

**Lower Menominee River Area of Concern
South Channel Habitat Improvement Project
Great Lakes Restoration Initiative Grant
Grant/Project No. GL-00E01568**

Quality Assurance Project Plan

REL Project No. 3775-008

Prepared for:

Wisconsin Department of Natural Resources (WDNR)
2984 Shawano Avenue
Green Bay, WI 54313-6727

City of Marinette
1905 Hall Avenue
Marinette, WI 54143-1716



Prepared by:

**Robert E. Lee & Associates, Inc. (REL)
1250 Centennial Centre Boulevard
Hobart, WI 54155**

A1. Title of Plan and Approval

**Quality Assurance Project Plan
Lower Menominee River Area of Concern
South Channel Habitat Improvement Project**

Approvals:



Brian Miller, PE
City of Marinette Project Manager

9.30.16

Date



Donalea Dinsmore
WDNR Office of Great Lakes Funding and Quality Assurance Coordinator

10/3/2016

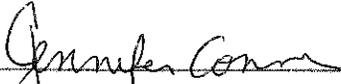
Date



Laurel Last
Lower Menominee River Area of Concern Coordinator

10/03/2016

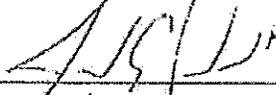
Date



Jennifer Connor
EPA-GLNPO Grant Manager

10/12/2016

Date



Jared Schmidt, PE, Robert E. Lee & Associates, Inc.
Oversight Consultant Quality Assurance Project Manager

9/30/16

Date



Construction PM, Applied Ecological Services, Inc.
Joshua Kraemer, Construction Project Manager / Ecologist

10/3/16

Date

A2. Table of Contents

A1.Title of Plan and Approval	2
A2.Table of Contents	3
A3.Distribution List	4
A4.Project/Task Organization	5
A5.Problem Definition/Background	9
A6.Project/Task Description	11
B1.Primary Goals and Objectives	11
C1.Quality Control	12
D1.Project Schedule	16
E1.Site Maintenance and Vegetative Growth Goals	18

List of Appendices

Appendix A – Construction Plans

Appendix B – Construction Specifications – Native Landscaping

Appendix C – Applied Ecological Services, Inc., Maintenance Plan

Appendix D -- WDNR Timed-Meander Sampling Protocol for Wetland Floristic Quality Assessments

List of Tables

Table 1. Roles & Responsibilities

Table 2. Implementation Schedule 2016

Table 3. Implementation Schedule 2017

Table 4. Contractor Preliminary Project Schedule

List of Figures

Figure 1. Organization Chart

A3. Distribution List

Brian Miller
City of Marinette
1905 Hall Avenue
Marinette, WI 54143-1716
(715) 732-5134
BMiller@Marinette.wi.us

Jonathan Sbar
City of Marinette
1905 Hall Avenue
Marinette, WI 54143-1716
(715) 732-5150
JSbar@Marinette.wi.us

Laurel Last
WI Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727
(920) 662-5103
Laurel.last@Wisconsin.gov

Jennifer Connor
GLNPO, US EPA Grant Coordinator
77 W Jackson Blvd
Chicago, IL 60604
(312) 886-0201
Connor.Jennifer@epa.gov

Jared Schmidt
Robert E. Lee & Associates, Inc.
1250 Centennial Centre Boulevard
Hobart, WI 54155
jschmidt@releeinc.com

Joshua Kraemer
Applied Ecological Services, Inc.
W2836 Dundas Road
Brillion, WI 54110
Joshua.kraemer@appliedeco.com

A4. Project/Task Organization

Figure 1 presents the organizational structure for the South Channel Habitat Improvement Project. All lines of communication, management activities, and technical direction within this project team will follow this organizational arrangement. Any directions or communications from the U.S. EPA will be given to the City of Marinette Project Manager and to the Wisconsin Department of Natural Resources Project Manager. The City of Marinette Project Manager will subsequently communicate directions to Robert E. Lee and Contractor. The Wisconsin Department of Natural Resources and U.S. EPA project manager will be notified of all proposed changes in personnel.

Responsibilities of key project personnel are outlined in Table 1 and as follows:

U.S. EPA Grant Manager

The USEPA Grant Manager (GM) for this project will be Jennifer Connor. The GM has the overall responsibility for general grant oversight to include:

1. Grant administration.
2. Final approval of project quality documentation.

Wisconsin Department of Natural Resources (WDNR) Great Lakes Funding and Quality Assurance Coordinator

The WDNR Quality Assurance Reviewer for this project will be Donalea Dinsmore.

1. Review and approve the QAPP.
2. Technical consultation on data quality issues.
3. Communication with USEPA Grant Manager.
4. Prepare grant progress reports for USEPA.

Wisconsin Department of Natural Resources Project Manager

The project manager for the WDNR will be Laurel Last. The WDNR project manager has overall responsibility for project oversight.

1. Provide technical consultation services to the City of Marinette Project Manager.
3. Oversee and address project progress.
4. Communicate with the City, WDNR, and USEPA project managers.
5. Review progress reports detailing work accomplished.
6. Approve project invoices charged to the grant (assistance agreement).
7. Review all final reports.

City of Marinette Project Manager

The project manager for the City of Marinette will be Brian Miller. The city project manager has overall responsibility for implementing the project. The City project manager will:

1. Direct project activities.
2. Prepare and submit progress reports detailing work accomplished, funds spent, and the project status.
3. Be responsible for review of project deliverables, development of project planning, and the overview of project strategies.
4. Review site reports for consistency with objectives stated in work plans.
5. Provide final signature on all assessments.
6. Assure timely invoicing to WDNR for eligible project expenses.

Construction Project Manager (Contractor) – Applied Ecological Services, Inc.

The construction manager for this project will be a Contractor Representative, led by Project Manager,

Joshua Kraemer, Ecologist. The project manager is responsible for implementing the project, and has the authority to commit the resources necessary to meet project objectives and requirements. The project manager's primary function is to ensure that technical, financial, and scheduling objectives are achieved.

The project manager will:

1. Be responsible for planning, coordinating, monitoring, and evaluating of project field activities.
2. Define project objectives and develop a detailed work plan schedule.
3. Establish project policy and procedures to address the specific needs of the project as a whole, as well as the objectives of each task.
4. Develop project plans and strategies and review all project deliverables.
5. Review the work performed on each task to ensure its quality, responsiveness, and timeliness.
6. Resolve technical problems.
7. Be responsible for environmental reports and documents.

Robert E. Lee Quality Assurance Manager

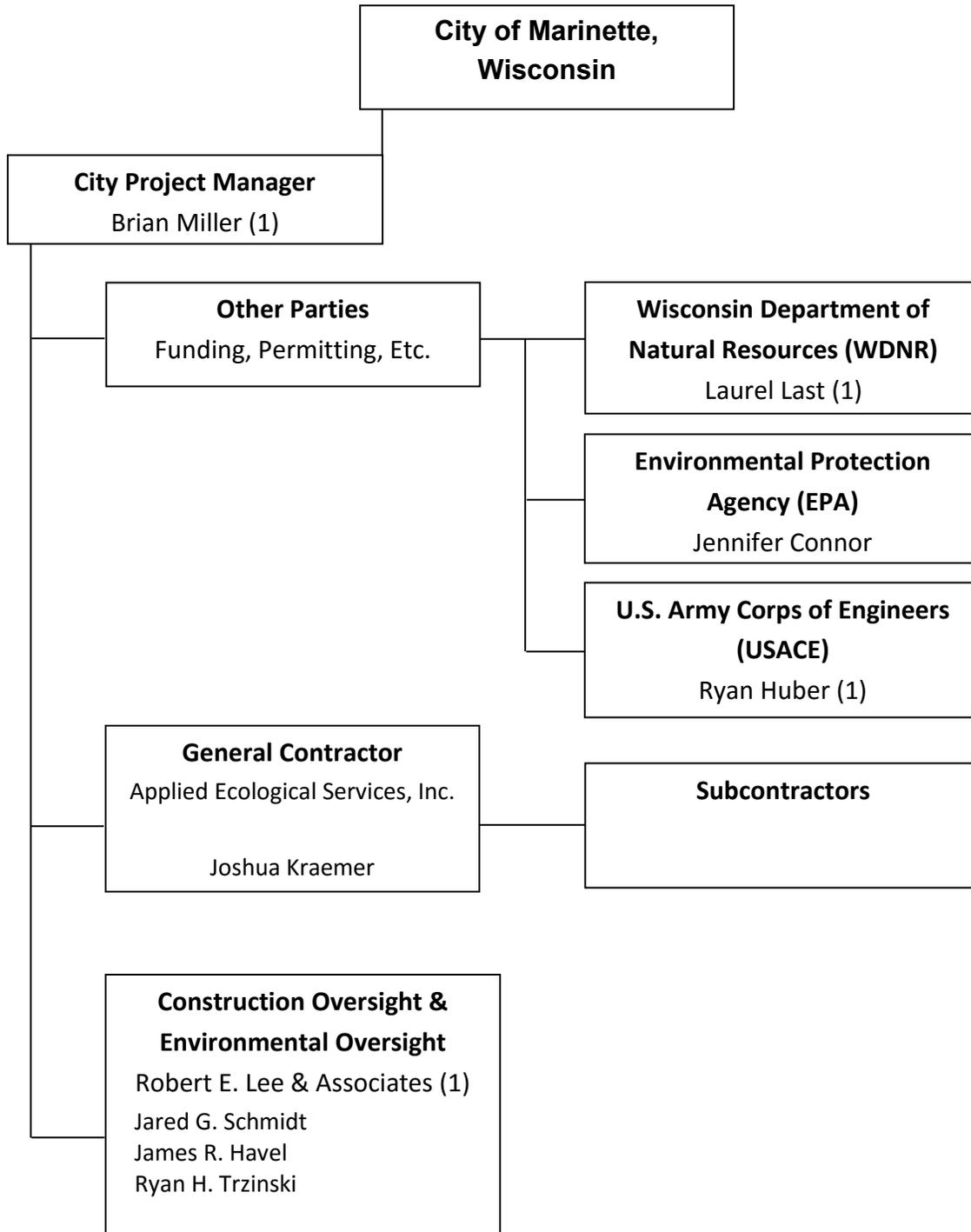
The REL quality assurance (QA) manager for this project will be Jared Schmidt. The QA manager will:

1. Oversee assessment activities to ensure that restoration methodology and construction method procedures are being followed.
2. Assist in any QA issues with field questions, as needed.
3. Conduct Field Audits.
4. Communicate with the City project manager, contractor, and WDNR with regard to project progress.

Table 1. Roles & Responsibilities

Individual(s) Assigned	Responsible for:	Authorized to:
Brian Miller City of Marinette	<input type="checkbox"/> Project management on behalf of City of Marinette	<input type="checkbox"/> Stop work <input type="checkbox"/> Approve contracts <input type="checkbox"/> Approve change orders
Laurel Last Wisconsin DNR	<input type="checkbox"/> Project oversight <input type="checkbox"/> Technical assistance <input type="checkbox"/> Reporting internally to DNR	<input type="checkbox"/> Stop work
Donalea Dinsmore Wisconsin DNR	<input type="checkbox"/> Quality Assurance	<input type="checkbox"/> Approve QAPP
Jennifer Connor US EPA	<input type="checkbox"/> Grant coordination	<input type="checkbox"/> Approve funding
Contractor Applied Ecological Services, Inc. Joshua Kraemer	<input type="checkbox"/> Construction activities: Site restoration and enhancement installation <input type="checkbox"/> Installation and maintenance of storm water BMPs <input type="checkbox"/> Installation and maintenance of in-water TSS controls <input type="checkbox"/> Implementing corrective actions with appropriate documentation	<input type="checkbox"/> Select subcontractors <input type="checkbox"/> Stop work due to weather <input type="checkbox"/> Address spills
Construction & Environmental Oversight Robert E. Lee & Associates	<input type="checkbox"/> Performing construction oversight <input type="checkbox"/> Preparing weekly construction oversight reports <input type="checkbox"/> Serving as the main point of contact at the site for WDNR/City/engineer	<input type="checkbox"/> Stop work
	<input type="checkbox"/> Performing weekly inspections of storm water BMPs <input type="checkbox"/> Performing weekly inspections of in-water TSS controls <input type="checkbox"/> Preparing weekly reports, uploading to FTP site <input type="checkbox"/> Prescribe corrective actions for BMPs and process <input type="checkbox"/> Identifying necessary corrective actions and follow-up on implementation	<input type="checkbox"/> Stop work <input type="checkbox"/> Prescribe corrective actions for storm water BMPs

Figure 1. Organization Chart



(1) Authority to stop work.

A5. Problem Definition/Background

The Menominee River South Channel is located downstream of the Menominee River Turning Basin and between the Sixth Street Slip and the Ogden Street Bridge within the Lower Menominee River Area of Concern (AOC), Marinette, Wisconsin.

This project will create and enhance habitat in the South Channel by implementing the final design and specifications provided by the United States Fish and Wildlife Service (USFWS) via their consultants Anderson Engineering of Minnesota, LLC, and Inter-Fluve, Inc. Invasive species control and native seeds, plants, trees, and shrubs will be planted to improve bank habitat and establish diverse native plant communities in the channel. Woody debris will be integrated into the toe of the bank to establish improved fish habitat. In addition, opening/clearing existing small channels to wetlands will increase northern pike spawning habitat. Great blue heron and osprey nesting platforms will be installed on the islands located in the western portion of the study area. Bat houses, wood duck boxes, and eastern bluebird boxes will also be installed. In addition, the streambed elevation will be lowered at the Ogden Street Bridge to improve flows from the South Channel into Menekaunee Harbor. The project includes three years of vegetation monitoring and maintenance to assure that native vegetation is established and project and AOC goals are met.

The adjacent shoreline is owned by Tyco International and City of Marinette on the south side and Waupaca Foundry on the north side. East of Ogden Street is the Menekaunee Harbor. A City-owned trail runs from the Harbor south to Red Arrow Park, an existing public beach, which borders Seagull Bar State Natural Area to the south (Attachment A). Fish and wildlife habitat in the South Channel and Menekaunee Harbor has been degraded by invasive plant species, contaminated sediment, and excessive sedimentation.

The Wisconsin Department of Natural Resources (WDNR) is currently partnering with the City to implement a restoration project at Menekaunee Harbor (95% complete) to improve sediment quality, provide additional fish and wildlife habitat, and increase human recreational and economic opportunities around the Harbor. The remediation of arsenic-contaminated sediments in the South Channel is now complete, providing the opportunity to accelerate ecological restoration along the Channel and improve the connectivity between Menekaunee Harbor and the main channel of the Lower Menominee River and the overall habitat value to fish and wildlife in the AOC.

The South Channel was identified as a target area for restoration in the 2013 Fish and Wildlife Population and Habitat Management and Restoration Plan Update (WDNR and MDEQ, 2013), available online at: <http://dnr.wi.gov/topic/greatlakes/documents/Menominee2013FishAndWildlifePlan.pdf>. The Plan listed three required activities related to the South Channel:

- Complete a habitat restoration and protection project in the South Channel for increased fish and wildlife habitat.
- Increase the hydrologic connection between South Channel and Menekaunee Harbor by removing sediment, debris and excess riprap under the Ogden Street Bridge.
- Conduct biological monitoring of the South Channel (segment 6a) to document ecological recovery.

Completion of the habitat restoration project would first require arsenic levels in the sediment to be reduced to 20 parts per million (ppm) or below. At the time the update was written, Tyco International, owners of Ansul Incorporated, were in the process of implementing a Resource Conservation and

Recovery Act (RCRA) project to address arsenic-contaminated sediment in the turning basin and the South Channel. The Administrative Order on Consent required Tyco to remove sediment with equal to or greater than 50 ppm arsenic if practical (USEPA, 2012). It also allowed Tyco to leave sediment with arsenic concentrations between 50 and 20 ppm in place and monitor its natural recovery (dilution) to a concentration of 20 ppm arsenic or less by November 1, 2023, (USEPA, 2012). However, the 20 ppm arsenic concentration could be reached earlier through additional active remediation.

A Great Lakes Legacy Act (GLLA) Betterment Agreement between Tyco, the United States Environmental Protection Agency (USEPA), and WDNR was signed in May 2014. The agreement calls for additional dredging of all soft and semi-consolidated sediments that have arsenic concentrations greater than 20 ppm remaining after the 2013 completion of the RCRA component of the project. This agreement acts to speed recovery of the aquatic ecosystem, thus allowing for earlier Beneficial Use Impairment (BUI) removal and AOC delisting. Once the GLLA Betterment Project Agreement was signed, planning could proceed for the habitat restoration project in the South Channel. The USFWS Great Lakes Restoration Initiative (GLRI) funding earmarked for the project shifted toward design of the habitat project rather than monitoring of the natural recovery.

The USFWS hired Anderson Engineering of Minnesota, LLC, with sub-consultant Inter-Fluve, Inc., to complete the South Channel habitat design and held a project kick-off meeting in September 2014. In 2014, Anderson Engineering and Inter-Fluve gathered and analyzed preliminary data and began work on concept designs. The US Army Corps of Engineers (USACE) began modeling current and future conditions for flow and scour. Regular meetings and conference calls between the project partners and interested local stakeholders have ensured that the project progresses smoothly and AOC goals are being met. The final designs and specifications are now available for implementation of this project. A long-term AOC priority is to increase the hydrologic connection and fish passage under Ogden Street Bridge between the South Channel and Menekaunee Harbor. This includes removing debris and excess riprap that was placed there before the arsenic cleanup to keep contaminated sediment from moving downstream to Menekaunee Harbor. Part of that material was moved in October 2014, leaving a depth of about one foot under the bridge. The design for this restoration project includes the removal of additional material to an elevation of 577 feet, or as much as can be removed without impacting an existing sanitary line near the bridge. Sediment sampling efforts in 2015 showed that the material under the bridge is close to the desired design elevation, and consists primarily of debris and rock, not sediment as initially thought.

Input from the Citizens Advisory Committee (local RAP implementation group) and WDNR and Michigan Department of Environmental Quality (MDEQ) staff has been included to ensure plans are consistent with Remedial Action Plan (RAP) delisting targets. Efforts to restore fish and wildlife habitat will contribute to the removal of the Loss of Fish & Wildlife Habitat and Degradation of Fish & Wildlife Populations BUIs (WDNR and MDEQ 2015).

A6. Project/Task Description

As discussed within Appendices A, and B, (South Channel Habitat Improvement Plan and Specifications) the project tasks are described and laid out in detail. As with many habitat restoration plans, it is important to note that this plan is intended to be presented as the best available at the time the document is published, but nature is continually changing. Therefore, the guidance within this document should be used with consideration as an adaptive management and maintenance plan, where decisions are made relative to the changing environment, with the intent of meeting the desired performance standards.

B1. Primary Goals and Objectives

The purpose of the South Channel Habitat Improvement ecological restoration is to restore native vegetation and habitat to a degraded wetland complex. This relates to the goals of the *2013 Fish and Wildlife Population and Habitat Management and Restoration Plan Update for the Lower Menominee River Area Concern*. The achievement of the goals outlined in that plan would mean that conditions have improved such that the BUIs of degradation of fish and wildlife populations and the loss of fish and wildlife habitat will no longer be applicable within the AOC. The goals include:

1. Provide shallow water, emergent vegetation areas suitable for the spawning requirements of native fish species including northern pike (*Esox lucius*) and muskellunge (*Esox masquinongy*)
2. Provide foraging and loafing opportunities for native amphibians, reptiles, waterfowl, and other water birds
3. Provide additional flow and improved fish passage at Ogden Street Bridge
4. Contribute towards the achievement of restoration goals and objectives found within the Lower Menominee River Area of Concern Fish and Wildlife Population and Habitat Management and Restoration Plan (2013) by implementing the final design and specifications provided by USFWS

In support of these goals, the objectives and related target criteria of this restoration are as follows:

1. Restore benthic habitats for use by invertebrates and native fish species which historically utilize the South Channel.
 - a) Install fish sticks, log structures, fish sticks, lunger structures, pike spawning channel, woody debris and rock structures to increase cover and feeding opportunities.
 - b) Establish populations of emergent native vegetation in the channel.
 - c) Eliminate and control invasive species within emergent aquatic communities, while establishing native plants to provide spawning habitat.
2. Establish healthy and diverse native vegetation communities
 - a) Restore/create community types found to be high priority communities within the Northern Lake Michigan Coastal Ecological Landscape.
 - b) Install a variety of ferns, grasses, sedges, forbs, shrubs and trees currently and historically found within Marinette County.
 - c) Increase plant diversity by added a few species typically found more often within southern Wisconsin to account for temperature increases due to global climate shifts.
 - d) Absolute cover of invasive species will be < 15% within each community type.

3. Restore wetland and upland habitat for use by invertebrates, amphibians, reptiles, mammals and birds.
 - a) Native vegetation capable of providing a variety of food and cover will be established throughout the restored/created communities.
 - b) Existing snags will be left and protected to provide food sources and potential future nesting sites.
 - c) Rock and brush piles will be added to provide cover.
 - d) Downed woody debris will be placed in the emergent aquatic and wet meadow communities to provide sites for loafing and basking.
 - e) Nesting boxes and platforms will be installed to increase suitable nesting sites.
 - f) Bat houses will be erected to provide roosting sites.

In addition to the habitat benefits towards removing BUIs in the AOC, the project presents opportunities for public outreach, education, recreation, beautification, and connectivity with other nearby restoration projects. As a result of achieving the restoration objectives, the project will also increase wetland functional values significantly.

This project is being conducted as one of the multiple projects concurrently happening within this Area of Concern. The overall goal is to delist the AOC.

C1. Quality Control

a) Quality Control Procedures

To understand the role of Quality Control in the overall Quality Assurance/Quality Control (QA/QC) process, it is important to distinguish the terms Quality Control and Quality Assurance.

Establishing Quality Assurance for this project is the overall purpose of this QAPP. Quality Assurance defines the successful project outcome based on the project's objectives, data inputs, available resources, and required technical skills. In contrast, Quality Control is the set of procedures used to check that the QA process is being followed and that the end product meets the standards established by the Quality Assurance Project Plan.

As is appropriate for most construction projects, Quality Control will be accomplished primarily through site reviews by NES/REL personnel, bi-weekly project management team meetings, submittal reviews, plant inspections, and site surveys. NES/REL personnel will be in contact with AES on daily basis to address questions or concerns. NES/REL personnel will document work on a weekly basis and will create weekly reports that will summarize the weekly activities completed. In addition to reviews and report generating, deliverables will be presented to the project management team (City of Marinette, WDNR, Robert E. Lee & Associates, and NES Ecological Services) for review and comment, providing another layer of QC for the project.

During site reviews NES/REL personnel will inspect the site to verify compliance with all permits associated with this project. Then will meet with AES personnel to discuss current activities and potential future activities. NES/REL will document what work has been completed within log books and will photograph the site to document the site review. The site information obtained will be compiled and included in the weekly reporting.

At the Bi-weekly project management team meetings work items that have been completed since the last meeting, and will discuss potential work items that will be completed before the next meeting. During this meeting the City of Marinette, NES/REL, AES, and WDNR will discuss concerns any party has in regards to the work that is currently taking place, or for future work items.

Submittal reviews will be completed in accordance with Specification section 01 32 19, Submittals. Submittals will be sent to REL/NES for review on all items specified within the project Specifications.

Underwater lunker structure placements within the harbor will be laid out by REL/NES prior to placement within the water by AES personnel. Placement will be verified by visual inspection of the structure and site observance of anchor/rock placement to ensure installation per plans and specifications.

Fish stick habitat structure placements within the harbor will be laid out by REL and installed by AES personnel. Placement will be verified by visual inspection of the tree structure and on site observance of anchor placement and cabling to ensure installation per plans and specifications.

b) Special Training/Certification

Construction oversight personnel must be licensed in Wisconsin as a Professional Engineer (PE), have designation as an Engineer in Training (EIT), Ecologist, or be an Engineering Technician with direct oversight by a PE, and have experience or training in construction observation, and ecological planting installation.

Environmental compliance personnel shall have had training in the principles and practices of erosion and sediment control measures, and possess the skill to assess conditions that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures that are in use. Licensure as a Professional Engineer or registration as a Certified Professional in Erosion and Sediment Control (CPESC) or similar is preferred.

Robert E. Lee & Associates, Inc. (REL) personnel conducting bathymetric, and topographic surveys have the required knowledge of SOPs and site specific HASP requirements.

c) Documents and Records

A private FTP site maintained by Robert E. Lee & Associates, Inc. will be made accessible to all parties involved in the project and will be updated as necessary with the most current approved versions of the project plan drawings, QAPP, and Erosion Control & Storm Water Management Plan. This site will also be utilized for dissemination of progress reports, audit reports, construction observation logs, and inspection records. An email notification shall be sent to personnel identified in A3. Distribution List upon upload of any updated plans. This FTP site will also provide templates for forms used by field personnel. In addition to the documents outlined below, additional submittals and documentations as required by the technical specifications shall also be prepared and distributed.

Documentation will be prepared throughout the project for the following:

1. Schedule, budget, and personnel details
2. Conformance to project specifications
3. Construction quantities management
4. Materials and equipment taken off site and brought on site
5. Photographs and written records management

6. Construction materials utilized, including those plantings, and seed mixes placed
7. Site challenges and actions taken to address.

The documentation gathered during site construction, operations, and closure, including as-constructed drawings, will be assembled into a project documentation report that will be provided to the WDNR following cessation of harbor site and containment site activities and closure. Three hard copies and one electronic CD copy will be provided to both the WDNR and the City of Marinette.

Construction observation logs shall include details and photographs for weekly construction activities. These logs shall be retained for the duration of the project plus at least three years post-construction. Construction observation shall be used to produce reports which include documentation of all of the following:

1. Plant inspection reviews
2. Site preparation
3. Construction as-built drawings
4. Material quantities
5. Data will be recorded on the appropriate field forms or in field logbooks.

d) Procedures for Corrective Actions

During the construction and implementation portion of this project, the project management team will work closely with the Contractor to ensure implementation follows the intent of the bidding documents. The project management team will work within the parameters of sound engineering/ecological procedures to adapt to changes in climate, water levels, plant availability, and other natural effects throughout the construction and ongoing monitoring and maintenance component of the project. The following are general parameters of the approval and implementation practices.

Contractor will submit a draft version of shop drawings and any other request for interpretations to the NES/ REL personnel for review and comment. The reviewer will provide comments and edits to AES for incorporation into the construction project and will discuss the comments as necessary to ensure clarity.

The review process will be documented by maintaining edited copies and comments in the project file. Once formal approval is given for shop drawings, the contractor can move into implementation phase.

If changes in conditions require corrective action after the work has been finalized, the Project Manager will convene a meeting of the project management team and notify them there is a need for corrective action. This team will identify the necessary actions to address the issue and prepare a formal response and it will be sent to AES for implementation. Corrective actions will be made relative to attaining the same overall project goal as identified within this document and supporting habitat plan, design plans, and construction specifications.

As potential changes are encountered during the construction process, AES will notify REL/NES of the item and REL/NES will determine if the proposed alteration still falls within the proposed plans and specifications. REL/NES will provide recommendations to the City and WDNR either through e-mail, telephone conversations, or at bi-weekly meetings. The City and WDNR will have time to review the proposed alteration recommendation or discommendation and will provide comments to REL/NES. Then REL/NES will work with AES to address the change within a contract modification, amending the contract documents or will work to implement the specified items as specified.

If plant availability issues arise, REL/NES and AES will work together to determine which species, sizes, or types are not available at the time of ordering. If a species specified is available next year, REL/NES will document the species and will direct AES to install these plants in the spring of 2017 once available again. If a species is not available, and is potentially not available in the spring of 2017, REL/NES will notify WDNR of the species and will include additional seeds, plants, trees, or shrubs that are currently available to maintain the proper vegetative growth planned for each corresponding zone. The WDNR 2016 Wisconsin Plant list will be referenced when choosing species.

e) Performance Standards

Performance standards are stated within the Construction Specifications, specifically section 1.04 and as detailed in 4.12, 4.13, 4.14, and 4.15 of Specification Section 32 90 10, Native Landscaping. Appendix C is the maintenance plan provided by the Contractor, and reinforces the procedures and responsibilities of the contractor to ensure successful plan implementation, including ongoing maintenance and monitoring, including replacements as deemed appropriate by the guidelines, as dictated by the oversight consultant.

The Contractor is under contract to perform year zero, 1, 2, and 3 of the longer term maintenance plan. Maintenance will be performed through November 2019. Detailed maintenance activities currently proposed are identified throughout Specification Section 32 90 10, Native Landscaping.

The performance standards identified within the project specifications correlate to the standards that are expected to be reached by the installation contractor. These levels would be reviewed in association with a 1 year warranty period. Additional standards apply to the ongoing monitoring and maintenance component of the project. The installation contractor has also been contracted to perform additional ongoing monitoring and maintenance. These guidelines and specifications are identified within the project Plan, Specifications, and identify proposed actions to be provided, and performance goals to be reached including plant retention, invasive species removal, and physical structure upkeep.

In addition to maintenance completed by the contractor, Keith West, PhD, University of Wisconsin-Marquette (UW-M) has offered participation by his students, to aid in the ongoing maintenance program. Exact tasks and responsibilities have yet to be determined, but UW-M staff and students will participate within the ongoing maintenance, to further help the project area thrive and succeed. During the continued efforts of the monitoring and maintenance components of this project, UW-M staff and students will work with the City, NES, AES, and WDNR staff to become accustomed to the tasks they are likely to take on going forward. Since AES is performing 3-years of monitoring and maintenance as part of their contract duties, specific roles and responsibilities for UW-M could vary significantly based on the ecological condition of the habitat area. However UW-M will play a significant role in the success of long term maintenance of the habitat area, supplemented with professional assistance as deemed necessary by the City and appointed project team.

f) Data Review, Verification, and Validation

Upon receipt of observation reports, and inspection reports the QA/QC manager shall conduct a 100% completeness check to ensure all necessary information has been provided. Instances where information is missing shall be raised to the report-preparer for resolution. In the event that items are

outside the specified restrictions for the material, results will be flagged and the project team will investigate provide alternate resolutions. All resolutions will be documented.

g) Verification and Validation Methods

Throughout the project, REL will perform site reviews to document incremental progress on the project that can be compared with AES reported progress. In isolated areas, discrepancies in documentation will be reconciled on a case by case basis.

h) Inspection/Acceptance of Supplies & Materials

REL/NES will have qualified personnel on site to view supplies and materials delivered to site. REL/NES will validate supplies and materials brought to site meet the requirements of the specifications. During live plant stock delivery, REL/NES will be on site to view the plants delivered to site to verify, plant materials conform to contract documents with respect to quantity, quality, size, species, upright, green, healthy condition and disease free. Once materials are installed on site, REL/NES will verify proper installation and location.

D1. Project Schedule

a) Project Schedule

Tables 2 and 3 provide an approximate timeline for completion of tasks associated with the native plantings and structure installations. The schedule needs to be flexible to accommodate for weather, scheduling conflicts, etc., but it provides a general indication of the dates for completing the proposed components. Table 4 identifies the contractor’s preliminary schedule.

Table 2. Implementation Schedule - 2016.

Task	Year 2016											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Install & Maintain Restoration Signs & Barrier Fencing								■	■	■	■	
Site Preparation – Invasive Species Control in all Communities								■	■	■	■	
Site Preparation – Herbicide Applications								■	■	■	■	
Debris/Litter Removal								■	■	■	■	
Install Carp & Goose Fencing								■	■			
Aquatic & Emergent Live Plant Installation								■	■			
Osprey Nesting Platforms										■	■	
Erect Bird & Bat Houses										■	■	
Install Log Structures								■	■	■	■	
Construct Rock & Brush Piles								■	■	■	■	
Install Fish Sticks									■	■	■	
Disc & Harrow								■	■	■	■	
Native Seed Installation									■	■	■	
Live Plant Installation									■	■	■	

Task	Year 2016											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Install Potted & Bare-root Trees/Shrubs												
Install Live Stakes												
Install Lunker Structures												
Excavate Pike Channel												

Table 3. Implementation Schedule - 2017.

Task	Year 2017											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Install Fish Sticks*												
Install Rock Piles												
Maintenance/Repair of Restoration Signs & Barrier Fencing												
Maintenance/Repair Carp & Goose Fencing												
Live Plant Installation												

Activities in red may be completed over the ice, if not completed in 2016.

Activities in green may be completed in the spring of 2017 if plants are not available in the fall.

*Final measures to secure the structures shall be conducted, when the soil is no longer frozen.

E1. Site Maintenance and Vegetative Growth Goals

a) Maintenance Plan

1) The maintenance plan developed by the contractor shall strive to obtain the performance standards that are identified in *Spec Section 32 90 10; Performance Standards*. The maintenance plan shall be a fluid document that will need to address unpredictable weather patterns such as drought, high waters, excessive prolonged heat, extreme weather, but not limited to these items, and potential remedies that will address each potential scenario to ensure the performance standards are reached. If extreme conditions persist beyond the reasonable expectation of a warranty, or extend beyond the warranty period, alternate funding sources may need to be identified to supplement planting deficiencies that may be a result of significant naturally occurring conditions.

Wisconsin DNR, City of Marinette, and REL will review and comment on the maintenance plan provided from the Contractor, to ensure that all possibilities are addressed within this document.

Specifications attached within Appendix B discuss the maintenance plan requirements in further detail and clarification. Reference section 1.04 and as detailed in 4.12, 4.13, 4.14, and 4.15 of Specification Section 32 90 10, Native Landscaping.

b) Performance Standards

The below performance standards will be used to verify the success of the restored wetland and upland communities. Some of the standards will also help determine if the wetlands are providing increased functional values.

The restored and enhanced communities will be monitored annually over a three year period. The site will be monitored by conducting timed meander surveys throughout each assessment area which will be based on community types. The WDNR's Timed-Meander Sampling Protocol for Wetland Floristic Quality Assessment will be utilized to collect vegetation data (Appendix D).

A variety of data will be collected including vegetation species present and their coverage, which will be determined using the perpendicular projection to the ground from the outline of the aerial parts of the plant species and reported as the percent of the total area (e.g., substrate or water surface) covered (Brower et al. 1990). The percent foliage coverage will help determine the success of the overall vegetation establishment on the site and it will be analyzed for each species using the Daubenmire Classification Scheme ((Mueller-Dombois and Ellenberg 1974). The Daubenmire methodology will rank each species observed according to estimated foliage cover (Table 4). By providing a range of percent foliage cover for each rank, the Daubenmire Classification Scheme will help minimize errors due to observer bias, visual estimation, etc. Frequency of occurrence and relative frequency of occurrence will also be estimated. The frequency of occurrence is defined as the number of times that a given species occurred in each community type. The relative frequency of occurrence is the frequency of that species divided by the sum of the frequencies of all species in the community (Bower et al. 1990). The rankings developed using the Daubenmire Classification Scheme and the frequency of occurrence data will be utilized to help determine whether the objectives relating to dominance by native taxa and the percent coverage of exotic species is satisfactorily achieved.

Table 4. Daubenmire Classification Scheme Cover Ranking System.

Percent Foliage Cover	Rank
0-5	1
5-25	2
25-50	3
50-75	4
75-95	5
95-100	6

Once a comprehensive plant list has been accrued, the average coefficient of conservatism or Mean C and floristic quality index (FQI) will be calculated for each community type within the restoration site. Each plant’s coefficient of conservatism will be taken from the document “Development of A Floristic Quality Assessment Methodology for Wisconsin” and the newly developed Floristic Quality calculator worksheet. The coefficient of conservatism (C) is based on a scale of 1 to 10 and is a measure of a plant’s affinity or its estimated probability of occurring in a landscape relatively unaltered from what is believed to be a pre-settlement condition. A C of 0, therefore, is assigned to plants like box elder (*Acer negundo*) that have demonstrated little fidelity to any remnant natural community (i.e., it may be found anywhere), while a C of 10 is assigned to plants like shrubby cinquefoil (*Potentilla fruticosa*) that are almost always restricted to high quality natural areas. According to the “Development of A Floristic Quality Assessment Methodology for Wisconsin,” a Mean C that ranges between 0 and 3 contains many species that are very tolerant of disturbance. An average between 4 and 6 indicates a moderately tolerant community, while anything above 7 contains many species that are not tolerant of disturbance. The FQI is calculated by averaging the sum of the coefficients of conservatism for all identified species and then by dividing the average by the square root of the total number of plants. Based upon Michigan studies (Herman et al. 1996), a FQI of less than 20 has minimal significance from a natural quality standpoint. A FQI higher than 35 suggests that an area has relatively high conservatism and richness and that they are floristically important. Habitats with a FQI higher than 50 are extremely rare and represent a significant component to native biodiversity and natural landscapes. The Mean C and floristic quality index will be used to assess the floristic quality (i.e., natural condition) of the restored communities.

Year 1

- a. Except in the far eastern Mesic Forest stand, aerial coverage of invasive, non-native species such as giant reed grass, reed canary grass, purple loosestrife, Japanese knotweed and garlic mustard will not be >10% absolute cover after one year.

- b. Aerial coverage of garlic mustard will not be >75% absolute cover after one year within the far eastern Mesic Forest stand.
- c. After one year, >75% of the vegetative cover within the restoration site will be native species, <25% of the cover will be invasive, non-native species.
- d. Eighty percent of the site will be vegetated within one year.
- e. 90% of trees, shrubs and live stakes planted within the various communities will be present and healthy one year after installation.
- f. The Aquatic Submergent/Emergent Restoration Community shall have a minimum of 20 native, non-invasive species present.
- g. The Mesic Forest, Mesic Prairie, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder, Wet-Mesic Forested Wetland and Wet-Mesic Prairie Communities shall each have a minimum of 20 native, non-invasive species present.
- h. The Mesic Prairie and Wet-Mesic Prairie Communities shall each have a minimum of 15 native, non-invasive species present.
- i. To ensure the restored communities have natural significance, the floristic quality index (FQI) and Coefficient of Conservatism (Mean C) for each shall be > 20 and > 3.5, respectively, after one year. FQI values will be calculated utilizing all species present: non-native species will be assigned a value of zero.

Year 2

- a. Except in the far eastern Mesic Forest stand, aerial coverage of invasive, non-native species such as giant reed grass, reed canary grass, purple loosestrife, Japanese knotweed and garlic mustard will not be >5% absolute cover after two years.
- b. Aerial coverage of garlic mustard will not be >50% absolute cover after two years within the far eastern Mesic Forest stand.
- c. After two years, >80% of the vegetative cover within the restoration site will be native species, <20% of the cover will be invasive, non-native species.
- d. Eighty five percent of the site will be vegetated within two years.
- e. 80% of trees, shrubs and live stakes planted within the various communities will be present and healthy one year after installation.
- f. The Aquatic Submergent/Emergent Restoration Community shall have a minimum of 20 native, non-invasive species present.
- g. The Mesic Forest, Mesic Prairie, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder, Wet-Mesic Forested Wetland and Wet-Mesic Prairie Communities shall each have a minimum of 25 native, non-invasive species present.
- h. The Mesic Prairie and Wet-Mesic Prairie Communities shall each have a minimum of 20 native, non-invasive species present
- i. To ensure the restored communities have natural significance, the floristic quality index (FQI) and Coefficient of Conservatism (Mean C) for each shall be > 22 and > 3.8, respectively, after two years. FQI values will be calculated utilizing all species present: non-native species will be assigned a value of zero.

Year 3.

- a. Except in the far eastern Mesic Forest stand, aerial coverage of invasive, non-native species such as giant reed grass, reed canary grass, purple loosestrife, Japanese knotweed and garlic mustard will not be >5% absolute cover after two years.
- b. Aerial coverage of garlic mustard will not be >25% absolute cover after three years within the far eastern Mesic Forest stand.

- c. After three years, >85% of the vegetative cover within the restoration site will be native, non-invasive species, <15% of the cover will be invasive, non-native species.
- d. Ninety percent of the site will be vegetated within three years.
- e. 75% of trees, shrubs and live stakes planted within the various communities will be present and healthy one year after installation.
- f. The Aquatic Submergent/Emergent Restoration Community shall have a minimum of 20 native, non-invasive species present.
- g. The Mesic Forest, Mesic Prairie, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder, Wet-Mesic Forested Wetland and Wet-Mesic Prairie Communities shall each have a minimum of 30 native, non-invasive species present.
- h. The Mesic Prairie and Wet-Mesic Prairie Communities shall each have a minimum of 25 native, non-invasive species present.
- i. To ensure the restored communities have natural significance, the floristic quality index (FQI) and Coefficient of Conservatism (Mean C) for each shall be > 25 and > 4.0, respectively, after three years. FQI values will be calculated utilizing all species present: non-native species will be assigned a value of zero.
- j. Twenty one of the forty two nesting and roosting boxes shall be utilized or occupied annually by year three.
- k. Twenty avian species, five species of reptiles and amphibians, and five mammal species will be recorded, either through direct observation, calls or sign left by the species, utilizing the site after three years.

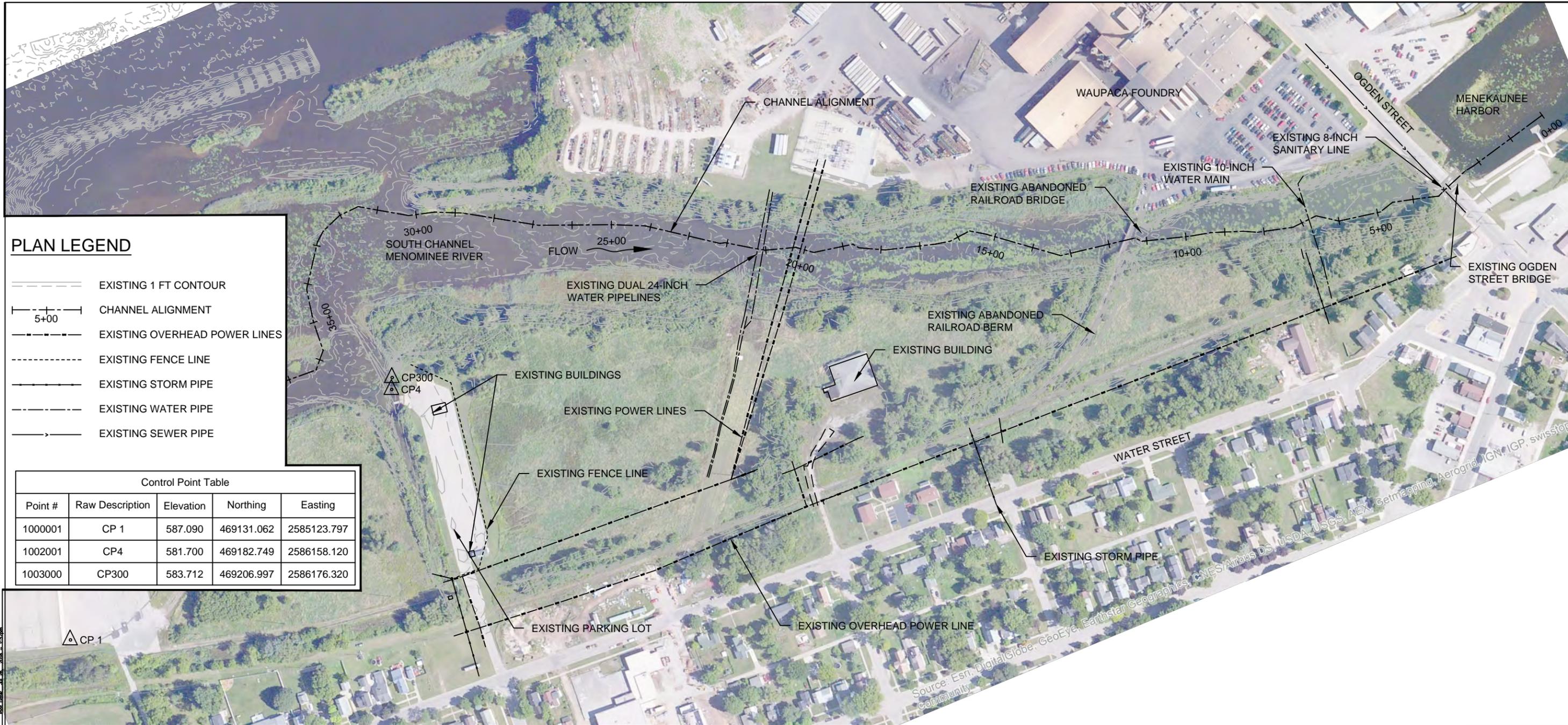
After Year 3.

- a. City of Marinette will be responsible to maintaining the hab restoration area. The City will work with UW-Marinette and WDNR to continue with long term maintenance activities to help limit invasive species from reestablishing, ensure habitat structures are viable, and to help protect the revitalization of the South Channel habitat.

A

APPENDIX A

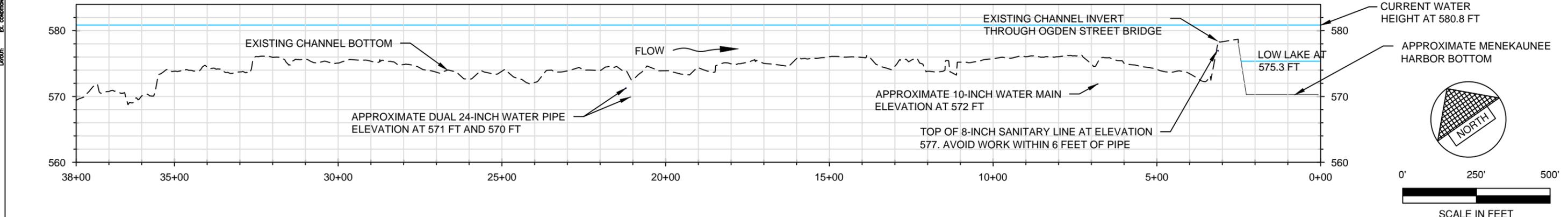
Construction Plans



PLAN LEGEND

- EXISTING 1 FT CONTOUR
- CHANNEL ALIGNMENT
- EXISTING OVERHEAD POWER LINES
- EXISTING FENCE LINE
- EXISTING STORM PIPE
- EXISTING WATER PIPE
- EXISTING SEWER PIPE

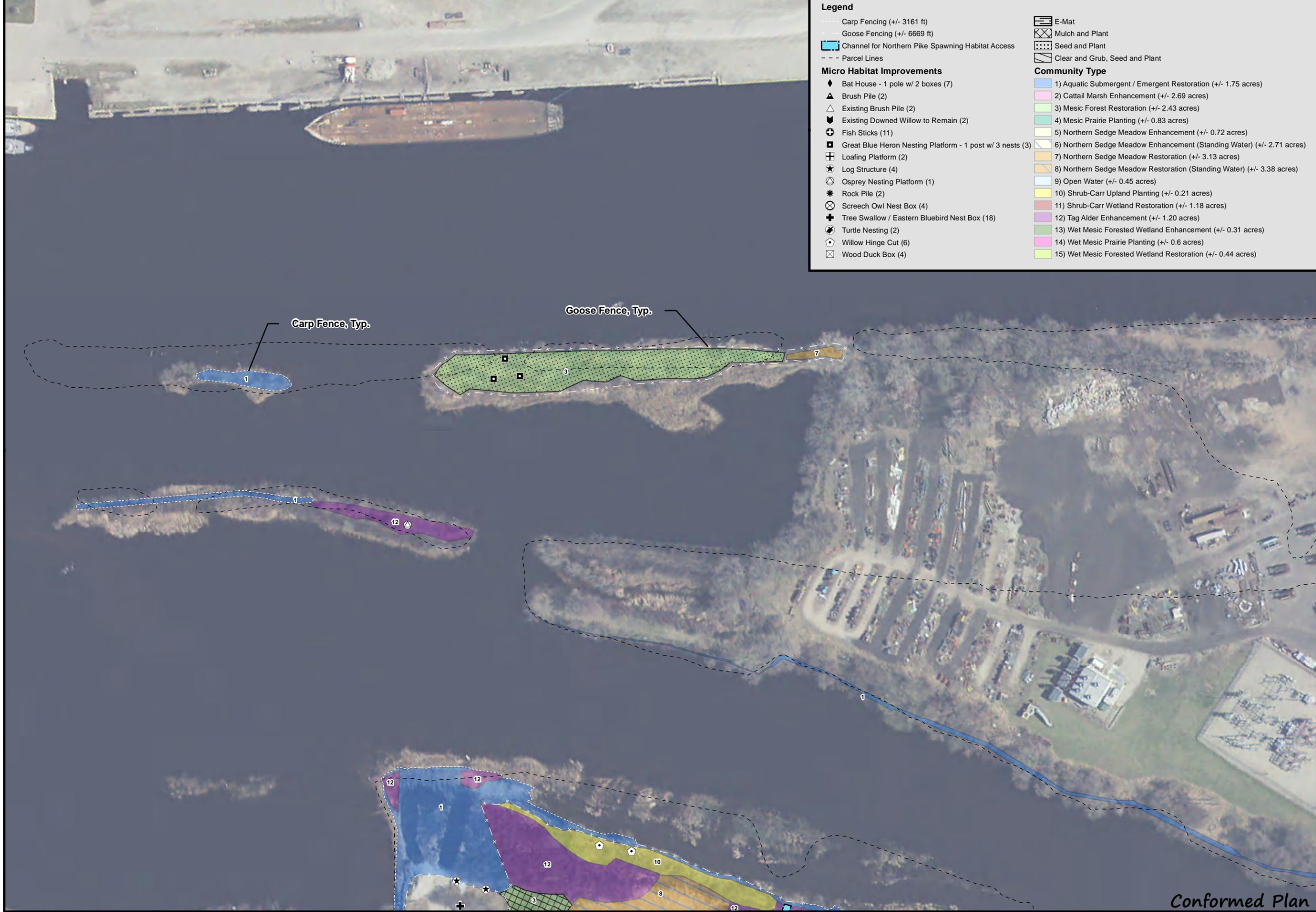
Control Point Table				
Point #	Raw Description	Elevation	Northing	Easting
1000001	CP 1	587.090	469131.062	2585123.797
1002001	CP4	581.700	469182.749	2586158.120
1003000	CP300	583.712	469206.997	2586176.320



SCALE IN FEET

CONFORMED PLAN

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION	DRAWN BLT CHECKED JGS DESIGNED RHT	CONTRACT NO. 3775-16-02 SOUTH CHANNEL HABITAT IMPROVEMENT CITY OF MARINETTE MARINETTE COUNTY, WISCONSIN	EXISTING CONDITIONS	DATE 8/10/16 FILE 3775008T JOB NO. 3775008	Robert E. Lee & Associates, Inc. ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES 1250 CENTENNIAL CENTRE BOULEVARD HOBBART, WI 54155 920-662-9841 www.releesinc.com Celebrating 60 Years of Excellence	SHEET NO. 2
-----	------	---------	----------	-----	------	---------	----------	---	--	---------------------	---	---	-----------------------



Legend

- Carp Fencing (+/- 3161 ft)
 - Goose Fencing (+/- 6669 ft)
 - Channel for Northern Pike Spawning Habitat Access
 - - - Parcel Lines
- Micro Habitat Improvements**
- ◆ Bat House - 1 pole w/ 2 boxes (7)
 - ▲ Brush Pile (2)
 - △ Existing Brush Pile (2)
 - ▽ Existing Downed Willow to Remain (2)
 - ⊕ Fish Sticks (11)
 - Great Blue Heron Nesting Platform - 1 post w/ 3 nests (3)
 - ⊕ Loading Platform (2)
 - ★ Log Structure (4)
 - Osprey Nesting Platform (1)
 - * Rock Pile (2)
 - ⊗ Screech Owl Nest Box (4)
 - ⊕ Tree Swallow / Eastern Bluebird Nest Box (18)
 - ⊙ Turtle Nesting (2)
 - ◇ Willow Hinge Cut (6)
 - ⊗ Wood Duck Box (4)
- Community Type**
- 1) Aquatic Submergent / Emergent Restoration (+/- 1.75 acres)
 - 2) Cattail Marsh Enhancement (+/- 2.69 acres)
 - 3) Mesic Forest Restoration (+/- 2.43 acres)
 - 4) Mesic Prairie Planting (+/- 0.83 acres)
 - 5) Northern Sedge Meadow Enhancement (+/- 0.72 acres)
 - 6) Northern Sedge Meadow Enhancement (Standing Water) (+/- 2.71 acres)
 - 7) Northern Sedge Meadow Restoration (+/- 3.13 acres)
 - 8) Northern Sedge Meadow Restoration (Standing Water) (+/- 3.38 acres)
 - 9) Open Water (+/- 0.45 acres)
 - 10) Shrub-Carr Upland Planting (+/- 0.21 acres)
 - 11) Shrub-Carr Wetland Restoration (+/- 1.18 acres)
 - 12) Tag Alder Enhancement (+/- 1.20 acres)
 - 13) Wet Mesic Forested Wetland Enhancement (+/- 0.31 acres)
 - 14) Wet Mesic Prairie Planting (+/- 0.6 acres)
 - 15) Wet Mesic Forested Wetland Restoration (+/- 0.44 acres)
- Other Legend Items:**
- E-Mat
 - Mulch and Plant
 - Seed and Plant
 - Clear and Grub, Seed and Plant



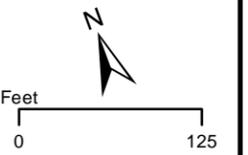
Plant Community Zones & Habitat Structures Map 1

6/7/2016

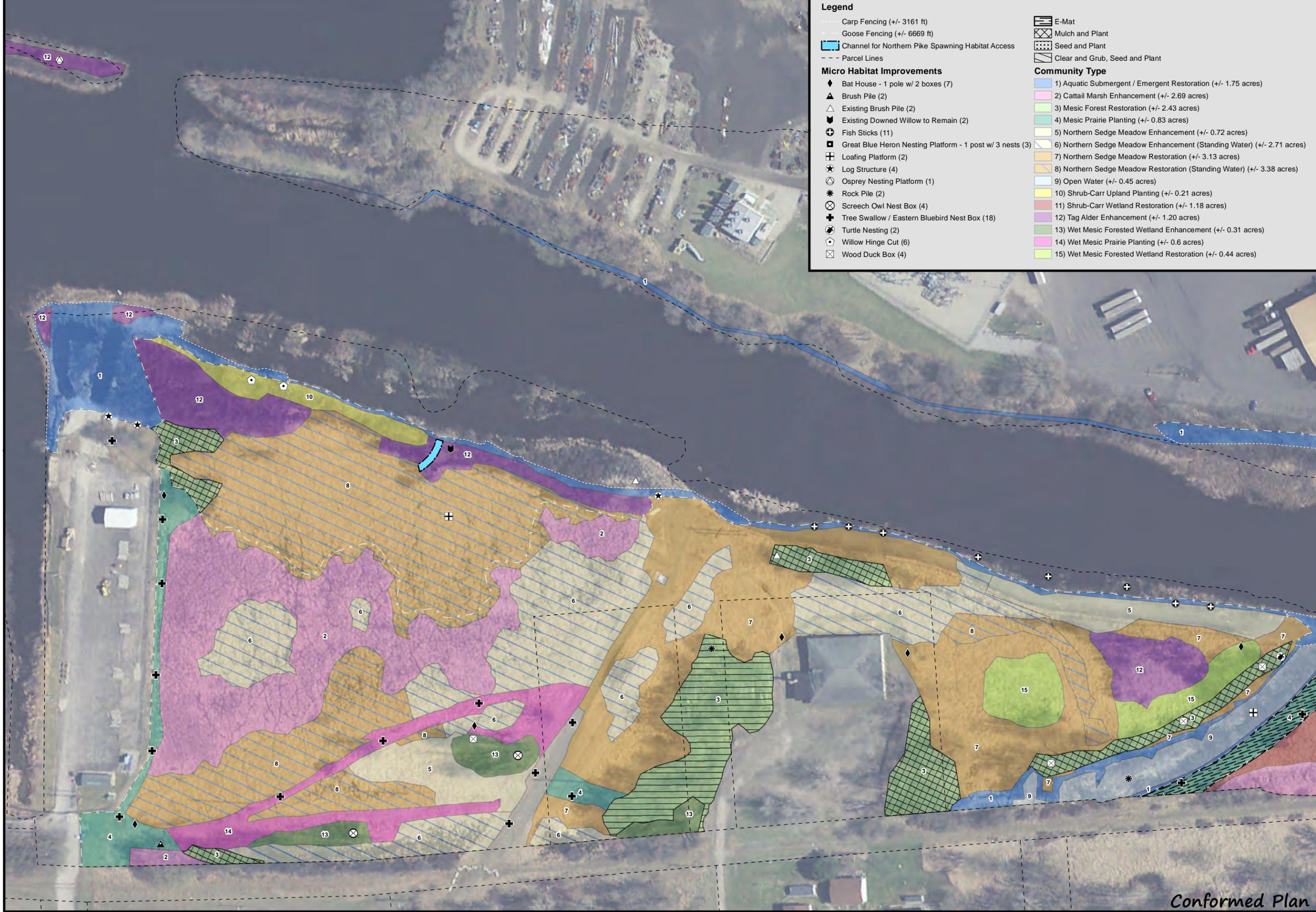
**City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin**

Sources: Robert E. Lee & Associates, Inc., Marinette County

Disclaimer: Robert E. Lee & Associates, Inc. makes every effort to ensure this map is free of errors but does not warrant the map or its features are either spatially or temporally accurate or fit for a particular use. Robert E. Lee & Associates, Inc., provides this map without any warranty of any kind whatsoever, either expressed or implied.



Conformed Plan



Legend

- Carp Fencing (+/- 3161 ft)
- Goose Fencing (+/- 6669 ft)
- Channel for Northern Pike Spawning Habitat Access
- - - Parcel Lines

Micro Habitat Improvements

- ◆ Bat House - 1 pole w/ 2 boxes (7)
- ▲ Brush Pile (2)
- △ Existing Brush Pile (2)
- ▼ Existing Downed Willow to Remain (2)
- ⊕ Fish Sticks (11)
- Great Blue Heron Nesting Platform - 1 post w/ 3 nests (3)
- ⊕ Loading Platform (2)
- ★ Log Structure (4)
- Osprey Nesting Platform (1)
- * Rock Pile (2)
- ⊗ Screech Owl Nest Box (4)
- ⊕ Tree Swallow / Eastern Bluebird Nest Box (18)
- ⊗ Turtle Nesting (2)
- ⊕ Willow Hinge Cut (6)
- ⊗ Wood Duck Box (4)

Community Type

- 1) Aquatic Submergent / Emergent Restoration (+/- 1.75 acres)
- 2) Cattail Marsh Enhancement (+/- 2.69 acres)
- 3) Mesic Forest Restoration (+/- 2.43 acres)
- 4) Mesic Prairie Planting (+/- 0.83 acres)
- 5) Northern Sedge Meadow Enhancement (+/- 0.72 acres)
- 6) Northern Sedge Meadow Enhancement (Standing Water) (+/- 2.71 acres)
- 7) Northern Sedge Meadow Restoration (+/- 3.13 acres)
- 8) Northern Sedge Meadow Restoration (Standing Water) (+/- 3.38 acres)
- 9) Open Water (+/- 0.45 acres)
- 10) Shrub-Carr Upland Planting (+/- 0.21 acres)
- 11) Shrub-Carr Wetland Restoration (+/- 1.18 acres)
- 12) Tag Alder Enhancement (+/- 1.20 acres)
- 13) Wet Mesic Forested Wetland Enhancement (+/- 0.31 acres)
- 14) Wet Mesic Prairie Planting (+/- 0.6 acres)
- 15) Wet Mesic Forested Wetland Restoration (+/- 0.44 acres)

Other Legend Items:

- E-Mat
- Mulch and Plant
- Seed and Plant
- Clear and Grub, Seed and Plant



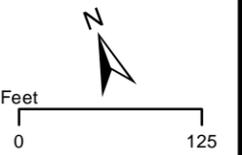
**Plant Community Zones
& Habitat Structures
Map 2**

6/7/2016

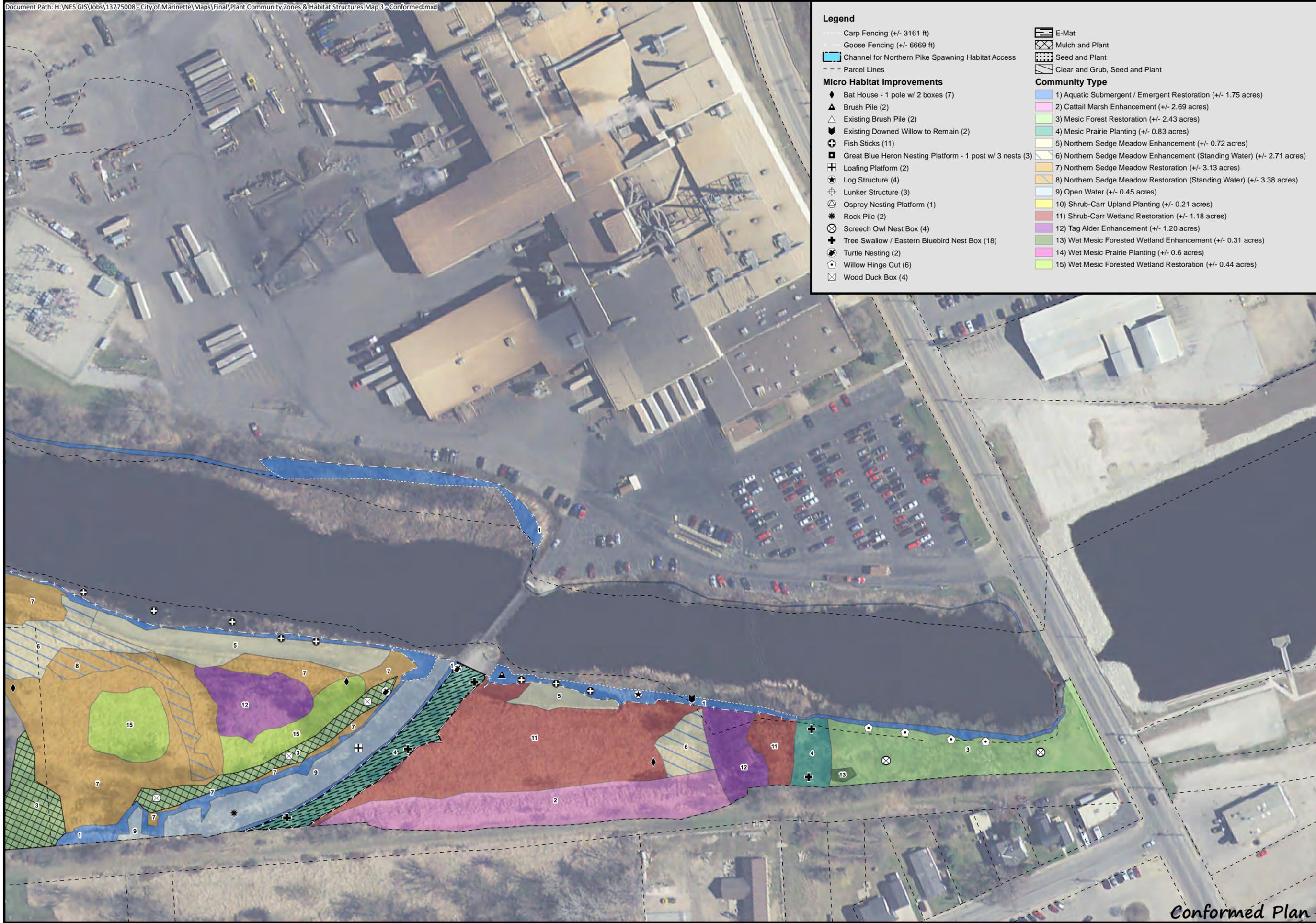
**City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin**

Sources: Robert E. Lee & Associates, Inc., Marinette County

Disclaimer: Robert E. Lee & Associates, Inc. makes every effort to ensure this map is free of errors but does not warrant the map or its features are either spatially or temporally accurate or fit for a particular use. Robert E. Lee & Associates, Inc. provides this map without any warranty of any kind whatsoever, either expressed or implied.



Conformed Plan



Legend

- Carp Fencing (+/- 3161 ft)
- Goose Fencing (+/- 6669 ft)
- Channel for Northern Pike Spawning Habitat Access
- - - Parcel Lines

Micro Habitat Improvements

- ◆ Bat House - 1 pole w/ 2 boxes (7)
- ▲ Brush Pile (2)
- △ Existing Brush Pile (2)
- ▼ Existing Downed Willow to Remain (2)
- ⊕ Fish Sticks (11)
- Great Blue Heron Nesting Platform - 1 post w/ 3 nests (3)
- ⊕ Loafing Platform (2)
- ★ Log Structure (4)
- ⊕ Lunker Structure (3)
- ⊕ Osprey Nesting Platform (1)
- * Rock Pile (2)
- ⊗ Screech Owl Nest Box (4)
- ⊕ Tree Swallow / Eastern Bluebird Nest Box (18)
- ⊗ Turtle Nesting (2)
- ⊕ Willow Hinge Cut (6)
- ⊗ Wood Duck Box (4)

Community Type

- 1) Aquatic Submergent / Emergent Restoration (+/- 1.75 acres)
- 2) Cattail Marsh Enhancement (+/- 2.69 acres)
- 3) Mesic Forest Restoration (+/- 2.43 acres)
- 4) Mesic Prairie Planting (+/- 0.83 acres)
- 5) Northern Sedge Meadow Enhancement (+/- 0.72 acres)
- 6) Northern Sedge Meadow Enhancement (Standing Water) (+/- 2.71 acres)
- 7) Northern Sedge Meadow Restoration (+/- 3.13 acres)
- 8) Northern Sedge Meadow Restoration (Standing Water) (+/- 3.38 acres)
- 9) Open Water (+/- 0.45 acres)
- 10) Shrub-Carr Upland Planting (+/- 0.21 acres)
- 11) Shrub-Carr Wetland Restoration (+/- 1.18 acres)
- 12) Tag Alder Enhancement (+/- 1.20 acres)
- 13) Wet Mesic Forested Wetland Enhancement (+/- 0.31 acres)
- 14) Wet Mesic Prairie Planting (+/- 0.6 acres)
- 15) Wet Mesic Forested Wetland Restoration (+/- 0.44 acres)

E-Mat

- ⊗ Mulch and Plant
- ⊗ Seed and Plant
- ⊗ Clear and Grub, Seed and Plant



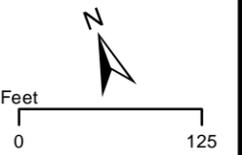
**Plant Community Zones
& Habitat Structures
Map 3**

6/7/2016

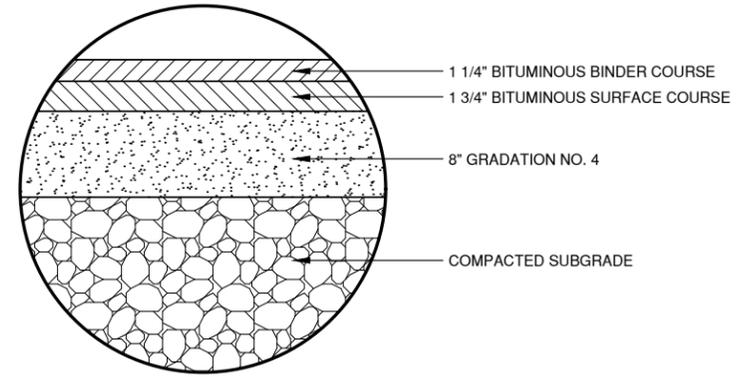
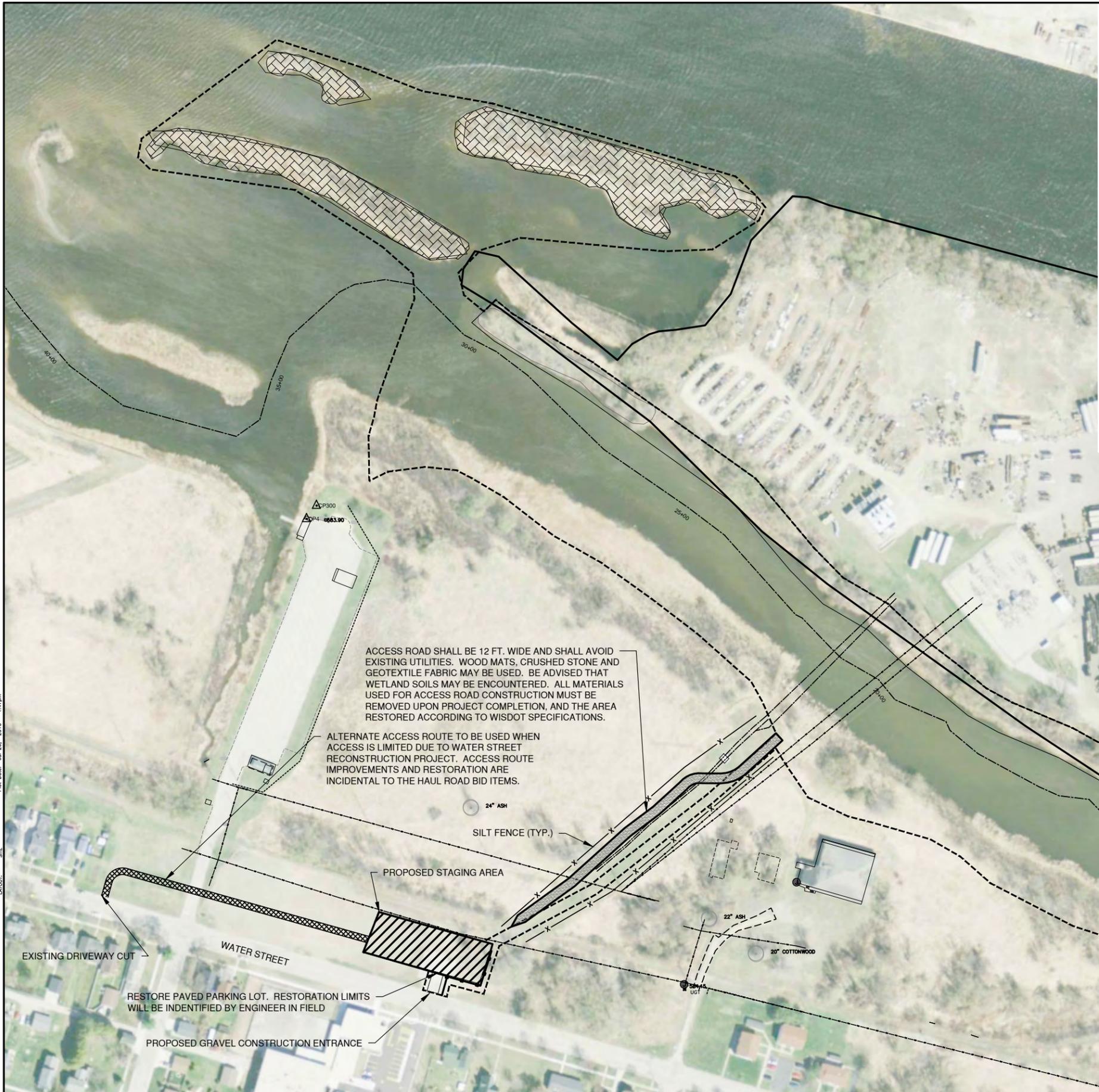
**City of Marinette
Preliminary Wetland Analysis
Contract No. 3775-16-02
City of Marinette
Marinette County, Wisconsin**

Sources: Robert E. Lee & Associates, Inc., Marinette County

Disclaimer: Robert E. Lee & Associates, Inc. makes every effort to ensure this map is free of errors but does not warrant the map or its features are either spatially or temporally accurate or fit for a particular use. Robert E. Lee & Associates, Inc., provides this map without any warranty of any kind whatsoever, either expressed or implied.



Conformed Plan



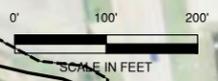
PARKING LOT PAVEMENT DETAIL

ACCESS ROAD SHALL BE 12 FT. WIDE AND SHALL AVOID EXISTING UTILITIES. WOOD MATS, CRUSHED STONE AND GEOTEXTILE FABRIC MAY BE USED. BE ADVISED THAT WETLAND SOILS MAY BE ENCOUNTERED. ALL MATERIALS USED FOR ACCESS ROAD CONSTRUCTION MUST BE REMOVED UPON PROJECT COMPLETION, AND THE AREA RESTORED ACCORDING TO WISDOT SPECIFICATIONS.

ALTERNATE ACCESS ROUTE TO BE USED WHEN ACCESS IS LIMITED DUE TO WATER STREET RECONSTRUCTION PROJECT. ACCESS ROUTE IMPROVEMENTS AND RESTORATION ARE INCIDENTAL TO THE HAUL ROAD BID ITEMS.

RESTORE PAVED PARKING LOT. RESTORATION LIMITS WILL BE IDENTIFIED BY ENGINEER IN FIELD

WAUPACA FOUNDRY



CONFORMED PLAN

FILE: R:\3775\3775_3775008\DWG\RD01.DWG PLOT DATE: Jul 26, 2016 1:14pm

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

DRAWN
FLB
CHECKED
JGS
DESIGNED
RHT

CONTRACT NO. 3775-16-02
SOUTH CHANNEL HABITAT IMPROVEMENT
CITY OF MARINETTE
MARINETTE COUNTY, WISCONSIN

ACCESS ROAD DETAIL

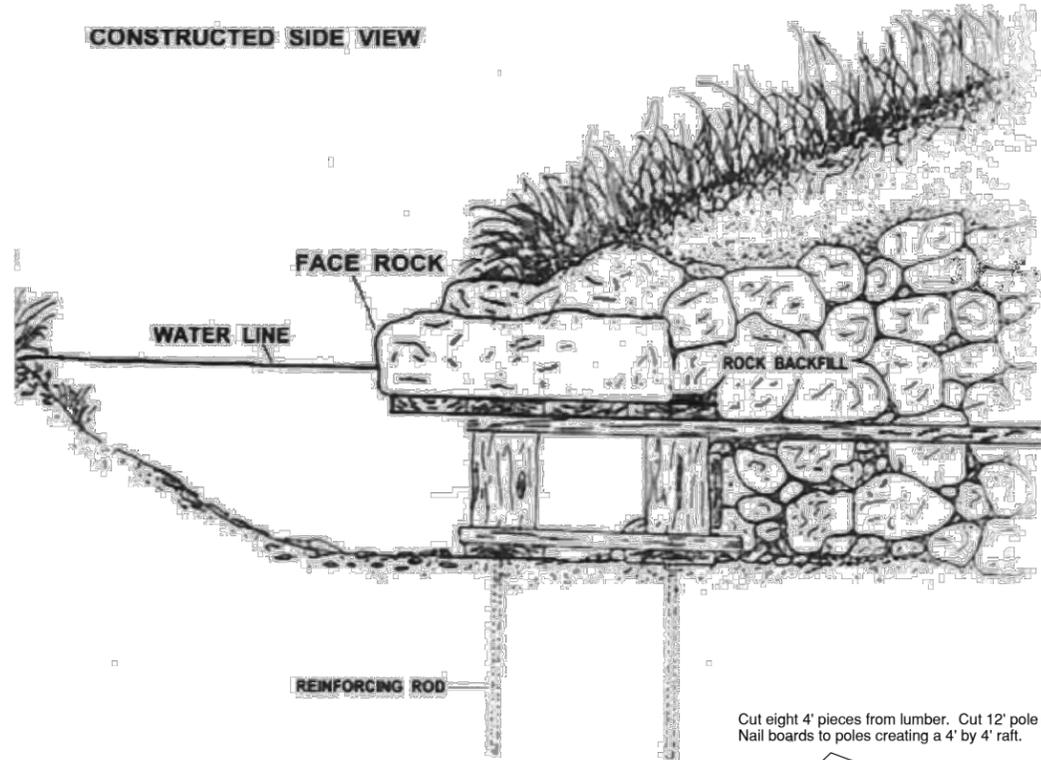
DATE
08/20/14
FILE
BLUOY AND ROAD
JOB NO.
3775008



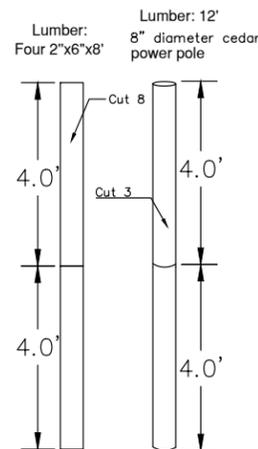
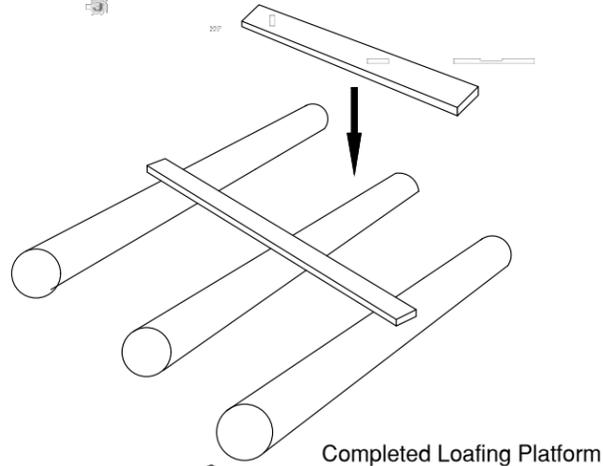
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
920-662-9641 www.releinc.com
Celebrating 60 Years of Excellence

SHEET NO.
6

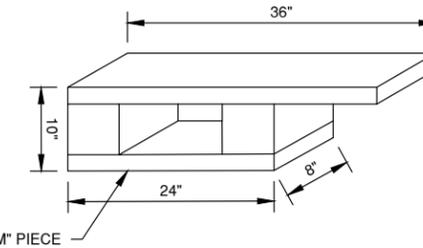
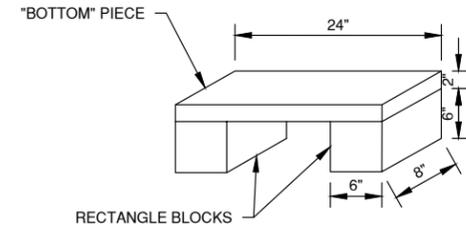
CONSTRUCTED SIDE VIEW



Cut eight 4' pieces from lumber. Cut 12' pole into three 4' lengths. Nail boards to poles creating a 4' by 4' raft.



Turtle and Duck Loafing Platform

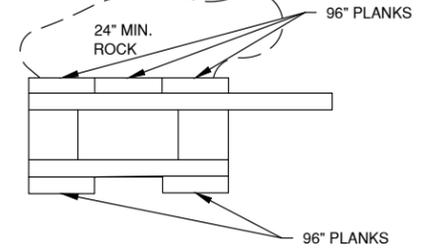
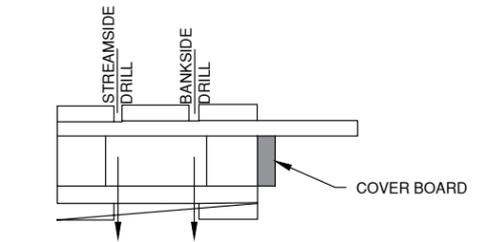


STEP 1: BUILD SPACERS

BUILD 3 EQUAL SPACERS AS SHOWN USING OAK OR OTHER WOOD THAT IS STRONG AND ROT RESISTANT. USE 20D NAILS MIN.

STEP 2: FROM THE LUNKER BOTTOM

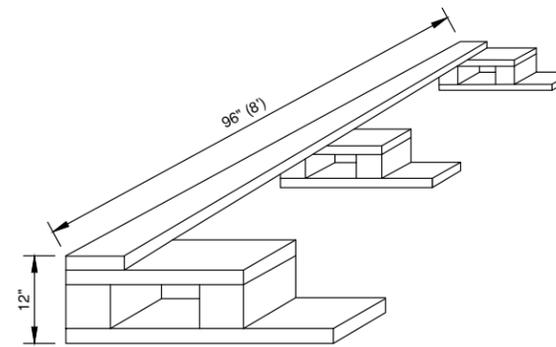
BRIDGE THE SPACERS WITH TWO 8-FOOT PLANKS. THE SPACERS SHOULD BE EVENLY SPACED. SECURE EACH PLANK WITH 20D NAILS.



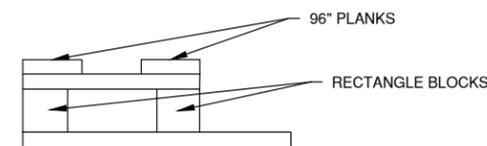
STEP 4: PREPARE LUNKERS FOR PLACEMENT

INSTALL COVER BOARD ON BANK SIDE OF LUNKER. THE PLACEMENT OF THE LUNKER IS DEPENDENT ON THE BASE MATERIAL. THREE TECHNIQUES ARE GENERALLY USED.

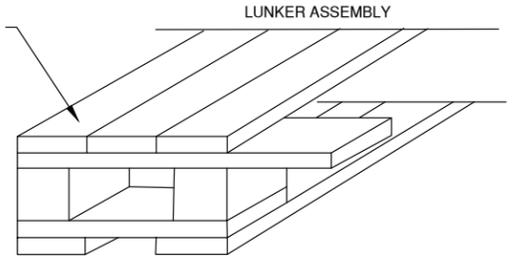
1. PLACE SOIL ANCHORS ATTACH AND SOIL ANCHORS TO LUNKER. OR
2. PLACE LARGE ROCK ON TOP OF LUNKER STRUCTURE. PLACE LUNKER WITH ROCK TO WEIGHT IT DOWN. OR
3. DRILL 9/16\"/>



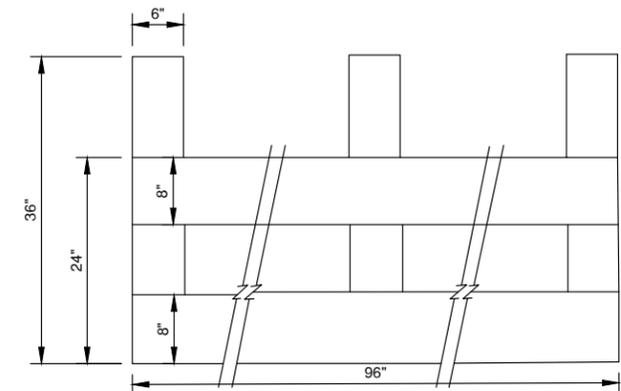
PERSPECTIVE SIDE VIEW (ONE PLANK IN PLACE)



STEP 3: FORM THE LUNKER TOP



PERSPECTIVE SIDE VIEW (THREE PLANKS IN PLACE)



STEP 3: FORM THE LUNKER TOP

BRIDGE SPACERS WITH THREE 8-FOOT PLANKS. SECURE EACH PLANK WITH 20D NAILS.

LUNKER ASSEMBLY DETAILS

FILE: R:\3775\3775-1775008\DWG\DETAILS.dwg PLOT DATE: Jul 26, 2016 1:24pm

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
SOUTH CHANNEL HABITAT IMPROVEMENT
CITY OF MARINETTE
MARINETTE COUNTY, WISCONSIN

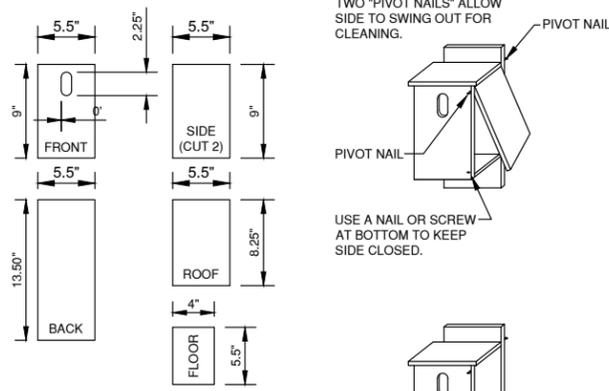
LUNKER ASSEMBLY DETAILS AND
TURTLE/DUCK PLATFORM

DATE: 06/20/16
FILE: DETAILS
JOB NO.: 3775008

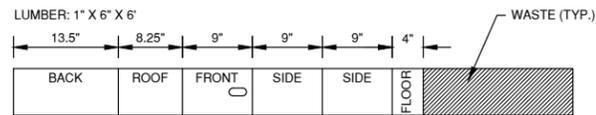
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
920-662-9641 www.releinc.com
Celebrating 60 Years of Excellence

SHEET NO. **8**

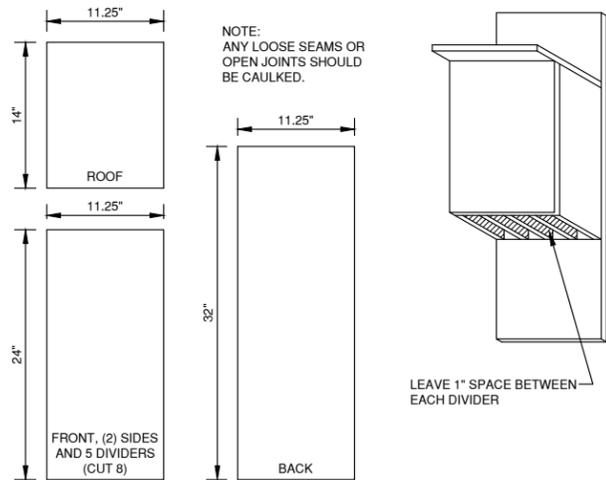
CONFORMED PLAN



NOTE: THESE DIMENSIONS ARE FOR 3/4\"/>



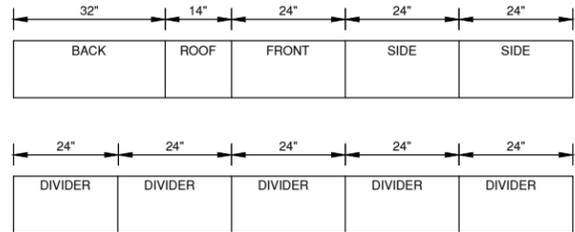
TREE SWALLOW AND EASTERN BLUEBIRD NEST BOX



NOTE: ANY LOOSE SEAMS OR OPEN JOINTS SHOULD BE CAULKED.

LEAVE 1\"/>

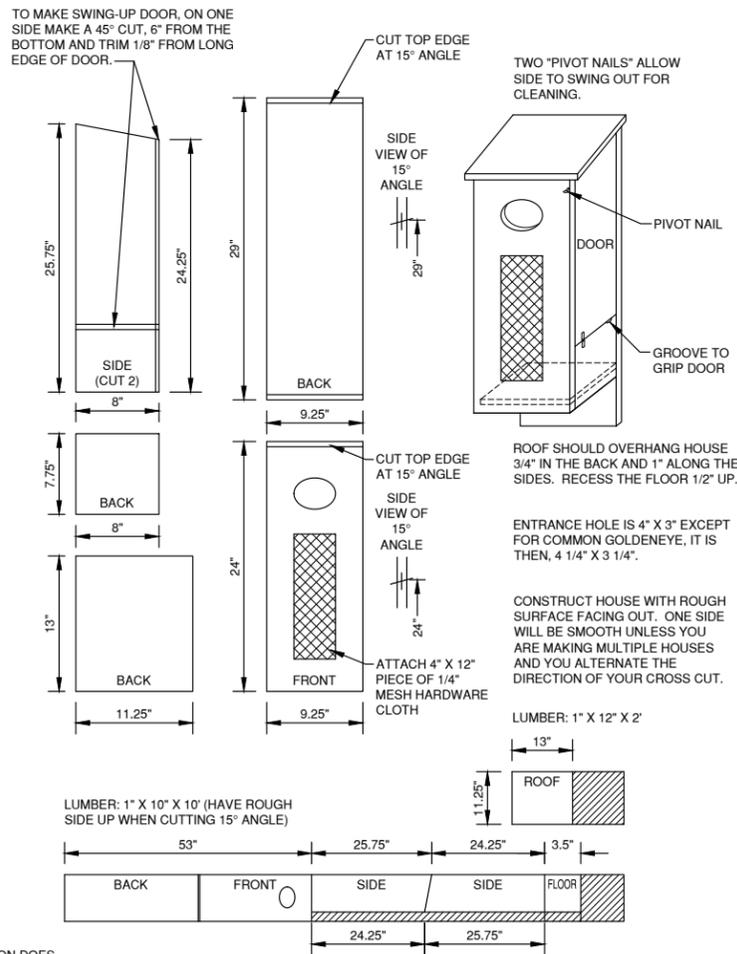
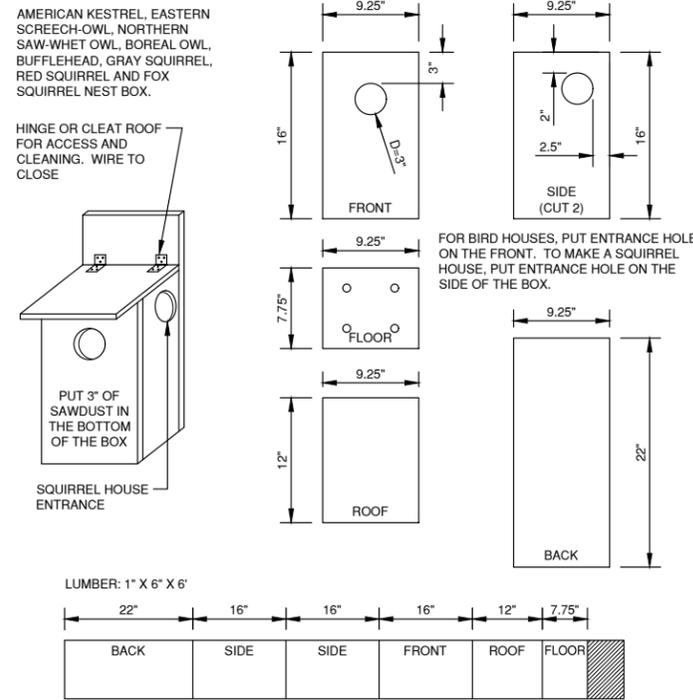
LUMBER: (2) 1\"/>



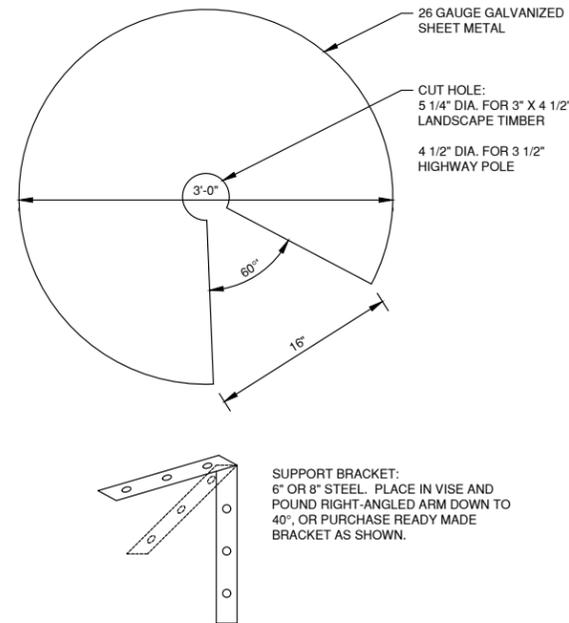
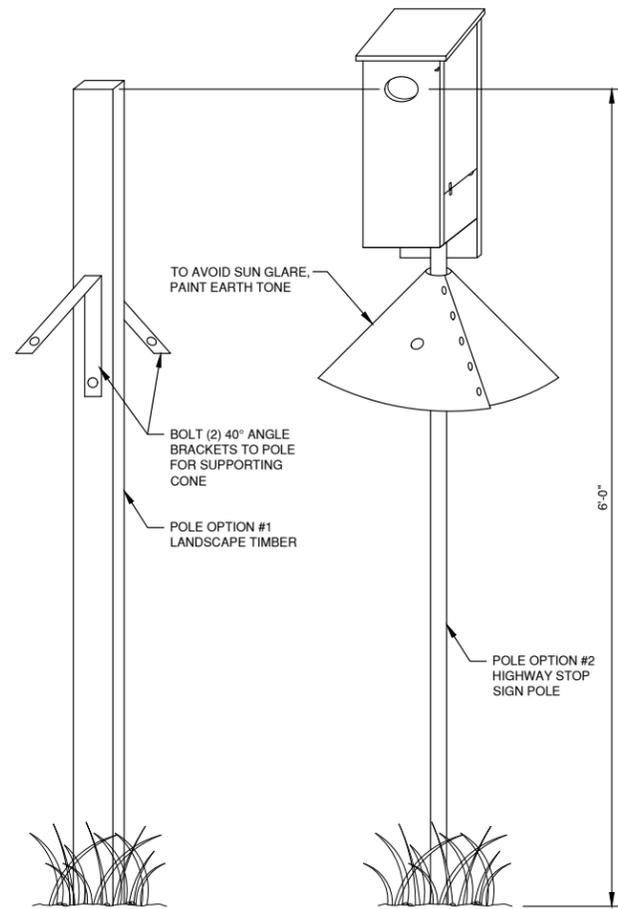
BAT HOUSE

NOTE: ALL NESTING/ROOSTING STRUCTURES SHALL BE CONSTRUCTED WITH CEDAR WOOD.

DISCLAIMER: THE USE OF TRADE NAMES OR REFERENCES TO SPECIFIC PRODUCTS OR COMPANIES IN THIS PUBLICATION DOES NOT IMPLY ENDORSEMENT BY THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES. THEY ARE INTENDED ONLY AS AN AID TO THE READER BECAUSE MANY OF THESE PRODUCTS MENTIONED IN THE TEXT ARE SPECIALIZED AND ARE MARKETED BY PRIVATE CITIZENS OR SMALL BUSINESSES THAT CAN BE HARD FOR THE READER TO LOCATE. IF YOU ARE AWARE OF OTHER PRODUCTS OR BUSINESSES THAT SHOULD BE INCLUDED IN FUTURE EDITIONS OF THIS BOOK, PLEASE CONTACT THE NONGAME WILDLIFE PROGRAM, DEPARTMENT OF NATURAL RESOURCES, 500 LAFAYETTE ROAD, ST. PAUL MN 55155



WOOD DUCK, HOODED MERGANSER AND COMMON GOLDENEYE NEST BOX



CONE GUARD DETAIL

FILE: R:\3775\3775\3775008\DWG\DETAILS 1.dwg PLOT DATE: Jul 26, 2016 11:23:59am

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
SOUTH CHANNEL HABITAT IMPROVEMENT
CITY OF MARINETTE
MARINETTE COUNTY, WISCONSIN

DETAILS

DATE	06/20/16
FILE	DETAILS 1
JOB NO.	3775008



Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
920-662-9641 www.releinc.com
Celebrating 60 Years of Excellence

SHEET NO. **9**

CONFORMED PLAN

MATERIALS LIST:

ITEM
QUANTITY

FRAME PLATFORM

LUMBER
2 X 4 IN. X 3 FT. 3
2 X 4 IN. X 6 FT. 1
2 X 6 IN. X 3 FT. 4

HARDWARE

NAILS, COMMON 16d GALVANIZED 1/2 LB
NAILS, COMMON 5d GALVANIZED 1/4 LB
GALVANIZED METAL STRAP, 3/8 X 7 IN. 2
BOLTS, 3/8 X 10 IN. 4
GALVANIZED WELDED WIRE FABRIC, 1- X2-IN. MESH 3 S.F.
HEAVY-DUTY WIRE STAPLES, 7/8 IN. 12

MISCELLANEOUS

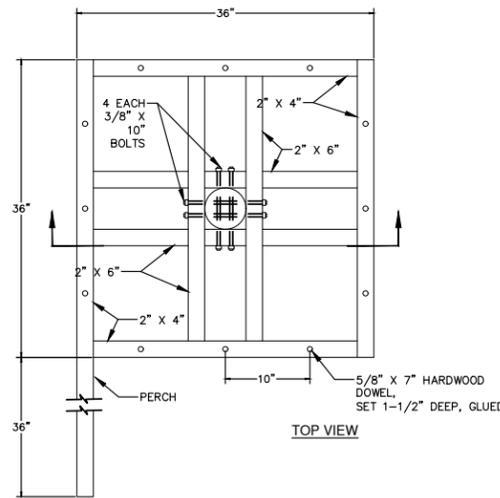
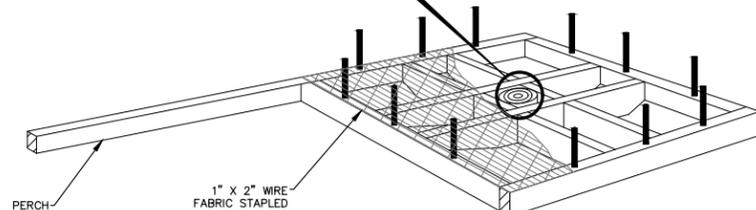
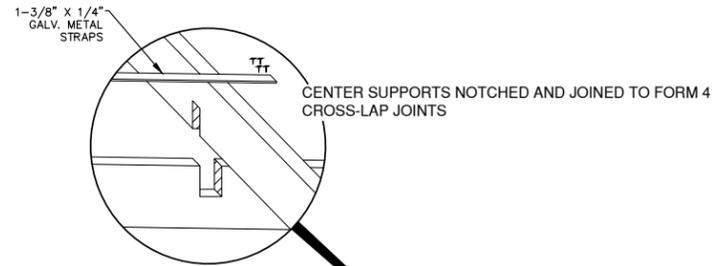
HARDWOOD DOWELS, 5/8 X 7 IN. 12
WOOD GLUE 1 CONTAINER

SUPPORT POLE

CEDAR POLE, 35-40 FT. MINIMUM HEIGHT, WITH 5-IN. TOP DIAMETER 1

NOTES:

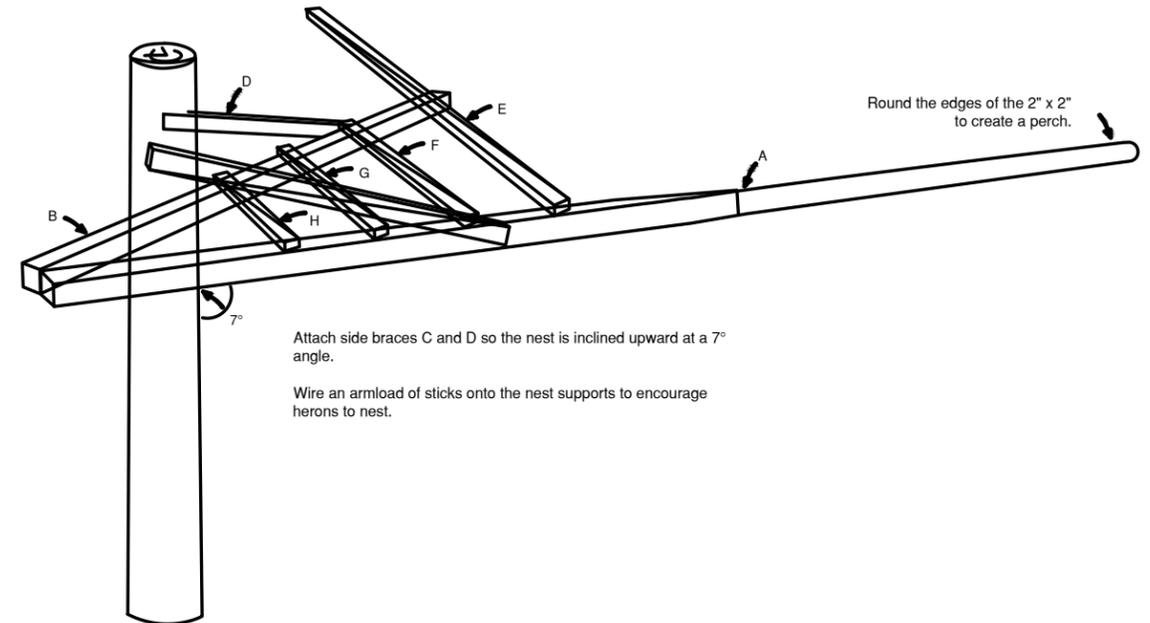
1. STAPLE A 3' X 3' PIECE OF 1" X 2" GALV. WELDED WIRE FABRIC OVER THE TOP OF PLATFORM.
2. ALL JOINTS SHALL BE GLUED AND NAILED.
3. LUMBER USED FOR PLATFORM SHOULD BE DURABLE SOFTWOOD MATERIAL SUCH AS REDWOOD, CEDAR, OR CYPRESS. IF PLATFORMS ARE LOCATED IN MARINE OR EXTREMELY HUMID ENVIRONMENTS, WEATHERED, PRESSURE-TREATED LUMBER SHOULD BE USED.
4. FOUR 3/8" X 4" LAG BOLTS MAY BE SUBSTITUTED FOR THE FOUR 3/8" X 10" BOLTS.



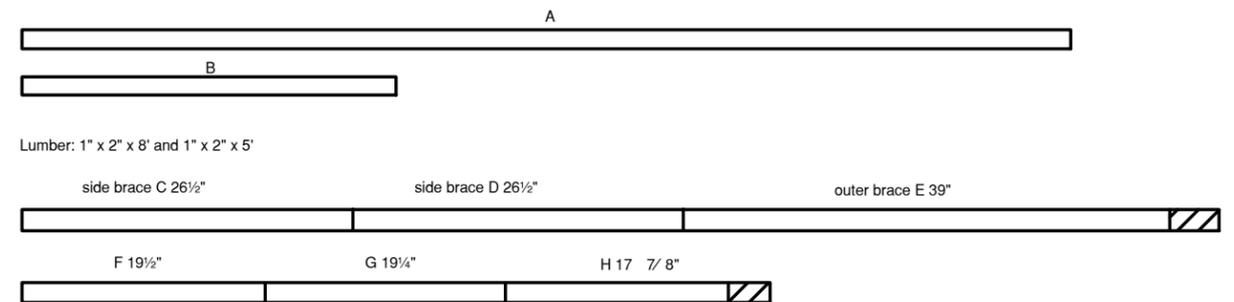
35-40' CEDAR POLE, WITH 5" MIN. TOP DIA.

GROUND SURFACE

PERSPECTIVE



Lumber: 35'-40' cedar power pole that has an 8" to 10" diameter at the base.
Lumber: 2" x 2" x 7" and 2" x 2" x 30"



GREAT BLUE HERON NEST PLATFORM

OSPREY NESTING PLATFORM FRAME

(DESIGN SPECIFICATIONS AFTER GUIDELINES PROVIDED BY BOB ADAIR, U.S. BUREAU OF RECLAMATION.)

LAYOUT: DETAILS
FILE: R:\3775\3775-3775008\DWG\DETAILS.dwg
PLOT DATE: Jul 26, 2016 10:20am

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
SOUTH CHANNEL HABITAT IMPROVEMENT
CITY OF MARINETTE
MARINETTE COUNTY, WISCONSIN

DETAILS

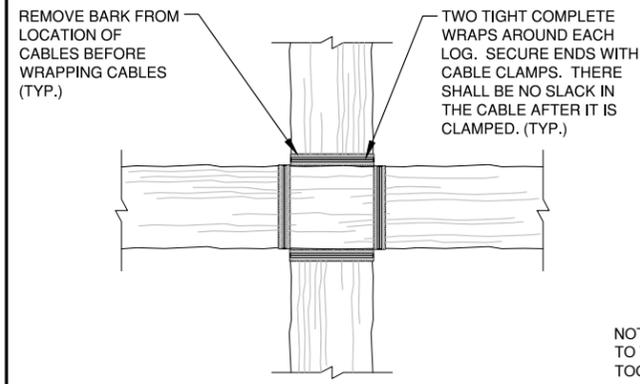
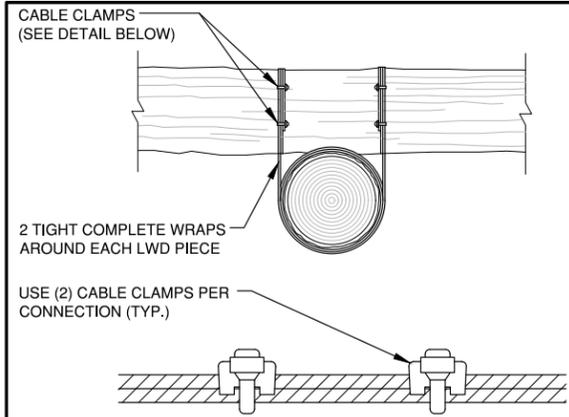
DATE: 06/20/16
FILE: DETAILS
JOB NO.: 3775008



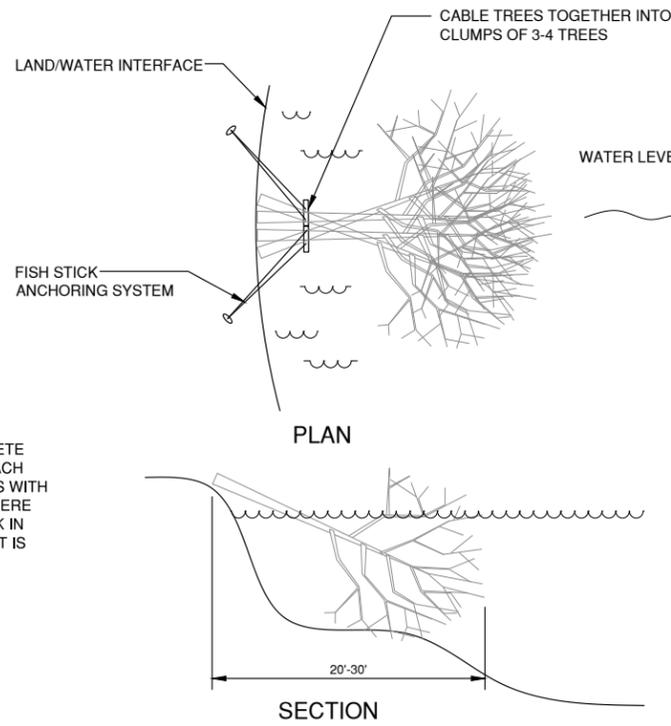
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
920-662-9641 www.releinc.com
Celebrating 60 Years of Excellence

SHEET NO. 7

CONFORMED PLAN

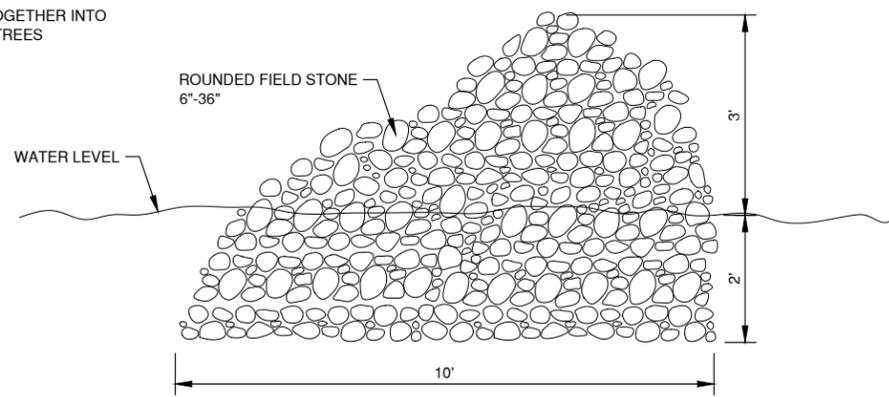


LOG CABLING DETAIL

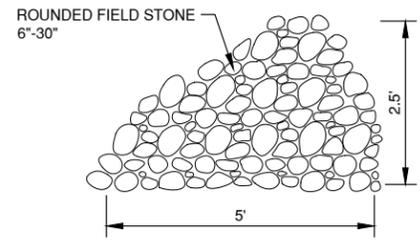


NOTE: TWO PIPES WILL BE USED PER GROUPING OF TREES; AND, EACH PIPE WILL BE ATTACHED TO TWO SEPARATE TREE TRUNKS WITHIN THE GROUP. EACH GROUPING SHALL BE SECURED TOGETHER AROUND EACH TRUNK WITH A MIN. 3/8" GALVANIZED CABLE AND CABLE CLAMPS.

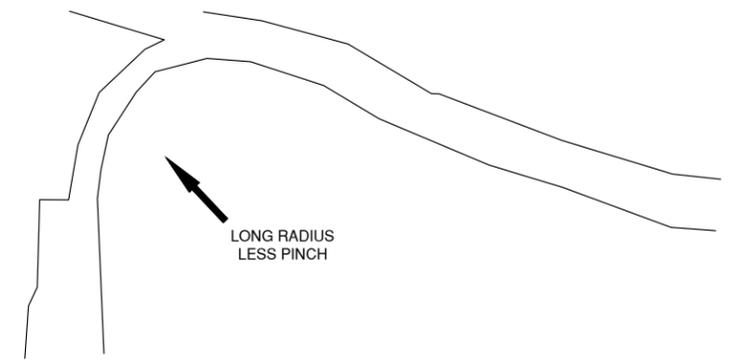
FISH STICK DETAIL



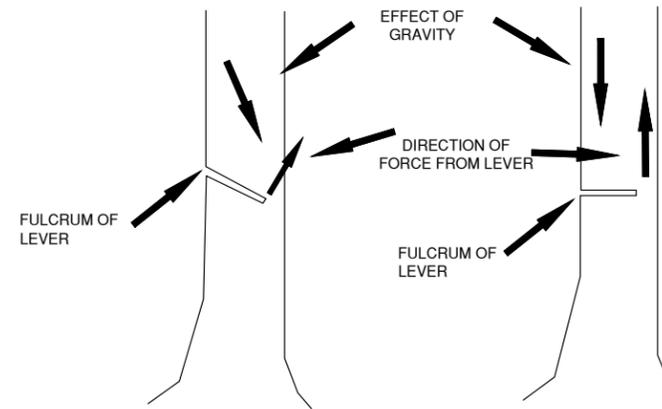
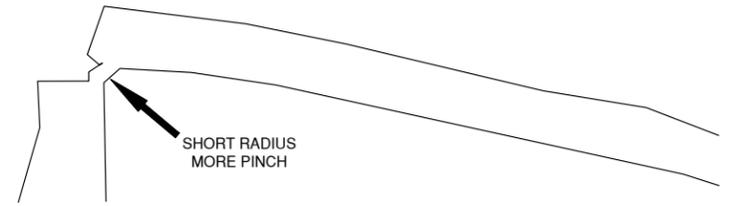
ROCK PILE IN WATER DETAIL



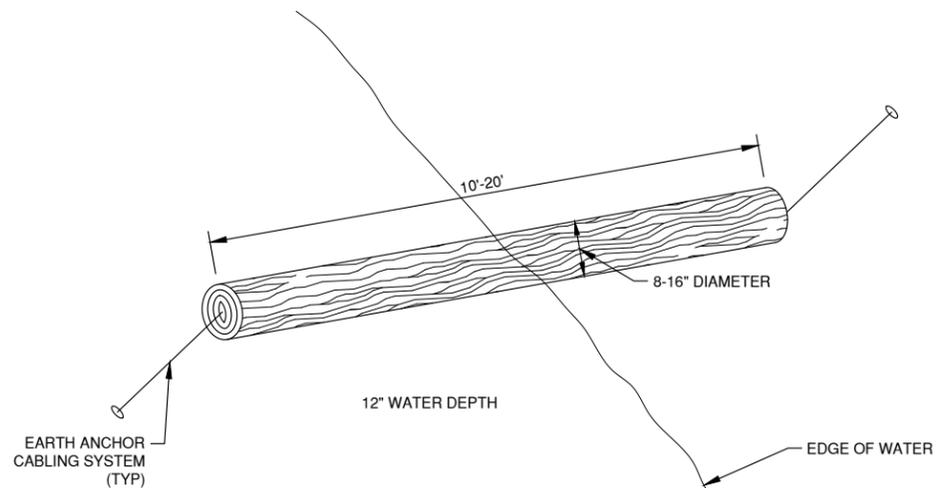
ROCK PILE OUT OF WATER DETAIL



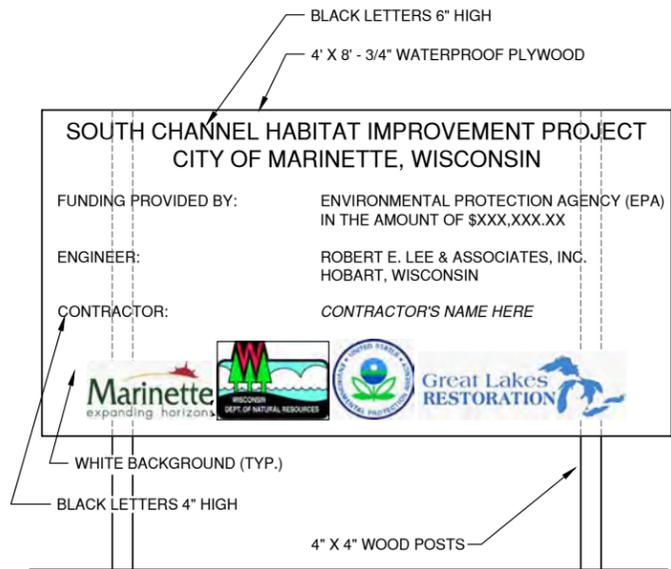
GRAVITY AND LEVER ACTION PUT FORCE ACROSS THE GRAIN WITH AN ANGLE CUT, BUT WITH THE GRAIN ON THE FLAT CUT.



HINGE CUT DETAIL



LOG STRUCTURE SECURING DETAIL



- NOTES:
1. ALL PAINT SHALL BE EXTERIOR GRADE ENAMEL IN COLOR INDICATED.
 2. SIGN SHOULD INCLUDE GREAT LAKES RESTORATION INITIATIVE LOGO (GLRI) IN LOWER RIGHT HAND CORNER OF SIGN. GLRI LOGO TO BE PROVIDED TO CONTRACTOR BY EPA.
 3. FINAL SIGN DETAILS AND INFORMATION TO BE COORDINATED WITH OWNER. SUBMIT SHOP DRAWING FOR REVIEW.
 4. FUNDING AMOUNT WILL BE PROVIDED PRIOR TO SIGN CREATION.

SIGN PLATE DETAIL

FILE: R:\3775\3775-3775008\DWG\DETAILS 1.dwg PLOT DATE: Jul 26, 2016 2:22pm LAYOUT: DETAILS 2

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
SOUTH CHANNEL HABITAT IMPROVEMENTS
CITY OF MARINETTE
MARINETTE COUNTY, WISCONSIN

DETAILS

DATE	06/20/16
FILE	DETAILS 1
JOB NO.	3775008



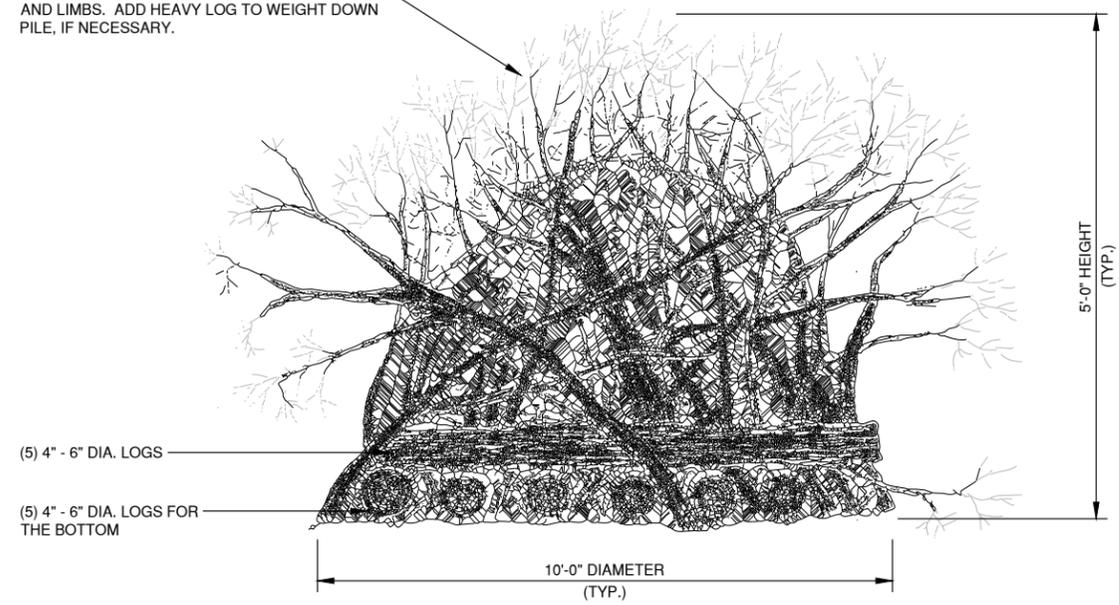
Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
920-662-9641 www.releinc.com
Celebrating 60 Years of Excellence

SHEET NO.
10

CONFORMED PLAN

File: R:\3700\3775\3775000\DWG\DETAILS 1.dwg
 Plot Date: Jul 26, 2016 2:13pm
 Layer: DETAILS 3

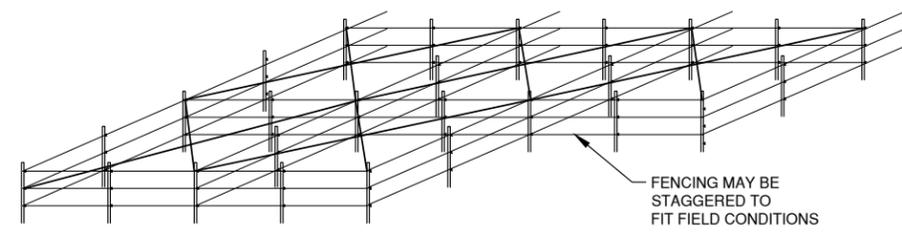
CONSTRUCT WITH ODD LENGTH BRANCHES AND LIMBS. ADD HEAVY LOG TO WEIGHT DOWN PILE, IF NECESSARY.



BRUSH PILE DETAIL

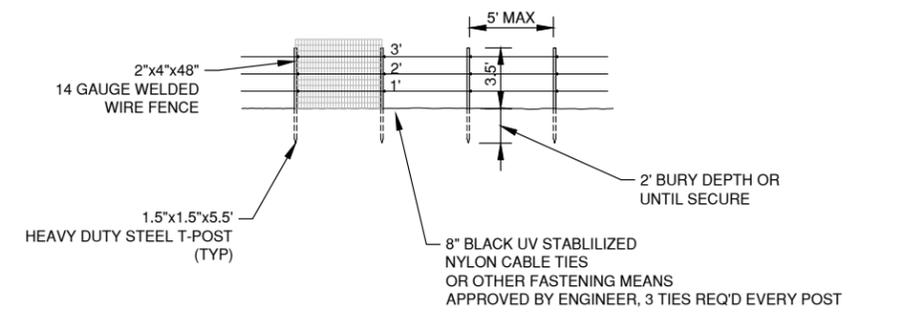
NOTE:
PRUNE DAMAGED OR WEAK ROOTS AND BRANCHES.

GOOSE EXCLUSION FENCE ISOMETRIC VIEW



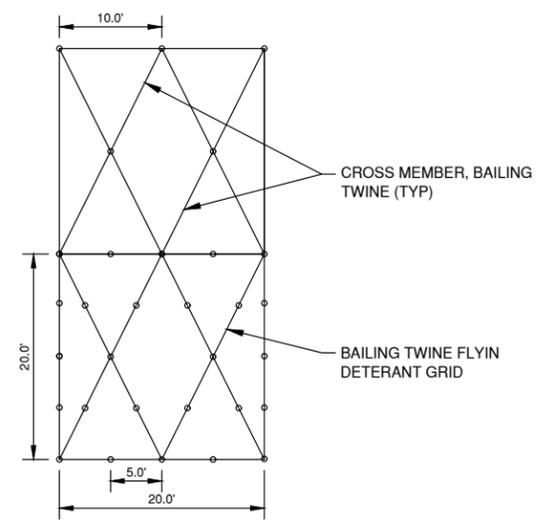
FENCING MAY BE STAGGERED TO FIT FIELD CONDITIONS

CARP EXCLUSION FENCE ISOMETRIC VIEW



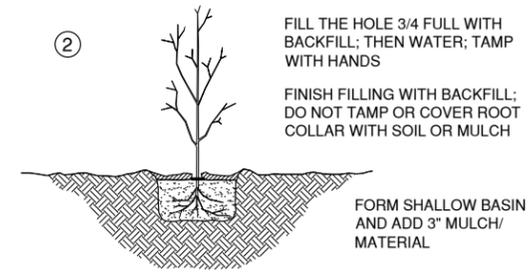
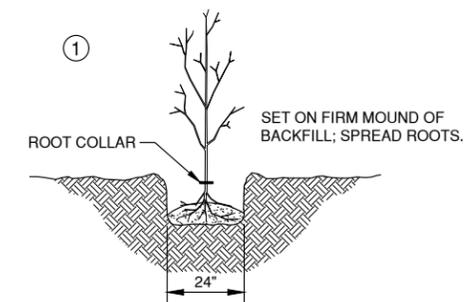
CARP EXCLUSION FENCING ELEVATION VIEW

GOOSE EXCLUSION FENCING PLAN VIEW

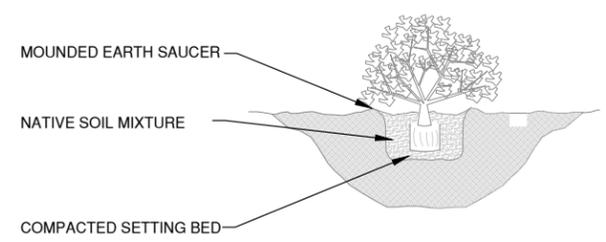


CARP EXCLUSION FENCING PLAN VIEW

NOTE:
 1. GOOSE FENCING MATERIAL SHALL BE 48\"/>



TYPICAL BARE-ROOT PLANTING DETAIL



NOTE: SHRUB SHALL BEAR SAME RELATION TO FINISH GRADE AS IN NURSERY.

TYPICAL POTTED TREE AND SHRUB PLANTING DETAIL

CARP AND GOOSE EXCLUSION FENCING DETAIL

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
 SOUTH CHANNEL HABITAT IMPROVEMENT
 CITY OF MARINETTE
 MARINETTE COUNTY, WISCONSIN

MISCELLANEOUS DETAILS

DATE: 04/20/15
 FILE: DETAILS 1
 JOB NO.: 3775005

Robert E. Lee & Associates, Inc.
 ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
 1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
 920-662-9641 www.releinc.com
 Celebrating 60 Years of Excellence

SHEET NO. **11**

CONFORMED PLAN



FILE: R:\3775\3775-16-02\3775-16-02_SHT 20 TRUCK ROUTES.dwg
 USER: CLO
 DATE: 07/26/2016 10:28:00 AM

(APPROX. DREDGE AREA)

LOT 24
(APPROX. DREDGE
SPOILS CONTAINMENT
SITE AREA)

TRUCK ROUTE TO/FROM
LOT 24 DREDGE SPOILS
CONTAINMENT AREA

ALTERNATE ROUTE USED
DURING SCHOOL HOURS

CONFORMED PLAN

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

DRAWN: RLB
 CHECKED: JGS
 DESIGNED: RHT

CONTRACT NO. 3775-16-02
 SOUTH CHANNEL HABITAT IMPROVEMENT
 CITY OF MARINETTE
 MARINETTE COUNTY, WISCONSIN

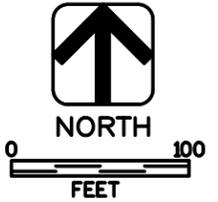
ANTICIPATED DREDGE SPOILS TRUCK ROUTES

DATE: 04/20/16
 FILE: SHT 20 TRUCK ROUTES
 JOB NO.: 3775008

Robert E. Lee & Associates, Inc.
 ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
 1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
 920-662-9841 www.releesinc.com
 Celebrating 60 Years of Excellence

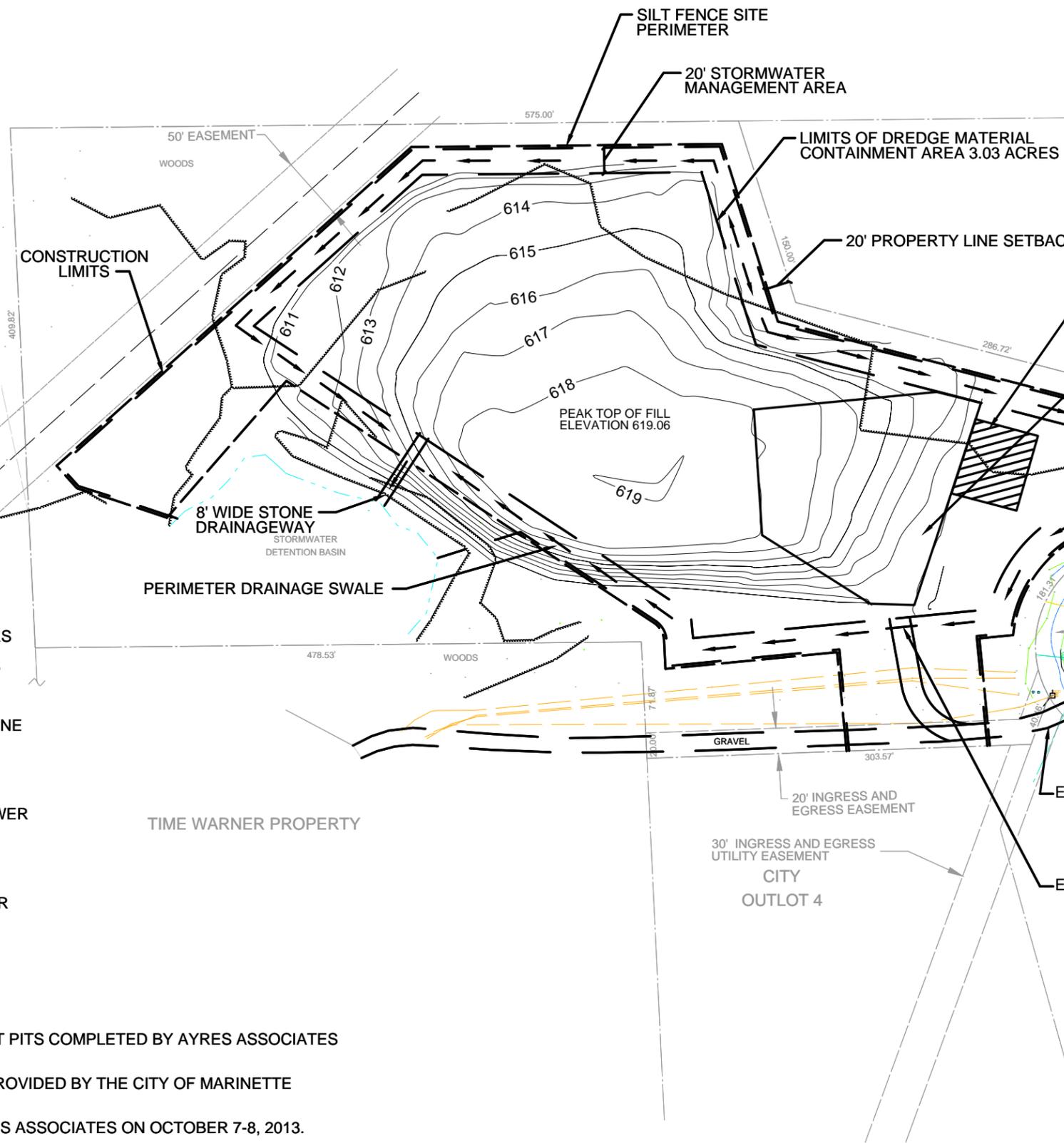
SHEET NO. 12

EARTHWORK ESTIMATES
 MAXIMUM ALLOWABLE FILL
 PER DESIGN = 54,500 CY
 PEAK OF FILL ELEVATION = 631.9 FT.



NOTES:
 1. FINAL SLOPES SHALL MATCH EXISTING SLOPES.

6" AVERAGE TOPSOIL TO BE STRIPPED AND STOCK PILED. DREDGE MATERIAL (APPROX 114 SY) SHALL BE PLACED ON SLOPES AND GRADED TO NEAR EXISTING SLOPE. TOPSOIL SHALL BE REPLACED, GRADED, SEED, FERTILIZED AND MULCHED.



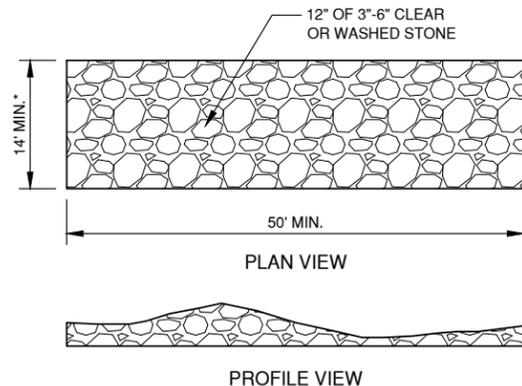
- LEGEND**
- TREE LINE
 - EDGE OF GRAVEL
 - PROPERTY LINE
 - RIGHT OF WAY
 - 2 - FOOT ELEVATION CONTOURS
 - DELINEATED WETLAND AREAS
 - UNDERGROUND GAS LINE
 - UNDERGROUND TELEPHONE LINE
 - UNDERGROUND WATER LINE
 - UNDERGROUND ELECTRIC LINE
 - UNDERGROUND SANITARY SEWER
 - STORM SEWER PIPE
 - DITCH CENTERLINE
 - APPROXIMATE EDGE OF WATER
 - CONSTRUCTION LIMITS
 - SILT FENCE

- NOTES:
1. TOPOGRAPHIC SURVEY AND TEST PITS COMPLETED BY AYRES ASSOCIATES ON 10-13-2013.
 2. PLAT/ PROPERTY LINE SURVEY PROVIDED BY THE CITY OF MARINETTE ENGINEERING DEPARTMENT.
 3. WETLANDS DELINEATED BY AYRES ASSOCIATES ON OCTOBER 7-8, 2013.

File: R:\3775\3775_3775006.dwg; SHT 21 LOT 24.dwg
 Plot Date: Jul 26, 2016 2:08pm
 L:\0000\11117

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION	DRAWN RLB	CONTRACT NO. 3775-16-02 SOUTH CHANNEL HABITAT IMPROVEMENT CITY OF MARINETTE MARINETTE COUNTY, WISCONSIN	LOT 24 DREDGE SPOILS CONTAINMENT SITE	DATE 04/20/16	FILE SHT 21 LOT 24	JOB NO. 3775008	 Robert E. Lee & Associates, Inc. ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES 1250 CENTENNIAL CENTRE BOULEVARD HOBERT, WI 54155 920-662-9641 www.releinc.com Celebrating 60 Years of Excellence	SHEET NO. 13
								CHECKED JGS							
								DESIGNED RHT							

CONFORMED PLAN



*14" MIN. OR FULL WIDTH OF THE EGRESS POINT.
REFERENCE WDNR TECHNICAL STANDARD 1057.

TRACKING PAD DETAIL
(IF APPLICABLE)

INLET PROTECTION NOTES:

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE WDOT PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2"x4".

INSTALLATION NOTES:
TYPE "B" & "C"

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

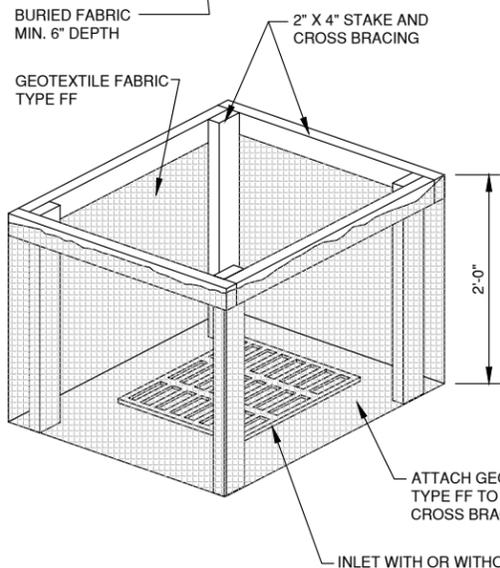
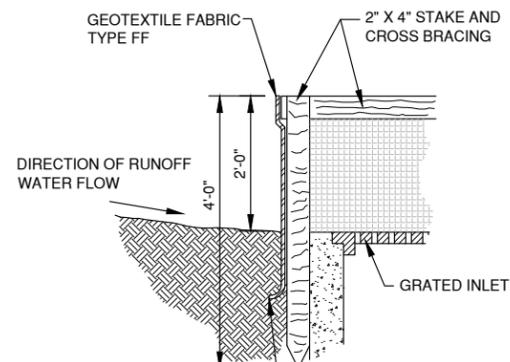
DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE "D"

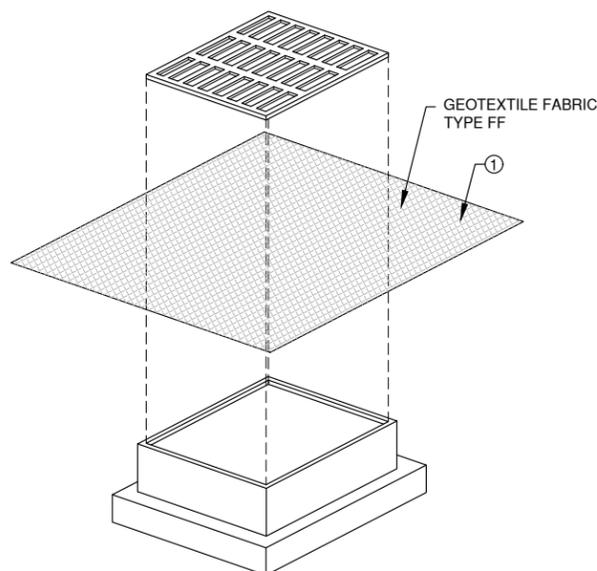
DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30" MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY, CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE, THE TIES SHALL BE PLACED AT THE MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

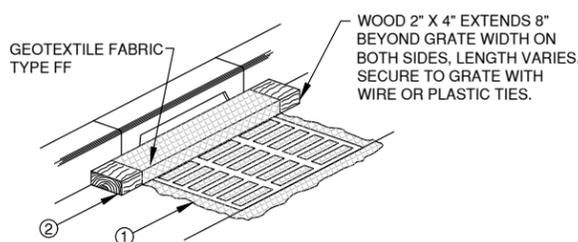


INLET PROTECTION, TYPE A

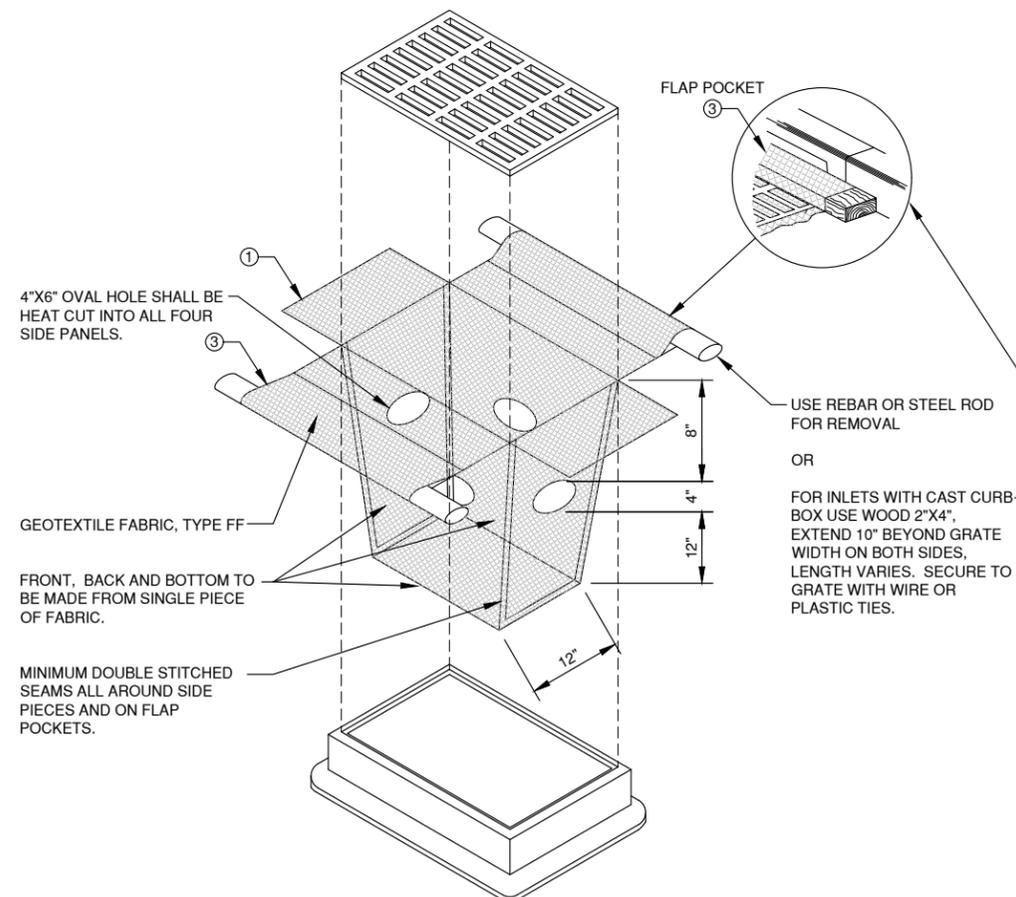


**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



**INLET PROTECTION, TYPE C
(WITH CURB BOX)**



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT CURB BOX AS PER NOTE "2")

FILE: R:\3775\3775-1775008\EROSION CONTROL.dwg
DATE: Jul 26, 2016 10:22am
LAYOUT: INLET PROTECTION
LAYOUT: INLET PROTECTION

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
SOUTH CHANNEL HABITAT IMPROVEMENT
CITY OF MARINETTE
MARINETTE COUNTY, WISCONSIN

EROSION CONTROL
INLET PROTECTION AND
MISCELLANEOUS DETAILS

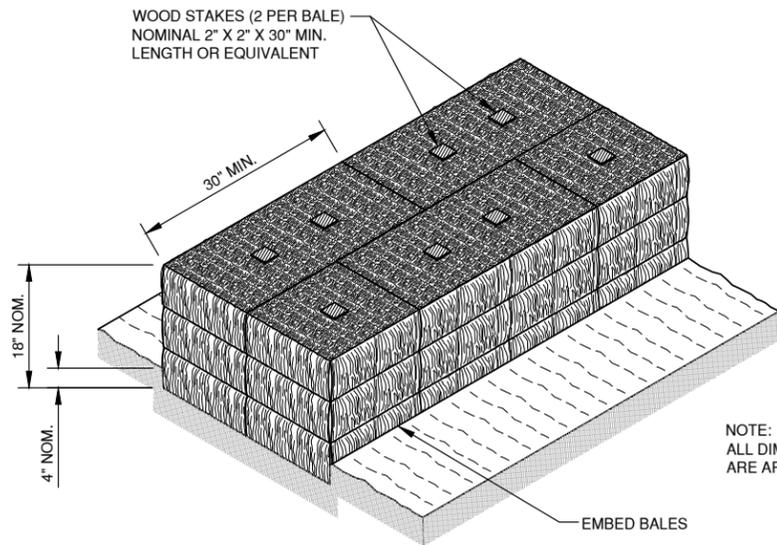
DATE	04/20/16
FILE	EROSION CONTROL
JOB NO.	3775008



Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBBART, WI 54155
920-662-9641 www.releinc.com
Celebrating 60 Years of Excellence

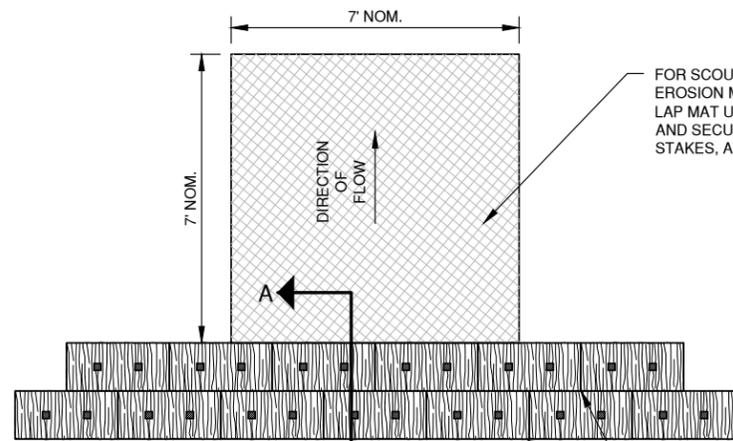
SHEET NO.
14

CONFORMED PLAN

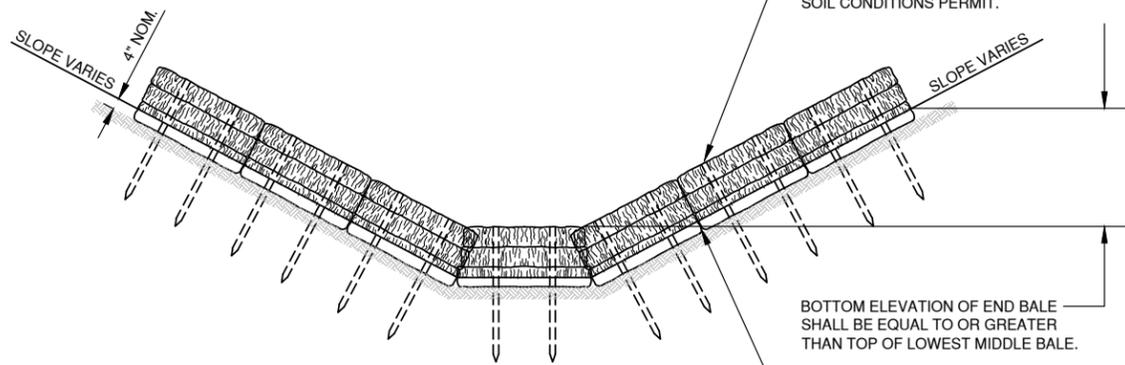


SECTION A-A

NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

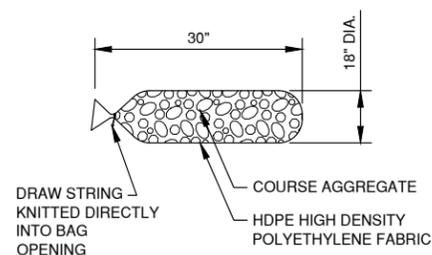


PLAN VIEW



FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES
TYPE A



FILTER BAG DETAIL

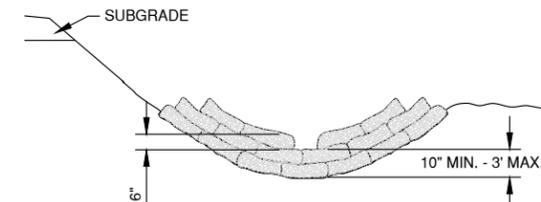
COURSE AGGREGATE INFORMATION

SIEVE SIZE	SIZE NO. AASHTO No. 67 (1)
2 INCH (50 mm)	-
1 1/2 INCH (37.5mm)	-
1 INCH (25.0 mm)	100
3/4 INCH (19.0mm)	90-100
3/8 INCH (9.5mm)	20-55
No. 4 (4.75mm)	0-10
No. 8 (2.36mm)	0-5

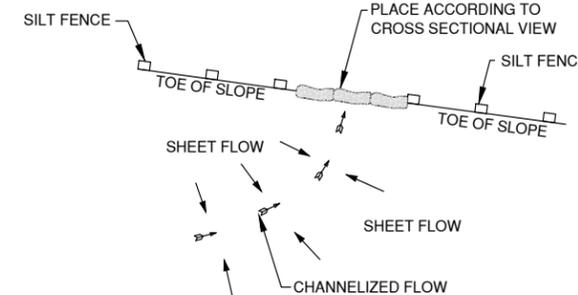
(1) SIZE No. ACCORDING TO AASHTO M 43

NOTES:

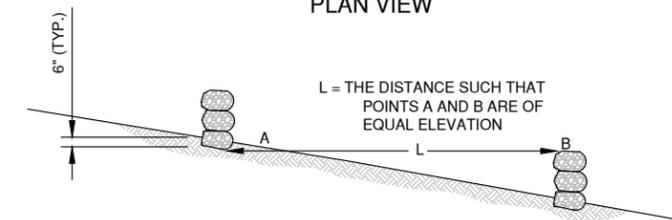
18" X 30" ROCK FILLED FILTER BAG SHALL BE COMPRISED OF THE FOLLOWING:
 HDPE HIGH DENSITY POLYETHYLENE
 HDPE HIGH DENSITY POLYETHYLENE DRAW STRING KNITTED DIRECTLY INTO BAG OPENING.
 80% FABRIC CLOSURE WITH APPARENT OPENING SIZE NO LARGER THAN 1/8" X 1/8"
 ROLLED SEAM USING A MINIMUM OF 480 DENIER POLYESTER SEWING YARN FOR STRENGTH AND DURABILITY.
 USE WELL GRADED COURSE AGGREGATE CONFORMING TO THE FOLLOWING GRADATION REQUIREMENTS



CROSS SECTIONAL VIEW



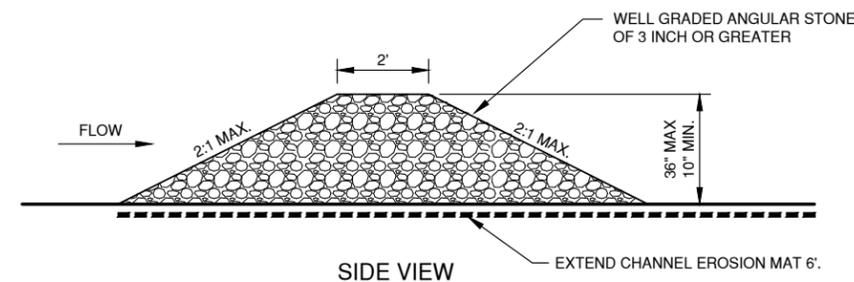
PLAN VIEW



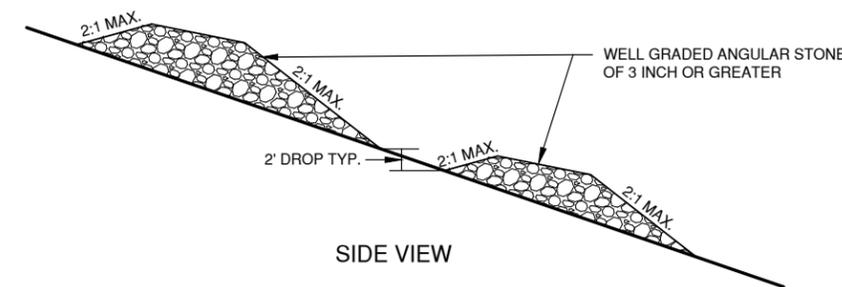
SIDE VIEW

DITCH CHECK DETAIL

ROCK FILLED EROSION CONTROL BAGS
TYPE B



SIDE VIEW



SIDE VIEW

TEMPORARY DITCH CHECK USING STONE
TYPE C

File: R:\3700\3775\3775008\env\EROSION CONTROL.dwg
 Plot Date: Jul 26, 2016 10:22am
 LAYOUT: DITCH CHECKS
 DITCH CHECKS

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
 SOUTH CHANNEL HABITAT IMPROVEMENT
 CITY OF MARINETTE
 MARINETTE COUNTY, WISCONSIN

EROSION CONTROL
 DITCH CHECK DETAILS

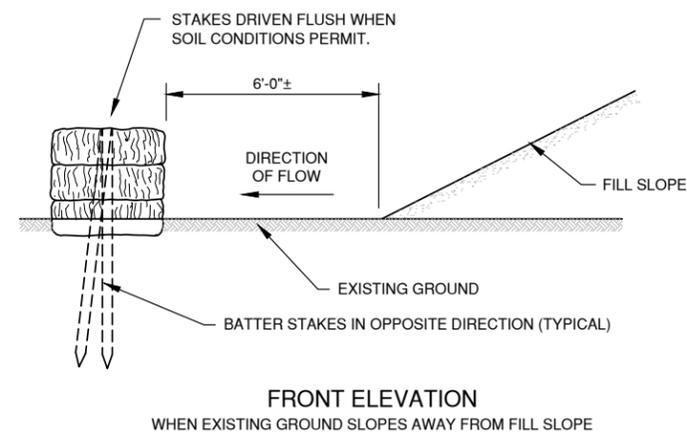
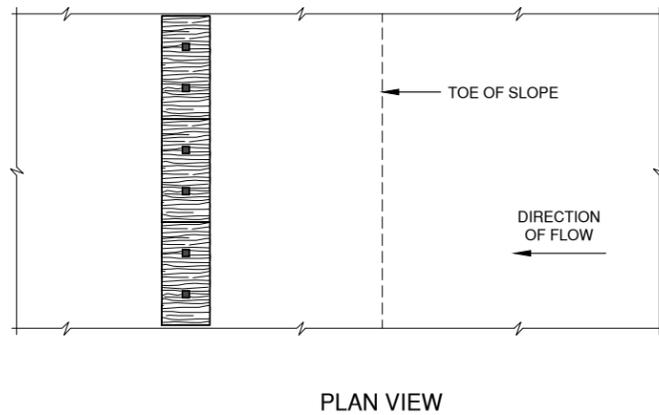
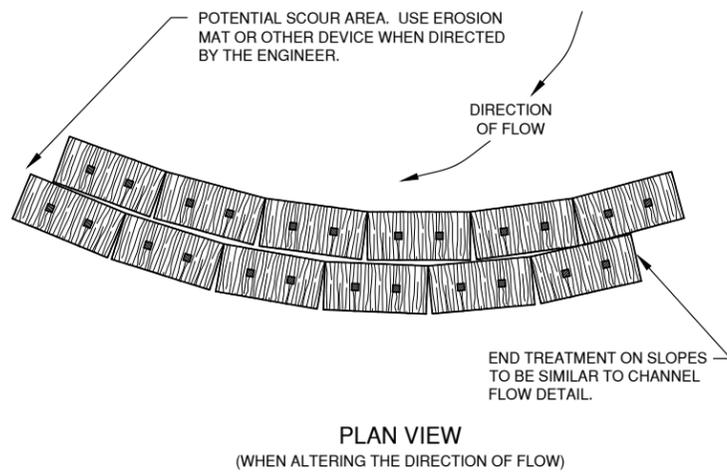
DATE
04/20/16
 FILE
EROSION CONTROL
 JOB NO.
3775008



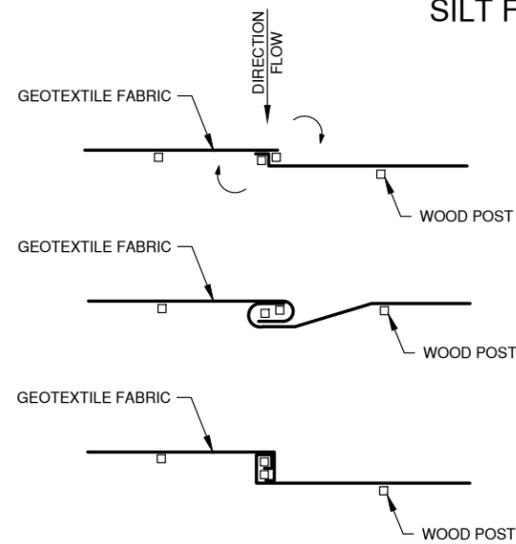
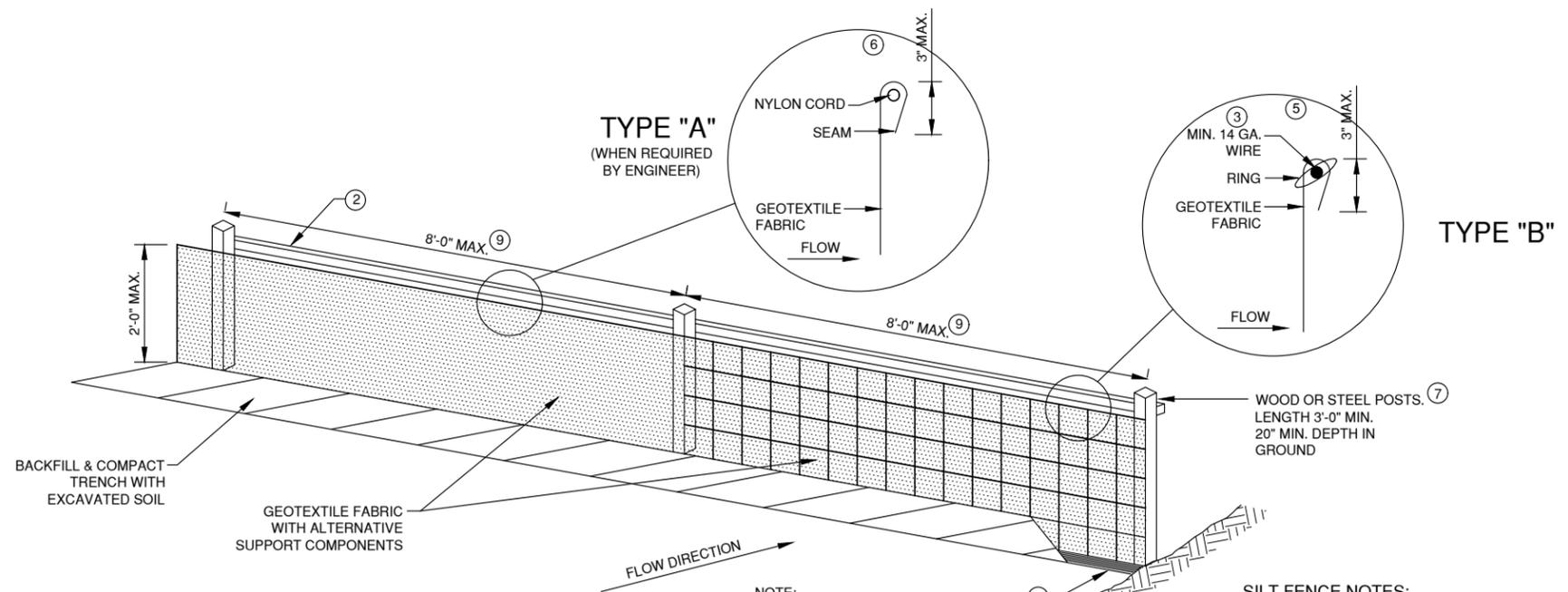
Robert E. Lee & Associates, Inc.
 ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
 1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
 920-662-9641 www.releinc.com
 Celebrating 60 Years of Excellence

SHEET NO.
15

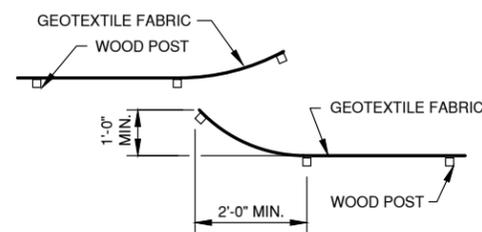
CONFORMED PLAN



EROSION BALES FOR SHEET FLOW

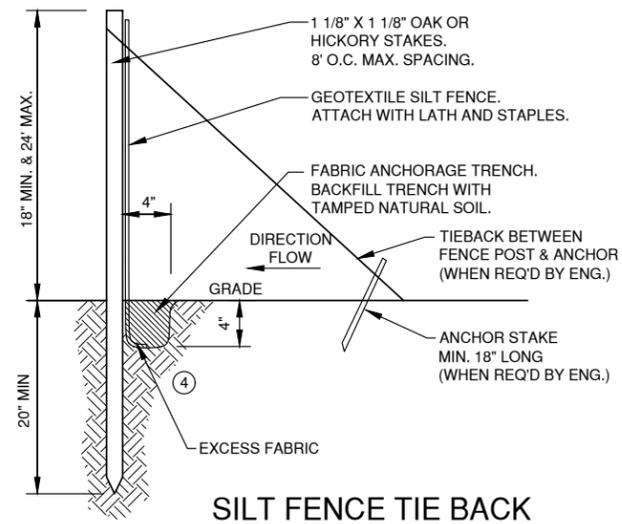


TWIST METHOD (8)



HOOK METHOD (8)

JOINING TWO LENGTHS OF SILT FENCE



EROSION CONTROL SHEET FLOW NOTES:

1. ANY SOIL STOCKPILED THAT REMAINS FOR MORE THAN 7 DAYS SHALL BE COVERED OR TREATED WITH STABILIZATION PRACTICES SUCH AS TEMPORARY OR PERMANENT SEEDING AND MULCHING.
2. A MINIMUM OF 4 INCHES OF TOPSOIL MUST BE APPLIED TO ALL AREAS TO BE SEEDDED OR SODDED.
3. ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, WASTEWATER, TOXIC MATERIALS, OR HAZARDOUS MATERIALS) SHALL BE PROPERLY DISPOSED OF AND NOT ALLOWED TO BE CARRIED OFF-SITE BY RUNOFF OR WIND.
4. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED UP BY THE END OF EACH DAY. **FLUSHING SHALL NOT BE ALLOWED.**
5. ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR THE APPLICATION OF STABILIZATION MEASURES MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
6. FOR ANY DISTURBED AREA THAT REMAINS INACTIVE FOR GREATER THAN 7 WORKING DAYS, OR WHERE GRADING WORK EXTENDS BEYOND THE PERMANENT SEEDING DEADLINES, THE SITE MUST BE TREATED WITH TEMPORARY STABILIZATION MEASURES SUCH AS SOIL TREATMENT, TEMPORARY SEEDING AND/OR MULCHING.
7. ALL TEMPORARY EROSION CONTROL PRACTICES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED WITH 70% VEGETATION AND A NOTICE OF TERMINATION HAS BEEN APPROVED BY THE DNR.
8. WIND EROSION SHALL BE KEPT TO A MINIMUM DURING CONSTRUCTION. WATERING, MULCH OR A TACKING AGENT MAY NEED TO BE UTILIZED TO PROTECT NEARBY RESIDENCES/WATER RESOURCES.
9. CONTRACTOR RESPONSIBLE FOR MAINTAINING ALL THE EROSION CONTROL MEASURES IN CONFORMANCE WITH THE WDNR CONSERVATION PRACTICE STANDARDS, LATEST EDITION.
10. UPON COMPLETION OF STORM INLET CONSTRUCTION, INSTALL STORM DRAIN INLET PROTECTION FOR CONSTRUCTION SITE AS SPECIFIED.
11. FINE SEDIMENT ACCUMULATIONS SHALL BE CLEANED FROM STREETS, PRIVATE DRIVES, OR PARKING AREAS BY MANUAL OR MECHANICAL SWEEPING A MINIMUM OF ONCE PER WEEK AND BEFORE ALL IMMINENT RAINS.
12. EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF RAINFALL OF 0.5 INCH OR MORE.

SILT FENCE NOTES:

1. EROSION CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH WDNR TECHNICAL STANDARD.
2. CROSS BRACE WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THE ENGINEER.
3. MINIMUM 14 GAUGE WIRE REQUIRED, FOLD FABRIC 3" OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS ON 12" C.C.
4. EXCAVATE A TRENCH A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
5. WIRE SUPPORT FENCE SHALL BE 14 GAUGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6". SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 12" C.C. (TYPE B)
6. GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 3/4" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED. (TYPE A)
7. STEEL POSTS SHALL BE STUDDED "TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.28 LBS./LIN. FT. (WITHOUT ANCHOR) FIN ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
8. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL, IF POSSIBLE, BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY, USE ONE OF THE FOLLOWING TWO METHODS: A.) TWIST METHOD -- OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B.) HOOK METHOD -- HOOK THE END OF EACH SILT FENCE LENGTH.
9. THE MAXIMUM SPACING OF POSTS FOR WOVEN FABRIC SILT FENCE SHALL BE 8 FEET AND FOR NON-WOVEN FABRIC, 3 FEET.

File: R:\3775\3775_V3775008.dwg; EROSION CONTROL.dwg
Date: Jul 26, 2016 12:24pm
LAYOUT: SHEET FLOW
LAYOUT: SHEET FLOW

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
SOUTH CHANNEL HABITAT IMPROVEMENT
CITY OF MARINETTE
MARINETTE COUNTY, WISCONSIN

EROSION CONTROL
SHEET FLOW DETAILS

DATE	04/20/16
FILE	EROSION CONTROL
JOB NO.	3775008

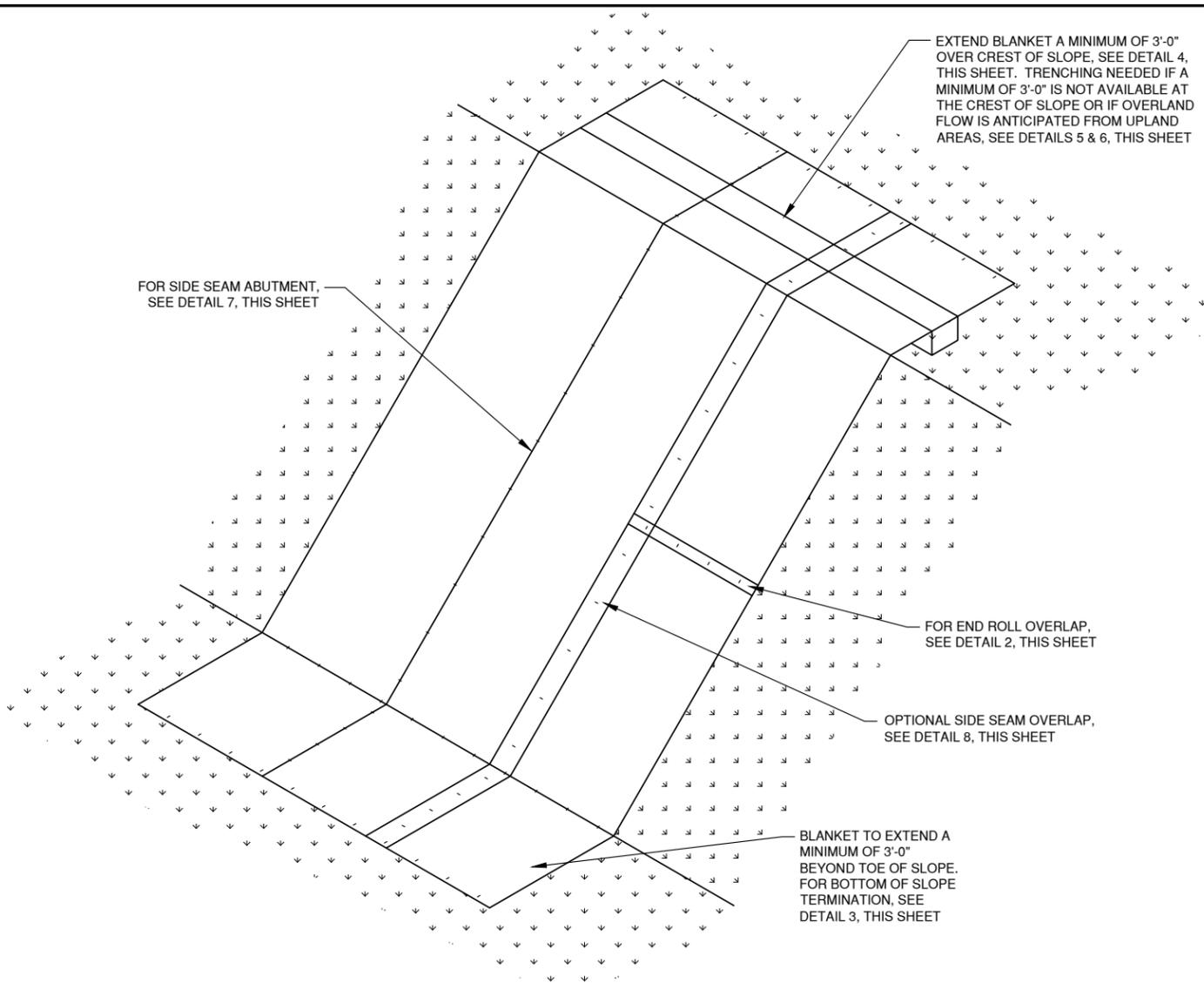


Robert E. Lee & Associates, Inc.
ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
1250 CENTENNIAL CENTRE BOULEVARD HOBBART, WI 54155
920-662-9641 www.releinc.com
Celebrating 60 Years of Excellence

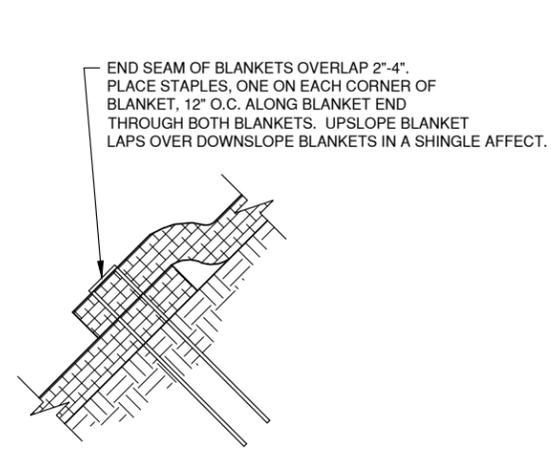
SHEET NO.	16
-----------	----

CONFORMED PLAN

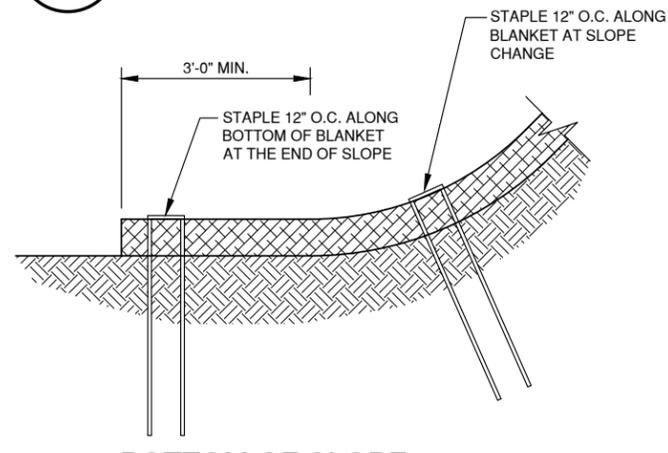
File: S:\7770\3775\3775002\veg_erosion_MAT.dwg
 Plot Date: Jul 26, 2016 2:28pm
 PLAN
 LAYOUT: LAYOUT1



SLOPE DETAIL 1
VAR.



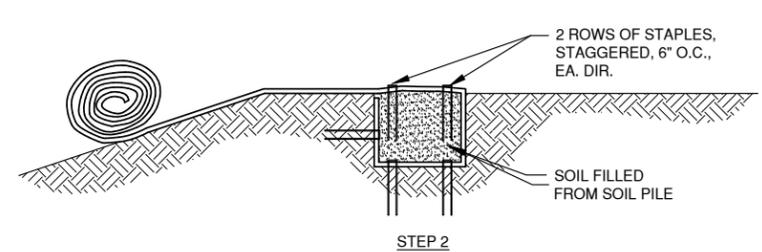
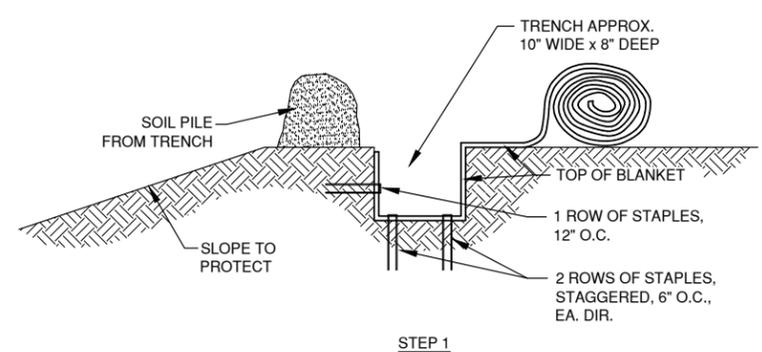
END ROLL OVERLAP 2
VAR.



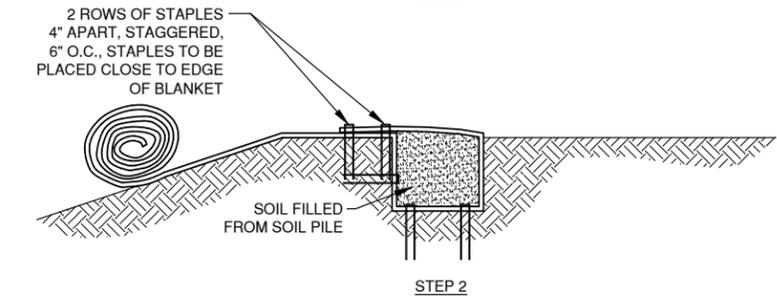
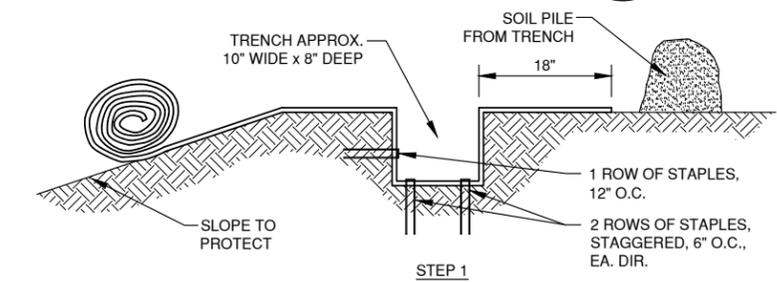
BOTTOM OF SLOPE TERMINATION 3
VAR.



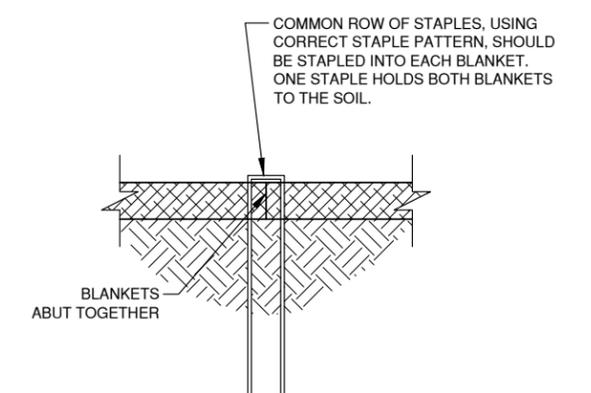
SLOPE CREST ANCHOR METHOD "A" (NO TRENCH) 4
VAR.



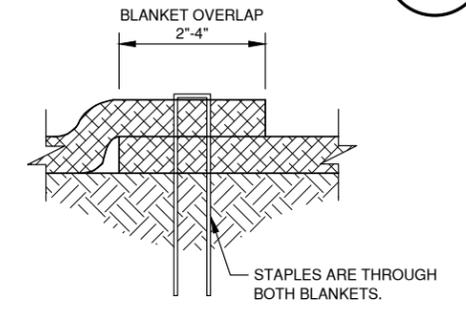
SLOPE TRENCHING METHOD "B" 5
VAR.



SLOPE TRENCHING METHOD "C" 6
VAR.



SIDE SEAM ABUT STAPLE DETAIL 7
VAR.



SIDE SEAM OVERLAP STAPLE DETAIL 8
VAR.

NOTES:
 1. STAPLE PATTERNS ARE DEPENDENT ON SITE CONDITIONS. SEE MANUFACTURER STAPLE PATTERN GUIDE FOR DETAILS.

CONFORMED PLAN

NO.	DATE	APPROV.	REVISION	NO.	DATE	APPROV.	REVISION

CONTRACT NO. 3775-16-02
 SOUTH CHANNEL HABITAT IMPROVEMENT
 CITY OF MARINETTE
 MARINETT COUNTY, WISCONSIN

EROSION MAT
 SLOPE APPLICATION DETAILS

DATE: 05/20/15
 FILE: EROSION MAT
 JOB NO.: 3775008



Robert E. Lee & Associates, Inc.
 ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES
 1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155
 920-662-9641 www.releinc.com
 Celebrating 60 Years of Excellence

SHEET NO.
17

B

APPENDIX B

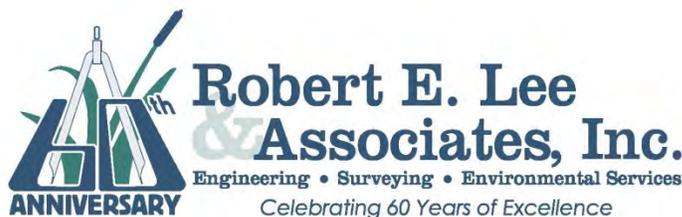
Construction Specifications

City of Marinette
Marinette County, Wisconsin

Specifications & Drawings For
South Channel Habitat Improvements

REL Contract No. 3775-16-02

July 2016



1250 Centennial Centre Boulevard ♦ Hobart, WI 54155-8995
Phone: 920-662-9641 or 800-986-6338
www.releeinc.com

INTRODUCTORY INFORMATION

PROOF OF BIDDER'S RESPONSIBILITY

Wisconsin Statutes, 1995 Amendment to Section 66.29(2)

The contents of this questionnaire will be considered confidential. It shall be completely filled out and must be received by the official responsible for receiving bids not less than five (5) days before the scheduled date of opening bids.

If the City or Village officials are not satisfied with the sufficiencies of the answers to the questionnaire and financial statement, they may refuse to accept the bid, returning it unopened, or require additional information.

STATEMENT OF QUALIFICATION

Construction of : SOUTH CHANNEL HABITAT IMPROVEMENTS
in CITY OF MARINETTE Wisconsin
(City or Village)

- 1. Name of Bidder: _____
- 2. Bidder's Address: _____
- 3. Corporation _____ Partnership _____ Individual _____
- 4. For Corporation — Date of Incorporation _____
Incorporators _____
- 5. For Partnership — When formed? _____
Partners _____
- 6. For individual — How long in business? _____
- 7. Type of principal construction? _____
- 8. Present contract: _____
 - a. Location _____
Type _____
Amount of contract _____
Percentage completed _____
 - b. Location _____
Type _____
Amount of contract _____
Percentage completed _____

9. Have you ever failed to complete a contract?

Where

When

Why

Amount of contract

Type of work

10. Name of your bonding company

Address

11. Name of your principal bank

12. A complete financial statement shall be attached hereto prepared.

13. A schedule of all major equipment owned by the contractor and available for the project shall be attached.

14. A statement of the principal personnel and their experience available for the project shall be attached.

15. A statement of the contracts in excess of \$10,000 completed in the last three (3) years, where located, type and amount of contract shall be attached.

16. Have you been qualified by the Wisconsin Department of Transportation? _____

For what amount? _____

All questions shall be answered as completely as possible. Where a question does not apply, you shall so state. Answers must be typewritten or in ink. Any additional information not included in the questionnaire but of importance to determine your qualifications may be presented in letter form attached to the questionnaire and made a part thereof.

I hereby certify that I have prepared and/or examined all answers to this questionnaire, prepared all statements attached hereto, that all information and statements are based on facts known to me, that I have full authority to make such statements in behalf of the contractor to which the questionnaire applies and that such statements are true and correct.

(Signature)

(Title)

Subscribed and sworn to before me this _____ day of _____, 20____.

(Notary or other officer authorized to administer oath)

My Commission Expires: _____

Return questionnaire to: ROBERT E. LEE & ASSOCIATES, INC.

Consulting Engineers
1250 Centennial Centre Boulevard
Hobart, WI 54155
(920) 662-9141 (fax)
lrorgers@releeinc.com (e-mail)

On or before:

Thursday, June 23, 2016

TABLE OF CONTENTS

SECTION #	SECTION DESCRIPTION
INTRODUCTORY INFORMATION	
00 00 00	Proof of Bidder's Responsibility *Thursday, June 23, 2016.
00 01 00	Table of Contents
DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS	
00 11 13	Advertisement for bid
00 21 13 use	Instruction to Bidders
00 41 13	Bid Form
00 41 13 E-Form	Unit Price Bid Schedule (<i>Excel format bid form available upon request to lrogers@releeinc.com</i>)
00 41 13.3	Tabulation of Subcontractors
00 43 13	Bid Bond
00 51 00	Notice of Award
00 52 00	Standard Form of Agreement between Owner and Contractor
00 55 00	Notice to Proceed
00 61 13.13_C-610	Performance Bond
00 61 13.16_C-615	Construction Payment Bond
00 62 76	Application for Payment No. ____ -Unit Price
00 63 13	Request for Interpretation
00 63 36	Field Order Form
00 63 49	Work Change Directive
00 63 63_C-941	Change Order
00 65 16	Certificate of Substantial Completion
00 65 19	Certificate of Final Completion
00 65 19.13	Contractor's Affidavit
00 65 19.16	Contractor's Release
00 65 19.19	Statement of Surety Company
00 72 00_C-700_2007	Standard General Conditions of the construction contract Industry Standards
00 73 00 (C-800)	Supplementary Conditions
Wage Rates—WI DWD	Wage Rates (Dept. of Workforce Development Wage Rates)
Wage Rates—Davis Bacon	Wage Rates – Davis Bacon Wage Rates
DIVISION 1 - GENERAL REQUIREMENTS	
01 11 00	Special Provisions
01 22 00	Measurement and Payment Unit Price Bid Items
01 31 19	Project Meetings
01 32 19	Submittals
01 32 33	Construction Photographs
01 40 00	Field Engineering
01 41 00	Regulatory Requirements
01 57 14	Erosion Control
01 78 36	Warranties
DIVISION 2 -EXISTING CONDITIONS	
02 66 02	Access Road
DIVISION 31 - EARTHWORK	
31 05 13	Soils and Aggregates
31 23 00	Earthwork
DIVISION 32 - EXTERIOR IMPROVEMENTS	
32 11 23	Crushed Aggregate Base Course (Roadway Construction)
32 12 16	Asphaltic Concrete Pavement
32 72 00	Bird Habitat Enhancements
32 90 10	Native Landscaping

SECTION #	SECTION DESCRIPTION
32 95 00	Habitat Structures
	DRAWING DIVISION
1-17	

00

DIVISION 00

PROCUREMENT AND CONTRACTING REQUIREMENTS

**SECTION 00 11 13
ADVERTISEMENT FOR BIDS**

CITY OF MARINETTE
1905 HALL AVENUE
MARINETTE, WI 54143

Sealed bids for **South Channel Habitat Improvements, Contract No. 3775-16-02** will be received by the **City of Marinette City Clerk** at the **City Hall** located at **1905 Hall Avenue, Marinette, WI 54143** until **June 28, 2016 at 11:00 a.m.** local time and shall include the following:

- 30 acres of various habitat restoration.
- Various ecological habitat improvements, both in water and out.
- Live plantings.
- Wildlife structures.
- Diverse native seeding.
- Wetland restoration.
- Invasive species treatment.

Bids will be publicly opened and read aloud.

The owner encourages DBEs including MBEs and WBEs to submit bid proposals. The Bidding Documents, consisting of Advertisement for Bids, Instructions to Bidders, General Conditions, Supplementary Conditions, Bid Bond, Agreement, Statement of Surety Company, Contractor's Affidavit, Contractor's Release, Certificate of Substantial Completion, Drawings and Specifications, may be examined at the following location(s):

Blue Print Service Company 2350 West Pershing Street; Suite A Appleton, WI 54914 920-733-4539 Phone 920-733-1438 Fax bps@blueprintservice.com	Blue Print Service Company 425 Packerland Drive Green Bay, WI 54303-5418 920-494-4539 Phone 920-494-4538 Fax bps@blueprintservice.com	Robert E. Lee & Associates, Inc. 1250 Centennial Centre Boulevard Hobart, WI 54155 920-662-9641 Phone 920-662-9141 Fax
--	--	--

The Contract shall be subject to Section 66.0903 of the Wisconsin Statutes per wage scales.

A copy of the State of Wisconsin Dept. of Workforce Development (DWD) prevailing Wage Rates and Davis Bacon General Decision No. WI160015 for this project have been included. The Contractor shall pay the higher of the applicable wage rates. The Contractor and his subcontractors will be obligated not to discriminate in employment practices. The non-discrimination stipulations and wage rate determinations are included in the contract documents.

Each bid must be accompanied by a Bid Bond or certified check equivalent to 5% maximum proposal.

Prequalification of Bidders will be required 5 days prior to the bid opening.

No Bidder may withdraw his bid within 60 days after the actual date of the opening thereof.

The Owner reserves the right to reject any or all bids or any part of a bid. Further, the Owner reserves the right to waive any informality in any bid. The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary

by the Owner; and the same shall in no way affect or make void the contract, except that the appropriate additions to or deductions from the contract price will be made.

A pre-bid meeting will not be held.

Complete digital project bidding documents are available at www.releeinc.com or www.questcdn.com. You may download the digital plan documents for a non-refundable fee of \$35 by inputting Quest Project (**eBidDoc #4538144**) on the website's Project Search page. Please contact QuestCDN.com at 952-233-1632 or info@questcdninfo.com for assistance in free membership registration, downloading, and working with this digital project information. Contact Blue Print Service Company for more information on paper sets and payment options available. Downloaded plans are not scaleable, neither the owner nor the engineer shall be held responsible for the scale of downloaded plans. Only printed plans obtained from Blue Print Service Company shall be considered to be scaleable plans.

◆ Blue Print Service Company
2350 West Pershing Street; Suite A
Appleton, WI 54914
920-733-4539 Phone
920-733-1438 Fax
bps@blueprintservice.com e-mail

◆ Blue Print Service Company
425 Packerland Drive
Green Bay, WI 54303-5418
920-494-4539 Phone
920-494-4538 Fax
bps@blueprintservice.com e-mail

The letting of the work described herein is subject to the provisions of the Wisconsin State Statutes, in particular 62.15, 66.0901, and 66.0903.

Brian Miller, City Engineer
City of Marinette Engineering Department

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

- A. Bidder--The individual or entity who submits a Bid directly to OWNER.
- B. Issuing Office--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- C. Successful Bidder--The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the sum, if any, stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office. Authorized sets of the Bidding Documents may be obtained digitally or by paper copy as directed in the Advertisement for Bids.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 The object of the request for the Qualification of Bidders is not to discourage bidding or make it difficult for qualified Bidders to file bids. Neither is it intended to discourage beginning contractors. It is intended to make it possible for the Owner to have exact information on financial ability, equipment, and experience in order to reduce the hazards involved in awarding contracts to parties apparently not qualified to perform them and to select those contractors qualified to properly complete the work proposed.

3.02 Prior action of the Owner in qualifying Contractors for other projects in previous calendar years will not be applicable to this project.

3.03 Owner's decision as to qualification of the Bidder shall be final.

3.04 Any contractor that has performed unsatisfactorily on a past project will not be qualified to bid.

3.05 Bidders shall be required to submit evidence that they have a practical knowledge of the particular work bid upon and that they have the financial resources to complete the proposed work.

3.06 Five days prior to the bid date, the contractor shall be required to submit the following information to the Engineer for consideration:

- A. The address and description of the Bidder's permanent place of business and name of state where incorporated.
- B. A list of the property and equipment available to the Bidder to evaluate if the Bidder can execute the work properly and expeditiously.
- C. The Bidder shall submit a compiled, reviewed or audited complete set of financial statements, including notes to the financial statements, prepared by an independent outside accountant for the most current fiscal year, and the previous fiscal year, that demonstrates the Bidder's financial ability to meet all of the obligations incidental to the work. The current fiscal year's statements shall be less than 16 months old.
- D. The Bidder's performance record, giving the description and location and contact information of similar projects constructed in a satisfactory manner by the Bidder.
- E. Description of all safety related citations, all fatal injuries, and any contemplated or actual legal actions by any governmental agency resulting from or related to work performed by the Bidder, his agent, or subcontractor during the past 5 years.
- F. Executed copies of all minority-owned and small business certification statements.
- G. Such additional information as will assist the Owner in determining whether the Bidder is adequately prepared to fulfill the Contract.
- H. A list of contracts defaulted or resulting in lawsuits in the previous five (5) years

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 Subsurface and Physical Conditions

- A. The Supplementary Conditions may identify:
 - 1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.
 - 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.01.A, if any, will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings. Downloaded plans are not scaleable, neither the owner nor the engineer shall be held responsible for the scale of downloaded plans. Only printed plans obtained from Blue Print Service Company shall be considered to be scaleable plans.

4.02 Underground Facilities

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities, including OWNER, or others.

4.03 Hazardous Environmental Condition

- A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by OWNER to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

- 4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

- 4.05 On request, OWNER will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

- 4.06 A. Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) that relates to the Work for contemplated by these bidding documents (per 2007 version). On request, OWNER will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

- 4.06 B. Paragraph 6.13.C of the General Conditions indicates that if an Owner safety program exists, it will be noted in the Supplementary Conditions.

- 4.07 It is the responsibility of each Bidder before submitting a Bid to:

- A. Examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. Carefully study all reports of explorations and tests of subsurface conditions, if any, at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures, if any, at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and carefully study all reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;
- E. Consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs;
- F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. Become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- I. Promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder; and
- J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and

the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

5.01 A pre-bid conference will be held at 10:00 a.m. local time on Thursday, April 21, 2016 at the 6th Street Boat Launch in the City of Marinette, WI. Representatives of OWNER and ENGINEER will be present to discuss the Project. Bidders are required to attend and participate in the conference. ENGINEER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 6 - SITE AND OTHER AREAS

6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda e-mailed or faxed to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

Direct all questions to the project contact, Ryan Trzinski, P.E., at the office of the engineer at 920-662-9641. Questions may also be e-mailed to Ryan Trzinski, P.E. at rtrzinski@releinc.com.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 8 - BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to OWNER in an amount of 5% of Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond [on the form attached] issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of

the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

9.01 The number of days within which, or the dates by which, [Milestones are to be achieved and] the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 - LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and OWNER may consider such price adjustment in evaluating Bids and making the contract award.

12.02 If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.

12.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

ARTICLE 13 - PREPARATION OF BID

13.01 The Bid form is included with the Bidding Documents. Additional copies may be obtained from the office of the Engineer.

13.02 All blanks on the Bid form shall be completed in ink and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each [section, Bid item, alternative, adjustment unit price item, and unit price item] listed therein, or the words “No Bid,” “No Change,” or “Not Applicable” entered.

13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.

13.06 A Bid by an individual shall show the Bidder’s name and official address.

13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.

13.08 All names shall be typed or printed in ink below the signatures.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.

13.10 The address and telephone number for communications regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder’s authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder’s state contractor license number for the state of the Project, if any, shall also be shown on the Bid form.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

14.01 Unit Price

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in Section 00 41 13, Bid Form.

B. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.

ARTICLE 15 - SUBMITTAL OF BID

15.01 Bids shall be made on the blank forms prepared by the Owner. The Bid is to be completed and submitted with the Bid security and the following data:

- A. Required bid security in the form of Section 00 43 13, Bid Bond or certified check.
- B. Section 00 41 13, Bid Form
- C. Section 00 41 13.3, Tabulation of Subcontractors

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to OWNER'S OFFICE or as stated in Section 00 41 13, Bid Form.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 - OPENING OF BIDS

17.01 Bids will be received and opened at the time and place indicated in the advertisement or invitation to Bid, and unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids on the "Bid Results or Project Bid Information" page at www.relecinc.com.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 - AWARD OF CONTRACT

19.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, non-responsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

19.04 In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

19.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.

19.06 If the contract is to be awarded by the Owner, it will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or “or-equal” items, to the responsible Bidder whose bid, conforming with all the material terms and conditions of the Instructions to Bidders, is the lowest, price and other factors considered.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER’s requirements as to performance and payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by such Bonds.

ARTICLE 21 - SIGNING OF AGREEMENT

21.01 When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER.

Within ten days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

- END OF SECTION -

**SECTION 00 41 13
BID FORM**

PROJECT IDENTIFICATION:

Client Name: City of Marinette
Project Name: South Channel Habitat Improvement
Contract No. 3775-16-02

CONTRACT IDENTIFICATION AND NUMBER:

Contract No. 3775-16-02
Client Name: City of Marinette
Project Name: South Channel Habitat Improvement

THIS BID IS SUBMITTED TO:

Personal Delivery before Bid Date:
CITY OF MARINETTE
1905 HALL AVENUE
MARINETTE, WI 54143

Mail Delivery before Bid Date:
CITY OF MARINETTE
1905 HALL AVENUE
MARINETTE, WI 54143

- 1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.
- 2.01 Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.
- 3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:
 - A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
 - E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
 - F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
 - G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.
 - H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
 - I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.
 - J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- 4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

_____ (words)

_____ (figures)

Refer to unit price bid schedule.

Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

6.01 Bidder agrees that the Work will be substantially completed and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions on or before the dates or within the number of calendar days indicated in Section 00 52 00, Standard Form of Agreement between Owner and Contractor.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

7.01 The following documents are attached to and made a condition of this Bid:

A. Required Bid security in the form of bid bond or certified check. (Along with Section 00 43 13, Bid Bond)

B. Section 00 41 13, Bid Form.

C. Section 00 41 13.3, Tabulation of Subcontractors.

8.01 The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

SUBMITTED on _____, 20____.

State Contractor License No. _____ (If applicable)

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: __ (CORPORATE SEAL)

Attest _____
(Signature of Corporate Secretary)

Business address: _____

Phone No.: _____ FAX No.: _____

Date of Qualification to do business is _____.

A Joint Venture

Joint Venturer Name: _____ (SEAL)

By: _____

(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ FAX No.: _____

Joint Venturer Name: _____ (SEAL)

By: _____

(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ FAX No.: _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

LABELED TAB – BID SCHEDULE

***Place labeled tab before Unit price bid schedule (spreadsheet) _Section 00 41 13.**

UNIT PRICE BID SCHEDULE

OWNER: City of Marinette
 PROJECT: South Channel Habitat Improvements
 CONTRACT: 3775-16-02
 BID DATE: June 28 2016 at 11:00 a.m.
 ENGINEERS: ROBERT E. LEE & ASSOCIATES, INC.

NOTE: The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary by the Owner; and the same shall in no way affect or make void the contract, except that the appropriate additions to or deductions from the contract price will be made.

APPLIED ECOLOGICAL SERV.**Brodhead, WI**

Item		Unit	Qty.	Unit Price	Total Price
<u>Revegetation</u>					
1	Aquatic Submergent/Emergent Restoration Zone site preparation, per plans specifications, for the unit price of:	ACRE	1.75	\$509.00	\$890.75
2	Provide & Install Aquatic Submergent/Emergent plantings, per plans and specifications, for the unit price of:	EA	8,825	\$4.04	\$35,653.00
3	Provide & Install Goose Fencing, per plans and specifications, for the unit price of:	L.F.	6,670	\$2.96	\$19,743.20
4	Provide & Install Goose Grid Fencing, per plans and specifications, for the unit price of:	S.F.	131,380	\$0.14	\$18,393.20
5	Provide & Install carp fencing, per plans and specifications, for the unit price of:	L.F.	3,165	\$6.78	\$21,458.70
6	Cattail Marsh Enhancement Zone site preparation, per plans and specifications, for the unit price of:	ACRE	2.69	\$1,444.00	\$3,884.36
7	Mesic Forest Restoration Zone site preparation, per plans and specifications, for the unit price of:	ACRE	1.79	\$509.00	\$911.11
8	Clear & Grub Existing Mesic Forest per plans and specifications, for the lump sum of:	LS	1	\$31,244.00	\$31,244.00
9	Provide & Install 4-inch screened topsoil in existing Mesic Forest, 100% passing the 2-inch sieve, free of lumps, stones, brush, roots, weeds, and extraneous matter harmful to plant growth, including delivery, placing, spreading, and grading, for the unit price of:	CY	350	\$55.00	\$19,250.00
10	Island Mesic Forest Restoration Zone seeding, per plans and specifications, for the unit price of:	ACRE	0.47	\$5,250.00	\$2,467.50
11	Mesic Forest Restoration Zone seeding, per plans and specifications, for the unit price of:	ACRE	0.64	\$5,251.00	\$3,360.64
12	Provide & Install Mulch in Mesic Forest Restoration Zone, per plans and specifications for the unit price of:	CY	190	\$114.00	\$21,660.00
13	Provide & Install Plants in Mesic Forest Restoration Zone, per plans and specifications, for the unit price of:	EA	850	\$5.43	\$4,615.50

UNIT PRICE BID SCHEDULE

00 41 13-1

UNIT PRICE BID SCHEDULE

OWNER: City of Marinette
 PROJECT: South Channel Habitat Improvements
 CONTRACT: 3775-16-02
 BID DATE: June 28 2016 at 11:00 a.m.
 ENGINEERS: ROBERT E. LEE & ASSOCIATES, INC.

NOTE: The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary by the Owner; and the same shall in no way affect or make void the contract, except that the appropriate additions to or deductions from the contract price will be made.				APPLIED ECOLOGICAL SERV. Brodhead, WI	
Item		Unit	Qty.	Unit Price	Total Price
14	Provide & Install plants in Island Mesic Forest Restoration Zone, per plans and specifications, for the unit price of:	EA	600	\$4.58	\$2,748.00
15	Provide & Install Mesic Forest Trees and Shrubs, including Protectors, per plans and specifications, for the unit price of:	EA	400	\$63.85	\$25,540.00
16	Provide & Install Island Mesic Forest Restoration Zone trees and shrubs, including Protectors, per plans and specifications, for the unit price of:	EA	250	\$63.85	\$15,962.50
17	Mesic Prairie Planting Zone site preparation and seeding, per plans and specifications, for the unit price of:	ACRE	0.83	\$3,851.00	\$3,196.33
18	Provide & Install erosion blanket - S 75 BN, in prairie zone on historic rail corridor, per plans and specifications, for the unit price of:	S.Y.	1,355	\$2.48	\$3,360.40
19	Northern Sedge Meadow Enhancement Zone site preparation and seeding, per plans and specifications, for the unit price of:	ACRE	0.72	\$6,470.00	\$4,658.40
20	Northern Sedge Meadow Enhancement Zone (Standing Water) site preparation, per plans and specifications, for the unit price of:	ACRE	2.71	\$1,444.00	\$3,913.24
21	Northern Sedge Meadow Restoration Zone site preparation, per plans and specifications, for the unit price of:	ACRE	6.51	\$509.00	\$3,313.59
22	Northern Sedge Meadow Restoration Zone seeding, per plans and specifications, for the unit price of:	ACRE	3.13	\$5,026.00	\$15,731.38
23	Install Northern Sedge Meadow Restoration Zone Supplemental Plants, per plans and specifications, for the unit price of:	EA	4,000	\$4.10	\$16,400.00
24	Provide & Install Northern Sedge Meadow Restoration Zone Plants, per plans and specifications, for the unit price of:	EA	17,000	\$4.10	\$69,700.00
25	Shrub-Carr Upland Zone site preparation, per plans and specifications, for the unit price of:	ACRE	0.21	\$979.00	\$205.59
26	Provide & Install Shrub-Carr Upland Zone Supplemental Plants, per plans and specifications, for the unit price of:	EA	1,000	\$4.52	\$4,520.00
27	Provide & Install Shrub-Carr Upland Shrubs, including Protectors, per plans and specifications, for the unit price of:	EA	100	\$61.25	\$6,125.00

UNIT PRICE BID SCHEDULE

00 41 13-2

UNIT PRICE BID SCHEDULE

OWNER: City of Marinette
 PROJECT: South Channel Habitat Improvements
 CONTRACT: 3775-16-02
 BID DATE: June 28 2016 at 11:00 a.m.
 ENGINEERS: ROBERT E. LEE & ASSOCIATES, INC.

NOTE: The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary by the Owner; and the same shall in no way affect or make void the contract, except that the appropriate additions to or deductions from the contract price will be made.				APPLIED ECOLOGICAL SERV. Brodhead, WI	
Item		Unit	Qty.	Unit Price	Total Price
28	Shrub-Carr Wetland Restoration Zone site preparation and seeding, per plans and specifications, for the unit price of:	ACRE	1.18	\$5,886.00	\$6,945.48
29	Provide & Install Shrub-Carr Wetland Restoration Zone Supplemental Plants, per plans and specifications, for the unit price of:	EA	1,500	\$4.52	\$6,780.00
30	Provide & Install Shrub-Carr Wetland Restoration Shrubs, including Protectors, per plans and specifications, for the unit price of:	EA	400	\$66.40	\$26,560.00
31	Provide & Install Shrub-Carr Wetland Restoration Live Stakes, per plans and specifications, for the unit price of:	EA	600	\$6.01	\$3,606.00
32	Tag Alder Enhancement Zone site preparation, per plans and specifications, for the unit price of:	ACRE	1.20	\$2,380.00	\$2,856.00
33	Provide & Install Tag Alder Enhancement Zone Supplemental Plants, per plans and specification, for the unit price of:	EA	775	\$4.83	\$3,743.25
34	Provide & Install Tag Alder Enhancement Zone Shrubs, including Protectors, per plans and specifications, for the unit price of:	EA	125	\$69.16	\$8,645.00
35	Wet Mesic Forested Wetland Enhancement Zone site preparation, per plans and specifications, for the unit price of:	ACRE	0.31	\$1,444.00	\$447.64
36	Provide & Install Wet Mesic Forested Wetland Enhancement Zone Supplemental Plants, per plans and specifications, for the unit price of:	EA	400	\$4.79	\$1,916.00
37	Provide & Install Wet Mesic Forested Wetland Enhancement Zone Shrubs, including Protectors, per plans and specifications, for the unit price of:	EA	75	\$61.37	\$4,602.75
38	Wet-Mesic Prairie Planting Zone site preparation and seeding, per plans and specifications, for the unit price of:	ACRE	0.60	\$6,783.00	\$4,069.80
39	Wet Mesic Forested Wetland Restoration Zone site preparation and seeding, per plans and specifications, for the unit price of:	ACRE	0.44	\$8,055.00	\$3,544.20
40	Provide & Install Wet Mesic Forested Wetland Restoration Zone Supplemental Plants, per plans and specifications, for the unit price of:	EA	575	\$7.32	\$4,209.00

UNIT PRICE BID SCHEDULE

UNIT PRICE BID SCHEDULE

OWNER: City of Marinette
 PROJECT: South Channel Habitat Improvements
 CONTRACT: 3775-16-02
 BID DATE: June 28 2016 at 11:00 a.m.
 ENGINEERS: ROBERT E. LEE & ASSOCIATES, INC.

NOTE: The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary by the Owner; and the same shall in no way affect or make void the contract, except that the appropriate additions to or deductions from the contract price will be made.

**APPLIED ECOLOGICAL SERV.
Brodhead, WI**

Item		Unit	Qty.	Unit Price	Total Price
41	Provide & Install Wet Mesic Forested Wetland Enhancement Zone Trees & Shrubs, including Protectors, per plans and specifications, for the unit price of:	EA	350	\$65.66	\$22,981.00
42	Removal of all carp and goose fencing, prior to contract closeout, for the lump sum of:	LS	1	\$30,083.00	<u>\$30,083.00</u>
TOTAL Revegetation, Items 1-42					\$489,895.51
<u>Habitat Structures</u>					
43	Install Bird House - Eastern Bluebird, per plans and specifications, for the unit price of:	EA	18	\$300.00	\$5,400.00
44	Install Bird House - Wood Duck, per plans and specifications, for the unit price of:	EA	4	\$340.00	\$1,360.00
45	Install Bird House - Eastern Screech Owl, per plans and specifications, for the unit price of:	EA	4	\$429.00	\$1,716.00
46	Install Bat House (1 Pole, 2 boxes), per plans and specifications, for the unit price of:	EA	7	\$670.00	\$4,690.00
47	Install Nesting Platform - Osprey, per plans and specifications, for the unit price of:	EA	1	\$6,440.00	\$6,440.00
48	Install Nesting Platform - Great Blue Heron (1 Pole, 3 Nests), per plans and specifications, for the unit price of:	EA	3	\$6,572.00	\$19,716.00
49	Install Fish Sticks, per plans and specifications, for the unit price of:	EA	3	\$919.00	\$2,757.00
50	Complete Tree Hinge Cuts, per plans and specifications, for the unit price of:	EA	3	\$223.00	\$669.00
51	Install Loafing Platforms, per plans and specifications, for the unit price of:	EA	2	\$700.00	\$1,400.00
52	Install Log Structures, per plans and specifications, for the unit price of:	EA	4	\$853.00	\$3,412.00
53	Install Rock Pile in Water, per plans and specifications, for the unit price of:	EA	1	\$7,419.00	\$7,419.00

UNIT PRICE BID SCHEDULE

UNIT PRICE BID SCHEDULE

OWNER: City of Marinette
 PROJECT: South Channel Habitat Improvements
 CONTRACT: 3775-16-02
 BID DATE: June 28 2016 at 11:00 a.m.
 ENGINEERS: ROBERT E. LEE & ASSOCIATES, INC.

NOTE: The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary by the Owner; and the same shall in no way affect or make void the contract, except that the appropriate additions to or deductions from the contract price will be made.

**APPLIED ECOLOGICAL SERV.
Brodhead, WI**

Item		Unit	Qty.	Unit Price	Total Price
54	Install Rock Pile out of Water, per plans and specifications, for the unit price of:	EA	1	\$1,971.00	\$1,971.00
55	Install Brush Piles, per plans and specifications, for the unit price of:	EA	2	\$770.00	\$1,540.00
56	Install Lunger Structures, per plans and specifications, for the unit price of:	EA	1	\$5,976.00	\$5,976.00
57	Install Material for Turtle Nesting, per plans and specifications, for the unit price of:	CY	8	\$266.00	\$2,128.00
58	Construct Channel for Northern Pike Spawning Habitat Access, per plans and specifications, for the unit price of:	LS	1	\$10,981.00	<u>\$10,981.00</u>
TOTAL Habitat Structures, Items 43-58					\$77,575.00
<u>Erosion Control Measures</u>					
59	Silt fencing, installed and maintained, to include all appurtenances, for the unit price of:	LF	2,000	\$4.28	\$8,560.00
60	Silt fence removal after 70% vegetation is established, to include all labor and landscape repair, as needed, for the unit price of:	LF	2,000	\$1.57	\$3,140.00
61	Rock bags for ditch checks, installed, and maintained, for the unit price of:	EA	250	\$47.88	\$11,970.00
62	Rock bags removal after 70% vegetation is established, to include all labor and landscape repair, as needed, for the unit price of:	EA	250	\$27.53	\$6,882.50
63	Tracking pads, furnished, installed, maintained, removed, and any restoration, for the unit price of:	UNIT	1	\$3,939.00	\$3,939.00
64	Inlet protection furnished, installed, maintained, and removed, for the unit price of:	EA	4	\$251.00	<u>\$1,004.00</u>
TOTAL Erosion Control Measures, Items 59-64					\$35,495.50
<u>Supplemental Bid Items</u>					

UNIT PRICE BID SCHEDULE

OWNER: City of Marinette
 PROJECT: South Channel Habitat Improvements
 CONTRACT: 3775-16-02
 BID DATE: June 28 2016 at 11:00 a.m.
 ENGINEERS: ROBERT E. LEE & ASSOCIATES, INC.

NOTE: The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary by the Owner; and the same shall in no way affect or make void the contract, except that the appropriate additions to or deductions from the contract price will be made.

**APPLIED ECOLOGICAL SERV.
Brodhead, WI**

Item		Unit	Qty.	Unit Price	Total Price
65	Mobilization to include all work and operations necessary to move personnel, equipment, supplies, and incidentals to the project site and to establish all of the contractor's offices, buildings, sanitary accommodations, and other facilities necessary to work on the project. It also covers all other work and operations whose performance is required, or for costs necessarily incurred before beginning work on various items on the project site and demobilization costs, for the lump sum of:	LS	1	\$62,386.00	\$62,386.00
66	Earthwork, as specified, including all required excavation, and transportation of material to Lot #24, for the lump sum of:	LS	1	\$62,554.00	\$62,554.00
67	Lot #24 work, salvaging existing topsoil, placing material from south channel, grading, replacement of existing topsoil, seeding, fertilizing, and mulching disturbed area, for the lump sum of:	LS	1	\$19,449.00	\$19,449.00
68	Prepare 3-year maintenance plan according to specifications, for review and approval, with yearly updates (if needed), for the unit price of:	LS	1	\$1,577.00	\$1,577.00
69	Conduct 1 year of maintenance activities, November 2016 through November 2017, per specifications and approved plan, for the unit price of:	LS	1	\$44,715.00	\$44,715.00
70	Site debris removal to include the gathering, removal, and disposal of site debris off-site at an approved location, including but not limited to, wood logs, wood planks, concrete blocks, concrete pavers, or site debris unsuitable for vegetative growth, for the unit price of:	CY	250	\$100.00	\$25,000.00
71	Parking lot restoration including removal and disposal of existing asphaltic and base material, installing new 8-inch thick Gradation No. 4 stone and 3 inches of E-1, PG 58-28, placed in two lifts, for the unit price of:	SY	400	\$80.00	\$32,000.00

UNIT PRICE BID SCHEDULE

OWNER: City of Marinette
 PROJECT: South Channel Habitat Improvements
 CONTRACT: 3775-16-02
 BID DATE: June 28 2016 at 11:00 a.m.
 ENGINEERS: ROBERT E. LEE & ASSOCIATES, INC.

NOTE: The Owner reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work as may be deemed necessary by the Owner; and the same shall in no way affect or make void the contract, except that the appropriate additions to or deductions from the contract price will be made.

APPLIED ECOLOGICAL SERV.**Brodhead, WI**

Item		Unit	Qty.	Unit Price	Total Price
72	Conduct 1 year of maintenance activities, November 2017 through November 2018, per specifications and approved plan, for the unit price of:	LS	1	\$22,781.00	\$22,781.00
73	Conduct 1 year of maintenance activities, November 2018 through November 2019, per specifications and approved plan, for the unit price of:	LS	1	\$19,943.00	\$19,943.00
TOTAL Supplemental Bid Items, Items 65-73					<u>\$290,405.00</u>
TOTAL CONTRACT 3775-16-02, Items 1-73					\$893,371.01
<u>ALTERNATE BID ITEMS</u>					
74	Mesic Forest Restoration Zone site preparation, per plans and specifications, for the unit price of:	ACRE	0.64	\$510.00	\$326.40
75	Install Fish Sticks, per plans and specifications, for the unit price of:	EA	5	\$919.00	\$4,595.00
76	Complete Tree Hinge Cuts, per plans and specifications, for the unit price of:	EA	3	\$223.00	\$669.00
77	Install Lunker Structures, per plans and specifications, for the unit price of:	EA	2	\$5,976.00	\$11,952.00
78	In lieu of Bid Item No. 23, Install Northern Sedge Meadow Restoration Zone Plants, per plans and specifications, for the unit price of:	EA	17,000	\$4.10	\$69,700.00
79	12- foot haul road installation, as specified, for the lump sum of:	LS	1	\$25,314.00	\$25,314.00
80	12- foot haul road removal and restoration, as specified, for the lump sum of:	LS	1	\$21,952.00	\$21,952.00

SECTION 00 41 13.3

TABULATION OF SUBCONTRACTORS

The following subcontractors will be utilized for portions of the project work, only one subcontractor may be included for each classification of work. Each classification shall be filled in with either the subcontractors name or 'Prime Contractor' if the Prime Contractor will perform the work. Changes shall not be made subsequent to the bid unless the change(s) is requested in writing and is approved by the Owner.

**PROJECT NAME: SOUTH CHANNEL HABITAT IMPROVEMENT
CONTRACT NO. 3775-16-02**

Subcontractor	Classification of Work	Estimated Dollar Amount
n/a	Landscaping	
Northeast Asphalt, Inc. 1524 Atkinson Drive Green Bay, WI 54303	Asphalt	\$13,360.00
Solutions 101, LLC PO Box 298 Hortonville, WI 54944	Earthwork	\$265,600.00
n/a	Trucking	
n/a	Concrete	
n/a	Erosion Control	

**SECTION 00 43 13
BID BOND**

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CITY OF MARINETTE

1905 HALL AVENUE

MARINETTE, WI 54143

BID

BID DUE DATE: June 28, 2016 at 11:00 a.m.

PROJECT (Brief Description Including Location):

South Channel Habitat Improvement; Contract No. 3775-16-02

BOND

BOND NUMBER: _____

DATE (Not later than Bid due date): _____

PENAL SUM: _____

(Words)

(Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

(Seal)

Bidder's Name and Corporate Seal

(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

By: _____

Signature and Title

(Attach Power of Attorney)

Attest: _____

Signature and Title

Attest: _____

Signature and Title

-
- Note: (1) Above addresses are to be used for giving required notice.
(2) Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1. OWNER accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by OWNER, or
 - 3.3. OWNER fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by OWNER and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power or Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer or proposal as applicable.

OWNER'S REPRESENTATIVES:

Robert E. Lee & Associates, Inc.
1250 Centennial Centre Boulevard
Hobart, WI 54155
(920) 662-9641
(920) 662-9141 (Fax)

AGENT OR BROKER:

Name: _____

Address: _____

Phone: _____

Fax: _____

SECTION 00 51 00
NOTICE OF AWARD

Date: _____

[Certified Mail -- Return Receipt Requested]

TO: _____
(BIDDER)

ADDRESS: _____

Contract: 3775-16-02

Project: South Channel Habitat Improvement

You are notified that your Bid dated _____ for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded a Contract for _____

(Indicate total Work, alternates or sections or Work awarded)

The Contract Price of your Contract is _____ Dollars (\$ _____).

4 copies of each of the proposed Legal Documents accompany this Notice of Award.

You must comply with the following conditions precedent within 15 days of the date you receive this Notice of Award. 4 sets of the Contract documents will be delivered separately or otherwise made available to you immediately.

1. Deliver to the OWNER 4 fully executed counterparts of the Legal Documents. [Each of the Legal Documents must bear your signature on 00 51 00-2].
2. Deliver with the executed Legal Documents the Contract security (Bonds) as specified in the Instructions to Bidders (Article 20), [and] General Conditions (paragraph 5.01) [and Supplementary Conditions (paragraph SC-5.01).]

3. (List other conditions precedent).

Failure to comply with these conditions within the time specified will entitle OWNER to consider your Bid in default, to annul this Notice of Award and to declare your Bid security forfeited.

Within ten days after you comply with the above conditions, OWNER will return to you one fully executed counterpart of the Contract Documents.

CITY OF MARINETTE

(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____

This the _____ day of _____, 20__.

By: _____

Title: _____

Copy to ENGINEER
(Use Certified Mail, Return Receipt Requested)

**SECTION 00 52 00
STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE**

THIS AGREEMENT is by and between CITY OF MARINETTE

(hereinafter called OWNER) and _____

(hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

SOUTH CHANNEL HABITAT IMPROVEMENT PROJECT; CONTRACT 3775-16-02

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

SOUTH CHANNEL HABITAT IMPROVEMENT PROJECT; CONTRACT 3775-16-02

ARTICLE 3 - ENGINEER

3.01 The Project has been designed by Robert E. Lee & Associates, Inc., who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 Time of the Essence

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Project Milestones

A. None.

4.03 Substantial Completion and Final Completion/Payment

A. Work on-site shall not commence prior to August 1, 2016 or Chapter 30 approval, whichever is later and in accordance with paragraphs 14.04, 14.05, 14.06, and 14.07 of the General Conditions; however, all work must be substantially completed by the substantial completion

date below. The milestone(s), substantial completion, final completion, and final payment dates are as follows:

Substantial Completion:	<u>October 31, 2016</u>	Dates
Final Completion and Payment:	<u>November 15, 2019</u>	Dates

4.04 Liquidated Damages

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER \$1,500 each day that expires after the time specified in paragraph 4.03 for Substantial Completion until the milestone is substantially complete. If multiple milestones are listed the Liquidated Damage amount is for each milestone listed.
- B. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER \$1,000 for each day that expires after the time specified in paragraph 4.02 for Final Completion and readiness for final payment until the Work is completed and ready for final payment. The owner reserves the right to deduct the amount of the liquidated damages from the final payment or retainage.

ARTICLE 5 - CONTRACT PRICE

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to paragraph 5.01.A below:

- A. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in this paragraph:

_____ (words)

_____ (figure)

As provided in paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by ENGINEER as provided in paragraph 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment on or *before* the **1st Friday of each month** during performance of the Work as provided in paragraphs 6.02.A.1 and 6.02.A.2 below. **If the application for payment is not received by the date specified, the payment shall be delayed to the next scheduled approval date.** All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions:
 - a. 95% of Work completed (with the balance being retainage). When the Work has been 50% completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100% of the Work completed less the aggregate of payments previously made; and
2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 95% of the Work completed, less such amounts as ENGINEER shall determine in accordance with paragraph 14.02.B.5 of the General Conditions.

6.03 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

ARTICLE 7 - INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at a rate equal to the daily prime lending rate as published in the Wall Street Journal plus 1.5%.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents of Contract Documents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 00 52 00-1 to 00 52 00-8, inclusive);
 - 2. Performance Bond (pages 00 61 13.13-1 to 00 61 13.13-3, inclusive);
 - 3. Payment Bond (pages 00 61 13.16-1 to 00 61 13.16-3, inclusive);
 - 4. Bid Bond (pages 00 43 13-1 to 00 43 13-3, inclusive);
 - 5. Other Bonds (pages _____ to _____, inclusive);
 - a. _____ (pages _____ to _____, inclusive);
 - b. _____ (pages _____ to _____, inclusive);
 - c. _____ (pages _____ to _____, inclusive);
 - 6. General Conditions (pages 00 72 00-1 to 00 72 00-63, inclusive);
 - 7. Supplementary Conditions (pages 00 73 00-1 to 00 73 00-7, inclusive);
 - 8. Specifications as listed in the table of contents of the Project Manual;
 - 9. Drawings consisting of a cover sheet and sheets numbered 1 through 17, inclusive, with each sheet bearing the following general title: South Channel Habitat Improvement, Menominee River, Marinette, WI; REL Contract No. 3775-16-02;
 - 10. Addenda (numbers _____ to _____, inclusive);
 - 11. Exhibits to this Agreement (enumerated as follows):
 - a. Notice to Proceed (pages 00 55 00-1 to 00 55 00-1, inclusive);
 - b. CONTRACTOR's Bid (pages 00 41 13-1 to 00 41 13-5, inclusive);
 - c. Documentation submitted by CONTRACTOR prior to Notice of Award (pages 00 41 13-1 to 00 43 13-3, inclusive);

12. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

- a. Written Amendments;
- b. Work Change Directives;
- c. Change Order(s).

B. The documents listed in paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

9.02 Legal Documents

A. The legal documents are a subset of the contract documents which form the Agreement for services by and between the Owner and Contractor.

B. The legal documents consist of the following:

1. Notice of Award (Pages 00 51 00-1 to 00 51 00-2, inclusive).
2. This Agreement (Pages 00 52 00-1 to 00 52 00-8, inclusive).

ARTICLE 10 - MISCELLANEOUS

10.01 Terms

A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

10.02 Assignment of Contract

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 Successors and Assigns

- A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on _____ (which is the Effective Date of the Agreement).

OWNER:
CITY OF MARINETTE

CONTRACTOR:

By: _____

By: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest _

Attest _

Address for giving notices:
City of Marinette—City Hall
1905 Hall Avenue
Marinette, WI 54143

Address for giving notices:

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER-CONTRACTOR Agreement.)

License No. _____
(Where applicable)

Agent for service of process: _____

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

Designated Representative:

Designated Representative:

Name: Brian Miller

Name: _____

Title: City Engineer

Title: _____

Address: 1905 Hall Avenue
Marinette, WI 54143

Address: _____

Phone: 715-732-5134

Phone: _____

Facsimile: _____

Facsimile: _____

Email: bmiller@marinette.wi.us

Email: _____

SECTION 00 55 00
NOTICE TO PROCEED

Dated _____

TO: _____
(CONTRACTOR)

ADDRESS: _____

Contract: 3775-16-02

Project: SOUTH CHANNEL HABITAT IMPROVEMENT

You are notified that the Contract Times under the above contract will commence to run on _____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement the date of Substantial Completion is _____ and the date of readiness for final payment is _____.

Before you may start any Work at the Site, paragraph 2.05.C of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also, before you may start any Work at the Site, you must

CITY OF MARINETTE
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

(TITLE)

Copy to ENGINEER

Acceptance of Notice: Receipt of the above Notice to Proceed is hereby acknowledged by:

(CONTRACTOR REPRESENTATIVE)

(DATE)

(TITLE)

LABELED TAB - BONDS

***Place labeled tab before Section 00 61 13.**

**SECTION 00 61 13.13 (C-610)
PERFORMANCE BOND**

CONTRACTOR (name and address):

SURETY (name and address of principal place of business):

OWNER (name and address):

CITY OF MARINETTE
1905 HALL AVENUE
MARINETTE, WI 54143

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: South Channel Habitat Improvement; Contract No. 3775-16-02

BOND

Bond Number:

Date (not earlier than the Effective Date of the Agreement of the Construction Contract):

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

(seal)
Contractor's Name and Corporate Seal

(seal)
Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature (attach power of attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of

the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within

two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

**SECTION 00 61 13.16 (C-615)
PAYMENT BOND**

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

CITY OF MARINETTE
1905 HALL AVENUE
MARINETTE, WI 54143

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):* South Channel Habitat Improvement; City of Marinette

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

(seal)

Contractor's Name and Corporate Seal

(seal)

Surety's Name and Corporate Seal

By: _____

Signature

By: _____

Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____

Signature

Attest: _____

Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a

Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions

16.1 Claim: A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully

asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

- 16.3 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

SECTION 00 62 76
APPLICATION FOR PAYMENT NO. _____

To: City of Marinette
From: _____
Contract: 3775-16-02
Project: South Channel Habitat Improvement
For work accomplished through the date of: _____

1. Original Contract Price:	_____	
2. Add (Deduct) by Revised Quantities:	_____	
3. Net change by Change Orders and Written Amendments (+ or -):	_____	\$0.00
4. Current Contract Price (1 plus 2 plus 3):	_____	\$0.00
5. Total completed and stored to date:	_____	
6. Retainage (per Agreement):		
_____ % of completed work:	\$ _____	-
_____ % of stored material:	\$ _____	-
Total Retainage:	_____	\$0.00
7. Total completed and stored to date less retainage (5 minus 6):	_____	\$0.00
8. Less previous Application for Payments:	_____	\$0.00
9. Due this Application (7 minus 8):	_____	\$0.00

Record of Previous Payments:

1. _____	4. _____
2. _____	5. _____
3. _____	6. _____

Sub-Total \$0.00 \$0.00

Accompanying Documentation:

SUBMITTED: _____

By: _____ Date: _____
CONTRACTOR (Authorized Signature)

RECOMMENDED:
By: _____ Date: _____
ENGINEER (Authorized Signature)

APPROVED:
By: _____ Date: _____
OWNER (Authorized Signature)

SECTION 00 63 36

**FIELD ORDER FORM
ITEM NO. _____**

OWNER CITY OF MARINETTE
PROJECT SOUTH CHANNEL HABITAT IMPROVEMENT
CONTRACTOR _____
CONTRACT NO. 3775-16-02
DATE _____
THIS CHANGE IS REQUESTED BY _____

DESCRIPTION OF ORDER:

Refer to Drawing Sheets _____ Section or Detail _____

Refer to Specification Paragraphs _____

Will additional drawings be necessary? Yes [] No []

It is understood and mutually agreed that this form is to be used only to record minor orders which do not increase or decrease the contract price or change the intent of a specific provision of the contract. Any orders involving change to the contract price or contract requirements must be covered by a formal change order executed by the Owner and the Contractor.

FOR ROBERT E. LEE & ASSOCIATES

FOR CONTRACTOR

FOR OWNER

Date _____ Date _____ Date _____

SECTION 00 63 49

WORK CHANGE DIRECTIVE

No. _____

Owner: CITY OF MARINETTE Robert E. Lee & Associates, Inc. Project No. 3775-16-02
Project: South Channel Habitat Improvement Contract No. 3775-16-02

Date of Issuance: _____

You are directed to proceed with the following change(s):

Description:

Purpose of Work Change Directive:

Attachments:

If Owner or Contractor believe that the above change has affected Contract Price, any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in Contract Price:

- Lump Sum
 Unit Prices
 Cost of the Work

Estimated increase (decrease) in Contract Price:

\$ _____

Estimated increase (decrease) in Contract Times:

Substantial Completion: ___ days;

Ready for final payment: ___ days.

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Acknowledged:

Approved:

By: _____
Robert E. Lee & Associates, Inc.

By: _____
Owner - City of Marinette

Date: _____

Date: _____

CC: Project Manager/Construction Observer
Norma Miller, REL (Conformed Document Creation)

SECTION 00 63 63 CHANGE ORDER

No. _____

Date of Issuance:	Effective Date:
Project: South Channel Habitat Improvement	Owner's Contract No.: 3775-16-02
Engineer's Contract No.: 3775-16-02	Contractor:
Date of Contract Start:	Original Contract Amount:

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

Description:

Attachments (list documents supporting change):

Reason for Change Order: _____ (example: project enhancement)

It is agreed by the Contractor that this Change Order includes any and all costs associated with or resulting from the change(s) ordered herein, including all impact, delays, and acceleration costs. Other than the dollar amount and time allowance listed herein, there shall be no further time or dollar compensation as a result of this Change Order.

CONTRACT PRICE			CONTRACT TIMES (Calendar Days)		
				To Substantial Completion	To Final Completion
Original:	\$0.00	Original:	0	0	
Previous C.O.s (Add):	\$0.00	Previous C.O.s (Add/Deduct):	0	0	
This C.O. (Add):	\$0.00	This C.O. (Add/Deduct):	0	0	
Total CO Value	\$0.00	REVISED:	0	0	
Contract Price with all approved Change Orders:	\$0.00	Original Completion Date:	1/1/000	1/1/000	
		Revised Completion Date:	#VALUE!	#VALUE!	

RECOMMENDED:

By _____
 Engineer (Robert E. Lee & Associates, Inc.)

_____ Date

ACCEPTED:

_____ Contractor (company name here)

_____ Date

APPROVED:

_____ Owner (City of Marinette)

_____ Date

Change Order

Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

SECTION 00 65 16

CERTIFICATE OF SUBSTANTIAL COMPLETION

DATE OF ISSUANCE _____

OWNER CITY OF MARINETTE
CONTRACTOR _____
Contract: 3775-16-02
Project: South Channel Habitat Improvement

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To _____
CITY OF MARINETTE
OWNER

And To _____
CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within ____ days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

OWNER: _____

CONTRACTOR: _____

The following documents are attached to and made a part of this Certificate:

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on _____
Date

ROBERT E. LEE & ASSOCIATES, INC.
ENGINEER

By: _____
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on _____
Date

CONTRACTOR

By: _____
(Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on _____
Date

CITY OF MARINETTE
OWNER

By: _____
(Authorized Signature)

SECTION 00 65 19
CERTIFICATE OF FINAL COMPLETION

DATE OF ISSUANCE _____

OWNER CITY OF MARINETTE

CONTRACTOR _____

Contract: 3775-16-02

Project: South Channel Habitat Improvement

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be completed in accordance with the Contract Documents on

DATE OF FINAL COMPLETION

Executed by ENGINEER on _____
Date

ROBERT E. LEE & ASSOCIATES, INC.
ENGINEER

By: _____
(Authorized Signature)

CONTRACTOR accepts this Certificate of Final Completion on _____
Date

CONTRACTOR

By: _____
(Authorized Signature)

OWNER accepts this Certificate of Final Completion on _____
Date

CITY OF MARINETTE
OWNER

By: _____
(Authorized Signature)

SECTION 00 65 19.13

CONTRACTOR'S AFFIDAVIT

STATE OF: _____

COUNTY OF: _____

Before me, the undersigned, a _____
(Notary Public, Justice of the Peace, or Alderman)

in and for said County and State personally appeared _____
(Individual, Partner, or duly authorized

representative of Corporate CONTRACTOR)

who being duly sworn according to law deposes and says that all labor, material, and outstanding claims
and indebtedness of whatever nature arising out of the performance of the CONTRACT of the _____

CITY OF MARINETTE
(OWNER)

with _____ have been paid in full.

(Individual, Partner, or duly authorized
representative of Corporate CONTRACTOR)

Sworn to and subscribed before me this _____ day of _____,
20____.

Notary Public

(Seal)

Commission expires: _____

SECTION 00 65 19.16

CONTRACTOR'S RELEASE

KNOW ALL MEN BY THESE PRESENTS THAT: _____

(CONTRACTOR)

of _____ County and State of _____ does hereby acknowledge that

he has received this day of _____ an from the _____

(OWNER)

the sum of One Dollar (\$1.00) and other valuable consideration in full satisfaction and payment of all sums of money owing, payable and belonging to _____

(CONTRACTOR)

by any means whatsoever, for on account of a certain agreement hereinafter called the CONTRACT,

between the said _____ CITY OF MARINETTE _____

(OWNER)

and _____

(CONTRACTOR)

dated _____.

NOW, THEREFORE, the said _____

(CONTRACTOR)

(for myself, my heirs, executors, and administrators) (for itself, its successors and assigns) do by these presents remise, release quit-claim and forever discharge the said _____

CITY OF MARINETTE

(OWNER)

its successors and assigns, of and from all claims and demands arising from or in connection with the said CONTRACT dated _____ and of and from all, and all manner of action and actions, cause and causes of action and actions, suits, debts, dues duties, sum and sums of money, accounts, reckonings, bond, bills, specialties, covenants, contracts, agreements, promises, variances, damages, judgments, extents, executions, claims and demand, whatsoever in law or equity, or otherwise which against the said _____

CITY OF MARINETTE

(OWNER)

its successors and assigns ever had, now have, or which (I, my heirs, executors or administrators) (it, its successors and assigns) hereinafter can, shall or may have for upon or by reason of any matter, cause or thing whatsoever, from the beginning of the world to the date of these presents.

IN WITNESS WHEREOF _____
(CONTRACTOR)

has caused these presents to be duly executed the _____ day of _____, 20__.

Signed, Sealed, and Delivered
in the presence of:

(Individual) _____ (Seal)

(Partnership Contractor) _____ (Seal)

By _____ (Seal)
(Partner)

Attest:

(Seal)

(Secretary) By _____ (Seal)
(President or Vice-President)

(Corporate Seal)

**SECTION 00 65 19.19
STATEMENT OF SURETY COMPANY**

IN ACCORDANCE with the provisions of the CONTRACT dated _____

_____ between the _____

CITY OF MARINETTE
(OWNER)

and _____
(CONTRACTOR)

the _____
(SURETY)

SURETY on the Material and Labor Payment BOND of _____

_____ after a careful examination of the books and records of said CONTRACTOR or after receipt of an affidavit from CONTRACTOR, which examination of affidavit satisfies SURETY that all claims for labor and materials have been satisfactorily settled, hereby approves of the final payment of the said _____
(CONTRACTOR)

and by these presents witnesseth that payment to the CONTRACTOR of the final estimates shall not relieve SURETY of any of its obligations to _____, as set forth in the said SURETY COMPANY'S BOND.

IN WITNESS WHEREOF, said SURETY has hereunto set its hand and seal this _____ day of _____, 20____.

Attest:

(Seal) _____ By: _____
President

Note: This statement, if executed by any person other than the President or Vice-President of the Company, must be accompanied by a certificate of even date showing authority conferred upon the person so signing to execute such instruments on behalf of the Company represented.

LABELED TAB – GENERAL CONDITIONS

***Place labeled tab before Section 00 72 00 or C-700.**

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly by

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES



ASCE American Society
of Civil Engineers

P/E National Society of
Professional Engineers
Professional Engineers in Private Practice

AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
A Practice Division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

Copyright © 2007 National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314-2794
(703) 684-2882
www.nspe.org

American Council of Engineering Companies
1015 15th Street N.W., Washington, DC 20005
(202) 347-7474
www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

Associated General Contractors of America
2300 Wilson Boulevard, Suite 400, Arlington, VA 22201-3308
(703) 548-3118
www.agc.org

The copyright for this EJCDC document is owned jointly by the four EJCDC sponsoring organizations and held in trust for their benefit by NSPE.

**STANDARD GENERAL CONDITIONS OF THE
CONSTRUCTION CONTRACT**

TABLE OF CONTENTS

	Page
Article 1 – Definitions and Terminology	1
1.01 Defined Terms.....	1
1.02 Terminology	5
Article 2 – Preliminary Matters	6
2.01 Delivery of Bonds and Evidence of Insurance.....	6
2.02 Copies of Documents.....	6
2.03 Commencement of Contract Times; Notice to Proceed.....	6
2.04 Starting the Work.....	7
2.05 Before Starting Construction	7
2.06 Preconstruction Conference; Designation of Authorized Representatives	7
2.07 Initial Acceptance of Schedules.....	7
Article 3 – Contract Documents: Intent, Amending, Reuse	8
3.01 Intent.....	8
3.02 Reference Standards.....	8
3.03 Reporting and Resolving Discrepancies.....	8
3.04 Amending and Supplementing Contract Documents.....	9
3.05 Reuse of Documents	10
3.06 Electronic Data.....	10
Article 4 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points.....	10
4.01 Availability of Lands	10
4.02 Subsurface and Physical Conditions	11
4.03 Differing Subsurface or Physical Conditions.....	11
4.04 Underground Facilities	13
4.05 Reference Points	14
4.06 Hazardous Environmental Condition at Site.....	14
Article 5 – Bonds and Insurance	16
5.01 Performance, Payment, and Other Bonds	16
5.02 Licensed Sureties and Insurers	16
5.03 Certificates of Insurance	16
5.04 Contractor’s Insurance.....	17
5.05 Owner’s Liability Insurance	18
5.06 Property Insurance	18
5.07 Waiver of Rights	20
5.08 Receipt and Application of Insurance Proceeds.....	21

5.09	Acceptance of Bonds and Insurance; Option to Replace	21
5.10	Partial Utilization, Acknowledgment of Property Insurer	21
Article 6 – Contractor’s Responsibilities		22
6.01	Supervision and Superintendence.....	22
6.02	Labor; Working Hours.....	22
6.03	Services, Materials, and Equipment	22
6.04	Progress Schedule	23
6.05	Substitutes and “Or-Equals”	23
6.06	Concerning Subcontractors, Suppliers, and Others.....	25
6.07	Patent Fees and Royalties	27
6.08	Permits.....	27
6.09	Laws and Regulations	27
6.10	Taxes	28
6.11	Use of Site and Other Areas	28
6.12	Record Documents.....	29
6.13	Safety and Protection	29
6.14	Safety Representative.....	30
6.15	Hazard Communication Programs	30
6.16	Emergencies	30
6.17	Shop Drawings and Samples	30
6.18	Continuing the Work.....	32
6.19	Contractor’s General Warranty and Guarantee.....	32
6.20	Indemnification	33
6.21	Delegation of Professional Design Services	34
Article 7 – Other Work at the Site.....		35
7.01	Related Work at Site	35
7.02	Coordination.....	35
7.03	Legal Relationships.....	36
Article 8 – Owner’s Responsibilities.....		36
8.01	Communications to Contractor.....	36
8.02	Replacement of Engineer.....	36
8.03	Furnish Data	36
8.04	Pay When Due	36
8.05	Lands and Easements; Reports and Tests.....	36
8.06	Insurance	36
8.07	Change Orders.....	36
8.08	Inspections, Tests, and Approvals	37
8.09	Limitations on Owner’s Responsibilities	37
8.10	Undisclosed Hazardous Environmental Condition	37
8.11	Evidence of Financial Arrangements	37
8.12	Compliance with Safety Program.....	37
Article 9 – Engineer’s Status During Construction		37
9.01	Owner’s Representative.....	37

9.02	Visits to Site	37
9.03	Project Representative	38
9.04	Authorized Variations in Work	38
9.05	Rejecting Defective Work	38
9.06	Shop Drawings, Change Orders and Payments.....	38
9.07	Determinations for Unit Price Work	39
9.08	Decisions on Requirements of Contract Documents and Acceptability of Work.....	39
9.09	Limitations on Engineer’s Authority and Responsibilities	39
9.10	Compliance with Safety Program.....	40
Article 10 – Changes in the Work; Claims		40
10.01	Authorized Changes in the Work	40
10.02	Unauthorized Changes in the Work	40
10.03	Execution of Change Orders.....	41
10.04	Notification to Surety.....	41
10.05	Claims.....	41
Article 11 – Cost of the Work; Allowances; Unit Price Work.....		42
11.01	Cost of the Work.....	42
11.02	Allowances.....	45
11.03	Unit Price Work	45
Article 12 – Change of Contract Price; Change of Contract Times		46
12.01	Change of Contract Price	46
12.02	Change of Contract Times	47
12.03	Delays.....	47
Article 13 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work		48
13.01	Notice of Defects	48
13.02	Access to Work	48
13.03	Tests and Inspections	48
13.04	Uncovering Work.....	49
13.05	Owner May Stop the Work.....	50
13.06	Correction or Removal of Defective Work	50
13.07	Correction Period	50
13.08	Acceptance of Defective Work.....	51
13.09	Owner May Correct Defective Work	51
Article 14 – Payments to Contractor and Completion		52
14.01	Schedule of Values.....	52
14.02	Progress Payments	52
14.03	Contractor’s Warranty of Title	55
14.04	Substantial Completion.....	55
14.05	Partial Utilization	56
14.06	Final Inspection.....	56
14.07	Final Payment.....	57
14.08	Final Completion Delayed.....	58

14.09 Waiver of Claims	58
Article 15 – Suspension of Work and Termination	58
15.01 Owner May Suspend Work	58
15.02 Owner May Terminate for Cause	58
15.03 Owner May Terminate For Convenience.....	60
15.04 Contractor May Stop Work or Terminate	60
Article 16 – Dispute Resolution	61
16.01 Methods and Procedures.....	61
Article 17 – Miscellaneous	61
17.01 Giving Notice	61
17.02 Computation of Times	61
17.03 Cumulative Remedies	62
17.04 Survival of Obligations.....	62
17.05 Controlling Law	62
17.06 Headings.....	62

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an

addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of

the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

- A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
 1. A Field Order;
 2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the

Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

- 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
- 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

- 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
- 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
- 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

- 1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
- 2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other

professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price

or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by

Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 Licensed Sureties and Insurers

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 Certificates of Insurance

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 - 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 - 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
6. include completed operations coverage:
 - a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
 2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property

insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery

against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
 - 3) it has a proven record of performance and availability of responsive service.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services; and

- 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or

other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all

court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor

shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
1. all persons on the Site or who may be affected by the Work;
 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.

- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*
 - a. Submit number of copies specified in the General Requirements.
 - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.
 2. *Samples:*
 - a. Submit number of Samples specified in the Specifications.
 - b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.
- B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Submittal Procedures:*
1. Before submitting each Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
 2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop

Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
 6. any inspection, test, or approval by others; or
 7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor,

Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
1. written notice thereof will be given to Contractor prior to starting any such other work; and
 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits

and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The

opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
 2. approve the Claim; or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 Cost of the Work

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on

Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 *Allowances*

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances:*

1. Contractor agrees that:

- a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
- b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance:*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 2. there is no corresponding adjustment with respect to any other item of Work; and
 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

- c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
- d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the

control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Notice of Defects

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.03 Tests and Inspections

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.

- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. repair such defective land or areas; or
 - 2. correct such defective Work; or
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute

resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and

equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 Progress Payments

A. Applications for Payments:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the

Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or

- b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
 - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment:

- 1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or

- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities

pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due:*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
 1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 3. Contractor's repeated disregard of the authority of Engineer; or
 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 Methods and Procedures

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer’s action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
 - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agrees with the other party to submit the Claim to another dispute resolution process; or
 - 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Computation of Times

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

LABELED TAB – SUPPLEMENTARY CONDITIONS

***Place labeled tab before Section 00 73 00.**

SECTION 00 73 00 (C-800)

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700, 2007 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated below, which are applicable to both the singular and plural thereof.

SC- 1.01.A.17 Add the following language at the end of paragraph 1.01.A.17:

The word Plans used in the specifications shall mean drawings as so defined.

SC-2.02 Delete paragraph A. in its entirety and insert the following in its place:

- A. The Owner shall furnish to Contractor printed copies of the following Conformed documents; up to (3) sets of the ½-size Drawings, (2) sets of the full-size Drawings and (3) Conformed Specifications. Additional copies will be furnished upon request at the cost of reproduction.

SC-2.03.A. Delete the last sentence of paragraph 2.03.A.

SC-5.03.A.,B. Delete paragraphs 5.03.A and B in their entirety and insert the following in its place.

- A. CONTRACTOR shall deliver with the executed Agreement to the OWNER, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which OWNER or any additional insured may reasonably request) which CONTRACTOR is required to purchase and maintain in accordance with Article 5.
- B. Before any work at the site is started, OWNER shall deliver to the CONTRACTOR certificates of insurance (and other evidence of insurance which CONTRACTOR or any additional insured may reasonably request) which is required to purchase and maintain in accordance with Article 5.

SC-4.02 Subsurface and Physical Conditions

Add the following new paragraph(s) immediately after paragraph 4.02.B3:

- 4. In the preparation of Drawings and Specifications, ENGINEER or ENGINEER's Consultants relied upon the following reports of explorations and tests of subsurface conditions at the Site:

NOT APPLICABLE

- 5. Copies of reports and drawings itemized in SC-4.02.4 and SC-4.02.5) if any, that are not included with Bidding Documents may be examined at Robert E. Lee & Associates, Inc., 1250 Centennial Centre Boulevard , Hobart, WI 54155, (920)662-9641 during business hours. These reports and drawings are not part of the Contract Documents, but the "technical data" contained

therein upon which CONTRACTOR may rely as identified and established above are incorporated therein by reference. CONTRACTOR is not entitled to rely upon other information and data utilized by ENGINEER and ENGINEER's consultants in the preparation of Drawings and Specifications.

SC-5.04 Add the following new paragraph immediately after paragraph 5.04.B.6:

7. Will contain waiver of subrogation provisions in accordance with paragraph 5.07.

SC-5.04 Add the following new paragraph immediately after paragraph 5.04.B:

C. The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under paragraphs 5.04.A.1 and A.2 of the General Conditions:
 - a. State Statutory
 - b. Applicable Federal (e.g., Longshoreman's) Statutory
 - c. Employer's Liability:
 - 1) Each Accident \$500,000
 - 2) Policy Limit \$1,000,000
 - 3) Each Employee \$500,000
2. Contractor's General Liability under paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor:
 - a. General Aggregate \$2,000,000
 - b. Products - Completed Operations Aggregate \$2,000,000
 - c. Personal and Advertising Injury \$1,000,000
 - d. Each Occurrence (Bodily Injury and Property Damage) \$1,000,000
 - e. Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages where applicable.
 - f. Excess or Umbrella Liability
 - 1) General aggregate \$3,000,000
 - 2) Each occurrence \$2,000,000
3. Automobile Liability under paragraph 5.04.A.6 of the General Conditions:
 - a. Combined Single Limit of \$1,000,000
4. The Contractual Liability coverage required by paragraph 5.04.B.3 of the General Conditions shall be provided by the CONTRACTOR as part of the CONTRACTOR's General Liability coverage.
5. The Owner and Engineer shall be listed as additional insureds on the Contractor's General Liability policy.

SC-5.06.A. Delete paragraph 5.06.A in its entirety and insert the following in its place:

- A. CONTRACTOR shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. This insurance shall:
 1. Include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER ENGINEER's Consultants and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents and

- other consultants and subcontractors of any of them each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;
2. Be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, false work, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;
 3. Include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. Cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER; and
 5. Allow for partial utilization of the Work by OWNER;
 6. Include testing and startup; and
 7. Be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued and said insurance certificate shall not include the words "endeavor to" or the words "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives." Contractor shall furnish the City of Marinette and Waupaca Foundry with the following four **additional endorsements** to your insurance policy:
 - a. Additional insured;
 - b. Waiver of subrogation;
 - c. Primary insurance; and
 - d. Notice of cancellation
 8. CONTRACTOR shall be responsible for any deductible or self-insured retention.
 9. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with this paragraph SC-5.06 shall comply with the requirements of paragraph 5.06.C of the General Conditions.

SC-5.07 Add the following new paragraph immediately after Paragraph 5.07.A:

1. The Contractor's insurer hereunder waives all rights of subrogation against Owner and Engineer, any right of setoff and counterclaim, and any other right to deduction due to outstanding premiums, whether by attachment or otherwise with respect to insurance required under GC 5.04 and further under the supplementary conditions.

SC-6.02.B Delete paragraph 6.02B in its entirety and insert the following in its place.

- B. Overtime and shift work may be established as a regular procedure by the Contractor with the written permission of the Owner. Such permission may be revoked at any time. No work other than overtime and shift work established as a regular procedure shall be done between the hours of 6:00 P.M. and 7:00 A.M., nor on Saturdays, Sundays, or legal holidays, except such work as is necessary for the proper care and protection of the work already performed or except in case of an emergency.
1. All costs for overtime incurred by the Engineer for construction observation, except those occurring as a result of overtime and shift work established as a regular procedure, shall

be paid by the Contractor. Overtime observation shall include observation required during holidays, Saturdays, Sundays, and any weekday between the hours of 6:00 P.M. and 7:00 A.M. Such costs will include, but will not necessarily be limited to engineering, construction observation or administration, general supervision and other overhead expenses which are directly chargeable to the overtime work. All such charges shall be deducted by the Owner from payments due the Contractor.

SC-6.03 Add the following to 6.03:

- D. The equipment supplier must be an Authorized Distributor or Representative of the equipment being supplied in the designated territory. Authorized OEM is not acceptable.
- E. The equipment supplier shall submit certification of authorization by the equipment manufacturer to perform start-up and warranty repair services.
- F. The equipment supplier shall provide a statement from the manufacturer stating that their design and quality of workmanship is Factory approved and in no way will affect the new warranty provided by the manufacturer.
- G. The equipment supplier shall provide evidence of satisfactory performance on a minimum of ten (10) similar projects of equal service conditions for a minimum period of five (5) years.

SC-6.06.B Add the following language at the end of the second sentence of paragraph 6.06.B.:

- 1. Within five days of the Bid opening and before the Notice of Award, the apparent Successful Bidder is required to identify Subcontractors and Suppliers submitted to the ENGINEER and OWNER on the form provided in the Bidding Documents.

SC-6.06.C.3 Add the following sentence:

- 3. OWNER or ENGINEER may furnish to any such Subcontractor, Supplier, or other individual or entity, to the extent practicable, information about amounts paid to CONTRACTOR on account of Work performed for CONTRACTOR by a particular Subcontractor, Supplier, or other individual or entity.

SC-6.10 Add the following to 6.10 Taxes:

B. Waste Treatment Facilities

- 1. Exemption – Tangible personal property which becomes a component part of an industrial or governmental waste treatment facility is exempt from sales and use tax (sec. 77.54(26), Wis. Stats.).
- 2. Municipal (Government) Facilities – Construction materials which become a component part of a Wisconsin governmental waste treatment facility may be purchased without tax by contractors pursuant to the standards set forth in sec. Tax 11.11, Wis. Adm. Code. Governmental waste treatment facilities include:
 - a. Wastewater treatment facilities. In general terms, this is everything within the fence, except storm sewers, water supply systems, private domestic wastewater treatment facilities, and collection and discharge systems.
 - b. Sanitary landfills. This includes collection and burner systems, laboratory equipment, maintenance buildings, garages, office buildings, fences, and gates.

- c. Groundwater facilities. These are municipal facilities constructed to treat hazardous or contaminated ground water and include oil and water separators, air strippers, aerators, blowers, filters, carbon units, controls, thermal oxidizers, and pumps. Not included within the exemption are the collection and discharge systems.
3. It is not necessary for a governmental unit or contractors engaged in constructing a waste treatment facility for a Wisconsin governmental unit to obtain Department of Revenue approval of the governmental unit's waste treatment facility to qualify for the waste treatment facility exemption. Purchases by Contractors and Subcontractors - The sales tax exemption for waste treatment facilities includes the purchase of tangible personal property by a contractor who incorporates these purchases into a waste treatment facility.
- a. The contractor shall certify on an exemption certificate, Form S-211, the intended exempt use of the item and give the Form S-211 to its supplier. Suppliers of construction or repair materials for waste treatment facilities should not charge sales tax on such sales if they accept from the purchaser in good faith an exemption certificate (Form S-211).
 - b. Purchase of items that do not become a part of the waste treatment facility are subject to the tax. This includes items but is not limited to such as industrial gases, form lumber, tunnel shields, and supplies used by the contractor during construction. Payments by a contractor for equipment purchased (or leased) to perform a construction job are also taxable.

C. Other Public Facilities

- 1. Exemption - The sales price from the sale of and the storage, use, or other consumption of tangible personal property, or items or property under s. [77.52 \(1\) \(b\)](#) or [\(c\)](#), Wis. Stats. sold to a construction contractor who, in fulfillment of a real property construction activity, transfers the tangible personal property, or items or property under s. [77.52 \(1\) \(b\)](#) or [\(c\)](#), to an entity described under s. 77.54 sub. [\(9a\) \(b\)](#), [\(c\)](#), [\(d\)](#), [\(em\)](#), or [\(f\)](#), Wis. Stats. if such tangible personal property, or items or property, becomes a component of a facility in this state that is owned by the entity. In this subsection, "facility" means any building, shelter, parking lot, parking garage, athletic field, athletic park, storm sewer, water supply system, and sewerage collection facility, but does not include a highway, street, or road.
- 2. Purchases by Contractors and Subcontractors - The sales tax exemption for other public facilities include the purchase of tangible personal property by a contractor who incorporates these purchases into public facilities as outlined above in C., 1.
 - a. The contractor shall certify on an exemption certificate, Form S-211, the intended exempt use of the item and give the Form S-211 to its supplier. Suppliers of construction or repair materials for public facilities should not charge sales tax on such sales if they accept from the purchaser in good faith an exemption certificate (Form S-211).
 - b. Purchas of items which do not become a part of the public facilities are subject to the tax. This includes but is not limited to items such as industrial gases, form lumber, tunnel shields, and supplies used by the contractor during construction. Payments by a contractor for equipment purchased (or leased) to perform a construction job are also taxable.

SC-6.19.D Add the following:

D. The warranty period shall be 365 days from the date of substantial completion. All equipment shall be warranted for a period of 365 days from the date of substantial completion or 18 months

from the date of delivery, whichever is longer. If the project requires a county right-of-way permit, the contractor shall provide the warranty as stated in the permit.

SC-7.02.A.1 Delete paragraphs 7.02.A. 1-3 in their entirety and insert the following:

1. The CONTRACTOR shall have the authority and be responsible for coordination of the activities among the other prime contractors and subcontractors on the Site to ensure a safe, efficient working environment. This authority covers scheduling delivery of materials, storage of materials, sequencing of construction involving different crafts, resolving interface issues between crafts, scheduling testing, and all other aspects of the Work that do not impact the design or function of the Work.

SC-10.03.A.4 Add the following at the end of paragraph 10.03.A:

4. Change Orders shall be prepared on the form included in the General Requirements.

SC-11.01.A.5.b Add the following sentence: The cost of small tools, \$300 and less in value, and consumables shall be paid by adding 4% of the each employee's base hourly rate to the employee's payroll cost.

SC-11.01.A.5.c Revise the first sentence of the paragraph 11.01.A.5.c. to read as follows: c. Rentals of all construction equipment and machinery, having a value in excess of \$300, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading unloading, assembly, dismantling, and removal thereof.

SC-11.01.B.1 Revise the first sentence of paragraph 11.01.B.1 to read as follows: 1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, *project managers*, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

SC-11.01.B Add 11.01.B.6 as follows: 6. The cost of company owned autos or trucks assigned to foremen, superintendents or project managers.

SC-11.02.B.1. Add 11.02 B.1.c. as follows: c. Contractor's cost for installation, labor and miscellaneous materials will be paid when specified in the specific allowance item. Payment will be in accordance with GC 11.01 cost of work.

SC-12.01.C.2 Revise the sentence to read: 2. If a fixed fee is not agreed upon, or permitted by the funding agency, then a fee based on the following percentages of the various portions of the Cost of the Work:

SC-12.01.C.2.a Delete paragraphs SC.12.01.C.2.a-c in their entirety and insert the following:

- a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;

- b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be 20 percent. The percentage adjustment for 11.01.A.3 shall include full compensation for general overhead and profit for the subcontractors and the CONTRACTOR's administrative costs including general supervision, overhead, profit, and any other expense required for the CONTRACTOR to administer the services of one of the subcontractors.

SC-14.02.A.1. Revise the first sentence of paragraph 14.02.A.1 to read as follows: 1. At least 10 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

SC-14.02.A.2. Delete this paragraph in its entirety and insert the following in its place:

- 2. Beginning with the second Application for Payment, each application shall include a partial waiver of lien from all subcontractors and suppliers for Work provided to discharge Contractor's legitimate obligations associated with prior Applications for Payments.

SC-14.02.C.1 Revise the first sentence of paragraph 14.02.C.1 to read as follows: 1. Thirty days after approval of the Application for Payment by the OWNER, the amount recommended by the engineer will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

SC-14.07.A.2.(i) Revise the following language at the end of (a) of paragraph 14.07.A.2:

- (a) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.6. and such other data and schedules as ENGINEER may reasonably require.

SC-17.07 Add the following paragraph 17.07:

17.07 Wage Rates

- A Wage Rates for construction as established by the State of Wisconsin Dept. of Workforce Development (DWD) prevailing Wage Rates and Davis Bacon General Decision No. WI150015 for this project have been included. The Contractor shall pay the higher of the applicable wage rates.
- B. The Contractor shall comply with all applicable federal, state and local rules and regulations regarding the posting, certification, and filing of Wage Rates paid to employees.
- C. The wage rates for this project are provided in the Contract Documents.
- D. If the Contractor finds it necessary to employ any person in a trade or occupation not classified in the wage determinations, the Contractor shall obtain approved wage rates for such trades and occupations from the State of Wisconsin Department of Workforce Development and the U. S. Department of Labor.

- END OF SECTION -

LABELED TAB –WAGE RATES

***Place labeled tab JUST AFTER Section 00 73 00 AND BEFORE any wage rate information from State of Wisconsin, Federal Davis Bacon.**

WAGE RATES—Dept. of Workforce Development

State of Wisconsin Department of Workforce Development Equal Rights Division	DEPARTMENTAL ORDER
ISSUE DATE: 6/13/2016	
PROJECT:	
SOUTH CHANNEL HABITAT IMPROVEMENTS MARINETTE CITY, MARINETTE COUNTY, WI Determination No. 201601799 [Owner Project No. 3775-16-02]	
PROJECT OWNER:	REQUESTER:
BRIAN R MILLER, DIRECTOR OF PUBLIC WORKS CITY OF MARINETTE 1905 HALL AVE MARINETTE, WI 54143	RYAN TRZINSKI, PROJECT ENGINEER ROBERT E. LEE & ASSOCIATES, INC. 1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 541551895
ADDITIONAL CONTACT:	NOTE: The Requester must provide a copy of this Project Determination and enclosures to the Project Owner and Additional Contact.
<p>The department received an application for prevailing wage rate determination for the above-captioned project. The department conducted a survey to determine the prevailing wage rate for the trade(s) or occupation(s) needed to complete the project. The survey's findings appear in the attached project determination.</p> <p>If you believe that the wage rate for any trade or occupation does not accurately reflect the prevailing wage rate in the city, village or town where the project is located, you may ask the department to conduct an administrative review of such wage rate. You must submit this request in writing within 30 days from the date indicated above. Additionally, your request must include wage rate information from at least three similar projects in the city, village or town where the proposed project is located and on which some work has been performed by the contested trade(s) during the current survey period and was previously considered by the department in issuing the attached determination. See DWD 290.10 of the Wisconsin Administrative Code and either s. 66.0903(3)(br), Stats., or s. 103.49(3)(c), Stats., for a complete explanation of the administrative review process.</p> <p>Enclosures</p>	
<p>It is hereby ordered that the prevailing wage rates set forth in the attached project determination shall only be applicable to the above referenced project. This order is a FINAL ORDER of the department unless a timely request for an administrative review is filed with the department.</p> <p>ISSUED BY:</p> <p style="text-align: center;"> Equal Rights Division Labor Standards Bureau Construction Wage Standards Section P.O. Box 8928, Madison, WI 53708-8928 (608)266-6861 </p> <p style="text-align: center;"> Web Site: http://dwd.wisconsin.gov/er/ </p>	

PREVAILING WAGE RATE DETERMINATION

Issued by the State of Wisconsin
Department of Workforce Development
Pursuant to s. 66.0903, Wis. Stats.
Issued On: 6/13/2016

DETERMINATION NUMBER: 201601799

EXPIRATION DATE: Prime Contracts MUST Be Awarded or Negotiated On Or Before 12/31/2016. If NOT, You MUST Reapply.

PROJECT NAME: SOUTH CHANNEL HABITAT IMPROVEDMENTS
PROJECT NO: 3775-16-02

PROJECT LOCATION: MARINETTE CITY, MARINETTE COUNTY, WI

CONTRACTING AGENCY: CITY OF MARINETTE

CLASSIFICATION:	Contractors are responsible for correctly classifying their workers. Either call the Department of Workforce Development (DWD) with trade or classification questions or consult DWD's Dictionary of Occupational Classifications & Work Descriptions on the DWD website at: dwd.wisconsin.gov/er/prevailing_wage_rate/Dictionary/dictionary_main.htm .
OVERTIME:	Time and one-half must be paid for all hours worked: <ul style="list-style-type: none">- over 10 hours per day on prevailing wage projects- over 40 hours per calendar week- Saturday and Sunday- on all of the following holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25;- The day before if January 1, July 4 or December 25 falls on a Saturday;- The day following if January 1, July 4 or December 25 falls on a Sunday. Apply the time and one-half overtime calculation to whichever is higher between the Hourly Basic Rate listed on this project determination or the employee's regular hourly rate of pay. Add any applicable Premium or DOT Premium to the Hourly Basic Rate before calculating overtime. A DOT Premium (discussed below) may supersede this time and one-half requirement.
FUTURE INCREASE:	When a specific trade or occupation requires a future increase, you MUST add the full hourly increase to the "TOTAL" on the effective date(s) indicated for the specific trade or occupation.
PREMIUM PAY:	If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.
DOT PREMIUM:	This premium only applies to highway and bridge projects owned by the Wisconsin Department of Transportation and to the project type heading "Airport Pavement or State Highway Construction." DO NOT apply the premium calculation under any other project type on this determination.
APPRENTICES:	Pay apprentices a percentage of the applicable journey person's hourly basic rate of pay and hourly fringe benefit contributions specified in this determination. Obtain the appropriate percentage from each apprentice's contract or indenture.
SUBJOURNEY:	Subjourney wage rates may be available for some of the trades or occupations indicated below with the exception of laborers, truck drivers and heavy equipment operators. Any employer interested in using a subjourney classification on this project MUST complete Form ERD-10880 and request the applicable wage rate from the Department of Workforce Development PRIOR to using the subjourney worker on this project.

This document **MUST BE POSTED** by the **CONTRACTING AGENCY** in at least one conspicuous and easily accessible place **on the site of the project**. A local governmental unit may post this document at the place normally used to post public notices if there is no common site on the project. This document **MUST** remain posted during the entire time any worker is employed on the project and **MUST** be physically incorporated into the specifications and all contracts and subcontracts. If you have any questions, please write to the Equal Rights Division, Labor Standards Bureau, P.O. Box 8928, Madison, Wisconsin 53708 or call (608) 266-6861.

The following statutory provisions apply to local governmental unit projects of public works and are set forth below pursuant to the requirements of s. 66.0903(8), Stats.

s. 66.0903 (1) (f) & s. 103.49 (1) (c) "PREVAILING HOURS OF LABOR" for any trade or occupation in any area means 10 hours per day and 40 hours per week and may not include any hours worked on a Saturday or Sunday or on any of the following holidays:

1. January 1.
2. The last Monday in May.
3. July 4.
4. The first Monday in September.
5. The 4th Thursday in November.
6. December 25.
7. The day before if January 1, July 4 or December 25 falls on a Saturday.
8. The day following if January 1, July 4 or December 25 falls on a Sunday.

s. 66.0903 (10) RECORDS; INSPECTION; ENFORCEMENT.

(a) Each contractor, subcontractor, or contractor's or subcontractor's agent performing work on a project of public works that is subject to this section shall keep full and accurate records clearly indicating the name and trade or occupation of every person performing the work described in sub. (4) and an accurate record of the number of hours worked by each of those persons and the actual wages paid for the hours worked.

s. 66.0903 (11) LIABILITY AND PENALTIES.

(a) 1. Any contractor, subcontractor, or contractor's or subcontractor's agent who fails to pay the prevailing wage rate determined by the department under sub. (3) or who pays less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor is liable to any affected employee in the amount of his or her unpaid wages or his or her unpaid overtime compensation and in an additional amount as liquidated damages as provided under subd. 2., 3., whichever is applicable.

2. If the department determines upon inspection under sub. (10) (b) or (c) that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the department shall order the contractor to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages within a period specified by the department in the order.

3. In addition to or in lieu of recovering the liability specified in subd. 1. as provided in subd. 2., any employee for and in behalf of that employee and other employees similarly situated may commence an action to recover that liability in any court of competent jurisdiction. If the court finds that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the court shall order the contractor, subcontractor, or agent to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages.

5. No employee may be a party plaintiff to an action under subd. 3. unless the employee consents in writing to become a party and the consent is filed in the court in which the action is brought. Notwithstanding s. 814.04 (1), the court shall, in addition to any judgment awarded to the plaintiff, allow reasonable attorney fees and costs to be paid by the defendant.

BUILDING OR HEAVY CONSTRUCTION

Includes sheltered enclosures with walk-in access for the purpose of housing persons, employees, machinery, equipment or supplies and non-sheltered work such as canals, dams, dikes, reservoirs, storage tanks, etc. A sheltered enclosure need not be "habitable" in order to be considered a building. The installation of machinery and/or equipment, both above and below grade level, does not change a project's character as a building. On-site grading, utility work and landscaping are included within this definition. Residential buildings of four (4) stories or less, agricultural buildings, parking lots and driveways are NOT included within this definition.

SKILLED TRADES

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
101	Acoustic Ceiling Tile Installer Future Increase(s): Add \$1.42/hr on 6/1/2016.	33.02	17.12	50.14
102	Boilermaker	33.35	28.77	62.12
103	Bricklayer, Blocklayer or Stonemason Future Increase(s): Add \$1.45 on 06/06/2016 Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	31.59	19.61	51.20
104	Cabinet Installer Future Increase(s): Add \$1.42/hr on 6/1/2016.	33.02	17.12	50.14
105	Carpenter Future Increase(s): Add \$1.42/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.02	17.12	50.14
106	Carpet Layer or Soft Floor Coverer Future Increase(s): Add \$1.42/hr on 6/1/2016.	33.02	17.12	50.14
107	Cement Finisher Future Increase(s): Add \$1.45 on 06/06/2016	31.59	19.61	51.20
108	Drywall Taper or Finisher Future Increase(s): Add \$1.42/hr on 6/1/2016.	33.02	17.12	50.14
109	Electrician Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	29.84	18.20	48.04
110	Elevator Constructor	44.55	29.65	74.20

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
111	Fence Erector	24.73	19.69	44.42
112	Fire Sprinkler Fitter	38.28	19.21	57.49
113	Glazier	27.74	17.33	45.07
114	Heat or Frost Insulator	18.00	8.53	26.53
115	Insulator (Batt or Blown)	23.62	11.55	35.17
116	Ironworker	29.27	23.72	52.99
117	Lather	32.72	16.00	48.72
118	Line Constructor (Electrical)	40.81	16.42	57.23
119	Marble Finisher	25.72	18.54	44.26
120	Marble Mason	31.55	18.26	49.81
121	Metal Building Erector	30.00	0.92	30.92
122	Millwright Future Increase(s): Add \$1.47/hr on 6/1/2016.	34.79	17.17	51.96
123	Overhead Door Installer	31.93	4.23	36.16
124	Painter	21.50	9.91	31.41
125	Pavement Marking Operator	30.00	18.81	48.81
126	Piledriver Future Increase(s): Add \$1.44/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.56	17.12	50.68
127	Pipeline Fuser or Welder (Gas or Utility)	34.86	16.33	51.19
129	Plasterer Future Increase(s): Add \$1.45 on 06/06/2016	32.40	18.80	51.20
130	Plumber Future Increase(s): Add \$1.55 on 6/1/16	35.54	17.20	52.74
132	Refrigeration Mechanic Future Increase(s): Add \$1.50 on 6/1/16	35.54	17.20	52.74
133	Roofer or Waterproofer	17.50	6.97	24.47
134	Sheet Metal Worker	30.82	21.90	52.72

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
135	Steamfitter Future Increase(s): Add \$1.55 on 6/1/16	35.54	17.20	52.74
137	Teledata Technician or Installer	22.50	12.74	35.24
138	Temperature Control Installer	33.86	15.23	49.09
139	Terrazzo Finisher	25.72	18.54	44.26
140	Terrazzo Mechanic Future Increase(s): Add \$1.45 on 06/06/2016	31.59	19.60	51.19
141	Tile Finisher	30.00	0.00	30.00
142	Tile Setter Future Increase(s): Add \$1.45/hr on 6/06/2016.	31.59	19.61	51.20
143	Tuckpointer, Caulker or Cleaner Future Increase(s): Add \$1.45 on 06/06/2016 Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	32.40	18.80	51.20
144	Underwater Diver (Except on Great Lakes)	36.74	16.00	52.74
146	Well Driller or Pump Installer Future Increase(s): Add \$1/hr on 6/1/2016; Add \$1/hr on 6/1/2017.	25.32	16.40	41.72
147	Siding Installer	17.00	6.71	23.71
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	36.73	20.41	57.14
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	32.65	15.52	48.17
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	28.57	13.71	42.28
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.53	13.55	40.08
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	25.00	12.55	37.55

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle Future Increase(s): Add \$1.15/hr on 6/1/2015. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	25.68	18.96	44.64
203	Three or More Axle	16.50	9.30	25.80
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07
205	Pavement Marking Vehicle	16.50	9.30	25.80
207	Truck Mechanic	16.50	9.30	25.80

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer Future Increase(s): Add \$1.25/hr eff. 06/06/2016 Premium Increase(s): Add \$1.00/hr for certified welder and pipelayer; Add \$.25/hr for mason tender	25.06	15.63	40.69
302	Asbestos Abatement Worker	17.50	7.59	25.09
303	Landscaper	21.90	9.83	31.73
310	Gas or Utility Pipeline Laborer (Other Than Sewer and Water)	21.14	14.65	35.79
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	16.00	4.31	20.31
314	Railroad Track Laborer	24.22	15.12	39.34
315	Final Construction Clean-Up Worker	29.01	17.39	46.40

**HEAVY EQUIPMENT OPERATORS
SITE PREPARATION, UTILITY OR LANDSCAPING WORK ONLY**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
501	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Milling Machine; Boring Machine (Directional, Horizontal or Vertical); Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Backhoe (Track Type) Having a Mfgr's Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Crane, Shovel, Dragline, Clamshells; Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Grader or Motor Patrol; Master Mechanic; Mechanic or Welder; Robotic Tool Carrier (With or Without Attachments); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Tractor (Scraper, Dozer, Pusher, Loader); Trencher (Wheel Type or Chain Type Having Over 8 Inch Bucket). Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07
502	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Environmental Burner; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Jeep Digger; Screed (Milling Machine); Skid Rig; Straddle Carrier or Travel Lift; Stump Chipper; Trencher (Wheel Type or Chain Type Having 8 Inch Bucket & Under).	34.47	18.86	53.33
503	Air Compressor (&/or 400 CFM or Over); Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Forklift; Generator (&/or 150 KW or Over); Greaser; High Pressure Utility Locating Machine (Daylighting Machine); Mulcher; Oiler; Post Hole Digger or Driver; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack.	33.69	18.61	52.30
504	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
505	Work Performed on the Great Lakes Including Crane or Backhoe Operator; Assistant Hydraulic Dredge Engineer; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder; 70 Ton & Over Tug Operator. Future Increase(s): Add \$1.25/hr on 1/1/2017. Premium Increase(s): Add \$.50/hr for Friction Crane, Lattice Boom or Crane Certification (CCO).	44.05	23.24	67.29

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
506	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery. Future Increase(s): Add \$1.25/hr on 1/1/2017.	39.20	23.09	62.29
507	Work Performed on the Great Lakes Including Deck Equipment Operator, Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	36.72	21.15	57.87

**HEAVY EQUIPMENT OPERATORS
EXCLUDING SITE PREPARATION, UTILITY, PAVING LANDSCAPING WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
508	Boring Machine (Directional); Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add \$1.60/hr on 6/3/2016. Premium Increase(s): Add \$.50/hr for >200 Ton; Add \$1/hr at 300 Ton; Add \$1.50/hr at 400 Ton; Add \$2/hr at 500 Ton & Over.	37.67	20.38	58.05
509	Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Boring Machine (Horizontal or Vertical); Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Pile Driver; Versi Lifts, Tri-Lifts & Gantrys (20,000 Lbs. & Over). Future Increase(s): Add \$1.60/hr on 6/3/2016. Premium Increase(s): Add \$.25/hr for all >45 Ton lifting capacity cranes.	36.42	20.38	56.80

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
510	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Dredge (NOT Performing Work on the Great Lakes); Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Hydro-Blaster (10,000 PSI or Over); Milling Machine; Skid Rig; Traveling Crane (Bridge Type). Future Increase(s): Add \$1.60/hr on 6/3/2016.	35.22	20.38	55.60
511	Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Environmental Burner; Gantrys (Under 20,000 Lbs.); Grader or Motor Patrol; High Pressure Utility Locating Machine (Daylighting Machine); Manhoist; Material or Stack Hoist; Mechanic or Welder; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tining or Curing Machine; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07
512	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Grout Pump; Hoist (Tugger, Automatic); Industrial Locomotives; Jeep Digger; Lift Slab Machine; Mulcher; Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames. Future Increase(s): Add \$1.60/hr on 6/3/2016.	32.62	20.38	53.00

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
513	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Boatmen (NOT Performing Work on the Great Lakes); Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Elevator; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Forklift; Generator (&/or 150 KW or Over); Greaser; Heaters (Mechanical); Loading Machine (Conveyor); Oiler; Post Hole Digger or Driver; Prestress Machine; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Robotic Tool Carrier (With or Without Attachments); Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$1.60/hr on 6/3/2016.	31.99	20.38	52.37
514	Gas or Utility Pipeline, Except Sewer & Water (Primary Equipment). Future Increase(s): Add \$1/hr on 5/30/2016.	37.04	22.44	59.48
515	Gas or Utility Pipeline, Except Sewer & Water (Secondary Equipment).	33.82	20.30	54.12
516	Fiber Optic Cable Equipment	28.50	0.88	29.38

SEWER, WATER OR TUNNEL CONSTRUCTION
--

Includes those projects that primarily involve public sewer or water distribution, transmission or collection systems and related tunnel work (excluding buildings).

SKILLED TRADES

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
103	Bricklayer, Blocklayer or Stonemason	31.55	18.26	49.81
105	Carpenter	32.72	16.00	48.72
107	Cement Finisher Future Increase(s): Add \$1.75 on 6/1/16. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.	35.97	17.85	53.82
109	Electrician Future Increase(s): Add \$1.60 on 6/1/16; Add \$1.70 on 6/1/17 Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	35.13	23.19	58.32
111	Fence Erector	24.73	19.69	44.42
116	Ironworker	32.50	20.58	53.08
118	Line Constructor (Electrical)	40.81	16.42	57.23
125	Pavement Marking Operator	30.00	18.81	48.81
126	Piledriver	33.24	16.00	49.24
130	Plumber Future Increase(s): Add \$1.50 on 6/1/16	39.95	19.45	59.40
135	Steamfitter	34.86	16.33	51.19
137	Teledata Technician or Installer	22.50	12.74	35.24
143	Tuckpointer, Caulker or Cleaner	32.15	17.66	49.81
144	Underwater Diver (Except on Great Lakes)	31.00	20.43	51.43
146	Well Driller or Pump Installer Future Increase(s): Add \$1/hr on 6/1/2016; Add \$1/hr on 6/1/2017.	25.32	16.40	41.72

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	36.73	15.92	52.65
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	32.65	15.52	48.17
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	28.57	13.71	42.28
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.53	13.55	40.08
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.97	34.72

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	19.00	0.00	19.00
203	Three or More Axle	19.00	0.00	19.00
204	Articulated, Euclid, Dumptor, Off Road Material Hauler	33.69	19.78	53.47
205	Pavement Marking Vehicle	19.00	0.00	19.00
207	Truck Mechanic	19.00	0.00	19.00

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer Future Increase(s): Add \$1.25/hr eff. 06/06/2016 Premium Increase(s): Add \$.20 for blaster, bracer, manhole builder, caulker, bottomman and power tool; Add \$.55 for pipelayer; Add \$1.00 for 0-15 lbs. compressed air; Add \$2.00 for 15-30 lbs. compressed air; Add \$3.00 for over 30 lbs. compressed air.	26.93	15.64	42.57
303	Landscaper	41.00	0.00	41.00
304	Flagperson or Traffic Control Person	25.03	0.00	25.03
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	16.00	4.31	20.31
314	Railroad Track Laborer	24.22	15.12	39.34

**HEAVY EQUIPMENT OPERATORS
SEWER, WATER OR TUNNEL WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
521	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Master Mechanic; Pile Driver. Premium Increase(s): Add \$.25/hr for operating tower crane.	38.09	20.80	58.89
522	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Spreader & Distributor; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Dredge (NOT Performing Work on the Great Lakes); Milling Machine; Skid Rig; Telehandler; Traveling Crane (Bridge Type). Premium Increase(s): Add \$.25/hr for operating tower crane.	37.31	20.80	58.11
523	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Boring Machine (Horizontal or Vertical); Bulldozer or Endloader (Over 40 hp); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Manhoist; Material or Stack Hoist; Mechanic or Welder; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Premium Increase(s): Add \$.25/hr for operating tower crane.	36.36	20.80	57.16

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
524	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Environmental Burner; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Hoist (Tugger, Automatic); Grout Pump; Jeep Digger; Lift Slab Machine; Mulcher; Power Subgrader; Pump (3 Inch or Over) or Well Points; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Tining or Curing Machine; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames.	33.69	21.75	55.44
525	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Loading Machine (Conveyor); Post Hole Digger or Driver; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack.	30.19	22.06	52.25
526	Boiler (Temporary Heat); Forklift; Greaser; Oiler.	30.99	19.78	50.77
527	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
528	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	41.65	21.71	63.36
529	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	36.72	21.15	57.87
530	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under), Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	36.72	21.15	57.87

LOCAL STREET OR MISCELLANEOUS PAVING CONSTRUCTION
--

Includes roads, streets, alleys, trails, bridges, paths, racetracks, parking lots and driveways (except residential or agricultural), public sidewalks or other similar projects (excluding projects awarded by the Wisconsin Department of Transportation).

SKILLED TRADES

CODE	TRADE OR OCCUPATION	Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		
		HOURLY BASIC RATE OF PAY \$	HOURLY FRINGE BENEFITS \$	TOTAL \$
103	Bricklayer, Blocklayer or Stonemason	31.55	18.26	49.81
105	Carpenter Future Increase(s): Add \$1.42/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.02	17.12	50.14
107	Cement Finisher	33.46	17.66	51.12
109	Electrician	32.68	23.21	55.89
111	Fence Erector	24.73	19.69	44.42
116	Ironworker	29.27	23.72	52.99
118	Line Constructor (Electrical)	40.81	16.42	57.23
124	Painter	21.50	9.91	31.41
125	Pavement Marking Operator	30.00	18.81	48.81
126	Piledriver Future Increase(s): Add \$1.44/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.56	17.12	50.68
133	Rofer or Waterproofer	17.50	6.97	24.47
137	Teledata Technician or Installer	22.50	12.74	35.24
143	Tuckpointer, Caulker or Cleaner	32.15	17.66	49.81
144	Underwater Diver (Except on Great Lakes)	36.74	16.00	52.74
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	36.73	15.92	52.65
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	32.65	15.52	48.17
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	28.57	13.71	42.28
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.53	13.55	40.08

154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.97	34.72
-----	---	-------	-------	-------

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	20.70	5.90	26.60
203	Three or More Axle	20.70	5.90	26.60
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07
205	Pavement Marking Vehicle	20.70	5.90	26.60
206	Shadow or Pilot Vehicle	20.70	5.90	26.60
207	Truck Mechanic	20.70	5.90	26.60

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer	24.87	0.00	24.87
303	Landscaper Future Increase(s): Add \$1.00/hr eff. 06/01/2016; Add \$1.00/hr eff. 06/01/2017 Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	30.67	15.65	46.32
304	Flagperson or Traffic Control Person	25.03	0.00	25.03
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	16.00	4.31	20.31
314	Railroad Track Laborer	24.22	15.12	39.34

**HEAVY EQUIPMENT OPERATORS
CONCRETE PAVEMENT OR BRIDGE WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
541	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add \$1.60/hr on 6/3/2016. Premium Increase(s): Add \$.50/hr for >200 Ton; Add \$1/hr at 300 Ton; Add \$1.50/hr at 400 Ton; Add \$2/hr at 500 Ton & Over.	37.67	20.38	58.05
542	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Crane, Tower Crane Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add \$1.30/hr on 6/1/2016; Add \$1.25/hr on 6/1/2017. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/prevailing-wage-compliance.aspx .	37.77	21.85	59.62

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
543	<p>Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.</p> <p>Future Increase(s): Add \$1.30/hr on 6/1/2016; Add \$1.25/hr on 6/1/2017.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://wisconsin.gov/Pages/doing-bus/civil-rights/labornwage/prevailing-wage-compliance.aspx.</p>	37.27	21.85	59.12
544	<p>Backfiller; Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine.</p> <p>Future Increase(s): Add \$1.30/hr on 6/1/2016; Add \$1.25/hr on 6/1/2017.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://wisconsin.gov/Pages/doing-bus/civil-rights/labornwage/prevailing-wage-compliance.aspx.</p>	37.27	21.85	59.12

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
545	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.	31.62	19.78	51.40
546	Fiber Optic Cable Equipment.	28.50	0.88	29.38
547	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
548	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder. Future Increase(s): Add \$1.25/hr on 1/1/2017. Premium Increase(s): Add \$.50/hr for Friction Crane, Lattice Boom or Crane Certification (CCO).	44.05	23.24	67.29
549	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or more); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	36.72	21.15	57.87
550	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	36.72	21.15	57.87

**HEAVY EQUIPMENT OPERATORS
ASPHALT PAVEMENT OR OTHER WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
551	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads and/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic.	36.67	19.78	56.45

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
552	<p>Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver.</p> <p>Future Increase(s): Add \$1.30/hr on 6/1/2016; Add \$1.25/hr on 6/1/2017.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://wisconsin.gov/Pages/doing-bus/civil-rights/labornwage/prevaling-wage-compliance.aspx.</p>	37.77	21.85	59.62
553	<p>Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boring Machine (Directional, Horizontal or Vertical); Bulldozer or Endloader; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Laser/Screed; Concrete Slipform Placer Curb & Gutter Machine; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.</p>	24.00	9.81	33.81
554	<p>Backfiller; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self-Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler.</p>	21.30	9.54	30.84

Fringe Benefits Must Be Paid On All Hours Worked

<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u> \$	<u>HOURLY FRINGE BENEFITS</u> \$	<u>TOTAL</u> \$
555	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$1.60/hr on 6/3/2016.	32.62	20.38	53.00

556	Fiber Optic Cable Equipment.	28.50	0.88	29.38
-----	------------------------------	-------	------	-------

***** END OF RATES *****

The documents following the Prevailing Wage Rate Determination consist of twenty pages (including this one) of various forms/documents that will be used throughout the completion of the project. This prevailing wage rate determination and its underlying legal requirements outlined in the attached documents apply for the life of this project even though work on the project continues into 2017 or beyond. The chart below lists the form number, form/document name, the party who uses the document, and the document's number of pages. If you have any questions regarding these forms please call the Prevailing Wage Office at (608)266-6861.

ERD Form Number	Form Name	Party Who Uses the Form	Pages
	July 2015 description of recent changes to Wisconsin's prevailing wage laws resulting from enactment of the 2015-17 State Budget Bill.		1
	Prevailing Wage - Public Entity Project Owners	Explanation of project owner responsibilities	2
16056	Post the White Sheet	Contracting agency	1
10908	Consolidated List of Debarred Contractors	Any party contracting someone to complete work on a prevailing wage project	4
	Prevailing Wage – Contractors	Explanation of contractor responsibilities	2
7777	Disclosure of Ownership	Contractors that meet the criteria set out in (3)(A)&(B) of the form	1
5724	Prime Contractor Affidavit of Compliance	Prime contractor files with contracting agency upon completion of the work before receiving final payment	2
10584	Agent or Subcontractor Affidavit of Compliance	Subcontractors file with their awarding contractor upon completion of their work on the project before receiving final payment	2
10880	Request to Employ Subjourneyperson	Contractors wishing to employ a subjourneyperson(s)	1
	Additional General Prevailing Wage Law Information	General information for public entity or any other interested party	3

02/16/2016

THE 2015-17 BUDGET BILL MADE SIGNIFICANT CHANGES TO WISCONSIN'S PREVAILING WAGE LAWS. HOWEVER, THOSE CHANGES DO NOT GO INTO EFFECT UNTIL JANUARY 1, 2017.

During calendar year 2016, DWD will continue to enforce prevailing wage laws for local governmental unit and state agency public works projects under current prevailing wage laws.

2015 Wisconsin Act 55 (the budget bill) repealed the state prevailing wage law for **local governmental units** such as villages, towns, cities, school districts, or sewerage districts effective January 1, 2017. However, if a local governmental unit:

- issues a Request for Bids before January 1, 2017, for a project of public works that is subject to bidding or,
- enters into a contract before January 1, 2017, for a project of public works that is not subject to bidding,

then those public works projects are subject to the current prevailing wage law (§66.0903, Wis. Stats.) through the life of the project. Projects of public works with prevailing wage project determinations issued prior to 2017 continue to be subject to the current prevailing wage law through the life of the project even though the project may have work going on in 2017 or subsequent years.

Contractors working on local governmental unit projects with prevailing wage rate determinations must continue to pay employees the appropriate prevailing wage and maintain required prevailing wage payroll records. For instance, if a contractor is working in 2018 on a public works project with a project determination issued prior to 2017, then the contractor is required to comply with the "old" prevailing wage rate law (§66.0903, Wis. Stats.). After January 1, 2017, DWD will continue to enforce prevailing wage requirements for projects with DWD prevailing wage determinations issued under the "old" prevailing wage laws (§§ 66.0903 & 103.49, Wis. Stats.).

For new public works projects starting on January 1, 2017, state prevailing wage law will only apply to **state agency** and **state highway** projects. Prevailing wage rates applicable to state agencies will be those issued by the U.S. Department of Labor under the Davis-Bacon Act, 40 U.S.C. 3142. The Wisconsin Department of Administration will enforce the new state agency prevailing wage law (§16.856, Wis. Stats.) and the Wisconsin Department of Transportation will continue to enforce prevailing wage on state highway projects (under a law renumbered as §84.062, Wis. Stats.).

PREVAILING WAGE – Public Entity Project Owners

Any public works project that has a total estimated project cost that equals or exceeds single-trade or multiple-trade project thresholds requires a prevailing wage rate determination issued by the Department of Workforce Development (DWD). Public works include erecting, constructing, remodeling, repairing, demolishing, alterations, painting and decorating projects for a local governmental unit or state agency. State law excludes minor service or maintenance work, warranty work, or work under a supply-and-installation contract. There is a statutory definition for most of these exclusions. The prevailing wage law that applies to local governmental units is §66.0903, Wis. Stats. The prevailing wage law that applies to state agencies is §103.49, Wis. Stats. The applicable administrative rules for all public entities are DWD 290 and DWD 294, Wis. Adm. Code.

Thresholds

- A “single-trade project of public works” means a project in which a single trade accounts for 85% or more of the total labor cost of the project. The single trade threshold is \$48,000.
- A “multiple-trade project of public works” means a project in which no single trade accounts for 85% or more of the total labor cost of the project.
- (a) The multiple-trade threshold is \$100,000, unless a municipality falls under the description in (b).
 - (b) The multiple-trade threshold of \$234,000 applies to public works projects erected, constructed, repaired, remodeled, or demolished by a private contractor for •a city or village with a population less than 2500 or •a town.

A local governmental unit or state agency that has a public works project that equals or exceeds the prevailing wage thresholds must do all of the following:

- Request a prevailing wage rate determination for the project from DWD at least 30 days before soliciting bids or negotiating contracts. An Application for Prevailing Wage Rate Determination is available on the DWD website: http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm
To avoid waiting for a project determination use the on-line application system that permits the user to generate a determination immediately and save all documents in PDF form to the user’s computer. Use this project determination on line application at the following address:

http://dwd.wisconsin.gov/er/prevailing_wage_rate/pw_online_determinations.htm

- Tell potential contractors the project is subject to state prevailing wage law when soliciting bids.
- Include the prevailing wage rate determination in the construction contract, or if there is no written contract, provide a copy of the project determination to each prime contractor.
- Award contracts to contractors who do *not* appear on the “Consolidated List of Debarred Contractors.”
- Notify contractors that they are required to have a written substance abuse testing program in place that fulfills the requirements of §103.503, Wis. Stats., before commencing work on the prevailing wage project.
- Post the prevailing wage rate determination on the project site. (This document is often referred to as “the white sheet.”)
- Notify project contractors that if DWD finds that a contractor violated the prevailing wage law, DWD will assess liquidated damages of 100% of the wages owed to employees.
- Obtain an Affidavit of Compliance from each prime contractor before making final payment for the project.

If the total estimated cost of the project exceeds the prevailing wage thresholds, a local governmental unit or state agency also must obtain a prevailing wage rate determination under the following circumstances:

- when a completed facility is leased, purchased, lease-purchased or otherwise acquired by or dedicated to a public entity in lieu of the public entity contracting for the project,
- when one public entity does work for another public entity,
- when a *private* entity will construct a road, street, bridge, sanitary sewer or water main project and dedicate it to a local governmental unit or the state for its ownership or maintenance (except for some residential subdivisions).

For more information, visit the prevailing wage website: http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm. For further assistance, call the Equal Rights Division at 608-266-6861 and ask for prevailing wage.

POST THE WHITE SHEET

As the public entity receiving this prevailing wage rate determination, YOU ARE REQUIRED by law to post the prevailing wage rate determination (i.e., white sheet) in at least one conspicuous and easily accessible place on the project site that is available to all construction workers. The white sheet must remain posted from the onset of the project until all construction labor on the project has been completed.

[See, Wis. Admin. Code §DWD 290.12(1)]

Posting the white sheet inside the general contractor's trailer does not meet this requirement. That placement is not available/accessible to all workers and is not a location over which you have control.

If you have questions about posting, please call (608)266-6861 and ask for prevailing wage intake.

State of Wisconsin - Department of Workforce Development

This list has been prepared in accordance with the provisions of §§66.0903(12) and 103.49(7), Wis. Stats., and Chapter DWD 294 of the Wisconsin Administrative Code. All contractors on this list were found to have committed a "debarable offense" related to certain labor standard provisions determined or established for a state or local public works project. No state agency, local governmental unit or owner or developer may knowingly solicit bids from, negotiate with or award any contracts to or approve or allow any subcontracts with a debarred contractor, including all divisions, affiliates or other organizational elements of such contractor that are engaged in construction business activities, until the debarment is terminated. The name of each debarred contractor must remain on this list for a period of three (3) years from the termination date indicated below. The contractor is, however, only "debarred" from the "effective date" through the "termination date" indicated for that contractor. Questions regarding this list should be addressed to Jim Chiolino, Equal Rights Division, P. O. Box 8928, Madison, WI 53708 or call (608) 266-3345. Deaf, hearing or speech-impaired callers may contact the department by calling its TDD number (608) 264-8752.

<u>Name of Contractor</u>	<u>Address</u>	<u>Effective Date</u>	<u>Termination Date</u>	<u>Cause Code</u>	<u>Date of Violation(s)</u>	<u>Limitations/Deviations</u>
A-1 Duran Roofing & Insulation Services, Inc.	3700 N Fratney St Milwaukee, WI 53212	11/1/14	10/31/17	1, 2 and 4	2011- 2012	None
Abel, Mike	8095 NW 64 th St Miami, FL 33166 or See, Abel Electric, Inc					
Abel Electric, Inc	3385 Belmar Rd Green Bay, WI 54313	9/1/12	8/31/15	1	2011	None
Alpha Electric, LLC	350 Business Park Dr Sun Prairie, WI 53590	8/1/15	7/31/18	4	2014	None
Arnie Christiansen Mason Contractors, LLC	2304 65 th Dr Franksville, WI 53126	9/1/14	8/31/16	1, 2 and 4	2011	None
Atkins, Scott	See, Freedom Insulation, Inc					
Bickel, Matthew	See, Peshtigo Asphalt, Inc					
Boecker, Roger	See, R-Way Pumping, Inc					
Brechtl, Mark G	See, Ecodec, Inc					

<u>Name of Contractor</u>	<u>Address</u>	<u>Effective Date</u>	<u>Termination Date</u>	<u>Cause Code</u>	<u>Date of Violation(s)</u>	<u>Limitations/Deviations</u>
Cargill Heating and Air Conditioning Company, Inc	3049 Edgewater La La Crosse, WI 54603	3/1/14	2/28/17	1 and 2	2011	None
Castlerock Commercial Construction, Inc	PO Box 11699 Milwaukee, WI 53211-0699	2/1/12	1/31/15	1, 2 and 4	2009 & 2010	None
Christiansen, Andy	See, Arnie Christiansen Mason Contractors, LLC					
Christiansen, Arnold	See, Arnie Christiansen Mason Contractors, LLC					
Darnick, Gregory L	See, Darnick Trucking, LLC					
Darnick Trucking, LLC	W914 County Rd V Berlin, WI 54923	11/1/14	10/31/15	1, 2 and 4	2012 & 2013	None
Dem/Ex Group, Inc	805 S Adams St Manito, IL 61546	12/1/11	11/30/14	1 and 2	2010	None
Duran, Bernardo	See, A-1 Duran Roofing & Insulation Services and RRS2 Inc					
Ecodec, Inc	5106 Wintergreen Dr Madison, WI 53704	10/1/14	9/30/17	1	2011 & 2012	None
Fisher, Ed &/or Fisher, Rhonda	See, Dem/Ex Group, Inc					
Freedom Insulation, Inc	117925 219th Ave Chippewa Falls, WI 54729	9/1/11	8/31/14	1	2008- 2010	None
Froode, Kathleen M	See, Masonry Specialists II, LLC					
Galstad, Michael E (aka Michael Earl Galstad)	See, Cargill Heating and Air Conditioning Company, Inc					

<u>Name of Contractor</u>	<u>Address</u>	<u>Effective Date</u>	<u>Termination Date</u>	<u>Cause Code</u>	<u>Date of Violation(s)</u>	<u>Limitations/Deviations</u>
Gjolaj, Ded	See, Horizon Bros Painting Corp					
Grade A Construction, Inc	157 Enterprise Rd Delafield, WI 53018	1/1/16	12/31/19	1, 2 and 4	2014	None
Horizon Bros Painting Corp	1053 Kendra La Howell, MI 48843	10/1/14	9/30/16	4	2012	None
JT Roofing, Inc	350 Tower Dr Saukville, WI 53080	6/1/12	5/31/15	1, 2 and 4	2007 & 2008	None
Jinkins, Richard	See, Castlerock Commercial Construction, Inc					
John's Concrete	See, Wagner Companies, Inc, dba John's Concrete					
Kott, Joseph J	See, Alpha Electric, LLC					
Masonry Specialists II, LLC	5109 Briarwood Ct Racine, WI 53402	8/1/15	7/31/18	4	2014	None
Mid-W Enterprises, Inc	1730 22 nd Avenue Kenosha, WI 53140	6/1/15	5/31/17	1, 2 and 4	2013	None
Midwest Construction Co, Inc	See, Mid-W Enterprises, Inc					
Oden, Cassie	See, A-1 Duran Roofing & Insulation Services and RRS2 Inc					
Ofstie, Darin	See, Precision Excavating and Grading, LLC					
Peret, Robert	See, A-1 Duran Roofing & Insulation Services and RRS2 Inc					

<u>Name of Contractor</u>	<u>Address</u>	<u>Effective Date</u>	<u>Termination Date</u>	<u>Cause Code</u>	<u>Date of Violation(s)</u>	<u>Limitations/Deviations</u>
Peshtigo Asphalt, Inc	W3895 Track La Peshtigo, WI 54157	3/1/16	2/28/17	1	2013- 2014	None
Precision Excavating and Grading, LLC or Precision Excavating Enterprises, LLC	2104 Pierce Saint Croix Rd Baldwin, WI 54002	5/1/11	4/30/14	1, 2 and 4	2006- 2008	None
R-Way Pumping, Inc	3023 Lake Maria Rd Freeport, MN 56331	3/1/12	2/28/15	1, 2 and 4	2008	None
RRS2 Inc.	133 N Jackson St, #427 Milwaukee, WI 53202 or 1313 N Franklin Pl, #805 Milwaukee, WI 53202	11/1/14	10/31/17	1, 2 and 4	2011- 2012	None
Thull, Gerald T	See, JT Roofing, Inc					
Ventura, Robert	See, Mid-W Enterprises, Inc					
Wagner, Cory L	See, Wagner Companies, Inc					
Wagner Companies, Inc, dba John's Concrete	2063 Georgia Ave Racine, WI 53404	8/1/15	7/31/18	1	2013	None
Yaresh, Kathleen R	See, Grade A Construction, Inc					

Cause Code: 1 = Failure to Pay Straight Time 2 = Failure to Pay Overtime 3 = Kickback 4 = Payroll Records.

PREVAILING WAGE – Contractors

Any public works project that has a total estimated project cost that equals or exceeds prevailing wage project thresholds requires a prevailing wage rate determination issued by the Department of Workforce Development (DWD). Public works include erecting, constructing, remodeling, repairing, demolishing, alterations, painting and decorating projects for a local governmental unit or state agency. State law excludes minor service or maintenance work, warranty work, or work under a supply-and-installation contract. There is a statutory definition for most of these exclusions. The prevailing wage laws that apply to local governmental units and their contractors are §§66.0903 and 103.503, Wis. Stats. The prevailing wage laws that apply to state agencies and their contractors are §§103.49 and 103.503, Wis. Stats. The applicable administrative rules for all prevailing wage projects are DWD 290 and DWD 294, Wis. Adm. Code. These laws include provisions that apply to all contractors and subcontractors working on prevailing wage projects.

Any contractor or subcontractor working on a local governmental unit or state agency's public works project that equals or exceeds current prevailing wage project thresholds must do all of the following:

- Receive and review the project's prevailing wage rate determination (i.e., white sheet).
- Tell subcontractors the project is subject to state prevailing wage law and include the prevailing wage rate determination in the construction contract, or if there is no written contract, provide a copy of the project determination to each subcontractor.
- Hire subcontractors who do *not* appear on the "Consolidated List of Debarred Contractors."
- Have a written substance abuse testing program in place that fulfills the requirements of §103.503, Wis. Stats., before commencing work on the project.

- Notify subcontractors that if DWD finds that a contractor or subcontractor violated the prevailing wage law, DWD will assess liquidated damages of 100% of the wages owed to employees.
- Apply to DWD for subjourney wage rates prior to employing these individuals on the project.
- Receive and retain a completed Affidavit of Compliance from each subcontractor brought on to the project before providing final payment to those subcontractors.
- Submit a completed Affidavit of Compliance to the contractor who brought the subcontractor on to the project before receiving final payment for the project.
- Maintain payroll records for 3 years that comply with §§66.0903(10)(a) or 103.49(5)(a), Stats. and DWD 274.06.
- Respond to requests from DWD or the project owner to provide payroll records and/or respond to prevailing wage complaints filed by employees or third parties.

For more information, visit the prevailing wage website: http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm. For further assistance, call the Equal Rights Division at 608-266-6861 and ask for prevailing wage.

Disclosure of Ownership

The statutory authority for the use of this form is prescribed in Sections 66.0903(12)(d), 66.0904(10)(d) and 103.49(7)(d), Wisconsin Statutes.

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1) (m), Wisconsin Statutes].

- (1) On the date a contractor submits a bid to or completes negotiations with a state agency, local governmental unit, or developer, investor or owner on a project subject to Section 66.0903, 66.0904 or 103.49, Wisconsin Statutes, the contractor shall disclose to such state agency, local governmental unit, or developer, investor or owner, the name of any "other construction business," which the contractor, or a shareholder, officer or partner of the contractor, owns or has owned within the preceding three (3) years.
- (2) The term "other construction business" means any business engaged in the erection, construction, remodeling, repairing, demolition, altering or painting and decorating of buildings, structures or facilities. It also means any business engaged in supplying mineral aggregate, or hauling excavated material or spoil as provided by Sections 66.0903(3), 66.0904(2), 103.49(2) and 103.50(2), Wisconsin Statutes.
- (3) This form must **ONLY** be filed, with the state agency project owner, local governmental unit project owner, or developer, investor or owner of a publicly funded private construction project that will be awarding the contract, if **both (A) and (B) are met**.
 - (A) The contractor, or a shareholder, officer or partner of the contractor:
 - (1) Owns at least a 25% interest in the "other construction business," indicated below, on the date the contractor submits a bid or completes negotiations; or
 - (2) Has owned at least a 25% interest in the "other construction business" at any time within the preceding three (3) years.
 - (B) The Wisconsin Department of Workforce Development (DWD) has determined that the "other construction business" has failed to pay the prevailing wage rate or time and one-half the required hourly basic rate of pay, for hours worked in excess of the prevailing hours of labor, to any employee at any time within the preceding three (3) years.

Other Construction Business

Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code

I hereby state under penalty of perjury that the information, contained in this document, is true and accurate according to my knowledge and belief.

Print the Name of Authorized Officer			
Authorized Officer Signature	Date Signed		
Corporation, Partnership or Sole Proprietorship Name			
Street Address or P O Box	City	State	Zip Code

If you have any questions call (608) 266-6861

Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(c), 66.0904(7)(c) and 103.49(4r)(c) Wisconsin Statutes.

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m), Wisconsin Statutes].

This form must **ONLY** be filed with the **Awarding Agency** indicated below.

State Of)	Project Name	
	DWD Determination Number	Project Number (if applicable)
)SS County Of)	Date Determination Issued	Date of Contract
	Awarding Agency	
	Date Work Completed	

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below and have recently completed all of the work required under the terms and conditions of a contract with the above-named awarding agency and make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(c), 66.0904(7)(c) or 103.49(4r)(c), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding agency.
- **I have** fully complied with all the wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding agency indicated above.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit				
Street Address	City	State	Zip Code	Telephone Number
Print Name of Authorized Officer			Date Signed	
Signature of Authorized Officer				

List of Agents and Subcontractors

Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		

If you have any questions call (608) 266-6861

Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(b), 66.0904(7)(b) and 103.49(4r)(9b), Wisconsin Statutes. The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.

Personal information you provide may be used for secondary purposes [Privacy Law, Section 15.04(1)(m), Wisconsin Statutes].

This form must **ONLY** be filed with the **Awarding Contractor** indicated below.

State Of _____))SS County Of _____)	Project Name		
	DWD Determination Number		Project Number (if applicable)
	Date Determination Issued		Date of Subcontract
	Awarding Contractor		
	Date Work Completed		

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below. We have recently completed all of the work required under the terms and conditions of a subcontract with the above-named awarding contractor. We make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(b), 66.0904(7)(b) or 103.49(4r)(b), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding contractor.
- **I have** fully complied with the entire wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding contractor.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit				
Street Address or PO Box	City	State	Zip Code	Telephone Number ()
Print Name of Authorized Officer			Date Signed	
Authorized Officer Signature				

List of Agents and Subcontractors

Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ()			Telephone Number ()		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ()			Telephone Number ()		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ()			Telephone Number ()		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ()			Telephone Number ()		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ()			Telephone Number ()		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ()			Telephone Number ()		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ()			Telephone Number ()		

If you have any questions call (608) 266-6861

Request to Employ Subjourneyperson

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes. Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04(1)(m), Wisconsin Statutes). The employer indicated below requests that the Department of Workforce Development (DWD) determine the prevailing wage rate(s) and related qualifications to enable such employer to use a subjourneyperson(s) on the following prevailing wage project, in accordance with the provisions of Section DWD 290.025, Wisconsin Administrative Code.

1. Name of Project Appearing on the Project Determination	
County	City, Village or Town
DWD Project Determination Number	Project Number (if applicable)
2. Job Classification(s) for which you request a subjourney rate (i.e., carpenter, electrician, plumber, etc.)	
a.	
b.	
c.	
d.	
3. Employer Name (Print)	
Requester Name (Print)	
Address	City State Zip Code
Telephone Number ()	Requester Title
Email address (if you prefer to receive your response via email)	Fax Number (if you prefer to receive your response via fax) ()
READ CAREFULLY: I understand that this request is ONLY applicable to the project and job classification(s) listed above and that subjourney employees primarily work under the direction of and assist a skilled trade employee by frequently using the tools of a skilled trade and will NOT regularly perform the duties of a general laborer, heavy equipment operator or truck driver. If the subjourney employee regularly performs the work of a different trade or occupation, he/she will be compensated for such work at the applicable journeyperson prevailing wage rate. I agree to compensate subjourney employees in strict accordance with the directions received from the DWD.	
Requester Signature	Date Signed

MAIL the completed request to:
 EQUAL RIGHTS DIVISION, LABOR STANDARDS BUREAU
 PO BOX 8928, MADISON WI 53708

OR

FAX the completed request to: (608) 267-4592 / DO NOT e-mail your request.
 Call (608) 266-6861 for assistance in completing this form.

ADDITIONAL GENERAL PREVAILING WAGE LAW INFORMATION

(This document updated July 2015)

NOTE: Recent prevailing wage law changes enacted by the 2015-17 Budget Bill (2015 Wisconsin Act 55) do not go into effect until calendar year 2017.

For prevailing wage laws and frequently asked questions, refer to the prevailing wage website at:
http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm

Topic	Who's affected?	Brief description of requirement under §66.0903 or §103.49
Non-applicability	All public entities	Prevailing wage rates do not apply to minor service or maintenance work, warranty work, or work under a supply and installation contract.
Non-applicability: Minor service or maintenance work	Local governmental units & Contractors	Minor service or maintenance work means a project of public works that is limited to <ul style="list-style-type: none"> • minor crack filling, chip or slurry sealing, or other minor pavement patching, not including overlays, that has a projected life span of no longer than 5 years or that is performed for a TOWN and is not funded under §86.31, regardless of projected life span; • the depositing of gravel on an existing gravel road applied solely to maintain the road; • road shoulder maintenance; • cleaning of drainage or sewer ditches or structures; or • any other limited, minor work on public facilities or equipment that is routinely performed to prevent breakdown or deterioration.
Non-applicability: Minor service or maintenance work	State agencies	Minor service or maintenance work means a project of public works that is limited to <ul style="list-style-type: none"> • minor crack filling, chip or slurry sealing, or other minor pavement patching, not including overlays, that has a projected life span of no longer than 5 years; • cleaning of drainage or sewer ditches or structures; or • any other limited, minor work on public facilities or equipment that is routinely performed to prevent breakdown or deterioration.
Non-applicability: Supply & installation contract	All public entities	Supply and installation contract means a contract under which the material is installed by means of simple fasteners or connectors such as screws or nuts and bolts and no other work is performed on the site of the project of public works, and the total labor cost to install the material does not exceed 20 percent of the total cost of the contract.
Non-applicability: Work which a contractor or individual donates to a public entity	All public entities	Prevailing wage laws §§66.0903 & 103.49, Stats., do not apply to work performed on a project of public works for which the local governmental unit or the state or the state agency contracting for the project is not required to compensate any contractor, subcontractor, contractor's or subcontractor's agent, or individual for performing the work.

Topic	Who's affected?	Brief description of requirement under §66.0903 or §103.49
Non-applicability: Residential	All public entities	A prevailing wage rate determination is not required for the erection, construction, repair, remodeling, or demolition of a residential property containing 2 dwelling units or less.
Non-applicability: Residential subdivision infrastructure	All public entities	A prevailing wage rate determination is not required for a road, street, bridge, sanitary sewer, or water main project that is a part of a development in which at least 90 percent of the lots contain or will contain 2 dwelling units or less, as determined by the local governmental unit at the time of approval of the development, and that, on completion, is acquired by, or dedicated to, a local governmental unit (including under §236.13(2), Stats.), or the state, for ownership or maintenance by the local governmental unit or the state.
Electronic certified payroll record	Contractors	The requirement that every contractor on a prevailing wage project submit to DWD monthly a certified record of employees who worked on the project and that DWD post these certified records on its Internet website was discontinued effective July 1, 2011. Contractors are still required to maintain payroll records and provide them upon request from DWD &/or the project owner.
Payroll record inspection request by any person	Contractors & Complainants	Any person may request DWD to inspect the payroll records of any contractor working on a prevailing wage project. On receipt of such a request, the contractor must submit to DWD a certified record of its payroll records, other than personally identifiable information relating to an employee of the contractor, for no longer than a 4-week period. DWD may request records from a contractor under this provision no more than once per calendar quarter for each project of public works on which the contractor is performing work. The department may not charge a requester a fee for obtaining that information. DWD must make these certified records available for public inspection.
Statewide uniformity	Local governmental units	A local governmental unit may not enact & administer a prevailing wage ordinance/provision for public works or publicly funded private construction projects. Any extant laws to that effect are void.
Substance Abuse Testing	Contractors & Workers	Before commencing work on a prevailing wage project, a contractor must have a written substance abuse testing program in place that complies with §103.503, Wis. Stats. No employee may use, possess, attempt to possess, distribute, deliver, or be under the influence of a drug or under the influence of alcohol while performing work on a prevailing wage project.

Topic	Who's affected	Brief description of requirement under §66.0903 or §103.49
Covered employees	Truck drivers & Other workers & Contractors	<p>A laborer, worker, mechanic, or truck driver who is employed to process, manufacture, pick up, or deliver materials or products from a commercial establishment that has a fixed place of business from which the establishment supplies processed or manufactured materials or products or from a facility that is not dedicated exclusively, or nearly so, to a project of public works is NOT entitled to receive the prevailing wage rate UNLESS any of the following applies:</p> <ol style="list-style-type: none"> 1) the laborer, worker, mechanic, or truck driver is employed to go to the source of mineral aggregate such as sand, gravel, or stone and deliver that mineral aggregate to the site of a project of public works by depositing the material directly in final place, from the transporting vehicle or through spreaders from the transporting vehicle. 2) the laborer, worker, mechanic, or truck driver is employed to go to the site of a project of public works, pick up excavated material or spoil from the site of the project, and transport that excavated material or spoil away from the site of the project.

WAGE RATES—Davis Bacon

General Decision Number: WI160015 05/20/2016 WI15

Superseded General Decision Number: WI20150015

State: Wisconsin

Construction Type: Heavy

Counties: Wisconsin Statewide.

HEAVY CONSTRUCTION PROJECTS (Excluding Tunnel, Sewer, and Water Lines).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	01/29/2016
2	02/26/2016
3	03/04/2016
4	03/11/2016
5	04/01/2016
6	04/08/2016
7	05/20/2016

BOIL0107-001 01/01/2015

	Rates	Fringes
BOILERMAKER		
Boilermaker.....	\$ 33.35	28.60
Small Boiler Repair (under 25,000 lbs/hr).....	\$ 26.91	16.00

BRWI0001-002 06/01/2013

CRAWFORD, JACKSON, JUNEAU, LA CROSSE, MONROE, TREMPPEALEAU, AND VERNON COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 35.94	17.05

BRWI0002-002 06/01/2015

ASHLAND, BAYFIELD, DOUGLAS, AND IRON COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 36.10	16.13

BRWI0002-005 06/01/2015

ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 34.16	16.38

BRWI0003-002 06/01/2015

BROWN, DOOR, FLORENCE, KEWAUNEE, MARINETTE, AND OCONTO COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 31.59	16.39

BRWI0004-002 06/01/2013

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 35.10	18.58

BRWI0006-002 06/01/2013

ADAMS, CLARK, FOREST, LANGLADE, LINCOLN, MARATHON, MENOMINEE, ONEIDA, PORTAGE, PRICE, TAYLOR, VILAS AND WOOD COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 32.14	16.56

BRWI0007-002 06/01/2015

GREEN, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 32.90	17.01

BRWI0008-002 06/01/2015

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 36.74	18.19

BRWI0009-001 06/01/2015

GREEN LAKE, MARQUETTE, OUTAGAMIE, SHAWANO, WAUPACA, WASHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 31.59	16.39

BRWI0011-002 06/01/2015

CALUMET, FOND DU LAC, MANITOWOC, AND SHEBOYGAN COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 31.59	16.39

BRWI0013-002 06/01/2015

DANE, GRANT, IOWA, AND RICHLAND COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 32.86	17.22

BRWI0019-002 06/01/2015

BARRON, BUFFALO, BURNETT, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, ST. CROIX, SAWYER AND WASHBURN COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 31.36	16.51

BRWI0021-002 06/01/2015

DODGE AND JEFFERSON COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 33.58	16.65

BRWI0034-002 06/01/2015

COLUMBIA AND SAUK COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 32.86	17.22

CARP0087-001 07/01/2012

BURNETT (W. of Hwy 48), PIERCE (W. of Hwy 29), POLK (W. of Hwys 35, 48 & 65), AND ST. CROIX (W. of Hwy 65) COUNTIES

	Rates	Fringes
Carpenter & Piledrivermen.....	\$ 33.34	16.73

CARP0252-002 07/02/2012

ADAMS, BARRON, BAYFIELD (Eastern 2/3), BROWN, BUFFALO, BURNETT (E. of Hwy 48), CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DANE, DODGE, DOOR, DUNN, EAU CLAIRE, FLORENCE (except area bordering Michigan State Line), FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IOWA, IRON, JACKSON, JEFFERSON, JUNEAU, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE (except N.E. corner), MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE (E. of Hwys 29 & 65), POLK (E. of Hwys 35, 48 & 65), PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST CROIX (E. of Hwy 65), TAYLOR, TREMPPEALEAU, VERNON, VILAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD

COUNTIES

	Rates	Fringes
CARPENTER		
CARPENTER.....	\$ 30.48	15.80
MILLWRIGHT.....	\$ 32.11	15.80
PILEDRIVER.....	\$ 30.98	15.80

 CARP0252-010 07/02/2012

ASHLAND COUNTY

	Rates	Fringes
Carpenters		
Carpenter.....	\$ 30.48	15.80
Millwright.....	\$ 32.11	15.80
Pile Driver.....	\$ 30.98	15.80

 CARP0264-003 06/01/2008

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WAUKESHA, AND WASHINGTON COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 30.52	14.41

 CARP0361-004 05/11/2015

BAYFIELD (West of Hwy 63) AND DOUGLAS COUNTIES

	Rates	Fringes
CARPENTER.....	\$ 34.11	17.80

 CARP2337-001 06/01/2008

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON

ZONE B: KENOSHA & RACINE

	Rates	Fringes
PILEDRIVERMAN		
Zone A.....	\$ 27.25	19.46
Zone B.....	\$ 24.47	19.46

 CARP2337-003 06/02/2008

	Rates	Fringes
MILLWRIGHT		
Zone A.....	\$ 27.92	19.08
Zone B.....	\$ 26.82	19.08

ZONE DEFINITIONS

ZONE A: MILWAUKEE, OZAUKEE, WAUKESHA AND WASHINGTON COUNTIES

ZONE B: KENOSHA & RACINE COUNTIES

ELEC0014-002 06/01/2015

ASHLAND, BARRON, BAYFIELD, BUFFALO, BURNETT, CHIPPEWA, CLARK
(except Maryville, Colby, Unity, Sherman, Fremont, Lynn &
Sherwood), CRAWFORD, DUNN, EAU CLAIRE, GRANT, IRON, JACKSON, LA
CROSSE, MONROE, PEPIN, PIERCE, POLK, PRICE, RICHLAND, RUSK, ST
CROIX, SAWYER, TAYLOR, TREMPPEALEAU, VERNON, AND WASHBURN
COUNTIES

	Rates	Fringes
Electricians:.....	\$ 31.21	18.92

ELEC0014-007 06/01/2014

REMAINING COUNTIES

	Rates	Fringes
Teledata System Installer Installer/Technician.....	\$ 22.50	12.72

Low voltage construction, installation, maintenance and
removal of teledata facilities (voice, data, and video)
including outside plant, telephone and data inside wire,
interconnect, terminal equipment, central offices, PABX,
fiber optic cable and equipment, micro waves, V-SAT,
bypass, CATV, WAN (wide area networks), LAN (local area
networks), and ISDN (integrated systems digital network).

ELEC0127-002 06/01/2015

KENOSHA COUNTY

	Rates	Fringes
Electricians:.....	\$ 37.02	29%+9.77

ELEC0158-002 06/01/2015

BROWN, DOOR, KEWAUNEE, MANITOWOC (except Schleswig),
MARINETTE(Wausuakee and area South thereof), OCONTO, MENOMINEE
(East of a line 6 miles West of the West boundary of Oconto
County), SHAWANO (Except Area North of Townships of Aniwa and
Hutchins) COUNTIES

	Rates	Fringes
Electricians:.....	\$ 29.84	29.50% + 9.37

ELEC0159-003 06/01/2015

COLUMBIA, DANE, DODGE (Area West of Hwy 26, except Chester and
Emmet Townships), GREEN, LAKE (except Townships of Berlin,
Seneca, and St. Marie), IOWA, MARQUETTE (except Townships of
Neshkoka, Crystal Lake, Newton, and Springfield), and SAUK
COUNTIES

	Rates	Fringes
Electricians:.....	\$ 35.75	19.87

 ELEC0219-004 06/01/2015

FLORENCE COUNTY (Townships of Aurora, Commonwealth, Fern, Florence and Homestead) AND MARINETTE COUNTY (Township of Niagara)

	Rates	Fringes
Electricians:		
Electrical contracts over		
\$180,000.....	\$ 31.16	18.34
Electrical contracts under		
\$180,000.....	\$ 28.96	18.26

 ELEC0242-005 05/31/2015

DOUGLAS COUNTY

	Rates	Fringes
Electricians:.....	\$ 33.90	24.47

 ELEC0388-002 06/01/2013

ADAMS, CLARK (Colby, Freemont, Lynn, Mayville, Sherman, Sherwood, Unity), FOREST, JUNEAU, LANGLADE, LINCOLN, MARATHON, MARINETTE (Beecher, Dunbar, Goodman & Pembine), MENOMINEE (Area West of a line 6 miles West of the West boundary of Oconto County), ONEIDA, PORTAGE, SHAWANO (Aniwa and Hutchins), VILAS AND WOOD COUNTIES

	Rates	Fringes
Electricians:.....	\$ 28.96	24.85% + 9.70

 ELEC0430-002 06/01/2015

RACINE COUNTY (Except Burlington Township)

	Rates	Fringes
Electricians:.....	\$ 34.98	19.89

 ELEC0494-005 01/01/2016

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Electricians:.....	\$ 35.13	23.26

 ELEC0494-006 06/01/2014

CALUMET (Township of New Holstein), DODGE (East of Hwy 26 including Chester Township), FOND DU LAC, MANITOWOC (Schleswig), and SHEBOYGAN COUNTIES

	Rates	Fringes
Electricians:.....	\$ 29.64	20.54

 ELEC0494-013 06/01/2015

DODGE (East of Hwy 26 including Chester Twp, excluding Emmet Twp), FOND DU LAC (Except Waupuin), MILWAUKEE, OZAUKEE, MANITOWOC (Schleswig), WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
Sound & Communications		
Installer.....	\$ 16.47	14.84
Technician.....	\$ 26.00	17.70

Installation, testing, maintenance, operation and servicing of all sound, intercom, telephone interconnect, closed circuit TV systems, radio systems, background music systems, language laboratories, electronic carillon, antenna distribution systems, clock and program systems and low-voltage systems such as visual nurse call, audio/visual nurse call systems, doctors entrance register systems. Includes all wire and cable carrying audio, visual, data, light and radio frequency signals. Includes the installation of conduit, wiremold, or raceways in existing structures that have been occupied for six months or more where required for the protection of the wire or cable, but does not mean a complete conduit or raceway system. work covered does not include the installation of conduit, wiremold or any raceways in any new construction, or the installation of power supply outlets by means of which external electric power is supplied to any of the foregoing equipment or products

ELEC0577-003 06/01/2015

CALUMET (except Township of New Holstein), GREEN LAKE (N. part including Townships of Berlin, St Marie, and Seneca), MARQUETTE (N. part including Townships of Crystal Lake, Neshkoro, Newton, and Springfield), OUTAGAMIE, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
Electricians:.....	\$ 29.60	26.5%+9.15

ELEC0890-003 06/01/2015

DODGE (Emmet Township only), GREEN, JEFFERSON, LAFAYETTE, RACINE (Burlington Township), ROCK AND WALWORTH COUNTIES

	Rates	Fringes
Electricians:.....	\$ 31.90	24.95% + \$10.46

ELEC0953-001 07/01/2015

	Rates	Fringes
Line Construction:		
(1) Lineman.....	\$ 42.14	32% + 5.00
(2) Heavy Equipment Operator.....	\$ 40.03	32% + 5.00
(3) Equipment Operator.....	\$ 33.71	32% + 5.00
(4) Heavy Groundman Driver..	\$ 26.78	14.11
(5) Light Groundman Driver..	\$ 24.86	13.45

(6) Groundsman.....\$ 23.18 32% + 5.00

 ENGI0139-001 06/01/2015

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WASHINGTON, AND WAUKESHA
 COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1.....	\$ 41.66	20.40
Group 2.....	\$ 41.16	20.40
Group 3.....	\$ 40.66	20.40
Group 4.....	\$ 39.97	20.40
Group 5.....	\$ 38.09	20.40
Group 6.....	\$ 32.94	20.40

HAZARDOUS WASTE PREMIUMS:

EPA Level "A" Protection: \$3.00 per hour
 EPA Level "B" Protection: \$2.00 per hour
 EPA Level "C" Protection: \$1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, Tower Cranes, Pedestal Tower Cranes and Derricks with or w/o attachments with a lifting capacity of over 100 tons; or Cranes, Tower Cranes, Pedestal Tower Cranes and Derricks with boom, leads, and/or jib lengths measuring 176 feet or longer; Self-Erecting Tower Cranes over 4000 lbs lifting capacity; All Cranes with Boom Dollies; Boring Machines (directional); Master Mechanic. \$0.50 additional per hour per 100 tons or 100 ft of boom over 200 ft or lifting capacity of crane over 200 tons to a maximum of 300 tons or 300 ft. Thereafter an increase of \$0.01 per ft or ton, whichever is greater.

GROUP 2: Cranes, Tower Cranes, Pedestal Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; or Cranes, Tower Cranes Portable Tower Cranes, Pedestal Tower Cranes and Derricks with boom, leads and/or jib lengths measuring 175 feet or less; Backhoes (excavators) 130,000 lbs and over; Caisson Rigs; Pile Drivers; Boring Machines (vertical or horizontal), Versi-Lift, Tri-Lift, Gantry 20,000 lbs & over.

GROUP 3: Backhoe (excavator) under 130,000 lbs; Self-erecting Tower Crane 4000 lbs & under lifting capacity; Traveling Crane (bridge type); Skid Rigs; Dredge Operator; Mechanic; Concrete Paver (over 27E); Concrete Spreader and Distributor; Forklift/ Telehandler (machinery- moving / steel erection); Hydro Blaster, 10,000 psi and over

GROUP 4: Material Hoists; Stack Hoists; Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 5 tons or under (tractor or truck mounted); Hoist (tuggers 5 tons & over); Hydro-Excavators/Daylighters; Concrete Pumps Rotec type Conveyors; Tractor/Bulldozer/End Loader (over 40 hp); Motor Patrol; Scraper Operator; Sideboom; Straddle Carrier; Welder; Bituminous Plant and Paver Operator; Roller over 5 tons; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Rotary Drill Operator and Blaster; Percussion Drill Operator; Air Track Drill and/or Hammers; Gantrys (under 20,000 lbs); Tencher (wheel type or chain type having 8 inch or larger bucket); Milling Machine; Off-Road Material Haulers.

GROUP 5: Backfiller; Concrete Auto Breaker (large); Concrete Finishing Machines (road type); Rubber Tired Roller; Concrete Batch Hopper; Concrete Conveyor Systems; Grout Pumps; Concrete Mixers (14S or over); Screw Type Pumps and Gypsum Pumps; Tractor, Bulldozer, End Loader (under 40 hp); Trencher (chain type, bucket under 8 inch); Industrial Locomotives; Rollers under 5 tons; Stump Grinder/Chipper (Large); Timber Equipment; Firemen (pile drivers and derricks); Personnel Hoist, Telehandler over 8000 lbs; Robotic Tool Carrier with or without attachments

GROUP 6: Tampers - Compactors (riding type); Assistant Engineer; A-Frames and Winch Trucks; Concrete Auto Breaker; Hydrohammers (small); Brooms and Sweepers; Hoist (tuggers under 5 tons); Boats (Tug, Safety, Work Barges, Launch); Shouldering Machine Operator; Prestress Machines; Screed Operator; Stone Crushers and Screening Plants; Screed Operators (milling machine), Farm or Industrial Tractor Mounted Equipment; Post Hole Digger; Fireman (asphalt plants); Air Compressors over 400 CFM; Generators, over 150 KW; Augers (vertical and horizontal); Air, Electric, Hydraulic Jacks (slipform); Skid Steer Loaders (with or without attachments); Boiler Operators (temporary heat); Refrigeration Plant/Freeze Machines; Power Pack Vibratory/Ultra Sound Drivers and Extractors; Welding Machines; Heaters (mechanical); Pumps; Winches (small electric); Oiler and Greaser; Rotary Drill Tender; Conveyor; Forklifts/Telehandler 8000 lbs & under; Elevators: Automatic Hoists; Pumps (well points); Combination Small Equipment Operators

 ENGI0139-003 06/01/2015

REMAINING COUNTIES

	Rates	Fringes
Power Equipment Operator		
Group 1.....	\$ 37.67	20.10
Group 2.....	\$ 36.42	20.10
Group 3.....	\$ 35.22	20.10
Group 4.....	\$ 34.69	20.10
Group 5.....	\$ 32.62	20.10
Group 6.....	\$ 31.99	20.10

HAZARDOUS WASTE PREMIUMS:

EPA Level "A" Protection: \$3.00 per hour
 EPA Level "B" Protection: \$2.00 per hour
 EPA Level "C" Protection: \$1.00 per hour

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of over 100 tons; Cranes, Tower Cranes, and Derricks with boom, leads and/or jib lengths 176 ft or longer.

GROUP 2: Backhoes (Excavators) weighing 130,00 lbs and over; Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths 175 ft or less; Caisson Rigs; Pile Driver

GROUP 3: Backhoes (Excavators) weighing under 130,000 lbs;

Travelling Crane (bridge type); Milling Machine; Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Laser Screed; Concrete Grinder and Planing Machine; Slipform Curb and Gutter Machine; Boring Machine (Directional); Dredge Operator; Skid Rigs; over 46 meter Concrete Pump.

GROUP 4: Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 10 tons or less; Tractor, Bulldozer, or End Loader (over 40 hp); Motor Patrol; Scraper Operator; Bituminous Plant and Paver Operator; Screed-Milling Machine; Roller over 5 tons; Concrete pumps 46 meter and under; Grout Pumps; Rotec type machine; Hydro Blaster, 10,000 psi and over; Rotary Drill Operator; Percussion Drilling Machine; Air Track Drill with or without integral hammer; Blaster; Boring Machine (vertical or horizontal); Side Boom; Trencher, wheel type or chain type having 8 inch or larger bucket; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Straddle Carrier; Material Hoists; Stack Hoist; Man Hoists; Mechanic and Welder; Off Road Material Haulers.

GROUP 5: Tractor, Bulldozer, or Endloader (under 40 hp); Tampers -Compactors, riding type; Stump Chipper, large; Roller, Rubber Tire; Backfiller; Trencher, chain type (bucket under 8 inch); Concrete Auto Breaker, large; Concrete Finishing Machine (road type); Concrete Batch Hopper; Concrete Conveyor Systems; Concrete Mixers, 14S or over; Pumps, Screw Type and Gypsum); Hydrohammers, small; Brooms and Sweepers; Lift Slab Machine; Roller under 5 tons; Industrial Locomotives; Fireman (Pile Drivers and Derricks); Pumps (well points); Hoists, automatic; A-Frames and Winch Trucks; Hoists (tuggers); Boats (Tug, Safety, Work Barges and Launches); Assistant Engineer

GROUP 6: Shouldering Machine Operator; Farm or Industrial Tractor mounted equipment; Post Hole Digger; Auger (vertical and horizontal); Skid Steer Loader with or without attachments; Robotic Tool Carrier with or without attachments; Power Pack Vibratory/Ultra Sound Driver and Extractor; Fireman (Asphalt Plants); Screed Operator; Stone Crushers and Screening Plants; Air, Electric, Hydraulic Jacks (Slip Form); Prestress Machines; Air Compressor, 400 CFM or over; Refrigeration Plant/Freeze Machine; Boiler Operators (temporary heat); Forklifts; Welding Machines; Generators; Pumps over 3"; Heaters, Mechanical; Combination small equipment operator; Winches, small electric; Oiler; Greaser; Rotary Drill Tender; Conveyor; Elevator Operator

IRON0008-002 06/01/2014

BROWN, CALUMET, DOOR, FOND DU LAC, KEWAUNEE, MANITOWOC, MARINETTE, OCONTO, OUTAGAMI, SHAWANO, SHEBOYGAN, AND WINNEBAGO COUNTIES:

	Rates	Fringes
IRONWORKER.....	\$ 29.27	23.96

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0008-003 06/01/2015

KENOSHA, MILWAUKEE, OZAUKEE, RACINE, WALWORTH (N.E. 2/3),
WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 32.36	24.07

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0383-001 06/01/2015

ADAMS, COLUMBIA, CRAWFORD, DANE, DODGE, FLORENCE, FOREST, GRANT, GREENE, (Excluding S.E. tip), GREEN LAKE, IOWA, JEFFERSON, JUNEAU, LA CROSSE, LAFAYETTE, LANGLADE, MARATHON, MARQUETTE, MENOMINEE, MONROE, PORTAGE, RICHLAND, ROCK (Northern area, vicinity of Edgerton and Milton), SAUK, VERNON, WAUPACA, WAUSHARA, AND WOOD COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 32.85	21.84

IRON0512-008 05/01/2015

BARRON, BUFFALO, CHIPPEWA, CLARK, DUNN, EAU CLAIRE, JACKSON, PEPIN, PIERCE, POLK, RUSK, ST CROIX, TAYLOR, AND TREMPPEALEAU COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 35.50	23.45

IRON0512-021 05/01/2015

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, LINCOLN, ONEIDA, PRICE, SAWYER, VILAS AND WASHBURN COUNTIES

	Rates	Fringes
IRONWORKER.....	\$ 31.04	23.45

LABO0113-002 06/01/2015

MILWAUKEE AND WAUKESHA COUNTIES

	Rates	Fringes
LABORER		
Group 1.....	\$ 27.51	19.35
Group 2.....	\$ 27.66	19.35
Group 3.....	\$ 27.86	19.35
Group 4.....	\$ 28.01	19.35
Group 5.....	\$ 28.16	19.35
Group 6.....	\$ 24.00	19.35

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and

Bridge Builder; Landscaper; Multiplate Culvert Assembler;
 Stone Handler; Bituminous Worker (Shoveler, Loader, and
 Utility Man); Batch Truck Dumper or Cement Handler;
 Bituminous Worker (Dumper, Ironer, Smoother, and Tamper);
 Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawyer and Filler
 (Pavement); Vibrator or Tamper Operator (Mechanical Hand
 Operated); Chain Saw Operator; Demolition Burning Torch
 Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter
 (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagperson; traffic control person

 LABO0113-003 06/01/2015

OZAUKEE AND WASHINGTON COUNTIES

	Rates	Fringes
LABORER		
Group 1.....	\$ 26.76	19.35
Group 2.....	\$ 26.86	19.35
Group 3.....	\$ 26.91	19.35
Group 4.....	\$ 27.11	19.35
Group 5.....	\$ 26.96	19.35
Group 6.....	\$ 23.85	19.35

LABORERS CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer;
 Demolition and Wrecking Laborer; Guard Rail, Fence, and
 Bridge Builder; Landscaper; Multiplate Culvert Assembler;
 Stone Handler; Bituminous Worker (Shoveler, Loader, and
 Utility Man); Batch Truck Dumper or Cement Handler;
 Bituminous Worker (Dumper, Ironer, Smoother, and Tamper);
 Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawyer and Filler
 (Pavement); Vibrator or Tamper Operator (Mechanical Hand
 Operated);

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter
 (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson and Traffic Control Person

 LABO0113-011 06/01/2015

KENOSHA AND RACINE COUNTIES

	Rates	Fringes
LABORER		

Group 1.....	\$ 26.57	19.35
Group 2.....	\$ 26.72	19.35
Group 3.....	\$ 26.92	19.35
Group 4.....	\$ 26.89	19.35
Group 5.....	\$ 27.22	19.35
Group 6.....	\$ 23.71	19.35

LABORERS CLASSIFICATIONS:

GROUP 1: General laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawyer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster and Powderman

GROUP 6: Flagman; traffic control person

LABO0140-002 06/01/2015

ADAMS, ASHLAND, BARRON, BAYFIELD, BROWN, BUFFALO, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, CRAWFORD, DODGE, DOOR, DOUGLAS, DUNN, EAU CLAIRE, FLORENCE, FOND DU LAC, FOREST, GRANT, GREEN, GREEN LAKE, IRON, JACKSON, JUNEAU, IOWA, JEFFERSON, KEWAUNEE, LA CROSSE, LAFAYETTE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, MONROE, OCONTO, ONEIDA, OUTAGAMIE, PEPIN, PIERCE, POLK, PORTAGE, PRICE, RICHLAND, ROCK, RUSK, SAUK, SAWYER, SHAWANO, SHEBOYGAN, ST. CROIX, TAYLOR, TREMPPEALEAU, VERNON, VILLAS, WALWORTH, WASHBURN, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
LABORER		
Group 1.....	\$ 30.67	15.55
Group 2.....	\$ 30.77	15.55
Group 3.....	\$ 30.82	15.55
Group 4.....	\$ 31.02	15.55
Group 5.....	\$ 30.87	15.55
Group 6.....	\$ 27.30	15.55

LABORER CLASSIFICATIONS

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawyer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator, Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; powderman

GROUP 6: Flagperson; Traffic Control

LABO0464-003 06/01/2015

DANE COUNTY

	Rates	Fringes
LABORER		
Group 1.....	\$ 30.95	15.55
Group 2.....	\$ 31.05	15.55
Group 3.....	\$ 31.10	15.55
Group 4.....	\$ 31.30	15.55
Group 5.....	\$ 31.15	15.55
Group 6.....	\$ 27.30	15.55

LABORERS CLASSIFICATIONS:

GROUP 1: General Laborer; Tree Trimmer; Conduit Layer; Demolition and Wrecking Laborer; Guard Rail, Fence, and Bridge Builder; Landscaper; Multiplate Culvert Assembler; Stone Handler; Bituminous Worker (Shoveler, Loader, and Utility Man); Batch Truck Dumper or Cement Handler; Bituminous Worker (Dumper, Ironer, Smoother, and Tamper); Concrete Handler

GROUP 2: Air Tool Operator; Joint Sawyer and Filler (Pavement); Vibrator or Tamper Operator (Mechanical Hand Operated); Chain Saw Operator; Demolition Burning Torch Laborer

GROUP 3: Bituminous Worker (Raker and Luteman); Formsetter (Curb, Sidewalk, and Pavement); Strike Off Man

GROUP 4: Line and Grade Specialist

GROUP 5: Blaster; Powderman

GROUP 6: Flagperson and Traffic Control Person

PAIN0106-008 05/01/2014

ASHLAND, BAYFIELD, BURNETT, AND DOUGLAS COUNTIES

	Rates	Fringes
Painters:		
New:		
Brush, Roller.....	\$ 28.81	15.27
Spray, Sandblast, Steel....	\$ 29.41	15.27
Repaint:		
Brush, Roller.....	\$ 27.31	15.27

Spray, Sandblast, Steel....\$ 27.91 15.27

PAIN0108-002 06/01/2015

RACINE COUNTY

Rates Fringes

Painters:

Brush, Roller.....\$ 31.84 18.60
 Spray & Sandblast.....\$ 32.84 18.60

PAIN0259-002 05/01/2008

BARRON, CHIPPEWA, DUNN, EAU CLAIRE, PEPIN, PIERCE, POLK, RUSK, SAWYER, ST. CROIX, AND WASHBURN COUNTIES

Rates Fringes

PAINTER.....\$ 24.11 12.15

PAIN0259-004 05/01/2015

BUFFALO, CRAWFORD, JACKSON, LA CROSSE, MONROE, TREMPPEALEAU, AND VERNON COUNTIES

Rates Fringes

PAINTER.....\$ 22.03 12.45

PAIN0781-002 06/01/2013

JEFFERSON, MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

Rates Fringes

Painters:

Bridge.....\$ 29.87 20.04
 Brush.....\$ 29.52 20.04
 Spray & Sandblast.....\$ 30.27 20.04

PAIN0802-002 06/01/2015

COLUMBIA, DANE, DODGE, GRANT, GREEN, IOWA, LAFAYETTE, RICHLAND, ROCK, AND SAUK COUNTIES

Rates Fringes

PAINTER
 Brush.....\$ 26.70 17.65

PREMIUM PAY:

Structural Steel, Spray, Bridges = \$1.00 additional per hour.

PAIN0802-003 06/01/2015

ADAMS, BROWN, CALUMET, CLARK, DOOR, FOND DU LAC, FOREST, GREEN LAKE, IRON, JUNEAU, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, PORTAGE, PRICE, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WAUSHARA, WAUPACA, WINNEBAGO, AND WOOD COUNTIES

	Rates	Fringes
PAINTER.....	\$ 23.74	11.72

PAIN0934-001 06/01/2015

KENOSHA AND WALWORTH COUNTIES

	Rates	Fringes
Painters:		
Brush.....	\$ 31.84	18.60
Spray.....	\$ 32.84	18.60
Structural Steel.....	\$ 31.99	18.60

PAIN1011-002 06/01/2015

FLORENCE COUNTY

	Rates	Fringes
Painters:.....	\$ 24.15	11.46

PLAS0599-010 06/01/2015

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
Area 1.....	\$ 37.96	16.92
Area 2 (BAC).....	\$ 34.16	18.93
Area 3.....	\$ 34.64	18.62
Area 4.....	\$ 33.95	19.51
Area 5.....	\$ 35.97	17.28
Area 6.....	\$ 31.44	21.82

AREA DESCRIPTIONS

AREA 1: BAYFIELD, DOUGLAS, PRICE, SAWYER, AND WASHBURN COUNTIES

AREA 2: ADAMS, ASHLAND, BARRON, BROWN, BURNETT, CALUMET, CHIPPEWA, CLARK, COLUMBIA, DODGE, DOOR, DUNN, FLORENCE, FOND DU LAC, FOREST, GREEN LAKE, IRON, JEFFERSON, KEWAUNEE, LANGLADE, LINCOLN, MANITOWOC, MARATHON, MARINETTE, MARQUETTE, MENOMINEE, OCONTO, ONEIDA, OUTAGAMIE, POLK, PORTAGE, RUSK, ST CROIX, SAUK, SHAWANO, SHEBOYGAN, TAYLOR, VILAS, WALWORTH, WAUPACA, WAUSHARA, WINNEBAGO, AND WOOD COUNTIES

AREA 3: BUFFALO, CRAWFORD, EAU CLAIRE, JACKSON, JUNEAU, LA CROSSE MONROE, PEPIN, PIERCE, RICHLAND, TREMPLEAU, AND VERNON COUNTIES

AREA 4: MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

AREA 5: DANE, GRANT, GREEN, IOWA, LAFAYETTE, AND ROCK COUNTIES

AREA 6: KENOSHA AND RACINE COUNTIES

* PLUM0011-003 05/02/2016

ASHLAND, BAYFIELD, BURNETT, DOUGLAS, IRON, SAWYER, AND WASHBURN COUNTIES

	Rates	Fringes
PLUMBER.....	\$ 39.07	18.73

PLUM0075-002 06/01/2015		

MILWAUKEE, OZAUKEE, WASHINGTON, AND WAUKESHA COUNTIES

	Rates	Fringes
PLUMBER.....	\$ 39.87	20.12

PLUM0075-004 06/01/2015		

DODGE (Watertown), GREEN, JEFFERSON, LAFAYETTE, AND ROCK COUNTIES

	Rates	Fringes
PLUMBER.....	\$ 39.87	20.12

PLUM0075-009 06/01/2014		

COLUMBIA, DANE, IOWA, MARQUETTE, RICHLAND AND SAUK COUNTIES

	Rates	Fringes
PLUMBER.....	\$ 37.57	17.47

PLUM0111-007 05/05/2014		

MARINETTE COUNTY (Niagara only)

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 30.72	20.80

PLUM0118-002 06/01/2015		

KENOSHA, RACINE, AND WALWORTH COUNTIES

	Rates	Fringes
Plumber and Steamfitter.....	\$ 39.20	19.25

PLUM0400-003 06/01/2015		

ADAMS, BROWN, CALUMET, DODGE (except Watertown), DOOR, FOND DU LAC, GREEN LAKE, KEWAUNEE, MANITOWOC, MARINETTE (except Niagara), MENOMINEE, OCONTO, OUTAGAMIE, SHAWANO, SHEBOYGAN, WAUPACA, WAUSHARA, AND WINNEBAGO COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 33.64	17.20

PLUM0434-002 05/31/2015		

BARON, BUFFALO, CHIPPEWA, CLARK, CRAWFORD, DUNN, EAU CLAIRE, FLORENCE, FOREST, GRANT, JACKSON, JUNEAU, LA CROSSE, LANGLADE,

LINCOLN, MARATHON, MONROE, ONEIDA, PEPIN, PIERCE, POLK,
 PORTAGE, PRICE, RUSK, ST. CROIX, TAYLOR, TREMPPEALEAU, VERNON,
 VILAS, AND WOOD COUNTIES

	Rates	Fringes
PIPEFITTER.....	\$ 36.75	16.32

 PLUM0601-003 06/01/2015

DODGE (Watertown), GREEN, JEFFERSON, LAFAYETTE, MILWAUKEE,
 OZAUKEE, ROCK, WASHINGTON AND WAUKESHA COUNTIES

	Rates	Fringes
PIPEFITTER.....	\$ 42.36	21.64

 PLUM0601-009 06/01/2015

COLUMBIA, DANE, IOWA, MARQUETTE, RICHLAND AND SAUK COUNTIES

	Rates	Fringes
PIPEFITTER.....	\$ 45.55	18.44

 TEAM0039-002 06/01/2015

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axle Trucks.....	\$ 25.63	18.96
3 or more axles; Euclids or Dumptor, Articulated Truck, Mechanic.....	\$ 25.63	18.96

 SUWI2011-001 11/16/2011

	Rates	Fringes
WELL DRILLER.....	\$ 16.52	

 WELDERS - Receive rate prescribed for craft performing
 operation to which welding is incidental.

=====
 Unlisted classifications needed for work not included within
 the scope of the classifications listed may be added after
 award only as provided in the labor standards contract clauses
 (29CFR 5.5 (a) (1) (ii)).

 The body of each wage determination lists the classification
 and wage rates that have been found to be prevailing for the
 cited type(s) of construction in the area covered by the wage
 determination. The classifications are listed in alphabetical
 order of "identifiers" that indicate whether the particular
 rate is a union rate (current union negotiated rate for local),
 a survey rate (weighted average rate) or a union average rate

(weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can

be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
 Wage and Hour Division
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

LABELED TAB – AVAILABLE PROJECT INFORMATION

***Place labeled tab AFTER any wage rate information from State of Wisconsin AND AFTER ANY SOIL REPORTS OR PERMITS.**

LABELED TAB – SPECIFICATIONS

***Place labeled tab BEFORE Division 1 divider page**

01

DIVISION 01

GENERAL REQUIREMENTS

SECTION 01 11 00

SPECIAL PROVISIONS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included: South Channel Habitat Improvements Project; Contract No. 3775-16-02
- B. Related Sections and Divisions: Applicable provisions of the General Conditions and Supplementary Conditions shall apply to this section.

1.02 CONTRACT DOCUMENTS—INTENT AND USE

A. Intent of Documents:

1. Singular notations and specifications shall be considered plural where application is reasonably inferred.
2. Mention or indication of extent of work under any work division or specification section is done only for convenience of Contractor and shall not be construed as describing all work required under that division or section.
3. Some individual sections may contain a list of related sections. The list of related sections in individual sections is provided for the convenience of Contractor and is not necessarily all-inclusive. Contractor may not rely upon this listing for determination of scope of work. Other sections of the specifications, not referenced in individual sections shall apply as required for proper performance of the work.
4. Command type sentences may be used in the Contract Documents. These sentences refer to and are directed to Contractor.
5. Symbols for various elements and systems are shown on the drawings. Should there be any doubt regarding the meaning or intent of the symbols used, a written interpretation shall be obtained from Engineer.

B. Use of Documents:

1. Contractor shall examine all specifications and drawings for the work, including those that may pertain to work Contractor does not normally perform with its own forces.
2. Contractor shall use all of the project drawings and specifications:
 - a. For a complete understanding of the project.
 - b. To determine the type of construction and systems required.
 - c. For coordination with other contractors.
 - d. To determine what other contractors.
 - e. To anticipate and notify others when work by others will be required.
 - f. And all other relevant matters related to the project.
3. Contractor is also bound by all requirements of the Contract Documents which are applicable to, pertain to, or affect its work, as may be shown or inferred by the entire set of project drawings and specifications.

1.03 GENERAL WORK PROVISIONS

- A. Driveways and other access to residences, business, or other commercial properties shall be maintained at all times during construction. ***At the time of the preconstruction meeting, the Contractor shall submit a proposed work sequence for Engineer/Owner approval.***

- B. All utilities aboveground or underground that need to be supported during the prosecution of this contract shall be coordinated with the utilities and the cost thereof shall be the sole responsibility of the Contractor.
- C. The Contractor shall maintain local traffic in areas not under immediate construction. The Contractor will be responsible for immediate local traffic control signage. The signage and traffic control shall be according to the “Manual on Uniform Traffic Control Devices for Streets and Highways”, latest edition. The associated cost shall be included in the appropriate bid item of the Contractor’s bid.
- D. All trenches within existing or proposed paved or graveled roadways, driveways, sidewalks, and other hard surfaces shall be backfilled with Soil Class G1 and compacted to 95% of modified proctor.
- E. Extreme care shall be taken to protect all trees along the construction route, which are not marked for removal or within the right-of-way and easement areas. For damaged trees and trees that die due to construction, the Contractor shall be responsible for the cost of tree replacement up to \$1,000 per tree. The total amount shall be deducted from final contract payment.
- F. The Contractor will furnish the municipality and Engineer with a telephone list, including cell or home phone numbers, of key personnel available for after hours and weekend emergencies.
- G. At all times, the Contractor shall see that affected work site areas shall be kept drained and free of groundwater and surface water. The Contractor shall dispose of the water so as not to cause injury to public or private property or to cause a nuisance or menace to the public. Additionally, the Contractor shall prevent excessive dust; and he shall, at his own expense, provide adequate dust control measures acceptable to the Engineer.
- H. The Contractor shall implement all erosion control in conformance with the WDNR Conservation Practice Standards (Latest Edition). All existing and installed inlets shall have erosion protection. These items shall be incidental to the project.
- I. Restoration
1. All damaged, disturbed, or removed surfaces, structures, or utilities, whether private or public, shall be repaired, restored, and/or replaced to a condition equal to or better than that which existed prior to the start of the work, including all ditches, culverts, roadways, alleyways, field lawns, walkways, retaining walls, fences, buildings, driveways, mailboxes, and any other items that may exist in the construction area.
 2. Following initial soil disturbance, all areas shall be restored within one month, weather permitting.
 3. All disturbed areas within the right-of-way and outside the paved streets and all easements shall be topsoiled to provide a minimum depth of 6 inches with salvaged topsoil, fine graded, raked free of lumps and stones, seeded and mulched. Any additional topsoil required to return the site to a condition as good as or better than existing condition shall be the responsibility of the Contractor.
 4. All restoration will be paid for at the contract unit price as specified.
- J. The owner shall have prior claim to all surplus excavated material. All excess excavated material shall be disposed of on-site as directed by the Owner. The topsoil shall be removed prior to placing the material and replaced when completed. If the Owner does not desire to claim

surplus excavated material, the contractor shall be totally responsible for obtaining a disposal site. **NO** material shall be disposed of in a flood plain, wetland, or waterway.

- K. Clearing, grubbing, and stripping of the topsoil will be the responsibility of the Contractor, and shall be considered incidental to the appropriate bid item. The topsoil shall be temporarily stockpiled on-site.
- L. The subgrade condition and elevation shall be checked by the Engineer prior to placement of base course material. The base course condition and elevation shall be checked by the Engineer.
- M. Submit list of subcontractors to Engineer.
- N. Removal of concrete sidewalk, bituminous pavements, curb and gutter, and driveway shall include disposal by the Contractor at a site that will accept such material. This work shall be included in the appropriate bid item.
- O. Contractor shall not commence work on-site until all materials are approved and are on-site.
- P. Payment requests shall be submitted to the engineer in Excel software form on the form provided in Section 00 62 76, Application for Payment, page 00 62 76-3.
- Q. Contractor's insurance shall be provided as specified in the general & supplemental conditions. Builder's Risk, "All Risk" or open peril insurance shall be provided per SC-5.06A. There will be no exception to these requirements. Installation floaters in lieu of the Builder's Risk Insurance will not be accepted. The contractor shall coordinate with the insurance company to provide the required insurance.
- R. Water main is noted on the plans to have **6.5' minimum cover** and the top of pipe elevations are shown. The elevation of the water main may be required to be adjusted in the field, due to conflicts with service laterals. The contractor shall verify the elevation of the service laterals, and with the approval of the Engineer or Owner, adjust the elevation of the water main accordingly to avoid conflicts. Any elevation adjustments will be incidental to the appropriate bid item.
- S. The Contractor shall coordinate with the United States Postal Service (USPS) to insure mail delivery. The Contractor shall provide temporary mailboxes at a location approved by the Owner, USPS, and Engineer, if necessary to maintain uninterrupted mail delivery.

1.04 SPECIAL REQUIREMENTS

- A. See Specification Section 32 90 10, Native Landscaping, for guarantee/warranty and maintenance requirements.
- B. Mobilization will be paid by the following:

% Complete	Payment Amount of Bid Item
5%	25%
25%	25%
50%	25%
75%	25%

- C. Sign board materials, design, delivery, installation, and all associated appurtenances are incidental to the mobilization bid item.
- D. Alternate bid items will be awarded by the City based on available funding.
- E. Site debris will be paid by the Cubic yard of material hauled off site. Truck measurement or approved method of measurement determined by the Engineer and Contractor can be used to quantify the material removed.
- F. SS 144.99 & NR 107 WPDES, Chemical Aquatic Plant Control GP, is required for this project. Contractor shall submit all required permitting documents and fees. This permit is required prior to any associated work items being completed. Costs associated with this permit is incidental to project.
- G. CH. 283 Aquatic Plant, Algae & Bacteria GP, WPDES WI-0064556-1, is required for this project. Contractor shall submit all required permitting documents and fees. This permit is required prior to any associated work items being completed. Costs associated with this permit is incidental to project.
- H. Prior to removing topsoil at Lot #24, the disturbance area shall be marked out with lath by the contractor and approved by the Engineer to ensure proposed fill area will be sloped in a manner near existing conditions.
- I. Prior to excavation near Ogden Street, all required erosion control measures shall be in place, including, but not limited to turbidity barrier, silt fence, water containment, sediment settling system, and any other erosion control item to ensure all WDNR permitting requirements are achieved. This work is considered incidental to the earthwork bid item.
- J. No dewatering of material excavated near Ogden Street is allowed. Sealed (water tight) dump trucks shall be used to transport saturated material from site to Lot #24 for natural dewatering at Lot #24.
- K. Large rock and rip rap stone encountered near Ogden Street Bridge can remain and be used for stream channel protection or bridge abutment protection or recycled off-site. All stone that will remain or be recycled shall be approved by the engineer prior to inclusion into final product.
- L. Carp fencing staking shall utilize 1.5-inch x 1.5-inch x 5.5-foot heavy duty steel T-posts or equivalent. Carp fencing shall be 2-inch x 4-inch x 48-inch 14 gauge welded wire fence and use 8-inch black UV stabilized cable ties to secure fencing to posts in three (3) locations on each post. Carp fence shall be installed prior to plant installation and shall be maintained throughout the maintenance period.
- M. Limits of parking lot restoration will be determined by engineer prior to any saw cutting.
- N. Any damage to concrete curb and gutter shall be removed and replaced at no cost to the City.
- O. Coordination with Degroot, Inc., shall occur to ensure Water Street Reconstruction project and South Channel project work items are not impeded by each other.

- P. Dust control on Water Street shall occur at the discretion of the engineer and dust control is incidental to the mobilization item.
- Q. Truck route shall utilize Water Street to Main Street to Shore Drive to Cleveland Avenue.
- R. If a utility structure is crossed to install the access road, they shall be protected with a steel plate prior to road installation.
- S. All truck access shall use alternate entrance west of 6th Street to access the South Channel project.
- T. The alternate bid item Mesic Forest Restoration Zone Site preparation shall be completed as specified within the specifications. If this alternative is chosen, it will remove items 8, 9, 11, 14 & 16 and will reduce item #15 to 100.
- U. Haul road bid item will only be used if access is unachievable or as needed.
- V. No clearing and grubbing or hinge cutting of trees can occur prior than October 1, 2016.
- W. Additional permitting was required to for the installation of the luncker structures and the northern pike spawning channel bid items. Permitting process is currently underway and expected permit issuance to be in early September 2016. No work on these two items can begin until the WDNR permit is received by the City.
- X. Material excavated from the North Pike Channel shall be removed from the wetland and placed in an upland fill area. No excavated material can be placed in adjacent wetlands and cannot leave the project site. Place excavated fill materials in upland project site areas that are slated for restoration or as approved by the Engineer in the field.

1.05 WORK SEQUENCE

- A. The Contractor shall submit a construction schedule documenting all phases of construction. The construction schedule shall be submitted in accordance with Section 01 32 19, Submittals.
- B. Final work to be completed will include site grading and landscaping.
- C. Operation and start-up of all equipment must be approved by the Engineer prior to proceeding. Start-up shall be in accordance with Section 01 75 00, Starting of Systems.

1.06 CONTRACTOR USE OF SITE

- A. General:
 - 1. The “area of the site” referred to in these specifications shall be limited to existing rights-of-way or easements as shown on the drawings.
 - 2. Construction activities shall be confined within the area of the site limits.
 - 3. From the start of work to completion Contractor is responsible for the care of the site and the premises which are affected by operations of work of this Contract.
 - 4. Except for permanent site improvements provided under the Contract, Contractor shall restore property disturbed during the work, to the conditions which previously existed.

5. Work in occupied spaces shall be restricted to specified work and essential activities, such as making necessary connections and extending services or constructing temporary access ways. Such work shall be scheduled in advance with Owner.

B. Parking and Deliveries:

1. Contractor is responsible for control of traffic by vehicles and persons within the limits of its operations.
2. Parking for employees, subcontractors, and agents of Contractor shall be in areas subject to approval of Owner.
3. Access to the site for delivery of construction material or equipment shall be subject to approval of Owner.

C. Work in Private Right-of-Way

1. Whenever the work is to be prosecuted through property for which the Owner has obtained a license, permit, or easement, the Contractor shall abide fully with the terms of the license, permit, or easement, a copy of which is on file with the Owner.
2. Prior to final payment, the Contractor shall send a notice to all easement grantors by certified mail, return receipt requested, a copy of which shall be filed with the Owner. Said notice to be similar to the following:

The undersigned Contractor has completed the restoration of the construction site on which you have granted an easement for installation of certain utilities and improvements. If said site restoration is not completed to your satisfaction, please contact the Engineer, Robert E. Lee & Associates, Inc., 1250 Centennial Centre Boulevard, Hobart, WI 54155-8995, in writing, and arrangements will be made immediately to view the site and restore the site in conformance with our contract obligations.

If the Engineer, Robert E. Lee & Associates, Inc., 1250 Centennial Centre Boulevard, Hobart, WI 54155-8995, does not hear from you in writing within 10 days from the above date, site restoration of your property will be deemed completed and approved by you.

(Name of Contractor)

(Address of Contractor)

Owner shall furnish contractor with names and addresses of easement grantors.

1.07 OWNER OCCUPANCY

- A. The Owner will occupy the site during construction.
- B. Provide access for state and local review agencies.

1.08 EXISTING SERVICES AND STRUCTURES

- A. Interruption of existing services shall be kept to a minimum and shall be limited to times approved by the Owner.

- B. The Contractor shall coordinate with Owner and local utility companies in keeping the services in operation and repair any damages to the satisfaction of the Owner and local utility.
- C. Contractor shall not interrupt any existing services until written approval is received from the Owner.
- D. In accordance with Wisconsin Statute 182, the Contractor shall contact Diggers Hotline prior to beginning any excavations. A call to Diggers Hotline does not absolve the Contractor of the requirements of this statute.
- E. Contractor shall proceed with caution in excavating and preparing the site so that the location of existing structures can be determined. Contractor shall keep an accurate record of existing services and structures and provide a copy to the Owner. The record shall include adequate measurements, depths, and conditions.

1.09 PROTECTION OF WORK

- A. Contractor shall protect the Owner's property from damage, dust, debris and other resulting construction activities.
- B. Contractor shall keep property free from dirt, dust and fumes from construction activities at all times.
- C. Property damaged by the Contractor shall be repaired or replaced by the Contractor to the satisfaction of the Owner.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

NOT APPLICABLE

- END OF SECTION -

SECTION 01 22 00

MEASUREMENT AND PAYMENT UNIT PRICE BID ITEMS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section specifies requirements for following:
 - 1. Method of measurement.
 - 2. Method of payment.
- B. The supplemental bid items listed are in addition to the scope of work as shown on the drawings and described in the specifications.

1.02 CONTRACT ITEMS

- A. Over excavation/Backfill
 - 1. The unit price per cubic yard shall include all materials, labor, tools and equipment required for excess excavation, removal and off-site disposal of unsuitable soils and the placing, spreading and compacting of Class C- I fill material. Unsuitable soils shall be excavated to a depth as determined by the soils report and Engineer.
 - 2. Measurement for payment shall be made by the Engineer using appropriate volume calculations of the "cut" material, in-place.
 - 3. Payment shall be made per cubic yard of "cut" material, "in-place".
 - 4. The unit price payment shall be made for all excavation and backfill required per the soils report and as shown on the plans.
- B. Rock Removal
 - 1. The unit price per cubic yard in addition to that shown in the soil boring, if applicable shall include all materials, labor, tools and equipment required for rock removal.
 - 2. Measurement shall be made by the Engineer using appropriate volume calculations of the "cut" material.
 - 3. Payment shall be made per cubic yard.
- C. Asphaltic Concrete Pavement and Patch
 - 1. These items consist of the following:
 - a. Asphalt work in areas requiring full lane width removals.
 - b. Asphalt patches (including driveway patches) in trench areas only.
 - 2. Unit payment – listed respectively.
 - a. Full lane width removal areas – square yard.
 - 3. Measurement:
 - a. Square yard: measurement shall be based on the following:
 - 1) Determine by measuring the area of bituminous pavement compacted in place.
 - 2) Delivery tickets submitted daily.
 - 4. Thickness shall be as shown on the plans, or if not shown, then as required in Section 32 12 16, Asphaltic Concrete Pavement.

5. The following work shall be included in the unit price and will be considered incidental cost items:
 - a. Furnishing, placing, spreading, and compacting asphalt as required in Section 32 12 16, Asphaltic Concrete Pavement.
 - b. Site restoration.
 - c. Restoring pavement areas damaged outside trench "Pay Width".
 - d. Prepare edges for paving by sawcutting as required in Section 31 23 16.20, Cutting and Patching (Roadways).
 - e. Furnishing and applying a tack coat between the binder course and surface course as needed and directed by the engineer.

6. Density Deficiency

- a. Density shall be measured by averaging the nuclear density test required for a day's production placed.
- b. Should the average density fall below specified densities, the Owner may accept the deficient work in accordance with the terms of Section 00 72 00, Standard General Conditions of the Construction Contract. Payment will be made at an adjusted price as specified in the following table:

PERCENT DENSITY BELOW SPECIFIED MINIMUM	PAYMENT FACTOR (PERCENT OF CONTRACT PRICE)
From 0.5 to 1.0 inclusive	95%
From 1.1 to 1.5 inclusive	85%

- c. If the specified density deficiency is greater than 1.5%, the material shall be removed and replaced with a mixture to the specified density and, when acceptably replaced, will be paid for at the contract unit price.

7. Thickness Deficiency

- a. Thickness deficiency shall be verified using theoretical tonnage. If the in place tonnage is greater than 10 percent below the theoretical tonnage the following shall apply.
 1. Thickness shall be measured by averaging four (4) core samples taken after the final course has been compacted in place. Sample locations shall be determined by the Engineer.
 2. The unit price per square yard will be computed proportional to the average thickness of four cores as follows:

Deficiency in Thickness Determined By:

<u>Cores in Inches</u>	<u>Percent of Unit Price Allowed</u>
0.00 to 0.125	95%
0.126 to 0.25	85%

3. If the thickness deficiency is greater than 0.25 inches, the material shall be removed and replaced with a mixture to the specified thickness, and when acceptably replaced, will be paid for at the contract unit price.

D. Crushed Aggregate Base Course

1. These items consist of crushed aggregate base course quantities as follows:

- a. Along roads and alleys requiring full lane width replacement. Also, along shoulders unless paid for under separate bid item.
2. Unit payment - listed respectively:
 - a. Full lane-width removal areas – square yard, unless paid for under separate bid item.
3. Measurement:
 - a. Square Yard: Measurement shall be based on the following:
 - 1) Determine by measuring the area of crushed aggregate base course compacted in place per plan details.
4. The following work shall be included in the unit price and will be considered incidental cost items:
 - a. All necessary excavation, shaping, fine grading, and compacting to attain the required cross-sectional contour.
 - b. Prepare edges for paving by sawcutting as required in Section 31 23 16.20, Cutting and Patching (Roadways).
 - c. Base course material as required in Section 32 11 23, Crushed Aggregate Base Course.
 - d. Where full lane width replacement is required, all excavation of surface and base materials, shaping, fine grading and compaction outside the trench width as necessary to attain the required cross-sectional contour.

E. Sidewalk

1. This item includes replacing sidewalk in allowable trench areas and new sidewalk where shown on the plans, all in accordance with Section 03 33 03, Cast-in-Place Concrete Street Work Pavement, Curb and Gutter, Sidewalk, and Driveway.
2. Unit payment - square foot.
3. Measurement shall be made along the edge of concrete for sidewalks. Area will be calculated based on actual length and width. Irregular shaped pours will be calculated based on the average length and width.
4. Thickness and width shall be as shown on the plans or as required in Section 31 23 33, Trenching, Backfilling and Compacting.
5. The following work shall be included in the unit price and will be considered incidental cost items:
 - a. Excavation and preparation of foundation including furnishing aggregate base.
 - b. Forming.
 - c. Placing and finishing concrete.
 - d. Concrete material.
 - e. Site restoration.
 - f. Handicap ramps (excluding curb).
 - g. Sidewalk steps.
 - h. Expansion and contraction joints.
 - i. Sawcutting as required by Section 31 23 16.20, Cutting and Patching (Roadways)

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 – EXECUTION

NOT APPLICABLE

- END OF SECTION -

SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Work Included: This section includes all project meetings required during construction.

1.02 RELATED SECTIONS AND DIVISIONS:

1. Applicable provisions of the General Conditions shall govern the work in this section.
2. Section 01 32 19 – Submittals.
3. All related equipment specifications.

1.03 MEETINGS

- A. Project meetings will be held throughout the project at intervals agreed to by the Engineer, Owner and Contractor.
- B. Contractor's project manager, job superintendent, subcontractors and necessary equipment suppliers shall attend the project meetings, as appropriate. Contractor's representative shall have the authority to bind the Contractor to decisions at the meeting.
- C. The following meetings, at a minimum shall be attended by the Contractor representatives, Engineer, and Owner:
1. Preconstruction Meeting
 2. Biweekly Progress Meeting
 3. Project Close-Out Meeting
- D. Notice of meetings shall be e-mailed to those required to attend and copies to interested parties such as suppliers and governmental agencies.
- E. The Engineer shall be responsible for the mailing of meeting notices, meeting agenda and meeting minutes.
- F. The Contractor shall submit typed reports detailing the project schedule, schedule compliance and future construction plans affecting the project schedule at the project meetings. The Contractor shall keep the project schedule updated throughout the construction period.

1.04 EQUIPMENT INSTALLATION AND START-UP MEETINGS

- A. When required in the individual specification sections, the Contractor shall coordinate an equipment installation meeting prior to beginning the work.
- B. When required in the individual specification sections, the Contractor shall coordinate a start-up meeting prior to start-up of the equipment.
- C. Contractor shall be responsible for the mailing of meeting notice, meeting agenda and meeting minutes.

- D. Contractor shall be responsible for coordinating the attendance of all parties involved in the work.
- E. Contractor shall notify the Engineer at least 7 days prior to the meeting date.
- F. Contractor shall record the meeting minutes and distribute within 3 working days after the meeting.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

NOT APPLICABLE

- END OF SECTION -

SECTION 01 32 19

SUBMITTALS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included: This Section includes administrative and procedural requirements for submittals required for performance of the work, including the following:
1. Contractor's progress schedule.
 2. Submittal schedule.
 3. Shop drawings.
 4. Submittal Transmittal Data Sheet.
 5. Product data.
 6. Samples.
 7. Quality assurance submittals.
- B. Related Sections and Divisions:
1. Applicable provisions of the General Conditions shall govern the work in this section.
 2. Requirements for submittals are described in other sections of the specifications.

1.02 IDENTIFICATION OF SUBMITTALS

- A. The Contractor shall mark each submittal and re-submittal by providing the information described in 1.06, Submittal Transmittal Data Sheet.
- B. The Contractor shall stamp each submittal indicating that submittal was reviewed by the Contractor and meets the requirements of the plans and specifications. Unstamped submittals will not be reviewed by the Engineer and returned.

1.03 CONSTRUCTION SCHEDULE

- A. The Contractor shall prepare and submit a detailed progress schedule in accordance with the General Conditions. The construction schedule shall be of sufficient detail to assure adequate planning and execution of the work and provide an appropriate basis for monitoring and evaluation of the progress of work.
- B. The progress schedule shall indicate the sequence of all work including the start date, completion date and duration.
- C. The progress schedule shall incorporate shop drawing and sample submittals schedule.
- D. If, at any time during the Project, Contractor fails to complete an activity by its latest scheduled completion date, Contractor shall, within 3 working days of notification by Engineer, submit to Engineer written statement as to how and when work force will be reorganized to return Contract to current schedule.
- E. When it becomes apparent from progress evaluation and updated schedule data that milestone completion or Contract completion dates will not be met, Contractor shall take some or all of following actions.

1. Increase construction staffing in such quantities and crafts as shall substantially eliminate backlog of work.
 2. Increase number of working hours per shift, shifts per work day, work days per week, or amount of construction equipment, or combination thereof sufficient to substantially eliminate backlog of work.
 3. Reschedule work items to achieve concurrency of accomplishments.
- F. Addition of equipment or construction forces, increasing working hours or other method, manner or procedures to return to current Construction Progress Schedule will not be considered justification for amending Contract Documents or treated as acceleration.
- G. The progress schedule shall be updated throughout the construction period. The Contractor shall revise the schedule monthly and submit with the monthly payment request. The progress schedule will be reviewed at the monthly construction progress meetings.

1.04 SUBMITTAL SCHEDULE

- A. Contractor shall make all submittals far enough in advance of scheduled installation dates to ensure adequate time for review and approval by the Engineer. This schedule shall also take into account possible revisions and resubmittals.
- B. To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
1. Allow 4 weeks for submittals.
 2. Allow 2 weeks for re-submittals.
 3. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the work to permit processing

1.05 SHOP DRAWINGS

- A. All shop drawings shall be addressed to shop drawing coordinator at Robert E. Lee & Associates. The shop drawing coordinator will be identified at the pre-construction meeting.
- B. Shop drawings shall be submitted under an industrial submittal transmittal data sheet as described in 1.06. An electronic copy of the submittal transmittal data sheet will be provided by e-mail.
- C. Shop drawings shall include technical data including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and other pertinent data. Shop drawings shall be submitted for all manufactured or fabricated items.
- D. Shop drawings shall be checked, approved and stamped by the Contractor in accordance with the General Conditions before submitting to the Engineer for review and approval.
- E. Do not use shop drawings without an appropriate final stamp indicating action taken.
- F. Except for submittals for the record or information, where action and return is required, the Engineer shall review each submittal, mark to indicate action taken, and return promptly. The Engineer/Architect will stamp each submittal with a uniform action stamp. The Engineer/Architect will mark the stamp appropriately to indicate the action taken, as follows:
1. "No Exceptions Taken": The work covered by the submittal may proceed provided it complies with requirements of the Contract Documents.

2. "Make Corrections Noted": The work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents.
3. "Revise and Resubmit": Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Revise and Resubmit" at the Project Site or elsewhere where work is in progress.
4. "Rejected": Do not proceed with work covered by the submittal. Resubmit without delay. Do not use, or allow others to use, submittals marked "Rejected" at the Project Site or elsewhere where work is in progress.
5. "Submit Specified Item": Item submitted does not meet specifications. Submit exact item specified.

G. Shop drawings that require resubmission shall be revised as follows:

1. Revise initial drawings and data and resubmit as required.
2. Provide an itemized list of all changes other than those requested by the Engineer in the cover letter.

H. Submittal Format

1. Electronic for all submittals except the following:
 - a. Reinforcing steel, submit one (1) full size plan sheet.
 - b. Submittals normally requiring three-ring binders such as instrumentation & electrical equipment, submit one (1) copy for approval. Provide four (4) copies after approval.

1.06 SUBMITTAL TRANSMITTAL DATA SHEET

A. Shop drawings shall be submitted by specification section. The Contractor shall submit a submittal transmittal data sheet with each shop drawing, refer to the form at the end of this section. Include all required submittal information as indicated in the specification section. Combining specification sections on submittal sheets is NOT PERMITTED.

B. The submittal transmittal data Sheet must be filled out correctly or the submittal will be returned. The following information MUST be included:

1. Date.
2. Project Name.
3. Contractor.
4. Submittal Number.
5. Previous Submittal Number, if applicable.
6. Specification Section Number.
7. Submittal for.
8. Information Block.
9. Name and Signature of Contractor.

1.07 PRODUCT DATA

A. Contractor shall provide product data as required to supplement shop drawings.

B. Submittal Transmittal Data Sheet shall be provided for each product data submittal.

C. Product data shall include illustrations, schedules, installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.

- D. Contractor shall mark each copy of the product data to identify products, models, options and other pertinent.
- E. Contractor shall include all Material Safety Data Sheets (MSDS) required by OSHA.

1.08 SAMPLES

- A. Contractor shall provide samples where noted or specified.
- B. Submittal Transmittal Data Sheets shall be provided for each sample submittal.
- C. Samples are physical examples which illustrate the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
- D. Samples shall have attached labels for identification bearing the following information:
 - 1. Project name.
 - 2. Description of sample.
 - 3. Contractor name.
 - 4. Standards met by the sample.
 - 5. Submit three samples for review.
- E. Approval of the samples shall be obtained before proceeding with the work relating to the sample.
- F. Samples not incorporated into the work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site.
- G. Field samples shall comply with submittal requirements to the fullest extent possible.

1.09 QUALITY ASSURANCE SUBMITTALS

- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other sections of the specifications.
- B. Submittal Transmittal Data Sheets shall be provided for each quality assurance submittal.
- C. Inspection and Test Reports shall be submitted as required by other sections of the specifications.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

NOT APPLICABLE

- END OF SECTION -

SUBMITTAL TRANSMITTAL DATA SHEET

(Attach to Each Submittal)

DATE: _____ PROJECT NAME: South Channel Habitat Improvements

CONTRACTOR: _____ CONTRACT NO.: 3775-16-02

SUBMITTAL NO. _____ New Submittal _____ Resubmittal _____ Previous Submittal No. _____

SPECIFICATION SECTION NO. _____

(Cover only one section with each transmittal)

SUBMITTAL FOR: _____ Shop Drawings _____ Product Data _____ Samples
_____ O&M Information _____ Proposed Substitution _____ Other

Specifications Section	Number of Copies	Description ()	Catalog Drawing or Brochure No.

I certify that the above submitted item has been reviewed in detail and is correct and in strict conformance with the contract drawings and specifications, except as otherwise stated, and is stamped accordingly.

Signature of Contractor

SUBMITTAL REVIEW (**FOR ENGINEER'S USE ONLY**)

TO: _____ TARGET DATE: _____

REVIEWER INITIALS AND DATE: _____

COMMENTS _____

DISPOSITION:

- 1. No Exceptions Taken.
- 2. Make Corrections Noted.
- 3. Revise and Resubmit.
- 4. Rejected.
- 5. Submit Specified Item.

Robert E. Lee & Associates, Inc.

Checked for conformance with design concept of project and general compliance with information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for omissions. Quantities, environmental requirements, dimensions which shall be confirmed and correlated at job site, his work with that of all other trades and the satisfactory performance of his work.

Returned By: _____

Date: _____

SECTION 01 32 33

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work included: This section includes photography of:
1. Utility construction routes.
 2. Building sites.
- B. Related Sections and Divisions:
1. Applicable provisions of the General Conditions shall govern the work in this section.
 2. Section 01 32 19, Submittals.

1.02 UTILITY CONSTRUCTION OR ROADWAY CONSTRUCTION ROUTES

- A. Before construction may start in any section, the contractor shall deliver pre-construction photographs to the Engineer. The photographs shall be collated by project stationing. The photographs shall include:
1. Intervals of 100-feet along project route. (Indicate by station)
 2. Trees and shrubbery.
 3. Surfacing, sidewalks, driveways, and curb and gutter.
 4. Structures.
 5. Fencing, signs, and mail boxes.
 6. Culverts and topographic features.

1.03 BUILDING SITES

- A. Building sites shall include wastewater treatment plants, water treatment plants, elevated tanks, bridges, and other structures.
- B. Before construction may start, the Contractor shall provide pre-construction photographs to the Engineer. The photographs shall show building conditions and site features.

1.04 PHOTOGRAPHS

- A. Photographs shall be in digital format, minimum 3.0 megapixels.
- B. The digital footnote/file name shall include the date, name of work, name of structure, direction of view, and location on each photo.
- C. The Contractor shall provide two copies of each photo disc in .jpg format. The project name and project number shall be listed on each disc. A release of rights statement shall be signed and dated releasing any and all rights to the photos, and granting the City of Marinette and Wisconsin Department of Natural Resources (WDNR) all rights to the photos.

PART 2 - PRODUCTS - NOT APPLICABLE

PART 3 - EXECUTION - NOT APPLICABLE

- END OF SECTION -

SECTION 01 40 00

FIELD ENGINEERING

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Work under this section is associated with:
1. Staking.
 2. Profile and topography.
 3. Records and markers.

1.02 STAKING PROVIDED BY OWNER'S REPRESENTATIVE

- A. Staking for utility construction shall include:
1. Location of construction limits.
 2. Original staking of line and grade and location of all structures.
 3. Benchmarks on site.
- B. Staking for building construction.
1. Two construction baselines
 2. Establish benchmarks onsite.
 3. Location of construction limits.

1.03 STAKING TO BE PROVIDED BY CONTRACTOR

- A. Any staking work required to complete the work and not specifically provided by the Owner's representative.
- B. Contractor shall establish grade from stakes or benchmarks established by the Owner's representative.

1.04 CONSTRUCTION STAKING

- A. The Contractor shall provide the Owner's representative an advance notification of three working days when requesting construction staking.
- B. All construction shall be completed by the Contractor according to the alignments, grades, and baselines as established and set by the Owner's representative.
- C. The Contractor shall be responsible for the cost of restaking baselines, line & grade, structures & benchmarks unnecessarily destroyed or altered as a result of his negligence during the construction period.

1.05 PROFILE AND TOPOGRAPHY

- A. Contours or profiles of the ground are shown on the drawings. These profiles and contours are reasonably correct, but are not guaranteed to be absolutely so, and together with any schedule of quantities are presented only as an approximation.

1.06 CONTRACTORS RECORDS AND MARKERS

- A. In addition to submittals and records required in other parts of the Contract Documents, Contractor shall record the following in such a manner that the Owner can locate same in the future by reference to recorded measurements:
1. Any deviations of underground covered work from contract drawings.
 2. On pipeline construction, the exact location and depth below grade of all:
 - a. Valves and pipelines.
 - b. Changes in direction.
 - c. or "T" branches on sewers.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

NOT APPLICABLE

- END OF SECTION -

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. Work Included: This section includes regulatory requirements in regard to the project. Regulatory agency's requirements supersede this section.
- B. Related Sections and Divisions: Applicable provisions of the General Conditions shall govern the work in this section.

1.02 OSHA REQUIREMENTS

- A. All work including site safety, equipment, materials and fabricated items provided by the Contractor shall comply with all OSHA requirements.

1.03 PERMITS

- A. The Contractor shall obtain all permits required for this project. Where the permit requirements of any permit are more restrictive than the plans and specifications, the permit requirements shall govern.
- B. Contractor shall obtain required permits from all regulatory governmental agencies governing dewatering. Contractor shall be responsible to maintain existing private wells affected by dewatering activities. It shall be the responsibility of the Contractor to provide a water supply to the affected resident at no cost to the Owner. The Contractor shall be required to drill and close wells in accordance with WDNR requirement.

The governing agency in Wisconsin is:

Wisconsin Department of Natural Resources
Private Water Supply Section
P.O. Box 7921
Madison, Wisconsin 53707

- C. Contractor shall comply with the WDNR requirements regulating the discharge of effluent from construction trenches. These provisions provide for the removal of suspended solids prior to direct discharge to surface water or wetlands. Contractor shall be responsible for obtaining any necessary permits.

1.04 UNDERGROUND UTILITIES

- A. Under the provisions of Wisconsin Statutes, Section 182.0175, all contractors, subcontractors, and any firm or individual intending to do work on this contract shall contact all utility firms in the affected area of construction a minimum of three (3) working days prior to beginning construction so that affected utilities will be located and marked.

1.05 PROPERTY MONUMENTS

- A. It shall be the responsibility of the Contractor to protect iron pipe and survey monuments from movement where possible. The cost of replacement of any monuments moved or destroyed by the Contractor shall be assessed to him.

1.06 WAGE RATES

- A. Not less than the prevailing wage rates shall be paid to the workers employed on this project.
- B. Contractor shall comply with the State or Federal wage rates governing this project.
- C. The wage rates for this project are provided in the Contract Documents.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

NOT APPLICABLE

- END OF SECTION -

SECTION 01 57 14

EROSION CONTROL

PART 1 - GENERAL

1.01 SUMMARY

- A. Work included: This section consists of construction and maintenance of temporary erosion and sediment control measures to be performed prior to and during construction.
- B. Related Sections and Divisions:
 - 1. Applicable provisions of the General Conditions shall govern the work in this section.
 - 2. All related construction sections.
 - 3. Erosion Control and Storm Water Management Plan.
 - 4. Section 01 32 19, Submittals.
- C. Unless shown otherwise, the contractor shall be responsible for selecting method of erosion and sediment control.
- D. The Contractor's erosion control measures must comply with the approved Erosion Control and Storm Water Management Plan, Wisconsin Natural Resources Code NR 151, Wisconsin DNR Conservation Practice Standards, Latest Edition, WisDOT Product Acceptability List, Latest Edition, and local erosion control ordinances.

1.02 SUBMITTALS

- A. Submit the following in accordance with Section 01 32 19, Submittals:
 - 1. Material samples upon request or owner's representative.
 - 2. Manufacturer's certification that materials delivered comply with requirements of this section.

PART 2 - PRODUCTS

- A. Products used for implementing the Erosion Control and Storm Water Management Plan and for conformance to WDNR Conservation Practice Standards, Latest Edition shall conform to the WisDOT Product Acceptability List, Latest Edition.

PART 3 - EXECUTION

- A. All installations shall conform to requirements of the WDNR Conservation Practice Standards, Latest Edition.
- B. The Contractor shall maintain a written record of all implemented erosion control practices as required by the WDNR. A suggested format is WDNR Form 3400-187, latest revision (see attached). The written record shall be maintained throughout final completion. Copies shall be forwarded to the Engineer upon request and with each pay request.

- C. Inspections of implemented erosion and sediment control best management practices must be performed weekly and within 24 hours after a precipitation event 0.5 inches or greater which results in runoff.
- D. Installed erosion control measures shall be removed from the site after 70% revegetation has been achieved, and all remaining disturbed areas shall be seeded, fertilized, and mulched.

PART 4 – PAYMENT

- A. Payment shall be based on the following:
 - 1. Erosion control shall be paid for at the contract price bid in accordance with the bid form.

- END OF SECTION –

Notice: Use of this specific form is voluntary, but the information contained on this form must be collected and kept by the permittee under s. NR 216.48(4), Wis. Adm. Code, for a construction site covered under the General WPDES Construction Site Storm Water Discharge Permit, Permit No. WI-0067831-2. This form is provided for the convenience of the permittee to meet the requirements of s. NR 216.48(4), Wis. Adm. Code. Multiple copies of this form may be made to compile the inspection report.

Inspections of implemented erosion and sediment control best management practices must be performed weekly and within 24 hours after a precipitation event 0.5 inches or greater which results in runoff.

Weekly written reports of all inspections conducted by or for the permittee must be maintained throughout the period of general permit coverage.

The information maintained in accordance with s. NR 216.48 (4) must be submitted to the Department upon request.

Name of Permittee:				
Construction Site Name (Project): South Channel Habitat Improvement			Construction Site ID No.: (WDNR #)	
Location:			County: Marinette	
Contractor:			Field Office Phone:	
Note: Weekly inspection reports, along with erosion control and storm water management plans, are required to be maintained on site and made available upon request.				
Date of inspection (mm/dd/yy): ____		Type of inspection: <input type="checkbox"/> Weekly <input type="checkbox"/> Precipitation Event <input type="checkbox"/> Other (specify) _____		
Time of inspection: Start: ____ a.m./p.m. End: ____ a.m./p.m.		Name(s) of individual(s) performing inspection:		
Weather:				
Description of present phase of construction:				
Modifications Required	Yes	No	Not Applicable	Comments/Recommendations about the overall effectiveness of the erosion and sediment control measures. Note: For each item checked "Yes", complete the follow-up information on page 2.
Ditch Checks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Erosion Control Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Erosion Mat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Grading Practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Inlet Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mulch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Offsite Sediment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Permanent Seeding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Schedule / Phasing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silt Fence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silt Screen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sod	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stabilized Outlet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Temp. Diversion Channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Temp. Settling Basin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Temporary Seeding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tracking Pads	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Turbidity Barrier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (specify) ____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Use the space below for detailed follow-up action items.</i>				

Name of Permittee:		
Construction Site Name (Project): South Channel Habitat Improvement		Construction Site ID No.: (WDNR #)
Exact place of erosion/sediment control inspected	Type of erosion/sediment control and its observed condition	Description of any necessary maintenance or repair to erosion/sediment control, including anticipated date of completion

SECTION 01 78 36

WARRANTIES

PART 1 - GENERAL

1.01 SUMMARY

- A. **Work Included:** This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturers standard warranties on products and special warranties.
- B. **Related Sections**
1. Applicable provisions of the General Conditions shall govern terms of the Contractor's special warranty of workmanship and materials.
 2. Section 01 77 00, Closeout Procedures.
 3. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of Divisions 2 through 16.
- C. **Disclaimers and Limitations**
Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.02 DEFINITIONS

- A. **Standard Product Warranties** are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
- B. **Special Warranties** are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.03 WARRANTY REQUIREMENTS

- A. Starting date for all warranties shall be the date of Substantial Completion as indicated on Certificate of Substantial Completion, except that warranties for work completed after the date of substantial completion shall begin on date of acceptance of such work by the Owner.
- B. **Related Damages and Losses**
When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- C. **Replacement Cost**
Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Document. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

- D. Owner's Recourse
Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
- E. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.04 SUBMITTALS

- A. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Prepare warranties as various components of the project are completed.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

NOT APPLICABLE

- END OF SECTION -

02

DIVISION 02

EXISTING CONDITIONS

SECTION 02 66 02

ACCESS ROAD

PART 1 – GENERAL

1.01 SUMMARY OF WORK

- A. This item of work shall consist of the construction of an aggregate-surfaced access road. The finished roads shall consist of 12 inches of compacted aggregate. A compacted aggregate composed of one or more courses or layers of crushed gravel or crushed stone constructed on geotextile fabric and the existing foundation in accordance with the specifications and in reasonably close conformity to the lines, grades, thicknesses, and typical cross sections shown on the plans or established by the Engineer.
- B. Related Section and Divisions:
1. Applicable provisions of the General Conditions
 2. Section 01 32 19, Submittals

1.02 REFERENCE STANDARDS

- A. American Society of Testing Materials (ASTM)

PART 2 – PRODUCTS

2.01 NUMBER 1 GRAVEL

- A. The materials shall be well graded from coarse to fine, and conform to the following gradation requirements:

Sieve Size	Size No. 1 – Percent Passing by Weight	
	Crushed Gravel	Crushed Stone
1-1/2 inch	100	100
1 inch	75-100	—
3/4 inch	—	—
3/8 inch	40-75	30-65
No. 4	30-60	25-55
No. 10	20-45	15-40
No. 40	10-30	—
No. 200	3-10	2-12

- B. Unless otherwise provided, material for the roadway shall be Size No. 1.

2.02 SAMPLING AND TESTING

1. Sampling and testing shall be in accordance with the following ASTM Designations:
2. Sampling
 - a. Amount of Material Finer than No. 200 Sieve D75
 - b. Sieve Analysis of Aggregates C117
 - c. Sieve Analysis of Mineral Filler C136
 - d. Soundness of Aggregates C546
 - e. Abrasion of Coarse Aggregates C88
 - f. Specific Gravity and Absorption of Coarse Aggregate C131
 - g. Specific Gravity and Absorption of Fine Aggregate C127
 - h. Liquid Limit of Soils C128
 - i. Plastic Limit of Soils D423
 - j. Plasticity Index of Soils D424

PART 3 – EXECUTION

3.01 GENERAL

- A. The access road shall be constructed to the width and section shown on the plans.
- B. Aggregate material shall not be placed on an earth subgrade that is not uniformly compacted or one that is covered by ice or snow.
- C. Basecourse material shall not be placed on a dry or dusty earth subgrade, where the existing condition would cause rapid dissipation of moisture from the basecourse material and hinder or preclude its proper compaction.
- D. Such dry subgrades shall be watered and reworked or recompacted if necessary.
- E. No excavation of subgrade material shall occur.

3.02 COMPACTION

- A. The material shall be deposited in a manner to minimize segregation.
- B. After a layer or course has been placed and spread to the required thickness, width, and contour, it shall be compacted.
- C. In the event the material is deficient in moisture content for readily attaining the required density, it shall be moistened to the degree necessary.
- D. Each layer shall be constructed as far in advance of the succeeding layer as directed by the Engineer.
- E. The work shall, in general, proceed from the point on the project nearest the source of supply of aggregate in order that hauling equipment will travel over the previously placed material in a uniform routing so as to cover all portions of the initial layers.

3.03 DUST CONTROL

- A. The Contractor shall minimize the dispersion of dust from the basecourse during construction and maintenance operations, until acceptance of the basecourse, by the application of water or other approved dust control material, when ordered by the Engineer.

3.04 BASIS OF PAYMENT

- A. Payment shall be on the basis of lump sum of access road completed and accepted.
- B. The basis of payment shall be on the basis of the unit price as provided for in the bid schedule

- END OF SECTION -

31

DIVISION 31

EARTHWORK

SECTION 31 05 13

SOILS AND AGGREGATES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Work Included:

This section includes all material, labor, and equipment necessary to produce, haul, place, and compact the specified soil or aggregate.

B. Related Sections and Divisions:

1. The applicable provisions of the General Conditions shall govern the work in this section.
2. Section 01 32 19, Submittals.
3. Section 31 23 33, Trenching, Backfilling and Compaction.

1.02 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM C33 Spec. for Concrete Aggregates.
2. ASTM C88 Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
3. ASTM C117 Test for Material Finer than No. 200 Sieve in Mineral Aggregates by Washing.
4. ASTM C131 Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
5. ASTM C136 Sieve Analysis of Fine and Coarse Aggregates.
6. ASTM C144 Spec. for Aggregate for Masonry Mortar.
7. ASTM C207 Spec. for Hydrated Lime for Masonry Purposes.
8. ASTM C535 Test for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
9. ASTM C602 Spec. for Agricultural Liming Materials.
10. ASTM D75 Sampling Aggregates.
11. ASTM D422 Particle Size Analysis of Soils.
12. ASTM D448 Spec. for Standard Sizes of Coarse Aggregate for Highway Construction.
13. ASTM D1140 Test for Amount of Material in Soils Finer than the No. 200 Sieve.
14. ASTM D1241 Spec. for Materials for Soil-Aggregate Subbase, Base, and Surface Courses.
15. ASTM D2216 Laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil Aggregate Mixtures.
16. ASTM D2487 Classification of Soils for Engineering Purposes.
17. ASTM D4318 Test Method for Liquid Limit, Plastic Limit, and Plasticity of Soils.

1.03 QUALITY ASSURANCE

- ###### A. No soils and aggregates furnished under this section shall be frozen.

1.04 MATERIAL TESTING

- A. Contract with an independent testing laboratory to provide testing services required by this section. Contractor shall be responsible for the cost of all testing required for submittals.
- B. To establish acceptability of material, tests shall be performed for each soils class in accordance to the following standards:
1. Soils Class A and C:
 - a. ASTM C88.
 - b. ASTM C131 (for coarse aggregates smaller than 1½ inches).
 - c. ASTM C136.
 - d. ASTM C535 (for coarse aggregates 1½ inches and larger).
 - e. ASTM C 117 (use when aggregate contains materials finer than No. 200 sieve).
 2. Soils Class B:
 - a. ASTM C88.
 - b. ASTM C117.
 - c. ASTM C136.
 3. Soils Class D:
 - a. ASTM C117.
 - b. ASTM C136.
 - c. ASTM D1241.
 - d. ASTM D2487.
 4. Soils Class E:
 - a. ASTM C136 (test when gravel content is present).
 - b. ASTM D422.
 - c. ASTM D1140.
 - d. ASTM D2216.
 - e. ASTM D4318
 5. Soils Class F:
 - a. ASTM D2487.
 6. Soils Class G:
 - a. ASTM D2487.
- C. In addition to the above, furnish a soil analysis of Soil Class F:
1. Analyze for the following:
 - a. pH
 - b. Phosphorus
 - c. Potassium
 - d. Soluble Salts
 - e. Calcium
 - f. Magnesium
- D. Source sample all soils and aggregates in accordance with ASTM D75.
- E. Perform one (1) acceptable test for each type of material at each source.

1.05 SUBMITTALS

- A. Submit the following in accordance with Section 01 32 19, Submittals.
 - 1. Test reports.
 - 2. Soils analysis including recommendations for fertilizer type and application.
 - 3. Daily delivery tickets with each load.

PART 2 - PRODUCTS

2.01 ENGINEERED SOILS AND AGGREGATES (SOIL CLASS A)

A. General

- 1. Material shall be clean, sound, hard, dense, durable, field or quarry stone which is free from seams, cracks, or other structural defects. It shall be angular material from shot rock (blasted) or crushed rock having substantially all face of which have resulted from artificial crushing.
- 2. Loss due to sulfate soundness test shall not exceed 10 percent.
- 3. Loss due to abrasion test shall not exceed 40 percent.

B. Gradation

1. Extra-Heavy Riprap		
<u>Average Dimension Range For Each Riprap</u>		<u>Fraction of Gross In-Place Volume</u>
<u>Inches</u>		<u>Occupied by Stones Inches</u>
>30		0%
22-25		10%-14%
18-22		15%-21%
8-18		20%-28%
<8		5%-7%
<1		2% or less
2. Heavy Riprap		
<u>Average Dimension Range For Each Riprap</u>		<u>Fraction of Gross In-Place Volume</u>
<u>Inches</u>		<u>Occupied by Stones Inches</u>
>25		0%
18-20		10%-14%
14-18		15%-21%
6.5-14		20%-28%
<6.5		5%-7%
<1		2% or less
3. Medium Riprap		
<u>Average Dimension Range For Each Riprap</u>		<u>Fraction of Gross In-Place Volume</u>
<u>Inches</u>		<u>Occupied by Stones Inches</u>
>20		0%
14-16		10%-14%
11-14		15%-21%
5-11		20%-28%
<5		5%-7%
<1		2% or less

4.	Light Riprap	<u>Fraction of Gross In-Place Volume Occupied by Stones Inches</u>
	<u>Average Dimension Range For Each Rip Rap Inches</u>	
	>16	0%
	11-13	10%-14%
	9-11	15%-21%
	4-9	20%-28%
	<4	5%-7%
	<1	2% or less
5.	Soil Class A-3 (Breaker Run Rock or 6" Crushed Rock)	
	<u>Sieve Size</u> <u>% Passing by Weight</u>	
	7-inch	100
	6-inch	90
	4-inch	75
	3-inch	10
6.	Soil Class A-5 (2½-inch Crushed Rock - ASTM D448-No.2)	
	<u>Sieve Size</u> <u>% Passing by Weight</u>	
	3-inch	100
	2½-inch	90-100
	2-inch	35-70
	1½-inch	0-15
	¾-inch	0-5
7.	Soil Class A-6 (1½-inch Crushed Rock - ASTM D448-No. 4)	
	<u>Sieve Size</u> <u>% Passing by Weight</u>	
	2-inch	100
	1½-inch	90-100
	1-inch	20-55
	¾-inch	0-15
	3/8-inch	0-5
8.	Soil Class A-7 (¾ -inch Crushed Rock - ASTM D448-No. 67)	
	<u>Sieve Size</u> <u>% Passing by Weight</u>	
	1-inch	100
	¾-inch	90-100
	3/8-inch	20-55
	No. 4	0-10
	No. 8	0-5
9.	Soil Class A-8 (3/8-inch Crushed Rock Chips - ASTM D448-No. 8)	
	<u>Sieve Size</u> <u>% Passing by Weight</u>	
	½-inch	100
	3/8-inch	85-100
	No. 4	10-30
	No. 8	0-10
	No. 16	0-5

2.02 ENGINEERED SOILS AND AGGREGATES (SOIL CLASS B)

A. General

1. Shall be hard, strong, durable particles free from seams, cracks, and other structural defects.
2. Rounded to subangular.
3. Free from organic impurities and debris.

B. Gradation

1. Soils Class B-1 (Coarse Aggregate - ASTM C33 - No. 3)

<u>Sieve Size</u>	<u>% Passing by Weight</u>
2½-inch	100
2-inch	90-100
1½-inch	35-70
1-inch	0-15
½-inch	0-5

2. Soil Class B-2 (Coarse Aggregate - ASTM C33 - No. 7)

<u>Sieve Size</u>	<u>% Passing By Weight</u>
¾-inch	100
½-inch	90-100
⅜-inch	40-70
No. 4	0-15
No. 8	0-5

3. Soil Class B-3 (Fine Aggregate - ASTM C33)

<u>Sieve Size</u>	<u>% Passing by Weight</u>
¾-inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10

4. Soil Class B-4 (Masonry Sand - ASTM C144)
Percent Passing

<u>Sieve Size</u>	<u>Natural Sand</u>	<u>Manufactured Sand</u>
No. 4	100	100
No. 8	95 to 100	95 to 100
No. 16	70 to 100	70 to 100
No. 30	40 to 75	40 to 75
No. 50	10 to 35	20 to 40
No. 100	2 to 15	10 to 25
No. 200	---	0 to 10

2.03 ENGINEERED SOILS AND AGGREGATES (Soil Class C)

A. General

1. Shall be hard, durable, granular material of uniform quality resulting from crushed rock or crushed bank run sand and gravel.
2. Shall be free from clay lump, organic matter, shale, excess, elongated, or flat pieces, and other deleterious substances.
3. Forty-five percent of the particles retained on a No. 4 sieve shall have at least one fractured face.
4. Wear shall not exceed 50 percent.
5. Loss due to sulfate soundness test shall not exceed 18 percent by weight.
6. Total moisture content shall not exceed 7 percent.
7. Filler for blending shall have a maximum liquid limit of 25 percent and a maximum plasticity index of six.

B. Gradation

1. Soil Class C-1 (Crushed Stone)

<u>Sieve Size</u>	<u>% by Weight Passing</u>
1½-inch	100
3/8-inch	30-65
No. 4	25-55
No. 10	15-40
No. 200	2-12

2. Soil Class C-2 (Crushed Stone)

<u>Sieve Size</u>	<u>% by Weight Passing</u>
1-inch	100
3/8-inch	40-75
No. 4	25-60
No. 10	15-45
No. 200	3-12

3. Soil Class C-3 (Crushed Stone)

<u>Sieve Size</u>	<u>% by Weight Passing</u>
1-inch	100
¾-inch	95-100
3/8-inch	50-90
No. 4	35-70
No. 10	15-55
No. 200	5-15

4. Soil Class C-4 (Crushed Gravel)

<u>Sieve Size</u>	<u>% by Weight Passing</u>
1½-inch	100
1-inch	75-100
3/8-inch	40-75
No. 4	30-60
No. 10	20-45
No. 40	10-30
No. 200	3-10

5. Soil Class C-5 (Crushed Gravel)

<u>Sieve Size</u>	<u>% by Weight Passing</u>
1-inch	100
3/8-inch	50-85
No. 4	35-65
No. 10	25-50
No. 40	10-30
No. 200	3-10

6. Soil Class C-6 (Crushed Gravel)

<u>Sieve Size</u>	<u>% by Weight Passing</u>
1-inch	100
¾-inch	95-100
3/8-inch	50-90
No. 4	35-70
No. 10	20-55
No. 40	10-35
No. 200	8-15

2.04 BANK RUN SOILS

A. Soil Class D-1 and D-2

1. Shall be rounded or subangular material resulting from pit run or crushed material.
2. Shall be free from clay lumps, organic matter, and deleterious substances.
3. One hundred percent by weight shall pass a 3-inch sieve.
4. Maximum liquid limit shall be 25 percent and maximum plasticity index shall be six.
5. The portion of material, which passes a No. 4 sieve, shall conform to the following gradation:

<u>Sieve Size</u>	<u>Maximum % by Weight Passing</u>	
	<u>Grade D-1</u>	<u>Grade D-2</u>
No. 4	100	100
No. 40	75	---
No. 100	15	30
No. 200	8	15

B. Soil Class D-3 (Sand)

1. Well graded, unwashed bank run or crushed bank run, which is free from clay lumps, organic matter, and other deleterious substances with gradation as follows:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
1/4-inch	100
No. 4	90-100
No. 10	45-90
No. 40	15-45
No. 200	0-10

C. Soil Class E-1 (Clay Soil)

1. Minimum 50 percent by weight passing the No. 200 sieve.
2. For the fraction passing the No. 40 sieve, the minimum plasticity index shall be 15.
3. Minimum Atterberg liquid limit of 30.
4. Free from organic material, boulders, cobbles, excessive amounts of gravel (greater than 1/4-inch), and other deleterious substances.

D. Soil Class F-1 (Topsoil)

1. Topsoil shall be defined as the upper soil horizon consisting of mineral layers of maximum humus (organic) accumulation.
2. Topsoil shall:
 - a. Have adequate mineral content to support the growth of the vegetation intended to be established.
 - b. Have one of the following SCS (Soil Conservation Service) soil textures: loam, sandy loam, silt loam, silty clay loam, or clay loam.
 - c. Be free from herbicides, which would be detrimental for the intended use.
 - d. Have adequate fertility for quick establishment of vegetation.
 - e. Shall be neither excessively acid nor excessively alkaline.
 - f. Shall be free from deleterious substances.

E. Soil Class G-1 (Clean Earth Fill)

1. Soil Class G-1 shall be any soil material excavated on the project site or obtained from borrow areas.
2. Soil materials unsuitable and, therefore, not approved for this classification are:

- a. Soils with high organic contents such as: topsoil, peat, muck, organic silts, and clays, marls, etc.
- b. Macadam or rubble filled soils containing such materials as: foundry sand, fly ash cinders, asphalt, and concrete rubble, etc.
- c. Silty soils such as: rock flour, loess, etc.
- d. Soils with gravel larger than 3-inch.
- e. Silty clay or clays with a high plasticity (CH soils as defined in ASTM D2487).
- f. All soil contaminated with hazardous waste materials as defined by the EPA.

F. Soils Class G-2 (Clean Earth Fill)

1. Same as G-1 above except shall not contain gravel larger than 3-inch.

2.05 MANUFACTURED AND SPECIAL SOILS

A. Soil Class J-1 (Agricultural Limestone)

1. Conform to ASTM C602.
2. Ground or crushed limestone.
3. Neutralization index of not less than 40 or more than 109.
4. Meet the following gradation:
 - a. Passing a No. 4 sieve - 100 percent.
 - b. Passing a No. 10 sieve - 90 to 100 percent.
 - c. Passing a No. 50 sieve - 50 to 100 percent.

B. Soil Class J-2 (Hydrated Lime)

1. Shall consist of essentially calcium, hydroxide, or a mixture of calcium hydroxide, magnesium oxide, and magnesium hydroxide.
2. Dry powder obtained by treating quick lime with enough water to satisfy its chemical affinity for water under the conditions of its hydration.
3. Hydrated lime shall conform to the requirements of ASTM C207, Type N or S.

PART 3 - EXECUTION

3.01 APPLICATION

- A. Use the soil classification name as called for in specifications or on drawings.
- B. Place material in accordance with the plans and appropriate specification sections for the type of work being performed.

- END OF SECTION -

SECTION 31 23 00

EARTHWORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Excavation to the lines and grades shown on the Drawings to match proposed grades.

1.2 RELATED SECTIONS

- A. Section 01 57 14, Erosion and Sediment Control

1.3 REFERENCE STANDARDS

- A. Earthwork shall be performed in accordance with the provisions of WisDOT Standard Specifications, Section 205, Roadway and Drainage Excavation, and as described below.
- B. Earthwork shall be performed in accordance with the provisions of WisDOT Standard Specifications, Section 207, Embankment, and as described below.

PART 2 - PRODUCTS

2.1 Common Excavation

- 1. Common Excavation shall consist of all material excavated on site to achieve the lines and grades indicated on the Drawings. This includes subgrade excavation.
- 2. If contaminated soils are encountered on-site, the Contractor shall dispose of them at an approved site in a legally-compliant manner.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Perform all Earthwork in strict compliance with the Storm Water Pollution Prevention Plan (SWPPP) and Section 01 57 14, Erosion and Sedimentation Control.
- B. Protect existing surface and subsurface features on-site and adjacent to site as follows:
 - 1. Protect and maintain bench marks, monuments or other established reference points and property corners. If disturbed or destroyed, replace at own expense to full satisfaction of the Engineer and controlling agency.
 - 2. Verify location of utilities by calling Wisconsin Diggers Hotline (800-242-8511) prior to construction activities. Omission or inclusion of utility items in the Drawings and Specifications does not constitute non-existence or definite location.
 - a. Take necessary precautions to protect existing utilities from damage due to any construction activity.
 - b. Repair damages to utility items at Contractor's expense.
 - c. In case of damage, notify Engineer at once so required protective measures may be taken.
 - 3. Maintain, free of damage, existing fences, structures, and pavement, not indicated to be removed. Any item known or unknown or not properly located that is inadvertently damaged shall be repaired to original condition. All repairs to be made and paid for by Contractor.
 - 4. Maintain stockpiles and excavations in such a manner to prevent inconvenience or damage to structures on-site or on adjoining property.

Menominee River South Channel Habitat Improvement

5. Avoid surcharge or excavation procedures which can result in heaving, caving, or slides.

3.2 EXCAVATION AND GRADING

- A. The work includes all operations in connection with excavation, salvage, construction of fills and embankments, rough grading, and disposal of excess materials required to attain the finished lines and grades as shown on the Drawings.
- B. Excavation and Grading: Perform as required by the Contract Drawings.
 1. Contract Drawings may indicate existing grade, subgrade and finished grade required for construction of Project. Stake all units, channels, structures, excavations, and other items and establish their elevations. Perform other layout work required. Replace property corner markers to original location if disturbed or destroyed.
 2. Protection of finish grade: During construction, shape and drain embankment and excavations. Maintain ditches and drains to provide drainage at all times. Protect graded areas against action of elements prior to acceptance of work. Reestablish grade where settlement or erosion occurs.
 3. Excavate to elevations and dimensions indicated or specified.
 4. Removal of obstructions and undesirable materials in excavation includes, but is not necessarily limited to, removal of old foundations, existing construction, logs, riprap, and any other materials which may be concealed beneath the waterline or present grade, as required to perform the Work as indicated on the Drawings. If undesirable material and obstructions are encountered during excavation, remove material and replace as directed by the Engineer.
 5. Materials to be removed consist of small boulders, cobble, gravel, sand, silts, and clays. Varying soil moisture contents will be encountered during the excavation. The Contractor shall be equipped to handle excavation with moisture content ranging from dry to very wet during excavation, handling, loading, transport, and disposal.
 6. Excavated material deemed acceptable for use as Salvaged Material by the Engineer shall be stockpiled, managed, and eventually placed in the work as depicted in the Drawings.
 7. Excavated materials not earmarked for salvage, stockpile or reuse shall be disposed by the Contractor at an off-site location. Off-site removal is the Contractor's responsibility.
 8. Excavated materials suitable for use as Topsoil shall be identified during excavation operations by the Engineer.
 - a. Topsoil will generally be located just beneath the existing surface, but may also be located deeper in the floodplain soils.
 - b. Topsoil shall be salvaged and stockpiled for eventual reuse in the project limits in accordance with WisDOT Standard Specifications, Section 265, Topsoil and Salvaged Topsoil.
 - c. Stockpiles shall be located in a manner that facilitates reuse of the material, including enhancement of material drying.
 9. Do not carry excavations beyond that shown on the Drawings except as directed by the Engineer. No extra compensation will be made to Contractor for excavation beyond the grades shown on the Drawings without prior approval by the Engineer.

3.3 GENERAL REQUIREMENTS

- A. The Owner's Representative may make adjustments to the design grades based on field conditions at the time of construction prior to finish grading.
- B. Tolerance for grading shall be ± 0.2 feet in all areas.

PART 4 - MEASUREMENT AND PAYMENT

Menominee River South Channel Habitat Improvement

4.1 EARTHWORK

- A. Earthwork will not be measured for payment.
- B. Payment will be at the lump sum price, which will include all labor, materials, equipment, tools, and other expenses necessary to complete the work specified for this Item, including stockpiling, transport and management of Common Excavation and Salvaged Material within the project limits.
- C. The Contractor is notified that the estimated volumes to achieve final grades are 114 cubic yards of cut.

END OF SECTION 31 23 00

32

DIVISION 32

EXTERIOR IMPROVEMENTS

SECTION 32 11 23

CRUSHED AGGREGATE BASE COURSE (ROADWAY CONSTRUCTION)

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Included: This section includes constructing a crushed aggregate base for roadways shouldering, curb and gutter, and parking lots.
- B. Aggregates from recycled material may not be used unless required as part of this project.

1.02 REFERENCE STANDARDS

- A. ASTM: American Society for Testing and Materials
- B. AASHTO: American Association of Highway and Transportation Officials
- C. W.D.O.T.: Standard Specifications for Highway and Structure Construction, Latest Edition.

1.03 SUBMITTALS

- A. Test results for aggregate materials supplied for use on this project may be from a source which was approved for a previous project, provided the submitted test results were obtained within 6 months previous to this submittal
 - 1. Source testing report.
- B. Submit two (2) copies of testing data of tests performed by Contractor:
 - 1. Test reports must include location in work where test was taken.
- C. Delivery Tickets
 - 1. Provide delivery tickets daily for each load of crushed aggregate for base course delivered to the work, including:
 - a. Date.
 - b. Tare and net weight.
 - c. Type of material.
- D. Samples
 - 1. Provide material samples needed for required testing.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Aggregates
 - 1. Aggregates shall consist of hard, durable particles of crushed stone or crushed gravel and a filler of natural sand, stone sand or other finely divided mineral matter.
 - a. Remove oversize material by screening or by crushing to required sizes.

- b. Composite material shall be free from organic matter, shale, and lumps or balls of clay and shall conform to the gradation requirements below.
- 2. Liquid limit and plasticity index.
 - a. Aggregate including any blended filler shall have a liquid limit of not more than 25 and a plasticity index of not more than 6.
- 3. Fracture Count
 - a. At least 45% of particles retained on the No. 4 sieve shall have at least one fractured face.
- 4. Soundness
 - a. When the fraction of aggregate retained on the No. 4 sieve is subjected to five cycles of the sodium sulfate soundness test, weighted loss shall not exceed 18% by weight.
- 5. Filler for blending
 - a. Additional mineral filler require to meet gradation requirements or for satisfactory binding of material shall be uniformly blended with base course material at the screening plant.
 - b. Mineral fillers shall be free from agglomerations or lumps and shall contain not more than 15% of material retained on a No. 4 sieve
- 6. Moisture content: Shall not exceed 7%.

2.02 GRADATION REQUIREMENTS

A. Gradation No. 1

% By Weight Passing

<u>Sieve Size</u>	<u>Crushed Gravel</u>	<u>Crushed Stone</u>
1½-inch	100	100
1 inch	75-100	--
3/8-inch	40-75	30-65
No. 4	30-60	25-55
No. 10	20-45	15-40
No. 40	10-30	--
No. 200	3-10	2-12

B. Gradation No. 2

% By Weight Passing

<u>Sieve Size</u>	<u>Crushed Gravel</u>	<u>Crushed Stone</u>
1-inch	100	100
3/8-inch	50-85	40-75
No. 4	35-65	25-60
No. 10	25-50	15-45
No. 40	10-30	--
No. 200	3-10	3-12

C. Gradation No. 3

% By Weight Passing

<u>Sieve Size</u>	<u>Crushed Gravel</u>	<u>Crushed Stone</u>
1-inch	100	100
¾- inch	95-100	95-100
3/8-inch	50-90	50-90
No. 4	35-70	35-70
No. 10	20-55	15-55
No. 40	10-35	--

D. Gradation No. 4

% By Weight Passing

<u>Sieve Size</u>	<u>% By Weight Passing</u>
1¼-inch	95 – 100
¾-inch	70 – 93
3/8-inch	45 – 80
No. 4	30 – 63
No. 10	20 – 48
No. 40	8-28
No. 200	2.0 – 12.0

E. Breaker Run Base Course (Light)

<u>Sieve Size</u>	<u>% By Weight Passing</u>
3-inch	90- 100
1½-inch	60 – 85
¾-inch	40 – 65
No. 4	15 – 40
No. 10	10 – 30
No. 40	5 – 20
No. 200	2 – 12

F. Breaker Run Base Course (Heavy)

<u>Sieve Size</u>	<u>% By Weight Passing</u>
4-inch	100
3½-inch	90 – 95
2½-inch	50 – 90
1½-inch	30 – 60
¾-inch	15 – 30
No. 4	0 – 5

PART 3 - EXECUTION

3.01 PREPARATION OF SUBGRADE

- A. Preparation of subgrade for crushed aggregate base course shall be in accordance with requirements of Section 31 23 16.10, Earthwork for Roadway Construction.
- B. Do not place the base course on a subgrade that is soft or spongy or one that is covered by ice or snow.
- C. Do not place base course material on a dry or dusty subgrade when existing condition would cause rapid dissipation of moisture from base course material and hinder or preclude its proper compaction.
1. Apply water to such dry foundations and rework or recompact as necessary.

3.02 AGGREGATE USAGE

- A. Lower Layer Of Roadways and Shoulders: Breaker Run (Light).

B. Top Layer of Roadways and Shoulders: Gradation No. 3.

3.03 CONSTRUCTION METHODS

A. Place crushed aggregate base course to the width and thickness shown on plans.

1. Maximum compacted thickness of any one layer shall not exceed six (6) inches.
 - a. When multiple courses are required, they shall be composed of approximately equal thicknesses.

B. Spreading Base Material

1. The work shall proceed so that the hauling equipment will travel over the previously placed material.
2. No hauling shall be permitted on the subgrade.
3. Route hauling equipment as uniformly as possible over all portions of the previously constructed layers of the base course.

C. Compaction

1. After a layer of course has been placed and spread to the required thickness, width, and contour, it shall be compacted.
2. If the material is deficient in moisture content, add moisture during compaction operations by means of appropriate equipment.
3. Each layer or course of subbase or base placed shall be compacted to a minimum of 95% Modified Proctor.
4. Areas where proper compaction cannot be obtained due to segregation of materials, excess fines or other deficiencies shall be reworked or the material be removed and replaced with material that will yield the desired results.
5. Maintain line and grade during compaction operations.

D. Maintenance

1. The Contractor shall be responsible for and maintain the base course until surface paving is complete.

E. Dust Control

1. Contractor shall maintain dust control until paving is completed.
2. Dust control shall be by the application of water or an approved dust control material.

3.04 SHOULDERING

A. Construct shoulders with base course material and conform with the elevation and section shown on the plans.

B. When the finish course of bituminous paving is not placed immediately after the binder course, shouldering shall be placed flush with the surface of the binder.

C. The remainder of the shouldering shall be completed after the finish bituminous course is placed.

D. Shouldering equipment shall be capable of placing shouldering material without marring or damaging pavement or appurtenance.

E. Littering of the pavement with base material shall be corrected by brooming.

3.05 TESTING

- A. Contractor shall secure the services of an established independent laboratory for soil testing services as follows:
1. Source testing
 - a. Sampling: AASHTO T2
 - b. Sieve Analysis
 - 1) AASHTO T27 for aggregates including fracture count
 - 2) AASHTO T37 for mineral fillers
 - c. Liquid test: AASHTO T89
 - d. Plasticity index: AASHTO T90
 - e. Soundness: AASHTO T104 using sodium sulfate
 - f. Standard Proctor: ASTM D698
 2. Installation testing
 - a. The basecourse condition and elevation shall be checked by the Engineer prior to placement of subsequent basecourse or bituminous material. The basecourse will be proof rolled using a tandem axle dump truck fully loaded with basecourse material to the maximum legal weight limit.
- B. When the testing results show that the work is of an acceptable nature, the acceptance of the work shall not relieve the Contractor from making corrections to the tested work during the warranty period.

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT

- A. Work under this section shall be incidental to the project or paid for as shown in the bid schedule.
- B. Base Course
1. Measurement shall be by the square yard in place.
 2. Payment shall include:
 - a. Labor, material and equipment.
 - b. Hauling and placing.
 - c. Compacting and grading.
 - d. Dust control.
 - e. Adjusting manholes and valves.
 - f. Testing.
- C. Shouldering
1. Shall be incidental.

- END OF SECTION -

SECTION 32 12 16

ASPHALTIC CONCRETE PAVEMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This section includes the material requirements for aggregates and bituminous materials for utilization in binder and surface course pavements for light and medium duty streets and parking lots.

1.02 REFERENCE STANDARDS

- A. American Society of Testing and Materials (ASTM)
- B. American Association of State Highway Officials (AASHTO)
- C. Federal Aviation Agency (FAA)
- D. Asphalt Institute (AI)
- E. Wisconsin Department of Transportation Standard Specifications for Highway and Structure Construction. (Latest Edition).

1.03 SUBMITTALS

- A. Submit two (2) copies of test results of quality control testing including:
 - 1. Materials source testing.
 - 2. Asphaltic concrete pavement installation testing.
 - 3. Additional testing.
- B. Submit one (1) copy of daily weight tickets showing the net weight for each truckload of pavement delivered and placed.
- C. The quantity of asphaltic concrete pavement placed shall be confirmed using theoretical tonnage. Tonnage shall be based on the square yards placed at 110# per square yard per inch. Tonnage shall not deviate greater than 5 percent from the theoretical tonnage.

1.04 STORAGE AND DELIVERY

- A. Stockpile aggregate to prevent excessive segregation.
- B. In-truck storage period for hot mix shall not exceed 2 hours.
- C. Store asphalt cement in tanks free of foreign substances and caked asphalt.

PART 2 - PRODUCTS

2.01 AGGREGATE

- A. Aggregate shall conform to Wis. DOT Standard Specifications for Highway and Structures Construction, (latest edition).

2.02 MINERAL FILLER

- A. Mineral filler shall conform to Wis. DOT Standard Specifications for Highway and Structures Construction, (latest edition).

2.03 ASPHALT MATERIALS

- A. Conform to Wis. DOT Standard Specifications for Highway and Structures Construction, (latest edition).

2.04 TACK COAT

- A. Tack coat shall conform to Wis. DOT Standard Specifications for Highway and Structures Construction,(latest edition).

2.05 ASPHALT MIX

- A. Asphaltic mix shall be Type E-1, pg 58-28 and conform to Wis. DOT Standard Specifications for Highway and Structures Construction, (latest edition).

2.06 EQUIPMENT

- A. All equipment shall conform to Wis. DOT Standard Specifications for Highway and Structures Construction, (latest edition).
- B. Trucks shall be covered and insulated adequately to provide a mix temperature of 250° F (121°C) at point of delivery.

PART 3 - EXECUTION

3.01 EQUIPMENT REQUIREMENTS

- A. Mixing plants shall conform to AASHTO M156.
- B. Bituminous paver shall have following features.
 1. Hopper distribution system.
 2. Screed assembly shall be capable of heating and adjusting to slope and elevation.
 3. Paver shall produce an even finished surface with a smooth, dense texture.
- C. Roller shall be in accordance to following:
 1. Designed specifically for bituminous compaction.
 2. Vibratory with adjustable frequency and amplitude.
 3. Compression: 250 pounds per inch of width of drive rollers.
 4. Provide device to moisture, and clean rollers
- D. Trucks shall be covered and insulated adequately to provide a mix temperature of 250° F (121°C) at point of delivery.

3.02 SURFACE PREPARATION

- A. Prepare compacted foundation in accordance with Section 32 11 23, Crushed Aggregate Base Course.
- B. Remove loose concrete and protruding joint material.
- C. Clean surface joints.
- D. Control weeds with herbicide in accordance with state and local regulations.
- E. Adjust sanitary and storm manholes to finished pavement grade.
- F. Adjust valve boxes to finished pavement grade
- G. Fill potholes and depressions with a leveling course of asphaltic mix and compact.
- H. Tack coat shall be applied to all new bituminous surfaces which have been driven on, became contaminated, or was placed greater than 12 hours prior to subsequent pavement courses.
- I. Remove all joint sealant prior to placement of any new bituminous pavement material.

3.03 BITUMINOUS PAVEMENT PLACEMENT

- A. Place to thickness, grade and section shown on plan.
 - 1. When thickness is not shown on plans, pavement thickness shall be 3 inches compacted. (Type E-1)
 - a. 1¾-inch binder course, Gradation Nominal aggregate size ¾-inch (19 mm).
 - b. 1¼-inch surface course, Gradation Nominal aggregate size ⅜-inch (9.5 mm).
 - 2. Course thickness shall be achieved by placing single or multiple layers of bituminous to the following tolerances:
 - a. Minimum thickness: three times the largest aggregate when compacted.
 - b. Maximum thickness: 2¼ inches compacted
- B. Hand Spreading
 - 1. Will be permitted only in areas inaccessible to finishing machines.
 - 2. Place by means of a shovel and shape with rake or lute.
 - 3. Do not rake over machine spread surfaces.
- C. Compaction
 - 1. Roll as soon as mixture will support roller without displacing pavement mat.
 - a. Initial pass shall be with drive roller toward paver.
 - b. Start at lower unsupported edge and progress toward other edge.
 - c. Overlap successive trips.
 - 2. Subsequent strips laid; start adjacent to previous laid strip and continue to opposite edge.
 - 3. Roll until:
 - a. Roller marks are minimized or eliminated.
 - b. Surface is of uniform density.
 - c. Required density is obtained.

- D. Bonding Joints
 - 1. Clean all joints.
 - 2. Joining new bituminous to existing bituminous:
 - a. Saw cut all joints.
 - 3. Joining new bituminous to new bituminous
 - a. Saw cut end joint if it has been over 12 hours since the other "new" pavement had been placed.
 - b. Tack coat all cold surfaces.
- E. Bonding Surfaces
 - 1. Tack all existing and new bituminous surfaces.
 - 2. Tack all abutting concrete or asphalt surfaces.
 - 3. Application rate shall be one-twentieth(1/20) gallon per square yard minimum, and one-fourteenth (1/14) gallon per square yard maximum.

3.04 PAVING RESTRICTIONS

- A. Do not place bituminous pavement when following conditions exist.
 - 1. Unstable or frozen base.
 - 2. During rain or snow.
 - 3. When air temperature is less than 35°F (1.50°C).

3.05 SURFACE REQUIREMENTS

- A. Surface shall be dense and to a true plane of 1/8 inch in 10 feet.
- B. Bituminous shall be replaced when the following conditions exist.
 - 1. Pavement has raveling, rutting, or will not set up to receive traffic.
 - 2. At a minimum replacement shall be a full lane width, patching will not be permitted.
 - 3. All joints will be saw cut and tack coated.

3.06 SHOULDERING

- A. Shoulder all portions of the street where curb and gutter is not required.
- B. Unless shown otherwise, shoulders shall be three (3) feet wide.
- C. If the finish bituminous course is not placed immediately after the binder course, shouldering shall be completed in multiple lifts, one lift after each course.
- D. Conform with Section 32 11 23, Base Course.

3.07 SPECIFIED DENSITY PROCEDURE (TYPE E-1)

- A. Laboratory density is that which is obtained when samples of the mix from the applicable course is compacted and its weight determined in accordance with W.D.O.T. Test Method 1559, "Superpave Method of Mix Design" for each pavement mix.
- B. Ordinary Compaction Method
 - 1. Course
 - a. Leveling

- b. Wedging
- c. Patching
- 2. Degree of Compaction
 - a. Compact to the degree that no further appreciable consolidation is evidenced under the action of the compaction equipment

C. Laboratory Method

- 1. Degree of Compaction
 - a. Binder course on existing paved surface: 89.5% of laboratory density.
 - b. Binder course on crushed aggregate base course: 89.5% of laboratory density.
 - c. Surface course: 91.5% of laboratory density.
- 2. Acceptance Testing
 - a. Perform one (1) density test per 350 square yards per lift or every 100 lineal feet of roadway in accordance with ASTM D2950.
- 3. Laboratory density is that which is obtained when samples of the mix from the applicable course is compacted and its weight determined in accordance with ASTM D1559.

- D. The Contractor shall secure the services of an established independent testing laboratory to perform all testing; or the contractor may perform testing with their own WisDOT certified personnel with Engineer approval.

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT

- A. Work under this section shall be incidental to the project or paid for as shown in the bid schedule.

B. Measurement and Payment

- 1. Square yards shall be computed by measuring the area of bituminous pavement compacted in place.
- 2. Payment will be made by the square yard compacted in place.
- 3. Payment shall include:
 - a. Hauling and placing
 - b. Compaction
 - c. Tack
 - d. Site restoration
 - e. Adjusting manholes and valves
 - f. Testing

C. Density Deficiency

- 1. Density shall be measured by averaging the nuclear density test required for a day's production placed.
- 2. Should the average density fall below specified densities, the Owner may accept the deficient work in accordance with the terms of Section 00 72 00, Standard General Conditions of the Construction Contract. Payment will be made at an adjusted price as specified in the following table:

PERCENT DENSITY BELOW SPECIFIED MINIMUM	PAYMENT FACTOR (PERCENT OF CONTRACT PRICE)
From 0.5 to 1.0 inclusive	98
From 1.1 to 1.5 inclusive	95
From 1.6 to 2.0 inclusive	91
From 2.1 to 2.5 inclusive	85
From 2.6 to 3.0 inclusive	70

3. If the specified density deficiency is greater than 3%, the material shall be removed and replaced with a mixture to the specified density and, when acceptably replaced, will be paid for at the contract unit price.

D. Thickness Deficiency

1. Thickness deficiency shall be verified using theoretical tonnage. (Theoretical tonnage shall be computed as follows; 110 pounds per inch per square yard). If the in place tonnage is greater than 10 percent below the theoretical tonnage the following shall apply.
 - a. Thickness shall be measured by averaging four (4) samples taken after the final course has been compacted in place.
 - b. The unit price per square yard will be computed proportional to the average thickness of four cores as follows:

Deficiency in Thickness Determined By:	
<u>Cores in Inches</u>	<u>Percent of Unit Price Allowed</u>
0.00 to 0.125	100%
0.126 to 0.25	85%
0.251 to 0.375	70%
0.376 to 0.50	55%

- c. If the thickness deficiency is greater than 0.50 inches, no payment will be made until the Contractor corrects the deficiency with additional courses (minimum 1¼ inches compacted per course).

- END OF SECTION -

SECTION 32 72 00

WETLANDS RESTORATION - BIRD HABITAT ENHANCEMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. This Section covers the work necessary for watercourse habitat enhancement, including bird house, bird nesting platform, and bat house construction and installation, as specified and shown on the Plans, for watercourse habitat enhancement.

1.2 DEFINITIONS

- A. BIRD HABITAT ENHANCEMENT
 - 1. Furnish and install bird houses, bird nesting platforms, and bat houses for the purpose of enhancing bird habitat.

1.3 RELATED SECTIONS

- A. Section 31 38 02, Large Wood
- B. Section 31 23 00, Earthwork
- C. Section 31 32 02, Surface Fabric Treatment

1.4 REFERENCE STANDARDS

PART 2 - PRODUCTS

2.1 BIRD HOUSES, BIRD NESTING PLATFORMS AND BAT HOUSES

- A. Materials for the construction and installation of bird houses, bird nesting platforms and bat houses shall be as designated on the Plans.

2.2 BIRD HOUSES

- A. Tree Swallow/Eastern Bluebird
 - 2. Nesting box shall be mounted 5-6 feet above the ground on 3/4-inch Rigid Metal Conduit (RMC) made of stainless steel. The pole shall be \geq 10 feet in length.
 - 3. Stainless steel 3/4-inch conduit 2-hole straps or equal shall be used.
 - 4. Approved suppliers if chosen to purchase premade structure:
 - a. Midwest Prairies
10651 N. Charley Bluff Rd
Milton, WI 53563
608-868-3169
 - b. Fred Craig
608 526-2221
fm266@centurytel.net

B. Wood Duck

1. 4-inch of wood shavings or a mix of shavings and wood chips shall be placed in the nest box
2. Nesting box shall be mounted 6 feet above the ground on a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be ≥ 10 feet in length.
3. A standard mounting bracket such as the one sold by Lone Star Woodcraft or equal may be utilized; however, the bracket shall be made flush with the box edges when complete. Otherwise, the contractor shall follow instructions at the following website: <http://www.batcon.org/pdfs/bathouses/InstallingYourBatHouseWoodenPostSteel%20Pole.pdf>. Although the instructions are for the installation of a bat house, the procedure for installing a house on a steel pole can be applied.
4. If contractor prefers to purchase the houses, wooden houses can be purchased from the following groups or companies:
 - a. Midwest Prairies
10651 N. Charley Bluff Rd
Milton, WI 53563
608-868-3169
 - b. Minnesota Waterfowl Association
907 First St. North
Hopkins, MN 55343
952-767-0320
<http://www.mnwaterfowl.com/page/show/339127-minnesota-waterfowl-association>

C. Great Blue Heron

1. Pole used to mount nests shall be 35-40 foot cedar pole with a bottom diameter of 8-10-inch. The pole shall be installed be ≥ 10 feet into the ground to ensure stability.
2. Three nesting platforms shall be attached to each pole. The first platform shall be constructed two feet (2') from the top. The platforms shall be spaced 4 feet apart and staggered at 180-degree intervals.
3. A handful of sticks (½-inch to ¾-inch in diameter) shall be wired to the nesting platform to encourage nesting

D. Osprey

1. Pole used to mount nest shall be a 30-foot cedar pole with a bottom diameter of 8-10-inch. The pole shall be installed 6-8 feet into the ground to ensure stability.
2. A handful of sticks (½-inch to ¾-inch in diameter) shall be wired to the nesting platform to encourage nesting

2.3 BAT HOUSES

A. All lumber used in construction of this house shall be cedar.

1. If contractor prefers to purchase the houses, a certified Bat Conservation International (BCI) 3 or 4 chamber wooden house can be purchased from the following companies:
 - a. Best Bat Houses
Oregon, WI 53575
(608) 513-9497
sales@bestbathouses.com
<http://www.bestbathouses.com/>
 - b. Lone Star Woodcraft
210-885-0811
info@lonestarwoodcraft.com
<http://www.lonestarwoodcraft.com/bathouse.html>
 - c. Habitat for Bats
2258 Highway 16 E
Jackson, GA 30233

770-500-2851

<http://www.habitatforbats.org/estore/>

- d. P&S Country Crafts, LLC
1441 Peaked Hill Road
Bristol, NH 03222
(603) 744-2265
<http://www.pscountrycrafts.com/shop/products.php?cat=8>

- B. Constructed houses shall be secured to buildings using two 2-inch stainless steel screws.
 - 1. Purchased houses shall be installed per manufacturer's instructions or those found at <http://www.batcon.org/pdfs/bathouses/InstallingYourBatHousebuilding.pdf>
 - 2. Constructed and purchased houses not placed on buildings shall be secured to a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be > 16 feet in length. Pole installation can also be found at the above web address. Two houses shall be placed back-to-back on each pole; therefore, a double mounting bracket shall be utilized. Brackets can be purchased from Lone Star Woodcraft.

PART 3 - EXECUTION

3.1 INSTALLATION OF BIRD HOUSES, BIRD NESTING PLATFORMS AND BAT HOUSES

- A. Construction and installation of bird houses, bird nesting platforms and bat houses shall be as provided in the Plans.
- B. Poles for bird nesting platforms shall be embedded a minimum of 10 feet in the ground, unless otherwise approved by the Engineer. Following installation, the Contractor shall protect all bird houses, bird nesting platforms and bat houses from damage due to construction activities.

3.2 BIRD HOUSES

- A. Once constructed or purchased, the following instructions shall be followed for placement and installation:
 - 1. Tree Swallow/Eastern Bluebird
 - a. Entrance hole shall be placed so it is facing east
 - b. Nesting box shall be mounted 5-6 feet above the ground on 3/4-inch Rigid Metal Conduit (RMC) made of stainless steel. The pole shall be \geq 10 feet in length.
 - c. Instructions for mounting the box on the RMC are as follows:
 - d. Remove and recycle 2 feet of a standard 10-foot section of 3/4-inch RMC
 - e. Using a post pounder, drive 2 feet of the RMC into the ground so 5-6 feet is left above ground. If soft soils are encountered, longer poles will be necessary so they can be driven far enough into the ground to provide support.
 - f. Loosely attach stainless steel 3/4-inch conduit 2-hole straps to the back of the nesting box with 3/4-inch stainless steel deck screws. The top strap shall be attached just below the roof while the bottom strap shall be attached even with the floor.
 - g. Slip straps on the nesting box onto the RMC, adjust to the recommended height listed above and tighten the screws to secure the box to the RMC.
 - 2. Wood Duck
 - a. 4-inch of wood shavings or a mix of shavings and wood chips shall be placed in the nest box
 - b. Entrance hole shall be placed so it is facing the water.
 - c. Nesting box shall be mounted 6 feet above the ground on a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be \geq 10 feet in length.

- d. Using a post pounder, drive 2 feet of the steel post into the ground so 6 feet is left above ground. If soft soils are encountered, longer poles will be necessary so they can be driven far enough into the ground to provide support.
 - e. A standard mounting bracket such as the one sold by Lone Star Woodcraft or equal may be utilized; however, the bracket shall be made flush with the box edges when complete. Otherwise, the contractor shall follow instructions at the following website: <http://www.batcon.org/pdfs/bathouses/InstallingYourBatHouseWoodenPostSteel%20Pole.pdf>. Although the instructions are for the installation of a bat house, the procedure for installing a house on a steel pole can be applied.
 - f. Mounting shall allow a slight (1/8-inch) forward lean to allow easier duckling exist
 - g. Nest boxes may be mounted to a cedar post rather than a stainless steel pole; however, a predator guard must be installed to prevent feral cat and raccoon predation.
 - h. Although nesting season will have begun, the nesting boxes shall be installed in early June as they may be utilized by a pair of birds raising a second brood during 2015.
3. Great Blue Heron
- a. Pole used to mount nests shall be 35-40 foot cedar pole with a bottom diameter of 8-10-inch. The pole shall be installed 10 feet into the ground to ensure stability.
 - b. Three nesting platforms shall be attached to each pole. The first platform shall be constructed two feet (2') from the top. The platforms shall be spaced 4 feet apart and staggered at 180-degree intervals.
 - c. A handful of sticks (1/2-inch to 3/4-inch in diameter) shall be wired to the nesting platform to encourage nesting.
4. Osprey
- a. Pole used to mount nest shall be 35-40 foot cedar pole with a bottom diameter of 8-10-inch. The pole shall be installed 10 feet into the ground to ensure stability.
 - b. A handful of sticks (1/2-inch to 3/4-inch in diameter) shall be wired to the nesting platform to encourage nesting

3.3 BAT HOUSES

- A. Houses shall be placed so they are:
- 1. 12-20 feet above the ground on either a building or pole with predator guard. Buildings with metal siding shall be avoided.
 - 2. Facing East or South.
 - 3. Receiving a minimum of 6-8 hours of sun exposure per day.
 - 4. Protected from the wind.
 - 5. Greater than 25 feet from a potential predator perch such as tree limbs or utility lines.
 - 6. Not near bright lights such as street, security or porch lighting.
 - 7. Situated away from windows and doors.
- B. Houses shall be painted black.
- C. Constructed houses shall be secured to buildings using two 2-inch stainless steel screws. Screws shall be centered and installed in the exposed board above the roof and below the chamber openings.
- D. Constructed and purchased houses not placed on buildings shall be secured to a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be > 16 feet in length. Pole installation can also be found at the above web address. Two houses shall be placed back-to-back on each pole; therefore, a double mounting bracket shall be utilized. Brackets can be purchased from Lone Star Woodcraft.

3.4 MEASUREMENT AND PAYMENT

A. Work under this section shall be paid for as indicated in Section 00 41 13, Bid Form.

PART 4 - MEASUREMENT AND PAYMENT

- 4.1 Constructed and installed Bird houses, bird nesting platforms, and bat houses will be counted following successful installation to establish the number of each item completed.
- 4.2 Payment for the work specified in this Section will be made at the contract unit prices and shall be full compensation for all labor, materials, equipment, tools, and expenses required to complete the work for this Item.

END OF SECTION

SECTION 32 90 10 NATIVE LANDSCAPING

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes requirements for the following:
1. Site Preparation.
 2. Seeding.
 3. Planting.
 4. Maintenance.
 5. Warranty.

1.02 REFERENCES

- A. Native material references:
1. Black, M.R. and E.J. Judziewicz. 2009. *Wildflowers of Wisconsin and the Great Lakes Region*. University of Wisconsin Press, Madison, WI.
 2. Curtis, J. 1959. *Vegetation of Wisconsin*. University of Wisconsin Press, Madison, WI.
 3. Fassett, N.C. 1975. *A Manual of Aquatic Plants*. University of Wisconsin Press, Madison, WI.
 4. Fassett, N.C. 1976. *Spring Flora of Wisconsin*. University of Wisconsin Press, Madison, WI.
 5. Hip, A.L. 2008. *Field Guide to Wisconsin Sedges – An Introduction to the Genus Carex (Cyperaceae)*. University of Wisconsin Press, Madison, WI.
 6. Kelsey, H.P, and W.A. Dayton. *Standardized Plant Names*. American Joint Committee on Horticulture Nomenclature (current edition).
- B. "State Specifications:" State of Wisconsin Department of Transportation, "Standard Specifications for Highway and Structure Construction – Sections 627,630 & 632," current edition, including any subsequent Supplemental Specifications.
- C. Wisconsin Statutes and Wisconsin Administrative Code - Chapters ATCP 20 and 29.
- D. American Association of Nurserymen, Inc. (AAN) Standard: American Standard for Nursery Stock (ANSI Z60.1).
- E. Standard Methods of the Association of Official Agricultural Chemists.

1.03 SUBMITTALS

- A. Submit the following to the OWNER and ENGINEER prior to installation in accordance with Section 01 32 19, Submittals:
1. Information indicating vendor, species botanical and common names, gross weight, seed purity (% PLS), harvest date, and origin. Original nursery packaging for each species must be provided 14 days after seeding activities are completed.
 2. Information indicating vendor, species botanical and common names, and pot size. Plant material shall comply with State of Wisconsin and federal laws with respect to inspection for plant diseases and insect infestation.
 3. Inspection certificates and paperwork indicating the licensed nursery, species botanical and common names, and material size within 14 days of shipment.
 4. Sample of erosion blanket and staples along with paperwork regarding their certification properties.
 5. Sample or photo of tree/shrub protector
 6. Chemical Labels and Herbicide Application Record(s) within 30 days after application.
 7. Photograph or detailed design of carp and goose fencing system.
- B. Maintenance Plan:

1. CONTRACTOR shall prepare a plan outlining native vegetation maintenance activities to be conducted by the CONTRACTOR during the warranty period. The plan shall include general procedures (i.e., fertilizing, watering, pruning); noxious and invasive species control (i.e. reed canary grass, purple loosestrife, phragmites, garlic mustard, etc.); as well as native vegetation enhancement procedures. The plan shall be in accordance with industry standards.
2. The Maintenance Plan shall be submitted and approved by the ENGINEER prior to conducting landscape installation.

1.04 QUALITY ASSURANCE

A. Qualifications:

1. **CONTRACTOR or Subcontractor shall be a company specializing in native landscaping installation.**
2. **Perform planting by personnel familiar with accepted native landscape planting procedures. Qualified foreman, representing CONTRACTOR or Subcontractor, shall be on-site during planting procedures. The individual shall be an ecologist with at least 5 years of native plant installation experience.**
3. **Submit qualifications requested on the qualification form with the bid. OWNER has sole authority to approve or disapprove native landscape contractor and/or subcontractor at OWNER's sole discretion.**

B. Ability to Deliver:

1. Investigate sources of supply and confirm they can supply plants specified on plant list in sizes, variety, and quantity noted and specified before submitting bid. Failure to take this precaution will not relieve responsibility for furnishing and installing plant material in accordance with Contract requirements.
2. Substitutions may be permitted only upon submission of written proof that specified plant is not obtainable locally. Such substitution may be made upon written authorization by qualified botanist. Adjustments will be made at no additional cost to OWNER.
3. Provide seed and plant materials discussed below in quantity and size designated.

C. Inspection:

1. OWNER and ENGINEER may inspect plant material at nursery. Such inspection shall be in addition to inspection at job site.
2. Upon delivery and before seeding and/or planting, OWNER and ENGINEER may inspect seed packages and plants.
3. Inspection and approval is for quality, size, and variety only, and in no way impairs right of rejection for failure to meet other requirements during progress of Work.
4. CONTRACTOR shall be present during required inspections.

D. Source Quality Control.

1. Certification: Landscape materials shall be from stock inspected and certified by authorized governmental agencies. Material shall comply with governmental regulations prevailing at supply source and project.
2. Plant material shall comply with State of Wisconsin and federal laws with respect to inspection for plant diseases and insect infestation.
3. Size and grading standards of plant materials shall be in accordance with American Association of Nurserymen, Inc. (AAN) Standard: American Standard for Nursery Stock (ANSI Z60.1).

E. VHS and INVASIVE SPECIES

1. To the extent practicable, equipment and gear used on infested waters should not be used on other non-infested waters.
2. All equipment utilized for the project including but not limited to tracked equipment, barges, boats, silt/turbidity curtains, hoses and pumps shall be decontaminated for invasive and exotic viruses and species prior to and after use. The following steps shall be taken every time equipment is moved to avoid transporting invasive and exotic viruses and species:
 - a. Inspect and remove terrestrial and aquatic plants, seeds, animals and mud from equipment.
 - b. Drain all water from equipment that comes in contact with infested waters.
 - c. Dispose of aquatic plants and animals in the trash. Never release or transfer aquatic plants, animals or water from one water body to another.

- d. Wash equipment with hot (>104 degrees F) and/or high pressure water **OR** allow your equipment to dry thoroughly for 5 days.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Preparation for Delivery:

- 1. Seed:
 - a. Pack seeds for delivery in suitable bags in accordance with standard commercial practice.
 - b. Tag or label each bag as required by laws of State of Wisconsin and Federal Seed Act. Vendor's name shall show on or be attached to each bag together with statement signed by vendor indicating following:
 - 1) Kind of seed contained.
 - 2) Percentage of purity and germination for native grass/sedge mix.
 - 3) Percentage of hard seed, if any.
 - 4) Statement conforming to laws of State of Wisconsin herein before mentioned showing percentage of weed seeds, if any.
- 2. Potted or Container Plants:
 - a. Provide container to hold rootstock protecting root mass and structure during delivery and handling.
 - b. Roots shall be developed and free from root rot.
 - c. Roots shall be kept cool and moist and out of sun and wind.
 - d. Trees and shrubs shall not be pruned prior to shipping.
 - e. Follow nursery guidelines.
 - f. Bare root plants are unacceptable unless plants are being installed during normal dormant periods (i.e., spring and fall). Where bare root stock is used, it must be delivered and handled in such a way that roots are never allowed to dry out.
- 3. Bare-root Plants:
 - a. Dig and prepare for shipment in manner that will not damage roots, branches, shape, and future development of plant.
 - b. Ensure roots are moistened and adequately covered to prevent drying. Cover root with thick coating of mud by puddling or wrap in wet straw, moss or other suitable packing material immediately after they are dug for protection until delivery and installation.
 - c. Pruning shall not occur prior to shipping.
- 4. Live Stakes:
 - a. All live stakes shall be handled in a manner that will prevent injuries to the bark and exposed ends.
 - b. Stakes shall be harvested during the dormant season prior to installation, which is defined as, "The period when woody vegetation has set buds and photosynthesis in the leaves has ceased."
 - c. Live Stakes shall be refrigerated at a temperature between 31 – 40 degrees Fahrenheit with 60-70% humidity prior to being delivered to the site unless they are harvested from a nearby site and installed within 2-3 days. Stakes shall be inspected regularly for issues such as rotting and drying.

B. Delivery:

- 1. Schedule shipping to minimize on-site storage of materials.
- 2. Notify ENGINEER 48 hours before delivery of seed and/or plant material.
- 3. Each shipment shall be accompanied by paperwork showing sizes and varieties included.
- 4. Failure to notify ENGINEER in advance, in order to arrange proper scheduling, may result in loss of time or removal of plant material not installed as specified.
- 5. Seed: Each species shall be delivered to the project site in the nursery's original, sealed packaging and labeled in accordance with Wisconsin State Law and the Federal Seed Act.
- 6. Protect seed against weather-related damage or other damages occurring during transit. Remove from site, seed that has become wet, moldy, or otherwise damaged and replace without extra cost to OWNER.
- 7. Plant Material: Take precautions in accordance with best trade practices and nursery recommendations to ensure arrival of material at Project Site in good condition and without injury. Cover plants to prevent freezing, drying, transit injury, or other exposure. During shipment, plants shall not be bent, stacked, or bound in manner that damages or destroys natural shape. Soil moisture shall be checked and material watered, if necessary.

8. Trees with damaged, crooked leader or multiple leaders, unless specifically specified, will be rejected. Trees and shrubs with abrasion of bark, sun scalds, disfiguring knots or fresh cuts of limbs over 1-1/4 in. which have not completely calloused, will be rejected.
9. Live Stakes that are crooked or have damaged bark will be rejected.

C. Temporary Storage:

1. Storage of Plant Material:
 - a. Set plants that are not to be planted within 4 hours, on ground and heel in with peat, soil, mulch or other approved media.
 - b. Protect roots of plant material from drying or other possible injury.
 - c. Water plants as necessary until planted.
 - d. Plants shall not remain unplanted for longer than 3 days.
 - e. Maintain bare-root plants in cold storage at approximately 31 – 40 degrees Fahrenheit prior to being delivered to Site.
 - f. Live Stakes purchased from a nursery or constructed by the CONTRACTOR shall be installed within 2 days of delivery or cutting. During this time, stakes shall be kept out of direct sunlight and protected from the wind. The stakes can be stored in water to prevent them from drying out; in fact, soaking the stakes in cool/cold water for 24-48 hours prior to installation with a small amount of rooting hormone will improve survivability. Stakes shall be inspected regularly for issues such as rotting and drying.
 - g. Live Stakes that are to be shipped and/or harvested by the CONTRACTOR and stored for a longer period of time must discuss storage conditions with the ENGINEER.
2. Keep seed cool, dry, and protected against weather-related damage or other damages occurring during storage so their effectiveness will not be impaired. Do not store in direct contact with ground. Replace seed that has become wet, moldy, or otherwise damaged at CONTRACTOR'S expense.
3. Store fertilizer, humus, and spray materials in weatherproof storage areas and in such manner, their effectiveness will not be impaired.

PART 2 PRODUCTS

2.01 PLANT SPECIMENS

A. General:

1. Plant material shall be nursery grown or harvested unless otherwise specified or approved in writing by ENGINEER.
2. Unless specifically noted otherwise, plant material shall be of selected specimen quality, have normal habit of growth, and be sound, healthy, vigorous plants with well-developed root systems. Plants shall be free of disease, insect pests, their eggs or larvae, and injuries.
3. Plant/Seed information:
 - a. See Paragraphs 2.01 G. & H. for seed mix and plant quantity requirements.
 - b. It is the CONTRACTOR'S responsibility to ensure plants and/or seed are true to species and variety and conform to measurement specified in Paragraphs 2.01 G. & H., except plants larger than specified may be used if approved by ENGINEER. Use of such plants shall not result in increased Contract Price.
 - c. Where plants larger than specified have been submitted in writing for approval and approved in writing by ENGINEER, CONTRACTOR shall assume responsibility of guarantee for plant in size as planted.
 - d. OWNER & ENGINEER must approve any substitutions.
4. Tree/Shrub/Live Stake information:
 - a. See Paragraph 2.01 I. for tree, shrub, live stakes size and quantity requirements. Provide source of plant material at least 4 weeks prior to digging or harvesting.
 - b. Plants shall be freshly dug or container grown material. Plants placed in cold storage for an extended period (>1 month) of time are not acceptable unless the CONTRACTOR makes such a request in writing and the materials are inspected and approved.
 - c. Measure plants when branches are in normal position. Height and spread refer to plant's main body and not from branch tip to branch tip.
 - d. If range of size is given, no plant or stake shall be less than minimum size and not less than 50% of plants shall be as large as upper half of range specified.

- e. Measurements specified are minimum size acceptable and are measurements after pruning, where pruning is required. Plants meeting measurements specified, but not producing normal balance between height and spread, will be rejected.

B. Cover Crop

- 1. Cover Crop Seed mix for all restored areas shall be as follows:

Species	% Minimum Purity	% Minimum Germination
Annual Oats	98	90
Winter Wheat	95	90
Barnyard Grass (<i>Echinochloa crus-galli</i>)	95	90

- 2. Seeding a cover crop by itself between April 15th & August 15th shall be conducted using Annual Oats at a rate of 120 lbs/acre.
- 3. Seeding a cover crop by itself between August 15th & November 30th shall be conducted using Winter Wheat at a rate of 90 lbs/acre.
- 4. Native seeding conducted between April 15th & June 15th shall include a cover crop of Annual Oats at a rate of 20 lbs/acre.
- 5. Native seeding conducted between October 15th & November 30th shall include a cover crop of Winter Wheat at a rate of 10 lbs/acre and Annual Oats at a rate of 20 lbs/acre.
- 6. Native wetland seeding shall also include a cover crop of Barnyard Grass at a rate of 1 lb/acre.

C. Native Seed

- 1. Seed stock shall be wild ecotype indigenous to Wisconsin or the first tier counties in those states bordering Wisconsin or have natural origins within a preferred 100-mile radius and if needed, a 250-mile radius of the intended planting site.
- 2. Grasses classified as "Agricultural Grasses" shall be PLS as specified. Other seed shall be "clean" according to high quality industry standards.
- 3. Seed shall not be more than one year old at time of seeding.
- 4. Legumes shall be inoculated with proper rhizobia immediately prior to planting (six hours or less).

D. Pot/Container Grown Plants

- 1. Wetland live plant seed stock shall be wild ecotype indigenous to Wisconsin or have natural origins within a preferred 100-mile radius and if needed, a 250-mile radius of the intended planting site. Plugs shall not be less than 2.5 x 2.5 square in. size with a depth of 3.5 in., unless bare root or smaller material is the only stock available,
- 2. Tree and shrub seed stock shall be wild ecotype indigenous to the Upper Midwest and shall have been grown within same hardiness zone as the Project Site or acclimated to conditions of same hardiness zone for a minimum of two growing seasons. Hardiness zones shall conform to "Zones of Plant Hardiness" as provided by U.S. Department of Agriculture.
- 3. Pot grown plants and select bare-root species shall have heavy fibrous root system, or well-developed tap root, developed by proper horticultural practice including transplanting and root pruning, and shall have grown in container for at least one growing season.
- 4. Root system shall have developed sufficiently long for new fibrous roots to develop so root mass will retain its shape and hold together when removed from container.
- 5. Container shall not strangle or girdle natural growth of plant. Plants, other than groundcovers, over-established in container as evidenced by pot-bound root ends will be rejected.
- 6. Bare root plants are generally unacceptable; however, exceptions may be made for species difficult to secure as potted material such as some submergent aquatic plants and floating-leaved species including water lilies. If bare root material is not specified in Paragraph 2.01 H., the CONTRACTOR must request permission, in writing, to use bare root stock.

E. Bare Root Trees & Shrubs:

- 1. Tree and shrub seed stock shall be wild ecotype indigenous to the Upper Midwest and shall have been grown within same hardiness zone as the Project Site or acclimated to conditions of same hardiness zone for a minimum of two growing seasons. Hardiness zones shall conform to "Zones of Plant Hardiness" as provided by U.S. Department of Agriculture.

2. Root Spread shall be:

Height of Plant	Minimum Spread of Root (in.)
18 - 24 in.	10
2 - 3 ft	11
3 - 4 ft	14
4 - 5 ft	16
5 - 6 ft	18
6 - 8 ft	20

F. Live Stakes

1. Stakes shall be wild ecotype indigenous to the Upper Midwest and shall have been harvested within same hardiness zone as the Project Site. Hardiness zones shall conform to "Zones of Plant Hardiness" as provided by U.S. Department of Agriculture.
2. Stake dimensions must meet the following:
 - (a) Diameter - ½-inch – 2-inch
 - (b) Length – 18-inch – 24-inch
3. The top of the stake must be cut flush and the butt end cut at a 45-degree angle.
4. All branches on the stake must be removed. They shall be trimmed close to the stem without damaging the stake.
5. Stakes shall be constructed from native species that are healthy, vigorous stock that is straight wood at least one (1) year old.

G. Wetland and Upland Seed Mix Species and Quantities:

Mesic Forest Planting Zone

Species		
Common Name	Scientific Name	Ounces Required Per Acre
<i>Forbs</i>		
Tall Thimbleweed	<i>Anemone virginiana</i>	1.6
Columbine	<i>Aquilegia canadensis</i>	2.9
Large-leaved Aster	<i>Eurybia macrophylla</i>	0.9
Northern Bedstraw	<i>Galium boreale</i>	1.3
Bottle Gentain	<i>Gentiana andrewsii</i>	0.8
Wild Geranium	<i>Geranium maculatum</i>	1.5
Yellow Avens	<i>Geum aleppicum</i>	7.3
White Snakeroot	<i>Eupatorium rugosum</i>	1.5
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	0.3
Sweet Joe-Pye Weed	<i>Eutrochium purpureum</i>	4.3
Saw-tooth Sunflower	<i>Helianthus grosseserratus</i>	1.9
Pale-leaved Sunflower	<i>Helianthus strumosus</i>	3.0
Solomon's Plume	<i>Maianthemum racemosum</i>	4.6
Wood Betony	<i>Pedicularis canadensis</i>	1.0
Jacob's Ladder	<i>Polemonium reptans</i>	1.0
Solomon's Seal	<i>Polygonatum biflorum</i>	4.6
Heart-leaved Aster	<i>Symphyotrichum cordifolius</i>	0.3
Calico Aster	<i>Symphyotrichum lateriflorum</i>	1.2
Purple Meadow Rue	<i>Thalictrum dasycarpum</i>	6.6
Culver's Root	<i>Veronicastrum virginicum</i>	0.9
Golden Alexanders	<i>Zizia aurea</i>	11.6
<i>Grasses/Sedges/Rushes</i>		
Hairy Woodland Brome	<i>Bromus pubescens</i>	25.5
Pennsylvania Sedge	<i>Carex pensylvanica</i>	0.4
Bottlebrush Grass	<i>Elymus hystrix</i>	23.4
Virginia Wild Rye	<i>Elymus virginicus</i>	53.0
Fowl Manna Grass	<i>Glyceria striata</i>	4.0
Dudley's Rush	<i>Juncus dudleyi</i>	0.1
Path Rush	<i>Juncus tenuis</i>	0.3
Leafy Satin Grass	<i>Muhlenbergia mexicana</i>	2.1
Upland Wild Timothy	<i>Muhlenbergia racemosa</i>	3.4
Fowl Bluegrass	<i>Poa palustris</i>	2.4
TOTAL		173.7

Mesic Prairie Planting Zone

Species		
Common Name	Scientific Name	Ounces Required Per Acre
<i>Forbs</i>		
Nodding Onion	<i>Allium cernuum</i>	4.1
Columbine	<i>Aquilegia canadensis</i>	0.8
Common Milkweed	<i>Asclepias syriaca</i>	1.2
Butterfly Weed	<i>Asclepias tuberosa</i>	0.9
Purple Prairie Clover	<i>Dalea purpurea</i>	8.4
Showy Tick Trefoil	<i>Desmodium canadense</i>	0.9
Shooting Star	<i>Dodecatheon meadia</i>	0.8
Pale Purple Coneflower	<i>Echinacea pallida</i>	9.0
Ox-eye	<i>Heliopsis helianthoides</i>	6.2
Round-headed Bushclover	<i>Lespedeza capitata</i>	6.9
Rough Blazingstar	<i>Liatris aspera</i>	4.9
Pale Spiked Lobelia	<i>Lobelia spicata</i>	0.2
Wild Bergamot	<i>Monarda fistulosa</i>	1.8
Common Mountain Mint	<i>Pycnanthemum virginianum</i>	0.4
Yellow Coneflower	<i>Ratibida pinnata</i>	2.6
Black-eyed Susan	<i>Rudbeckia hirta</i>	0.9
Brown -eyed Susan	<i>Rudbeckia triloba</i>	2.8
Compass Plant	<i>Silphium laciniatum</i>	1.2
Prairie Dock	<i>Silphium terebinthinaceum</i>	1.6
Showy Goldenrod	<i>Solidago speciosa</i>	0.6
Smooth Blue Aster	<i>Symphyotrichum laeve</i>	1.0
Calico Aster	<i>Symphyotrichum lateriflorum</i>	0.3
New England Aster	<i>Symphyotrichum novae-angliae</i>	1.0
Common Spiderwort	<i>Tradescantia ohiensis</i>	7.8
Culver's Root	<i>Veronicastrum virginicum</i>	0.1
Golden Alexander	<i>Zizia aurea</i>	7.1
<i>Grasses/Sedges</i>		
Big Bluestem	<i>Andropogon gerardii</i>	7.8
Side Oats Grama	<i>Bouteloua curtipendula</i>	65.3
Sand Bracted Sedge	<i>Carex muehlenbergii</i>	6.5
Canada Wild Rye	<i>Elymus canadensis</i>	60.3
Switch Grass	<i>Panicum virgatum</i>	5.6
Little Bluestem	<i>Schizachyrium scoparium</i>	26.1
Indian Grass	<i>Sorghastrum nutans</i>	19.6
TOTAL		264.7

Northern Sedge Meadow Planting Zone

Species		Ounces Required
Common Name	Scientific Name	Per Acre
<i>Forbs</i>		
Canada Anemone	<i>Anemone canadensis</i>	0.9
Angelica	<i>Angelica atropurpurea</i>	4.7
Marsh Milkweed	<i>Asclepias incarnata</i>	2.7
Nodding Bur Marigold	<i>Bidens cernua</i>	2.6
Common Beggar's Ticks	<i>Bidens frondosa</i>	2.2
Turtlehead	<i>Chelone glabra</i>	0.6
Water Hemlock	<i>Cicuta maculata</i>	0.9
Flat-top Aster	<i>Doellingeria umbellata</i>	1.4
Cinnamon Willow Herb	<i>Epilobium coloratum</i>	0.4
Joe Pye Weed	<i>Eutrochium maculatum</i>	2.1
Boneset	<i>Eupatorium perfoliatum</i>	1.0
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	0.5
Sneezeweed	<i>Helenium autumnale</i>	1.5
Saw-tooth Sunflower	<i>Helianthus grosseserratus</i>	1.0
Spotted Touch-me-not	<i>Impatiens capensis</i>	1.4
Great Blue Lobelia	<i>Lobelia siphilitica</i>	0.5
Water Horehound	<i>Lycopus americanus</i>	0.8
Wild Mint	<i>Mentha arvensis</i>	0.4
Monkey Flower	<i>Mimulus ringens</i>	0.2
Pinkweed	<i>Persicaria pensylvanica</i>	1.1
Obedient Plant	<i>Physotegia virginiana</i>	0.7
Marsh Cinquefoil	<i>Potentilla palustris</i>	0.3
Common Mountain Mint	<i>Pycnanthemum virginianum</i>	0.7
Annual Buttercup	<i>Ranunculus sceleratus</i>	1.5
Wild Golden Glow	<i>Rudbeckia laciniata</i>	3.9
Tall Water Parsnip	<i>Sium suave</i>	0.6
Late Goldenrod	<i>Solidago gigantea</i>	0.3
Swamp Goldenrod	<i>Solidago patula</i>	0.6
Woundwort	<i>Stachys palustris</i>	0.8
Shining Aster	<i>Symphyotrichum firmus</i>	0.4
Panicled Aster	<i>Symphyotrichum lanceolatum</i>	0.7
Swamp Aster	<i>Symphyotrichum puniceum</i>	0.9
Purple Meadow Rue	<i>Thalictrum dasycarpum</i>	2.0
Blue Vervain	<i>Verbena hastata</i>	3.1
Culver's Root	<i>Veronicastrum virginicum</i>	0.3
Golden Alexanders	<i>Zizia aurea</i>	6.6
<i>Grasses/Sedges/Rushes</i>		
Fringed Brome	<i>Bromus ciliatus</i>	3.6
Canada Bluejoint	<i>Calamagrostis canadensis</i>	1.3
Water Sedge	<i>Carex aquatilis</i>	0.6
Crested Oval Sedge	<i>Carex cristatella</i>	1.2
Porcupine Sedge	<i>Carex hystericina</i>	5.2
Common Lake Sedge	<i>Carex lacustris</i>	0.8
Broad-leaved Woolly Sedge	<i>Carex pellita</i>	0.5
Deflexed Bottle-brush Sedge	<i>Carex retrorsa</i>	2.0
Awl-fruited Sedge	<i>Carex stipata</i>	4.6
Tussock sedge	<i>Carex stricta</i>	3.4
Common Yellow Lake Sedge	<i>Carex utriculata</i>	2.7
Walter's Barnyard Grass	<i>Echinochloa walteri</i>	4.6
Great Spike Rush	<i>Eleocharis palustris</i>	0.9
Virginia Wild Rye	<i>Elymus virginicus</i>	21.2
Rattlesnake Grass	<i>Glyceria canadensis</i>	3.3
Fowl Manna Grass	<i>Glyceria striata</i>	2.8
Dudley's Rush	<i>Juncus dudleyi</i>	0.1
Common Rush	<i>Juncus effusus</i>	0.3
Rice Cut Grass	<i>Leersia oryzoides</i>	1.1
Fowl Bluegrass	<i>Poa palustris</i>	1.4
Dark Green Bulrush	<i>Scirpus atrovirens</i>	1.5
Wool Grass	<i>Scirpus cyperinus</i>	0.5
Prairie Cord Grass	<i>Spartina pectinata</i>	2.7
TOTAL		116.6

Shrub-Carr Wetland Planting Zone

Species		
Common Name	Scientific Name	Ounces Required Per Acre
<i>Forbs</i>		
Canada Anemone	<i>Anemone canadensis</i>	0.9
Angelica	<i>Angelica atropurpurea</i>	4.7
Marsh Milkweed	<i>Asclepias incarnata</i>	2.7
Nodding Bur Marigold	<i>Bidens cernua</i>	2.6
Common Beggar's Ticks	<i>Bidens frondosa</i>	2.2
Turtlehead	<i>Chelone glabra</i>	0.6
Water Hemlock	<i>Cicuta maculata</i>	0.9
Marsh Cinquefoil	<i>Comarum palustre</i>	0.3
Flat-top Aster	<i>Doellingeria umbellata</i>	1.4
Cinnamon Willow Herb	<i>Epilobium coloratum</i>	0.7
Joe Pye Weed	<i>Eutrochium maculatum</i>	2.3
Boneset	<i>Eupatorium perfoliatum</i>	1.1
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	0.5
Sneezeweed	<i>Helenium autumnale</i>	1.5
Saw-tooth Sunflower	<i>Helianthus grosseserratus</i>	3.4
Spotted Touch-me-not	<i>Impatiens capensis</i>	1.4
Cardinal Flower	<i>Lobelia cardinalis</i>	0.9
Water Horehound	<i>Lycopus americanus</i>	0.8
Wild Mint	<i>Mentha arvensis</i>	0.5
Obedient Plant	<i>Physotegia virginiana</i>	0.7
Common Mountain Mint	<i>Pycnanthemum virginianum</i>	0.7
Wild Golden Glow	<i>Rudbeckia laciniata</i>	3.9
Great Water Dock	<i>Rumex orbiculatus</i>	6.1
Tall Water Parsnip	<i>Sium suave</i>	0.6
Late Goldenrod	<i>Solidago gigantea</i>	0.5
Swamp Goldenrod	<i>Solidago patula</i>	0.6
Woundwort	<i>Stachys palustris</i>	0.8
Shining Aster	<i>Symphotrichum firmus</i>	1.0
New England Aster	<i>Symphotrichum novae-angliae</i>	1.1
Swamp Aster	<i>Symphotrichum puniceum</i>	0.9
Purple Meadow Rue	<i>Thalictrum dasycarpum</i>	6.6
Blue Vervain	<i>Verbena hastata</i>	3.9
Culver's Root	<i>Veronicastrum virginicum</i>	0.4
Golden Alexanders	<i>Zizia aurea</i>	6.6
<i>Grasses/Sedges/Rushes</i>		
Fringed Brome	<i>Bromus ciliatus</i>	3.6
Canada Bluejoint	<i>Calamagrostis canadensis</i>	1.3
Water Sedge	<i>Carex aquatilis</i>	0.6
Crested Oval Sedge	<i>Carex cristatella</i>	1.2
Porcupine Sedge	<i>Carex hystericina</i>	5.2
Common Lake Sedge	<i>Carex lacustris</i>	0.8
Narrow-leaved Woolly Sedge	<i>Carex lasiocarpa</i>	1.3
Broad-leaved Woolly Sedge	<i>Carex pellita</i>	0.5
Deflexed Bottle-brush Sedge	<i>Carex retrorsa</i>	2.0
Awl-fruited Sedge	<i>Carex stipata</i>	4.6
Tussock sedge	<i>Carex stricta</i>	2.9
Common Yellow Lake Sedge	<i>Carex utriculata</i>	2.7
Great Spike Rush	<i>Eleocharis palustris</i>	0.9
Virginia Wild Rye	<i>Elymus virginicus</i>	21.2
Reed Manna Grass	<i>Glyceria grandis</i>	3.5
Fowl Manna Grass	<i>Glyceria striata</i>	2.6
Dudley's Rush	<i>Juncus dudleyi</i>	0.1
Rice Cut Grass	<i>Leersia oryzoides</i>	1.1
Fowl Bluegrass	<i>Poa palustris</i>	1.4
Dark Green Bulrush	<i>Scirpus atrovirens</i>	1.5
Wool Grass	<i>Scirpus cyperinus</i>	0.5
Rufous Bulrush	<i>Scirpus pendulus</i>	1.4
Prairie Cord Grass	<i>Spartina pectinata</i>	2.7
TOTAL		127.4

Wet-Mesic Prairie Planting Zone

Species		
Common Name	Scientific Name	Ounces Required Per Acre
<i>Forbs</i>		
Canada Anemone	<i>Anemone canadensis</i>	2.3
Common Milkweed	<i>Asclepias syriaca</i>	0.9
Swamp Thistle	<i>Cirsium muticum</i>	2.6
Showy Tick Trefoil	<i>Desmodium canadense</i>	3.0
Shooting Star	<i>Dodecatheon meadia</i>	1.2
Joe Pye Weed	<i>Eutrochium maculatum</i>	2.9
Bottle Gentain	<i>Gentiana andrewsii</i>	0.7
Sneezeweed	<i>Helenium autumnale</i>	1.1
Saw-tooth Sunflower	<i>Helianthus grosseserratus</i>	1.5
Prairie Alumroot	<i>Heuchera richardsonii</i>	0.2
Prairie Blazing Star	<i>Liatris pycnostachya</i>	6.6
Michigan Lily	<i>Lilium michiganense</i>	1.5
Pale Spiked Lobelia	<i>Lobelia spicata</i>	0.5
Wild Bergamot	<i>Monarda fistulosa</i>	4.2
Marsh Betony	<i>Pedicularis lanceolata</i>	3.0
Common Mountain Mint	<i>Pycnanthemum virginianum</i>	0.7
Yellow Coneflower	<i>Ratibida pinnata</i>	6.1
Black-eyed Susan	<i>Rudbeckia hirta</i>	2.2
Late Goldenrod	<i>Solidago gigantea</i>	0.3
Ohio Goldenrod	<i>Solidago ohioensis</i>	2.5
Panicled Aster	<i>Symphotrichum lanceolatum</i>	1.1
New England Aster	<i>Symphotrichum novae-angliae</i>	2.2
Purple Meadow Rue	<i>Thalictrum dasycarpum</i>	6.6
Common Spiderwort	<i>Tradescantia ohioensis</i>	4.6
Culver's Root	<i>Veronicastrum virginicum</i>	0.4
Golden Alexander	<i>Zizia aurea</i>	16.6
<i>Grasses/Sedges</i>		
Big Bluestem	<i>Andropogon gerardii</i>	91.0
Blue Joint Grass	<i>Calamagrostis canadensis</i>	6.5
Upland Wild Timothy	<i>Muhlenbergia racemosa</i>	9.1
Prairie Cord Grass	<i>Spartina pectinata</i>	33.7
TOTAL		215.8

Wet-Mesic Forested Wetland Planting Zone

Species		
Common Name	Scientific Name	Ounces Required Per Acre
<i>Forbs</i>		
Canada Anemone	<i>Anemone canadensis</i>	1.8
Tall Thimbleweed	<i>Anemone virginiana</i>	1.0
Columbine	<i>Aquilegia canadensis</i>	2.9
Common Beggar's Ticks	<i>Bidens frondosa</i>	2.9
Smallspike False Nettle	<i>Boehmeria cylindrica</i>	0.4
Wild Cucumber	<i>Echinocystis lobata</i>	3.6
White Snakeroot	<i>Eupatorium rugosum</i>	0.7
Large-leaved Aster	<i>Eurybia macrophyllus</i>	0.7
Northern Bedstraw	<i>Galium boreale</i>	1.0
Bottle Gentain	<i>Gentiana andrewsii</i>	0.5
Wild Geranium	<i>Geranium maculatum</i>	1.5
Yellow Avens	<i>Geum aleppicum</i>	7.3
Grass-leaved Goldenrod	<i>Euthamia graminifolia</i>	0.5
Saw-tooth Sunflower	<i>Helianthus grosseserratus</i>	1.9
Pale-leaved Sunflower	<i>Helianthus strumosus</i>	3.5
Spotted Touch-me-not	<i>Impatiens capensis</i>	0.9
Cardinal Flower	<i>Lobelia cardinalis</i>	0.9
Water Horehound	<i>Lycopus americanus</i>	1.7
Solomon's Plume	<i>Maianthemum racemosum</i>	4.6
Wild Mint	<i>Mentha arvensis</i>	0.5
Bishop's Cap	<i>Mitella diphylla</i>	0.4
Sweet Cicely	<i>Osmorhiza claytonii</i>	2.9
Wood Betony	<i>Pedicularis canadensis</i>	0.8
Jacob's Ladder	<i>Polemonium reptans</i>	1.0
Common Mountain Mint	<i>Pycnanthemum virginianum</i>	1.0
Wild Golden Glow	<i>Rudbeckia laciniata</i>	3.9
Mad-dog Skullcap	<i>Scutellaria lateriflora</i>	2.2
Late Goldenrod	<i>Solidago gigantea</i>	0.7
Calico Aster	<i>Symphotrichum lateriflorum</i>	1.0
Purple Meadow Rue	<i>Thalictrum dasycarpum</i>	6.6
Culver's Root	<i>Veronicastrum virginicum</i>	0.9
Golden Alexanders	<i>Zizia aurea</i>	11.6
<i>Grasses/Sedges/Rushes</i>		
Fringed Brome	<i>Bromus ciliatus</i>	21.8
Canada Bluejoint	<i>Calamagrostis canadensis</i>	1.3
Bebb's Oval Sedge	<i>Carex bebbi</i>	4.3
Common Wood Sedge	<i>Carex blanda</i>	1.5
Plains Oval Sedge	<i>Carex brevior</i>	6.3
Fringed Sedge	<i>Carex crinita</i>	4.7
Crested Oval Sedge	<i>Carex cristatella</i>	2.7
Wood Gray Sedge	<i>Carex grisea</i>	3.0
Slender Sedge	<i>Carex leptalea</i>	1.1
Field Oval Sedge	<i>Carex molesta</i>	7.1
Long-beaked Sedge	<i>Carex sprengei</i>	2.2
Awl-fruited Sedge	<i>Carex stipata</i>	4.6
Narrow-leaved Oval Sedge	<i>Carex tenera</i>	1.0
Brown Fox Sedge	<i>Carex vulpinoidea</i>	4.5
Canada Wild Rye	<i>Elymus canadensis</i>	51.4
Virginia Wild Rye	<i>Elymus virginicus</i>	53.0
Fowl Manna Grass	<i>Glyceria striata</i>	3.0
Dudley's Rush	<i>Juncus dudleyi</i>	0.1
Path Rush	<i>Juncus tenuis</i>	0.3
Leafy Satin Grass	<i>Muhlenbergia mexicana</i>	2.1
Upland Wild Timothy	<i>Muhlenbergia racemosa</i>	2.3
Fowl Bluegrass	<i>Poa palustris</i>	1.4
TOTAL		251.5

H. Live Plant Species and Quantities:

Emergent/Floating-Leaved/Submergent Aquatic Planting Zone

Species		Planting Depth	No. of Plants Required
Common Name	Scientific Name		
Common Water-plantain	<i>Alisma subcordatum</i>	0-6"	150
Water-shield	<i>Brasenia schreberi</i>	6-12"	100
River Bulrush	<i>Bolboschoenus fluviatilis</i>	6-12"	425
Water Sedge	<i>Carex aquatilis</i>	0-3"	275
Bristly Sedge	<i>Carex comosa</i>	0-3"	300
Common Lake Sedge	<i>Carex lacustris</i>	0-3"	325
Coontail	<i>Ceratophyllum demersum</i>	24-36"	200
Needle Rush	<i>Eleocharis acicularis</i>	12-24"	200
Creeping Spike Rush	<i>Eleocharis palustris</i>	0-3"	150
Reed Manna Grass	<i>Glyceria grandis</i>	0-3"	250
Northern Blue Flag	<i>Iris versicolor</i>	0-3"	450
Soft Rush	<i>Juncus effusus</i>	0-3"	250
Yellow Water-lily	<i>Nuphar advena</i>	12-24"	200
White Water-lily	<i>Nymphaea odorata</i>	12-24"	200
Water Smartweed	<i>Persicaria amphibia</i>	12-24"	200
Pickereel Weed	<i>Pontedaria cordata</i>	0-6"	500
Floating-leaf Pondweed	<i>Potamogeton natans</i>	12-24"	200
Long-leaved Pondweed	<i>Potamogeton nodosus</i>	12-24"	200
Common Arrowhead	<i>Sagittaria latifolia</i>	0-6"	700
Hardstem Bulrush	<i>Schoenoplectus acutus</i>	6-12"	750
Chair-maker's Rush	<i>Schoenoplectus pungens</i>	0-6"	500
Softstem Bulrush	<i>Schoenoplectus tabernaemontani</i>	6-12"	950
Common Bur-reed	<i>Sparganium eurycarpum</i>	6-12"	950
Sago Pondweed	<i>Stuckenia pectinata</i>	24-36"	200
Water Celery	<i>Vallisneria americana</i>	24-36"	200
		TOTAL	8,825

Mesic Forest Restoration Planting Zone

Species			
Common Name	Scientific Name	Quantity	Minimum Pot Size
<i>Forbs</i>			
White Baneberry	<i>Actaea pachypoda</i>	5	4.5"
Red Baneberry	<i>Actaea rubra</i>	5	4.5"
Wild Leek	<i>Allium tricoccum</i>	5	4.5"
Wild Columbine	<i>Aquilegia canadensis</i>	35	2.5"
Wild Sarsaparilla	<i>Aralia nudicaulis</i>	5	4.5"
Spikenard	<i>Aralia racemosa</i>	5	4.5"
Jack in the Pulpit	<i>Arisaema triphyllum</i>	10	2.5"
Wild Ginger	<i>Asarum canadense</i>	10	4.5"
Hairy Wood Mint	<i>Blephilia hirsuta</i>	15	2.5"
Blue Cohosh	<i>Caulophyllum thalictroides</i>	5	4.5"
White Snakeroot	<i>Eupatorium rugosum</i>	30	2.5"
Sweet Joe-Pye Weed	<i>Eutrochium purpureum</i>	30	2.5"
Big-leaved Aster*	<i>Eurybia macrophylla</i>	50	2.5"
Wild Strawberry*	<i>Fragaria virginiana</i>	30	2.5"
Wild Geranium*	<i>Geranium maculatum</i>	50	2.5"
Canada Mayflower	<i>Maianthemum canadense</i>	20	2.5"
False Solomon's Seal*	<i>Maianthemum racemosum</i>	15	4.5"
Starry False Solomon's Seal*	<i>Maianthemum stellatum</i>	30	2.5"
Virginia Bluebells*	<i>Mertensia virginica</i>	20	4.5"
Bishop's Cap	<i>Mitella dipylla</i>	20	2.5"
Woodland Phlox*	<i>Phlox divaricata</i>	50	2.5"
Mayapple*	<i>Podophyllum peltatum</i>	50	4.5"
Jacob's Ladder	<i>Polemonium reptans</i>	35	2.5"
Solomon's Seal*	<i>Polygonatum biflorum</i>	20	2.5"
Rattlesnake Root	<i>Prenanthes alba</i>	30	2.5"
Bloodroot	<i>Sanguinaria canadensis</i>	10	4.5"
Zig Zag Goldenrod*	<i>Solidago flexicaulis</i>	50	2.5"
Heart-leaved Aster	<i>Symphyotrichum cordifolius</i>	40	2.5"
Heath Aster	<i>Symphyotrichum ericoides</i>	40	2.5"
Early Meadow Rue	<i>Thalictrum dioicum</i>	30	2.5"
False Mitterwort	<i>Tiarella cordifolia</i>	10	2.5"
Great White Trillium	<i>Trillium grandiflorum</i>	10	4.5"
Merrybells	<i>Uvularia grandiflora</i>	10	4.5"
Barren Strawberry	<i>Waldsteinia fragarioides</i>	15	2.5"
<i>Sedges/Grasses</i>			
Pennsylvania Sedge*	<i>Carex pensylvanica</i>	150	2.5"
Curly-styled Wood Sedge	<i>Carex rosea</i>	100	2.5"
Bottlebrush Grass	<i>Elymus hystrix</i>	125	2.5"
Common Wood Rush	<i>Luzula multiflora</i>	100	2.5"
<i>Ferns</i>			
Lady Fern*	<i>Athyrium filix femina</i>	25	4.5"
Wood Fern	<i>Dryopteris intermedia</i>	20	4.5"
Leatherwood Fern	<i>Dryopteris marginallis</i>	15	4.5"
Ostrich Fern*	<i>Matteuccia pensylvanica</i>	40	4.5"
Cinnamon Fern*	<i>Osmunda cinnamomea</i>	40	4.5"
Interrupted Fern*	<i>Osmunda claytoniana</i>	40	4.5"
TOTAL		1,450	

*Species to also be supplemental planted in Mesic Forest to be cleared and grubbed.

Northern Sedge Meadow Restoration Planting Zone (Supplemental Planting)

<i>Species</i>			
Common Name	Scientific Name	Quantity	Minimum Pot Size
<i>Sedges/Grasses</i>			
Porcupine Sedge	<i>Carex hystericina</i>	700	2.5"
Common Lake Sedge	<i>Carex lacustris</i>	700	2.5"
Tussock Sedge	<i>Carex stricta</i>	1,000	2.5"
Prairie Cord Grass	<i>Spartina pectinata</i>	250	2.5"
<i>Ferns</i>			
Ostrich Fern	<i>Matteuccia struthiopteris</i>	250	4.5"
Sensitive Fern	<i>Onoclea sensibilis</i>	500	4.5"
<i>Forbs</i>			
Northern Blue Flag	<i>Iris versicolor</i>	500	2.5"
Marsh Marigold	<i>Caltha palustris</i>	100	4.5"
TOTAL		4,000	

Northern Sedge Meadow Restoration Planting Zone (Standing Water)

<i>Species</i>			
Common Name	Scientific Name	Quantity	Minimum Pot Size
<i>Sedges/Grasses</i>			
Bluejoint Grass	<i>Calamagrostis canadensis</i>	250	2.5"
Long-bracted Tussock Sedge	<i>Carex aquatilis</i>	1,500	2.5"
Green Bog Sedge	<i>Carex brunnescens</i>	500	2.5"
Bristly Sedge	<i>Carex comosa</i>	1,500	2.5"
Fringed Sedge	<i>Carex crinita</i>	750	2.5"
Porcupine Sedge	<i>Carex hystericina</i>	1,500	2.5"
Common Lake Sedge	<i>Carex lacustris</i>	1,000	2.5"
Woolly Fruit Sedge	<i>Carex lasiocarpa</i>	500	2.5"
Tussock Sedge	<i>Carex stricta</i>	2,000	2.5"
Creeping Spike Rush	<i>Eleocharis palustris</i>	250	2.5"
Rattlesnake Mannagrass	<i>Glyceria canadensis</i>	750	2.5"
Fowl Mannagrass	<i>Glyceria striata</i>	250	2.5"
Dark Green Bulrush	<i>Scirpus atrovirens</i>	750	2.5"
Prairie Cord Grass	<i>Spartina pectinata</i>	500	2.5"
<i>Ferns</i>			
Sensitive Fern	<i>Onoclea sensibilis</i>	500	4.5"
<i>Forbs</i>			
Sweet Flag	<i>Acorus americanus</i>	500	2.5"
Marsh Milkweed	<i>Asclepias incarnata</i>	250	2.5"
Marsh Marigold	<i>Caltha palustris</i>	250	4.5"
Marsh Cinquefoil	<i>Comarum palustre</i>	150	2.5"
Boneset	<i>Eupatorium perfoliatum</i>	250	2.5"
Joe Pye Weed	<i>Eutrochium maculatum</i>	500	2.5"
Water Avens	<i>Geum rivale</i>	250	2.5"
Northern Blue Flag	<i>Iris versicolor</i>	750	2.5"
Water Horehound	<i>Lycopus americanus</i>	250	2.5"
Swamp Candles	<i>Lysimachia terrestris</i>	150	2.5"
Winged Loosestrife	<i>Lythrum alatum</i>	150	2.5"
Water Smartweed	<i>Polygonum amphibium</i>	250	2.5"
Yellow Water Crowfoot	<i>Ranunculus flabellaris</i>	150	2.5"
Bog Goldenrod	<i>Solidago uliginosa</i>	150	2.5"
Swamp Aster	<i>Symphotrichum puniceus</i>	250	2.5"
Blue Vervain	<i>Verbena hastata</i>	250	2.5"
TOTAL		17,000	

Shrub-Carr Upland Planting Zone

Species			
Common Name	Scientific Name	Quantity	Minimum Pot Size
<i>Forbs</i>			
Wild Columbine	<i>Aquilegia canadensis</i>	40	2.5"
Blue Cohosh	<i>Caulophyllum thalictroides</i>	10	4.5"
White Snakeroot	<i>Eupatorium rugosum</i>	25	2.5"
Sweet Joe-Pye Weed	<i>Eutrochium purpureum</i>	25	2.5"
Big-leaved Aster	<i>Eurybia macrophylla</i>	50	2.5"
Wild Strawberry	<i>Fragaria virginiana</i>	40	2.5"
Wild Geranium*	<i>Geranium maculatum</i>	50	2.5"
False Solomon's Seal	<i>Maianthemum racemosum</i>	10	4.5"
Starry False Solomon's Seal	<i>Maianthemum stellatum</i>	25	2.5"
Virginia Bluebells	<i>Mertensia virginica</i>	10	4.5"
Woodland Phlox	<i>Phlox divaricata</i>	25	2.5"
Mayapple	<i>Podophyllum peltatum</i>	10	4.5"
Jacob's Ladder	<i>Polemonium reptans</i>	25	2.5"
Solomon's Seal	<i>Polygonatum biflorum</i>	25	2.5"
Zig Zag Goldenrod	<i>Solidago flexicaulis</i>	15	2.5"
Heart-leaved Aster	<i>Symphotrichum cordifolius</i>	15	2.5"
<i>Sedges/Grasses</i>			
Pennsylvania Sedge	<i>Carex pensylvanica</i>	250	2.5"
Bottlebrush Grass	<i>Elymus hystrix</i>	250	2.5"
<i>Ferns</i>			
Lady Fern	<i>Athyrium filix femina</i>	15	4.5"
Ostrich Fern	<i>Matteuccia pensylvanica</i>	40	4.5"
Cinnamon Fern	<i>Osmunda cinnamomea</i>	20	4.5"
Interrupted Fern	<i>Osmunda claytoniana</i>	25	4.5"
TOTAL		1,000	

Shrub-Carr Wetland Restoration Planting Zone

Species			
Common Name	Scientific Name	Quantity	Minimum Pot Size
<i>Sedges/Grasses</i>			
Common Lake Sedge	<i>Carex lacustris</i>	150	2.5"
Tussock Sedge	<i>Carex stricta</i>	500	2.5"
Prairie Cord Grass	<i>Spartina pectinata</i>	250	2.5"
<i>Ferns</i>			
Ostrich Fern	<i>Matteuccia struthiopteris</i>	100	4.5"
Sensitive Fern	<i>Onoclea sensibilis</i>	100	4.5"
<i>Forbs</i>			
Northern Blue Flag	<i>Iris versicolor</i>	300	2.5"
Marsh Marigold	<i>Caltha palustris</i>	100	4.5"
TOTAL		1,500	

Tag Alder Enhancement Planting Zone

<i>Species</i>			
Common Name	Scientific Name	Quantity	Minimum Pot Size
<i>Sedges/Grasses</i>			
Common Lake Sedge	<i>Carex lacustris</i>	100	2.5"
Tussock Sedge	<i>Carex stricta</i>	250	2.5"
Prairie Cord Grass	<i>Spartina pectinata</i>	100	2.5"
<i>Ferns</i>			
Ostrich Fern	<i>Matteuccia struthiopteris</i>	100	4.5"
Sensitive Fern	<i>Onoclea sensibilis</i>	50	4.5"
<i>Forbs</i>			
Northern Blue Flag	<i>Iris versicolor</i>	125	2.5"
Marsh Marigold	<i>Caltha palustris</i>	50	4.5"
TOTAL		775	

Wet-Mesic Forested Wetland Enhancement Planting Zone

<i>Species</i>			
Common Name	Scientific Name	Quantity	Minimum Pot Size
<i>Sedges/Grasses</i>			
Common Lake Sedge	<i>Carex lacustris</i>	50	2.5"
Tussock Sedge	<i>Carex stricta</i>	125	2.5"
Prairie Cord Grass	<i>Spartina pectinata</i>	50	2.5"
<i>Ferns</i>			
Ostrich Fern	<i>Matteuccia struthiopteris</i>	50	4.5"
Sensitive Fern	<i>Onoclea sensibilis</i>	25	4.5"
<i>Forbs</i>			
Northern Blue Flag	<i>Iris versicolor</i>	75	2.5"
Marsh Marigold	<i>Caltha palustris</i>	25	4.5"
TOTAL		400	

Wet-Mesic Forest Restoration Planting Zone

<i>Species</i>			
Common Name	Scientific Name	Quantity	Minimum Pot Size
<i>Ferns</i>			
Lady Fern	<i>Athyrium filix-femina</i>	75	4.5"
Cinnamon Fern	<i>Osmunda cinnamomea</i>	100	4.5"
Interrupted Fern	<i>Osmunda claytoniana</i>	100	4.5"
Royal Fern	<i>Osmunda regalis</i>	50	4.5"
<i>Forbs</i>			
Wild Sarsaparilla	<i>Aralia nudicaulis</i>	25	4.5"
Wild Strawberry	<i>Fragaria virginiana</i>	100	2.5"
Starry False Solomon's Seal	<i>Maianthemum stellatum</i>	50	2.5"
Woodland Phlox	<i>Phlox divaricata</i>	50	2.5"
Barren Strawberry	<i>Waldsteinia fragarioides</i>	25	2.5"
TOTAL		575	

I. Tree, Shrub and Live Stake Species and Quantities:

Mesic Forest Restoration Planting Zone

Species			
Common Name	Scientific Name	Quantity	Size - Height
<i>Trees</i>			
Balsam Fir*	<i>Abies balsamea</i>	20	#1-2 gallon
Red Maple*	<i>Acer rubrum</i>	45	3-5' bare-root
Sugar Maple	<i>Acer saccharum</i>	50	3-5' bare-root
Yellow Birch	<i>Betula alleghaniensis</i>	15	2-4' bare-root
Paper Birch*	<i>Betula papyrifera</i>	45	3-5' bare-root
Musclewood	<i>Carpinus caroliniana</i>	15	2-4' bare-root
Hackberry	<i>Celtis occidentalis</i>	20	3-5' bare-root
Ironwood	<i>Ostrya virginiana</i>	10	#1-2 gallon
White Pine*	<i>Pinus strobus</i>	20	#5-7 gallon
Trembling Aspen*	<i>Populus tremuloides</i>	45	3-5' bare-root
Wild Cherry*	<i>Prunus serotina</i>	45	3-5' bare-root
White Oak*	<i>Quercus alba</i>	20	3-5' bare-root
Red Oak*	<i>Quercus rubra</i>	45	3-5' bare-root
Basswood	<i>Tilia americana</i>	30	2-4' bare-root
White-cedar*	<i>Thuja occidentalis</i>	20	#5-7 gallon
Canadian Hemlock	<i>Tsuga canadensis</i>	10	#5-7 gallon
Slippery Elm	<i>Ulmus rubra</i>	10	#2-5 gallon
<i>Shrubs</i>			
Allegheny Shadblow*	<i>Amelanchier laevis</i>	10	#2-5 gallon
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	20	#1-2 gallon
American Hazelnut*	<i>Corylus americana</i>	20	2-4' bare-root
Bush Honeysuckle	<i>Diervilla lonicera</i>	10	#2-5 gallon
Common Witchhazel	<i>Hamamelis virginiana</i>	10	2-4' bare-root
Common Ninebark*	<i>Physocarpus opulifolius</i>	5	2-4' bare-root
Pasture Gooseberry	<i>Ribes cynosbati</i>	10	#2-5 gallon
Wild Rose*	<i>Rosa blanda</i>	5	#2-5 gallon
American Elder*	<i>Sambucus canadensis</i>	20	2-4' bare-root
Red-berried Elder	<i>Sambucus racemosa</i>	15	#2-5 gallon
Lowbush Blueberry	<i>Vaccinium angustifolium</i>	15	#2-5 gallon
Maple-leaf Viburnum	<i>Viburnum acerifolium</i>	10	#2-5 gallon
Nannyberry*	<i>Viburnum lentago</i>	20	2-4' bare-root
American Highbush Cranberry*	<i>Viburnum opulus L. subsp. trilobum</i>	15	#2-5 gallon
		TOTAL	650

*Species to be planted in Mesic Forest to be cleared and grubbed.

Shrub-Carr Upland Planting Zone

Species			
Common Name	Scientific Name	Quantity	Size - Height
<i>Shrubs</i>			
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	5	#1-2 gallon
Silky Dogwood	<i>Cornus amomum</i>	15	2-4' bare-root
Red-osier Dogwood	<i>Cornus stolonifera</i>	15	2-4' bare-root
American Hazelnut	<i>Corylus americana</i>	5	2-4' bare-root
Chokecherry	<i>Prunus virginiana</i>	5	#2-5 gallon
Black Currant	<i>Ribes americanum</i>	5	#1-2 gallon
American Elder	<i>Sambucus canadensis</i>	15	2-4' bare-root
Lowbush Blueberry	<i>Vaccinium angustifolium</i>	5	#2-5 gallon
Nannyberry	<i>Viburnum lentago</i>	15	2-4' bare-root
American Highbush Cranberry	<i>Viburnum opulus L. subsp. trilobum</i>	15	#2-5 gallon
		TOTAL	100

Shrub-Carr Wetland Restoration Planting Zone

Species			
Common Name	Scientific Name	Quantity	Size - Height
<i>Shrubs</i>			
Speckled Alder	<i>Alnus rugosa</i>	15	#1-2 gallon
Silky Dogwood	<i>Cornus amomum</i>	20	2-4' bare-root
Red-osier Dogwood	<i>Cornus stolonifera</i>	50	2-4' bare-root
Winterberry (Male & Female)	<i>Ilex verticillata</i>	50	2-4' bare-root
Black Currant	<i>Ribes americanum</i>	25	#1-2 gallon
Meadow-sweet	<i>Spiraea alba</i>	50	#2-5 gallon
Slender Willow	<i>Salix petiolaris</i>	100	#1-2 gallon
Pussy Willow	<i>Salix discolor</i>	75	#2-5 gallon
American Highbush Cranberry	<i>Viburnum opulus L. subsp. trilobum</i>	15	#2-5 gallon
TOTAL		400	

Live Stakes – Shrub-Carr Wetland Restoration Planting Zone

Species			No. of Stakes Required
Common Name	Scientific Name		
Silky Dogwood	<i>Cornus amomum</i>		100
Red-osier Dogwood	<i>Cornus stolonifera</i>		200
Bebb's Willow	<i>Salix bebbiana</i>		100
Pussy Willow	<i>Salix discolor</i>		200
TOTAL			600

Tag Alder Enhancement Planting Zone

Species			
Common Name	Scientific Name	Quantity	Size - Height
<i>Shrubs</i>			
Speckled Alder	<i>Alnus rugosa</i>	25	#1-2 gallon
Silky Dogwood	<i>Cornus amomum</i>	5	2-4' bare-root
Red-osier Dogwood	<i>Cornus stolonifera</i>	25	2-4' bare-root
Winterberry (Male & Female)	<i>Ilex verticillata</i>	5	2-4' bare-root
Black Currant	<i>Ribes americanum</i>	25	#1-2 gallon
Meadow-sweet	<i>Spiraea alba</i>	25	#2-5 gallon
Slender Willow	<i>Salix petiolaris</i>	5	#1-2 gallon
Pussy Willow	<i>Salix discolor</i>	5	#1-2 gallon
American Highbush Cranberry	<i>Viburnum opulus L. subsp. trilobum</i>	5	#2-5 gallon
TOTAL		125	

Wet Mesic Forested Wetland Enhancement Planting Zone

Species			
Common Name	Scientific Name	Quantity	Size - Height
<i>Shrubs</i>			
Black Chokeberry	<i>Aronia melanocarpa</i>	5	#2-5 gallon
Buttonbush	<i>Cephalanthus occidentalis</i>	10	2-4' bare-root
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	5	#5 gallon
Silky Dogwood	<i>Cornus amomum</i>	15	2-4' bare-root
Winterberry (Male & Female)	<i>Ilex verticillata</i>	15	2-4' bare-root
Fly Honeysuckle	<i>Lonicera canadensis</i>	5	#1-2 gallon
Common Ninebark	<i>Physocarpus opulifolius</i>	5	2-4' bare-root
Black Currant	<i>Ribes americanum</i>	10	#1-2 gallon
American Highbush Cranberry	<i>Viburnum opulus L. subsp. trilobum</i>	5	2-4' bare-root
TOTAL		75	

Wet Mesic Forested Wetland Restoration Planting Zone

<i>Species</i>			
Common Name	Scientific Name	Quantity	Size - Height
<i>Trees</i>			
Balsam Fir	<i>Abies balsamea</i>	10	#1-2 gallon
Red Maple	<i>Acer rubrum</i>	50	3-5' bare-root
Silver Maple	<i>Acer saccharinum</i>	25	3-5' bare-root
Yellow Birch	<i>Betula alleghaniensis</i>	10	2-4' bare-root
Musclewood	<i>Carpinus caroliniana</i>	5	2-4' bare-root
Northern Hackberry	<i>Celtis occidentalis</i>	10	3-5' bare-root
Tamarack	<i>Larix laricina</i>	25	#5-7 gallon
Black Spruce	<i>Picea mariana</i>	15	#5-7 gallon
Swamp White Oak	<i>Quercus bicolor</i>	25	3-5' bare-root
Bur Oak	<i>Quercus macrocarpa</i>	25	3-5' bare-root
Peach-leaf Willow	<i>Salix amygdaloides</i>	20	#2-5 gallon
White-cedar	<i>Thuja occidentalis</i>	15	#5-7 gallon
Canadian Hemlock	<i>Tsuga canadensis</i>	10	#5-7 gallon
Slippery Elm	<i>Ulmus rubra</i>	5	#2-5 gallon
<i>Shrubs</i>			
Black Chokeberry	<i>Aronia melanocarpa</i>	5	#2-5 gallon
Swamp Birch	<i>Betula pumila</i>	5	#2-5 gallon
Buttonbush	<i>Cephalanthus occidentalis</i>	10	2-4' bare-root
Silky Dogwood	<i>Cornus amomum</i>	10	2-4' bare-root
Red-osier Dogwood	<i>Cornus stolonifera</i>	5	2-4' bare-root
Winterberry (Male & Female)	<i>Ilex verticillata</i>	10	2-4' bare-root
Fly Honeysuckle	<i>Lonicera canadensis</i>	5	#1-2 gallon
Common Ninebark	<i>Physocarpus opulifolius</i>	10	2-4' bare-root
Black Currant	<i>Ribes americanum</i>	10	#1-2 gallon
American Elder	<i>Sambucus canadensis</i>	10	2-4' bare-root
Meadow-sweet	<i>Spiraea alba</i>	10	#2-5 gallon
Nannyberry	<i>Viburnum lentago</i>	5	2-4' bare-root
American Highbush Cranberry	<i>Viburnum opulus L. subsp. trilobum</i>	5	2-4' bare-root
TOTAL		350	

2.02 PLANTING & PROTECTION MATERIALS

A. Topsoil:

1. Obtained from natural well drained areas, and be fertile, friable soil, clean of undesirable materials such as plants, weeds, roots, stalks, stones, and other debris.
2. Existing topsoil shall be salvaged as it will be placed during restoration activities.
3. Acidity range of pH 5.0 and pH 7.0 and shall contain no less than 4% organic matter as determined by loss on ignition of moisture free samples dried at 100°C.

B. Soil Amendments:

1. Planting to be installed in native soils.

C. Mulching Materials:

1. Processed Hardwood Bark:
 - a. From mixed hardwood species and free of sticks and leaves, 60% shall range between 1 and 3 in. in length; remaining 40% shall not exceed 1-1/2 in.
 - b. Maximum of 5% content by weight of shredded wood particles.
2. Mushroom Manure:
 - a. Well-rotted cattle or stable manure with admixture of 15% to 30% topsoil.
 - b. Used for commercial growing of at least one crop of mushrooms.

- D. Water: CONTRACTOR shall make arrangements for water used for planting with appropriate water utilities. Cost of water usage is responsibility of CONTRACTOR and is incidental to contract.
 - 1. Obtain from fresh water sources and free from injurious chemical or other toxic substances harmful to plant life. No water, which is brackish, may be used.
 - 2. Provide hose and equipment necessary for proper watering of plant material.
- E. Tree Wrap:
 - 1. Trees shall not be wrapped.
- F. Tree Protectors & Stakes:
 - 1. Bare-root & Container Grown Plants. Products designed to eliminate herbivore damage from small rodents and protect the seedlings from wind and herbicide damage
 - a. Protectors
 - 1) Minimum 48" height
 - 2) Minimum 3" diameter
 - b. Stakes
 - 1) Minimum 30" height
 - 2) Wooden stakes shall be minimum 1"x1"
 - 3) PVC stakes shall be minimum 1/2" diameter

2.03 EROSION CONTROL MATERIALS

- A. Erosion Blanket & Stakes:
 - 1. Materials shall be completely biodegradable (Class I Urban Type A – S 75 BN) and included on WisDOT PAL
 - 2. Anchoring devices shall be a minimum of 6" in length, be completely biodegradable (Urban) and included on WisDOT PAL

2.04 HERBICIDE, ADJUVANT & DYES

- A. General:
 - 1. Use only chemicals approved by and registered with the Environmental Protection Agency (EPA).
 - 2. Chemicals used around water shall be aquatic approved.
 - 3. The chemical or combination of chemicals shall be chosen based on the target species present and the desired treatment outcome.

2.05 GOOSE FENCING

- A. General:
 - 1. 1.5" x 1.5" X 5.5' heavy-duty steel t-posts or equivalent.
 - 2. 48" green snow/safety fence.
 - 3. 8" Black UV stabilized cable ties to secure fencing to posts.
 - 4. Nylon rope, bailing twine or equivalent.

2.06 CARP FENCING

- A. General:
 - 1. 1.5" x 1.5" X 5.5' heavy-duty steel t-posts or equivalent.
 - 2. 2" X 4" X 48" 14 gauge welded wire fence.
 - 3. 8" Black UV Stabilized Cable Ties to secure fencing to posts.

PART 3 SUPPLIERS

3.01 PLANT SUPPLIERS

- A. At CONTRACTOR'S option, CONTRACTOR may contact the following companies for seed, plant, tree, and shrub supplies:

JFNew
708 Roosevelt Road
Walkerton, IN 46574
(574) 586-2412

Taylor Creek Restoration Nursery
17921 Smith Road
P.O. Box 256
Brodhead, WI 53520
(608) 897-8641

Marshland Transplant Aquatic Nursery
116 East Huron Street
Berlin, WI 54923-2050
1-800-AQUATIC

J&J Transplant Aquatic Nursery, LLC
P.O. Box 227
Wild Rose, WI 54984-0227
1-800-622-5055

Prairie Nursery, Inc.
P.O. Box 306
Westfield, WI 53964
1-800-476-9453

Prairie Moon Nursery
32115 Prairie Lane
Winona, MN 55987
1-866-417-8156

Dragonfly Gardens
491 State Highway 46
Amery, WI
(715) 268-7660

Hickory Road Gardens
2041 Hickory Road
Mosinee, WI 54455
(715) 693-6446

Stone Silo Prairie Garden
2325 Oak Ridge Circle
De Pere, WI 54115
(920) 336-1662

Agrecol, LLC
10101 North Casey Road
Evansville, WI 53536
(608) 223-3571

Alpha Nurseries, Inc.
3737 65th Street
Holland, MI 49423
(269) 857-7804

Outback Nursery, Inc.
15280 110th Street South
Hastings, MN 55033
(651) 438-2771

Reeseville Ridge Nursery
512 South Main Street
Reeseville, WI 53579
(920) 927-3291

Hanson's Garden Village
2660 County Hwy G
Rhineland, WI 54501
(715) 365-2929

3.02 EROSION CONTROL SUPPLIERS

- A. At CONTRACTOR'S option, CONTRACTOR may contact following companies for erosion blanket and staple supplies:

Hanes Geo
N94W143330 Garwin Mace Drive
Menomonee Falls, WI 53051
(866) 437-6839

CFM – Construction Fabrics & Materials Corp.
2525 Peiper Road
Cottage Grove, WI 53527
(608) 839-8031

Brock White
1425 South Ashland Avenue
Green Bay, WI 54304
(920) 432-6438

Earth & Road
101 Skyline Drive
Arlington, WI 53911
(608) 635-7755

3.03 HERBICIDE SUPPLIERS

- A. At CONTRACTOR'S option, CONTRACTOR may contact following companies for chemical supplies:

Crop Production Services
N125 County Highway C
DeForest, WI 53532
(608) 846-1100

Red River Specialties, Inc.
7545 Haygood Road
Shreveport, LA 71107
(317) 440-7103

PART 4 EXECUTION

4.01 PROJECT/SITE CONDITIONS

- A. Inspection:
1. Prior to beginning Work, CONTRACTOR shall examine and verify acceptability of Project site for conditions under which seeding and planting are to be performed. Do not proceed with Work until satisfactory conditions are present.
 2. Starting Work constitutes acceptance of conditions under which Work is to be performed. After such acceptances, CONTRACTOR shall be responsible for correcting unsatisfactory and defective Work resulting from such unsatisfactory conditions.
 3. When landscape work is executed in conjunction with construction of other work, coordinate schedule to permit execution of landscape work.

4.02 SITE PREPARATION/MAINTENANCE

- A. The Cattail Marsh and Northern Sedge Meadow Enhancement Zone (Standing Water) (Plant Community Map) shall not be seeded or planted; however, a combination of selective cutting and two (2) or three (3) spot herbicide applications to address invasive species will be conducted throughout the 2016 growing season. An initial treatment targeting Reed Canary Grass will be conducted by another contractor in June 2016 to assist with long-term control of this species. A herbicide solution including aquatic approved chemical (glyphosate or imazapyr), surfactant or MSO, ammonium sulfate and marking dye are to be utilized for each application and shall be applied at the rates recommended on the label for the vegetation species present. The first application is expected to be completed in late July. The second and third, if necessary, applications are expected to be undertaken in late August and late September or early October – prior to the first hard freeze. The schedule for herbicide applications will be flexible to accommodate the weather and existing growing conditions; however, the Contractor must communicate with the City and the Engineer prior to conducting any application. Care must be taken to ensure populations of existing or installed native plants are not killed during the process. Contractor must select appropriate means in which to apply the herbicide to ensure protection of native plant populations. Incomplete, untimely or unsuccessful herbicide treatments may result in additional treatment requirements to be conducted at the Contractor's expense. Damage or loss of native plant populations shall also be replaced at Contractor's expense.

4.03 SEEDING

- A. Seedbed Preparation
1. Prior to seeding a cover crop or native species, the planting areas shall be prepared through the following sequence:
 - a. Enhancement Zones (Plant Community Map): A combination of selective cutting and two (2) or three (3) spot herbicide applications to address invasive species will be conducted throughout the 2016 growing season. An initial treatment targeting Reed Canary Grass will be conducted by another contractor in June 2016 to assist with long-term control of this species. A herbicide solution including aquatic approved chemical (glyphosate or imazapyr), surfactant or MSO, ammonium sulfate and marking dye are to be utilized for each application and shall be applied at the rates recommended on the label for the vegetation species present. The first application is expected to be completed in late July. The second and third, if necessary, applications are expected to be undertaken in late August and late September or early October – prior to the first hard freeze.

The schedule for herbicide applications will be flexible to accommodate the weather and existing growing conditions; however, the Contractor must communicate with the City and the Engineer prior to conducting any application. Care must be taken to ensure populations of existing or installed native plants are not killed during the process. Contractor must select appropriate means in which to apply the herbicide to ensure protection of native plant populations. Incomplete, untimely or unsuccessful herbicide treatments may result in additional treatment requirements to be conducted at the Contractor's expense. Damage or loss of native plant populations shall also be replaced at Contractor's expense.

- b. Restoration Zones (Plant Community Map): A combination of mowing and two (2) or three (3) broadcast herbicide applications to eliminate existing vegetation will be conducted throughout the 2016 growing season. An initial treatment targeting Reed Canary Grass will be conducted by another contractor in June 2016 to assist with long-term control of this species. A herbicide solution including the chemical (glyphosate, imazapyr, clopyralid or clethodim – later 2 may only be utilized in non-aquatic settings), a surfactant or MSO, ammonium sulfate and marking dye are to be utilized for each application and shall be applied at the rates recommended on the label for the vegetation species present. The first application is expected to be completed in late July or early August. The second and third, if necessary, applications are expected to be undertaken in late August and late September or early October – prior to the first hard freeze. The schedule for herbicide applications will be flexible to accommodate the weather and existing growing conditions; however, the Contractor must communicate with the City and the Engineer prior to conducting any application. Contractor must select appropriate means in which to apply the herbicide. Incomplete, untimely or unsuccessful herbicide treatments may result in additional treatment requirements to be conducted at the Contractor's expense.
- c. Portions of the Mesic Forest, Mesic Prairie, Northern Sedge Meadow Restoration, Shrub-Carr Wetland Restoration, Wet-Mesic Prairie and Wet Mesic Forested Wetland Restoration Planting Zones: following the last herbicide application and prior to sowing the native seed and cover crop, the soil shall be lightly worked to a depth of ¼" – ½" in depth with a disc and/or harrow. The topsoil shall be free of heavy clay, refuse, stumps, large roots, rocks over 2 inches in diameter, weeds, or other extraneous material which would be detrimental to good seed-to-soil contact, and therefore seed establishment. If the soil is too light and fluffy, the area shall be cultipacked to provide a firmer seedbed prior to seeding.
- d. Northern Sedge Meadow Enhancement Zone: Existing vegetation shall be mowed to a height of 2-3" prior to sowing the native seed and cover crop to allow good seed dispersal and soil contact.

B. Installation:

- 1. Seeding shall occur immediately after seedbed preparation. Restoration Zones shall be seeded with the native seed mixes at the PLS ounces per acre rate indicated in Paragraph 2.01 G. Enhancement Zones shall be seeded with the native seed mixes at one half the PLS ounces per acre rate indicated in Paragraph 2.01 G. Seeding shall be conducted within the designated communities (Maps) between October 15th and November 30th.
- 2. All native seed species shall be mixed on-site prior to installation.
- 3. If the communities are hand sown, the seed shall be mixed with a carrier (e.g., sawdust, vermiculite, moist sand, etc.) to ensure even seed distribution. If a broadcast seeder is utilized, it shall be properly calibrated to ensure an even seed distribution is achieved within the planting area.
- 4. After the seed has been installed, the area shall be rolled to ensure good seed to soil contact.
- 5. Once seed installation is complete in one of the Mesic Prairie Planting Zones, erosion blanket shall be placed in those areas designated on the Drawings. Erosion blanket installation shall follow those requirements outlined in 4.08 below.

C. Seeding shall not be permitted during the following conditions unless otherwise approved:

1. Frozen soil or water conditions.
2. Wind speeds >10 miles per hour.
3. Temperatures less than 32 degrees Fahrenheit.
4. Temperatures greater than 90 degrees Fahrenheit.

4.04 LIVE PLANTING WITH PLUGS OR BARE-ROOT MATERIAL

A. Preparation:

1. Prior to installing the live plants, the planting area shall be prepared through the following sequence:
 - a. Enhancement Zones (Plant Community Map): A combination of selective cutting and two (2) or three (3) spot herbicide applications to address invasive species will be conducted throughout the 2016 growing season. An initial treatment targeting Reed Canary Grass will be conducted by another contractor in June 2016 to assist with long-term control of this species. A herbicide solution including aquatic approved chemical (glyphosate or imazapyr), surfactant or MSO, ammonium sulfate and marking dye are to be utilized for each application and shall be applied at the rates recommended on the label for the vegetation species present. The first application is expected to be completed in late July. The second and third, if necessary, applications are expected to be undertaken in late August and late September or early October – prior to the first hard freeze. The schedule for herbicide applications will be flexible to accommodate the weather and existing growing conditions; however, the Contractor must communicate with the City and the Engineer prior to conducting any application. Care must be taken to ensure populations of existing or installed native plants are not killed during the process. Contractor must select appropriate means in which to apply the herbicide to ensure protection of native plant populations. Incomplete, untimely, or unsuccessful herbicide treatments may result in additional treatment requirements to be conducted at the Contractor's expense. Damage or loss of native plant populations shall also be replaced at Contractor's expense.
 - b. Restoration Zones (Plant Community Map): A combination of mowing and two (2) or three (3) broadcast herbicide applications to eliminate existing vegetation will be conducted throughout the 2016 growing season. An initial treatment targeting Reed Canary Grass will be conducted by another contractor in June 2016 to assist with long-term control of this species. A herbicide solution including the chemical (glyphosate, imazapyr, clopyralid or clethodim – later 2 may only be utilized in non-aquatic settings), a surfactant or MSO, ammonium sulfate and marking dye are to be utilized for each application and shall be applied at the rates recommended on the label for the vegetation species present. The first application is expected to be completed in late July. The second and third, if necessary, applications are expected to be undertaken in late August and late September or early October – prior to the first hard freeze. The schedule for herbicide applications will be flexible to accommodate the weather and existing growing conditions; however, the Contractor must communicate with the City and the Engineer prior to conducting any application. Contractor must select appropriate means in which to apply the herbicide. Incomplete, untimely, or unsuccessful herbicide treatments may result in additional treatment requirements to be conducted at the Contractor's expense.
 - c. Select Mesic Forest Restoration Zones (Plant Community Map): 3" of shredded hardwood bark shall be installed after site preparation and prior to planting.
 - d. OWNER, ENGINEER and CONTRACTOR will meet on site to identify plant species locations throughout the restoration area.
 - e. Paragraph 2.01 H. indicates the native species and quantities to be planted.

B. Excavation for Planting:

1. Plant pits shall be prepared by excavating a hole into the existing soil with either the installer's hand, tree spade, shovel or power auger to a minimum diameter of 3" for 2.5" potted material and 6" for 4.5" potted material and sufficiently deep for both potted and

bare root material to allow the root collar to be at the original grade after the plant is positioned in the hole.

2. In areas where mulch is added, the material shall be moved to create the planting hole.
3. Additional directions regarding bare root plant installation from the nursery shall be followed.

C. Installation and Procedures:

1. Submergent and Emergent Aquatic plants shall be installed between July 15th and August 31st
2. Plants to be installed in the Mesic Forest Restoration, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland Restoration, Tag Alder Enhancement and the Wet-Mesic Forested Wetland Enhancement & Restoration communities shall be installed between October 15th and November 30th. Planting may occur earlier if site preparation appears adequate and the Owner & Engineer agree.
3. Submergent Aquatic plants shall be installed in water depths ranging from 12"-36" in depth.
4. Emergent Aquatic plants shall be installed in water depths ranging from 0"-12" in depth.
5. Submergent Aquatic plants will be planted in clusters within the planting zone located north of the boat ramp (Plant Community Map). Clusters shall contain a mix of species found in Paragraph 2.01 H. and be randomly planted in "clumps" of 10 to 25 individuals on approximate three-foot centers throughout the planting zone.
6. Emergent Aquatic plants shall be installed at indicated planting depths and cannot be submerged when planted. A minimum of 3" of plant material must be above the waterline, to ensure good growth and to handle flood inundations from storm events. Wetland plants will be randomly planted in "clumps" of 5 to 10 individuals on approximate three-foot centers throughout the planting zone. All species within a given "clump" shall be the same and the maximum distance between "clumps" shall be five feet.
7. Live plants to be installed in the Mesic Forest (Mulched Areas), Sedge Meadow Restoration (Standing Water) and Shrub-Carr Upland communities will be randomly planted in "clumps" of 5 to 10 individuals on approximate 3-foot centers that will be randomly scattered throughout the planting zone.
8. Live plants to be installed in the Mesic Forest (Seeded Areas), Northern Sedge Meadow Restoration, Shrub-Carr Wetland Restoration, Tag Alder Enhancement and Wet-Mesic Forested Wetland Enhancement & Restoration communities will be randomly planted in "clumps" of 5 to 10 individuals on approximate 6-foot centers that will be randomly scattered throughout the planting zone.
9. Container-Grown Plants:
 - a. Carefully open and remove potted plants from containers.
 - b. Unwind and/or cut encircling roots with a sharp tool. Exceptionally long roots shall be shortened and all roots shall be guided gently downward and outward to prevent root girdling.
 - c. Place plant in center of pit making sure the root collar is flush with the existing soil surface prior to backfilling with native soil. Backfill and hand tamp until soil is at final grade. No soil shall be placed over the root collar.
 - d. If planted through erosion blanket, replace blanket to its original position making sure to secure the material with additional staples. The fabric shall not be in direct contact with the plant. Excess material shall either be removed or folded upon itself to eliminate contact.
 - e. If planted in mulched areas, the mulch shall be placed back around the plant, but not so that it is directly in contact with it.
10. Bare-root Plants:
 - a. If nursery recommends additional means to secure the bare root material to the substrate such as using staples or weights, they shall be utilized to ensure successful establishment.
 - b. Bare-root material shall not be planted directly into the mulch; the roots must be installed in the soil below.

D. Planting shall not be permitted during the following conditions unless otherwise approved:

1. Frozen soil conditions.
2. Temperatures less than 32 degrees Fahrenheit.
3. Temperatures greater than 90 degrees Fahrenheit.

4.05 TREE & SHRUB PLANTING

A. Preparation:

1. OWNER, ENGINEER and CONTRACTOR will meet on site to identify plant species locations throughout the restoration area.
2. Paragraph 2.01 I. indicates the native species and quantities to be planted.

B. Excavation for Planting:

1. Plant Pits:
 - a. Planting pits shall be prepared through the following sequence:
 - 1) Center the planting pits at the stake location.
 - 2) Excavate pits to a minimum diameter of 24", where feasible, and sufficiently deep to allow the root collar to be at the original grade after the bare-root and/or potted tree or shrub is positioned in the hole. Pits shall be saucer-shaped with no vertical sides.
 - 3) The pit sides shall be roughened to allow future root penetration.
 - 4) Do not install plantings where depth of soil over underground construction, obstructions or rock is insufficient to accommodate roots or where pockets in rock or impervious soil require drainage. Remove rock or other underground construction and drain planting areas only when approved by ENGINEER. Payment for extra work shall be based on in-place volume required to provide normal requirements for plantings.
 - a) Where such conditions are encountered in excavation planting areas and where stone, boulders or other obstruction cannot be broken or removed by hand methods and where trees to be planted are under overhead wires, alternate locations for planting may be designated by ENGINEER.
 - b) Where locations cannot be changed as determined by ENGINEER, submit cost required to remove obstructions to depth of not less than 6 in. below required pit depth.
 - c) Dispose of excavated material not suitable for backfilling off-site.
 - d) If drainage problems are encountered detrimental to growth of specified plant material, notify ENGINEER of conditions before proceeding with Work.
 - 5) Container grown plants shall be placed on undisturbed soil. See typical planting detail – Sheet 11.
 - 6) Bare-root plants shall be set on a mound of backfill material. See typical planting detail – Sheet 11.
 - 7) If holes are excavated on a slope, proper depth shall be obtained by adding or removing soil on uphill or downhill side such that root collar ends up slightly above grade 1" – 2".
 - 8) Subsoil materials shall be kept separate from the above topsoil layer.

C. Installation Procedures:

1. Trees and shrubs will be randomly scatter planted throughout the Mesic Forest Restoration, Shrub-Carr Upland, Shrub-Carr Wetland Restoration, Tag Alder Enhancement and Wet-Mesic Forested Wetland Restoration & Enhancement Communities. Shrubs shall be placed in "clumps" of 3 to 5 individuals on approximate five-foot centers. Trees shall be planted no closer than ten feet apart throughout the restoration area.
2. Bare root and container-grown trees and shrubs shall be dormant planted between October 15th to November 30th.
3. Planting materials outside the above dates shall be considered unseasonable and requires approval by the ENGINEER.
4. If special conditions exist which warrant installation outside normal planting seasons, CONTRACTOR shall submit a written request to the OWNER and ENGINEER describing conditions and stating proposed variance. Approval to plant under such conditions shall in no way relieve CONTRACTOR from warranty.
5. Container-Grown Plants:
 - a. Carefully open and remove potted plants from containers.

- b. Unwind and/or cut encircling roots with a sharp tool and then score the sides of the root ball in several locations around the perimeter. Exceptionally long roots shall be shortened and all roots shall be guided gently downward and outward to prevent root girdling.
 - c. Place plant in center of pit making sure the root collar is flush with the existing soil surface prior to backfilling with native soil. While backfill approximately 3/4 of the hole, large rocks and debris shall be removed. Large clumps of ground and sod shall be broken apart while filling the pit; and if used, shall not interfere with root growth. Ground placed in the hole shall not be compacted; rather, water shall be poured over the soil to promote natural settling around the root ball. Once settled, fill the remaining hole making sure to use salvaged topsoil to bring up to grade. Water the additional backfill to promote final settling, lightly tamp and add topsoil that meets CITY specifications, if necessary. No soil shall be placed over the root collar. Approximately 10-20 gallons of water shall be used to settle the soil and irrigate the root ball and surrounding soil during installation.
6. Bare Root Plants:
- a. Prior to installing the trees and shrubs, their roots shall be soaked in water for several minutes, but no longer than 3 hours. Care should be taken to keep the roots from drying out during the planting process.
 - b. Place plants firmly on the mound of backfill material in the center of pit and spread the roots in a natural position within the pit while keeping the root collar flush with the existing soil surface.
 - c. Cut off broken or frayed roots. Roots too long for the planting hole shall be trimmed to prevent root girdling.
 - d. Place plant in center of pit making sure the root collar is flush with the existing soil surface prior to backfilling with native soil. While backfill approximately 3/4 of the hole, large rocks and debris shall be removed. Large clumps of ground and sod shall be broken apart while filling the pit; and if used, shall not interfere with root growth. Ground placed in the hole shall not be compacted; rather, water shall be poured over the soil to promote natural settling around the root ball. Once settled, fill the remaining hole making sure to use salvaged topsoil to bring up to grade. Water the additional backfill to promote final settling, lightly tamp and add topsoil that meets specifications, if necessary. No soil shall be placed over the root collar. Approximately 5-10 gallons of water shall be used to settle the soil and irrigate the root ball and surrounding soil during installation.
 - e. CONTRACTOR shall inspect all trees and shrubs two to five days after installation is completed and make any required adjustments or material additions.

D. Tree Protectors & Stakes:

- 1. Bare-root & Container Grown Plants.
 - a. Assemble and install loose plastic tubing around tree or shrub
 - b. Tube shall be placed flush or below the soil surface to prevent rodent access.
 - c. Protector shall be securely fastened in place with a wooden or PVC stake
 - d. Stakes shall be installed 12" into the ground to ensure stability.
 - e. Tubes shall be attached the stake with cable or wire ties at two

E. Planting shall not be permitted during the following conditions unless otherwise approved:

- 1. Saturated soil conditions.
- 2. Frozen soil conditions.
- 3. Temperatures less than 32 degrees Fahrenheit.
- 4. Temperatures greater than 90 degrees Fahrenheit.

4.05 LIVE STAKE INSTALLATION

A. Preparation:

- 1. OWNER, ENGINEER and CONTRACTOR will meet on site to determine live stake locations.
- 2. Paragraph 2.01 I. indicates the native species and quantities to be planted.

B. Installation:

1. Stakes shall be installed in a dormant state between October 15th and May 15th.
2. Stakes shall be randomly, but evenly scattered throughout the Shrub-Carr Wetland Restoration Planting Community.
3. A pilot hole shall be created with a suitable tool that will allow roughly $\frac{3}{4}$ of the stake (75%) to be inserted into the soil. If the soils allow, a planting hole may not be necessary and the stake can either be pushed or tapped (using a rubber mallet) into the ground to the required depth. Installing stakes via the latter method will require the CONTRACTOR to take care so the stakes are not damaged including split tops. Damaged material will be replaced at the CONTRACTOR'S expense.
4. Live stakes shall be installed as vertically as possible with two to five (2-5) bud scars present above ground. Additional length shall be removed.
5. Stakes installed in a pilot hole shall have the soil around the stake tamped and watered to eliminate air pockets.

C. Installation shall not be permitted during the following conditions unless otherwise approved:

1. Frozen soil conditions.
2. Temperatures less than 32 degrees Fahrenheit.
3. Temperatures greater than 90 degrees Fahrenheit.

4.06 GOOSE FENCE

A. Installation

1. Before live plants are installed, metal t-posts shall be placed at roughly ten-foot intervals around the perimeter of the Aquatic Submergent/Emergent Restoration, Mesic Prairie and Northern Sedge Meadow planting zones as designated on the Plant Community Map.
2. Green safety/snow fence shall be attached to each post at three locations using cable ties along the length of the plantings. Fencing shall be taut to keep geese from walking into the area from land. The fence shall be four feet in height and must be installed so it is flush with the ground to prevent geese from going under.
3. Areas >10' in width shall have Goose Grid Fencing installed. Nylon rope or bailing twine shall be attached between the inner and outer posts in a cross-hatch pattern over the planting area. Additional posts shall be added to ensure supports are no more than 20 feet apart. The rope shall be taut and located a minimum of 36" above the water. Flagging shall be tied intermittently along the rope to provide motion and alert waterfowl to the fencing. Fencing shall be installed as the plants are installed to ensure protection of the plants throughout the entire planting process. See fencing detail – Sheet 11.

B. Maintenance

1. Goose fencing shall be maintained throughout the first full growing season (2017).

C. Removal

1. CONTRACTOR shall be responsible for removal of the fencing system.

4.07 CARP BARRIER

A. Installation

1. Before live plants are installed, metal t-posts shall be placed at roughly five-foot intervals around the perimeter of the Aquatic Submergent/Emergent Restoration zone as designated on the Plan Community Map.
2. 14 gauge welded wire fence shall be attached to each post at three locations using cable ties along the length of the plantings. Fencing shall be four feet in height, taut and must be installed so it is flush with the ground to prevent carp from going under. See fencing detail per Sheet 11.
3. Fencing shall be installed as the plants are installed to ensure protection of the plants throughout the entire planting process.

B. Maintenance

1. Carp fencing shall be maintained throughout the first full growing season (2017).

C. Removal

2. CONTRACTOR shall be responsible for removal of the fencing system.

4.08 EROSION CONTROL MATERIALS

A. Installation

1. The CONTRACTOR shall install the erosion blanket and stakes per manufacturer's recommendations.
2. Install Class I, Urban, Type A (S 75 BN) erosion blanket and biodegradable stakes on the Mesic Prairie planting zone per Sheet 17 within 72 hours after seeding.
3. Do not apply during high winds.

4.09 WATERING

A. General:

1. Apply a minimum of five gallons of water to each tree, shrub, and live stake immediately after installation.
2. Apply a minimum of five gallons of water to each tree, shrub, and live stake weekly for the first four (4) weeks of the growing season after installation unless ≥ 1 " of rainfall is received during that week.

4.10 CLEAN UP AND REPAIR

- A. Remove excess and waste material daily.
- B. Upon completion of planting, remove excess soil, stones, and debris and dispose of off-site.
- C. CONTRACTOR shall be liable for any damage caused to surrounding properties as a result of negligence when conducting landscape installation. Damage to existing landscape, pavements, or other site features as result of Work shall be repaired to its original condition.

4.11 PRELIMINARY ACCEPTANCE

- A. Notify ENGINEER at conclusion of planting and seeding operations so OWNER and ENGINEER can determine completion by field inspection.
- B. Completion requires:
 1. Seed and plant material conforms to Contract Documents with respect to quantity, quality, size, species, and location, except those items accepted or revised in the field by OWNER and ENGINEER.
 2. Plant material shall be established, upright, green (i.e., healthy condition), and exist in the locations as determined by the OWNER and ENGINEER.

4.12 MAINTENANCE DURING WARRANTY PERIOD

A. General:

1. CONTRACTOR shall provide maintenance during the warranty period in accordance with the submitted and approved Maintenance Plan.
2. Repair work necessitated by CONTRACTOR'S operations, land disturbance outside designated work areas, CONTRACTOR'S failure to perform adequate maintenance or due to CONTRACTOR'S negligence shall be performed without cost to OWNER.
3. Any soil erosion resulting from inadequate cover crop or permanent seed establishment shall be corrected at the CONTRACTOR'S expense.

B. Protection:

1. CONTRACTOR is liable for damage to planted areas caused by deicing compounds, toxic substances, fertilizers, pesticides, and other materials applied by CONTRACTOR. CONTRACTOR is not liable for materials applied by others or damage caused by vandalism or acts of God.

2. Protect landscape Work and materials from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection until completion and acceptance.
 3. Protect existing property and improvements within these sites and those adjacent to OWNER'S property.
- C. Performance Standards: The below performance standards will be used to verify the success of the restored wetland and upland communities. Some of the standards will also help determine if the wetland is providing increased functional values.
1. Year 1
 - a. Except in the far eastern Mesic Forest stand, aerial coverage of invasive, non-native species such as giant reed grass, reed canary grass, purple loosestrife, Japanese knotweed and garlic mustard will not be >10% absolute cover after one year.
 - b. Aerial coverage of garlic mustard will not be >75% absolute cover after one year within the far eastern Mesic Forest stand.
 - c. After one year, $\geq 75\%$ of the vegetative cover within the restoration site will be native species, <25% of the cover will be invasive, non-native species.
 - d. Eighty percent of the site will be vegetated within one year.
 - e. 90% of trees, shrubs and live stakes planted within the various communities will be present and healthy one year after installation.
 - f. The Aquatic Submergent/Emergent Restoration Community shall have a minimum of 20 native, non-invasive species present.
 - g. The Mesic Forest, Mesic Prairie, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder, Wet-Mesic Forested Wetland and Wet-Mesic Prairie Communities shall each have a minimum of 20 native, non-invasive species present.
 - h. The Mesic Prairie and Wet-Mesic Prairie Communities shall each have a minimum of 15 native, non-invasive species present.
 - i. To ensure the restored communities have natural significance, the floristic quality index (FQI) and Coefficient of Conservatism (Mean C) for each shall be ≥ 20 and ≥ 3.5 , respectively, after one year. FQI values will be calculated utilizing all species present: non-native species will be assigned a value of zero.
 2. Year 2
 - a. Except in the far eastern Mesic Forest stand, aerial coverage of invasive, non-native species such as giant reed grass, reed canary grass, purple loosestrife, Japanese knotweed and garlic mustard will not be >5% absolute cover after two years.
 - b. Aerial coverage of garlic mustard will not be >50% absolute cover after two years within the far eastern Mesic Forest stand.
 - c. After two years, $\geq 80\%$ of the vegetative cover within the restoration site will be native species, <20% of the cover will be invasive, non-native species.
 - d. Eighty five percent of the site will be vegetated within two years.
 - e. 80% of trees, shrubs and live stakes planted within the various communities will be present and healthy one year after installation.
 - f. The Aquatic Submergent/Emergent Restoration Community shall have a minimum of 20 native, non-invasive species present.
 - g. The Mesic Forest, Mesic Prairie, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder, Wet-Mesic Forested Wetland and Wet-Mesic Prairie Communities shall each have a minimum of 25 native, non-invasive species present.
 - h. The Mesic Prairie and Wet-Mesic Prairie Communities shall each have a minimum of 20 native, non-invasive species present
 - i. To ensure the restored communities have natural significance, the floristic quality index (FQI) and Coefficient of Conservatism (Mean C) for each shall be ≥ 22 and ≥ 3.8 , respectively, after two years. FQI values will be calculated utilizing all species present: non-native species will be assigned a value of zero.
 3. Year 3.

- a. Except in the far eastern Mesic Forest stand, aerial coverage of invasive, non-native species such as giant reed grass, reed canary grass, purple loosestrife, Japanese knotweed and garlic mustard will not be >5% absolute cover after two years.
- b. Aerial coverage of garlic mustard will not be >25% absolute cover after three years within the far eastern Mesic Forest stand.
- c. After three years, $\geq 85\%$ of the vegetative cover within the restoration site will be native, non-invasive species, <15% of the cover will be invasive, non-native species.
- d. Ninety percent of the site will be vegetated within three years.
- e. 75% of trees, shrubs and live stakes planted within the various communities will be present and healthy one year after installation.
- f. The Aquatic Submergent/Emergent Restoration Community shall have a minimum of 20 native, non-invasive species present.
- g. The Mesic Forest, Mesic Prairie, Northern Sedge Meadow, Shrub-Carr Upland, Shrub-Carr Wetland, Tag Alder, Wet-Mesic Forested Wetland and Wet-Mesic Prairie Communities shall each have a minimum of 30 native, non-invasive species present.
- h. The Mesic Prairie and Wet-Mesic Prairie Communities shall each have a minimum of 25 native, non-invasive species present.
- i. To ensure the restored communities have natural significance, the floristic quality index (FQI) and Coefficient of Conservatism (Mean C) for each shall be ≥ 25 and ≥ 4.0 , respectively, after three years. FQI values will be calculated utilizing all species present: non-native species will be assigned a value of zero.
- j. Twenty one of the forty two nesting and roosting boxes shall be utilized or occupied annually by year three.
- k. Twenty avian species, five species of reptiles and amphibians, and five mammal species will be recorded, either through direct observation, calls or sign left by the species, utilizing the site after three years.

4.13 WARRANTY

- A. During the 1-year warranty period, CONTRACTOR shall re-seed areas with poor germination and replace diseased, unhealthy, and dying plants to meet the following criteria:
 1. Seeding success criteria – An area will be considered satisfactory if it meet the following:
 - a. A minimum of 75% total native vegetative coverage.
 - b. No bare areas larger than 10 square feet.
 - c. Vegetation is in healthy condition.
 2. Except in the unprotected Aquatic Submergent/Emergent Restoration Planting Zone on the north shore, 90% of the installed plants, shrubs, trees, and live stakes are living and healthy.
 3. 50% of the installed plants are living and healthy in the unprotected Aquatic Submergent/Emergent Restoration Planting Zone on the north shore.
- B. Replacement and Damages:
 1. Prior to expiration of the 1-year warranty period, follow-up inspection will be made to determine replacements required to be made by CONTRACTOR in accordance with provisions of these Specifications. ENGINEER will document findings in field report, and forward copies to CONTRACTOR. Items identified for replacement will be tagged during inspection with plastic flagging. Decision of OWNER and ENGINEER for required replacements is final and binding upon CONTRACTOR.
 2. CONTRACTOR is responsible for repairing damage to property caused by defective workmanship and materials.
- C. Exclusions:
 1. CONTRACTOR is not liable for replacement cost of seeds and plants damaged by extreme weather conditions. CONTRACTOR is not liable for plants not installed by CONTRACTOR under CONTRACTOR'S supervision, by relocation or removal by others,

by acts of God, or by vandalism, and losses because of curtailment of water by local authorities.

4.14 REPLACEMENTS

A. General Procedure

1. Reseeding and replanting shall be performed at the CONTRACTOR'S expense and in conformance with the original seeding and planting specifications unless they are modified by the ENGINEER.
2. Seed and plant replacements shall be of the same species, quality, and size as originally installed, or with substitutes pre-approved in writing by the ENGINEER.
3. Replanting and reseeding activities shall be conducted during the first available period, as determined by the OWNER and ENGINEER.
4. Dispose of dead plants off-site.
5. Restore areas damaged by replacement operations to original condition.
6. Notify OWNER and ENGINEER at conclusion of replacement program
7. OWNER and ENGINEER will conduct inspection of replacements for determining final acceptance.

B. Plant Material

1. Replace plants that have failed to flourish so their usefulness or appearance has been impaired. Missing or displaced plants along with those that have died, are in dying condition, or are stressed (e.g., yellowed, wilted, etc.) shall be replaced per OWNER recommendations.
2. Replace trees and shrubs with dead main leader or crown which is 25% or more dead.
3. Replace live stakes with no vegetative growth.

4.15 FINAL ACCEPTANCE

A. Procedure

1. Upon completion of replacement program, CONTRACTOR shall notify OWNER and ENGINEER.
2. OWNER and ENGINEER will inspect the site to determine acceptability of required replacements.
3. If acceptable and the warranty criteria outlined in 4.13.A.1.&2. are met, OWNER and ENGINEER shall notify CONTRACTOR, in writing, of final acceptance of Work.
4. After acceptance, OWNER will be responsible for all future replacements and maintenance.

4.15 MEASUREMENT AND PAYMENT

A. Include cost of:

1. Site preparation activities including spot & broadcast herbicide applications, mowing, debris removal, and soil preparation.
2. Providing and installing seed mixtures.
3. Providing and installing plants, shrubs, trees, and live stakes.
4. Storage of plant material.
5. Replacement of plants under warranty period.
6. All labor, materials and equipment necessary for planting and maintenance during establishment of native vegetation.
7. Cleanup.
8. Maintenance Plan.
9. Other appurtenant and incidental Work.

B. Do not include cost of:

1. Work included in other Bid items.

C. Measurement for Payment:

1. Work under this section shall be paid for at the contract unit price.

- END OF SECTION -

SECTION 32 95 00

HABITAT STRUCTURES

PART 1 -GENERAL

1.01 SUMMARY

- A. Work Included: This section includes the following:
1. Fish Stick Structures.
 2. Brush Pile Structures.
 3. Rock Pile Structures.
 4. Log Structures.
 5. Bird House Structures.
 6. Bat House Structures.
 7. Willow Hinge Cut
 8. Loafing Platform
 9. Turtle Nesting
 10. Lunker Structures
 11. Pike Access
- B. Related Sections and Divisions:
1. Applicable provisions of the General Conditions shall govern work in this section.
 2. Section 01 32 19, Submittals.
 3. Section 03 33 03, Cast in Place Concrete – Street Work Pavement, Curb and Gutter, Sidewalk, and Driveway.

1.02 REFERENCES

- A. Wisconsin Administrative Codes NR 103, NR 323, and NR 353
- B. American Society for Testing and Materials (ASTM).

1.03 SUBMITTALS

- A. Submit the following in accordance with Section 01 32 19, Submittals:
1. The contractor shall submit certifications for all products incorporated in each habitat structure device stating compliance with the specification.

PART 2 - PRODUCTS

2.01 FISH STICKS

- A. Trees shall be hardwood species that range from 40-70 feet in height with a minimum diameter of 8". Trees shall have intact tops with multiple branches to provide underwater structure and cover. Trees will be freshly harvested no more than four weeks prior to installation from an off-set location and transported to the restoration site for placement.
- B. Minimum 3/8" diameter galvanized steel cable and clamps meeting ASTM Current standards.

- C. Galvanized 3” diameter galvanized steel pipes in 10-12 feet in length and fastener bracket shall meet all ASTM Current Standards.

2.02 BRUSH PILES

- A. Bottom logs shall be 4-6 inches in diameter and shall be cut in a length of 10 feet.
- B. Odd length branches from material cut on site while completing site preparation activities including honeysuckle removal shall be utilized.

2.03 ROCK PILES

- A. Rounded unbroken field stone in diameter of 6-36” obtained from a nearby source.
- B. If clearing and grubbing occurs within the area, concrete from the existing foundations to be removed may be broken into smaller pieces ranging from 6-36” and be included into the final product.

2.04 LOG STRUCTURES

- A. Logs shall be 8-16 inches in diameter and shall be cut in a length of 10-20 feet.
- B. Duckbill earth anchor shall be a 3-inch anodized aluminum anchor, 1/8-inch galvanized cable that is 5 feet in length and galvanized cable clamps or equal shall be used.

2.05 BIRD HOUSES

- A. Tree Swallow/Eastern Bluebird
 1. Nesting box shall be mounted 5-6 feet above the ground on 3/4-inch Rigid Metal Conduit (RMC) made of stainless steel.
 2. Stainless steel 3/4-inch conduit 2-hole straps or equal shall be used.
 3. Approved suppliers if chosen to purchase premade structure:
 - a. Midwest Prairies
10651 N. Charley Bluff Rd
Milton, WI 53563
608-868-3169
 - b. Fred Craig
608 526-2221
fm266@centurytel.net
- B. Eastern Screech Owl
 1. 2-3-inch of wood chips shall be placed in the box
 2. Nesting box shall be placed at least 10 feet above the ground on a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be > 13’ in length. A standard mounting bracket such as the one sold by Lone Star Woodcraft or equal may be utilized; however, the bracket shall be made flush with the box edges when complete. Otherwise, the contractor shall follow the instructions found at the following website:
<http://www.batcon.org/pdfs/bathouses/InstallingYourBatHouseWoodenPostSteel%20Pole.pdf>. Although the instructions are for the installation of a bat house, the procedure for

installing a house on a steel pole can be applied. The steps for installing the steel pole can also be found here.

3. If contractor prefers to purchase the houses, wooden houses can be purchased from the following companies:

Midwest Prairies
10651 N. Charley Bluff Rd
Milton, WI 53563
608-868-3169

P&S Country Crafts, LLC
1441 Peaked Hill Road
Bristol, NH 03222
(603) 744-2265
<http://www.pscountrycrafts.com/shop/proddetail.php?prod=screech-owl-bird-house>

C. Wood Duck

1. 4-inch of wood shavings or a mix of shavings and wood chips shall be placed in the nest box
2. Nesting box shall be mounted 6 feet above the ground on a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be 8' in length.
3. A standard mounting bracket such as the one sold by Lone Star Woodcraft or equal may be utilized; however, the bracket shall be made flush with the box edges when complete. Otherwise, the contractor shall follow instructions at the following website: <http://www.batcon.org/pdfs/bathouses/InstallingYourBatHouseWoodenPostSteel%20Pole.pdf>. Although the instructions are for the installation of a bat house, the procedure for installing a house on a steel pole can be applied.
4. If contractor prefers to purchase the houses, wooden houses can be purchased from the following groups or companies:

Midwest Prairies
10651 N. Charley Bluff Rd
Milton, WI 53563
608-868-3169

Minnesota Waterfowl Association
907 First St. North
Hopkins, MN 55343
952-767-0320
<http://www.mnwaterfowl.com/page/show/339127-minnesota-waterfowl-association>

D. Great Blue Heron

1. Pole used to mount nests shall be 35-40' cedar pole with a bottom diameter of 8-10-inch. The pole shall be installed 6-8' into the ground to ensure stability.
2. Three nesting platforms shall be attached to each pole. The first platform shall be constructed two feet (2') from the top. The platforms shall be spaced 4 feet apart and staggered at 180-degree intervals.
3. A handful of sticks (½-inch to ¾-inch in diameter) shall be wired to the nesting platform to encourage nesting

E. Osprey

1. Pole used to mount nest shall be 35-40' cedar pole with a bottom diameter of 8-10-inch. The pole shall be installed 6-8' into the ground to ensure stability.
2. A handful of sticks (½-inch to ¾-inch in diameter) shall be wired to the nesting platform to encourage nesting

2.06 BAT HOUSES

- A. All lumber used in construction of this house shall be cedar.
1. If contractor prefers to purchase the houses, a certified Bat Conservation International (BCI) 3 or 4 chamber wooden house can be purchased from the following companies:

Best Bat Houses
Oregon, WI 53575
(608) 513-9497
sales@bestbathouses.com
<http://www.bestbathouses.com/>

Lone Star Woodcraft
210-885-0811
info@lonestarwoodcraft.com
<http://www.lonestarwoodcraft.com/bathouse.html>

Habitat for Bats
2258 Highway 16 E
Jackson, GA 30233
770-500-2851
<http://www.habitatforbats.org/estore/>

P&S Country Crafts, LLC
1441 Peaked Hill Road
Bristol, NH 03222
(603) 744-2265
<http://www.pscountrycrafts.com/shop/products.php?cat=8>

- B. Constructed houses shall be secured to buildings using two 2-inch stainless steel screws.
1. Purchased houses shall be installed per manufacturer's instructions or those found at <http://www.batcon.org/pdfs/bathouses/InstallingYourBatHousebuilding.pdf>
 2. Constructed and purchased houses not placed on buildings shall be secured to a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be > 16' in length. Pole installation can also be found at the above web address. Two houses shall be placed back-to-back on each pole; therefore, a double mounting bracket shall be utilized. Brackets can be purchased from Lone Star Woodcraft.

2.07 Willow Hinge Cut

- A. Existing willow trees and or branches shall be utilized.

2.08 Loafing Platform

- A. All lumber used in construction of this platform shall be cedar.

- B. All necessary assembly hardware shall be galvanized.
- C. Minimum 3/8" diameter galvanized welded steel chain and clamps meeting ASTM Current standards.

2.09 Turtle Nesting

- A. Washed fine sand containing <5% clay & <25% gravel shall be utilized.

2.10 Lunker Structures

- A. All lumber used in construction of this structure shall be oak or other hardwood.
- B. All necessary assembly hardware shall be galvanized.
- C. Minimum rock exposure shall be 24-inches.
- D. Rounded unbroken field stone in diameter of 6-36" obtained from a nearby source.

PART 3 – EXECUTION

3.01 FISH STICK STRUCTURES

- A. Trees to be utilized for these structures shall be hardwood species such as oak that range from 40-70 feet in height with a minimum diameter of 8-inch. Trees shall have intact tops with multiple branches to provide underwater structure and cover. Trees will be freshly harvested no more than four weeks prior to installation from an off-site location and transported to the restoration site for placement. Eight groupings with three to four trees per group will be placed along the shoreline on the south side of the open water community. The groups will be spaced approximately 50 feet apart with final placement based on site conditions. Trees shall be placed near shore with their trunks emerging approximately 10-15' from the water and resting on the shoreline. Tops shall extend into the adjacent shallow water up to depths of roughly three feet. Trees shall be anchored to 3-inch diameter galvanized steel pipes located on shore. Because of safety concerns with recreational users in the areas, the 10-12' steel piping will be driven subsurface so the top of the pipe is approximately one foot below ground and covered. Prior to setting the pipe, each one will be drilled to allow 3/8-inch galvanized steel cables to be attached with cable clamps. Once the pipes have been set, cables from the pipes will be attached to the trees. Two pipes will be used per grouping of trees; and, each pipe will be attached to two separate tree trunks within the group. Each tree grouping will be secured together around each trunk with a minimum 3/8-inch galvanized cable and cable clamps.

3.02 BRUSH PILE STRUCTURES

- A. Five logs that are 4-6" in diameter and 10' in length shall be placed parallel to one another on the ground. Five additional logs of the same dimensions shall be laid on top of and perpendicular to the first logs to create the brush pile base. Once the base is constructed, limbs and sticks found throughout the restoration site shall be woven and piled on the logs and top to create the pile. Honeysuckle to be removed from the project area should provide some material; however, if enough debris is not available, the Contractor shall find an off-site location. The City of

Marinette's composting site may provide the necessary material. When complete, the pile shall be approximately 10' in diameter and roughly five feet in height.

3.03 ROCK PILE

- A. Rounded fieldstone ranging in size from 6-36-inch shall be placed in a manner that creates an interlocking, stable mound. The base shall be roughly 10 feet wide with the top extending a minimum of three feet above the waterline. One side of the pile shall have a shelf near the water line. Due to site conditions, rocks will need to either be brought in and placed by hand or placed by equipment from a boat to ensure minimal damage to the remaining restoration area.
- B. Rounded fieldstone ranging in size from 6-36" shall be placed in a manner that creates a stable, interlocking mound. If clearing and grubbing occurs within the area, concrete from the existing foundations may be broken into smaller pieces 6-36" and placed in a similar manner as described above.

3.04 LOG STRUCTURE

- A. Four wooden timbers of varying lengths (10-20') and diameter (8-16-inch) shall be installed so that approximately one-half of the log is above water. To help ensure the structures remain in place, each end of the logs shall be secured with "duckbill" earth anchors, two per log. Anchors shall be driven a minimum of 3' into the substrate. The opposite end shall then be cabled to the log. At a minimum, the anchoring system shall be composed of a 3-inch anodized aluminum anchor, 1/8-inch galvanized cable that is 5 feet in length and galvanized cable clamps to secure the system to the logs. Due to site conditions, materials will need to either be brought in and placed by hand or placed by equipment from a boat or barge to ensure minimal damage to the remaining restoration area.

3.05 BIRD HOUSES

- A. Once constructed or purchased, the following instructions shall be followed for placement and installation:
 - 1. Tree Swallow/Eastern Bluebird
 - a. Entrance hole shall be placed so it is facing east
 - b. Nesting box shall be mounted 5-6 feet above the ground on 3/4-inch Rigid Metal Conduit (RMC) made of stainless steel.
 - c. Instructions for mounting the box on the RMC are as follows:
 - d. Remove and recycle 2 feet of a standard 10-foot section of 3/4-inch RMC
 - e. Using a post pounder, drive 2 feet of the RMC into the ground so 6 feet is left above ground
 - f. Loosely attach stainless steel 3/4-inch conduit 2-hole straps to the back of the nesting box with 3/4-inch stainless steel deck screws. The top strap shall be attached just below the roof while the bottom strap shall be attached even with the floor.
 - g. Slip straps on the nesting box onto the RMC, adjust to the recommended height listed above and tighten the screws to secure the box to the RMC.
 - 2. Eastern Screech Owl
 - a. To prevent squirrel occupation, the house shall be placed > 15' from any jumping point including tree trunks, buildings and overhanging branches.
 - b. 2-3-inch of wood chips shall be placed in the box

- c Nesting box shall be placed at least 10 feet above the ground on a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be > 13' in length. A standard mounting bracket such as the one sold by Lone Star Woodcraft or equal may be utilized; however, the bracket shall be made flush with the box edges when complete. Otherwise, the contractor shall follow the instructions found at the following website: <http://www.batcon.org/pdfs/bathouses/InstallingYourBatHouseWoodenPostSteel%20Pole.pdf>. Although the instructions are for the installation of a bat house, the procedure for installing a house on a steel pole can be applied. The steps for installing the steel pole can also be found here.
3. Wood Duck
- a. 4-inch of wood shavings or a mix of shavings and wood chips shall be placed in the nest box
 - b. Entrance hole shall be placed so it is facing the water.
 - c. Nesting box shall be mounted 6 feet above the ground on a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be 8' in length.
 - d. Using a post pounder, drive 2 feet of the steel post into the ground so 6 feet is left above ground.
 - e. A standard mounting bracket such as the one sold by Lone Star Woodcraft or equal may be utilized; however, the bracket shall be made flush with the box edges when complete. Otherwise, the contractor shall follow instructions at the following website: <http://www.batcon.org/pdfs/bathouses/InstallingYourBatHouseWoodenPostSteel%20Pole.pdf>. Although the instructions are for the installation of a bat house, the procedure for installing a house on a steel pole can be applied.
 - f. Mounting shall allow a slight (1/8-inch) forward lean to allow easier duckling exist
 - g. Nest boxes may be mounted to a cedar post rather than a stainless steel pole; however, a predator guard must be installed to prevent feral cat and raccoon predation.
 - h. Although nesting season will have begun, the nesting boxes shall be installed in early June as they may be utilized by a pair of birds raising a second brood during 2015.
4. Great Blue Heron
- a. Pole used to mount nests shall be 35-40' cedar pole with a bottom diameter of 8-10-inch. The pole shall be installed 6-8' into the ground to ensure stability.
 - b. Three nesting platforms shall be attached to each pole. The first platform shall be constructed two feet (2') from the top. The platforms shall be spaced 4 feet apart and staggered at 180-degree intervals.
 - c. A handful of sticks (1/2-inch to 3/4-inch in diameter) shall be wired to the nesting platform to encourage nesting.
5. Osprey
- a. Pole used to mount nest shall be 35-40' cedar pole with a bottom diameter of 8-10-inch. The pole shall be installed 6-8' into the ground to ensure stability.
 - b. A handful of sticks (1/2-inch to 3/4-inch in diameter) shall be wired to the nesting platform to encourage nesting

3.06 BAT HOUSES

- A. Houses shall be placed so they are:
 - 1. 12-20 feet above the ground on either a building or pole with predator guard. Buildings with metal siding shall be avoided.
 - 2. Facing East or South.
 - 3. Receiving a minimum of 6-8 hours of sun exposure per day.
 - 4. Protected from the wind.
 - 5. Greater than 25 feet from a potential predator perch such as tree limbs or utility lines.
 - 6. Not near bright lights such as street, security or porch lighting.
 - 7. Situated away from windows and doors.
- B. Houses shall be painted black.
- C. Constructed houses shall be secured to buildings using two 2-inch stainless steel screws. Screws shall be centered and installed in the exposed board above the roof and below the chamber openings.
- D. Constructed and purchased houses not placed on buildings shall be secured to a Schedule 40 Galvanized Steel Pole with an inside diameter of > 2-inch. The pole shall be > 16' in length. Pole installation can also be found at the above web address. Two houses shall be placed back-to-back on each pole; therefore, a double mounting bracket shall be utilized. Brackets can be purchased from Lone Star Woodcraft.

3.07 Hinge Cut Willows

- A. Existing willow trees or large branches will be marked in the field by the engineer to be hinge cut. Cut trees and branches shall be cut in a manner to provide a long radius hinge to ensure sustainability of the tree.

3.08 Loafing Platforms

- A. The floating platform requires three 4-foot lengths of 8" diameter cedar utility poles. Lay the posts parallel in order to make a 4'x4' platform on top of the posts. Nail 4-foot lengths of 2"x6" board's perpendicular to the direction of the posts. Space the boards about 1" apart. The platform should be placed in 2 to 4 feet of water. A length of welded link chain should be bolted around the posts on opposing corners of the platform. Each chain should be 3 feet longer than the depth of the water from the high water mark to the bottom. Each chain should be bolted to an 8"x8"x16" concrete foundation block. The double anchor blocks are dropped about 6 feet apart to prevent the platform from constantly pivoting with the wind.

3.09 Turtle Nesting

- A. Each site shall be prepared by removing vegetation either manually or through the use of chemicals within an area approximately 200 square feet in size. Vegetation shall be controlled throughout the 2016 growing season.
- B. In the fall of 2016, the sites shall be tilled or manually raked to break up remaining vegetation and to loosen and expose the native substrate.
- C. A minimum of 6" of washed, fine sand shall be placed within the area.

3.10 Lunker Structures

- A. Lunker structures require three 36-inch spacers, constructed out of hard wood material fastened by galvanized fasteners as shown within the plans. These spacers will be attached by five 8-foot piece of 2-inch x 6-inch wooden timber. Once the wooden structure is completed per details, it shall be covered in stone. Larger 24-inch minimum rock shall be placed near the exposed section of the lunker structure. Additional smaller stone can be placed on and behind the larger stone as shown within the plans. A minimum of 24-inches shall be exposed and topsoil fill shall be place behind it to cover remaining fill materials as shown within the plan.

3.11 Pike Access

- A. Pike access diversion channel shall be created in a manner that no material leaves the site. An existing channel will be enhanced to provide additional water flow into the northern sedge meadow restoration standing water zone. One foot of existing material will be diverted to the edge of the 10-foot channel as shown on the plans to provided additional water flow and fish passage. Any existing vegetation will be placed on the edge of the channel.

PART 4 – MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT

- A. Work under this section shall be paid for as indicated in Section 00 41 13, Bid Form.

- END OF SECTION -

C

APPENDIX C

Contractor – Maintenance Plan

South Channel Habitat Improvements Project – Marinette, WI

MAINTENANCE PLAN



Prepared by:
Applied Ecological Services

September 12, 2016

TABLE OF CONTENTS

METHODS.....	3
1. Undesirable species control.....	3
2. Watering	5
3. Replacements.....	6
4. Herbivory Fencing	7
REPORTING	7
1. Maintenance Logs	7
2. Pesticide Application Forms	7
APPENDICES.....	8
Appendix A. Maintenance Log.....	8
Appendix B. Herbicide Application Data Forms.....	9
Appendix C. Site Map	12
Appendix D. Business and Applicator Licenses.....	15

METHODS

1. Undesirable species control

Control of undesirable plant species will be performed throughout all plant community zones within the site boundaries as shown in the plans and site map provided (*Please see Appendix C for the Site Map.*) The focus of vegetation management shall be ensuring success of the planted and seeded vegetation in all plant community zones. This will be accomplished by using an adaptive management plan. Plans often change in response to new data and derived insights. For these reasons, this plan should be viewed as being neither conclusive nor absolute. This program is a starting point in an ongoing process of restoring the site's natural processes.

When regular monitoring and maintenance begins, it will provide feedback on the plans effectiveness, and generate information to evaluate and justify the need for changes. This process of evaluation, adjustment, refinement, and change is called "Adaptive Management." Adaptive management is a tool that is fundamental to the restoration, management, and maintenance work in the management plan described below.

A minimum number of five site visits per year will be scheduled during the growing season. A minimum of two treatments (herbicide and/or mowing as required) per growing season will be scheduled. Each trip will include monitoring of all planted locations. Applied Ecological Services (AES) will supply a maintenance log (*Please see Appendix A for a copy of this log*) for each visit with a description of treatments and findings. For each trip, the Engineer will be notified a day in advance.

Main Tools for Control

Herbicide Management:

The main tool for invasive species control needed at the site will be chemical control using a backpack sprayer and/or ATV sprayer depending on site conditions. By using these setups, we will selectively spray any undesirable vegetation throughout all of the plant community zones. Undesirable vegetation to be controlled, but not limited to, is reed canary grass, purple loosestrife, giant reed grass, spotted knapweed, etc. Care will be taken in the application and selection of chemicals to avoid damage to the trees and shrubs.

At all times, AES will follow the application guidelines listed in the herbicide labels for percent solution and rates per acre, disposal, etc. Also dictated on the label are the site conditions that particular herbicide may be applied. For example, by law, RoundUp cannot be applied over water, but Rodeo can. Chemicals that will be used onsite in aquatic areas will be approved for that use. All other herbicides to be used for the control of undesirable species onsite will be approved for that use. All chemicals will be applied by Wisconsin State-licensed commercial applicators (*Please see Appendix D for the Business & Applicator Licenses*) that are certified for specific categories (i.e. 5.0 - Aquatic & Mosquito, 1.1 - Field Crops & Vegetables/6.0 – Right-of-Way & Natural Areas).

Herbicides will be mixed with water, surfactants, oils, fuels, anti-foaming agents, tackifiers, dyes, and/or drift control agents to achieve desired results as specified by the manufacturer and in accordance with all applicable regulations.

Herbicide Application Data Forms will be filled out daily as chemical control methods are utilized. The site will be posted prior/after each chemical application with WDNR treatment signs for the wet areas and AES company treatment signs for the dry areas. Two types of forms will be needed depending on site conditions. For wet areas, a WDNR Aquatic Treatment Record will be filled out. For all other areas, an AES treatment record will be filled out. (*Please see Appendix B for the Herbicide Application Data Forms.*)

The types of equipment that may be used for herbicide management are backpack sprayers, ATV sprayers, spray bottles, Tyvek chemical suits, Nitrile chemical gloves, rubber steel-toed boots, and safety glasses.

Mowing:

The need for mechanical control may be utilized to keep undesirable species at bay throughout all plant community zones to promote growth of desirable vegetation and reduce competition for the trees and shrubs.

Mowing is a physical, non-selective activity that can be effectively implemented in the early stages of the restoration activities and is most often used during the construction and restoration phases of a project. It will be an effective tool for managing undesirable weed competition around the trees and shrubs.

If mowing is necessary, it will be performed as the undesirable vegetation starts to crowd and compete with the desirable vegetation, trees and shrubs. It will then be mowed to a height of 2-10 inches using a hand weed whip, ATV mower, DR mower or an amphibious machine with mower, depending on site conditions.

The type of equipment needed will be dependent on the size of the treatment area, the water level and its location and if the owner's representative will allow a motorized piece of equipment based on conditions at the time of mowing.

Manual Controls:

Multiple hand tools may be used in place of chemical treatment or mowing depending on site conditions and treatment size of areas.

Additional Notes:

- The controlled pesticide applications at the South Channel Habitat Improvements Project will need an aquatic herbicide permit from the WDNR issued by an Aquatic Plant Management Coordinator. This permit will be obtained by AES yearly and a copy will be forwarded on to the owner's representative when it comes in each year. All general and specific conditions within this permit will be followed.
- AES will follow all applicable safety regulations and guidelines of federal, state, and local jurisdictions, all applicable OSHA safety regulations and guidelines, and Federal Construction Safety and Health Standards while carrying out activities related to the project.
- The following safety equipment will be available at all times onsite for personnel: first aid kit, portable emergency eyewash, chemical spill kit, fire extinguisher, Material Safety Data Sheets, and appropriate PPE.
- All handling of materials and non-native species management will comply with the guidance provided in the Wisconsin Natural Resources Code 40 (Chapter NR 40).

2. Watering

Watering to maintain the plant community zones is not expected to be necessary due to the hydric soils found on site. In drought situations, we may need to water some of the plant community zones to

maintain survivability necessary to meet the project goals. During our visits to maintain these zones, we will monitor the condition of the trees and shrubs and will schedule watering as necessary. In this instance, we will water the trees and shrubs using drip irrigation tree rings or bags and entire zone watering would be done with watering cannons. Water will be pulled from the river or brought in via ATV's depending on site conditions.

3. Replacements

The contractor will work with the owner's representative to meet the performance standards outlined in the specifications. Replacements necessary to meet the performance standards will be determined by a joint yearly inspection conducted with the owner's representative and the contractor or otherwise as identified by the Owner. Replacements will be installed once during the 1- year warranty period within the planting periods as identified in the specifications within 30 days after written notification from the Owner's representative. Consideration for these replanting periods will be given for site conditions and weather. The contractor has the right to agree or disagree with replacements and offer alternative resolutions. Any agreed upon replacements will be installed during the next appropriate planting date as outlined in the specifications. Replacement trees and shrubs will be negotiated to determine what species are best suited for the site conditions. Some species may find the soil conditions on site to be more suitable than others. The contractor should plant more of the successful species for replacements and have the option to remove replacement species that have shown poor survivability due to site conditions.

Replacements will occur:

- If less than 90% of the installed trees, shrubs, plants, and live stakes are living and healthy. Excluding the unprotected Aquatic Submergent/Emergent Restoration Planting Zone.
- If less than 50% of the installed plants are living and healthy in the unprotected Aquatic Submergent/Emergent Restoration Planting Zone.
- If there is less than 75% total native vegetation coverage for seeded areas.
- If bare areas larger than 10 square feet exist for seeded areas.
- If vegetation is not in healthy condition for seeded areas.

Exclusions:

The contractor is not liable for replacement costs to seeds and plants damaged by extreme weather conditions (severe droughts/floods), plants not installed by the contractor, plants relocated or removed by

others, acts of God, losses because of curtailment of water by local authorities, or damage by vandalism. Vegetation management is for the contracted bid items only. The contract does not include any management or guarantee for the past, current, or future addition of plantings by others throughout the site. All care will be given in trying to avoid damage to plantings done by others. To minimize damage and increase visibility, the contractor requests flagging be installed and maintained on all plantings done by others that will be visible as the tall vegetation grows in. A location map is also requested for such plantings to be provided as a reference for the contractor. The contractor will only be liable for any contractor damage to plantings installed by others provided those plantings were flagged by the owner's representative.

4. Herbivory Fencing

Fencing of appropriate height and type to exclude herbivory grazing will be maintained in each zone that it applies to for the first full growing season. This includes the goose fencing, tree protectors, and carp fencing installed by the contractor and as directed by the owner throughout the warranty period.

REPORTING

1. Maintenance Logs

Maintenance logs will be filled out by the maintenance crews for every trip that occurs to the site, detailing specific areas and what activity occurred (herbicide treatment, mowing, watering, reseeding, replanting, herbivory fence repair, tree and shrub condition, etc.) The maintenance logs will be sent to the owner's representative/engineer within a week of the site visit.

Please see Appendix A for a copy of this log.

2. Pesticide Application Forms

All pesticide treatments will be recorded on a form, detailing the target area, type and amount of chemical used, and the target species. Maintenance crews will be recording this information. A copy of the pesticide application forms will be sent to the owner's representative/engineer within 30 days of application.

Please see Appendix B for a copy of these forms.

APPENDICES

Appendix A. Maintenance Log



MAINTENANCE LOG

Project: _____ Client: _____
By: _____ Date: _____ Time: _____
AES Project Number: _____

Undesirable Species Control: _____

Irrigation: _____

Tree/Shrub Condition: _____

Replacements: _____

Herbivory Fence: _____

Other: _____

Owner Signature: _____

Date: _____

Copies: Owner A/E Contractor Consultants _____ _____ File

Appendix B. Herbicide Application Data Forms



Applied Ecological Services, Inc.

APPLIED ECOLOGICAL SERVICES, INC.

17921 Smith Road, P.O. Box 256 Brodhead, WI 53520
 Phone: (608) 897-8641 • Fax: (608) 897-2044
 Email: info@appliedeco.com

SPECIALISTS IN ENVIRONMENTAL MANAGEMENT AND RESEARCH

HERBICIDE APPLICATION DATA FORM

DATE: _____ PROJECT MANAGER: _____

PROJECT NAME: _____ PROJECT #: _____

PROJECT LOCATION: (City, State) _____

APPLICATOR(S) NAME: _____ LICENSE #'S ON BACK OF PAGE

START TIME: _____ END TIME: _____ LABOR HOURS: _____

DESCRIPTION/LOCATION OF AREA TREATED (or as indicated on map):

VEGETATION TREATED:

CAUTION SIGNAGE PLACED: _____ REENTRY PERIOD: _____ MIXED LOAD SITE MAPPED: _____

<input checked="" type="checkbox"/>	Equipment Used	<input checked="" type="checkbox"/>	Method Used
	Backpack Sprayer		Spot Spray
	Glove Applicator		Broadcast Spray
	Hand Sprayer		Wick Application
	Wick Applicator		Stump Treat
	Tractor Sprayer		Other: _____
	ATV Sprayer		Other: _____

PRODUCT INFORMATION

Product Name	Spray Volume	Manufacturer	% a.i.	EPA#	Amount Used	Application Rate

WEATHER CONDITIONS: DIRECTION & WIND SPEED: _____ TEMPERATURE: _____ HUMIDITY: _____

(Please check one)

CLEAR: _____ PARTLY CLOUDY: _____ CLOUDY: _____

DID IT RAIN WITHIN 12 HOURS AFTER APPLICATION? _____ YES, if so, when: _____
 _____ NO

*Product Labels and MSDS sheets are available by request free of charge
 Revised 2-15-07

Notice: Completion of this form is a condition of the permit and provides records required by WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22). The Department may not issue you future permits unless you complete and submit this form. 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. 19.31-19.36 Wis. Stat.).

Submit this form: (1) immediately if any unusual circumstances occurred during treatment
 (2) as soon after treatment as possible, no later than 30 days
 (3) by October 1 if no treatment occurred

Completion of this form along with the permit satisfies the requirements of WDNR (NR 107) and DATCP (ATCP 29.21 and 29.22).

General Permit Information

Permit Number	Waterbody Name (including ponds, e.g. Smith Pond)		
County	Permit Holder Name (Customer Name)		
Permit Holder Address	City	State	ZIP Code

Treatment Information

Treatment Date (mm/dd/yyyy)	Starting Time (24 hr)	Ending Time (24 hr)	Water Temp (°C)	Ambient Air Temp (°C)
Wind Speed (mph)	Wind Direction	Expected Duration of Chemical Residuals		

Adverse Conditions Noted (i.e., dead fish, spawning fish, algae bloom, etc.)

If adverse conditions noted, indicate corrective actions taken

Onsite Supervision Present? <input type="radio"/> Yes <input type="radio"/> No	If Yes, Supervisor Name
--	-------------------------

Mixing and Loading Site Location (if other than business site or from prepackaged retail container or applied with equipment with a total capacity of not more than 5 gallons liquid or 50 pounds dry)

Herbicide Treatment and Water Use Restrictions Signs Posted in Accordance With NR 107? Yes No

Applicator shall provide each customer with a free copy of each pesticide label used (if requested)

Applicator Information

Individual or Business Name		Telephone Number
Street Address		
City	State	ZIP Code
Individuals Making Pesticide Application:	Last Name	First
		Certification #
	Last Name	First
		Certification #
	Last Name	First
		Certification #
Name of Person Completing Form	Signature	Date Signed
		DNR Use Only Date Received

Appendix D. Business & Applicator Licenses

**Wisconsin Department of Agriculture,
Trade and Consumer Protection
PO BOX 8911, MADISON, WI 53708-8911**

**NUMBER:
93-002104-009727**

COMMERCIAL PESTICIDE APPLICATION BUSINESS LIC

s. 94.703, Wis. Statutes

**LICENSED BUSINESS LOCATION
APPLIED ECOLOGICAL SERVICES INC
430 S CURTIS RD
WEST ALLIS WI**

**EXPIRES:
12/31/2016**

**SUBJECT TO REVOCATION
AS PROVIDED BY LAW**

**MAIL ADDRESS
APPLIED ECOLOGICAL SERVICES INC
PO BOX 256
BRODHEAD WI 53520**

DOING BUSINESS AS:

THIS LICENSE IS NOT TRANSFERABLE

POST OR CARRY AS REQUIRED BY LAW

**Wisconsin Department of Agriculture,
Trade and Consumer Protection
PO BOX 8911, MADISON, WI 53708-8911**

**NUMBER:
93-002104-019062**

COMMERCIAL PESTICIDE APPLICATION BUSINESS LIC

s. 94.703, Wis. Statutes

**LICENSED BUSINESS LOCATION
APPLIED ECOLOGICAL SERVICES INC
W2836 DUNDAS RD
BRILLION WI**

**EXPIRES:
12/31/2016**

**SUBJECT TO REVOCATION
AS PROVIDED BY LAW**

**MAIL ADDRESS
APPLIED ECOLOGICAL SERVICES INC
PO BOX 256
BRODHEAD WI 53520**

DOING BUSINESS AS:

THIS LICENSE IS NOT TRANSFERABLE

POST OR CARRY AS REQUIRED BY LAW

**Wisconsin Department of Agriculture,
Trade and Consumer Protection
PO BOX 8911, MADISON, WI 53708-8911**

**NUMBER:
93-002104-002104**

COMMERCIAL PESTICIDE APPLICATION BUSINESS LIC

s. 94.703, Wis. Statutes

**LICENSED BUSINESS LOCATION
APPLIED ECOLOGICAL SERVICES INC
17921 SMITH RD
BRODHEAD WI**

**EXPIRES:
12/31/2016**

**SUBJECT TO REVOCATION
AS PROVIDED BY LAW**

**MAIL ADDRESS
APPLIED ECOLOGICAL SERVICES INC
AARON KUBICHKA
17921 SMITH RD
BRODHEAD WI 53520**

DOING BUSINESS AS:

THIS LICENSE IS NOT TRANSFERABLE

POST OR CARRY AS REQUIRED BY LAW

2016 PESTICIDE APPLICATOR LICENSES

Last	First	License #	Exp Date	Cert. #	Category	Exp Date
Banach	Evan	298226-CA	12/31/2016	90130	1.1, 5.0	3/31/2019
Behrends	Jason	317287-RA	12/31/2016	N/A	5.0	IL Reciprocity
Brose	Austin	279905-CA	12/31/2016	89493	1.1, 5.0	3/31/2017
deCharms	Cory	301287-CA	12/31/2016	95530	1.1, 5.0	8/31/2019
Gerbyshak	Thomas	292791-CA	12/31/2016	90718	1.1, 2.0, 5.0	12/31/2017
Holme	Timothy	310909-CA	12/31/2016	97895	5.0	10/31/2020
Klapa	Justin	316931-CA	12/31/2016	99898	5.0, 6.0	4/30/2021
Klett	Al	310826-CA	12/31/2016	98120	5.0, 6.0	9/30/2020
Krogstad	Tad	287691-CA	12/31/2016	91793	1.1, 3.0, 5.0	3/31/2018
Kubichka	Aaron	146291-CA	12/31/2016	54107	1.1, 5.0	2/28/2020
Lanser	Travis	299674-CA	12/31/2016	95401	5.0, 6.0	7/31/2019
LaPointe	Joshua	150783-CA	12/31/2016	69736	1.1, 5.0	6/30/2019
Markowitz	Tyler	317286-RA	12/31/2016	N/A	5.0	IL Reciprocity
Nickey	Deanna	268426-CA	12/31/2016	87954	5.0, 6.0	9/30/2020
Robinson	Brady	310519-CA	12/31/2016	98094	5.0, 6.0	9/30/2020
Solawetz	Alex	268275-CA	12/30/2016	87863	5.0, 6.0	7/30/2021
Wire	Dustin	317575-CA	12/31/2016	76002	5.0, 6.0	8/31/2021

D

APPENDIX D

**WDNR Timed-Meander Sampling Protocol for Wetland Floristic
Quality Assessments**

Timed-Meander Sampling Protocol for Wetland Floristic Quality Assessment

Wisconsin Department of Natural Resources

INTRODUCTION

This standard operating procedure (SOP) describes the methods used by the Wisconsin Department of Natural Resources to conduct timed-meander surveys of wetland plant communities to determine wetland plant community condition. This SOP should be used in conjunction with the Floristic Quality Assessment Methodology for Wisconsin (Bernthal 2003). This SOP is based on and modified from procedures first developed and employed by the Lake Superior Research Institute (LSRI) (LSRI 2013). Possible uses for this protocol include Natural Heritage Inventory (NHI) surveys of State Natural Area wetland plant communities, FQA Benchmark Project surveys, water quality standards compliance surveys, wetland restoration site monitoring and wetland assessments for regulatory purposes.

DESCRIPTION

In this method, wetland types are first identified using aerial photographs and/or site investigations of the potential wetland(s) to be sampled. Assessment Areas (AAs) composed of relatively homogenous vegetation, are defined prior to sampling but can be modified after the survey based upon the conditions and features encountered during the survey. Natural communities, as defined by the NHI natural community classification, serve as the foundational unit of sampling (Table 1). When multiple types are present at a site, multiple Assessment Areas must be defined. Assign a wetland AA to the natural plant community type that it most closely resembles. If the AA's plant assemblage does not match any Natural Heritage Inventory community the dominant vegetation type (e.g., herbaceous, shrub, forested) may be noted. Table 1 contains a crosswalk to the Eggers and Reed classification system (2014).

Timed-meander start locations should begin far enough from the edge of a community type or from an anthropogenic disturbance (i.e., roadway, residential development, etc.) to avoid including transition zones from other plant communities in the survey. However, if the assessment area is surrounded by roadways, residential development, or other anthropogenic disturbance the timed-meander start location may be located at the edge of the disturbance. The survey consists of a search for all plant species present within a pre- or post- defined Assessment Area and an estimate of abundance and percent areal cover for each species at the end of the search period. The search takes place during timed intervals documented by the time keeper. The timer is paused when surveyors need to divert their attention from the search for any reason, such as conferring on an identification, documenting a rare species, or investigating an area with a plant composition different from the target community. The total time spent searching is an indication of search effort. All plant species are recorded when first observed and search intervals are documented on the Field Sheet. After all search intervals are complete, abundance and percent areal cover over the entire Assessment Area is estimated for each plant species, and notes on disturbance and other observations are documented.

The assessment areas must have homogeneous representation of wetland plants associated with each wetland community type. If a different wetland community type is encountered during a timed-meander survey of a given targeted community type, the timer is paused and the size of the new plant community is evaluated. If the new type is greater than 900 m² (30m x

Timed Meander Sampling Protocol for Wetland FQA

30m) (9688 ft², 98ft x 98ft or approximately 0.09 hectare (0.25 acre), then the area is excluded from the Assessment Area and the search remains paused until the surveyors return to the targeted plant community. If necessary, the new community would need to be evaluated by a separate survey. If the new type is less than 900 m² in size, the search is resumed and the small pocket can be treated as an inclusion within the primary wetland type.

Invasive plant species and anthropogenic disturbances should be observed during the walk to and from the Assessment Area, and noted in comments on the Timed-Meander Survey Field Sheet. Additional condition assessment tools may also be used to evaluate the wetland's health. For regulatory decisions, the Condition Assessment in Section 3 of the Wisconsin Rapid Wetland Assessment Methodology version 2 (Trochlell 2014) should be used. A Disturbance Factor Checklist is used for rating disturbance levels for the FQA Benchmark Project surveys. For future wetland condition surveys the Disturbance Factors Checklist or a modification of it will be used to assess stressors that may be causing an impairment to the wetland.

Table 1: Examples of Wetland NHI Natural Communities and Crosswalk to Eggers and Reed (2014).¹

NHI Natural community	Eggers and Reed (2014)	Dominant vegetation type
Submergent Marsh	Shallow Open Water Communities	Aquatic Herbaceous
Emergent Marsh	Shallow Water Marsh	Herbaceous
Northern Sedge Meadow	Sedge Meadow	Herbaceous
Southern Sedge Meadow	Sedge Meadow	Herbaceous
Wet-mesic Prairie	Wet/Wet-mesic Prairie	Herbaceous
Calcareous Fen	Calcareous Fen	Herbaceous
Boreal Rich Fen	N/A	Herbaceous
Central Poor Fen	N/A	Herbaceous
Ephemeral pond	Seasonally Flooded Basin	Herbaceous
Open Bog	Open Bog	Herbaceous/Low Shrub
Alder Thicket	Alder Thicket	Shrub
Shrub-carr	Shrub Carr	Shrub
Black Spruce Swamp	Coniferous Bog	Forested
Northern Wet-mesic Forest	Coniferous Swamp	Forested
Floodplain Forest	Floodplain Forest	Forested
Southern Hardwood Swamp	Hardwood Swamp	Forested

¹ Additional wetland community types, e.g., muskeg, interdunal, etc., may be surveyed. For a detailed description of each Natural Community, please refer to "Wisconsin's Natural Communities" on the WDNR [NHI website](#).

DEFINITIONS

Assessment Area (AA): Discrete, homogenous area of a target plant community that is to be thoroughly sampled during the timed meander survey. Large wetlands/wetland complexes may contain multiple wetland assessment areas.

EO - Element Occurrence: In the Natural Heritage Inventory, a population of a species or an example of a natural community or natural feature naturally occurring at a specific, ecologically appropriate location.

Search: Locating, identifying and documenting plant species presence, while mentally noting percent cover. Previously un-documented plant species are continuously added until the search interval is paused or ends.

Search Interval: A pre-defined time interval, maintained by the time keeper. The search time may be paused whenever the active search for additional species stops for various reasons, including taking time to work out difficult identifications, documenting rare species, adjusting the Assessment Area or other reasons.

REFERENCES

Bernthal, Thomas W. 2003. Development of a Floristic Quality Assessment Methodology for Wisconsin.

Eggers, S.D. and D.M. Reed. 2014. Wetland Plants and Plant Communities of Minnesota and Wisconsin, Version 3.1. US. Army Corps of Engineers, S. Paul District, St. Paul, MN.

Lake Superior Research Institute (LSRI). 2013. Timed-meander Sampling Protocol for Forested and Non-forested Wetland Floristic Quality Assessment. University of Wisconsin-Superior. Superior, WI.

Trochlell, Patricia A. 2014. Wisconsin Rapid Wetland Assessment Methodology, version 2.

Timed Meander Sampling Protocol for Wetland FQA

EQUIPMENT LIST

- ◆ Clipboard
- ◆ Compass
- ◆ Digital Camera
- ◆ Field Guides
- ◆ GPS Unit
- ◆ Digital watch with countdown timer
- ◆ Hand Lens (10X objective)
- ◆ Maps
- ◆ Markers
- ◆ Pencils (and sharpener/extra lead)
- ◆ Plant Collection Bags (i.e., Ziploc® Big Bags)
- ◆ Weather-Proof Datasheets

PROCEDURE

1. Upon arrival at the site, the survey team of two or more people must completely fill out the top portion of the WDNR Timed Meander Survey Sheet (Field Sheet) in Attachment 1 or other form for the Assessment Area (AA) to be surveyed. Use the Natural Heritage Inventory (NHI) Natural Community Descriptions to determine the appropriate plant community classification for the AA to be surveyed. If the survey involves an existing NHI Element Occurrence note the EO code. If the plant assemblage does not appear to match a natural community, note the dominant vegetation type from Table 1.
2. Start locations on the AA must begin at a point clearly within the target community type, away from transitional areas or anthropogenic disturbance (i.e., roadway, residential development, logging, ditching, etc.). The exception to this is that if an AA is immediately adjacent to an anthropogenic disturbance, then the start location may be located near the edge of this disturbance.
3. Travel to the AA start location and record any disturbance (e.g., invasive plants, logging, ditches) encountered while traveling to the survey start-up point on side 2 of the Field Sheet. This can also be completed at the end of the survey after the entire AA has been surveyed.
4. Take a waypoint at the survey start point using a handheld GPS unit. Record the starting point on the Field Sheet in decimal degrees. Indicate whether the GPS is set to a tracking function. This will create a record of survey locations over the course of the search.
5. Designate a lead observer and a data recorder for each survey; the observer will conduct the taxonomic identification and the recorder will complete the survey Field Sheet and operate the timer.
6. Set the countdown timer on the watch for 5 minutes. Start the stop watch and begin timing the first, 5-minute interval of the timed-meander survey. Standing at the start point, record all plants (ideally to species) that can be seen from the four cardinal directions before moving forward in search of new species. Upon reaching the end of a 5 minute interval, the timekeeper should instruct other observer(s) to stop searching until the next time interval begins.
7. Record plants using the full species name. Because there are numerous and often conflicting resources for accepted plant names (USDA Plants, Flora of North America, various state herbaria lists etc.), it is important to limit confusion caused by using multiple names for the same species. Therefore, this protocol follows the Wisconsin State Herbarium's list of vascular flora, which has recently been updated to reflect the most recent taxonomic information and is available online. The State Herbarium nomenclature should be used for conducting plant surveys in Wisconsin whenever possible.

Timed Meander Sampling Protocol for Wetland FQA

8. Record on the Field Sheet and collect all unknown, uncertain, and/or difficult-to-identify plant species, which will later be keyed or identified by experts (or eliminated from the analysis if identification is not possible).
9. Advance the search from the start point once the initial plants from the area surrounding the start point are recorded. Proceed walking through the site, taking care to identify all species encountered and making sure to investigate all vegetation layers. The search must always stay within the targeted plant community type for the duration of the survey, with one exception:
 - a. If a different plant community type is encountered during the search, stop the watch to pause the elapsed time and evaluate the size of the community. If the new community type is less than 900 m² (30m x 30m or 0.09 hectares, 9688 ft² (98 ft x 98 ft) or 0.25 acres) the timed meander survey can continue through that community type.
 - b. If the new community type is greater than 900 m², pause the survey until the surveyors have returned to the target plant community.
10. After each 5 minute time interval, the recorder should note on the Field Sheet the time interval in which those plant species were observed (i.e. 0-5 minutes, 5-10 minutes, 10-15 minutes, etc.). At the end of each time interval the observers may wish to briefly confer over any unknown species before resuming the next time interval. This reduces the number of unknown species for later office determination.
11. If an interruption of the process is necessary (e.g., intensive consulting with field guides and conferring with other surveyors over a difficult identification, bathroom breaks, difficult terrain, or vegetation encountered), stop the timer to pause the interval, eliminating these interruptions from the elapsed search time.
12. Pause the search if a rare, threatened, and/or endangered species is observed. Record the plant species on the Field Sheet, the location of the plant using the handheld GPS, take a digital photo of the species, and note associated species and other relevant information needed for the NHI Rare Plant Form. Collect a specimen if authorized and warranted. Resume the stop watch after all field recording is noted.
13. Typically a minimum of 30 minutes of total search time is needed to thoroughly search an AA. Stop the search when:
 - a. A pre-defined area has been completely searched. For some uses of this SOP a search of an entire pre-defined area may be required, regardless of the time it takes, even if no new species are observed in a search interval, OR
 - b. After 30 minutes of search time, one or no new species is found during the most recent 5 minute interval, OR
 - c. After 30 minutes of search time, the number of species observed in the most recent 5 minute interval is less than 5% of the running total of recorded species (including unknowns). For example, if, after the 10th five-minute interval (50 minutes of elapsed search time), 100 species have been observed, and 4 or fewer species were observed in the 10th 5-minute interval, the survey should be ended. The justification for ending is that the survey has reached the point of

Timed Meander Sampling Protocol for Wetland FQA

- diminishing returns and has likely captured 90-95% of the species richness, and has likely captured 100% of the dominant and common species.
- d. The search may end earlier than 30 minutes only if the entire AA has been thoroughly searched and no species were found in the final interval.
14. After the last search interval is completed take a waypoint at the survey end point using a handheld GPS unit. Record the waypoint on the Field Sheet in decimal degrees.
 15. Once the species list is complete assign each species a percent cover based on an ocular estimate of the percent of the AA covered by the canopy of that species (see Figures 1 and 2). Estimate to the nearest whole number. For species that cover 1% or less, use 1.
 16. For each species, assign an abundance code based upon the class categories listed in Table 2 below. Abundance estimates give a qualitative estimate of relative frequency and can be used to make comparisons with historically gathered site data. They also provide valuable data to compare species with small areal percent cover.
 17. Record other data on the Field Sheet, including soil texture and pH on side 1, if taken. Animal species observed and other observations are recorded on side 2.

Table 2. Abundance Classification

Symbol	Abundance Code	Description
A	Abundant	The dominant plants throughout the site
C	Common	Locally abundant or frequently encountered
O	Occasional	Occasionally encountered, or locally common but absent or infrequent across much of site
U	Uncommon	Infrequently encountered
R	Rare	Very few plants seen

Figure 1: Comparison chart for visual percentage estimation. NPS US Dept. of the Interior, Damage Assessment Handbook, 2002.

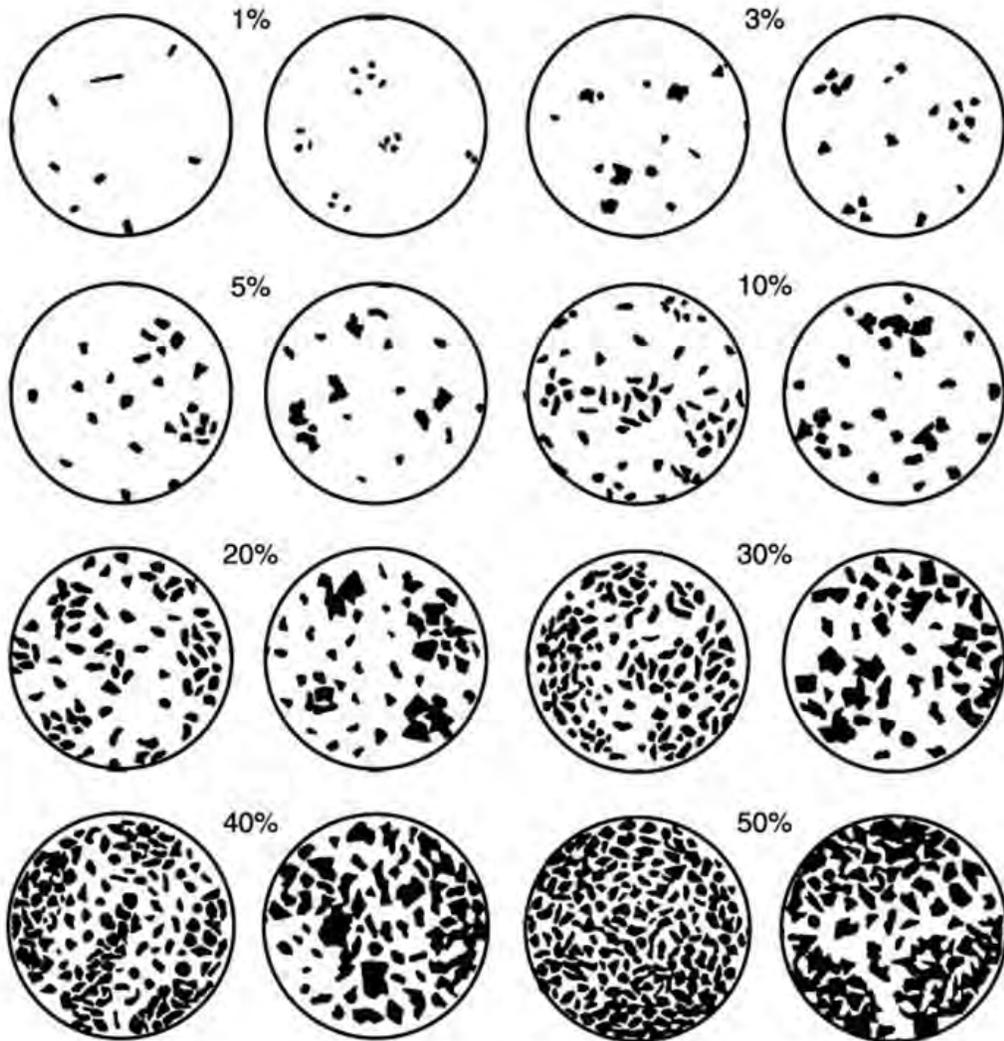
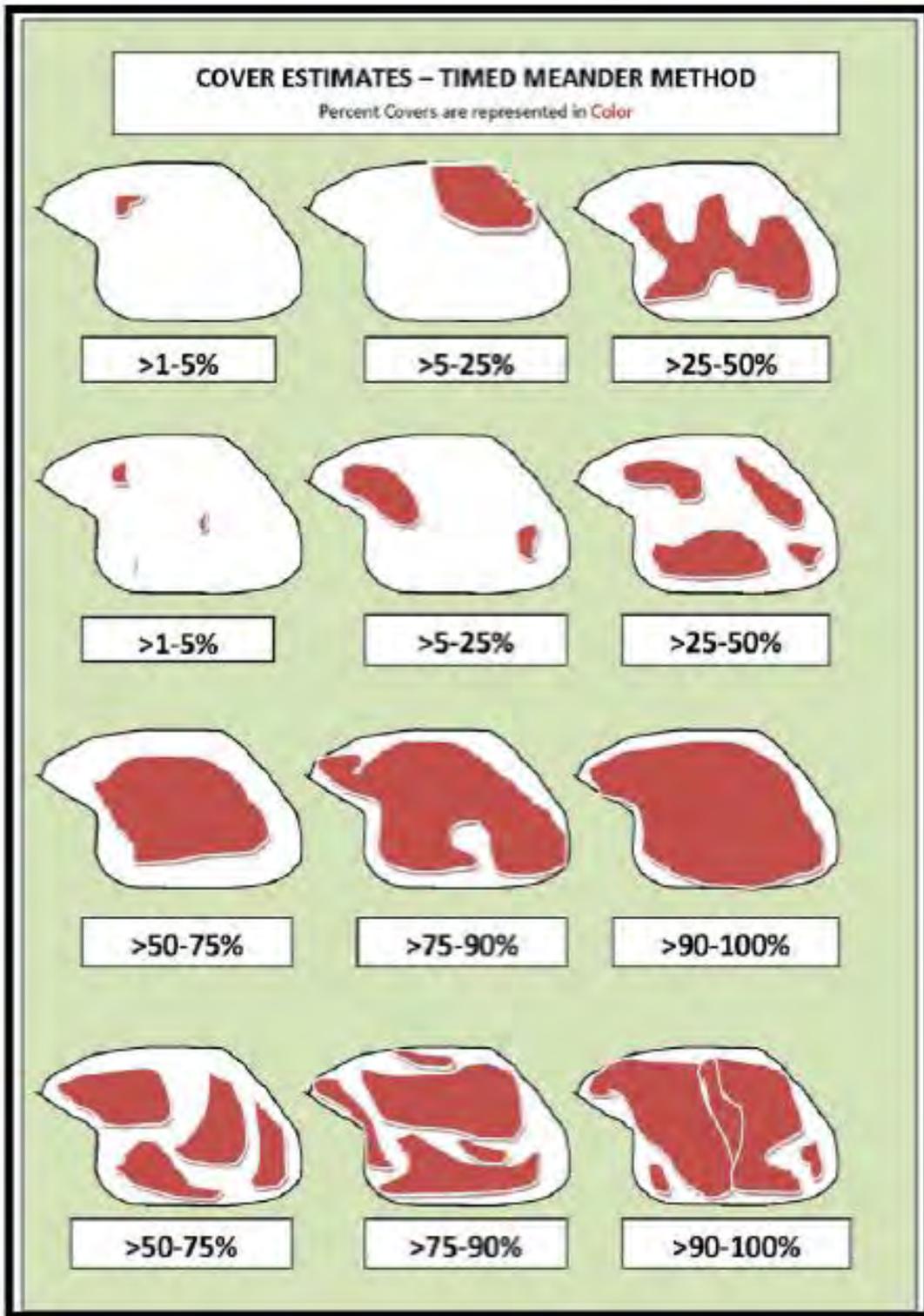


Figure 2: Cover estimates for timed meander method. LSRI 2013.



Attachment 1: WDNR Timed-Meander Survey Field Sheet, next page

WDNR Timed Meander Survey Field Sheet

Observers _____ Date _____

Property _____ Site Name _____ County _____

Access _____

Community Type _____ EOID (if existing EO) _____

GPS Used _____ Start point (Dec Deg) _____ End point (Dec Deg) _____ Track Taken? Y N

Total Elapsed Search Time _____ (mins) Soils & pH _____

Time		Species	%	AC	Notes	Time		Species	%	AC	Notes
0	1						36				
	2						37				
	3						38				
	4						39				
	5						40				
	6						41				
	7						42				
	8						43				
	9						44				
	10						45				
	11						46				
	12						47				
	13						48				
	14						49				
	15						50				
	16						51				
	17						52				
	18						53				
	19						54				
	20						55				
	21						56				
	22						57				
	23						58				
	24						59				
	25						60				
	26						61				
	27						62				
	28						63				
	29						64				
	30						65				
	31						66				
	32						67				
	33						68				
	34						69				
	35						70				

Estimate % areal cover and abundance code for each species

AC: Abundance codes: A (abundant), C (common), O (occasional), U (uncommon), R (rare)

