workin' bridges
PO Box 332
Grinnell, IA 50112
641.260.1262

5/6/2015

Steve McNulty
Weyerhaeuser Co.
785 North 42nd Street
Springfield, OR 97478

Dear Mr. McNulty,

Workin' Bridges is pleased to submit our "*Preservation Plan for Hayden Bridge*". It was a pleasure for Nels and I to work with Tally Patton and Doug Keeler, bringing our site visit to Springfield to a successful completion. Our nonprofit is dedicated to historic truss bridge and greenbelt preservation. Workin' Bridges began five years ago as a collaboration between BACH Steel and The N. Skunk River Greenbelt Association (NSRGA) to help other groups (25 site visits so far) find the right solution for their historic truss bridge projects. Workin' Bridges seeks to find the best team for each project and got very lucky teaming up with Nels Raynor of BACH Steel for the past five years. Nels brings the dedication, passion and twenty years of experience to these important bridge projects. BACH Steel is an industry leading specialist in dismantling pin-connected trusses (including Whipple trusses). We have been working with Jim Schiffer, PE from Michigan for the last two years, including the construction of a new bridge abutment for Waterford Bridge in Minnesota and the engineering for the Bunker Mill Bridge restoration in Iowa, another Workin' Bridges owned project. In Oregon, we completed the task of finding the team for this project and are very happy to add Tayna Wylder of StarConserve and Jim Weitman of Weitman Excavating to our expert list. As General Contractor, Star will coordinate the sub-contractors and will work with BACH Steel on the bridge lift.

The Plan ensures the preservation of an historically significant bridge which is our objective. The Plan includes an historic assessment and history of the bridge, a photographic overview, a detailed look at the team and our Scope of Work and Estimate detailing the safe, timely and cost-effective removal of the bridge from the river. We will dismantle, label and load the parts of the bridge for transportation to Michigan for painting, then on to it's new home in Delaware as a feature to a new bridge park.

Benefits for Weyerhaeuser

• Workin' Bridges will purchase the bridge from Weyerhaeuser for $1 before the lift and take on all responsibility for the project utilizing the funds detailed for preservation in lieu of demolition. Workin' Bridges is the interim owner as a Purchase Order from DNREC will be created once the costs of reassembly have been detailed. Matthew P. Chesser of DNREC will contact you directly with their stated interest in the Hayden Bridge.
• BACH Steel has experience dismantling and disassembly of a Whipple truss. See attached. BACH which show very clearly how the Hayden Bridge will be dismantled. Our plan avoids any entry of equipment, workers, or materials from the bridge into the McKenzie River. The use of larger cranes under a proposal with Ness Campbell sets the cranes away from the river with the bridge protected underneath to ensure a clean lift.
• BACH's work with state transportation departments (DOTs) across the US requires strict adherence to all Occupational Safety and Health Administration (OSHA) and other related safety requirements and regulations. A 2012 Construction Award was presented to BACH Steel by TxDOT for work on the Piano Bridge. A documentary of that work can be seen on YouTube at Workin' Bridges.
• Star Conserve, with eight years as a bridge contractor and Oregon DOT (ODOT) certified collaborates with Weitman Excavation and brings project management and construction administration ethics to the table so that all of the city, county and state requirements are met in a timely fashion.

Workin' Bridges, BACH Steel, Star Conserve, SGI and Weitman Excavating are committed to successfully completing projects in a safe and timely manner and recognize Weyerhaeuser's strong commitment to safety. We will complete all proposed work regarding the Hayden Bridge with a "safety first" approach. There are no safety violations to date to report and all of the elements needed are ready to be implemented. We hope our detailed package covers the project from A-Z. We have tried to present you with all of the information you need to make a decision. If you have any questions, please do not hesitate to contact us.

Respectfully submitted

Julie Bowers, Executive Director - NSRGA / Workin' Bridges 641.260.1262
Nels Raynor, President - BACH Steel 517.581.6243 *
Jim Schiffer, PE - Schiffer Engineering Group (SGI) - 231.360.6190
Tayna Wylder, President - StarConserve - 503-939-0055 *
Jim Weitman, Owner - Weitman Excavation 503.969.5961

The North Skunk River Greenbelt Association
NSRGA 501(c)3 -27-1752125
January 4, 2010
Workin' Bridges is a legal Trade Mark of NSRGA - January, 2014
POB 332, Grinnell, IA 50112
641.260.1262

workin' bridges
PO Box 332
Grinnell, IA 50112
641.260.1262

Photo Gallery - Hayden Bridge

5/6/2015









The Hayden Bridge is a rare 1882 Whipple (Double-Intersection Pratt) truss built of wrought and cast iron members by the Phoenix Bridge Company. The bridge is in excellent condition. Originally built as a replacement to an original crossing for the Continental Railroad, this bridge was moved in 1901 to Springfield, Oregon where it remained in service until 1987. This bridge is one of the oldest historic trusses in Oregon and nomination to the National Register of Historic Places will be done upon its move to Delaware bridge park.

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#610 Preservation Plan for Hayden Bridge

Steve McNulty
Weyerhaeuser Co.
785 North 42nd Street
Springfield, OR 97478

5/6/2015

Agreement Description

The "*Preservation Plan for Hayden Bridge*" for Weyerhaeuser Co. prepared by Workin' Bridges began with a site visit to Hayden Bridge in April of 2015. Workin' Bridges offers to take on interim responsibility for Hayden Bridge during its journey to another location and owner. By opting for this plan, Weyerhaeuser Co. will benefit in several ways: goodwill for saving a rare historical railroad truss bridge, time and money lost to mitigating demolition with various state agencies. Relocation for repurposing is the only option that we are presenting.

The site visit was conducted over two days in April. Our preservation plan includes information and costs regarding the removal and disassembly of the bridge from McKenzie River and plans for transportation to new location. The Scope of Work, Estimate, Assessment and Photographic Overview are included.

THE TEAM:

Nels Raynor – Owner – BACH Steel, Holt, Michigan. Nels has been working in the steel industry since the 80s and started his own business in 1992. He has worked on historic trusses since 1998 and began collaborating on historic bridge projects with Workin' Bridges as a co-founder in 2010. He is an expert in steel and iron fabrication, historic materials including wrought iron, and the hot riveting process. On this project Nels extensive experience with historic bridges, including lifts and disassembly of many historic bridges. Please see www.bachsteel.com for more information..

Tayna Wylder – Star Construction Services - Owner - Portland, Oregon - **StarConserve** (dba) was established in 2007 to provide high quality services for construction projects with an emphasis on environmental care and work in sensitive areas of restoration of water and natural resources. Star Conserve will be facilitating the project as a licensed, insured and bonded contractor, will apply for and manage the permits required by the city, county and state. StarConserve has an excellent reputation and places a great emphasis on safe and successful projects. As General Contractor, Star will be responsible for all of the management of sub contractors. Please visit www.starconserve.com for more information about

James Schiffer, PE – The Schiffer Group, Inc. (SGI), Traverse City, Michigan. SGI has worked in all aspects of design and construction of bridges for the last twenty years, including steel, pre-cast concrete, cast-in-place concrete, piling, wooden, geo-textile and historic materials. Jim will engineer the lift of the bridge and the pads for the cranes as well as the engineered plans for the reset of the Hayden Bridge in Delaware.

Jim Weitman – Weitman Excavating - Jim will bring his extensive experience to prepare the site for the excavation work necessary for the crane pads. Jim will also coordinate directly with Star Conserve and BACH Steel during the lift preparation and the actual lift, providing support and equipment needed for bridge disassembly.

Julie Bowers – Executive Director – NSRGA / Workin' Bridges, Grinnell, Iowa. NSRGA will manage the details of the preservation plan. Julie filmed and produced the documentary *Workin' Bridges: Historic Truss Bridge Restoration* featuring the Piano Bridge and will manage the potential documentary of the "*Moving an Historic Icon - Hayden Bridge*" with the crew of Ultimate Restorations, a series of documentaries screening now on Public Television.

Terms

To be determined.

All work will be complete in a neat and workmanlike manner. Any change or alteration from above will only be upon written agreement executed by all undersigned parties. Any other agreement concerning this contract, whether oral or written or made by any subcontractor workman or other part, will not be binding upon Workin' Bridges. In event of any dispute relating to this contract or its performance, Workin' Bridges shall have the option to demand binding arbitration through the American Arbitration Association by a panel of one, or proceed through Iowa Federal Courts by way of a mechanic's lien, foreclosure or any other appropriate action. In either event, the prevailing party shall be awarded all costs of litigation and/or arbitration including reasonable attorney's fees.

		Julie Bowers	*5/6/2015*
Steve McNulty	Date	Julie Bowers	Date

Weyerhaeuser Co.

Hayden Bridge

1882 Phoenix Bridge Co.

Whipple-Murphy Truss, built in 1882 in Corrine, Utah, moved to Oregon in 1901

Length	224'	**Weight**	
Width	19'5"	**Transportation:**	
Deck Width	18'	**Trucks:**	

Clark, Reeves & Company were the precursor to Phoenix Bridge Co.

Condition

Phenomenal. Fantastic. Excellent Condition. Noted one repair to nut for a pin connection. No packed rust, paint and patina in good condition.

Future Use

The Hayden Bridge will be relocated to a Bridge Park in Yorklyn, Delaware operated by DNREC. The history will be showcased and the story of it's time as a Weyerhaeuser owned and operated railroad bridge will be told.

Historic Value

Eligible for the National Register of Historic Places. Will be nominated upon move to NRHP by Delaware State Historic Preservation Office. It may be nominated as a Nationally Significant Bridge. See History of Hayden Bridge attached.

Assessment

This bridge is in pristine condition and should be preserved in a situation where it can still be seen and enjoyed by many. Whipple Trusses are complicated and having an experienced bridge restoration firm on hand to do the disassembly is key to reassembly. The bridge will be marked and prepared for shipping to Michigan where it will be painted and sent on to Delaware for erection.

DNREC - NVF Site

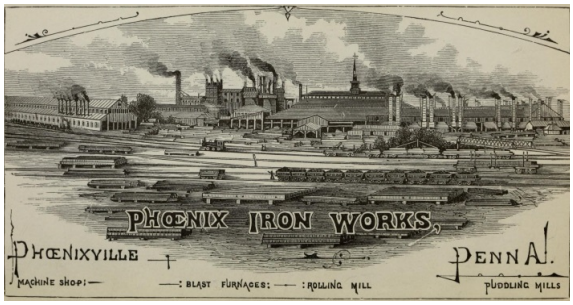
Prepared By:

bridges workin' PO Box 332
Grinnell, IA 50112
641.260.1262

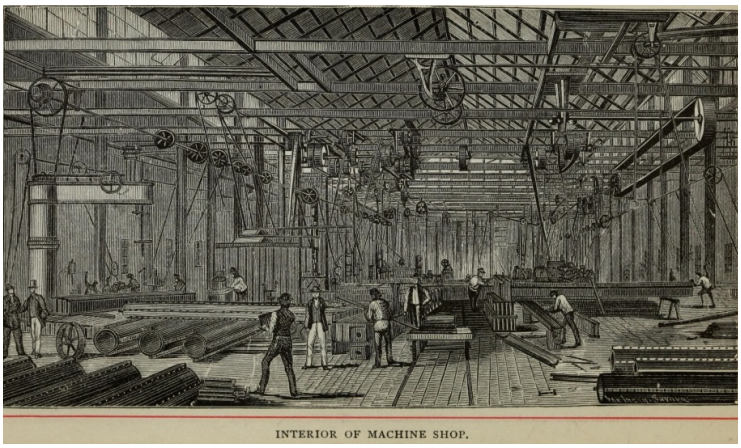
BACHSTEEL www.bachsteel.com

THE SCHIFFER GROUP, INC. III
ENGINEERING
CONCEIVE, ADVISE, DESIGN, ENGINEER, PERMIT, IMPLEMENT

Historic Significance of Hayden Bridge



The Hayden Bridge was originally located in Corrine, Utah across the Bear River on the Central Pacific Railroad (later the Southern Pacific Railroad). The Historic American Engineering Record documentation (HAER-OR-19) states that the iron truss bridge was built in 1882 over the Bear River to replace a wooden span that was built in 1869, part of the original Transcontinental Railroad. The truss bridge was relocated to its existing site in Oregon in 1901 and purchased by Weyerhaeuser in 1960. The last Weyerhaeuser trains to use the bridge were reported on September 3, 1987.

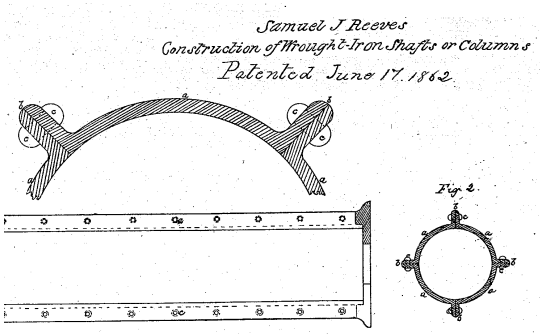

INTERIOR OF MACHINE SHOP.

The plaque on the Hayden Bridge reads "Clarke, Reeves, & Co. Phoenixville Bridge Works, Pa." The Historic American Engineering Record (HAER-IA-3) states the company was established by Thomas Curtis Clarke and Samuel Reeves in 1870. Clarke was a bridge engineer with prior experience working on various railroad lines. Samuel Reeves had taken over the late 18th Century Phoenix Iron Works, based in Phoenixville, Pennsylvania, in 1827. Reeves also held a patent for a special type of built-up riveted wrought iron cylindrical column commonly called a Phoenix Column. The patent (#35,582) was awarded in June 17, 1862. Together, Clarke, Reeves, & Co. and the Phoenix Iron Works were able to offer a vertical operation that included design, fabrication, and erection of truss bridges. Phoenix Iron Works provided the materials, with Clarke, Reeves, & Co. acting as the construction company. In 1883, Clarke left the company and it was renamed "Phoenix Bridge Company". The "Clarke, Reeves, & Co." plaque on the Hayden Bridge is evidence of the bridge's pre-1883 construction. Images of the Phoenix Iron Works from an 1886 company catalog are shown in the two above images.

The Hayden Bridge was built using patented Phoenix Columns on the top chord, end posts, vertical members, sway bracing, and portal bracing. Phoenix Columns are noted for rolled segments that have the appearance of channel with a curved web. These segments are riveted together to form a single cylindrical column. They competed with other forms of built-up beams including the Keystone Bridge Company's patented Keystone Columns, as well as more traditional forms of built-up beams such as back-to-back channels with v-lacing, which were not patented. Phoenix Columns were used on bridges and in buildings, see drawing.

The Hayden Bridge is pin connected, a common method for assembling bridges in the United States in the late 19th Century and early 20th Century. Pin-connected truss bridges were valued in the United States because they were easy for workers to erect on-site, and did not require field riveting. The Hayden Bridge utilizes a "Whipple" truss configuration, sometimes also called a "Whipple-Murphy" truss after the builder of the first pin-connected truss bridge, J. W. Murphy. Technically described as a "Double-Intersection Pratt" type of truss,

this variation on the far more common Pratt truss was invented by Squire Whipple and was a common truss type in the late 19th Century for long truss spans, typically over 150 feet.

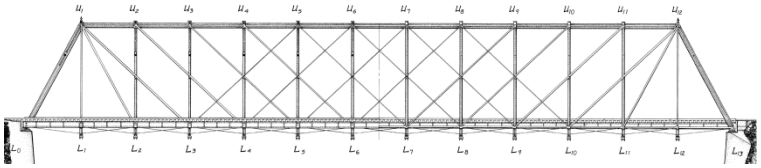


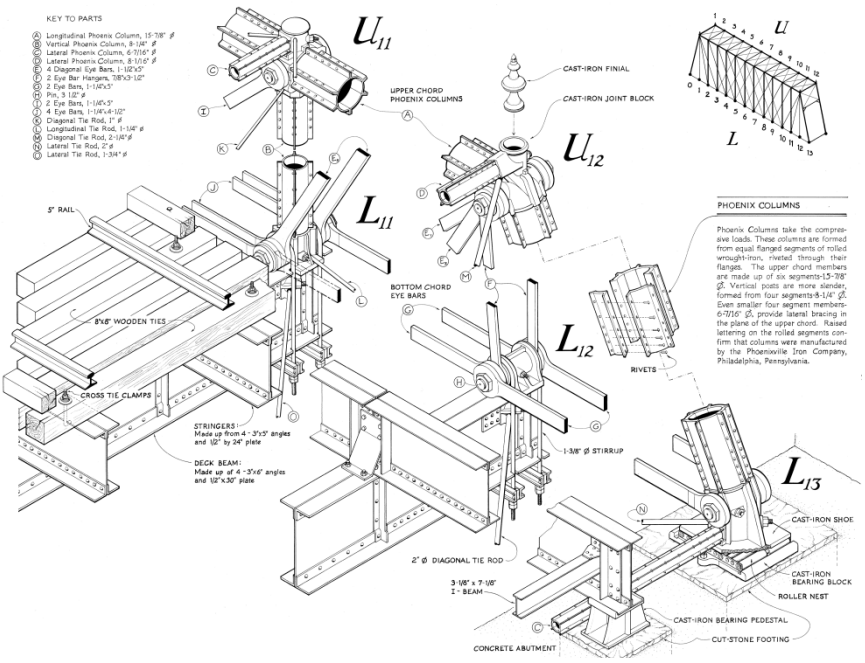
Any Whipple truss that remains today in the United States is rare and considered historically significant. Even rarer are truss bridges of any kind that utilize Phoenix columns. As such, the Hayden Bridge, a Whipple truss with Phoenix columns, is particularly rare and significant. Moreover, a brief review of bridges listed on www.historicbridges.org, www.bridgehunter.com, and the Historic American Engineering Record suggests that the Hayden Bridge has two additional notable areas where it stands out among surviving bridges: 1) the oldest known surviving bridge built by Clarke, Reeves, & Co. and 2) at a 225 foot span length it may be the oldest truss bridge span that uses Phoenix columns.

Finally, a field visit conducted in April 2015 by Workin' Bridges and Bach Steel noted that the bridge is unaltered from its original design including the structural elements of the truss, as well as the ornamental finials and plaques. For a bridge this old to show so little alteration or deterioration is remarkable. No major repairs or alterations to the original materials and design are needed.

This bridge is eligible for listing on the National Register of Historic Places. The intent in Delaware is to request such listing and we would suggest asking for "National Significance" which indicates that the bridge is one of the finest examples of its type in the entire country. A strong argument could be made that this is the most historically significant surviving bridge with Phoenix Columns.

The below drawings of the Hayden Bridge are from the Historic American Engineering Record documentation which can be viewed on line at http://loc.gov/pictures/item/or0289/.





Prepared For

Weyerhaeuser Co.

Hayden Bridge

The above satellite photo shows the bridge in place.

A. West end crane pad
B. West end disassembly area
C. East End crane pad
D. Electric Poles - Utilities
E. Light Poles
F. Tree Removal - By Owner
G. Landing Area - Axles

Lift Plan:

In short, our proposed procedure is to lift the truss superstructure off of its abutments in whole using two cranes. These cranes will carefully set the bridge onto a series of dollies on the parallel highway bridge. The Hayden Bridge will then be rolled down the road a short distance to the designated disassembly site. There, the bridge will be non-destructively dismantled and prepared for shipment. The disassembly work will require the installation of temporary shoring beams next to the trusses. These will be removed upon the disassembly of the truss.

Prepared By:

workin' bridges
PO Box 332
Grinnell, IA 50112
641.260.1262

Scope of Work

Date 4/21/2015 **Project #** 37 **Project** **Hayden Bridge**

Prepared For:

Steve McNulty
Weyerhaeuser Co.
785 North 42nd Street
Springfield, OR 97478

Location **Springfield, OR**
Marcola Street at Hayden Road

Project Scope of Work **Estimate Grand Total:** **$680,430**

1 Planning, Engineering, Mobilization

Engineering - Lift - OBEC	12,600.00
Mobilization - W'B	5,000.00
Administration, Supervision/Safety/ESCM/Permitting	47,000.00
Permit Fees	6,000.00
Mobilization - Contractor	19,200.00
Engineering - GeoTech	4,000.00
ROW bond $3,000,000 @ 2.75%	85,000.00
Engineering - Lift - Site Visit -	18,500.00
	197,300.00

2 Disassembly/Transportation/Demolition

Prepare Site for Crane	78,500.00
1 - 600 1 - 550 ton crane, dollies, walker beams, rigging	183,000.00
Pull and Dispose of Railroad Ties - Approximate 130 (included)	
Pull Stringers (included)	
Traffic Control Plan and Flaggers	8,930.00
Tree Removal & Trimming	2,500.00
Clearing and Grubbing	7,175.00
Light Pole - Remove and Replace	5,425.00
Load & Transport - Springfield, OR / MI - 8 Flat Beds - 48 tons included	

		285,530.00
3	**Abutments/Approaches***	
	NA	
4	**Upper Chord - Disassembly**	
	Prepare Bridge for Lift and Lift/Disassembly - BACH Steel	164,000.00
		164,000.00
5	**Lower Chord / Roadway**	
	Tarp Lower Chord Panels for Lift	3,000.00
		3,000.00
6	**Parts - Rivets/Pins**	
	Pins - not removed, Label All for Reassembly and Inventory	
7	**Railing***	
	na	
8	**Road Deck and Decking**	
	Remove Stringers and Railroad Ties (Included	
9	**Finish***	
	na	
10	**Landscape**	
	Landscape - graded and hydroseed	4,600.00
		4,600.00
11	**Trash & Clean Up**	
		1,000.00
12	**Punch & Warranty**	
	NA	
13	**Contingency**	
	Contingency @ 5% - Unknowns OBEC redux or USACE Permit only	25,000.00

	25,000.00

Estimate Grand Total: $680,430

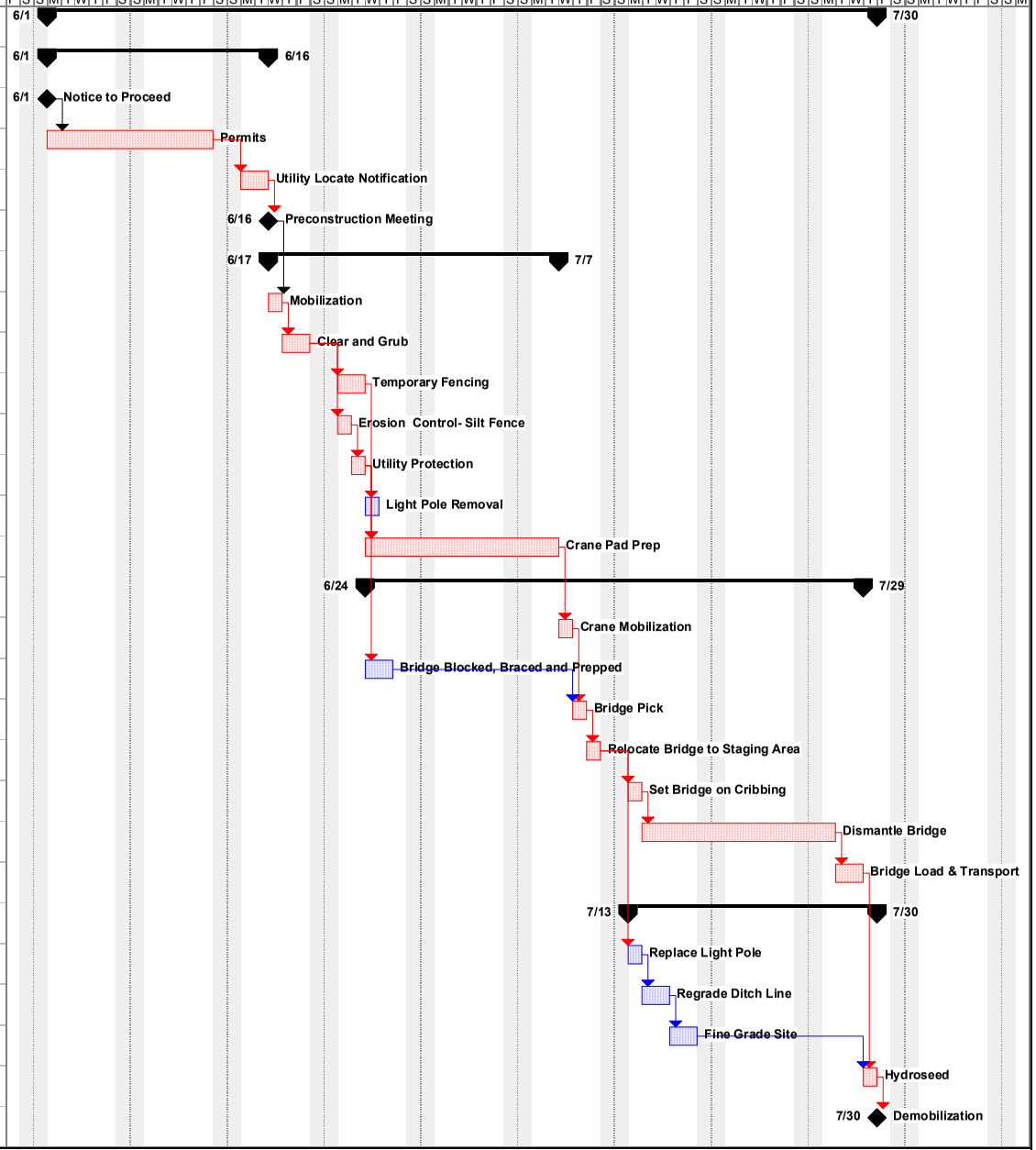
Please note: In our contingency column we are making sure to cover if OBEC engineering assessment needs modification. We have also put into contigency the costs if USACE permits are required.

Transportation is not included in this estimate as the bridge will be removed to long haul trucks for shipment to Michigan.

The ROW bond required by Lane County should be covered under general insurances. The bond cost of $85000 is included and if it can be waived the total would be decreased.

Hayden Bridge

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Hayden Bridge**	**44 days**	**Mon 6/1/15**	**Thu 7/30/15**	
2	**Preconstruction**	**12 days**	**Mon 6/1/15**	**Tue 6/16/15**	
3	Notice to Proceed	0 days	Mon 6/1/15	Mon 6/1/15	
4	Permits	10 days	Mon 6/1/15	Fri 6/12/15	3
5	Utility Locate Notification	2 days	Mon 6/15/15	Tue 6/16/15	4
6	Preconstruction Meeting	0 days	Tue 6/16/15	Tue 6/16/15	5
7	**Site Prep**	**15 days**	**Wed 6/17/15**	**Tue 7/7/15**	
8	Mobilization	1 day	Wed 6/17/15	Wed 6/17/15	6
9	Clear and Grub	2 days	Thu 6/18/15	Fri 6/19/15	8
10	Temporary Fencing	2 days	Mon 6/22/15	Tue 6/23/15	9
11	Erosion Control- Silt Fence	1 day	Mon 6/22/15	Mon 6/22/15	9
12	Utility Protection	1 day	Tue 6/23/15	Tue 6/23/15	11
13	Light Pole Removal	1 day	Wed 6/24/15	Wed 6/24/15	12
14	Crane Pad Prep	10 days	Wed 6/24/15	Tue 7/7/15	12,10
15	**Bridge Work**	**26 days**	**Wed 6/24/15**	**Wed 7/29/15**	
16	Crane Mobilization	1 day	Wed 7/8/15	Wed 7/8/15	14
17	Bridge Blocked, Braced and Prepped	2 days	Wed 6/24/15	Thu 6/25/15	12
18	Bridge Pick	1 day	Thu 7/9/15	Thu 7/9/15	17,16
19	Relocate Bridge to Staging Area	1 day	Fri 7/10/15	Fri 7/10/15	18
20	Set Bridge on Cribbing	1 day	Mon 7/13/15	Mon 7/13/15	19
21	Dismantle Bridge	10 days	Tue 7/14/15	Mon 7/27/15	20
22	Bridge Load & Transport	2 days	Tue 7/28/15	Wed 7/29/15	21
23	**Site Restablishment**	**14 days**	**Mon 7/13/15**	**Thu 7/30/15**	
24	Replace Light Pole	1 day	Mon 7/13/15	Mon 7/13/15	19
25	Regrade Ditch Line	2 days	Tue 7/14/15	Wed 7/15/15	24
26	Fine Grade Site	2 days	Thu 7/16/15	Fri 7/17/15	25
27	Hydroseed	1 day	Thu 7/30/15	Thu 7/30/15	26,22
28	Demobilization	0 days	Thu 7/30/15	Thu 7/30/15	27



StarConserve
Project: Hayden Bridge
Date: Thu 4/30/15

Task
Task Progress
Critical Task
Critical Task Progress
Milestone
Summary
Rolled Up Task
Rolled Up Critical Task
Rolled Up Milestone
Rolled Up Progress
Split
External Tasks
Project Summary
Group By Summary
Deadline

Case Study:

Removal and Dismantling of Charlotte Highway Bridge By Bach Steel

As shown in the following photos, this project involved the non-destructive removal from abutments and disassembly of a 177 foot long (173 foot span) pin-connected Whipple through truss bridge with 14.4 foot roadway, built in 1886. Photos Courtesy Vern Mesler.

Project Reference:

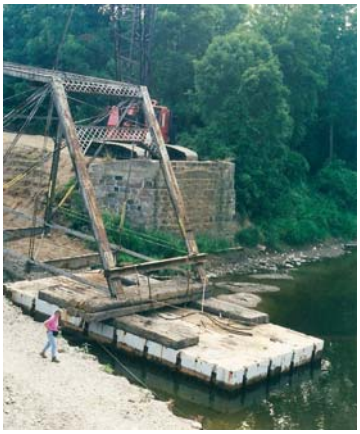
Vern Mesler
meslerv@gmail.com
517-614-9868

Bridge during deck removal. This bridge is a 177 foot through truss bridge with 14.4 foot roadway. It was built in 1886.

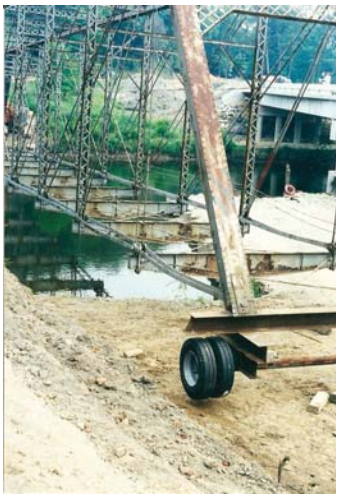
Using two cranes to lift the bridge from its abutments.

Using two cranes to lift the bridge from its abutments.

Placing one end of the bridge on a dolly which will roll the bridge back.



For this particular bridge, a barge was used on the other end for a portion of the removal process.!



Detail showing the dolly system used to roll the bridge away from the abutments.

Detail showing the dolly system used to roll the bridge away from the abutments.

Dismantling the bridge. Note the temporary beams under the top chord and beside the truss added for stability.

Dismantling the bridge. Note the temporary beams under the top chord and beside the truss added for stability.

Dismantling the bridge. Note the temporary beams under the top chord and beside the truss added for stability.

Dismantling the bridge. Detail showing a pin nut removed, as well as the associated eye bars.

Dismantling the bridge. Bridge completely on the ground, with temporary beams ready to be removed.

Bach Steel is a fabricator that that is most well-known for their work in relocating and restoring historic metal truss bridges. The company also does general structural steel fabrication and erection, hand-forged (wrought) iron/steel, ornamental art/furniture, stairs and rails, manufacturing, miscellaneous structural metal work, welding and repair. Bach Steel is run by owner Nels Raynor who has over 30 years of iron/steel fabrication and erection experience.

Metal Truss Bridge Restoration Experts

Bach Steel specializes in the preservation of historic metal truss bridges, including rehabilitation, restoration, and relocation. Bach Steel is one of the only companies in the country to specialize in this area of work. In particular Bach Steel has experience with "in-kind" restoration where the goal is to return a bridge to a like-new condition including appearance, design, and condition, while also striving to maintain as much of the original material as possible. This type of restoration is in keeping with the Secretary of the Interior's Standards for Rehabilitation which broadly outline best practices for historic preservation projects.

Central to in-kind restoration is the use of riveting. While many fabricators and engineers have dismissed riveting as a "lost art" that can no longer be performed by anyone today, at Bach Steel, riveting is a standard service that we have perfected through experience. We can drive rivets both efficiently and with the same quality of craftsmanship as the rivets that have safely held these historic truss bridges together often for well over a century. As such, we do not charge a premium for the service of riveting, allowing us to perform riveting as a cost that is competitive with using modern bolts as bridge fasteners.

Numerous other restoration techniques are used and perfected by Bach Steel such as pad welding for section loss and pneumatic pack rust removal. Additionally, Bach Steel prides itself in being able to exactly replicate portions of historic metal truss bridges, no matter how unusual the design details. The members of historic metal truss bridges often suffer from severe deterioration in portions of the member, while being in good condition in other locations. Rather than replace such members in their entirety, Bach Steel can remove the deteriorated section and weld an exact replica of that section back onto the truss member.

Bach Steel has experience restoring bridges in place over rivers, but also has extensive experience with carefully removing bridges from a river, non-destructively dismantling them into parts, and restoring them in a shop setting. The later method, particularly with pin-connected truss bridges, is usually more cost-effective by avoiding special procedures that are required when working over a river, and also allows for a more thorough cleaning and restoration.

Bach Steel is excited for an opportunity to be a part of any historic truss bridge preservation project across the country, and we can provide insight from project conception to project completion. In addition to our ability to restore historic metal truss bridges, we are always excited to lend our knowledge and insight during the project planning process. Our hands on experience with these bridges enables us to assess the condition of the bridge, help develop an appropriate scope of work for restoration, present different options for items such as deck and paint systems, and to help generate an accurate project cost estimate. Bach Steel would be happy to work with your project's existing engineer, or if you are in need of an engineer for your project, we have engineering firms we have worked with and can recommend for you.

Owner Nels Raynor began working with iron and steel at 19, held several jobs at several companies, and started Bach Steel in 1997. He has over 30 years of professional experience working with iron and steel.

Finding Bridges for Parks and Trails

Historic metal truss bridges originally built for highways are often today abandoned or find themselves up for replacement by a new bridge. These bridges are often made available to a third party for relocation and preservation. These bridges are outstanding options for non-motorized crossings such as park foot bridges or bike path bridges. Bach Steel can provide services to dismantle, restore, relocate, and re-erect these bridges. Show your commitment to history, sustainability, and beauty by choosing a historic metal truss bridge instead of a modern pre-fabricated bridge. A 100 year old bridge can readily be made ready for another century of service in a park or on a trail! While each bridge's restoration needs are different, our goal is to restore these bridges as cost-effectively possible, so that the decision to reuse a historic bridge can be competitive with the cost of buying a new pre-fabricated bridge. These unique bridges will provide a signature crossing that is both a functional crossing and an iconic destination. Bach Steel can help find a historic bridge that fits the needs of the crossing. We are aware of potentially available abandoned bridges, as well as the ever-changing list of historic bridges being made formally available by their owners for reuse before they are demolished and replaced. After a bridge has been selected, Bach Steel can then restore the bridge to like-new condition and erect it on-site in its new location.

Example Projects

State Street Bridge in Bridgeport, Saginaw County, Michigan – Complete disassembly, restoration in the shop, and reassembly of this highly deteriorated through truss bridge for pedestrian use. This was an MDOT-let project that included funding from a Transportation Enhancement grant. The photo above is a photo of a new cover plate being riveted to the top chord of the bridge. Some of the highlights of the skills needed to restore this bridge included hot metal riveting, and replication of deteriorated sections of truss members, and welding plate to address areas of section loss.
Photos: bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-bridgeport-bridge/

Kent Street Bridge in Portland, Michigan – Restored, reassembled, and reinstalled this large 220 foot through truss span in a new location over the Grand River for pedestrian use on Portland's trail system. The restored bridge is pictured to the left. Due to the size of the bridge and restrictions on the type of work that could be performed in the water, a special tramway system was designed to erect and deploy the bridge over the river in sections.
Photos: bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-kent-street-bridge/

Sterling Road Bridge on trail in Morenci, Michigan – Bach Steel's responsibility was the complete restoration of the truss parts for this bridge which was relocated to Morenci, Michigan for pedestrian use. The extensive deterioration on the bridge required hot metal riveting, and replication of deteriorated sections of truss members, and welding plate to address areas of section loss. Eyebars with section loss were pad welded to repair them. We also did selected repairs to the existing floor beams and installed new rivets where needed.
Photos: bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-sterling-road-bridge/

Charlotte Highway Bridge formerly over Grand River in Ionia County, Michigan – Bach Steel was responsible for the careful removal and disassembly of this large 173 foot span from the river and dismantling for relocation. The below webpage shows the bridge in its new location at Historic Bridge Park.
Photos: historicbridges.org/bridges/browser/?bridgebrowser=truss/charlotte/

Bauer Road Bridge, Historic Bridge Park, Calhoun County, Michigan – Bach Steel re-erected this bridge in its new location within Historic Bridge Park. This is an 89 foot through truss. It is made of wrought iron (and thus more resistant to deterioration from rust than steel it) and so the park chose to not paint the bridge.
Photos: historicbridges.org/bridges/browser/?bridgebrowser=truss/bauer/

Wildcat Bridge Road Bridge, Robertson County, Texas – Bach Steel rehabilitated this bridge for vehicular use. A photo showing a replicated end post base and bearing for this bridge with newly driven rivets visible is shown to the left.
Photos: bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-wildcat-bridge/

Providence Road Bridge, Robertson County, Texas – Bach Steel rehabilitated this bridge for vehicular use.
Photos: bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-providence-road-bridge/

Piano Bridge Fayette County, Texas – Bach Steel rehabilitated this bridge for vehicular use. Bach Steel was the recipient of a 2012 Construction Award from Texas Department of Transportation "in recognition of exemplary cooperation and performance in the construction" of this bridge.
Photos: bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-piano-bridge/

Letter of Recommendation

Dec 7, 2010
Subject: Letter of Recommendation

To whom it may concern:

I have worked with Nels Raynor on numerous Michigan Department of Transportation projects. He has shown that he has an excellent working knowledge of structural steel, particularly in the preservation of historic bridges. He has disassembled, repaired, and reassembled multiple historic bridges for the Department of Transportation with a superb quality of workmanship which is hard to find. He is a craftsman in the sense of having the ability to restore antique components with modern equipment meeting today's standards and specifications. He has an unlimited all position welding qualification with the Michigan Department of Transportation and has shown an expertise in all the tools required for this type of construction including torch and saw cutting, rivet removal and installation, and repair of section loss. He has my recommendation for any type of structural steel work which you may require.
If you have any questions feel free to contact me at the number listed below or by E-mail at: klopfb@michigan.gov
My working title is "Steel Fabrication Specialist".

Thank you;
Brion Klopf
Bridge Operations
(517) 204-6701

Bach Steel Project References

We also encourage you to contact Bach Steel's references below to discuss the relevant projects and experience our firm has working with historic metal bridges. Our references are as follows:

Vern Mesler (Reference for Michigan Projects)
VJM Metal Craftsman, Former Project Manager for Historic Bridge Park, Calhoun County, MI
www.historicbridgerestoration.com
Phone: 517-614-9868
Email: meslerv@gmail.com

Scott Miller, Vice President, Davis Construction (Reference for Michigan and Texas Projects)
Phone: (517) 322-3800 Ext. 18
Mobile: (517) 712-1160
scott@davisconstruction.us
http://www.davisconstruction.us/

Brion Klopf, Michigan Department of Transportation (Reference For Michigan Projects)
Bridge Operations / Steel Fabrication Specialist
(517) 204-6701
klopfb@michigan.gov

workin' bridges

PO Box 332
Grinnell, IA 50112
641.260.1262

The North Skunk River Greenbelt Association
NSRGA 501(c)3 -27-1752125
January 4, 2010
Workin' Bridges is a legal Trade Mark of NSRGA - January, 2014
POB 332, Grinnell, IA 50112
641.260.1262

NSRGA is dedicated to historic truss bridge and greenbelt restoration.

Julie Bowers is the Executive Director of The N. Skunk River Greenbelt Association (NSRGA), a non-profit she helped found in 2009 to save an historic bowstring bridge in Iowa. Along with master craftsman Nels Raynor, Ms. Bowers formed the organization Workin' Bridges in 2011, under the umbrella of NSRGA, to assist others across the country in historic bridge preservation efforts. Ms. Bowers is a graduate of Grinnell College and a 4th generation contractor dedicated to providing realistic rehabilitation costs, providing an economical way for those not experienced in bridge restoration to fund-raise, and to making historic bridge preservation economical for off-system adaptive reuse. She is presently involved in historic bridge preservation efforts in 12 states. In 2014 Ms. Bowers researched the reuse of Wiley's Bridge in Berks County, which lead to her work with Preservation Pennsylvania and PennDOT's Bridge Marketing Program.

Workin' Bridges - Projects

2009 - McIntyre Bowstring - W'B owns - Iowa to Delaware
2009 - Piano Bridge - Project Completed by TxDOT, Texas
2010 - Springfield Bowstring - Local Historic Society, Arkansas
2010 - Long Shoals Bridge - Under Development, Kansas
2010 - Military Bowstrings - Under Development, Kansas
2010 - King Railroad Bridge - Under Development, Kansas
2011 - Mulberry Creek Bridge - Scope Complete, Kansas
2012 - Upper Bluffton - Scope Complete, Demolished, Iowa
2012 - B.B. Comer Bridge - NTHP Economic Impact Study, Alabama
2013 - Bunker Mill Bridge - W'B Owns, Under Construction, Iowa
2013 - Otranto Bridge - Private Owner, Scope Complete, Demolished, Iowa
2014 - Waterford Bridge - W'B Managed, Phase 1 Abutment, Minnesota
2014 - Wileys Bridge - Scope Complete, Pennsylvania
2014 - Marsh Creek Bridge, W'B Owns, Pennsylvania to Delaware
2014 - Portland Water Works - W'B Owns,Oregon to Delaware
2014 - Fountain Island Bowstring, Scope Complete, Wisconsin
2014 - Waterloo Bridge, Scope Complete, Virginia
2014 - Wangum Road Bridge - Pres PA, Scope Complete, Gone, Pennsylvania
2014 - Craighead Bridge - Pres PA, Scope Complete, Pennsylvania
2014 - Bradford 37 - Pres PA, Scope Complete, Pennsylvania
2014 - Mary Street - Pres PA, Scope Complete, W'B interested, Pennsylvania
2014 - Shelhorne Bridge - DNREC, Scope Complete, Indiana
2014 - Hope Memorial Bowstring, Scope Complete, Fall Restoration, Texas
2015 - Hotel Bridge, Scope Complete, Massachusetts
2015 - Hayden Bridge, Scope Complete, W'B interested, Oregon
2015 - Wilson Bridge, Site Visit Planned, Dickinson County, Texas

All project information is available upon request.

The N. Skunk River Greenbelt Association
NSRGA • PO Box 332 • Grinnell, Iowa • 50112 • 641.260.1262

JAMES B. SCHIFFER, P.E.

Professional Engineer

YEARS OF EXPERIENCE: 26

EDUCATION:

B.S. Civil Engineering - Structural, 1989,
University of Michigan

EXPERIENCE SUMMARY:

Mr. Schiffer specializes in the design, permitting, funding and construction of general civil, structural, bridge and coastal engineering projects. These include historic bridge restorations, marina design and construction, waterfront improvements, single and multi-span bridges, box and three-sided tunnels and culverts, street and pavement design, sanitary and storm sewer systems, structural concepts and design of commercial and industrial buildings, wastewater treatment plant facilities, and marina improvements. In addition to graduate level structural engineering coursework, he has extensive field and office experience in the surveying, design, estimating, permitting and construction of new and rehabilitation of existing marinas, facilities, roadways and private structures and project sites.

Mr. Schiffer has implemented, designed and administered Design/Build projects keeping all aspects in balance - design integrity, owner's needs, timely project completion and maintaining forecasted budgets. His experience also includes construction inspection of state, municipal and private engineering projects. He is well versed in the procedures and documentation associated with DTMB, DOT, DNR, USDA/RD, and EDC funded projects, as well as AIA, DBIA and CMAA

PROFESSIONAL CREDENTIALS:

- 1999 / Professional Engineer / Michigan, No. 45737
- 2015 NCEES Record to assist with Multi-State registration
- 2009 / Shoreline Protection – Coastal Engineering Design & Practice
- 2000 / MDEQ Stormwater Mgt. – Construction Site Operator Certified
- 2000 / MDOT Density Technician
- 2000 / AASHTO Roadside Design
- 1999 / MDOT / ACEC Office Mgt.
- 1999 / MCA / ACI Concrete Field Technician Level I Certified
- 1999 / FSU Bituminous Paving Ops.
- 1998 / Troxler Certified

PROFESSIONAL AFFILIATIONS:

- National Society of Professional Engineers – Member
- Michigan Society of Professional Engineers – Member
- American Concrete Institute – Member

MAJOR AREAS OF EXPERTISE

- Technical & Contractual administration of municipal projects involving the coordination of omnibus funding agencies.
- Structural Design utilizing current Concrete (ACI, PCA) and Steel (AISC-ASD, AISC-LRFD, SJI) standards as well as the IBC2009 Building Codes.
- Structural Analysis using computer modeling (RISA3D, PileBuck SPW911, RAM Int'l).
- Historic bridge & structure restoration and renovation
- Hydraulic analysis for storm water management and drainage, and natural waterway flow effects on structures (HEC-RAS, HEC18, HEC20, FEMA 100-YR BFE).
- Design and construction of municipal, state and private construction projects.
- Construction assistance – Value engineering and surveying / layout

THE SCHIFFER GROUP, INC. III
ENGINEERING
CONCEIVE, ADVISE, ENGINEER, DESIGN, PERMIT, IMPLEMENT

SGI staff provided design and construction engineering services to be used during the 2010 fabrication and construction of the precast retaining wall sections which are integral with the three-sided arch culvert carrying Indian Creek under Three Mile Road in Walker, Michigan. In addition to the design and preparation of the shop drawings for the retaining wall sections, SGI designed the temporary steel sheeting and shoring required for construction.

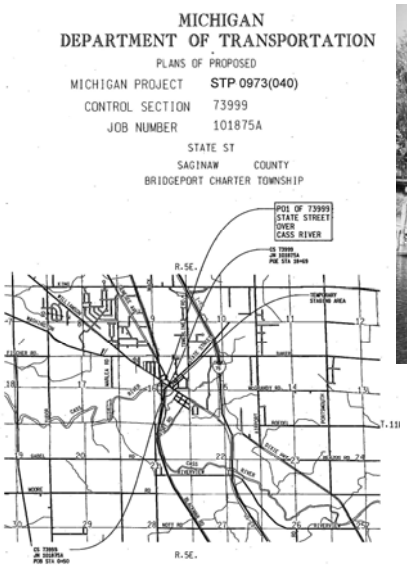
Photos & Renderings Reproduced Courtesy of Contractor

Three Mile Road @ Indian Creek
Walker, MI

THE SCHIFFER GROUP, INC.
ENGINEERING
CONCEIVE, ADVISE, ENGINEER, DESIGN, PERMIT, IMPLEMENT

SGI provided the contractor project engineering services during the reconstruction of this MDOT funded Historic Bridge Project including the dismantlement of the bridge from its original location, transport of the trusses to a rehabilitation site for sandblast, structural review, and repainting, installation of new piling and abutments and piers, restoration and re-erection of the 1940's circa truss and stringers and the construction of the new deck and walks. This bridge project is being lauded by historical organizations and environmental groups applauding the continued use of historic materials.

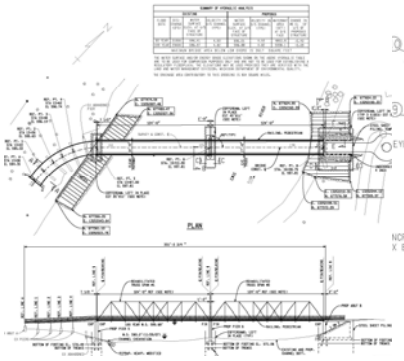
SGI engineering services have included floodplain hydraulic analysis required to obtain MDEQ permit revision needed to allow the contractor to utilize a more efficient transport method. We also provided the structural review of the proposed rigging method to be used during transport and re-erection and the structural design of the cofferdam system needed to permit the construction of the substructures.

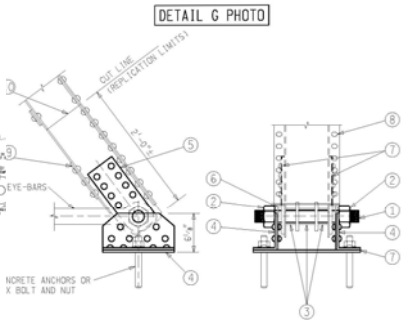


DETAIL G PHOTO

DETAIL H PHOTO

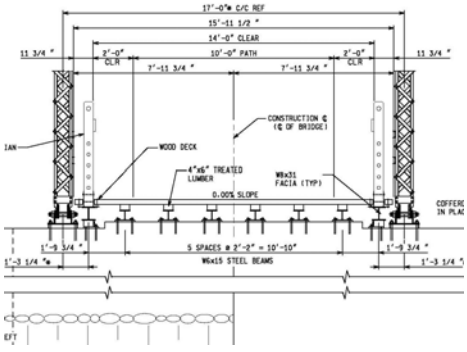
DETAIL C PHOTO





TRUSS BEARING DETAIL

DETAIL H



Images Reproduced from MDOT E-proposal files

State Street over Cass River
Bridgeport, MI

THE SCHIFFER GROUP, INC.
ENGINEERING
CONCEIVE, ADVISE, ENGINEER, DESIGN, PERMIT, IMPLEMENT

SGI staff provided project engineering during the construction of this MDOT funded Historic Bridge Project including the dismantlement of the bridge from its original location (Belleville, MI), transport of the members to Grand Rapids for sandblast, structural review, and repainting, installation of new piling and abutments, restoration and re-erection of the 1940's circa truss and stringers and the construction of the new deck and walks. This bridge over the Flat River north of Lowell, Michigan was lauded by historical organizations and environmental groups applauding the continued use of historic materials.

Photos & Renderings Reproduced Courtesy of TBS, Copyright SGI 2009

Bridge Replacement
Burroughs Street
over the Flat River
Vergennes Twp., MI

Jim Weitman
Weitman Excavation, LLC

Jim Weitman has been construction for over 25 years finding ways to continuously excel and innovate the industry. A graduate from Oregon State University in 1988 with a bachelor's degree in Construction Engineering Management, Jim spent the first five years of his career with a grading and paving contractor in the Bay Area. While in the Bay Area, he worked as a Project Engineer on several large-scale public roadways, marine work and airport terminal and runway projects. Upon returning to his home state in 1993, Jim joined the Coffman Excavation team as a Project Engineer. Over the subsequent ten years, (1993-2003) Jim participated in the roles of Project Engineer, Safety Director, Estimator, Project Manager, Senior Project Manager, Sponsor and as Vice President of Operations with Coffman Excavation. In May of 2003, Jim chose to pursue his dream of associating his name, integrity and business ethics with the relationships built amongst the elite by starting his own business, Weitman Excavation. Those who have had the opportunity to work with Jim recognize his ability to meet a stringent project schedule and budget. His focus on value engineering, pre-planning and long-term relationships strengthens his philosophy of being one team.

Throughout his career, Jim has successfully completed many major projects in both the Bay Area and Portland Metro regions.

Such projects include:

- Broadway Street/ Highway 1 Reconstruction, San Francisco, CA
- Cedar Street Reconstruction, Redwood City, CA
- Pittsburgh Marina - Pittsburgh, CA
- Valley Care Medical Center- Pleasanton, CA
- Oakland Airport Runway Resurfacing, Oakland, CA
- Evergreen Road, Hillsboro OR
- Rose Garden Project- Portland, OR
- West Side Light Rail- Portland OR
- Novelus- Hillsboro, OR
- Komatsu Silicon- Hillsboro, OR
- Harney District Hospital- Burns, OR
- Boeing- Gresham, OR
- PSU Academic Center- Portland, OR
- PDX HQP2 Parking Garage- Portland, OR
- Oregon Zoo- Portland, OR
- Rivergate Phase 3- Portland, OR
- Intel Aloha, Jones Farm, Ronler Acres, and West Union Campuses, Hillsboro, OR
- Port of Tillamook, Tillamook Bay, OR
- Intel RA4, Hillsboro, OR
- PGE Port Westward Unit 2, Clatskanie, OR
- Kelly Butte Reservoir Project, Portland, OR
- Mill Creek Storage Dam, Walla Walla, OR

About

Star Construction Services, dba StarConserve, established in 2007, provides high quality site development and specialty services to its clients. We are a woman-owned business, owned and operated by **Tayna Wylder,** providing various earthwork and concrete services throughout the Pacific Northwest. In the market of commercial construction, Star is a growing company that focuses on developing its core competencies within the industry and learning niche techniques such as bridge concrete work and natural environments involving water.

Tayna Wylder, Owner
StarConserve
(Photo courtesy of OAME)

Star's overall strategy is based on continuous improvement and commitment to the facilitation of well-being, growth, and success of our business and our employees. We are committed to work force diversity and development. A signatory union contractor, Star is a certified training agent for the unions we work with and assures on-the-job training is provided by qualified journeymen and journeywomen. In line with union objectives, we actively promote diversity and seek to attract a diverse work force of tradesmen and tradeswomen.

We work closely with the Oregon Association of Minority Entrepreneurs (OAME), Oregon Trades Women, Oregon Department of Transportation (ODOT) Civil Rights, Association of General Contractors (AGC) and other minority subcontractor's contractors to alert them of job openings. We are committed to growing people and business by utilizing diverse and gender specific contractors / suppliers when applicable. Additionally, Star holds Disadvantage Business Enterprise (DBE), Women Business Enterprise (WBE) and Emerging Small Business (ESB) certifications with the state of Oregon, as well as Women Owned Small Business (WOSB) certification with the federal government.

Services:

- General & specialty commercial contracting
- Site development
- Foundations & Structures
- Bridge construction
- Environmentally sensitive projects
- Green building
- Eco-systems

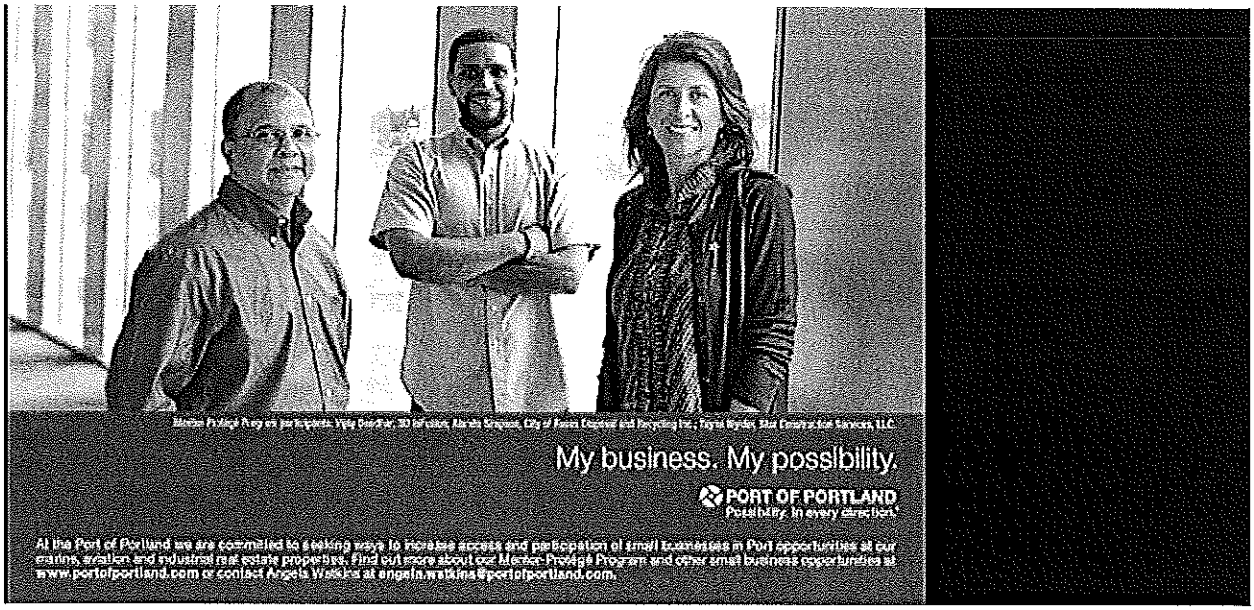
Leadership

- Communication development
- Sustainable Leadership
- Mentorship

StarConserve leads the industry by:

- Bridging tactical and organizational knowledge by delivering skills and experience in both areas — commercial contracting and leadership development
- Making the intangible tangible
- Providing leadership and mentoring services available to ensure success of program
- Certified and credentialed employees

We believe can and should be fun — and we bring that attitude to our projects



Mentor-Protégé Program participants: Vijay Deodhar, 3D InFusion; Alando Simpson, City of Roses Disposal and Recycling Inc.; Tayna Wylder, Star Construction Services, LLC.

Capabilities:

Qualifications/Certifications:

- 100% Woman Owned Small Business – Federal
- Disadvantaged Business Enterprise (DBE) – Oregon Certified #4884
- Woman Business Enterprise (WBE) – Oregon Certified #4884
- Emerging Small Business (ESB) – Oregon Certified #4884
- Construction Contractors Board State of Oregon #176654
- Washington State Department of Labor & Industries #STARCCS929DR
- LEED Green Associate Certification, USGBC (U.S. Green Building Council)
- International Coach Federation – Master Certified Coach
- Coach Training Institute – Certified Professional Co-Active Coach
- The Center for Transformational Presence – Practitioner of Transformational Presence Leadership
- Port of Portland Mentor Protégé Program Graduate 2012
- Oregon Department of Transportation Small Business Mentor Protégé since 2012 – current
- Certified Gemstone Energy Medicine Practitioner
- University of Washington – Foster School of Business, Minority Business Executive Program, 2014

- Oregon Department of Transportation Workforce and Small Business Advisory Committee Member, 2014
- Oregon Excellence Award – US Trade and Commerce Institute, 2013
- Equal Employment Opportunity Plan Utilization
- NAICS Codes: 115310, 236210, 236220, 237110, 237120, 237310, 238110, 238990, 238910, 611430

Tayna Wylder
Star Construction Services

Tayna began her commercial construction career as a laborer on a heavy highway project in Reno, Nevada while attending college at the University of Nevada-Reno in 1987. She moved to Portland, Oregon in 1992 where she worked in several corporate industries including finance, telecommunications and marketing while continuing her education and receiving her Master's as a Certified Coach. In 2007, Tayna combined her business passions and established Star Construction Services, LLC with the dedication to provide high quality services to its clients throughout the Pacific Northwest.

As a woman-owned business Star Construction grew steadily to provide various concrete services, earthwork and niche specialty services, such as bridge concrete work. As the market of commercial construction became more environmentally conscious, Tayna's passion for eco-systems and bridging people and their natural environments became an opportunity to make a dream come true. StarConserve, dba is a growing company that focuses on developing its core competencies in the important and sensitive areas of restoration of water and natural resources. Tayna will be overseeing the details of each project from a management level to assure client satisfaction and be alert for any value-added opportunities to pass on to the owner.

Throughout Tayna's construction career, Star has successfully completed many major projects in the Portland Metro Area and Pacific Northwest.