILE NAME: 1611XK-XX-XXXX.dgn

MILWAUKEE COUNTY
 MILWAUKEE CITY, BURHAM CANAL
 ESTUARY AREA OF CONCERN
 ECOSYSTEM RESTORATION

EXISTING SITE
 CROSS SECTION


NOTE:
 1. TITLE SPECIFIC NOTES

A1 EXISTING SITE CROSS SECTIONS
 SCALE: 1"=20'



SHEET ID
C-301

CERTIFIED FINAL



Appendix C
WDNR and U.S. EPA
Sediment Relocation
Correspondence



August 31, 2018

Mr. Jon Spigel
Miller Compressing Company
1640 West Bruce Street
Milwaukee, WI 53204

Subject: Approval to Manage Contaminated Material under Wis. Admin. Code § NR 718.15
Miller Compressing (Burnham Canal) (ALT SF), 1640 West Bruce Street, Milwaukee, WI
DNR BRRTS Activity #: 02-41-552940, 15-41-581667;
FID #: 241213720

Dear Mr. Spigel:

On June 26, 2018, Mark Walter of O'Brien & Gere Engineers, Inc. (OBG) submitted a completed 'Recommended Format for Exemption Request' on your behalf requesting to manage 1,400 cubic yards of contaminated material on the same site from which it will be excavated in accordance with Wis. Admin. Code § NR 718.15. The Department of Natural Resources (DNR) received all applicable technical assistance and database fees for providing review and response, in accordance with Wis. Admin. Code § NR 749.04(1).

Contaminated sediment within the western portion of the Burnham Canal is being addressed through limited dredging and offsite disposal of sediment and the installation of a cap over remaining contamination. In order to complete the remediation and to maintain storm water flow through the canal a channel must be formed at the base of the canal east of the West End Dredge Area. To form the channel, 1400 cubic yards of sediment will be excavated and replaced to an adjacent portion of the canal. Polycyclic aromatic hydrocarbon (PAH) and metal contamination was identified in samples collected from sediments within the canal. The approved cover will be installed over both the excavation and reuse areas within the canal.

Wis. Admin. Code § NR 718.15 Exemption

This letter grants an exemption from the solid waste requirements in Wis. Stats. § 289 and Wis. Admin. Code §§ NR 500 to NR 538 for the proposed material management activities. Approval of the exemption is based on the following:

- 1) Managing contaminated waste material in areas of the site identified on Figure A1, Sample Locations (1/14/16) included with the completed 'Recommended Format for Exemption Request' will meet the locational criteria listed under Wis. Admin. Code § NR 718.12(1)(c), with the exception of the following:
 - Within a floodplain
 - Within 3 feet of the high groundwater level
 - At a depth greater than the depth of the original excavation from which the contaminated soil was removed

Grant of exemption to s. NR 718.12(1)(c)1, 5, and 6

In consideration that sediment is being excavated from within a canal and will be replaced in an adjacent portion of the canal under similar conditions (with the exception of that the reuse area is located downslope from the excavation area), and the material will pose no greater risk to human health or the

environment after it is replaced within the canal, the DNR grants an exemption to the location criteria of Wis. Admin. Code § 718.12(1)(c)1, 5, and 6 will allow placement of contaminated waste material within the floodplain, below the waterline, and at a greater depth from which it was excavated.

- 2) Soil samples have been collected for analysis of contaminants previously detected or expected to be present at this site including PAHs and metals from areas most likely to contain residual contamination. Based on an estimated volume of 1,400 cubic yards of material, and a sampling frequency of 1 sample per 160 cubic yards, the sampling protocol described in Wis. Admin. Code § NR 718.12(1)(e) has been met.
- 3) A complete soil management plan, as defined by Wis. Admin. Code §§ NR 718.12(2)(b) and (c), has been provided to the DNR.
- 4) The proposed management of contaminated material at the Miller Compressing (Burnham Canal) (ALT SF) is expected to meet the criteria of Wis. Admin. Code §§ NR 726.13(1)(b)1 to 5.
- 5) Per Wis. Admin. Code § NR 718.12(2), the DNR was provided with at least 7 days' notice prior to commencing to proposed material management.
- 6) You have acknowledged that the continuing obligations described below will be required as a condition of managing the contaminated material on your property as proposed.

Continuing Obligations

The current property owner of the Miller Compressing (Burnham Canal) (ALT SF), and any subsequent property owners, must comply with the following continuing obligations, established under Wis. Admin. Code § NR 718.12(2)(d) at this site, to ensure that conditions will remain protective. DNR staff will conduct periodic prearranged inspections to ensure that the conditions included in this letter and the "Institutional Control Implementation Plan" are met. If these requirements are not followed, the DNR may take enforcement action under Wis. Stat. § 292.11 to ensure compliance with the specified requirements, limitations or other conditions related to the property.

Documents submitted to the DNR to request the Wis. Admin. Code § 718.15 exemption meet the requirements of Wis. Admin. Code § NR 718.12(2)(e) and are available in Portable Document Format (PDF) on the Bureau for Remediation and Redevelopment Tracking System (BRRTS on the Web) at <http://dnr.wi.gov/topic/Brownfields/wrrd.html>. Additionally, this site will be identified on the Remediation and Redevelopment Sites Map (RRSM), available at <http://dnr.wi.gov/topic/Brownfields/wrrd.html>, as having continuing obligations. All site information is on file at the Regional DNR office located at 2300 N. Dr. Martin Luther King, Jr. Drive, Milwaukee, WI 53212-3128.

The DNR fact sheet "Continuing Obligations for Environmental Protection," RR-819, helps to explain a property owner's responsibility for continuing obligations on their property. The fact sheet may be obtained at <http://dnr.wi.gov/files/PDF/pubs/rr/RR819.pdf>.

Please send written notifications in accordance with the following requirements to:

Department of Natural Resources
Attn: Remediation and Redevelopment Program Environmental Program Associate
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, WI 53212-3128

Site Specific Condition - Residual Sediment Contamination:

If contaminated sediment that was managed as proposed in the completed 'Recommended Format for Exemption Request' is excavated in the future, the property owner at the time of excavation will be responsible for the following:

- determine if contamination is present,
- determine whether the material would be considered solid or hazardous waste,
- ensure that any storage, treatment or disposal is in compliance with applicable statutes and rules.

Excavated material may be managed in accordance with Wis. Admin. Code § NR 718, with DNR approval obtained at that time. In addition, all current and future property owners and occupants of the property need to be aware that excavation of the contaminated soil may pose a hazard and special precautions may need to be taken to prevent a health threat to humans. If material managed under this exemption included solid waste other than soil, a historic fill exemption may be required to be obtained from the DNR prior to excavating the waste or constructing any structure over the materials.

The location(s) where contaminated soil is proposed to be managed at the Miller Compressing (Burnham Canal) (ALT SF) site is depicted on the attached Figure A1, Sample Locations (1/14/2016).

DNR approval prior to well construction or reconstruction is required *where contaminated sediment has been managed*, in accordance with Wis. Admin. Code § NR 812.09(4)(w). This requirement applies to private drinking water wells and high capacity wells. To obtain approval, complete and submit Form 3300-254 to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained at <http://dnr.wi.gov/topic/wells/documents/3300254.pdf>.

Maintenance of a cover:

A cover of approximately five feet of aggregate fill overlying a one-foot gravel remedial subaqueous cap is proposed to be installed and maintained over contaminated solid waste that will be managed at the Miller Compressing (Burnham Canal) (ALT SF) site as proposed in the completed 'Recommended Format for Exemption Request'. Once constructed, inspections of the cover will be required, and submittal of inspection reports may also be required. If the cover is approved for industrial land use the DNR is required to be notified before changing to a non-industrial use, to determine if the cover will be protective for that use. Institutional Controls will be implemented to ensure that the sand cover remains in place and is not disturbed. The Institutional Control Implementation and Assurance Plan (ICIAP) must be updated as part of the remedial design for the Site which will describe the inspection and maintenance activities that will apply to the proposed barrier. The attached Figure A1, Sample Locations (1/14/2016), shows where contaminated material is proposed to be managed and covered. An updated ICIAP must be provided to the DNR once the barrier has been constructed if changes were made to address actual site conditions.

Certain activities will be prohibited in areas of this site where maintenance of a cover or barrier is intended to prevent contact with any remaining contamination. When a barrier is required, the DNR must be notified before making a change, in order to determine if further action is needed to maintain the protectiveness of the remedy employed. The following activities are prohibited on any portion of the property where the cover is required, unless prior written approval has been obtained from the DNR:

- removal of the existing barrier or cover;
- replacement with another barrier or cover;
- excavating or grading of the land surface;
- filling on covered or paved areas;

- plowing for agricultural cultivation;
- construction or placement of a building or other structure;
- changing the use or occupancy of the property to a non-industrial exposure setting.

Other Information

- 1) Any hazardous substance discharge discovered during material management activities must be reported to the DNR following the requirements of Wis. Admin. Code § NR 706.
- 2) Material management activities exempted by this letter are scheduled to be completed within one year. Notify the DNR if this schedule will change.
- 3) Unless otherwise directed by the DNR, documentation of material management activities shall be provided within 60 days of the completion of this project. The documentation must describe how the activities complied with the approved management plan and must also comply with the requirements of Wis. Admin. Code § NR 724.15(3). Documentation must include:
 - a. A cover letter that contains the information required by Wis. Admin. Code § NR 724.05(2)(e)1.
 - b. Owner contact and property location information for the Miller Compressing (Burnham Canal) (ALT SF) site.
 - c. Maps, drawings, and cross sections that depict how contaminated material was managed.
 - d. A synopsis of the work conducted and an explanation as to how it complied with the material management plan and the conditions in this exemption approval.
 - e. A description of any changes made to the planned management activity and an explanation as to why they were necessary for the project.
 - f. Any field observations or results of monitoring conducted during the management activity.
 - g. A description of how new site conditions are protective of human health, safety, welfare and the environment at the Miller Compressing (Burnham Canal) (ALT SF) site.
 - h. A revised cover maintenance plan, if needed.

The DNR will request that incomplete documentation be amended as allowed by Wis. Admin. Code § NR 724.07(2).

- 4) This exemption is granted under Wis. Admin. Code § NR 718.15 and applies only to the specific activities described within the submitted 'Recommended Format for Exemption Request'. Any contaminated material that is excavated or otherwise disturbed at the Miller Compressing (Burnham Canal) (ALT SF) site, not covered under this or another exemption, must be managed in compliance with the requirements of Wis. Admin. Code §§ NR 500 through NR 538, the solid waste rules administered by the DNR's Waste and Materials Management Program. The management of contaminated material on a property that does not comply with these rules may be considered a hazardous substance discharge and would be required to be addressed following the process outlined in Wis. Admin. Code §§ NR 700 to NR 750.
- 5) Miller Compressing Company is responsible for obtaining any local, federal, or other applicable state permits to carry out the project.

All remediation sites are included in DNR's Bureau of Remediation and Redevelopment Tracking System (BRRTS) database. All documents and project milestones related to the cleanup of each of the involved sites are listed in the database entry identified by BRRTS activity #(s) 02-41-552940. Actions relating only to the management of contaminated material are tracked in the BRRTS system under activity # 15-41-552940.

Miller Compressing (Burnham Canal) (ALT SF)
1640 West Bruce Street, Milwaukee, WI
WDNR BRRTS #: 02-41-552940, 15-41-581667
FID #: 241213720

Page 5

We appreciate your efforts to protect the environment at this site. If you have any questions regarding this approval decision, please contact me by calling (608) 266-0941, or by email at paul.grittner@wisconsin.gov. Other questions regarding this site can be directed to the DNR project manager Margaret Brunette at (414) 263-8557, or margaret.brunette@wisconsin.gov.

Sincerely,



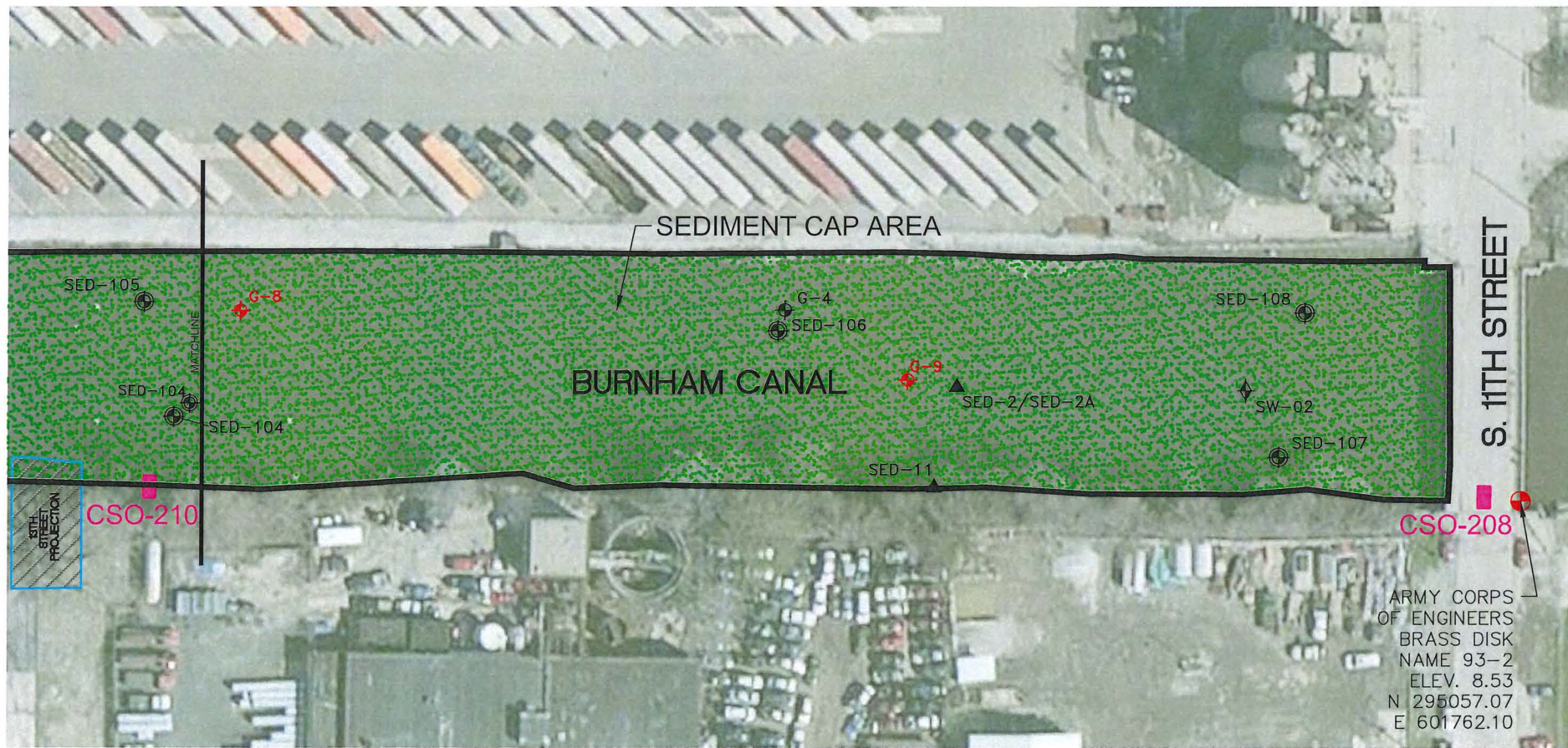
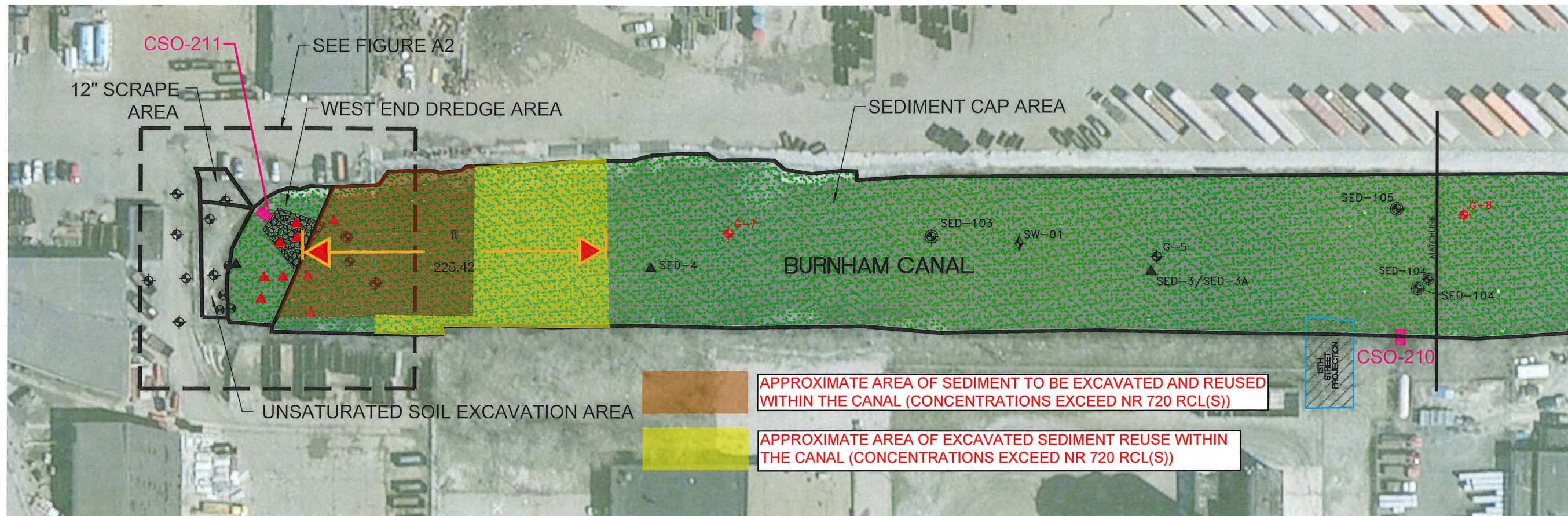
Paul Grittner
Contaminated Material Management Specialist
Remediation & Redevelopment Program

Attachments:

- Figure A1, Sample Locations, Natural Resource Technology

cc: Mark Walter, O'Brien & Gere Engineers, Inc., 234 W. Florida Street, Fifth Floor, Milwaukee, WI 53204 (electronic)
Leah Evison – EPA Region V (electronic)

Jan 14, 2016 6:30pm PLOTTED BY: dduida SAVED BY: dduida
 Y: Mapping\Projects\2117\CAD\3-1 Final Design Report\Appendix A Figa\Figure A1_Sample Locations.dwg Layout
 IMAGES: Y: Mapping\Projects\2117\CAD\3-1 Final Design Report\Appendix A Figa\Figure A1_Sample Locations.dwg
 REFCS:



	COMBINED SEWER OUTFALL		SED-102	SEDIMENT SAMPLE LOCATION (2007)
	APPROXIMATE LOCATION OF 9TH AND 13TH STREET IF EXTENDED TO CANAL		G-6	GEOTECHNICAL SAMPLE LOCATION (2007)
	REMEDIATION AREAS		G-7	PRE-DESIGN GEOTECHNICAL SAMPLE LOCATION (11/2011)
	SEDIMENT CAP		SED-126	PRE-DESIGN SEDIMENT SAMPLE LOCATION (11/2011)
	RIPRAP		HA-4	HAND AUGER LOCATION (12/2007)
	SOIL BORING LOCATION (7/2009)		SED-107	SEDIMENT SAMPLE LOCATION, APPROX. (2006)
	SURFACE WATER SAMPLE LOCATION (12/2007)			
	SEDIMENT SAMPLE LOCATION (7/2009)			
	SEDIMENT SAMPLE LOCATION (12/2007)			
	SEDIMENT SAMPLE LOCATION (12/2007)			
	SEDIMENT SAMPLE LOCATION (12/2007)			

SOURCE NOTE:
 THE DIGITAL DRAWING IMAGE WAS
 CREATED FROM BING MAPS FOR
 ARCGIS DESKTOP. (c) 2010
 MICROSOFT CORPORATION AND ITS
 DATA SUPPLIERS.
 COORDINATES BASED ON
 MILWAUKEE COUNTY COORDINATE
 REFERENCE SYSTEM NAD 83(97).

ARMY CORPS
 OF ENGINEERS
 BRASS DISK
 NAME 93-2
 ELEV. 8.53
 N 295057.07
 E 601762.10

SCALE IN FEET
 0 40 80

DRAWN BY:	DMD	DATE:	01/14/16
CHECKED BY:	RJB	DATE:	01/14/16
APPROVED BY:	RJB	DATE:	01/14/16
DRAWING NO.:		REFERENCE:	

SAMPLE LOCATIONS
 BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 FINAL DESIGN
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN

NATURAL
 RESOURCE
 TECHNOLOGY

PROJECT NO.
 2117/7.0

FIGURE NO.
 A1

Mark Walter

To: Evison, Leah
Subject: RE: Burnham Canal - EPA

From: Evison, Leah [mailto:evison.leah@epa.gov]
Sent: Monday, April 30, 2018 11:29 AM
To: Mark Walter <Mark.Walter@obg.com>
Cc: Laurie Parsons <Laurie.Parsons@obg.com>
Subject: Re: Burnham Canal - EPA

Thanks for the summary. As I mentioned on the phone, I do not consider the implementation adjustments you describe to be design changes. Please continue to coordinate with WDNR as you explore management options for the additional material.

Leah

Leah Evison
US EPA Remedial Project Manager/Region 5
outstationed at
520 Lafayette Rd N
St. Paul MN 55155
evison.leah@epa.gov
St. Paul office 651-757-2898

From: Mark Walter <Mark.Walter@obg.com>
Sent: Monday, April 30, 2018 11:00:13 AM
To: Evison, Leah
Cc: Laurie Parsons
Subject: RE: Burnham Canal - EPA

Hi Leah,

Thank you for your 3/27/18 response and for the discussion earlier this morning. A summary of today's discussion is provided below. As always, please feel free to contact us if you have any questions.

- Sediment designated to be removed from the West End Dredge Area, as called out in the EPA-approved ESD/ROD Design, will be removed, stabilized, and disposed at a landfill per the EPA-approved Design.
- Additional dredging will be performed, outside the footprint of (east of) the West End Dredge Area shown in the EPA-approved ESD/ROD Design, to allow placement of betterment material without obstructing canal hydraulics.
- The ESD/ROD cap will still be constructed in accordance with the EPA-approved Design.
- We will work with WDNR on management (and associated permitting) of sediment to be removed outside the footprint of (east of) the West End Dredge Area shown in the EPA-approved ESD/ROD Design. Management

options to be discussed with WDNR include in-place management of this material within the canal project area, east of the West End Dredge Area shown in the EPA-approved ESD/ROD Design.

Thanks again,

Mark

Mark D. Walter, PE

OBG | Environmental Engineer

414-837-3563 | c 608-220-2480

Mark.Walter@obg.com | www.obg.com



Appendix D
WDNR Form 4400-305
Continuing Obligations
Inspection and
Maintenance Log

Directions: In accordance with s. NR 727.05 (1) (b) 3., Wis. Adm. Code, use of this form for documenting the inspections and maintenance of certain continuing obligations is required. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.]. When using this form, identify the condition that is being inspected. See the closure approval letter for this site for requirements regarding the submittal of this form to the Department of Natural Resources. A copy of this inspection log is required to be maintained either on the property, or at a location specified in the closure approval letter. Do NOT delete previous inspection results. This form was developed to provide a continuous history of site inspection results. The Department of Natural Resources project manager is identified in the closure letter. The project manager may also be identified from the database, BRRTS on the Web, at <http://dnr.wi.gov/botw/SetUpBasicSearchForm.do>, by searching for the site using the BRRTS ID number, and then looking in the "Who" section.

Activity (Site) Name	BRRTS No.
----------------------	-----------

Inspections are required to be conducted (see closure approval letter):

annually
 semi-annually
 other – specify _____

When submittal of this form is required, submit the form electronically to the DNR project manager. An electronic version of this filled out form, or a scanned version may be sent to the following email address (see closure approval letter):

Inspection Date	Inspector Name	Item	Describe the condition of the item that is being inspected	Recommendations for repair or maintenance	Previous recommendations implemented?	Photographs taken and attached?
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N

BRRTS No.

Activity (Site) Name

Continuing Obligations Inspection and Maintenance Log

Form 4400-305 (2/14)

Page 2 of 2

{Click to Add/Edit Image}

Date added:

Title:

{Click to Add/Edit Image}

Date added:

Title:

Revised Cap Operations, Maintenance, and Monitoring Plan

**Burnham Canal Superfund Alternative Site
Milwaukee, Milwaukee County, Wisconsin**

WDNR BRRTS #: 02-41-246029

EPA ID: WIN000510222

Prepared For: Miller Compressing Company

April 17, 2019



APRIL 17, 2019 | PROJECT #67830

Revised Cap Operations, Maintenance, and Monitoring Plan

Burnham Canal Superfund Alternative Site
Milwaukee, Milwaukee County, Wisconsin
WDNR BRRTS #: 02-41-246029
EPA ID: WIN000510222

Prepared for:

Miller Compressing Company



LAURIE L. PARSONS, PE, PH
Senior Vice President



MARK D. WALTER, PE
Project Manager / Senior Engineer

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FIGURES

Figure 1	Site Location Map
Figure 2	Burnham Canal Site Layout
Figure 3	Sample Location Plan
Figure 4	Poling Survey Verification of Fill Material Flowchart

APPENDICES

Appendix A	Cap Maintenance and Hard Surfacing Plan
Appendix B	Sheet C035 and Reuse Cross-Sections from NR 718.15 Low Hazard Exemption Request
Appendix C	WDNR and U.S. EPA Sediment Relocation Correspondence
Appendix D	WDNR Form 4400-305 Continuing Obligations Inspection and Maintenance Log

1 INTRODUCTION

This document contains the Cap Operations, Maintenance, and Monitoring Plan (COMMP) prepared on behalf of Miller Compressing Company (Miller) for the Burnham Canal (described in more detail below). The COMMP addresses three capped areas; the Subaqueous Engineering Control Area, the Unpaved Engineering Control Area, and the Paved Engineering Control Area. Both the Paved Engineering Control Area and the Unpaved Engineering Control Area address soil areas. The Subaqueous Engineering Control Area addresses sediment as defined by Wis. Stat. § 292.01.17g. The Record of Decision/Explanation of Significant Differences (ROD/ESD) cap and betterment are to be constructed at the Burnham Canal Site (Site) in the Menomonee Valley, Milwaukee, Wisconsin (Figure 1).

1.1 SITE BACKGROUND

The Burnham Canal was historically a federally authorized navigation channel dredged and maintained to a depth of 21 feet below Lake Michigan Low Water Datum (i.e., 556.5 feet IGLD 85 or 557.36 feet NVGD 29) by the United States Army Corps of Engineers (USACE). The canal was dredged regularly while it was maintained by the USACE in order to maintain a depth conducive for shipping. In the mid-1980s as industrial activities decreased in the Menomonee Valley, dredging became less frequent with no dredging taking place since the fall of 1987. During this period, the west portion of the channel (i.e., from the 11th Street Bridge to the west) was federally delisted (1986) and the 11th Street Bridge was built, effectively blocking ship traffic from moving upstream. East of the 11th Street Bridge, the canal was further deauthorized on June 10, 2014 to allow for potential construction of an urban wetland in the Burnham Canal (USACE, May 2016). The canal is approximately 1,500 feet from west to east and ranges from approximately 95 feet to 125 feet in width. Water depths in the canal range from a few feet on the western boundary and up to 10 to 15 feet at some locations.

1.2 PURPOSE AND SCOPE

This COMMP addresses the existing paved area (Paved Engineering Control Area), the canal itself (Subaqueous Engineering Control Area) from the western terminus and extending east to the 11th Street Bridge as shown on Figure 2, and the Unpaved Engineering Control Area, which consists of cover material placed on upland soils above the ordinary high-water mark (OHWM) at the western end of the canal. This report sets forth the post-construction maintenance and monitoring requirements based on the remedial design, ROD/ESD, and the Chapter 30 betterment approach. It is understood that the final long-term care plan under Wis. Stat. 292.12(d)(1) for the Subaqueous Engineering Control Area and the Unpaved Engineering Control Area will be issued at the time WDNR approves closure under Wis. Admin. Code ch. NR 726. At the time of closure, the requirements of the COMMP will be superseded by WDNR's post-closure continuing obligations. The anticipated continuing obligations for the Site are described in the Long-Term Care Plan (LTCP). Since the Burnham Canal Site is subject to plans approved by the U.S. EPA, this COMMP is designed to be implemented in conjunction with the Institutional Control Implementation and Assurance Plan (ICIAP) for maintenance and monitoring of institutional controls (IC) until the COMMP is superseded. As such, the COMMP addresses all three capped areas.

The Purpose of this COMMP is to outline the necessary post-construction actions in order to maintain, monitor, and properly respond to any changes in the caps that may pose a threat to human health or the environment. As noted above, three cap areas exist, as listed below (Figure 2):

- Paved Engineering Control Area (west of the canal, in the historic location of the wire reclamation furnace)
- Unpaved Engineering Control Area (between the Paved Engineering Control Area and the Subaqueous Engineering Control Area, including the 12-inch Scrape area and the western bank of the canal above the OHWM)
- Subaqueous Engineering Control Area (from the 11th Street Bridge to the west terminus of the canal)

The Paved Engineering Control Area is currently paved with asphalt. This area will remain as is, since it meets the requirements of the existing Cap Maintenance and Hard Surfacing Plan approved by the WDNR on

September 1, 2009 (Appendix A), and will be monitored to ensure that the existing asphalt cap integrity is not compromised. Future monitoring will be performed in accordance with this approved plan.

The Unpaved Engineering Control Area consists of a small area between the Paved Engineering Control Area and the Subaqueous Engineering Control Area as shown on Figure 2. When the remedial action (RA) described in the Construction Quality Assurance Project Plan in Appendix C of the Final Design Report (CQAPP) is implemented, unsaturated soil will be excavated and backfilled with clean material to re-establish preconstruction grades. The Unpaved Engineering Control Area will consist of a soil cover and seeding, as well as riprap underlain by nonwoven geotextile on the reconstructed west bank of the Canal to prevent erosion. Post-construction monitoring of the Unpaved Engineering Control Area will be visual and focus on erosion control.

The largest area associated with this COMMP is the Subaqueous Engineering Control Area. Prior to capping activities, contaminated sediment will be dredged from the West End of the canal to remove the highest concentrations of contaminants of concern (COCs) in this area. After dredging to the design elevations, capping activities will be initiated within the canal and include the dredge area. The functions of the Subaqueous Engineering Control are to provide an isolation layer between possible receptors (e.g., benthic community) and the underlying contaminated sediments, as well as to prevent migration of the COCs (metals and PAHs) into the water column.

This document describes post-construction monitoring and maintenance activities that will be performed for the Paved Engineering Control Area, the Unpaved Engineering Control Area, and the Subaqueous Engineering Control Area considering the Betterment Project. Maintenance and monitoring will be performed in order to ensure that the caps remain intact, physically stable, and protective over time.

2 ROD/ESD CAP AND BETTERMENT DESIGN SUMMARY

2.1 UNPAVED ENGINEERING CONTROL AREA - SUMMARY

Soil will be excavated at the western terminus of the canal. Clean imported cover soil will be placed as backfill along the western bank and will be seeded. Riprap will be placed along the western canal slope for stability purposes.

2.2 PAVED ENGINEERING CONTROL AREA – SUMMARY

The Paved Engineering Control Area already meets the requirements of the existing Cap Maintenance and Hard Surfacing Plan approved by the WDNR on September 1, 2009. As such, the requirements of the approved plan are incorporated into the COMMP (Appendix A).

2.3 SUBAQUEOUS ENGINEERING CONTROL AREA – SUMMARY

Sediment in the canal will be capped using imported aggregate to achieve an average thickness of 12 inches or more, across the entire canal area, with no areas less than 9-inches thick. Prior to placement of the ROD/ESD cap, a stabilization layer will be installed over the canal sediment area. The stabilization layer may consist of up to 48 inches of aggregate to provide a base for constructing the ROD/ESD cap as described in the CQAPP.

There are two combined sewer outfalls (CSO) in the canal. The outfall discharges are identified as CSO 193 (formerly CSO-210) and CSO 194 (formerly CSO-211), as shown on Figure 2. At outfall CSO 193, a riprap apron is unnecessary due to the significant water column depth between the CSO invert and top of Betterment that will dissipate discharge velocity from the CSO. For erosion protection at CSO 194, a riprap apron will be constructed at the outfall. As shown in the Final Design Report plans, the riprap apron at outfall CSO 194 will be 19.5 feet wide at the outfall, extend 36 feet from the outlet, and widen to approximately 41 feet at the end of the riprap apron.

An additional five feet of imported aggregate will be placed on top of the ROD/ESD cap in most areas and, in areas near CSO 194 at the west end of the canal, two feet of riprap or material meeting the Wisconsin Department of Transportation (WisDOT) Select Crushed Material Specification (Select Crushed) underlain by nonwoven geotextile will be placed on top of the ROD/ESD cap. The design specifics for the Betterment work in the canal are set forth in the Chapter 30 permit application for the Betterment Project. The following is a summary of the key aspects of the design that relate to the COMMP:

1. To accommodate both the Betterment Project fill placement at the west end of the canal and flow from the CSO 194 (formerly CSO-211), a subaqueous conveyance channel will be constructed on top of the ROD/ESD cap in the western portion of the canal, as shown in Appendix B. The channel will extend approximately 200 feet downstream of the CSO 194 (formerly CSO-211) riprap apron, which will also be constructed on top of the ROD/ESD cap. The channel cross-section will be trapezoidal, with a base width and elevation approximately equal to that of the riprap apron. The channel will be lined with two feet of riprap or Select Crushed, and underlain by nonwoven geotextile, placed on top of the ROD/ESD cap, throughout its cross-section. The channel sides will slope upwards at 4H:1V, terminating at the elevation of the betterment fill material (Appendix B).
2. Based on the most recent United States Army Corps of Engineers (ACE) survey of the surface of the canal (2017), the sediment surface elevation is greater on the west end than the elevation observed during the remedial investigation (2008) and used in the remedial design. To allow for flow from CSO 194 (formerly CSO-211), up to seven feet of sediment will be relocated and capped (ROD/ESD cap) to build the subaqueous conveyance channel. The relocation will be conducted pursuant to Wis. Admin. Code ch. NR 718. WDNR approved relocation of sediment associated with subaqueous conveyance channel construction in an August 31, 2018 letter to Miller (Appendix C). U.S. EPA confirmed in an April 30, 2018 email to OBG that the sediment relocation associated with subaqueous conveyance channel construction is not considered a design change by U.S. EPA (Appendix C).

3 CAP MONITORING AND MAINTENANCE

Post-construction monitoring and contingency response actions are required for the cap areas that make up the Site. The three monitoring and maintenance areas include:

- Paved Engineering Control Area (west of the canal, in the historic location of the wire reclamation furnace)
- Unpaved Engineering Control Area (between the Paved Engineering Control Area and the Subaqueous Engineering Control Area, including the 12-inch Scrape area and the western bank of the canal above the OHWM)
- Subaqueous Engineering Control Area (from the 11th Street Bridge to the west terminus of the canal)

Results of monitoring efforts will be recorded and provided to the WDNR in Post-Construction Monitoring Reports. Monitoring activities and responses are described in the following sections for each of the areas.

3.1 PAVED ENGINEERING CONTROL AREA MONITORING

The Site includes a Paved Engineering Control Area at the west end of the canal. The condition of the Paved Engineering Control Area will be documented through visual inspection of the area. Since regular facility operations in this area will continue following construction, future monitoring will be performed in accordance with the existing facility-wide Cap Maintenance and Hard Surfacing Plan approved by WDNR on September 1, 2009 (Appendix A). Annual inspection and maintenance logs will be maintained per the example provided in Exhibit A to the Cap Maintenance and Hard Surfacing Plan.

3.2 UNPAVED ENGINEERING CONTROL AREA MONITORING

The Site includes an unpaved upland soil cap at the west end of the canal. The condition of the Unpaved Engineering Control Area will be documented through visual inspection. No operations occur in this area; therefore, reviews will be performed during the monitoring events for the Subaqueous Engineering Control Area as described in Section 3.3. A modified version of WDNR Form 4400-305 (Appendix D) will be prepared and completed for each inspection event and submitted to the WDNR as an attachment to the Post-Construction Monitoring Reports.

Monitoring will verify the status of the two main components of the Unpaved Engineering Control Area: the vegetative area and the west end Canal slope riprap above the OHWM. In the vegetative zone, monitoring will identify potential erosion and verify vegetative growth. The riprap zone above the OHWM on the west bank of the canal will be inspected to identify potential erosion and any loss of riprap into the canal. If needed, the riprap will be repaired in accordance with the Technical Specifications, provided in Appendix H of the Final Design Report.

3.3 SUBAQUEOUS ENGINEERING CONTROL AREA MONITORING

Monitoring events associated with the construction phase of the project are described in the CQAPP. The post-closure monitoring events are described in the LTCP. The post-construction, pre-closure monitoring events will be conducted as described by this COMMP and reported to the WDNR within 180 days following the monitoring event. An approval request for cessation of COMMP activities will be submitted to the WDNR with the Site closure request. At the time of closure, the requirements of the COMMP will be superseded by WDNR's post-closure continuing obligations. The anticipated post-closure continuing obligations for the Site are described in the Long-Term Care Plan (LTCP)

Post-construction, pre-closure Subaqueous Engineering Control Area and erosion monitoring events will be performed annually. In addition, monitoring will be conducted following abnormal weather events (e.g., rainfall greater than the 25-yr, 24-hr storm event). The 25-year, 24-hour storm events will be defined by the NOAA Precipitation Frequency Data Server (PFDS) at the time of the event (currently >4.56 inches of rainfall within 24 hours). Storm-related monitoring events will occur within 60 days of the storm event, weather conditions permitting. Storm-related monitoring events will satisfy the annual monitoring event requirement, but if an

annual event has already been performed, additional event(s) must be conducted that year if rainfall greater than the 25-year, 24-hour storm event occurs.

3.3.1 Purpose

Post-construction monitoring is designed to verify the remedial action cap remains in place by examining the betterment material placed on top of the remedial action cap. Verification of the presence of the betterment material will confirm that the ROD/ESD cap is in place and, thus, the ROD/ESD remedy remains protective of human health and the environment. Following documentation of construction completion, poling surveys, as described below, will be the primary method to demonstrate that material placed is intact.

3.3.2 Poling Surveys

Bathymetric surveys will have been completed for the ROD/ESD cap during construction, as required by the U.S. EPA approved design. These surveys also will include the Betterment fill. The purpose of the bathymetric surveys is to document the as-built elevations of the ROD/ESD cap and Betterment fill to obtain WDNR approval of construction. The survey methods and results will be incorporated into the Construction Documentation Report to be submitted and reviewed by WDNR under the Negotiated Agreement.

The purpose of post-construction surveys is to demonstrate that the ROD/ESD cap remains in place. Since the ROD/ESD cap will be buried beneath the Betterment Project fill material, a post-construction bathymetric survey of the ROD/ESD cap is not a feasible verification method. The post-construction monitoring requirement will be met by demonstrating that Betterment Project fill material remains in place. If the Betterment Project fill material remains in place, then the ROD/ESD cap also remains in place.

Post-construction verification monitoring events will consist of a poling survey of the Betterment Project fill material, the conveyance channel, and the CSO 194 (formerly CSO-211) riprap apron at approximately 25 verification locations, as shown in Figure 3. A real-time kinematic (RTK) global positioning system (GPS) will be used to navigate to proposed locations and log actual poling locations. The poling rod will be used to confirm the presence of riprap or Select Crushed atop the geotextile in the CSO 194 apron and conveyance channel, and confirm the presence of Select Crushed throughout the rest of the Subaqueous Engineering Control Area. As described in the Technical Specifications included in the Chapter 30 Permit Application for the Betterment project, the majority of Betterment fill material to be placed on top of the ROD/ESD cap will consist of aggregates that entirely pass the 1.5-inch sieve. However, the top few inches of the Betterment fill material (Betterment topping) will consist of coarser aggregate that is equivalent to the WisDOT Spec 312 for Select Crushed Material. If poling indicates that riprap or Select Crushed is not present atop the geotextile in the CSO 194 apron and conveyance channel (bare geotextile), additional evaluation or potential corrective action will be conducted, as necessary. Similarly, if poling indicates the absence of Betterment topping (Select Crushed) in the Subaqueous Engineering Control Area outside of the conveyance channel, additional evaluation or potential corrective action will be conducted, as necessary. A flowchart outlining the requirements for poling survey verification of fill material is provided as Figure 4.

The poling rod will also be used to measure canal water depth atop the voluntary betterment fill material. Water depth will be subtracted from canal water elevation to determine the elevation of the top of the Betterment Project material. Canal water elevation will be measured using a gaging station to be installed during construction. The elevations of the top of Betterment Project material will be compared to the elevations provided in the bathymetric and poling survey(s) completed during construction in the same or similar locations.

Post-Construction Monitoring Reports will be submitted to the WDNR following each monitoring event to document the poling survey results. If the presence of riprap or Select Crushed is not verified at all poling locations, additional evaluation conducted to demonstrate that betterment material remains will be discussed in these reports. If additional evaluation indicates the absence of betterment material, corrective actions, likely to include placement of additional aggregate fill materials in the affected areas, will be discussed in these reports. Inspection logs for the Unpaved Engineering Control Area, as discussed in Section 3.2, will be attached to each Post-Construction Monitoring Report.

3.4 POST-CONSTRUCTION PLAN MODIFICATION PROCESS

The COMMP sets forth the post-construction maintenance and monitoring requirements based on the remedial design, ROD/ESD, and the Chapter 30 betterment approach. It is understood that the final long-term care plan under Wis. Stat. 292.12(d)(1) for the Subaqueous Engineering Control Area and the Unpaved Engineering Control Area will be issued at the time WDNR approves closure under Wis. Admin. Code ch. NR 726. At the time of closure, the requirements of the COMMP will be superseded by WDNR's post-closure continuing obligations. The anticipated continuing obligations for the Site are described in the Long-Term Care Plan (LTCP).

Given the potential for additional fill material to be added to the canal above the Betterment (i.e. wetland construction) prior to Site closure, as well as the expectation that post-construction maintenance and monitoring activities will demonstrate that the caps remain intact, physically stable, and protective over time, COMMP modifications may be appropriate as the monitoring occurs. Alternative monitoring and documentation activities associated with the Unpaved Engineering Control Area and the Subaqueous Engineering Control Area, and/or frequency of these activities, may be proposed, as warranted, through a COMMP modification submitted to the WDNR. Proposed alternative COMMP activities and/or schedules would continue to confirm the stability and protectiveness of the caps until the COMMP is superseded.

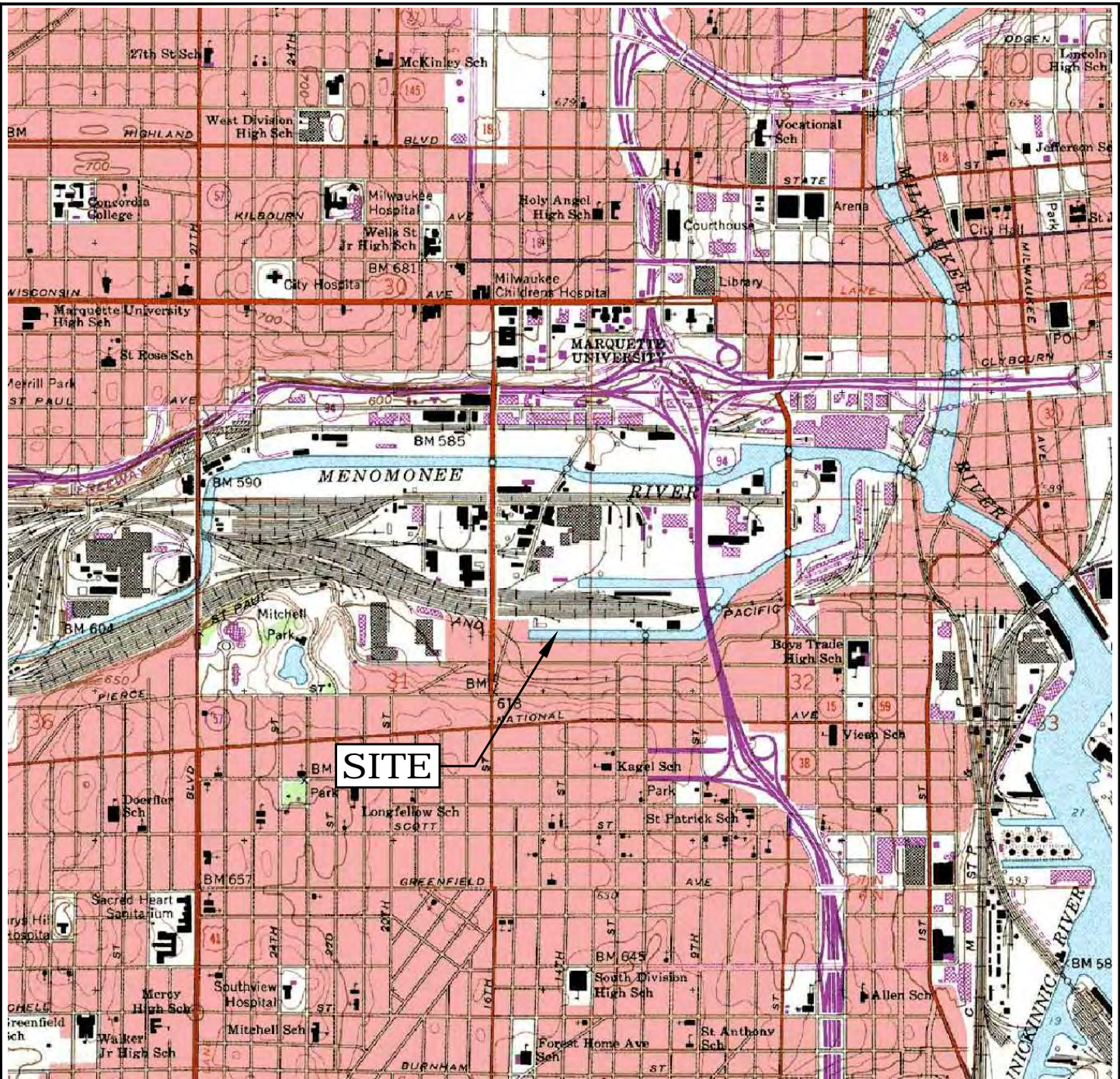
3.4 POST-CONSTRUCTION PLAN MODIFICATION PROCESS

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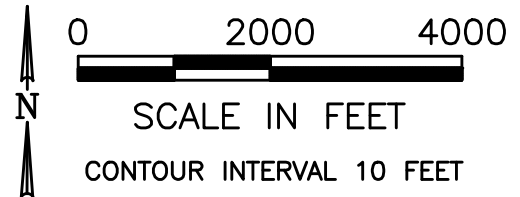
Given the potential for additional fill material to be added to the canal above the Betterment (i.e. wetland construction) prior to Site closure, as well as the expectation that post-construction maintenance and monitoring activities will demonstrate that the caps remain intact, physically stable, and protective over time, COMMP modifications may be appropriate as the monitoring occurs. Alternative monitoring and documentation activities associated with the Unpaved Engineering Control Area and the Subaqueous Engineering Control Area, and/or frequency of these activities, may be proposed, as warranted, through a COMMP modification submitted to the WDNR. Proposed alternative COMMP activities and/or schedules would continue to confirm the stability and protectiveness of the caps until the COMMP is superseded.



Figures



SOURCE: EARTHVISIONS U.S. TERRAIN SERIES,
 © EARTHVISIONS, INC. 603-433-8500.
 USGS 7.5 MINUTE QUADRANGLE,
 MILWAUKEE. DATED 1958.
 PHOTOREVISED 1971.



SITE LOCATION MAP

BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 CAP OPERATIONS, MAINTENANCE, AND MONITORING PLAN
 REVISION 3
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN

PROJECT NO.
21177.1

DRAWING NO.
2117-7-A01

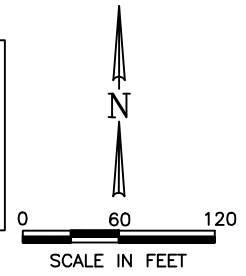
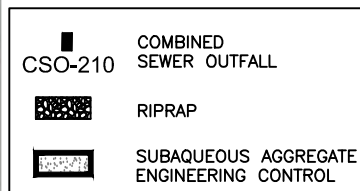
FIGURE NO.
1

DRAWN: DMD DATE: 05/04/15 CHK'D: Y_Z DATE: 02/02/16 APP'D: RJB DATE: 02/02/16

Apr 20, 2017 4:16pm PLOTTED BY: Millie AM SAVED BY: boetjen
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 REFERENCES:



Jul 12, 2017 2:12pm PLOTTED BY: MillispAM SAVED BY: MillispAM
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 REFPS:



- SOURCE NOTES:**
1. THE DIGITAL DRAWING IMAGE WAS CREATED FROM BING MAPS FOR ARCGIS DESKTOP. (c) 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS.
 2. COORDINATES BASED ON MILWAUKEE COUNTY COORDINATE REFERENCE SYSTEM NAD 83(97).

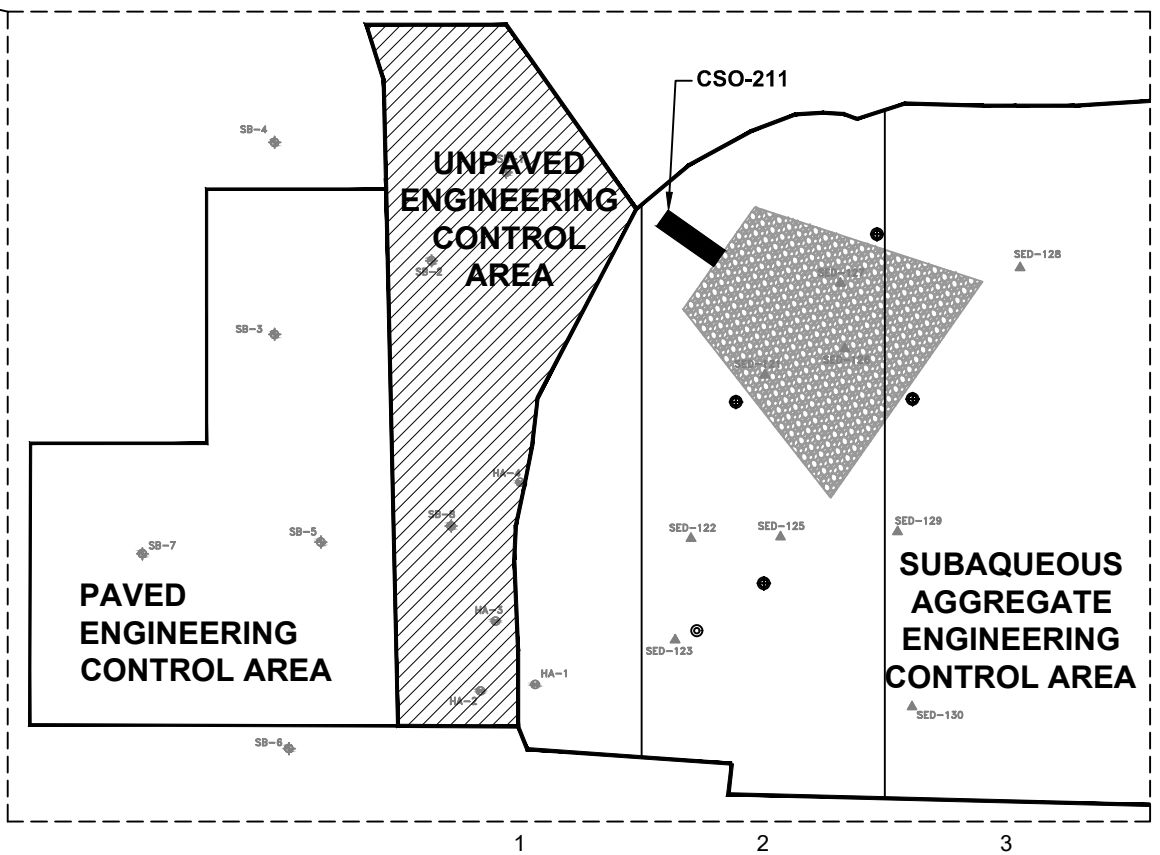
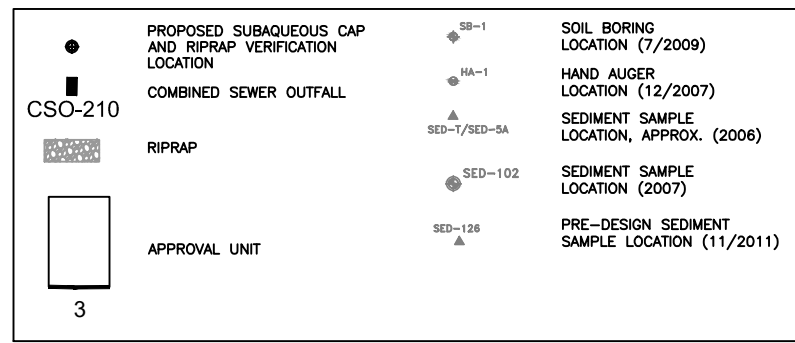
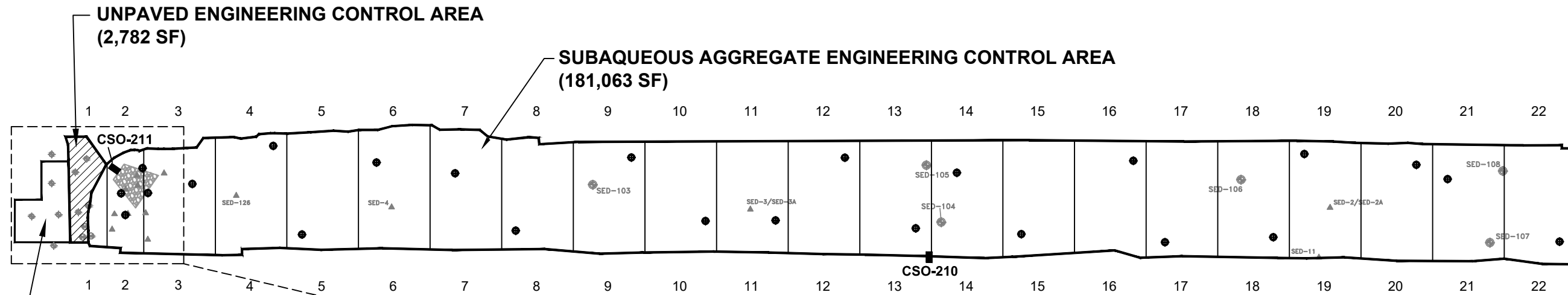
DRAWN BY:	DMD	DATE:	07/29/16
CHECKED BY:	Y_Z	DATE:	07/29/16
APPROVED BY:	RJB	DATE:	07/29/16
DRAWING NO: 2117-7.1-B02		REFERENCE: See Info Block	

**BURNHAM CANAL
 SITE LAYOUT**
 CAP OPERATIONS, MAINTENANCE AND MONITORING PLAN
 REVISION 3
 BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN

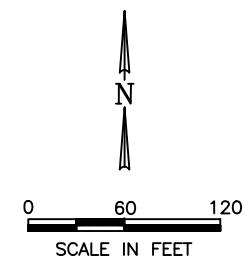


PROJECT NO.	21177.1
FIGURE NO.	2

Jul 12, 2017 2:22pm PLOTTED BY: MillspAM SAVED BY: MillspAM
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 WRCFS:



WEST END AREA DETAIL
 SCALE = 1:30



SOURCE NOTES:
 1. COORDINATES BASED ON MILWAUKEE COUNTY COORDINATE REFERENCE SYSTEM NAD 83(97).

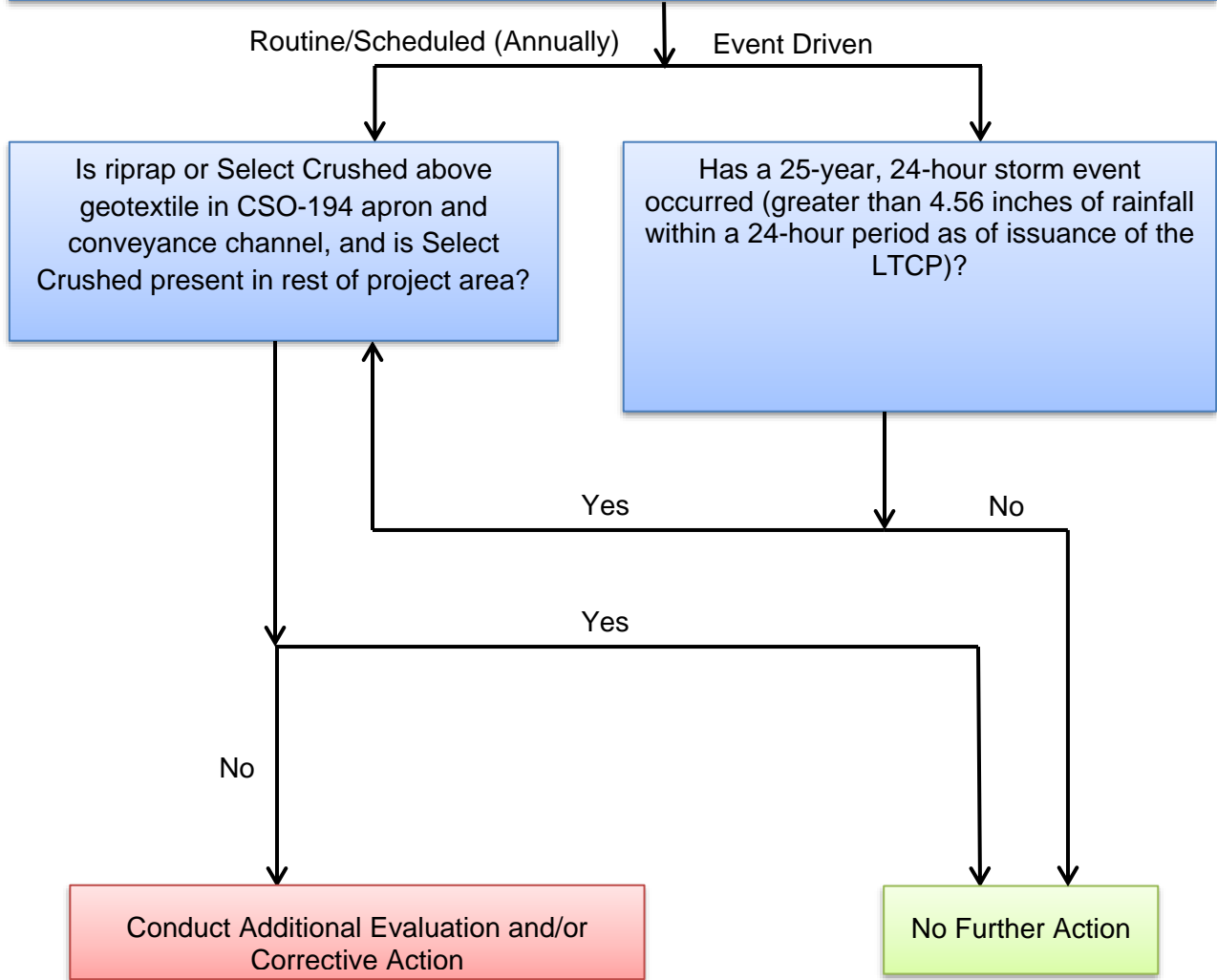
DRAWN BY:	DMD	DATE:	07/29/16
CHECKED BY:	Y_Z	DATE:	07/29/16
APPROVED BY:	RJB	DATE:	07/29/16
DRAWING NO: 2117-7.1-B03		REFERENCE: See Info Block	

BURNHAM CANAL
SAMPLE LOCATION PLAN
 REVISION 3
 CAP OPERATIONS, MAINTENANCE AND MONITORING PLAN
 BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN

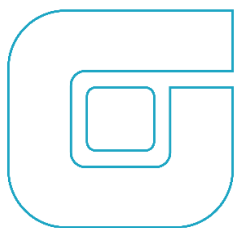


PROJECT NO.	21177.1
FIGURE NO.	3

Poling Survey Verification of Fill Material



Notes:
 Flowchart developed to summarize COMMP Section 3.3.2
 Event driven monitoring events will satisfy the annual monitoring requirement, but annual monitoring will not satisfy the event driven monitoring requirement
 Flowchart may be revised with WDNR approval of COMMP modification, per COMMP Section 3.4



POLING SURVEY VERIFICATION OF FILL MATERIAL FLOWCHART

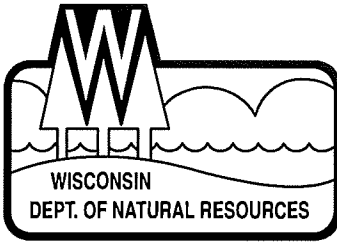
BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN

PROJECT NO.
67830.830

FIGURE NO.
4



Appendix A
Cap Maintenance and
Hard Surfacing Plan



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128
FAX 414-263-8606
Telephone 414-263-8500
TTY Access via relay - 711

September 1, 2009

In Reply, Refer to: FID# 241213720
BRRTS# 02-41-246029
BRR/ERP

Mr. Joe Kovacich
Vice President-Administration
Miller Compressing
Post Office Box 369
Milwaukee, WI 53201

Re: Remedial Action / Hard Surfacing Plan Approval for Miller Compressing Site –
Bruce Street Facility, 1640 W Bruce Street, Milwaukee, WI

Dear Mr. Kovacich:

As requested by Miller Compressing, the Wisconsin Department of Natural Resources (Department) has reviewed the Hard Surfacing Plan you submitted, dated June 15, 2009. We also received a request from your attorney, Mark Thimke at Foley and Lardner LLP, dated April 9, 2009. The require review fee was received.

You have requested Department approval of a plan to conduct the capping work in a logical, step-wise fashion consistent with Miller Compressing's business plans and activities. Further, the capping work is intended to address soil contamination impacts associated with scrap operations. The Plan contains a set of capping alternatives for areas that Miller Compressing elects to bring into the hard surfacing program at the Bruce Street facility. A copy of the Cap Maintenance / Hard Surfacing Plan (Plan) including a map (Exhibit B) of the areas that are subject to this letter is attached to this letter.

Background

In 1993, an inspector visiting the Miller Compressing property observed that a customer released liquids onto the ground in the area known as the "West Yard." Miller Compressing investigated and remediated the area in which the release occurred. Following that work, a meeting was held with the Department on January 10, 1996, to discuss the entire West Yard. At the meeting, Miller Compressing proposed to address other portions of the West Yard by hard surfacing/capping the yard as operations would allow. Plans for the hard surfacing/capping work were submitted to the Department on July 1, 1997. As opportunities arose, Miller Compressing undertook work consistent with the 1997 plans. On July 13, 2007, the Department issued a "Plan Approval" letter for hard surfacing of the "West Yard". On December 16, 2008, the Department received documentation that hard surfacing of the "West Yard" had been completed.

Department Concurrence

Over the last several years, the Department has worked closely with Wisconsin metal recyclers to develop a cooperative program for addressing soil contamination associated with historic operations at these sites. The Department acknowledges the importance of recycling operations

in the process of recycling and reusing valuable resources that would otherwise be landfilled. At the same time, the industry recognizes the need to take reasonable actions consistent with the nature of metal recycling to protect the environment. The West Yard is a continuing example of this cooperative effort.

Miller Compressing now plans to install hard surfacing on other portions of the site as the opportunity to complete the hard surfacing/capping work arises in those areas. The hard surface cap will be constructed as follows:

1. Currently unpaved operating areas would meet a specification of 5 inches of hard surfacing (concrete or asphalt) in addition to a minimum of 4 to 7 inches of stone base. This specification is similar to that approved by the Department in July 2007 for the "West Yard."
2. Existing hard surfaced areas will be improved, if necessary, so as to have a 9 to 12 inch cap. This cap will be a combination of existing hard surfacing and crushed stone base. Existing hard surfaced areas will be improved, if necessary, so as to have a minimum of 5 inches of hard surfacing, asphalt or concrete.
3. Landscape areas. There are several landscape areas at the Bruce Street facility. Most of these areas are located along the entrance to the Bruce Street/Greenwood Scale and near Mitchell Park. These areas were not used for scrap operations and will continue to be maintained with mulch, plantings and vegetation.

The Department concurs with the approach of hard surfacing/capping the areas shown on Exhibit B of the Plan. Hard surfacing/capping provides a barrier to direct contact with contaminants that may be found in the soil.

GIS Registry

This site will be listed on the Remediation and Redevelopment Program's GIS Registry. The specific reasons are summarized below:

- Residual soil contamination exists that must be properly managed should it be excavated or removed
- Before the land use may be changed from a metal recycling facility, additional environmental work **may be required to** be completed
- Pavement, an engineered cover or a soil barrier must be maintained over contaminated soil and the state must approve any changes to this barrier

This letter and information that was submitted with your Remedial Action / Hard Surfacing Plan will be included on the GIS Registry. To review the sites on the GIS Registry web page, visit the RR Sites Map page at <http://dnr.wi.gov/org/aw/rr/gis/index.htm>. If the property is listed on the GIS Registry because of remaining contamination and you intend to construct or reconstruct a well, you will need prior Department approval in accordance with s. NR 812.09(4)(w), Wis. Adm. Code. To obtain approval, Form 3300-254 needs to be completed and submitted to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained on-line <http://dnr.wi.gov/org/water/dwg/3300254.pdf> or at the web address listed above for the GIS Registry.

Please be aware that pursuant to s. 292.12 Wisconsin Statutes, compliance with the requirements of this letter is a responsibility to which you and any subsequent property owners must adhere.

You must pass on the information about these continuing obligations to the next property owner or owners. If these requirements are not followed or if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety, welfare, or the environment, the Department may take enforcement action under s. 292.11 Wisconsin Statutes to ensure compliance with the specified requirements, limitations or other conditions related to the property or this case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code. The Department intends to conduct inspections in the future to ensure that the conditions included in this letter including compliance with referenced maintenance plans are met.

Cover or Barrier

Pursuant to s. 292.12(2)(a), Wis. Stats., the pavement or other impervious cap that currently exists in the location shown on the attached map shall be maintained in compliance with the **attached maintenance plan** in order to minimize the infiltration of water and prevent groundwater contamination that would violate the groundwater quality standards in ch. NR 140, Wis. Adm. Code, and to prevent direct contact with residual soil contamination that might otherwise pose a threat to human health. If soil in the specific locations described above is excavated in the future, the property owner at the time of excavation must sample and analyze the excavated soil to determine if residual contamination remains. If sampling confirms that contamination is present the property owner at the time of excavation will need to determine whether the material is considered solid or hazardous waste and ensure that any storage, treatment or disposal is in compliance with applicable statutes and rules. In addition, all current and future owners and occupants of the property need to be aware that excavation of the contaminated soil may pose an inhalation or other direct contact hazard and as a result special precautions may need to be taken during excavation activities to prevent a health threat to humans.

The attached maintenance plan and inspection log are to be kept up-to-date and on-site. Please submit the inspection log to the Department upon request.

Conditions

The Department's concurrence with the hard surfacing/capping program for the West Yard is specifically conditioned on the following:

1. The site will continue to be utilized as part of a metal recycling facility;
2. Capping of areas of the Bruce Street facility will occur when operations allow for the work to proceed. Some operations are not readily amenable to capping due to the existing placement of equipment. As opportunities allow for capping to occur (for example, relocation of operations, change in activities or an ownership change), Miller Compressing will move ahead with the work.
3. The cap will be constructed and documented according to the Plan.
4. It is anticipated that the cap design may vary depending upon the nature of the operations in the area being addressed. The cap should be designed to withstand the anticipated use(s) of the area and minimize premature cap degradation.
5. Miller Compressing may, on a case-by-case basis, submit area-specific cap designs that vary from the approved designs or which incorporate newly available capping materials. These case-by-case designs will require Departmental pre-approval before they may be used by Miller Compressing.
6. Capping activities will be self-implementing. Once completed, Miller Compressing will notify the Department of the area that was capped and the cap design utilized in the area

- (including the type and amount of material that has been added and the pre-existing pavement conditions present prior to final capping).
7. For the capped areas, Miller Compressing will comply with the GIS Registry requirements noted above and will notify the next property owner of the requirements set forth in this letter.
 8. Closure of the site will not be granted until all environmental media are addressed, but for purposes of direct contact risk, capping will be considered sufficient.
 9. Additional investigation of soil and/or groundwater may be required before this site can be closed per NR 726.

Please note that this letter is not intended to address any issues related to investigation, remediation or any other issues related to the contamination that is the subject of the Superfund Alternatives Program which you are working on with the Environmental Protection Agency (EPA) and Margaret Brunette of the Department.

The Department appreciates efforts to restore the environment at this site. If you have any questions or concerns regarding this letter, please contact Andy Boettcher at (414) 263-8541.

Sincerely,



James A Schmidt
SER Remediation & Redevelopment Team Supervisor

CC: Mark Thimke, Foley and Lardner, 777 East Wisconsin Avenue, Milwaukee, WI 53202

Attachment: 1) Cap Maintenance / Hard Surfacing Plan (Plan), dated September 2009

Cap Maintenance / Hard Surfacing Plan

Miller Compressing Company
1640 W. Bruce Street
Milwaukee, Wisconsin 53201

FID # 241213720
BRRT# 02-41-246029

This document is the Cap Maintenance / Hard Surfacing Plan (herein referred to as the "Plan") for Miller Compressing's Bruce Street operation in accordance with the requirements of s NR 724.13(2), Wisconsin Administrative Code. The maintenance activities relate to the Plan established with the Wisconsin Department of Natural Resources (WDNR) to cap former/existing scrap handling/processing operations at this location.

More site-specific information about this property may be found in:

- Case file in the WDNR Southeastern regional office (FID# 241213720)
- BRRTS on the Web (<http://dnr.wi.gov/org/aw/rr/brrts/index.htm>)
- GIS Registry PDF file for further information on the nature and extent of contamination
- The WDNR project manager for Milwaukee County

Description of Contamination

Past scrap handling/processing operations along with past heavy industrial use resulted in elevated levels of RCRA metals, PAHs, petroleum products, PCBs and chlorinated solvents in near surface soils (2-4 feet below ground surface). The purpose of this Plan is to outline the requirements that Miller Compressing Company must follow when it requests that an area be added to the Plan and to describe the inspection and maintenance requirements for the "capped" areas of the site. Miller Compressing must document the compliance with the Plan and must maintain the Hard Surface Cap (herein referred to as the "Cap") agreed to with the WDNR.

Description of Hard Surface Cap

The extent of the Site is outlined on the attached map (Exhibit B) and the extent of the Cap is outlined on the subsequent exhibits designated starting with B (such as B-1, B-2, etc.) as areas are added into the Plan. The Cap will be 9-12 inches thick, consisting of 4-7 inches of suitable sub grade material and a minimum of 5 inches of hard surfacing which maybe asphalt or concrete. A more detailed description of the Cap is described in the WDNR letter dated September 1, 2009.

The proposed Cap over the soil contamination serves as a barrier to prevent direct human contact with residual soil contamination that might otherwise pose a threat to human health. This Cap will also act as a partial infiltration barrier to minimize future soil to groundwater contamination migration that would violate the groundwater standards in ch NR 140, Wisconsin Administrative Code.

Based on the current and future use of the property as a scrap processing facility, the barrier should function as intended unless disturbed.

Annual Inspection

All areas included in the Plan must be inspected annually, preferably in the spring after all snow and ice has melted and should identify deterioration, cracks or other potential problems that can cause exposure to underlying soils and evaluate damage due to settling, exposure to the weather, wear from traffic or operations, increasing age and other factors. Any area where soils have become or are likely to become exposed will be documented in an inspection log which will include recommendations for necessary repairs and the documentation of the completion of those repairs. The inspections will be performed by Miller Compressing or their designated representative. The Hard Surface Cap Inspection and Maintenance Log is attached as Exhibit A. The inspection log will be kept at Miller Compressing Company and available for submittal or inspection by the WDNR representative upon their request during normal business hours.

Maintenance Activities

If problems are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. Repairs may include patching and filling or larger resurfacing or construction activities. In the event that necessary maintenance activities expose the underlying soil, Miller Compressing Company must inform maintenance workers of the direct contact exposure hazard and provide them with appropriate personal protection equipment ("PPE"). Miller Compressing Company must notify the WDNR prior to any excavation activities. All soils being removed from the site must be treated, stored and disposed of by Miller Compressing Company in accordance with applicable local, state and federal law.

In the event the Cap overlying the contaminated soils is removed or replaced, the replacement Cap must meet the specifications stated in the WDNR letter dated September 1, 2009. Any replacement Cap will be subject to the same maintenance and inspection guidelines as stated in this Plan unless indicated otherwise by the WDNR or its successor.

The property owner, in order to maintain the integrity of the Cap, will maintain a copy of this Plan on-site and make it available to all interested parties (i.e. employees, contractors, future property owners, etc.) for viewing.

Prohibition of Activities and Notification of WDNR Prior to Actions Affecting the Cap

The following activities are prohibited on any portion of the property that Miller Compressing Company has selected to include in the Hard Surface Plan, unless prior notification to the WDNR has been made: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; or 6) construction or placement of a building or other structure which causes disturbance of the Cap.

Amendment or Withdrawal of Cap Maintenance Plan

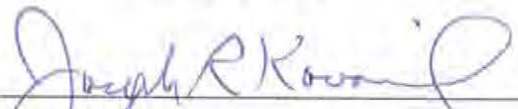
This Maintenance Plan can be amended or withdrawn by the property owner and its successors with the written approval of the WDNR

Contact Information

September 2009

Site Owner and Operator: Miller Compressing Company
1640 W. Bruce Street
Milwaukee, Wisconsin 53204
414-671-5980

Signature:



Name:

JOSEPH R KOVACICH


Title:

VICE PRESIDENT

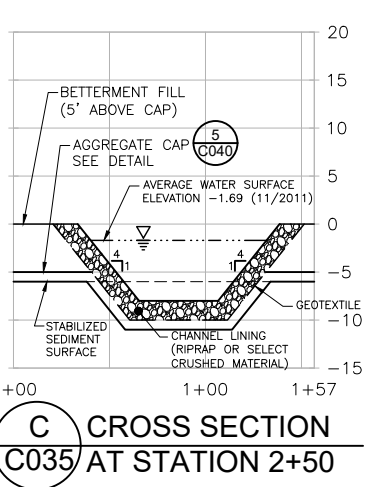
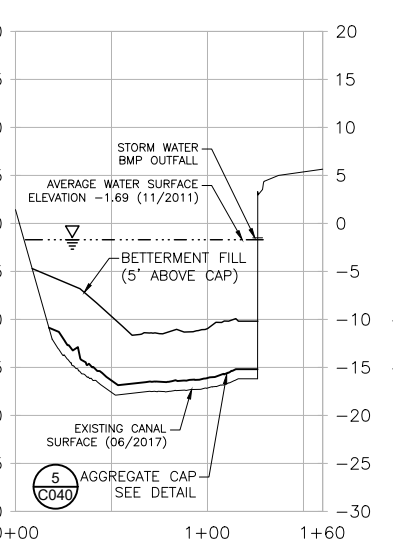
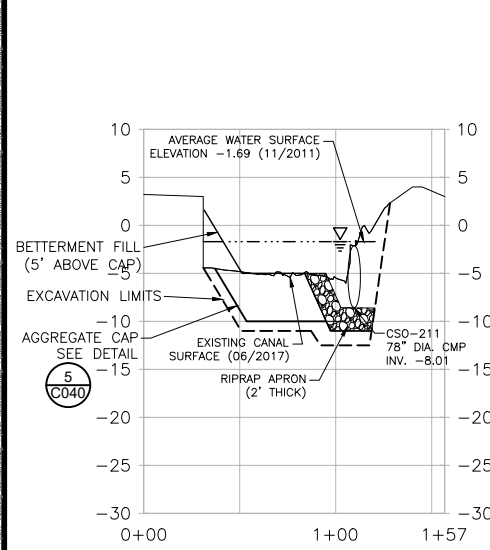
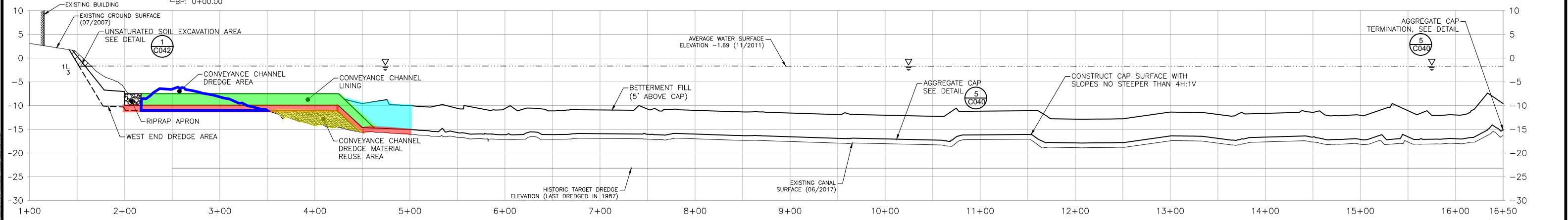
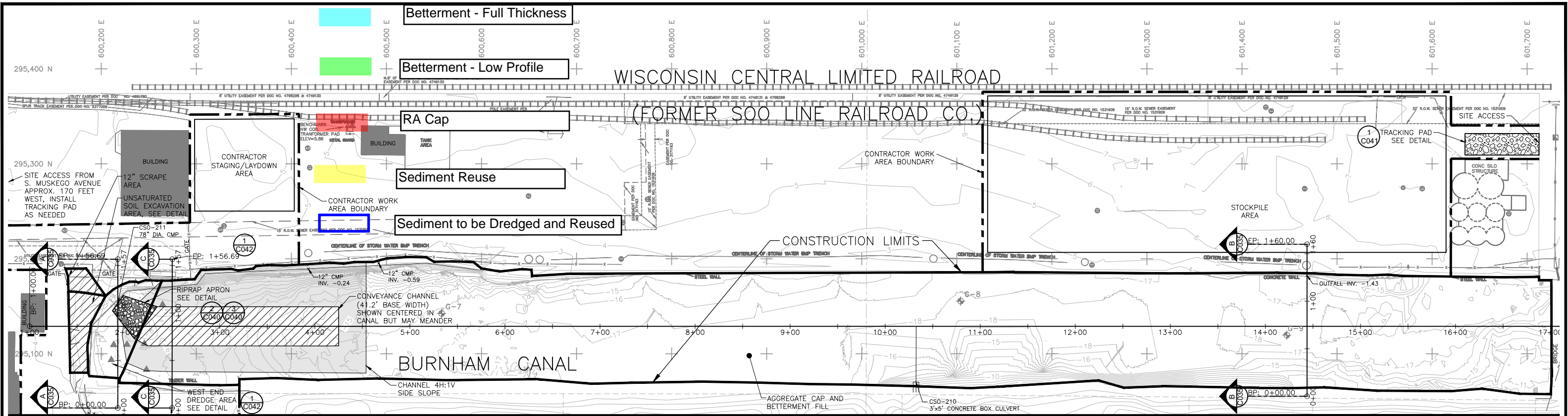
9/1/09

WDNR:

Andrew Boettcher
WDNR SE Regional Office
2300 N. MLK Jr Drive
Milwaukee, Wisconsin 53212-3128



Appendix B
Sheet C035 and Reuse
Cross-Sections from NR
718.15 Low Hazard
Exemption Request



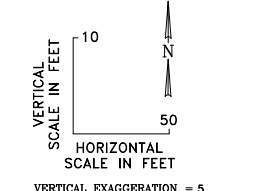
— 10 —	PRECONSTRUCTION CONTOUR	● SED-102	SEDIMENT SAMPLE LOCATION (2007)	— G —	GAS
- - -	RIGHT-OF-WAY (R.O.W.)/ PARCEL LINE	● G-6	GEOTECHNICAL SAMPLE LOCATION (2007)	— G-7 —	PRE-DESIGN GEOTECHNICAL SAMPLE LOCATION (11/2011)
- - -	SECTION LINE	● G-7	PRE-DESIGN GEOTECHNICAL SAMPLE LOCATION (11/2011)	▲	PRE-DESIGN SEDIMENT SAMPLE LOCATION (11/2011)
- - -	CONTRACTOR WORK AREA	— x —	FENCE	— S —	SANITARY SEWER
~ ~ ~	TREES & BRUSH	— B —	BUILDING	— STH —	STORM SEWER
◆	SOIL BORING LOCATION (7/2009)	— OHW —	OVERHEAD WIRE	○	MANHOLE
◆ SW-01	SURFACE WATER SAMPLE LOCATION (12/2007)	— TEL —	TELEPHONE	●	CATCH BASIN
◆ HA-4	HAND AUGER LOCATION (12/2007)	— ELC —	ELECTRIC	—	RAILROAD TRACKS
▲ SED-T/SED-5A	SEDIMENT SAMPLE LOCATION, APPROX. (2006)	— W —	WATER MAIN		

CONSTRUCTION NOTES:

1. THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.
2. LIMITS OF WEST END UNSATURATED SOIL AND DREDGE AREA DEPENDENT ON WATER ELEVATION, TO BE VERIFIED PRIOR TO WORK.

SOURCE NOTES:

1. EXISTING CONDITIONS NORTH AND WEST OF THE BURNHAM CANAL APPROXIMATE EDGE OF WATER CREATED FROM DIGITAL BASE FILE TM601D50.DWG/TM601D50RED, SURVEYED BY NATIONAL SURVEY & ENGINEERING ON 07/18/2007.
2. EXISTING CONTOURS WITHIN THE BURNHAM CANAL BASED ON BATHYMETRY SURVEY COMPLETED BY THE U.S. ARMY CORPS OF ENGINEERS ON 06/27/2017.
3. COORDINATE SYSTEM IS BASED ON NAD 83 HARN WISCONSIN COUNTY METER FEET. THE VERTICAL DATUM IS EQUAL TO THE NGVD 1929 ELEVATION MINUS 580.603.
4. CONTOURS SOUTH OF THE CANAL FROM MCAMLIUS (MILWAUKEE COUNTY AUTOMATED MAPPING AND LAND INFORMATION SYSTEM) DATA TYPE: ARCGIS MAP SERVICE, SERVER: [HTTP://MAPS.MILWAUKEECOUNTY.ORG/ARCGIS/SERVICES](http://MAPS.MILWAUKEECOUNTY.ORG/ARCGIS/SERVICES).



CONTACT DIGGERS HOTLINE PRIOR TO ANY UNDERGROUND WORK ON-SITE
CALL 811 OR (800) 242-8511
(262) 432-7910
(877) 500-9592 (EMERGENCY ONLY)

A CROSS SECTION C035 AT STATION 1+93

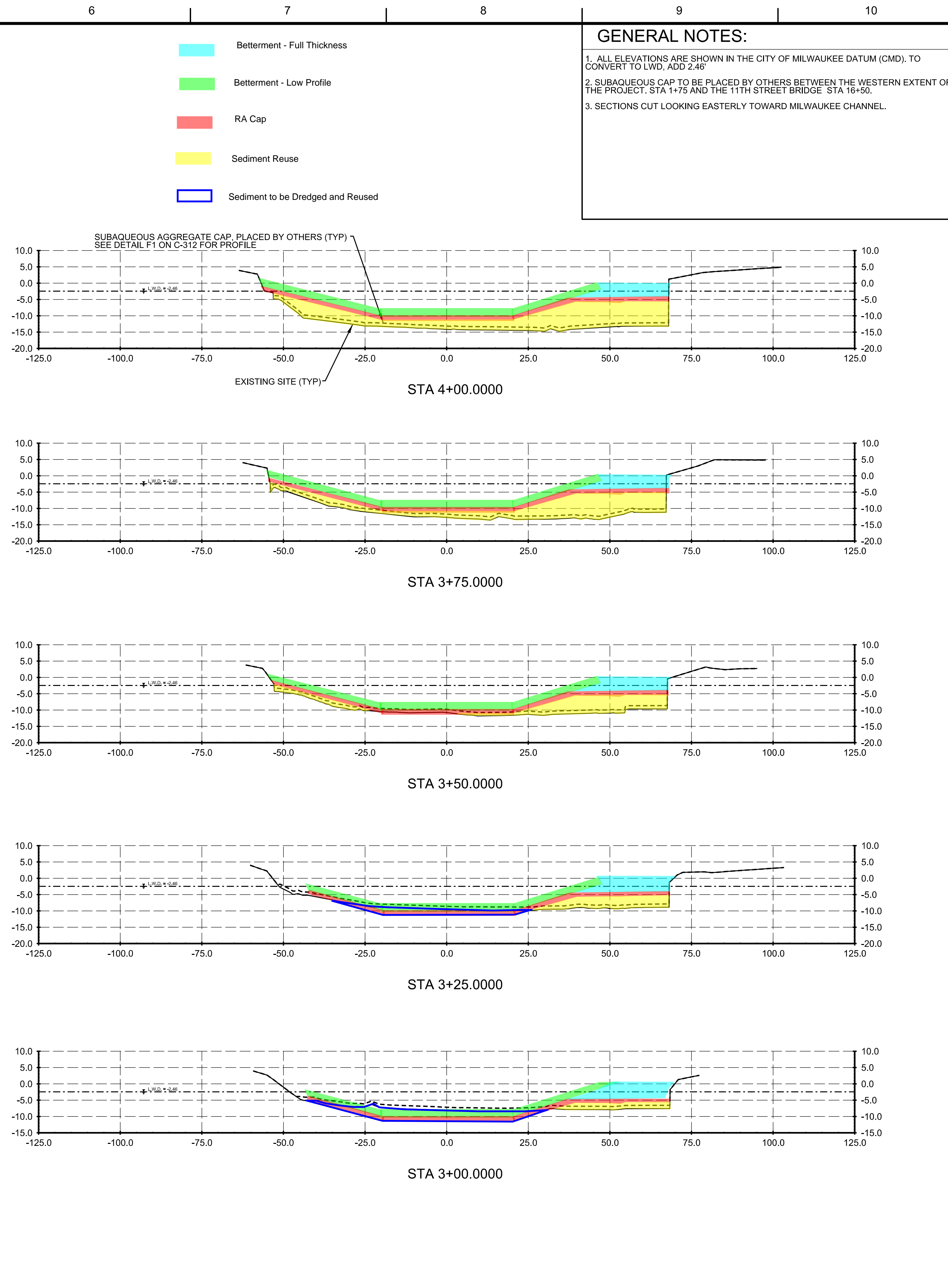
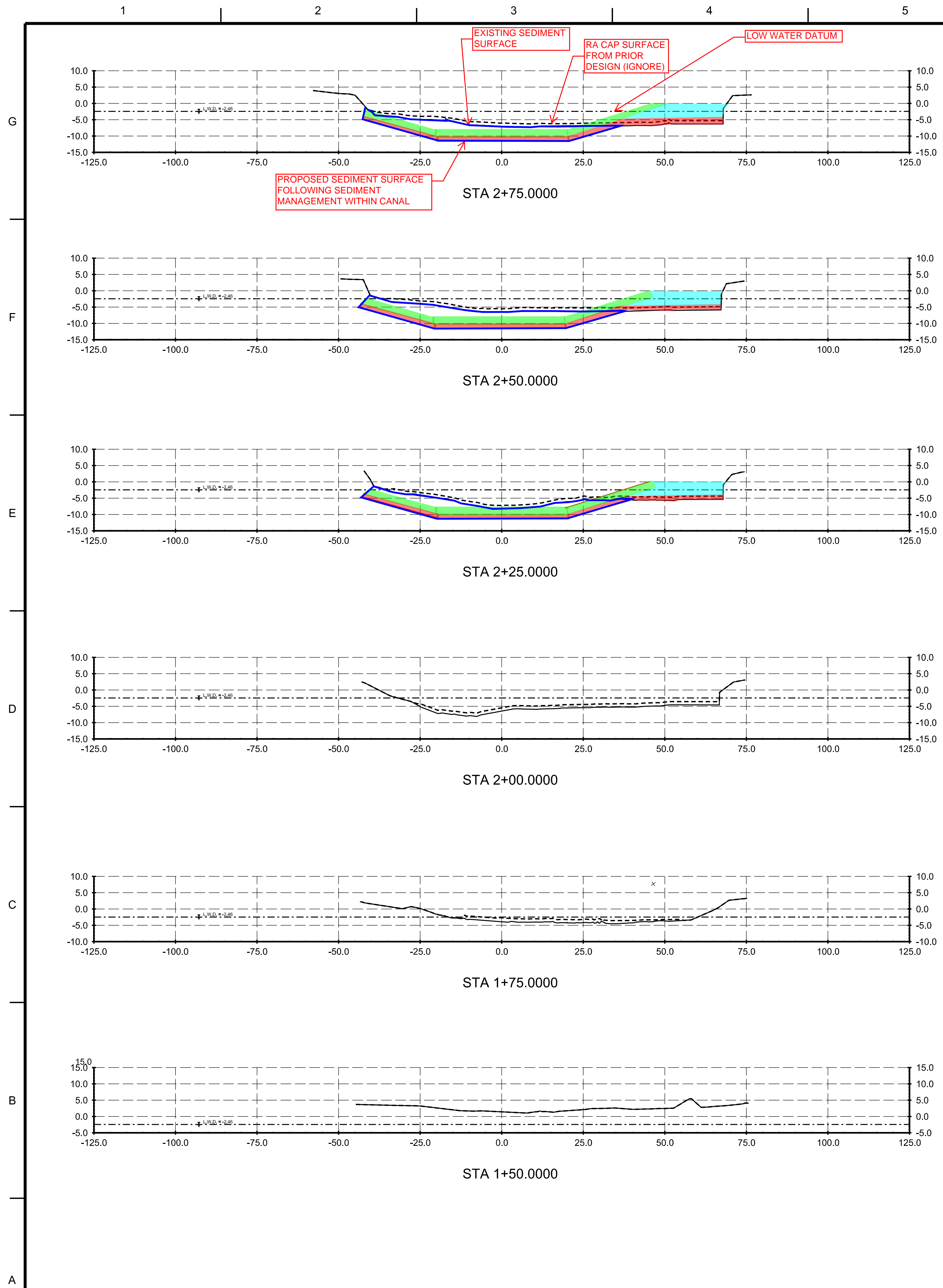
B CROSS SECTION C035 AT STATION 14+44

C CROSS SECTION C035 AT STATION 2+50

6.			
5.	VOL. BETTERMENT MOD. ISSUED FOR AGENCY REVIEW	DRAFT	
4.	ISSUED FOR AGENCY REVIEW	07/29/16	RJB
3.	ISSUED FOR AGENCY REVIEW	02/02/16	RJB
2.	ESD MODIFICATIONS ISSUED FOR AGENCY REVIEW	01/15/15	RJB
1.	ISSUED TO ADDRESS AGENCY COMMENTS	07/19/13	RJB
0.	ISSUED FOR AGENCY REVIEW	03/29/13	RJB
REVISION:		DATE:	APP'D BY:

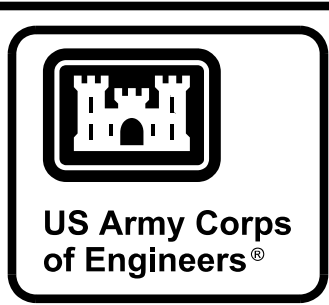


PROJECT NO. 67830/910	PROFILE AND CROSS SECTIONS	BURNHAM CANAL REMEDIATION VOLUNTARY BETTERMENT AGGREGATE FILL MATERIAL PLACEMENT REVISION MILLER COMPRESSING COMPANY CITY OF MILWAUKEE, WISCONSIN	SHEET NO. C035
DRAWN BY: DMD 05/04/15			
CHECKED BY: Y_Z 02/02/16	DRAWING NO: D2117C035-04.DWG		
APPROVED BY: RJB 02/02/16	REFERENCE: SEE INFO BLOCK		



GENERAL NOTES:

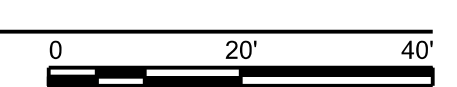
- ALL ELEVATIONS ARE SHOWN IN THE CITY OF MILWAUKEE DATUM (CMD), TO CONVERT TO LWD, ADD 2.46'
- SUBAQUEOUS CAP TO BE PLACED BY OTHERS BETWEEN THE WESTERN EXTENT OF THE PROJECT, STA 1+75 AND THE 11TH STREET BRIDGE STA 16+50.
- SECTIONS CUT LOOKING EASTERLY TOWARD MILWAUKEE CHANNEL.



MARK	DESCRIPTION	DATE

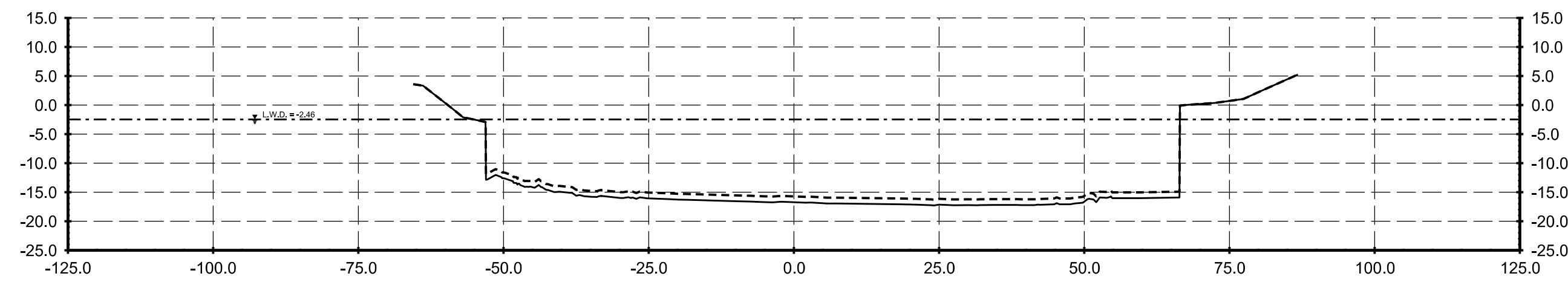
ISSUE DATE: 05 OCT 2017	DESIGNED BY: B. KORBETZ	CONTRACT NO.: W911XK-XX-XXXX	PROJECT NO.: %UOPX1%
ISSUED TO: MILWAUKEE COUNTY	CHECKED BY: N. ZAGER	CONTRACT NO.: W911XK-XX-XXXX	PROJECT NO.: %UOPX1%
U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT STREET ADDRESS CITY, STATE ZIP	DESIGNED BY: B. KORBETZ	CONTRACT NO.: W911XK-XX-XXXX	PROJECT NO.: %UOPX1%
MILWAUKEE COUNTY MILWAUKEE CITY, BURHAM CANAL ESTUARY AREA OF CONCERN ECOSYSTEM RESTORATION	CHECKED BY: N. ZAGER	CONTRACT NO.: W911XK-XX-XXXX	PROJECT NO.: %UOPX1%
EXISTING SITE CROSS SECTION	DESIGNED BY: B. KORBETZ	CONTRACT NO.: W911XK-XX-XXXX	PROJECT NO.: %UOPX1%

A1 C-100 **A1** EXISTING SITE CROSS SECTIONS SCALE: 1"=20'

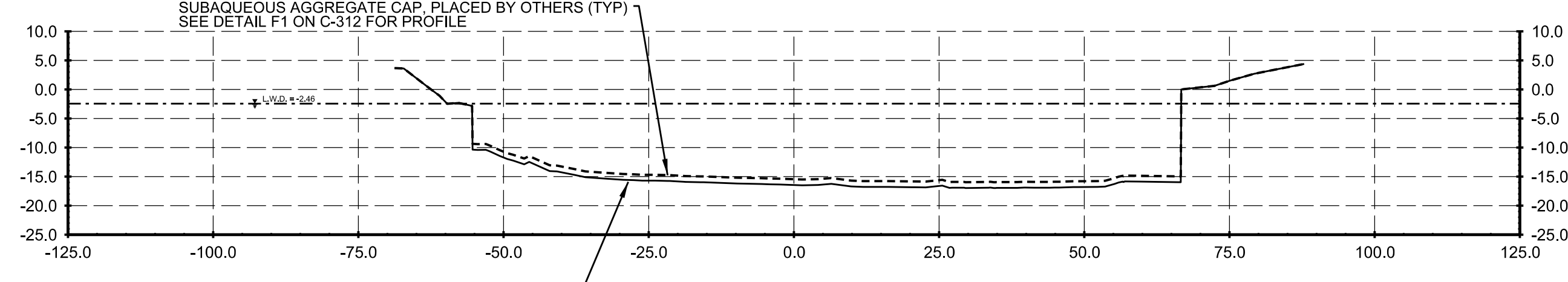


SHEET ID
C-300

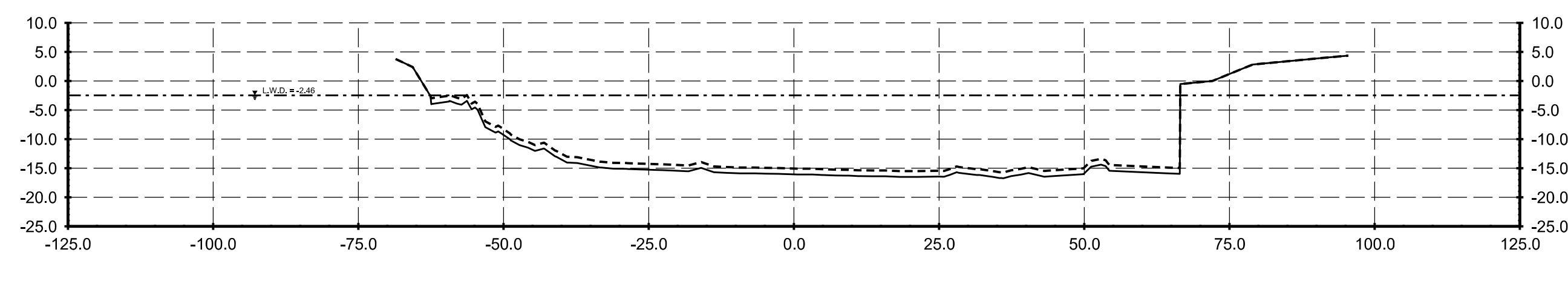
CERTIFIED FINAL



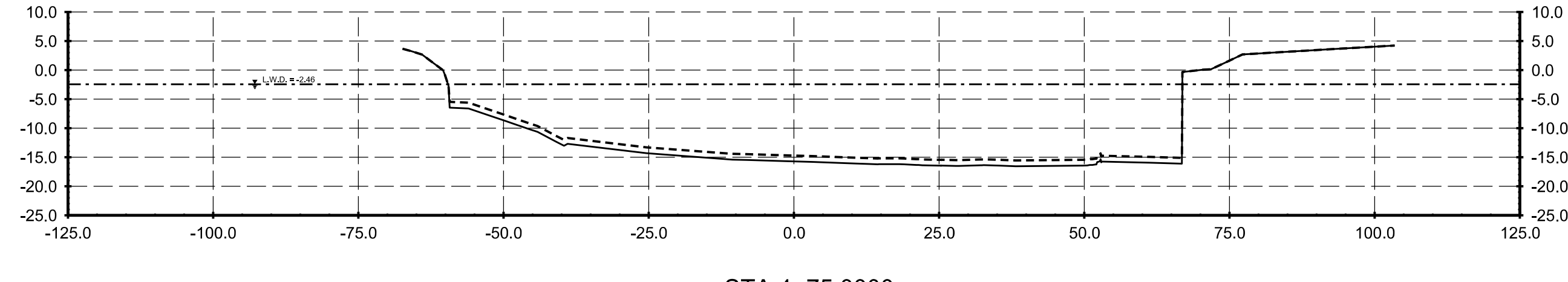
STA 5+50.000



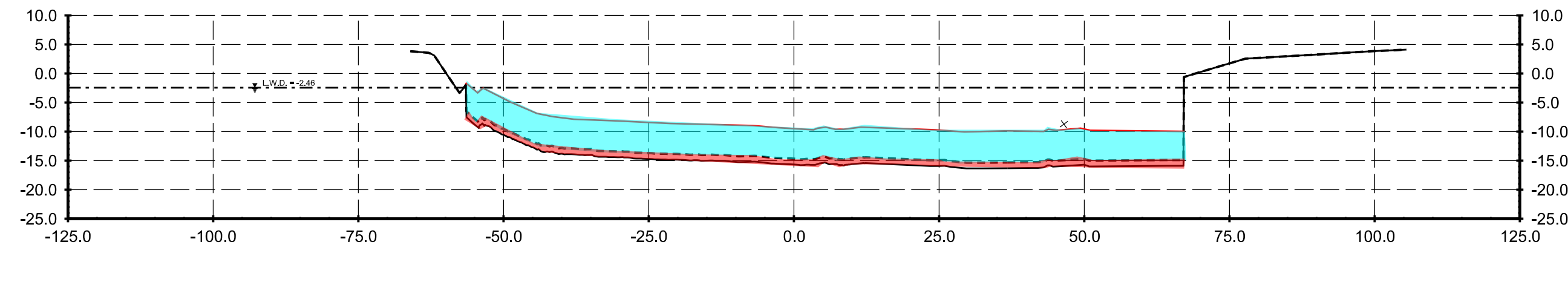
STA 5+25.000



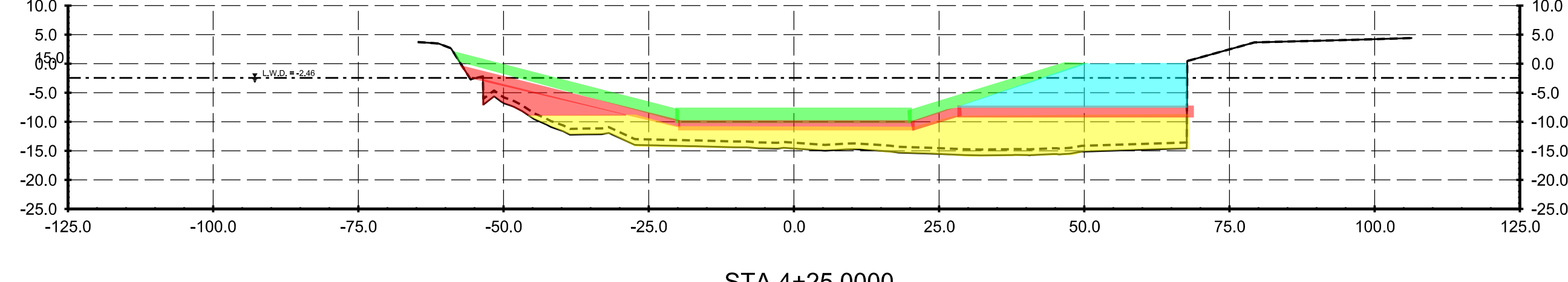
STA 5+00.000



STA 4+75.000



STA 4+50.000

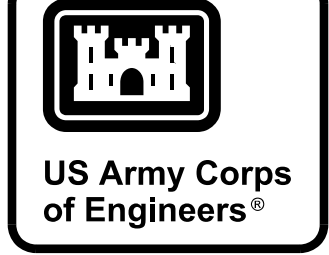


STA 4+25.000

- Betterment - Full Thickness
- Betterment - Low Profile
- RA Cap
- Sediment Reuse

GENERAL NOTES:

1. ALL ELEVATIONS ARE SHOWN IN THE CITY OF MILWAUKEE DATUM (CMD), TO CONVERT TO LWD, ADD 2.46'
2. SUBAQUEOUS CAP TO BE PLACED BY OTHERS BETWEEN THE WESTERN EXTENT OF THE PROJECT, STA 1+75 AND THE 11TH STREET BRIDGE STA 16+50.
3. SECTIONS CUT LOOKING EASTERLY TOWARD MILWAUKEE CHANNEL.



MARK	DESCRIPTION	DATE

DESIGNED BY: B. MELBY	ISSUE DATE: 05 OCT 2017
CHECKED BY: N. ZAGER	PROJECT NO. (MILWAUKEE): 1611XK-XX-XXXX
SUBMITTED BY: PHILIP ROSS	CONTRACT NO. (MILWAUKEE): 1611XK-XX-XXXX
ANSI D	SIZE: 11x17 (1/4" = 1')

U.S. ARMY CORPS OF ENGINEERS
DETROIT DISTRICT
STREET ADDRESS
CITY, STATE ZIP

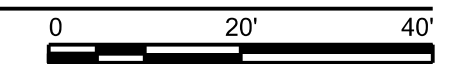
MILWAUKEE COUNTY
MILWAUKEE CITY, BURHAM CANAL
ESTUARY AREA OF CONCERN
ECOSYSTEM RESTORATION

EXISTING SITE
CROSS SECTION


NOTE:
1. TITLE SPECIFIC NOTES

A1
C-100
C-101

A1 EXISTING SITE CROSS SECTIONS
SCALE: 1"=20'



SHEET ID
C-301



Appendix C
WDNR and U.S. EPA
Sediment Relocation
Correspondence



August 31, 2018

Mr. Jon Spigel
Miller Compressing Company
1640 West Bruce Street
Milwaukee, WI 53204

Subject: Approval to Manage Contaminated Material under Wis. Admin. Code § NR 718.15
Miller Compressing (Burnham Canal) (ALT SF), 1640 West Bruce Street, Milwaukee, WI
DNR BRRTS Activity #: 02-41-552940, 15-41-581667;
FID #: 241213720

Dear Mr. Spigel:

On June 26, 2018, Mark Walter of O'Brien & Gere Engineers, Inc. (OBG) submitted a completed 'Recommended Format for Exemption Request' on your behalf requesting to manage 1,400 cubic yards of contaminated material on the same site from which it will be excavated in accordance with Wis. Admin. Code § NR 718.15. The Department of Natural Resources (DNR) received all applicable technical assistance and database fees for providing review and response, in accordance with Wis. Admin. Code § NR 749.04(1).

Contaminated sediment within the western portion of the Burnham Canal is being addressed through limited dredging and offsite disposal of sediment and the installation of a cap over remaining contamination. In order to complete the remediation and to maintain storm water flow through the canal a channel must be formed at the base of the canal east of the West End Dredge Area. To form the channel, 1400 cubic yards of sediment will be excavated and replaced to an adjacent portion of the canal. Polycyclic aromatic hydrocarbon (PAH) and metal contamination was identified in samples collected from sediments within the canal. The approved cover will be installed over both the excavation and reuse areas within the canal.

Wis. Admin. Code § NR 718.15 Exemption

This letter grants an exemption from the solid waste requirements in Wis. Stats. § 289 and Wis. Admin. Code §§ NR 500 to NR 538 for the proposed material management activities. Approval of the exemption is based on the following:

- 1) Managing contaminated waste material in areas of the site identified on Figure A1, Sample Locations (1/14/16) included with the completed 'Recommended Format for Exemption Request' will meet the locational criteria listed under Wis. Admin. Code § NR 718.12(1)(c), with the exception of the following:
 - Within a floodplain
 - Within 3 feet of the high groundwater level
 - At a depth greater than the depth of the original excavation from which the contaminated soil was removed

Grant of exemption to s. NR 718.12(1)(c)1, 5, and 6

In consideration that sediment is being excavated from within a canal and will be replaced in an adjacent portion of the canal under similar conditions (with the exception of that the reuse area is located downslope from the excavation area), and the material will pose no greater risk to human health or the

environment after it is replaced within the canal, the DNR grants an exemption to the location criteria of Wis. Admin. Code § 718.12(1)(c)1, 5, and 6 will allow placement of contaminated waste material within the floodplain, below the waterline, and at a greater depth from which it was excavated.

- 2) Soil samples have been collected for analysis of contaminants previously detected or expected to be present at this site including PAHs and metals from areas most likely to contain residual contamination. Based on an estimated volume of 1,400 cubic yards of material, and a sampling frequency of 1 sample per 160 cubic yards, the sampling protocol described in Wis. Admin. Code § NR 718.12(1)(e) has been met.
- 3) A complete soil management plan, as defined by Wis. Admin. Code §§ NR 718.12(2)(b) and (c), has been provided to the DNR.
- 4) The proposed management of contaminated material at the Miller Compressing (Burnham Canal) (ALT SF) is expected to meet the criteria of Wis. Admin. Code §§ NR 726.13(1)(b)1 to 5.
- 5) Per Wis. Admin. Code § NR 718.12(2), the DNR was provided with at least 7 days' notice prior to commencing to proposed material management.
- 6) You have acknowledged that the continuing obligations described below will be required as a condition of managing the contaminated material on your property as proposed.

Continuing Obligations

The current property owner of the Miller Compressing (Burnham Canal) (ALT SF), and any subsequent property owners, must comply with the following continuing obligations, established under Wis. Admin. Code § NR 718.12(2)(d) at this site, to ensure that conditions will remain protective. DNR staff will conduct periodic prearranged inspections to ensure that the conditions included in this letter and the "Institutional Control Implementation Plan" are met. If these requirements are not followed, the DNR may take enforcement action under Wis. Stat. § 292.11 to ensure compliance with the specified requirements, limitations or other conditions related to the property.

Documents submitted to the DNR to request the Wis. Admin. Code § 718.15 exemption meet the requirements of Wis. Admin. Code § NR 718.12(2)(e) and are available in Portable Document Format (PDF) on the Bureau for Remediation and Redevelopment Tracking System (BRRTS on the Web) at <http://dnr.wi.gov/topic/Brownfields/wrrd.html>. Additionally, this site will be identified on the Remediation and Redevelopment Sites Map (RRSM), available at <http://dnr.wi.gov/topic/Brownfields/wrrd.html>, as having continuing obligations. All site information is on file at the Regional DNR office located at 2300 N. Dr. Martin Luther King, Jr. Drive, Milwaukee, WI 53212-3128.

The DNR fact sheet "Continuing Obligations for Environmental Protection," RR-819, helps to explain a property owner's responsibility for continuing obligations on their property. The fact sheet may be obtained at <http://dnr.wi.gov/files/PDF/pubs/rr/RR819.pdf>.

Please send written notifications in accordance with the following requirements to:

Department of Natural Resources
Attn: Remediation and Redevelopment Program Environmental Program Associate
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, WI 53212-3128

Site Specific Condition - Residual Sediment Contamination:

If contaminated sediment that was managed as proposed in the completed 'Recommended Format for Exemption Request' is excavated in the future, the property owner at the time of excavation will be responsible for the following:

- determine if contamination is present,
- determine whether the material would be considered solid or hazardous waste,
- ensure that any storage, treatment or disposal is in compliance with applicable statutes and rules.

Excavated material may be managed in accordance with Wis. Admin. Code § NR 718, with DNR approval obtained at that time. In addition, all current and future property owners and occupants of the property need to be aware that excavation of the contaminated soil may pose a hazard and special precautions may need to be taken to prevent a health threat to humans. If material managed under this exemption included solid waste other than soil, a historic fill exemption may be required to be obtained from the DNR prior to excavating the waste or constructing any structure over the materials.

The location(s) where contaminated soil is proposed to be managed at the Miller Compressing (Burnham Canal) (ALT SF) site is depicted on the attached Figure A1, Sample Locations (1/14/2016).

DNR approval prior to well construction or reconstruction is required *where contaminated sediment has been managed*, in accordance with Wis. Admin. Code § NR 812.09(4)(w). This requirement applies to private drinking water wells and high capacity wells. To obtain approval, complete and submit Form 3300-254 to the DNR Drinking and Groundwater program's regional water supply specialist. This form can be obtained at <http://dnr.wi.gov/topic/wells/documents/3300254.pdf>.

Maintenance of a cover:

A cover of approximately five feet of aggregate fill overlying a one-foot gravel remedial subaqueous cap is proposed to be installed and maintained over contaminated solid waste that will be managed at the Miller Compressing (Burnham Canal) (ALT SF) site as proposed in the completed 'Recommended Format for Exemption Request'. Once constructed, inspections of the cover will be required, and submittal of inspection reports may also be required. If the cover is approved for industrial land use the DNR is required to be notified before changing to a non-industrial use, to determine if the cover will be protective for that use. Institutional Controls will be implemented to ensure that the sand cover remains in place and is not disturbed. The Institutional Control Implementation and Assurance Plan (ICIAP) must be updated as part of the remedial design for the Site which will describe the inspection and maintenance activities that will apply to the proposed barrier. The attached Figure A1, Sample Locations (1/14/2016), shows where contaminated material is proposed to be managed and covered. An updated ICIAP must be provided to the DNR once the barrier has been constructed if changes were made to address actual site conditions.

Certain activities will be prohibited in areas of this site where maintenance of a cover or barrier is intended to prevent contact with any remaining contamination. When a barrier is required, the DNR must be notified before making a change, in order to determine if further action is needed to maintain the protectiveness of the remedy employed. The following activities are prohibited on any portion of the property where the cover is required, unless prior written approval has been obtained from the DNR:

- removal of the existing barrier or cover;
- replacement with another barrier or cover;
- excavating or grading of the land surface;
- filling on covered or paved areas;

- plowing for agricultural cultivation;
- construction or placement of a building or other structure;
- changing the use or occupancy of the property to a non-industrial exposure setting.

Other Information

- 1) Any hazardous substance discharge discovered during material management activities must be reported to the DNR following the requirements of Wis. Admin. Code § NR 706.
- 2) Material management activities exempted by this letter are scheduled to be completed within one year. Notify the DNR if this schedule will change.
- 3) Unless otherwise directed by the DNR, documentation of material management activities shall be provided within 60 days of the completion of this project. The documentation must describe how the activities complied with the approved management plan and must also comply with the requirements of Wis. Admin. Code § NR 724.15(3). Documentation must include:
 - a. A cover letter that contains the information required by Wis. Admin. Code § NR 724.05(2)(e)1.
 - b. Owner contact and property location information for the Miller Compressing (Burnham Canal) (ALT SF) site.
 - c. Maps, drawings, and cross sections that depict how contaminated material was managed.
 - d. A synopsis of the work conducted and an explanation as to how it complied with the material management plan and the conditions in this exemption approval.
 - e. A description of any changes made to the planned management activity and an explanation as to why they were necessary for the project.
 - f. Any field observations or results of monitoring conducted during the management activity.
 - g. A description of how new site conditions are protective of human health, safety, welfare and the environment at the Miller Compressing (Burnham Canal) (ALT SF) site.
 - h. A revised cover maintenance plan, if needed.

The DNR will request that incomplete documentation be amended as allowed by Wis. Admin. Code § NR 724.07(2).

- 4) This exemption is granted under Wis. Admin. Code § NR 718.15 and applies only to the specific activities described within the submitted 'Recommended Format for Exemption Request'. Any contaminated material that is excavated or otherwise disturbed at the Miller Compressing (Burnham Canal) (ALT SF) site, not covered under this or another exemption, must be managed in compliance with the requirements of Wis. Admin. Code §§ NR 500 through NR 538, the solid waste rules administered by the DNR's Waste and Materials Management Program. The management of contaminated material on a property that does not comply with these rules may be considered a hazardous substance discharge and would be required to be addressed following the process outlined in Wis. Admin. Code §§ NR 700 to NR 750.
- 5) Miller Compressing Company is responsible for obtaining any local, federal, or other applicable state permits to carry out the project.

All remediation sites are included in DNR's Bureau of Remediation and Redevelopment Tracking System (BRRTS) database. All documents and project milestones related to the cleanup of each of the involved sites are listed in the database entry identified by BRRTS activity #(s) 02-41-552940. Actions relating only to the management of contaminated material are tracked in the BRRTS system under activity # 15-41-552940.

Miller Compressing (Burnham Canal) (ALT SF)
1640 West Bruce Street, Milwaukee, WI
WDNR BRRTS #: 02-41-552940, 15-41-581667
FID #: 241213720

Page 5

We appreciate your efforts to protect the environment at this site. If you have any questions regarding this approval decision, please contact me by calling (608) 266-0941, or by email at paul.grittner@wisconsin.gov. Other questions regarding this site can be directed to the DNR project manager Margaret Brunette at (414) 263-8557, or margaret.brunette@wisconsin.gov.

Sincerely,



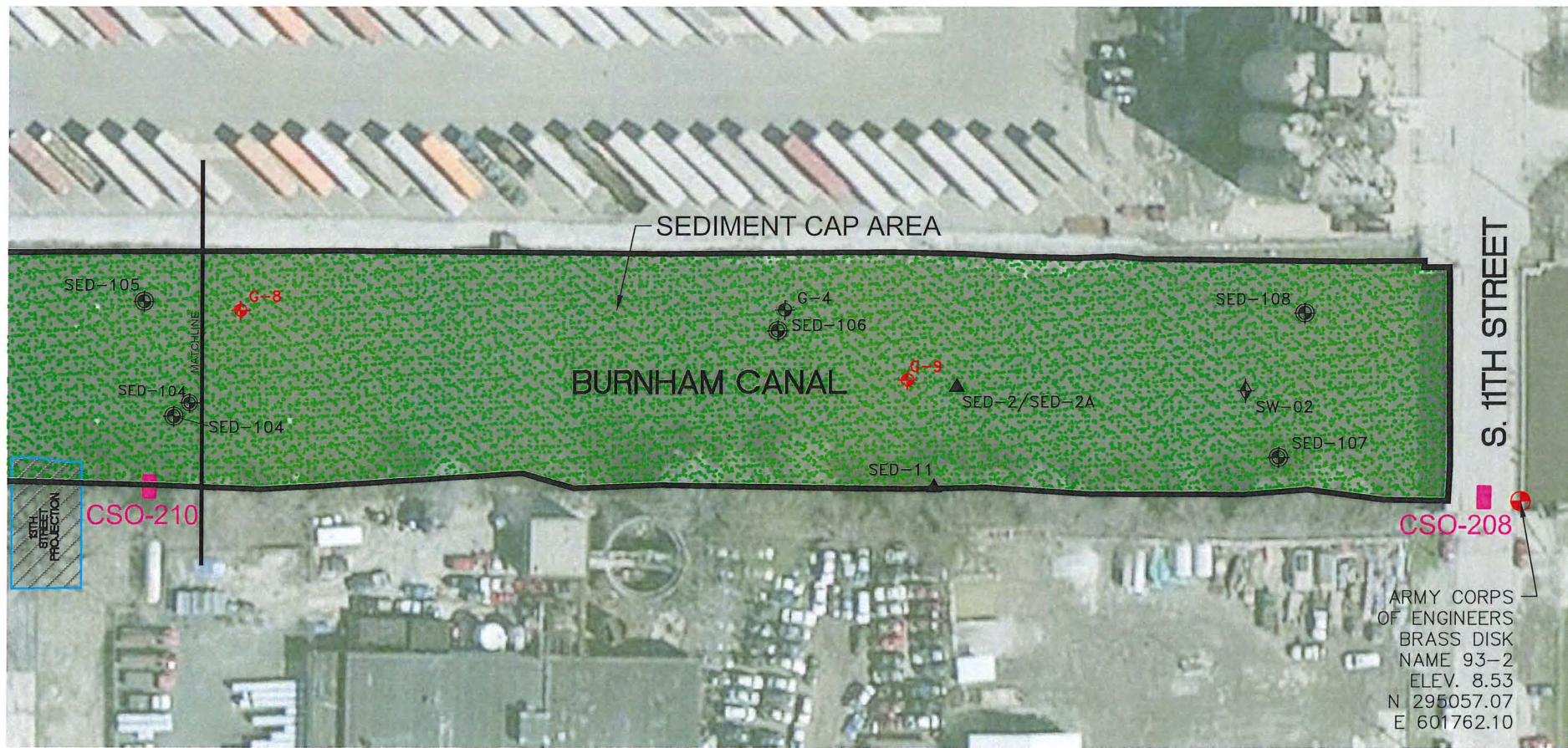
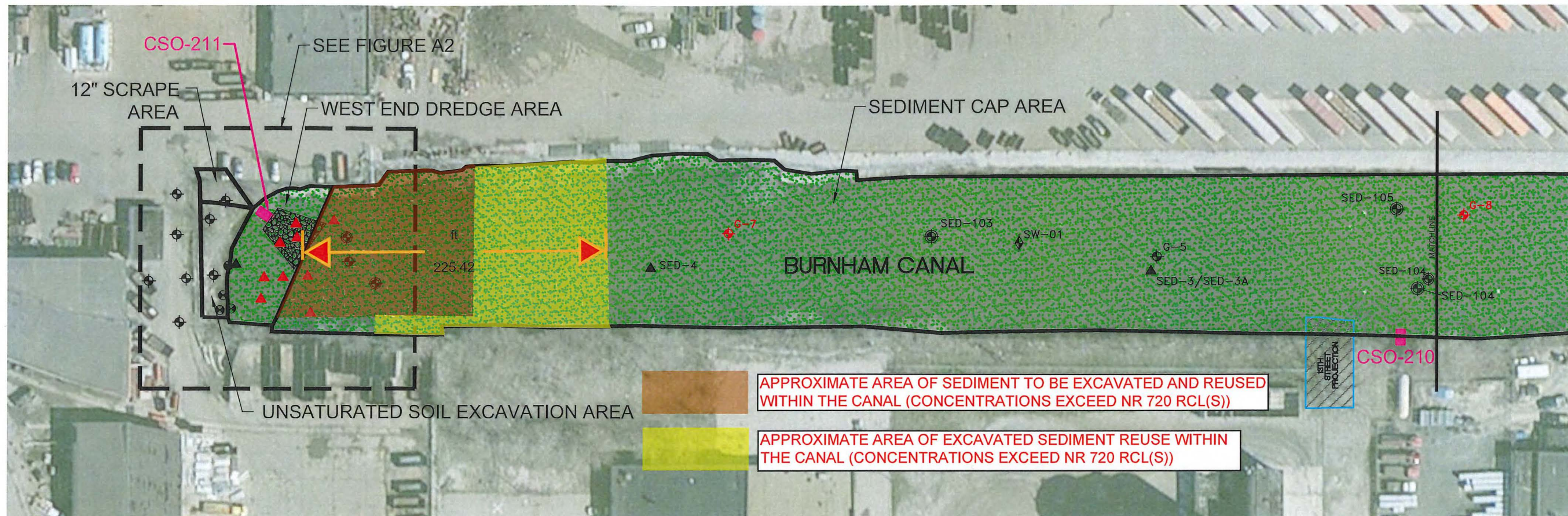
Paul Grittner
Contaminated Material Management Specialist
Remediation & Redevelopment Program

Attachments:

- Figure A1, Sample Locations, Natural Resource Technology

cc: Mark Walter, O'Brien & Gere Engineers, Inc., 234 W. Florida Street, Fifth Floor, Milwaukee, WI 53204 (electronic)
Leah Evison – EPA Region V (electronic)

Jan 14, 2016 6:30pm PLOTTED BY: ddudd SAVED BY: ddudd
 Y: Mapping\Projects\2117\CAD\3-1 Final Design Report\Appendix A Figa\Figure A1_Sample Locations.dwg Layout
 IMAGES: Y: Mapping\Projects\2117\CAD\3-1 Final Design Report\Appendix A Figa\Figure A1_Sample Locations.dwg
 REFCS:



CSO-207	COMBINED SEWER OUTFALL	SED-102	SEDIMENT SAMPLE LOCATION (2007)
	APPROXIMATE LOCATION OF 9TH AND 13TH STREET IF EXTENDED TO CANAL	G-6	GEOTECHNICAL SAMPLE LOCATION (2007)
	REMEDIATION AREAS	G-7	PRE-DESIGN GEOTECHNICAL SAMPLE LOCATION (11/2011)
	SEDIMENT CAP	SED-126	PRE-DESIGN SEDIMENT SAMPLE LOCATION (11/2011)
	RIPRAP		
	SOIL BORING LOCATION (7/2009)		
SW-01	SURFACE WATER SAMPLE LOCATION (12/2007)		
HA-4	HAND AUGER LOCATION (12/2007)		
	SEDIMENT SAMPLE LOCATION, APPROX. (2006)		

SOURCE NOTE:
 THE DIGITAL DRAWING IMAGE WAS
 CREATED FROM BING MAPS FOR
 ARCGIS DESKTOP. (c) 2010
 MICROSOFT CORPORATION AND ITS
 DATA SUPPLIERS.
 COORDINATES BASED ON
 MILWAUKEE COUNTY COORDINATE
 REFERENCE SYSTEM NAD 83(97).

ARMY CORPS
 OF ENGINEERS
 BRASS DISK
 NAME 93-2
 ELEV. 8.53
 N 295057.07
 E 601762.10

SCALE IN FEET

DRAWN BY:	DMD	DATE:	01/14/16
CHECKED BY:	RJB	DATE:	01/14/16
APPROVED BY:	RJB	DATE:	01/14/16
DRAWING NO.:		REFERENCE:	

SAMPLE LOCATIONS

BURNHAM CANAL SUPERFUND ALTERNATIVE SITE
 FINAL DESIGN
 MILLER COMPRESSING COMPANY
 MILWAUKEE, WISCONSIN

NATURAL
 RESOURCE
 TECHNOLOGY

PROJECT NO.
 2117/7.0

FIGURE NO.
 A1

Mark Walter

To: Evison, Leah
Subject: RE: Burnham Canal - EPA

From: Evison, Leah [mailto:evison.leah@epa.gov]
Sent: Monday, April 30, 2018 11:29 AM
To: Mark Walter <Mark.Walter@obg.com>
Cc: Laurie Parsons <Laurie.Parsons@obg.com>
Subject: Re: Burnham Canal - EPA

Thanks for the summary. As I mentioned on the phone, I do not consider the implementation adjustments you describe to be design changes. Please continue to coordinate with WDNR as you explore management options for the additional material.

Leah

Leah Evison
US EPA Remedial Project Manager/Region 5
outstationed at
520 Lafayette Rd N
St. Paul MN 55155
evison.leah@epa.gov
St. Paul office 651-757-2898

From: Mark Walter <Mark.Walter@obg.com>
Sent: Monday, April 30, 2018 11:00:13 AM
To: Evison, Leah
Cc: Laurie Parsons
Subject: RE: Burnham Canal - EPA

Hi Leah,

Thank you for your 3/27/18 response and for the discussion earlier this morning. A summary of today's discussion is provided below. As always, please feel free to contact us if you have any questions.

- Sediment designated to be removed from the West End Dredge Area, as called out in the EPA-approved ESD/ROD Design, will be removed, stabilized, and disposed at a landfill per the EPA-approved Design.
- Additional dredging will be performed, outside the footprint of (east of) the West End Dredge Area shown in the EPA-approved ESD/ROD Design, to allow placement of betterment material without obstructing canal hydraulics.
- The ESD/ROD cap will still be constructed in accordance with the EPA-approved Design.
- We will work with WDNR on management (and associated permitting) of sediment to be removed outside the footprint of (east of) the West End Dredge Area shown in the EPA-approved ESD/ROD Design. Management

options to be discussed with WDNR include in-place management of this material within the canal project area, east of the West End Dredge Area shown in the EPA-approved ESD/ROD Design.

Thanks again,

Mark

Mark D. Walter, PE

OBG | Environmental Engineer

414-837-3563 | c 608-220-2480

Mark.Walter@obg.com | www.obg.com



Appendix D
WDNR Form 4400-305
Continuing Obligations
Inspection and
Maintenance Log

Directions: In accordance with s. NR 727.05 (1) (b) 3., Wis. Adm. Code, use of this form for documenting the inspections and maintenance of certain continuing obligations is required. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.]. When using this form, identify the condition that is being inspected. See the closure approval letter for this site for requirements regarding the submittal of this form to the Department of Natural Resources. A copy of this inspection log is required to be maintained either on the property, or at a location specified in the closure approval letter. Do NOT delete previous inspection results. This form was developed to provide a continuous history of site inspection results. The Department of Natural Resources project manager is identified in the closure letter. The project manager may also be identified from the database, BRRTS on the Web, at <http://dnr.wi.gov/botw/SetUpBasicSearchForm.do>, by searching for the site using the BRRTS ID number, and then looking in the "Who" section.

Activity (Site) Name	BRRTS No.
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Inspections are required to be conducted (see closure approval letter):

annually
 semi-annually
 other – specify _____

When submittal of this form is required, submit the form electronically to the DNR project manager. An electronic version of this filled out form, or a scanned version may be sent to the following email address (see closure approval letter):

Inspection Date	Inspector Name	Item	Describe the condition of the item that is being inspected	Recommendations for repair or maintenance	Previous recommendations implemented?	Photographs taken and attached?
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N
		<input type="checkbox"/> monitoring well <input type="checkbox"/> cover/barrier <input type="checkbox"/> vapor mitigation system <input type="checkbox"/> other:			<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N

BRRTS No.

Activity (Site) Name

Continuing Obligations Inspection and Maintenance Log

Form 4400-305 (2/14)

Page 2 of 2

{Click to Add/Edit Image}

Date added:

Title:

{Click to Add/Edit Image}

Date added:

Title:

