

СН	2M	HILL	PROJECT NO.	TBD		
			PROJECT NAME	Nason	Creek	
(1)	DAY:			3:00	a.m x p.m. R	EPORT. 1
	WEAI	FHER Partly Sunny TEMP. MAX 90 °F MIN	90 °F PRECIPITA	ION		
(2)	KEY	PERSONNEL ON SITE:				
	Jim G	Gunter - BNSF				
	Rvan	Lawrence – CH2M HILL				
	Tyan	Lawrence - Grizivi File				
(3)		MAJOR EQUIPMENT ON PRO	JECT AND AMOUNT	OF USE		
	No.	Description			Size/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berminghammer B3505				-
	1	Rail-mounted crane to lift pile driving hammer				
(4)	WOR	K ACCOMPLISHED TODAY:				
	I arriv	ved on site at 9:15am.				
	the d	with Jim Gunter with BNSF. He initially told me that track windon esign memo. We ended up not getting track access until approx	rimately 11:30am. We İd	aded all	the supplies and o	got to the site at
	to op	eximately 12:00pm. I marked the pile in 1-foot increments while erate correctly – the piston was not being raised and dropped or	orrectly. BNSF spent are	ound 20 r	ninutes working o	n the hammer.
		F started driving the first pile at around 12:30pm. Advanced Pile till advanced without difficulty. BNSF drove pile to 55.5 feet, the				
	down	to approximately 59.5 feet. BNSF then cut off approximately 8 We left the jobsite at around 2:30pm.				
		the site at 3:00pm.				
	lion	and all discoupini.				
	<u></u>					
(5)		Ryan Lawre	ance D.F.		7/4	/2013
(3)		OBSERVER'S			•	ATF



Photo 1: View of site before the start of pile driving.



Photo 2: View of Pile 3 before the start of pile driving.



Photo 3: View of Pile 3 at the end of pile driving. Upper 8 inches of pile was cut off.

Pile Driving Record



Pile Type: HP 14x117 Size: 60 foot long sections PROJECT: Nason Creek Top Elev: _____ Basic Length: PROJECT No: TBD Cutoff EI: Penetration: Pile Location: Bent No. _ 3 Cutoff Length: Ground El: Pile Number: Tip Elev: ___ Pay Length: ___ Min. Penetration: Hammer Type: OED Driving Completed: Model: Berminghammer B3505 Cap Typ: Weight: **Driving Started:**

Cap Typ: Weight: 12,000lb + 4,000 piston Driving Started: 7/1/2013

Cushion: Steel striker plate Thickness: 6" Driving Started: 7/1/2013

3.0 9 6 5.7 51.0 46 4.0 5 5.7 51.0 42 4 4 4 55.0 33 4 4 4 51.0 42 4 4 4 6 52.0 33 4 4 53.0 35 4 53.0 35 4 53.0 35 54.0 38 4 54.0 38 4 54.0 38 4 54.0 38 4 55.0 31 4 56.0 35 54.0 38 4 56.0 35 54.0 38 4 56.0 35 54.0 38 4 56.0 35 56.0 35 57.0 24 4 56.0 35 57.0 24 4 4 58.0 35 58.0 35 59.0 28 4 43 58.0 59.0 28 4 4 48.0 60.0 60.0 60.0 60.0 60.0	7 6.2 8 6.1 8 6.1 7 6.2 6 6.6 6 6.5 6 6.6	2
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38.0 26 46 6.7 85.0	+	+
39.0 26 46 6.6 86.0	+	1
40.0 30 45 6.9 87.0	+	+
41.0 26 46 6.7 88.0	+	+
42.0 27 46 6.5 89.0	+	+
43.0 64 54 4.8 Soft blows 90.0	+	+
44.0 30 46 6.5 91.0	+	+
45.0 32 46 6.5 92.0	+	+
46.0 31 46 6.5 93.0	+	+
46.0 31 46 6.3 93.0 47.0 34 47 6.2 94.0		+

Observer: R. Lawrence



CH	I2MI	HILL				PROJE	CT NO.	476	6670	
						PROJE	CT NAME	Nas	son Creek	
(1)	DAY:	Tuesday	DATE: 7/2/20	013 WORK PERIOD:	8:30	x a.m.	p.m. To	0 2:30) a.m X p.m. F	REPORT. 2
	WEAT	HER	Suppy	TEMP. MAX 9	o °E MIN	90 °	F PRECIP	ΙΤΔΤΙΟΝ	Nor	10
	WLAI		Suring	121011 : 101777 90) 1 1711111	90	1 TREON	ITATION	INOI	i c
(2)		PERSONNEL								
	Jim G	Sunter - BNSF	: 							
	Ryan	Lawrence – (CH2M HILL							
(3)				MAJOR EQUIPM	IFNT ON PR	OJECT AN	ID AMOUN	NT OF US		
	No.			Description		OULOT AN	TD AINOU	11 01 00	Size/Capacity	Hrs. Oper.
	1	Pile driving h	nammer – Berm	inghammer B3505						<u>'</u>
	1			pile driving hammer						
			·							
(4)	WOR	K ACCOMPL	ISHED TODAY	' .						
		ed onsite at 8								
	I met	with Jim Gun	ter with BNSF. I	He told me that we v	vere just wait	ing for a wo	ork window	v to open	up for us to get on the the pile equipment	e tracks. We
	Jim a	nd some of hi	is crew attempte	ed to help another B	NSF crew ge	t an excava	ator unstud	k from a	soft area adjacent to	the tracks that it
	during	g pile driving.	The pile was dr	iven to just below th	d until 1:10p e railroad tie	m. Worked level and c	on Pier 3 I did not nee	Pile 4 tod d to be cu	ay. No problems wer utoff. BNSF crew clea	e encountered ined up, loaded
		ment, and lef the site at 2:3	t jobsite by 2:00	pm.						
		attached photo	•							
	0000	attaorica priot	30.							
(5)						rence, P.E.				2/2013
				(DBSERVER'S	S SIGNATU	JRE			ATE





Photo 2: View of the temporary pile extension that was used to drive the pile from 55.5 to 60 feet.



Photo 3: View of Pile 3 and Pile 4 at the end of the day. Note the slight rotation to Pile 3 that was driven yesterday.



СН	12MI	DAILY OBSERVATION REPORT	PROJECT NO. PROJECT NAME	476670 Nason Creek	
(1)	DAY:	Wednesday DATE: 7/3/2013 WORK PERIOD: 8:30	x a.m. p.m. TO	4:30 a.m x p.m. R	EPORT. 3
	WEAT	THER Sunny TEMP. MAX 90 °F MIN	90 °F PRECIPITAT	TION None	е
(2)		PERSONNEL ON SITE:			
		Gunter - BNSF Martin Fisher - ICF			
		Lawrence – CH2M HILL			
	Alan	Schmidt – Chelan County			
(2)					
(3)		MAJOR EQUIPMENT ON PRO	DJECT AND AMOUNT C		
	No.	Description		Size/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berminghammer B3505			
	1	Rail-mounted crane to life pile driving hammer			
(4)	WOR	RK ACCOMPLISHED TODAY:			
	I arriv	ved onsite at 8:30am.			
	for thi tracks secor	with Martin Fisher and Alan Schmidt when I arrived on site this is project. I met with Jim Gunter with BNSF. He told me that we s. We received track authority at approximately 11:45am. We gnd segment (60-120 foot section) of Pier 3 Pile 4. BNSF resume as follows:	e were just waiting for a water to the jobsite at aroung	work window to open up for d 12:00pm. The BNSF crev	us to get on the w welded the
	5	2 blows for the first 1 inch. 5 blows for the first 2 inches 10 blows for the first 4 inches			

- 14 blows for the first 6 inches
- 18 blows for the first 8 inches
- 23 blows fir the first 10 inches
- 26 blows for the first 12 inches

BNSF advanced Pier 3 Pile 4 without difficulty to a depth of 117 feet and then temporarily stopped driving the pile. They then began installing the first segment (0-60 feet) of Pier 3 Pile 2 at approximately 1:30pm. BNSF advanced this pile without difficulty to a depth of approximately 55 feet. They used an excavator to help keep the pile alignment straight. Then BNSF used their temporary pile extension to drive Pier 3 Pile 2 to a depth of 60 feet. Then BNSF used their temporary pile extension to drive Pier 3 Pile 4 to a depth of 120 feet. Between 117-120 feet, the number of blows required to advance the pile increased significantly, but it was unclear if this was due to setup or more difficult driving conditions. The batter of all the piles so far is roughly 1.5 inches over 12 inches. BNSF is having some difficulty keeping the piles from rotating. We left the jobsite at approximately 3:00pm.

We waited for 2 trains to pass and then tried to get back on the tracks at approximately 4:15pm, but the tracks were only going to be clear for 1 hour before the next train. The BNSF crew went back to the jobsite to do some non-pile driving work and I left the site, since no more piles would be installed today.

I left the site at 4:30pm.

See attached photos.

A total of 120 feet of pile was driven today (60 feet each on Pier 3 Pile 2 and Pier 3 Pile 4).

Current pile totals are:

Pier 3 Pile 2: 60 feet

Pier 3 Pile 3: 59.5 feet Pier 3 Pile 4: 120 feet

 (5)
 Ryan Lawrence, P.E.
 7/3/2013

 OBSERVER'S SIGNATURE
 DATE



Photo 1: View of first and second segments of Pier 3 Pile 4 being welded together.



Photo 2: View of the weld between the first and second segment of Pier 3 Pile 4.



Photo 3: View of Pile 2 and Pile 4 advanced as far as they can be using just the hammer. BNSF crew is attaching cables to pick up the temporary pile section that they will use to drive the piles to below the track elevation.



Photo 4: View of Piles 2, 3, and 4 (left to right) at Pier 3. Note the slight rotation of Pile 2 and Pile 3.



I2M	HILL						PRO	JECT NO	Э.	47667	70	
							PRO	JECT NA	AME	Naso	n Creek	
DAY:	Thursday	DATE:	7/4/201	3 WORK PE	RIOD:	8:30	x a.r	n. p.m.	то_	6:15	a.m X p.m.	REPORT. 4
WEAT	HER	Sunny		_ TEMP. MAX	83	°F MIN	83	_°F PR	ECIPITA	TION _	No	ne
KEY	PERSONNEL	ON SIT	E:									
Jim G	Sunter - BNSF											
Ryan	Lawrence – C	CH2M HI	LL									
Andre	ew Banas – R	MDT, Inc	D.									
									_			
				MAJOR EQ	UIPME	NT ON PR	OJECT	AND AN	OUNT	OF USE		
No.				Des	cription	l					Size/Capacity	Hrs. Oper.
1	Pile driving h	ammer -	– Bermin	ghammer B3	505							
1	Rail-mounted	d crane	to life pil	e driving ham	mer							
	DAY: WEAT KEY Jim G Ryan Andre	WEATHER KEY PERSONNEL Jim Gunter - BNSF Ryan Lawrence - C Andrew Banas - RI No. 1 Pile driving h	DAY: Thursday DATE: WEATHER Sunny KEY PERSONNEL ON SIT Jim Gunter - BNSF Ryan Lawrence - CH2M HI Andrew Banas - RMDT, Inc No. 1 Pile driving hammer	DAY: Thursday DATE: 7/4/201 WEATHER Sunny KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL Andrew Banas - RMDT, Inc. No. 1 Pile driving hammer - Bermin	DAY: Thursday DATE: 7/4/2013 WORK PER WEATHER Sunny TEMP. MAX KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL Andrew Banas - RMDT, Inc. MAJOR EQ No. Des 1 Pile driving hammer - Berminghammer B3	DAY: Thursday DATE: 7/4/2013 WORK PERIOD: WEATHER Sunny TEMP. MAX 83 KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL Andrew Banas - RMDT, Inc. MAJOR EQUIPME No. Description 1 Pile driving hammer - Berminghammer B3505	DAY: Thursday DATE: 7/4/2013 WORK PERIOD: 8:30 WEATHER Sunny TEMP. MAX 83 °F MIN KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL Andrew Banas - RMDT, Inc. MAJOR EQUIPMENT ON PROPERTY OF THE PROPERT	DAY: Thursday DATE: 7/4/2013 WORK PERIOD: 8:30 x a.r WEATHER Sunny TEMP. MAX 83 °F MIN 83 KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL Andrew Banas - RMDT, Inc. MAJOR EQUIPMENT ON PROJECT No. Description 1 Pile driving hammer - Berminghammer B3505	DAY: Thursday DATE: 7/4/2013 WORK PERIOD: 8:30 x a.m. p.m. WEATHER Sunny TEMP. MAX 83 °F MIN 83 °F PR KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL Andrew Banas - RMDT, Inc. MAJOR EQUIPMENT ON PROJECT AND AM No. Description 1 Pile driving hammer - Berminghammer B3505	PROJECT NAME DAY: Thursday DATE: 7/4/2013 WORK PERIOD: 8:30 x a.m. p.m. TO weather Sunny TEMP. MAX 83 °F MIN 83 °F PRECIPITA KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL Andrew Banas - RMDT, Inc. MAJOR EQUIPMENT ON PROJECT AND AMOUNT No. Description 1 Pile driving hammer - Berminghammer B3505	DAY: Thursday DATE: 7/4/2013 WORK PERIOD: 8:30 X a.m. p.m. TO 6:15 WEATHER Sunny TEMP. MAX 83 °F MIN 83 °F PRECIPITATION KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL Andrew Banas - RMDT, Inc. MAJOR EQUIPMENT ON PROJECT AND AMOUNT OF USE No. Description 1 Pile driving hammer - Berminghammer B3505	PROJECT NAME Nason Creek DAY:Thursday

(4) WORK ACCOMPLISHED TODAY:

I arrived onsite at 8:30am.

The BNSF crew was preparing to mobilize as I arrived because we had a track window from 8:30am to 12:30pm. Andrew Banas with RMDT arrived at approximately 8:45am. While Andrew setup his instrumentation on Pier 3 Pile 4, the BNSF crew advanced the base section of Pier 3 Pile 1 to a depth of approximately 55 feet. Then BNSF welded the third section of Pier 3 Pile 4 and began advancing the pile. The pile driving sensors worked correctly and successfully transmitted data to the pile driving analyzer. Preleminary analysis by Andrew indicated the capacity of the pile during restrike was around 250 kips and then was around 200 kips once the pile started moving, which was well below the desired capacity of 470 kips. Andrew felt the pile needed to be advanced deeper. Andrew also indicated that the pile hammer was not working as well as it should be. During the course of driving Pier 3 Pile 4, the stroke height decreased from around 7.5 to 6.5 feet. Ideally, the hammer stroke height should be around 10 feet. The hammer operator indicated the hammer was old and was not operating as well as it should be. The smaller amount of energy being produced by the hammer resulted in more hammer blows being needed to advance the pile, which resulted in longer pile driving time. The pile was only able to be advanced to a depth of 160 feet before the BNSF crew was out of time and had to get off the track. They cutoff the Pier 3 Pile 4 at a depth of 160 feet and Pier 3 Pile 1 at a depth of 56 feet.

The re-strike blows were as follows for Pier 3 Pile 4 at a depth of 120 feet:

8 blows for the first 1 inch.

17 blows for the first 2 inches

26blows for the first 3 inches

36blows for the first 4 inches

45blows for the first 5 inches 54 blows for the first 6 inches

64 blows for the first 7 inches

73 blows for the first 8 inches 82 blows for the first 9 inches

92 blows fir the first 10 inches

102 blows for the first 11 inches

111 blows for the first 12 inches

We were off the track by approximately 12:30pm. Jim was hopeful we could get another track window later in the day, so we stayed and waited to see if another track window would open. We were able to get another track window from approximately 3:30pm to 6:00pm. We used this time to weld on the second segment of Pier 3 Pile 3. Andrew also attached the pile driving sensors to this pile and used his pile driving analyzer to monitor the advancement of the pile. BNSF advanced the pile from a depth of 59.5 to 120 feet.

The re-strike blows were as follows for Pier 3 Pile 3 at a depth of 59.5 feet:

- 4 blows for the first 1 inch.
- 8 blows for the first 2 inches
- 13 blows for the first 3 inches
- 18 blows for the first 4 inches
- 21 blows for the first 5 inches
- 26 blows for the first 6 inches
- 29 blows for the first 7 inches
- 33 blows for the first 8 inches
- 38 blows for the first 9 inches
- 41 blows fir the first 10 inches
- 45 blows for the first 11 inches
- 48 blows for the first 12 inches

I left the site at 6:15pm.

See attached photos.

A total of 156.5 feet of pile was driven today (56 feet on Pier 3 Pile 1, 40 feet on Pier 3 Pile 4, and 60.5 feet on Pier 3 Pile 3).

Current pile totals are:

Pier 3 Pile 1: 55 feet

Pier 3 Pile 2: 60 feet

Pier 3 Pile 3: 120 feet

Pier 3 Pile 4: 160 feet

(5) 7/4/2013 Ryan Lawrence, P.E. **OBSERVER'S SIGNATURE** DATE



Photo 1: View of the first segment of Pier 3 Pile 1.



Photo 2: View of the pile driving sensors that wirelessly transmit data to the pile driving analyzer.



Photo 3: View of Pier 3 Pile 1 (left) and Pier 3 Pile 4 (right).



Photo 4: View of Pier 3 Piles 4, 3, 2, 1 (left to right).



Photo 5: View of weld on Pier 3 Pile 3.



CH	I2M	HILL	PROJECT NO.	476670	
			PROJECT NAME	Nason Creek	
(1)	DAY:	Friday DATE: 7/5/2013 WORK PERIOD: 7:30		3:00 a.m x p.m. RE	PORT. 5
	WEAT	THER Sunny TEMP. MAX 80 °F MIN	80 °F PRECIPITATI	ON None	!
(2)	KEY	PERSONNEL ON SITE:			
	Jim G	Gunter - BNSF		. <u> </u>	
	Ryan	n Lawrence – CH2M HILL			
	Andre	ew Banas – RMDT, Inc.			
(3)		MAJOR EQUIPMENT ON PR	OJECT AND AMOUNT O	F USE	
	No.	Description		Size/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berminghammer B3505			
	1	Rail-mounted crane to life pile driving hammer			
		•			

(4) WORK ACCOMPLISHED TODAY:

I arrived onsite at 7:30am.

Met with Jim and Andrew and discussed the objectives for the day. I worked on paperwork while we waited for a track window to open. We received access to the tracks from approximately 9:30am to 2:00pm. BNSF welded on a fourth segment (60 feet long) to Pier 3 Pile 4. BNSF then used their hammer to advance the pile while Andrew collected data using his pile driving analyzer. Restrike data was collected at the beginning of pile driving at approximately 160 feet. The pile was driven to a depth of approximately 215 feet before BNSF ran out of time and had to clear the tracks. They cut off the remaining 5 feet of pile. According to Andrew, the pile did not achieve the desired capacity during driving. The capacity during driving was around 250 kips, instead of the desired 470 kips. Andrew believes BNSF may be able to achieve capacity after allowing the pile to setup for a few days and then restriking it. However, Andrew believes the hammer is not adequate for achieving capacity during restrike because it is not currently capable of creating large enough hammer blows to displace the pile enough to mobilize all of the available soil resistance. Andrew believes BNSF needs to repair their hammer so that it can impart more energy or obtain a larger hammer that is capable of generating more energy. The stroke heights gradually decreased from around 7.5 feet to 6.5 feet, which is mostly due to the hammer heating up with use. BNSF hit the pile approximately 7,550 times today, which is a substantial amount of hammer blows. The hammer will likely not last the course of the project if it is subjected to that much continuous use. Even though the blows per foot were up to 180 at times, BNSF elected to continue driving to keep trying to get the pile into the ground.

We unloaded our equipment from the trucks at around 2:30pm. Andrew and I discussed the progress for the day with Josh Butler and went over some paperwork until 3:00pm. The BNSF crew was in the process of replacing the compression rings on the hammer as I was leaving and were planning on working on this for the rest of the day in an effort to improve the hammer's performance. I left the site at 3:00pm.

Andrew returned to the hotel room and performed some pile analyses over the next couple hours. We met at around 5:00pm and discussed his results with Josh. Basically, pile capacity was not achieved during driving, but may be possible to achieve during restrike after the pile has had time to setup, if BNSF is able to find a way to get a hammer that can generate enough energy to mobilize all of the soil resistance. Some options are: BNSF repairing their hammer, obtaining a more powerful hammer, or using alternate fuel blends to temporarily get a higher stroke height. It was decided that we would not have Andrew test tomorrow to give Pier 3 Pile 4 another day to setup and hopefully gain strength. We also want to see if BNSF changing the hammer's compression rings significantly improves the hammer performance.

The re-strike blows were as follows for Pier 3 Pile 4 at a depth of 160 feet:

- 14 blows for the first 1 inch.
- 26 blows for the first 2 inches
- 38 blows for the first 3 inches

52 blows for the first 4 inches

64 blows for the first 5 inches

76 blows for the first 6 inches

89 blows for the first 7 inches

100 blows for the first 8 inches

111 blows for the first 9 inches

122 blows fir the first 10 inches

133 blows for the first 11 inches

142 blows for the first 12 inches

See attached photos.

A total of 55 feet of pile was driven today (Pier 3 Pile 4 Segment 4).

Current pile totals are:

Pier 3 Pile 1: 55 feet Pier 3 Pile 2: 60 feet Pier 3 Pile 3: 120 feet Pier 3 Pile 4: 215 feet

(5) 7/5/2013 Ryan Lawrence, P.E. DATE

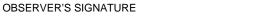




Photo 1: View of the weld on Pier 3 Pile 4 at 160 feet, between segments 3 and 4.



Photo 2: View of the Pier 3 Pile 4 during pile driving.



СН	2 M	HILL	PROJECT NO.	476670	
			PROJECT NAME	Nason Creek	
(1)	DAY:	Saturday DATE: 7/6/2013 WORK PERIOD: 7:30	x a.m. p.m. TO	1:00 a.m x p.m. RE	EPORT. 6
	WEAT	THER Sunny TEMP. MAX 85 °F MIN	85 °F PRECIPITATION	ON None)
(2)		PERSONNEL ON SITE: Gunter - BNSF			
	Ryan	Lawrence – CH2M HILL			
	-	n Fisher - ICF			
(3)		MAJOR EQUIPMENT ON PRO	JECT AND AMOUNT O	F USE	
	No.	Description		Size/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berminghammer B3505			
	1	Rail-mounted crane to life pile driving hammer			
		ı		L	

(4) WORK ACCOMPLISHED TODAY:

I arrived onsite at 7:30am.

We had a track window from 7:30 to 9:30am, we went to work as soon as I arrived. BNSF welded the second segment to Pier 3 Pile 1. We measured the restrike blowcounts for each inch of the first foot. The pile driving began at 8:40am.

The re-strike blows were as follows for Pier 3 Pile 1 at a depth of 55 feet:

- 2 blows for the first 1 inch.
- 3 blows for the first 2 inches
- 5 blows for the first 3 inches
- 7 blows for the first 4 inches
- 8 blows for the first 5 inches 10 blows for the first 6 inches
- 12 blows for the first 7 inches
- 13 blows for the first 8 inches
- 15 blows for the first 9 inches
- 16 blows fir the first 10 inches
- 17 blows for the first 11 inches
- 19 blows for the first 12 inches

The pile advanced without any problems to a depth of 116 feet. Despite the BNSF crew replacing the compression rings in the hammer the day before, I did not observe significantly higher stroke heights than yesterday. Average stroke heights were a little over seven feet high, which is slightly better than yesterday, but not significantly. Jim believes the hammer is operating a little better, and thinks the low stroke heights are the result of softer soil. Pile driving was finished by 9:25am.

After a train went by, we had another track window from around 10:30am to 12:40pm. The BNSF crew advanced Pier 2 Pile 2 to a depth of 60 feet. The pile advanced without any problems. The stroke heights were around 6 feet. Pile driving was finished at 9:10am.

I saw Martin Fisher onsite obverving the construction of the temporary access road and talked with him briefly. I explained the status of the pile driving work.

Jim did not think we would have enough of a window to drive any more pile today. If any short window opened up, he planned to use it to bring out more pile sections to the bridge site and unload them.

I left the site today at 1:00pm

See attached photos.

A total of 120 feet of pile was driven today (60 feet at Pier 3 Pile 1 Segment 4 and 60 feet at Pier 2 Pile 2 Segment 1).

Current pile totals are: Pier 2 Pile 2: 60 feet

Pier 3 Pile 1: 116 feet Pier 3 Pile 2: 60 feet

Pier 3 Pile 3: 120 feet Pier 3 Pile 4: 215 feet

(5) Ryan Lawrence, P.E. 7/6/2013 OBSERVER'S SIGNATURE DATE



Photo 1: View of the weld on Pier 3 Pile 1 at 55 feet, between segments 1 and 2.



Photo 2: View of the Pier 3 Pile 1 at the start of pile driving.



Photo 3: View of the Pier 3 Pile 1 during pile driving. BNSF is picking up their follower to drive the piles below the track level.



Photo 4: View of the Pier 3 piles (Pile 1, 2, 3, 4, left to right).



Photo 5: View of the follower that BNSF uses to drive the piles below the track level. (Follower at the top of the photo, pile at the bottom of the photo)



CF	12IVIHILL		PROJECT NO. PROJECT NAME	476670 Nason Creek	
(1)	DAY: Sunday DATE: 7/	7/2013 WORK PERIOD: 8:00	x a.m. p.m. TO	2:15 a.m x p.m. I	REPORT. 7
	WEATHER Sunny	TEMP. MAX 85 °F MIN	N 85 °F PRECIPITA	TION Non	ne
(2)	KEY PERSONNEL ON SITE:				
(=)	Jim Gunter - BNSF				
	Ryan Lawrence – CH2M HILL				
	Andrew Banas – RMDT, Inc.				
(3)		MAJOR EQUIPMENT ON P	ROJECT AND AMOUNT	OF USE	
	No.	Description		Size/Capacity	Hrs. Oper.
	1 Pile driving hammer – B	erminghammer B3505			
	1 Rail-mounted crane to l	ife pile driving hammer			
(4)	WORK ACCOMPLISHED TO	DAY:			
	I arrived onsite at 8:00am.				
	were a lot of trains backed up a opened up around noon. A sho and Pile 4. All of the piles were Andrew's recommendation to udata he needed and will evaluate.	te a few minutes after I did. I found and it would be difficult to get track out track window opened up at 1:00p advanced 12/16 to 1.0 inches using use ether to create larger hammer but the data later this afternoon. We of the day that would be long enough.	time today. Jim recommer om. We mobilized to Pier and ag approximately 8 to 10 holows, citing safety concer agot off the tracks at 2:00	nded that we wait and see 3 and performed restrikes of ammer blows. The BNSF of ns with that approach. And om. The BNSF foreman sa	if a window on Pile 1, Pile 3, crew did not follow rew collected the
	I left the site today at 2:15pm.				
	See attached photos.	ran taday			
	A total of 0 feet of pile was driv Current pile totals are:	en today.			
	Pier 2 Pile 2: 60 feet Pier 3 Pile 1: 116 feet Pier 3 Pile 2: 60 feet Pier 3 Pile 3: 120 feet Pier 3 Pile 4: 215 feet				
(5)		Ryan La	wrence, P.E.	7/	7/2013
		OBSERVER	R'S SIGNATURE		DATE



Photo 1: View of the restrike marks that were made on the follower from Pier 3, piles 1, 3, and 4.



СН	2M	HILL					PROJ	ECT NO.		476670	0		
							PROJ	ECT NAM	ΛE	Nason	Creek		
(1)	DAY:	Monday	DATE: _7/8/	2013 WORK PER	RIOD:	8:00	x a.m.	p.m.	то	3:15	a.m X p.m. F	EPORT.	8
	WEAT	THER	Sunny	TEMP. MAX	85	°F MIN	85	°F PREC	CIPITATI	ON	Nor	е	
(2)	KEY	PERSONNEL	ON SITE:										
	Jim C	Gunter - BNSF	=										
	Ryan	Lawrence – 0	CH2M HILL										
	Marti	n Fisher - ICF											
(3)				MAJOR EQU	JIPMEN	IT ON PR	OJECT A	AND AMO	UNT O	F USE			
	No.			Desc	ription					;	Size/Capacity	Hrs. Op	er.
	1	Pile driving I	nammer – Ber	minghammer B35	605								
	1	Rail-mounte	d crane to lift	pile driving hamm	ner								
	1	Deere 200D	Excavator	-									
	I met BNSI the p 9:00a this p Deerr rip-ra pile is at ap spent I obsi acces At ap suffic I left i	F began adva ille driving ana am. BNSF the bile because the e 200D excava ap material that is correct, but it proximately 1: t approximate erved that Ma is road that is proximately 3 cient track account the site today	n I got to the s ncing base se alyses currently n began adva- ne pile was hit ator to dig a h at was up to ar it is approxima 2:45pm. Other ly 20 minutes rtin Fisher was next to the ra :00pm Jim infe ess. at 3:15pm.	ctions. I asked Jir being performed being Pier 2 Pile 4 ting boulders arouble approximately bound 2 feet in dia tely 2 inches wes than what was all unloading more pos onsite intermitte ilroad embankme brimed me that BN	n to adv d by RM 4 Segmend 6 to v six fee meter. 0 thready r illes ont ntly tod nt.	vance either IDT, Inc. Bent 1 at ap 10 feet de 10 feet	er base s BNSF star peroximate eep that withe Pile 4 rd try, BN SF would , no other and. We with he was of driving an	section or reed by addedy 10:00 was forcing. In location. SF was a like it to be a difficultie were off the posite, he	second dvancing lam. BN ng the pi During ble to a be. BNS es were he tracks was ob-	section g Pier 2 SF had ille to twi digging dvance F then a encoun s by app serving	We mobilized to a swhile we waited Pile 3 Segment 1 considerable diffist out of alignmer he excavated sor the pile. The final advanced Pier 4 Ftered during pile or roximately 2:00pr the construction of the would not be segment 1, 60 fee	for the resul at approxima culty advance at. Jim used a ne boulder s orientation of the 4 Segme driving. BNSf n. of the tempore	Its of ately ing a ize of the nt 1 F ary
	Curre	ent pile totals a Pier 2 Pile 2: 6 Pier 2 Pile 3: 6 Pier 2 Pile 4: 6 Pier 3 Pile 1: 1 Pier 3 Pile 2: 6 Pier 3 Pile 4: 2 Pier 4 Pile 4: 6	50 feet 50 feet 50 feet 116 feet 50 feet 120 feet 215 feet										
<i>(</i> 5)						Ryan Law	rence P	=			7/0	3/2013	
(5)						SERVER'S						0/2013 DATE	



Photo 1: View of the excavator digging a hole at Pier 2 Pile 4 to remove the obstruction that was rotating the pile.



Photo 2: View of the pile being started at Pier 4 Pile 4.



Photo 3: View of the piles that have been advanced so far at Pier 2 (Piles 4, 3, 2 – left to right).



Photo 4: View of the piles that have been advanced so far at Pier 2 (Piles 4, 3, 2 – top to bottom).



		HILL					FNO	JECT NC	<i>)</i> .	476670	U		
							PRO	JECT NA	ME	Nason	Nason Creek		
(1)	DAY:	Tuesday	DATE: 7/9/2	2013 WORK PE	RIOD:	8:15	x a.m	p.m.	TO	2:15	a.m x p.m.	REPORT. 9	
	WEAT	THER	Sunny	TEMP. MAX	90	°F MIN	90	_°F PRE	ECIPITATIO	NC	No	ne	
(2)	KEY	PERSONNEL	ON SITE:										
	Jim C	Gunter - BNSF	<u> </u>										
	Ryan	Lawrence – (CH2M HILL										
(3)				MAJOR EQ	JIPMEN	IT ON PR	OJECT	AND AM	OUNT OF	F USE			
	No.			Desc	cription						Size/Capacity	Hrs. Oper.	
	1	Pile driving h	nammer – Beri	minghammer B3	505								
	1	Rail-mounte	d crane to lift	pile driving hamı	mer								
	1	Deere 200D	Excavator										
	I met proble all da BNSF any ri encool instea close tracks I left to See a A tota Pile 2 Curre	ems were encay by other con F advanced a rip-rap. Jim als untered during ad of the spece to 3 inches p s at approximates site today attached photony	n I got to the sountered durin tractors. BNS base section a so used the exit gille advance diffied 3 inches er foot during ately 2:00pm. at 2:15pm. os. of pile was drivered feet 60 feet 60 feet 60 feet 116 feet 60 feet 120 feet 215 feet 60 feet	ng pile advancer. F then got off the got off the at Bent 1 Pile 4. cavator to help the ment. BNSF the per foot. Jim wa the course of pill Jim did not think	nent. Co e tracks Jim use ne pile g n advan nted to s e driving we wou	onstruction at 11:00a d the exca go in the g ced a bas start with a g. No probuld get and	n of the a am. BNS avator to round wi se section a batter of lems we other win	access ro F receive dig a ~4 thout get n at Bent of 2 inche re encou dow to d	ad along ed anothe foot deep tting out o 4 Pile 2. es per foo ntered du rive piles	the railing windown to hole to	road embankmer w of track access o get the pile star nent. No problem tial batter was 2 i	rted and get past ns were nches per foot, d naturally end up We got off the	
(5)						Ryan Law	rence, P	.E.			7/	9/2013	
					OBS	SERVER'S	S SIGNA	TURE			[DATE	



Photo 1: View of the the installation of Bent 4 Pile 3. Crew is preparing to use the follower to further advance the pile.

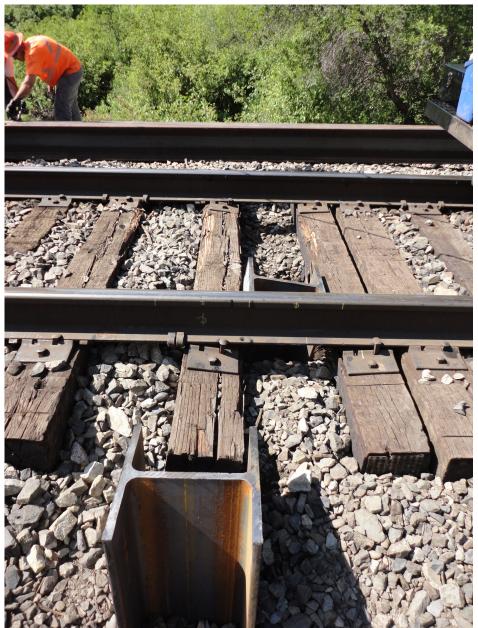


Photo 2: View of the piles at Bent 4. Note the batter on Pile 3 (top of photo) compared to Pile 4 (bottom of photo).



Photo 3: View of progress so far. Bents 1 through 4 can be seen (Bent 1 at bottom of photo).



WEATHER Sunny TEMP. MAX 85 °F MIN 85 °F PRECIPITATION None (2) KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL (3) MAJOR EQUIPMENT ON PROJECT AND AMOUNT OF USE	CH	I2M	HILL								PRC	JECT N	VO.	476	670	
WEATHER Sunny TEMP, MAX 85 F MIN 85 F PRECIPITATION None (2) KEY PERSONNEL ON SITE: Jim Gunter - BNSF Ryan Lawrence - CH2M HILL (3) MAJOR EQUIPMENT ON PROJECT AND AMOUNT OF USE No. Description Size/Capacity Hrs. Opt 1 Pile driving hammer - Berminghammer B3505 1 Rail-mounted crane to lift pile driving hammer 1 Deere 200D Excavator 1 Deere 200D Excavator 1 Deere 200D Excavator 1 I arrived onsite at 8:30am. I met with Jim when I got to the site. We waited for a track access window to open, which Jim expected to occur sometime later in moming, BNSF crew performed maintenance on the hammer crane. Just before a window finally opened, a semi truck it at arrived briggs in the area and all the area trains were stopped. Jim left the site to go inspect the briggs were inconstructed during place advancement. BNSF them advanced a base pile section at Bent 2 Pile 1. No problems were encountered during le advancement. Construction of the access road along the railroad embankment was taking place all day by other contractors. We got of the tracks at approximately 3:30pm. Jim did not think we would get another window to drive piles today. I left the site today at 4:00pm. See attached photos. A total of 120 feet of pile was driven today (60 feet at Bent 2 Pile 1 Segment 1, 60 feet at Bent 4 Pile 1 Segment 1). Current pile totals are: Bent 1 Pile 4: 60 feet Bent 2 Pile 4: 60 feet Bent 2 Pile 4: 60 feet Bent 3 Pile 3: 10 feet Bent 4 Pile 6: 60 feet Bent 6 Pile 7: 60 feet Bent 7 Pile 6: 60 feet Bent 6 Pile 7: 60 feet Bent 6 Pile 7: 60 feet Bent 6 Pile 7: 60 feet Bent 7 Pile 6: 60 feet Bent 6 Pile 7: 60 feet Bent 6 Pile 7: 60 feet Bent 7 Pile 6: 60 feet Bent 6 Pile 7: 60 feet Bent 6 Pile 7: 60 feet Bent 7 Pile 6: 60 feet Bent 6 Pile 7: 60 feet Bent 6 Pile 7: 60 f									PRC	JECT I	NAME	Nas	Nason Creek			
(3) MAJOR EQUIPMENT ON PROJECT AND AMOUNT OF USE Ryan Lawrence – CH2M HILL (3) MAJOR EQUIPMENT ON PROJECT AND AMOUNT OF USE No. Description Size/Capacity Hrs. Ope 1 Pile driving hammer – Berminghammer B3505 1 Rail-mounted crane to lift pile driving hammer 1 Deere 200D Excavator (4) WORK ACCOMPLISHED TODAY: I arrived onsite at 8:30am. I met with Jim when I got to the site. We waited for a track access window to open, which Jim expected to occur sometime later in morning. BNSF crew performed maintenance on the hammer crane. Just before a window finally opened, a semi truck hil a railroad bridge in the area and all the area trains were stopped. Jim left the site to go inspect the bridge. We finally roceived access to the advancement. BNSF then advanced a base pile section at Bern 4 Pile 1. No problems were encountered during pile advancement. Construction of the access road along the railroad embankment was taking blace all day by other contractors. We got off the tracks at approximately 3:30pm. Jim did not think we would get another window to drive piles today. I left the site today at 4:00pm. See attached photos. A total of 120 feet of pile was driven today (60 feet at Bernt 2 Pile 1 Segment 1, 60 feet at Bernt 4 Pile 1 Segment 1). Current pile totals are: Bernt 7 Pile 4: 60 feet Bernt 2 Pile 1: 60 feet Bernt 2 Pile 3: 60 feet Bernt 3 Pile 4: 20 feet Bernt 3 Pile 4: 20 feet Bernt 3 Pile 4: 20 feet Bernt 4 Pile 1: 16 feet Bernt 3 Pile 4: 20 feet Bernt 4 Pile 3: 60 feet Bernt 4 Pile 4: 60 feet Bernt 6 Pile 2: 60 feet Bernt 7 Pile 4: 60 feet Bernt 8 Pile 4: 60 feet Bernt 9 Pile 4: 60 feet Bernt 9 Pile 4: 60 feet Bernt 1 Pile 4: 60 feet Bernt 1 Pile 4: 60 feet Bernt 4 Pile 4: 60 feet Bernt 6 Pile 5: 60 feet Bernt 7 Pile 4: 60 feet Bernt 8 Pile 4: 60 feet Bernt 9 Pile 4: 60 feet Bernt 9 Pile 4: 60 feet	(1)	DAY:	Wednesday	DATE:	7/10/20	<u>)13</u> WO	RK PEF	RIOD:	8:	30	x a.r	n p.n	n. TO	4:00	a.m X p.m.	REPORT. 10
[3] MAJOR EQUIPMENT ON PROJECT AND AMOUNT OF USE No. Description Size/Capacity Hrs. Opt 1 Pile driving hammer – Berminghammer 83505 1 Rail-mounted crane to lift pile driving hammer 1 Deere 200D Excavator Deere 200D Excavator Deere 200D Excavator		WEA	THER	Sunny	<u> </u>	TEMI	P. MAX	85	_ ℉	MIN	85	_ °F P	RECIPIT	ATION	N	one
Ryan Lawrence – CH2M HILL	(2)	KEY	PERSONNEL	ON SIT	ΓE:											
MAJOR EQUIPMENT ON PROJECT AND AMOUNT OF USE No. Description Size/Capacity Hrs. Opt 1 Pile driving hammer – Berminghammer B3505 1 Rail-mounted crane to lift pile driving hammer 1 Deere 200D Excavator 1 Deere 200D Excavator 1 I arrived onsite at 8:30am. 1 I met with Jim when I got to the site. We waited for a track access window to open, which Jim expacted to occur sometime later in morning. SNET core y performed maintenance on the hammer crane. Just before a window finally opened, a semi truck bit at allicable bridge in the area and all the area trains were stopped. Jim left the site to go inspect the bridge. We finally received access to the tracks at approximately 100gm. BNSF advanced a base pile section at Bent 2 Pile 1. No problems were encountered during pile advancement. BNSF then advanced a base pile section at Bent 2 Pile 1. No problems were encountered during pile advancement. BNSF then advanced a base pile section at Bent 4 Pile 1. No problems were encountered during pile advancement. Construction of the access road along the railroad embankment was taking place all day by other contractors. We got off the tracks at approximately 3:30pm. Jim did not think we would get another window to drive piles today. I left the site today at 4:00pm. See attached photos. A total of 120 feet of pile was driven today (60 feet at Bent 2 Pile 1 Segment 1, 60 feet at Bent 4 Pile 1 Segment 1). Current pile totals are: Bent 1 Pile 4: 60 feet Bent 2 Pile 3: 60 feet Bent 3 Pile 2: 150 feet Bent 3 Pile 2: 150 feet Bent 4 Pile 1: 50 feet Bent 3 Pile 2: 150 feet Bent 4 Pile 2: 60 feet Bent 4 Pile 3: 60 feet Bent 4 Pile 3: 60 feet Bent 4 Pile 3: 60 feet Bent 4 Pile 4: 60 feet Bent 4 Pile 4: 60 feet		Jim (Gunter - BNSF													
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· · · · · · · · · · · · · · · · · · ·		morn bridg track adva Cons We g I left See a A tota Curre	sing. BNSF cre ie in the area a s at approxima ncement. BNS struction of the got off the track the site today a attached photo al of 120 feet o ent pile totals a Bent 1 Pile 4: 6 Bent 2 Pile 1: 6 Bent 2 Pile 3: 6 Bent 3 Pile 1: 1 Bent 3 Pile 2: 6 Bent 3 Pile 3: 1 Bent 4 Pile 1: 6 Bent 4 Pile 2: 6 Bent 4 Pile 3: 6 Bent 4 Pile 3: 6 Bent 4 Pile 3: 6	w performed all the tely 1:0 F then a access as at appear at 4:00p s. If the television of the television feet a feet and feet an	rmed mane area to	aintenan trains we NSF adv ed a base ong the t	nce on the ere stop anced a pile serial road	the har oped. J a base ection I emba m did r	nmer lim le e pile at Be nkme	crane off the sectice ont 4 F ent wa ink we	e. Just I site to g on at Be Pile 1. N s taking would	pefore a go inspe ent 2 Pil lo probl g place get and	a window ect the b e 1. No ems we all day b other win	r finally oridge. We problem re encountry other andow to	opened, a semi tru Ve finally received as were encountere untered during pile contractors. drive piles today.	uck hit a railroad access to the ed during pile
· · · · · · · · · · · · · · · · · · ·	(E)								Dyon	- I ou	ones '	_ 				7/10/2012
	(3)				=			ОВ								

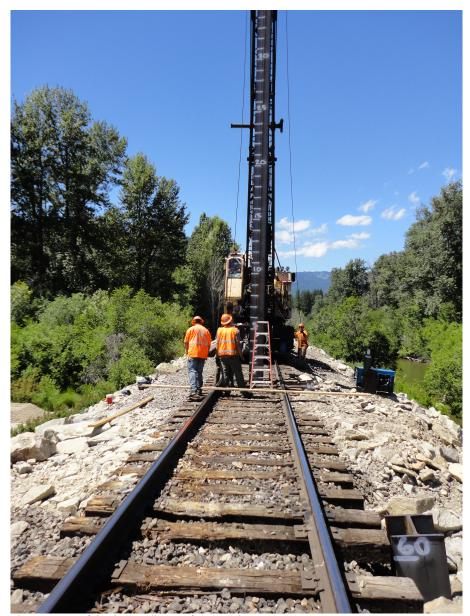


Photo 1: View of the the installation of Bent 2 Pile 1.

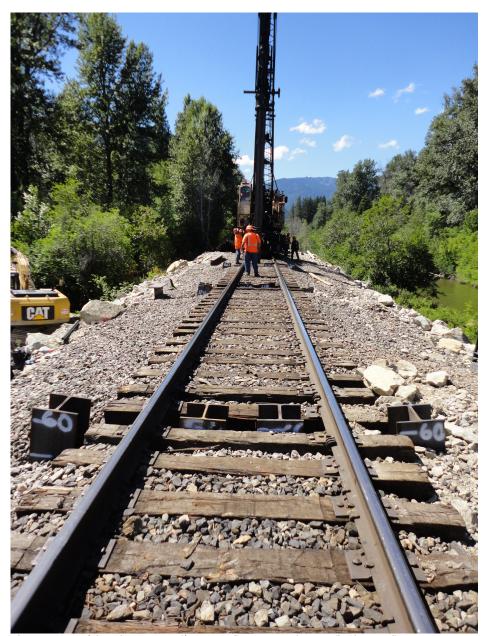


Photo 2: View of the piles at Bent 2 (foreground), Bent 3, and Bent 4 (background).



IHILL	PROJECT NO.	476670	None					
	PROJECT NAME	Nason Creek						
<u>Thursday</u> DATE: <u>7/11/2013</u> WORK PERIOD: <u>8:15</u>		2:45 a.m x p.m. F	REPORT. 11					
THER Sunny TEMP. MAX 80 °F MIN	80 °F PRECIPITA	TION Nor	ie					
PERSONNEL ON SITE:								
Gunter - BNSF Alan Schmidt – Ch	elan County							
n Lawrence – CH2M HILL								
in Fisher - ICF	_							
MA IOP FOLIDMENT ON PR	O IECT AND AMOUNT	OF LISE						
	OJECT AND AMOUNT		Hrs. Oper.					
		Size/Capacity	Tills. Oper.					
Deere 200D Excavator								
te up to this point in the project were moved offsite last night to new hammer is still a Berminghammer B3505. BNSF setup to mer to start. We had to get off the tracks by 10:30am, so we len't been used in awhile, so they figured it was just a matter of gradual 10:30 to 11:00am for track access. We went back on the track 1 just to get the hammer to start. They were able to get the harded on Bent 2 Pile 2 Segment 2. BNSF used the hammer to added for the 1 foot of driving. The hammer piston got stuck near bottom of the stroke. Jim believed the problem was with the concompression rings. We got off the tracks at 2:30pm.	another job. A different of drive a pile at Bent 1 Pile ft the tracks without advaetting it started the first tile at 11:00am. BNSF used nmer to start and used it vance the pile 1 foot befor the top of the hammer an appression rings and plants taking place all day by	crane and hammer were at 1, but they were unable to incing any of the pile. BNSf me and then it would be find their follower to restrike the for about 10 blows on the pure the hammer broke. Restand wouldn't release and fained to spend the rest of the other contractors. They spends 1, but they are the hammer broke.	the site today. get the new said the hammer e. We waited e pile at Bent 3 bile. Then BNSF trike data was all back down to e day putting on					
	THER Sunny TEMP. MAX 80 °F MIN PERSONNEL ON SITE: Gunter - BNSF Alan Schmidt – Ch Lawrence – CH2M HILL in Fisher - ICF MAJOR EQUIPMENT ON PR Description Pile driving hammer – Berminghammer B3505 Rail-mounted crane to lift pile driving hammer Deere 200D Excavator RK ACCOMPLISHED TODAY: wed onsite at 8:15am. t with Jim when I got to the site. We received track access at 8 to up to this point in the project were moved offsite last night to new hammer is still a Berminghammer B3505. BNSF setup to mer to start. We had to get off the tracks by 10:30am, so we lend to start. We had to get off the tracks by 10:30am, so we lend to start. We had to get off the tracks by 10:30am, so we lend to start. They were able to get the harmer do start. They were able to get the harmer do start. They were able to get the harmer do start. They were able to get the harmer do start. They were able to get the harmer do start. They were able to get the harmer to start. They were able to get the harmer to start. They were able to get the harmer to start. They were able to get the harmer to start. They were able to get the harmer to start. They were able to get the harmer to start. They were able to get the harmer for the 1 foot of driving. The hammer piston got stuck near ottem of the stroke. Jim believed the problem was with the core compression rings. We got off the tracks at 2:30pm. Struction of the access road along the railroad embankment was alling geofoam blocks near the west end of the new bridge. Mar	Thursday DATE: 7/11/2013 WORK PERIOD: 8:15 x a.m. p.m. TO	Thursday DATE: 7/11/2013 WORK PERIOD: 8:15 x and prime TO 2:45 and x prime FRECIPITATION Nor PERSONNEL ON SITE: Gunter - BNSF Alan Schmidt – Chelan County MAJOR EQUIPMENT ON PROJECT AND AMOUNT OF USE Description Size/Capacity Pile driving hammer – Berminghammer B3505 Rail-mounted crane to lift pile driving hammer Deere 200D Excavator RK ACCOMPLISHED TODAY: ved onsite at 8:15am. twith Jim when I got to the site. We received track access at 8:30am. The two cranes and pile driving hammers the up to this point in the project were moved offsite last night to another job. A different crane and hammer were at new hammer is still a Berminghammer B3505. BNSF setup to drive a pile at Bent 1 Pile 1, but they were unable to mere to start. We had to get off the tracks by 10:30am, so we left the tracks without advancing any of the pile. BNSF is the ben used in awhile, so they figured it was just a matter of getting it started the first time and then it would be fin 10:30 to 11:00am for track access. We went back on the track at 11:00am. BNSF used their follower to restrike the just to get the hammer to start. They were able to get the hammer to start and used it for about 10 blows on the jed on Bent 2 Pile 2 Segment 2. BNSF used the hammer to advance the pile 1 foot before the hammer broke. Resided for the 1 foot of driving. The hammer piston got stuck near the top of the hammer and wouldn't release and fe notted on Bent 2 Pile 2 Segment 2. BNSF used the hammer to advance the pile 1 foot before the hammer broke. Resident of the compression rings. We got off the tracks at 2:30pm.					

(5) 7/11/2013 Ryan Lawrence, P.E.

OBSERVER'S SIGNATURE

DATE





Photo 2: View of Bent 2 Pile 2 in the foreground. Note the weld that is 1 foot below the top of the pile, due to the pile needing to be cut off after only 1 foot of driving.



СН	2MHILL	PROJECT NO.	476670			
				PROJECT NAME	Nason Creek	
(1)	DAY:	Friday	DATE: <u>7/12/2013</u> WORK PERIOD: <u>8:10</u>	x a.m. p.m. TO	5:30 a.m x p.m. F	REPORT. 12
	WEAT	THER	Sunny TEMP. MAX 80 °F MI	N 80 °F PRECIPITA	TION Light afterno	on shower
(2)	KEY	PERSONNE	L ON SITE:			
` ,	Jim G	Sunter - BNS	F			
	Ryan	Lawrence -	CH2M HILL		-	
	Nyan	Lawrence –	CHZWITHELE			
						
(2)						
(3)		1	MAJOR EQUIPMENT ON P	ROJECT AND AMOUNT	İ	1
	No.		Description		Size/Capacity	Hrs. Oper.
	1	Pile driving	hammer – Berminghammer B3505			
	1	Rail-mounte	ed crane to lift pile driving hammer			
	1	Deere 200E) Excavator			
	We g 3:00p pile d 6 1 2 2 3 3 4 4 4 5 5 6 6 6 6	ot off the trace of trace of the trace of trace of the tr	hammer was able to achieve a stroke height of cks at approximately 10:00am and then waited for the crew installed the second segment of Bent 2 following restrike data was collected at 61 feet. The first inch the first two inches the first 4 inches the first 5 inches the first 6 inches the first 7 inches the first 8 inches the first 9 inches the first 10 inches the first 10 inches the first 10 inches the first 11 inches the first 12 inches	or another track window to	open. We received another	er track window at
	We g	ot off the trac	cks at 5:30pm.			
			e access road along the railroad embankment w llation of the geofoam blocks and spreading gran			ent the day
	I left t	the site today	/ at 5:30pm.			
	See a	attached pho	tos.			
	A tota	al of 119 feet	of pile was driven today (60 feet at Bent 1 Pile	1; 59 feet at Bent 2 Pile 2	Segment 2).	
	E E E	ent pile totals Bent 1 Pile 1: Bent 1 Pile 4: Bent 2 Pile 1: Bent 2 Pile 2: Bent 2 Pile 3: Bent 2 Pile 4: Bent 3 Pile 1: Bent 3 Pile 1:	60 feet 60 feet 120 feet 60 feet 60 feet 110 feet 60 feet 1116 feet			

Bent 3 Pile 3: 120 feet
Bent 3 Pile 4: 215 feet
Bent 4 Pile 1: 60 feet
Bent 4 Pile 2: 60 feet
Bent 4 Pile 3: 60 feet
Bent 4 Pile 4: 60 feet

 (5)
 Ryan Lawrence, P.E.
 7/12/2013

 OBSERVER'S SIGNATURE
 DATE



Photo 1: View of the installation of Bent 1 Pile 1. Note the levers being used to help the pile initially go in straight.



Photo 2: View of Bent 2 Pile 2. First and second segments are clamped together in preparation for welding.



Photo 3: View of Bent 2 Pile 2 after the first and second segments were welded together.



CH2	2M	HILL			-				476670			
						PROJECT NA	ME	Nasor	Creek			
(1)	DAY:	Saturday	DATE:	7/13/2013 WORK PERIOD:	N/A	a.m. p.m.	то	N/A	a.m p.m.	REPORT. 13		
,	WEAT	HER	N/A	TEMP. MAX N/A	°F MIN_	N/A °F PRE	CIPITATI	ON	N//	Α		
` ,		PERSONNEL Sunter - BNSF		'E:								
-												
(3)				MAJOR EQUIPMEN	NT ON PRO	DIFCT AND AM	OLINT O	FIISE				
_	No.			Description	11 0111 110	JOEOT AIVE AIVE		-	Size/Capacity	Hrs. Oper.		
_	1	Pile driving h	nammer	– Berminghammer B3505								
	1			to lift pile driving hammer								
	1	Deere 200D	Excavat	or								
	I spok problecheck checked be ge A total Curre E E E E E E E E E E E E E E E E E E	ems for trains ked in periodic etting a track v	the more and mig cally by point was been seen and mig cally by point was are: 60 feet 60 feet 120 feet 60 feet 116 feet 60 feet 1120 feet 1120 feet 60 feet 120 feet 60 feet	ning and found out that during aht result in us not getting a tra bhone to see if we were going oday and would try again tomo	ack window to get a tra	today. Per Jim's	recomm	endatio	n, I did not travel	to the jobsite and		
(5)					Ryan Lawr	ence, P.E.				3/2013 DATE		

(8.1)



CF	I2M	HILL			PROJECT NO. PROJECT NAME	476670 Nason Creek	
(1)	DAY:	Sunday	DATE: 7/14/2	2013 WORK PERIOD: 8:4	5 x a.m. p.m. TO _	3:15 a.m x p.m. F	REPORT. 14
	WEAT	THER	Sunny	TEMP. MAX <u>85</u> °F M	MIN 85 °F PRECIPITA	TION Nor	ne
(2)	KEY	PERSONNEI	ON SITE:				
	Jim G	Gunter - BNSF	=				
	Ryan	Lawrence -	CH2M HILL			-	
(3)				MAJOR EQUIPMENT ON	PROJECT AND AMOUNT	OF USE	
	No.			Description		Size/Capacity	Hrs. Oper.
	1	Pile driving I	nammer – Bern	ninghammer B3505			
	1			pile driving hammer			
	1	Deere 200D	Excavator				
	2 1 1 2 2 2 3 3 3 4 4	4 blows for the 13 blows for the 19 blows for the 22 blows for the 29 blows for the 32 blows for the 35 blows for the 38 blows for the 38 blows for the 34 blows for the 44 blows for the 13 blows for the 44 blows for the 13 blows for the 14 blows for the 13 blows for the 14 blows for the 15 blow		ches 6 6 6 6 6 6 6 6 6 6 6 6 6	following restrike data was	collected at 60 feet:	
	I left t	the site today	at 3:15pm.				
		attached phot					
			•	n today (at Bent 2 Pile 1 Segm	nent 2).		
	E E E E E E E E E E E E E E E E E E E	ent pile totals Bent 1 Pile 1: Bent 1 Pile 4: Bent 2 Pile 1: Bent 2 Pile 2: Bent 2 Pile 3: Bent 2 Pile 4: Bent 3 Pile 1: Bent 3 Pile 2: Bent 3 Pile 2: Bent 3 Pile 2: Bent 4 Pile 1: Bent 4 Pile 3: Bent 4 Pile 3: Bent 4 Pile 3: Bent 4 Pile 4:	60 feet 60 feet 119 feet 120 feet 60 feet 60 feet 116 feet 60 feet 120 feet 215 feet 60 feet 60 feet				

(5) Ryan Lawrence, P.E. 7/14/2013

OBSERVER'S SIGNATURE

DATE



Photo 1: View of the weld at Bent 2 Pile 1.



Photo 2: View of pile being cut off at 119 feet.



CH	2M	HILL				PROJECT NO.	476670		
						PROJECT NAME	Nasoi	n Creek	
(1)	DAY:	Monday	DATE: _ <u>7/15</u>	5/2013 WORK PERIOD:	8:30	x a.m. p.m. TO	4:00	a.m x p.m. F	REPORT. 15
	WEAT	THER	Sunny	TEMP. MAX <u>85</u>	°F MIN	85 °F PRECIPITA	TION	Nor	ne
(2)	KEY	PERSONNEI	L ON SITE:						
	Todd	Mains - BNS	F						
	Ryan	Lawrence -	CH2M HILL						
(3)				MA IOD FOLUDME	NT ON DR	O IECT AND AMOUNT	OF USE		
(-)	No					OJECT AND AMOUNT	OF USE	Sizo/Conocity	Hra Oper
	No.			Description				Size/Capacity	Hrs. Oper.
	1			minghammer B3505					
	1	Rail-mounte	d crane to lift	pile driving hammer					
	1	Deere 200D	Excavator						
	Todd 10:00 were I left t See a A tota Curre E E E E E E E E E	am. Once we encountered the site today attached phot al of 120 feet ent pile totals Bent 1 Pile 1: Bent 2 Pile 3: Bent 2 Pile 3: Bent 2 Pile 4: Bent 3 Pile 1: Bent 3 Pile 2: Bent 3 Pile 2: Bent 3 Pile 2: Bent 3 Pile 3: Bent 3 Pile 4: Bent 4 Pile 3: Bent 4 Pile 4: Bent 4 Pile 1: Bent 4 Pile 2:	onsite BNSF is had track ac during pile dri at 4:00pm. os. of pile was dri are: 60 feet 60 feet 119 feet 120 feet 60 feet 176 feet 120 feet 120 feet 120 feet 120 feet 120 feet 120 feet 120 feet 120 feet 120 feet 120 feet	foreman on the job now. cess, the BNSF crew ad ving. We left the tracks a ven today (60 feet at Be	vanced Ber at 4:00pm.	nt 3 Pile 1 Segment 3 ar	nd Bent 3	Pile 2 Segment 2	k access at . No problems
(F)		Bent 4 Pile 3: Bent 4 Pile 4:			Pyon La	rongo D.E.		7/4	E/2012
(5)						rence, P.E. S SIGNATURE			5/2013 DATE



Photo 1: View of Bent 3 Pile 1 being installed.



Photo 2: View of Bent 3 Piles 1 and 2 being installed.



CH	12M	M HILL							PROJECT NO.				476670			
									PRO	JECT N	AME	Naso	Nason Creek			
(1)	DAY:	Tuesday	/ DATE: <u>7/</u>	16/2013	WORK PER	RIOD:	11:	30	x a.m	n p.m.	то _	6:30	a.m X p.r	^{m.} REPORT.	16	
	WEAT	THER	Sunny		ГЕМР. МАХ	95	_°F	MIN_	95	_°F PR	ECIPITA	TION _		None		
(2)	KEY	PERSONN	EL ON SITE:													
` '		Mains - BN			N	like Ka	ne – C	Chelar	n Coun	ty						
	Ryan	Lawrence -	- CH2M HILL													
	Alan	Schmidt – C	Chelan County	/												
(3)				M	IAJOR EQI	JIPMEI	NT ON	N PRO	DJECT	AND AN	MOUNT	OF USE				
	No.					cription				7 12 7			Size/Capacity	/ Hrs	. Oper.	
	1	Pile driving	g hammer – B	erminah	ammer B3	505									aries	
	1		ted crane to												aries	
	1		D Excavator												0	
	We re were settle inform tracker if encountracker if enco	eceived trace encountere ement readir mation be seed. We left to thought we in the day. Note that the site toda attached photostatic properties and properties and properties are the pile of the pile	d during pile of ags could be to be to get out the tracks at 2 might get and We received to giple driving ay at 6:30pm. The tof pile was of a sare: 1: 60 feet 1: 19 feet 1: 120 feet 1: 176 feet 1: 176 feet 1: 120 feet 1: 215 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet 1: 120 feet	1:45am. driving. A aken in t ettlement ::15pm. other trac rack accord g. We lef	Once we halan and Mithe vicinity of the resulting factor access we say a gain at the tracks	ad tracke from of the prom the vindow at 4:00p at 6:30	k acce n Chel vile drive cons , so he om and Opm.	ess, the lan Coving contraction of the land the	ne BNS bunty w pperation on of th ed me t BNSF o	F crew a ere onsitions. CH2 e access o stay at crew adv	advance te and s M HILL s road a the jobs anced E	d Bent 4 etup sor had pre djacent t site until	Pile 1 Segmer ne survey point viously request o the railroad e he knew for su le 4 Segment 2	ts for us so the ded that this sembankment ure what was 2. No problen	hat survey could be available	
	E	Bent 4 Pile 4	1: 120 feet													
(5)							Ryan	Lawr	ence, F	P.E.				7/16/2013		
						ОВ	SERV	/ER'S	SIGNA	TURE				DATE		

(8.1)



Photo 1: View of Bent 4 Pile 4 Segment 2 about to be attached to the pile driving hammer.



Photo 2: View of the follower being removed from Bent 4 Pile 4 Segment 2 after it has been used to advance the pile below the track elevation. The follower is typically used to advance the last 5 feet of each pile segment because there is not room for the hammer to drive the piles below the track elevation.



СН	I2M	HILL	PROJECT NO.	476670		
			PROJECT NAME	Nason Cr	reek	
(1)	DAY:	Wednesday DATE: 7/17/2013 WORK PERIOD: 7:30	x a.m. p.m. TO	4:00	a.m x p.m. R	EPORT. <u>17</u>
	WEAT	THER Sunny TEMP. MAX 95 °F MIN	95 °F PRECIPITAT	ION	Non	е
(2)	KEY	PERSONNEL ON SITE:				
	Todd	Mains - BNSF				
	Ryan	n Lawrence – CH2M HILL				
	Bert	Miner - RMDT				
(3)		MAJOR EQUIPMENT ON PR	OJECT AND AMOUNT C	F USE		
	No.	Description		Siz	e/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berminghammer B3505				Varies
	1	Rail-mounted crane to lift pile driving hammer				Varies
	1	Deere 200D Excavator				0
	feet), Segn got o 12:30 We re enco road	45am. Bert hooked up his pile driving analyzer equipment to BI, Bent 3 Pile 3 (120 feet), Bent 3 Pile 2 (120 feet), and Bent 3 Finent 2. Bert collected pile driving data from approximately 117 iff the tracks at 12:00pm. Bert and I discussed some of his obsopm. Bert was going to drive back to his office to perform some eceived another track access window at 2:00pm. The BNSF cruntered during pile driving. We got off the tracks at 4:00pm. The adjacent to the railroad embankment were moving material to the site today at 4:00pm.	Pile 1 (176 feet). After that to 120 feet. No problems ervations from the day an e analyses with the data he advanced Bent 2 Pile proughout the afternoon, the service of t	the BNSF were encou d then Bert e collected 3 Segment he contract	crew advanced untered during p left the site at a today. t 2. No problem fors who constru	I Bent 2 Pile 4 pile driving. We approximately s were
		all of 120 feet of pile was driven today (60 feet at Bent 2 Pile 4	Seament 2 and 60 feet at	Rent 2 Dile	3 Segment 2)	
	Curre	ent pile totals are: Bent 1 Pile 1: 60 feet Bent 1 Pile 2: 0 feet Bent 1 Pile 3: 0 feet Bent 1 Pile 3: 0 feet Bent 2 Pile 4: 60 feet Bent 2 Pile 2: 120 feet Bent 2 Pile 3: 120 feet Bent 2 Pile 3: 120 feet Bent 3 Pile 1: 176 feet Bent 3 Pile 1: 176 feet Bent 3 Pile 3: 120 feet Bent 3 Pile 3: 120 feet Bent 4 Pile 3: 120 feet Bent 4 Pile 1: 120 feet Bent 4 Pile 3: 60 feet Bent 4 Pile 4: 120 feet Bent 4 Pile 3: 60 feet Bent 4 Pile 4: 120 feet				
(5)	•	Pyan Law	rence P.F.		7/1	7/2013

OBSERVER'S SIGNATURE

(8.1) REV 10/95 FORM 21A

DATE



Photo 1: View of the pile driving analyzer equipment that was attached to BNSF's follower.



Photo 2: View of BNSF using the follower to collect restrike data from Bent 3 Pile 3. Note the blue wire going from the follower to the computer that Bert had setup.





CH	I2M	HILL	PROJECT NO.	476670			
			PROJECT NAME	Nason Creek			
(1)	DAY:	Thursday DATE: 7/18/2013 WORK PERIOD: 9:00	x a.m. p.m. TO	3:30 a.m x p.m. F	REPORT. 18		
	WEAT	THER Sunny TEMP. MAX 95 °F MIN	95 °F PRECIPITAT	ION Nor	ne		
(2)		PERSONNEL ON SITE: Mains - BNSF					
	Ryan	Lawrence – CH2M HILL					
	Ttyan	LAWICHOC OF LIVET TILE					
(3)		MAJOR EQUIPMENT ON PRO	JECT AND AMOUNT C	F USE	+		
	No.	Description		Size/Capacity	Hrs. Oper.		
	1	Pile driving hammer – Berminghammer B3505			Varies		
	1	Rail-mounted crane to lift pile driving hammer			Varies		
	1	Deere 200D Excavator			0		
(4)	I arriv	ved onsite at 9:00am with Todd when I arrived onsite. He was expecting to get track by train and the railroad had to stop the train near the worksite stually got a track access window at 12:00pm. The BNSF crew at ems were encountered during pile driving. Total pile driving time om. Todd said we would not get any more track time today, so I the site today at 3:30pm. attached photos. al of 60 feet of pile was driven today (60 feet at Bent 3 Pile 2 Se ent pile totals are: Bent 1 Pile 1: 60 feet Bent 1 Pile 3: 0 feet Bent 1 Pile 4: 60 feet Bent 2 Pile 4: 119 feet Bent 2 Pile 3: 120 feet Bent 2 Pile 3: 120 feet Bent 2 Pile 3: 120 feet	o that a new engine car dvanced Bent 3 Pile 2 S e for the 60 foot pile was left the site.	could be brought out. We egment 3 from 120 to 180	waited onsite and feet deep. No		
(5)	E E	Bent 3 Pile 1: 176 feet Bent 3 Pile 2: 180 feet Bent 3 Pile 3: 120 feet Bent 3 Pile 4: 215 feet Bent 4 Pile 1: 120 feet Bent 4 Pile 2: 60 feet Bent 4 Pile 3: 60 feet Bent 4 Pile 4: 120 feet Bent 4 Pile 4: 120 feet Bent 4 Pile 4: 120 feet			8/2013		
		OBSERVER'S	SIGNATURE		DATE		



Photo 1: View of the crane picking up a pile segment and moving in into place at Bent 3 Pile 2.



Photo 2: View of Bent 3 Pile 2 Segments 2 and 3 being welded together.



Photo 3: View of the weld at Bent 3 Pile 2 between pile segments 2 and 3.



Photo 4: View of the follower being attached to the top of the pile to drive the final 4 feet of pile below the railroad track elevation.



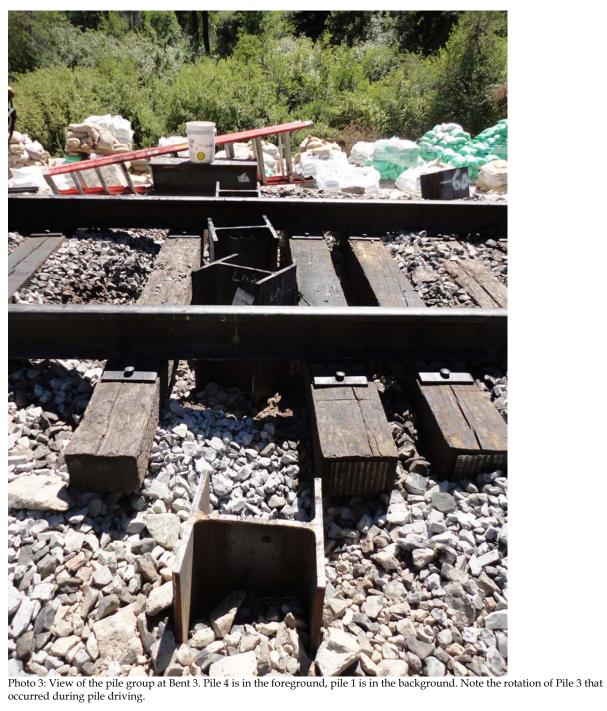
CH	I2M	2M HILL						ECT NO		476670			
							PROJE	ECT NAI	ME	Nasor	Creek		
(1)	DAY:	Friday	_ DATE: _ <u>7/</u> ^	19/2013 WORK	PERIOD:	10:00	x a.m.	p.m.	то	5:00	a.m X p.m.	REPORT. 19	
	WEAT	THER	Sunny	TEMP. M	1AX <u>95</u>	°F MIN	95	°F PRE	CIPITAT	ION	No	ne	
(2)		PERSONNEI											
	lodd	I Mains - BNS	<u> </u>										
	Ryan	Lawrence - 0	CH2M HILL										
(3)				MAJOR	EQUIPME	NT ON PR	OJECT A	ND AMO	DUNT C	F USE			
	No.				Description						Size/Capacity	Hrs. Oper.	
	1	Pile driving l	hammer – B	erminghammer	R3505							Varies	
	1			ift pile driving ha								Varies	
	1	Deere 200D		int plic driving he	arriirioi							0	
	-	Deele 200D	LXCavaloi									0	
(4)	I arri I met trains piles appro to fini drivin I left t See a A tota Curre	s to pass. The ready in case oximately 11:5 ish advancing ng. We got off the site today attached phot	10:00am nen I arrived BNSF crew CH2M HILL B0am. The B Bent 4 Pile the tracks a at 5:00pm. os. of pile was d are: 60 feet 0 feet 120 feet 120 feet 120 feet 120 feet 180 feet 180 feet 120 feet	onsite. He was unloaded anotl recommends t NSF crew adva 3 Segment 2, s	ner shipme hat piles b nced Bent o the pile v	ent of piles e advance 3 Pile 3 Se was cut off	from a del d deeper t egment 3 a at a depth	livery tru than orig and mos n of 105	uck while ginally p st of Ber feet. No	e we wa lanned. nt 4 Pile p probler	ms were encounte	ed to have extra k access at ISF ran out of time	
		2011 7 1 110 4 .											
(5)						Ryan Law	rence, P.E	≣.			7/	19/2013	
					OB	SERVER'S					- 1	DATE	



Photo 1: View of Bent 3 Pile 3 Segments 2 and 3 being welded together.



Photo 2: View of Bent 3 Pile 3 Segments 3 being positioned for pile driving.







CH	2M	HILL	PROJECT NO.	476670			
			PROJECT NAME	Nason Creek			
(1)	DAY:	Saturday DATE: 7/20/2013 WORK PERIOD: 9:00	x a.m. p.m. TO _	4:00 a.m x p.m.	REPORT. 20		
	WEAT	THER Sunny TEMP. MAX 95 °F MIN	95 °F PRECIPITA	TION N	lone		
(2)		PERSONNEL ON SITE: Mains - BNSF					
	Rvan	Lawrence – CH2M HILL					
(3)		MAJOR EQUIPMENT ON PR	OJECT AND AMOUNT	OF USE			
	No.	Description		Size/Capacity	Hrs. Oper.		
	1	Pile driving hammer – Berminghammer B3505			Varies		
	1	Rail-mounted crane to lift pile driving hammer			Varies		
	1	Deere 200D Excavator			0		
	befor After devel I left t See a A tota Curre E E E E E E E E E E E E E E E E E E	with Todd when I arrived onsite. The track access window he e getting track access. The BNSF crew advanced Bent 2 Pile 3 driving the pile, the BNSF crew placed additional crushed rock loped during pile driving. We got off the tracks at 3:45pm. the site today at 4:00pm. attached photos. al of 60 feet of pile was driven today (60 feet at Bent 2 Pile 3 Sent 1 Pile 1: 60 feet Bent 1 Pile 2: 0 feet Bent 1 Pile 3: 0 feet Bent 1 Pile 4: 60 feet Bent 1 Pile 4: 60 feet Bent 2 Pile 3: 119 feet Bent 2 Pile 3: 180 feet Bent 2 Pile 3: 180 feet Bent 3 Pile 3: 180 feet Bent 3 Pile 3: 180 feet Bent 3 Pile 3: 180 feet Bent 3 Pile 4: 215 feet Bent 4 Pile 4: 120 feet Bent 4 Pile 1: 120 feet Bent 4 Pile 2: 60 feet Be	3 Segment 3. No problen at the pile locations to fi	ns were encountered du	ring pile driving.		
(5)	E	Bent 4 Pile 3: 105 feet Bent 4 Pile 4: 120 feet Ryan Law	rence, P.E. S SIGNATURE		7/20/2013 DATE		





Photo 2: View of the finished weld on Bent 2 Pile 3 at a depth of 120.5 feet.



Photo 3: View of Bent 2 Pile 3 near the end of pile driving. The hammer has advanced the pile as far as it will go; BNSF is preparing to attach their follower to advance the pile below the track elevation.



Photo 4: View of additional crushed rock being deposited to fill the holes beneath the railroad ties that developed during pile driving.



CF	IZMIHILL			PROJECT NO		Nason Creek			
(1)	DAY:	Sunday	DATE: _ <u>7/2</u>	1/2013 WORK PERIO	D: 9:00	X a.m. p.m.	TO 3:00) a.m x p.m.	REPORT. 21
	WEAT	THER	Sunny	TEMP. MAX	95 °F MIN	<u>95</u> °F PRI	ECIPITATION	No	ne
(2)		PERSONNE Mains - BNS							
	Ryan	Lawrence –	CH2M HILL						
(3)				MAJOR EQUIF	PMENT ON PR	OJECT AND AM	OUNT OF US	SE .	
	No.			Descrip	otion			Size/Capacity	Hrs. Oper.
	1	Pile driving	hammer – Be	rminghammer B3505	5				Varies
	1	Rail-mounte	ed crane to lif	t pile driving hammer	r				Varies
	1	Deere 200D) Excavator						0
	I met 3. No I left t See a A tota Curre E E E E E E E E E E E E E E E E E E	problems we the site today attached phot	then I arrived of the encounter of at 3:00pm. Itos. If pile was driver are: 60 feet 0 feet 0 feet 120 feet 180 feet	onsite. We did not rec ed during pile driving ven today (60 feet at	. We got off th	e tracks at 2:45pr		crew advanced Bent	2 Pile 4 Segment
		Bent 4 Pile 4:	120 feet						
(5)					Ryan Law	rence, P.E.		7/2	21/2013
					OBSERVER'	S SIGNATURE		I	DATE





Photo 2: View of the finished weld on Bent 2 Pile 4 at a depth of 120.5 feet.



Photo 3: View of Bent 2 Pile 4. The third pile segment is being held in place by the crane as it is being welded together with the previous segment. Note the batter of the pile.



Photo 4: View of Bent 2 Pile 4 Segment 3 near the end of pile driving.



CH	I2M	HILL			-						476670 Nason Creek		
(1)	DAY:	Monday	DATE: <u>7/22/</u>	2013 WORK PER	RIOD:	7:30	X a.m	p.m.	то	2:30	a.m X p.m.	REPORT. 22	
	WEAT	THER	Sunny	TEMP. MAX	95	°F MIN	95	_°F PRE	ECIPITATIO	NC	Noi	ne	
(2)	Todd	PERSONNEI I Mains - BNS I Lawrence - (F										
(3)				MAJOR EQU	JIPME	NT ON PR	OJECT	AND AM	OUNT OF	F USE			
	No.				ription					1	Size/Capacity	Hrs. Oper.	
	1	Pile driving	hammer – Berr	ninghammer B35	505							Varies	
	1			oile driving hamn								Varies	
	1	Deere 200D	Excavator	<u> </u>								0	
	Problem of the proble	lems were end atcher to see in the site today attached phot	countered during five could get at 2:30pm. os. of pile was driver are: 60 feet 00 feet 00 feet 179 feet 180 feet 180 feet 176 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet	ng pile driving. W	e got o cess wi	ff the track ndow. Tod	s at 1:45 d was in	5pm. I wa formed th	ited at the	e site would not	ximately 10:30am rhile Todd checke get another track 1 Segment 3).	d in with the	
(5)	E	Bent 4 Pile 3: Bent 4 Pile 4:	105 feet		OR	Ryan Law SERVER's						22/2013 DATE	
					00						-	- · · · -	

(8.1)





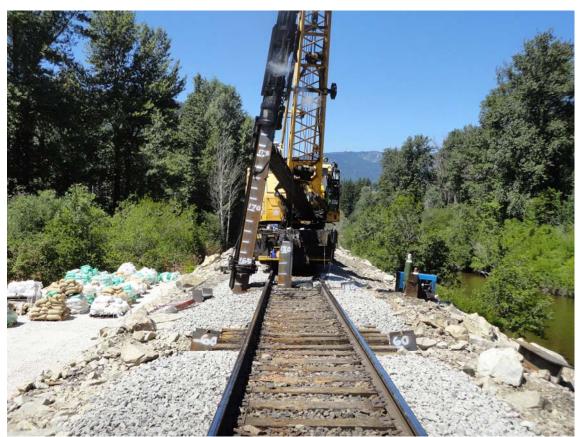


Photo 3: View of Bent 2 Pile 1 Segment 3 being advanced. The adjacent Bent 2 Pile 2 is still extending above the ground. BNSF used their follower to later finish advancing both piles.

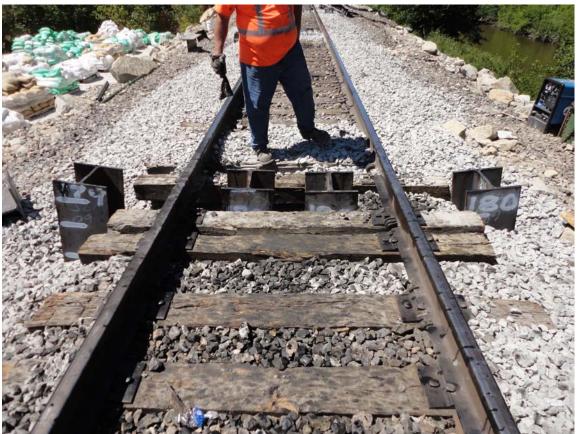


Photo 4: View of the Bent 2 piles.



СН	12M	HILL		PROJECT NO.	476670			
				PROJECT NAME	Nason Creek			
(1)	DAY:	Tuesday DATE: 7/23/201	3 WORK PERIOD: 10:00) x a.m. p.m. TO	3:00 a.m x p.m. R	EPORT. 23		
	WEAT	THER Sunny	TEMP. MAX 95 °F M	IIN 95 °F PRECIPITA	TION Non	ON None		
(2)	KEY	PERSONNEL ON SITE:						
	Todd	Mains - BNSF						
	Ryan	Lawrence - CH2M HILL						
	Alan	Schmidt - Chelan County						
				_				
(3)			MAJOR EQUIPMENT ON F	PROJECT AND AMOUNT	OF USE			
	No.		Description		Size/Capacity	Hrs. Oper.		
	1	Pile driving hammer – Berming	ghammer B3505			Varies		
	1	Rail-mounted crane to lift pile	driving hammer			Varies		
	1	Deere 200D Excavator				0		
	depth Todd anoth record Alan point soon I left See a A tota Curre II II II II II II II II II II II II II	with Todd when I arrived onsite of 60 to 120 feet. No problems I checked in with the dispatcher her track window today. I also hat mendations for the final pile let was onsite today and was colletes he setup previously so that we as BNSF moved their equipment the site today at 3:00pm. The setup previously so that we as BNSF moved their equipment the site today at 3:00pm. The setup previously so that we as BNSF moved their equipment the site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today at 3:00pm. The site today and was collete. The site today and was collete. The site today and was collete. The site today at 3:00pm. The site today and was collete. The site today at 3:00pm. The site today at	were encountered during pito see if we could get another ad numerous conversations ngths. cting survey measurements. e could see if any settlement nt out of the way.	ile driving. We got off the tra er track access window. To with CH2M HILL engineers I asked him to take survey thas occurred along the brid	acks at 1:30pm. I waited at dd was informed that we we today as we tried to determ measurements along the ti	the site while buld not get nine our racks at the		
(5)		_	Ryan L	awrence, P.E.	7/23	3/2013		
			OBSERVE	R'S SIGNATURE	D	ATE		

(8.1)

REV 10/95 FORM 21A

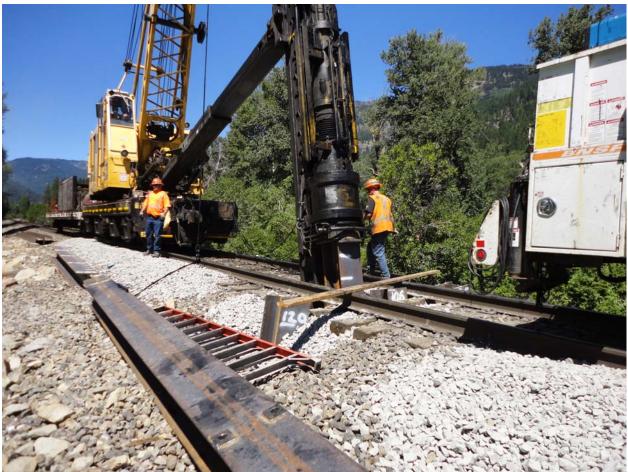


Photo 1: View of Bent 4 Pile 2 near the end of pile driving. The hammer had advanced the pile as far as possible and BNSF was about to pick up their follower and use that to advance the pile below the track elevation.



CF	12MI	IHILL P	ROJECT NO.	476670	
		P	ROJECT NAME	Nason Creek	
(1)	DAY:	Wednesday DATE: 7/24/2013 WORK PERIOD: 10:30 x	a.m. p.m. TO	11:00 a.m x p.m. R	EPORT. 24
	WEAT	THER Sunny TEMP. MAX 85 °F MIN 8	5 °F PRECIPITA	ATION Non	e
			<u>- </u>	· · · · · · · · · · · · · · · · · · ·	-
(2)	KEY	PERSONNEL ON SITE:			
	Todd	d Mains - BNSF			
	Rvan	n Lawrence – CH2M HILL			
			_		
					
(3)		MAJOR EQUIPMENT ON PROJE	CT AND AMOUNT	OF USE	
	No.	Description		Size/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berminghammer B3505			0
	1	Rail-mounted crane to lift pile driving hammer			0
	1	Deere 200D Excavator			0
	- '	Deere 2000 Excavator			, o
(4)	I spok arrive cranee BNSF replace would I spok I left t A tota Curre E E E E E E E E E E E E E E E E E E	oke with Todd on the telephone at 7:30am and he told me that he are ed onsite at 10:30am, but was told that BNSF would be unable to die. The BNSF crew was in the process of repairing the crane's enging. F was also using the downtime to do some maintenance on the hareacing the compression rings. Todd informed me that they would cert do have the repairs done to drive piles tomorrow. Toke with Jim Gunter with BNSF this morning on the telephone and in the site today at 11:00am. Tall of 0 feet of pile was driven today. The sent 1 Pile 1: 60 feet The sent 1 Pile 2: 0 feet The sent 1 Pile 3: 0 feet The sent 1 Pile 4: 60 feet The sent 2 Pile 1: 179 feet The sent 2 Pile 3: 180 feet The sent 2 Pile 3: 180 feet The sent 3 Pile 3: 180 feet The sent 3 Pile 3: 180 feet The sent 3 Pile 3: 180 feet The sent 3 Pile 3: 180 feet The sent 3 Pile 3: 180 feet The sent 3 Pile 4: 215 feet The sent 4 Pile 3: 105 feet The sent 4 Pile 3: 105 feet The sent 4 Pile 3: 105 feet The sent 4 Pile 4: 120 feet The sent 4 Pile 4: 120 feet The sent 4 Pile 4: 120 feet The sent 4 Pile 4: 120 feet The sent 4 Pile 4: 120 feet The sent 4 Pile 4: 120 feet The sent 4 Pile 4: 120 feet	ive any piles today e and was bringing nmer, including rep ainly not drive any	y because of mechanical diffig a mechanic to the site to he blacing the O-rings on the fue piles today and he didn't kno	culties with their elp with repairs. el pump and ow yet if they
(5)		Ryan Lawrence	e, P.E.	7/24	4/2013
. ,		OBSERVER'S SIG		D	ATE



CH	12M	HILL	PROJECT NO.	476670			
			PROJECT NAME	Nason Creek			
(1)	DAY:	<u>Thursday</u> DATE: <u>7/25/2013</u> WORK PERIOD: <u>10:00</u>	х а.м. р.м. ТО	2:00 a.m x p.m. R	EPORT. 25		
	WEAT	THER Sunny TEMP. MAX85 °F MIN	85 °F PRECIPITATION	ON None	е		
(2)	KEY	PERSONNEL ON SITE:					
	Todd	Mains - BNSF					
	Ryan	Lawrence – CH2M HILL					
	Alan	Schmidt – Chelan County					
		<u> </u>	·	-			
(3)		MAJOR EQUIPMENT ON PRO-	JECT AND AMOUNT OF	USE			
	No.	Description		Size/Capacity	Hrs. Oper.		
	1	Pile driving hammer – Berminghammer B3505			0		
	1	Rail-mounted crane to lift pile driving hammer			0		
	1	Deere 200D Excavator			0		
		Doors 2005 Excavator					
(4)	I spoil 10:00 crane they reapprote their I We g taking I left to A total Curre	ke with Todd on the telephone at 7:30am and he told me that he Dam. I arrived onsite at 10:00am, but BNSF did not yet have tracker and make sure their repairs from yesterday were successful. The need to order new parts for the crane and were unsure of when the position of the tracks at approximately 1:30pm. BNSF was still unsured yet survey readings while the sandbags were being moved. The site today at 2:00pm. If the sit	c access. At approximate ney were unable to get the he parts will arrive or who we some sandbags from o determine the station I	ely 11:00am BNSF decide neir crane started. They do en the crane will be opera one side of the tracks to ocations of the Bents and	ed to start their etermined that ational again. At the other using I the geofoam.		
(5)		Ryan Lawre	nce, P.E.	7/25	5/2013		
		OBSERVER'S S	SIGNATURE	D	ATE		



CH	I2M⊦	HLL				PROJECT NO.	47667	0	
						PROJECT NAME	Nasor	n Creek	
(1)	DAY:	Friday	DATE: <u>7/26/</u>	/2013 WORK PERIO	D: <u>N/A</u>	a.m. p.m. TO	N/A	a.m p.m.	REPORT. 26
	WEATI	HER	Sunny	TEMP. MAX	85 °F MIN	85 °F PRECIPIT	ATION	Nor	ne
(2)		PERSONNEL Mains - BNS							
(3)				MAJOR EQUIP	MENT ON PR	OJECT AND AMOUNT	r of USE		
	No.			Descript	tion			Size/Capacity	Hrs. Oper.
	1	Pile driving h	nammer – Berr	minghammer B3505					0
	1	Rail-mounte	d crane to lift p	pile driving hammer					0
	1	Deere 200D	Excavator						0
(4)	I spok but the being A total Currer B B B B B B B B B B B B B B B B B B	e with Todd of ey are expect able to drive	ting a replacen piles tomorrow bile was driven are: 60 feet 0 feet 0 feet 179 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 176 feet 180 feet 120 feet 120 feet 120 feet	ne at 8:30am and he nent part to arrive to v. I did not go to the	day and have	BNSF would not be driv a mechanic scheduled ince no pile work was	to install the	he part today. The	
(5)					Ryan Law	rence, P.E.			26/2013
					OBSERVER'S	SIGNATURE		[DATE



CH	I2M	IHILL	PROJECT NO.	476670			
			PROJECT NAME	Nason Creek			
(1)	DAY:	Saturday DATE: 7/27/2013 WORK PERIOD: 9:	30 X a.m. p.m. TO 4	1:00 a.m X p.m. R	EPORT. 27		
	WEA	THER Sunny TEMP. MAX 85 °F	MIN 85 °F PRECIPITATION	Non Non	е		
(2)	KEY	PERSONNEL ON SITE:					
	Brick	k Wall – BNSF Foreman					
	Ryan	n Lawrence – CH2M HILL					
			_				
(3)							
(0)		†	N PROJECT AND AMOUNT OF	1	1 0		
	No.	Description		Size/Capacity	Hrs. Oper.		
	1	Pile driving hammer – Berminghammer B3505			Varies		
	1	Rail-mounted crane to lift pile driving hammer			Varies		
	1	Deere 200D Excavator			0		
	We vand I problem their I left See : A total Currer I I I I I I I I I I I I I I I I I I	the the BNSF foreman, Brick Wall, when I arrived onsite. waited until 11:00am for a track access window. Once we Bent 1 Pile 4 Segment 2. Both piles were advanced to a delem with fuel pump on the hammer developed that prevener several feet of both piles were cut off. We got off the trace maintenance yard. The site at 4:00pm attached photos. Ital of 114 feet of pile was driven today (57 feet at Bent 1 Pile 1: 117 feet Bent 1 Pile 2: 0 feet Bent 1 Pile 2: 0 feet Bent 1 Pile 3: 0 feet Bent 1 Pile 4: 117 feet Bent 2 Pile 1: 179 feet Bent 2 Pile 1: 179 feet Bent 2 Pile 3: 180 feet Bent 2 Pile 4: 180 feet Bent 3 Pile 1: 176 feet Bent 3 Pile 2: 180 feet Bent 3 Pile 2: 180 feet Bent 3 Pile 2: 180 feet Bent 3 Pile 3: 180 feet Bent 3 Pile 4: 215 feet Bent 4 Pile 3: 120 feet Bent 4 Pile 3: 105 feet Bent 4 Pile 2: 120 feet Bent 4 Pile 3: 105 feet	received track access, the BNSF epth of approximately 117 feet. ted BNSF from driving the remacks at 3:45pm. BNSF was able t	Forew advanced Bent 1 During the last few feet of inder of the piles with the orepair the fuel pump af	Pile 1 Segment 2 of pile driving, a sir follower. The ter we got back to		
		Bent 4 Pile 4: 120 feet					
(E\		Dues	Lawrence P.E	7/0	7/2013		
(5)			Lawrence, P.E. /ER'S SIGNATURE		7/2013 ATE		
		OBOLIN	5 0.0		-		



Photo 1: View of the top of Bent 1 Pile 1 being ground off in preparation for pile welding.



Photo 2: View of the Bent 1 Pile 1 weld at 60.4 feet.



Photo 3: View of Bent 1 Pile 1 (left) and Bent 1 Pile 4 (right) at the end of driving before they were cut off at around 117 feet.



CH2MHILL			PROJECT NO.			476670				
						PROJECT NA	ME	Nason	Creek	
(1)	DAY:	Sunday	DATE: <u>7/2</u>	8/2013 WORK PERIOD:	9:30	X a.m. p.m.	то	2:15	a.m X p.m.	REPORT. 28
	WEAT	THER	Sunny	TEMP. MAX <u>85</u>	°F MIN_	85 °F PRE	ECIPITATI	ION	Noi	ne
(2)	KEY	PERSONNEI	L ON SITE:							
(-)		Wall – BNSF								
	Ryan	Lawrence –	CH2M HILL							
	Alan	Schmidt – Ch	nelan County							
(3)				MAJOR EQUIPME	NT ON PRO	DJECT AND AM	OUNT O	F USE		
	No.			Description	l			;	Size/Capacity	Hrs. Oper.
	1	Pile driving I	hammer – Be	erminghammer B3505						Varies
	1	Rail-mounte	d crane to lif	t pile driving hammer						Varies
	1	Deere 200D	Excavator							0
(4)	I arriv I met BNSI track durin settle I left t See a A tota Curre	F crew worked access, the E g pile driving. ement is taking the site at 2:1 attached photographs.	9:30am. F foreman, Br d to cut apart BNSF crew ac Alan Schmid g place. We g 5pm fos. f pile was drivare: 117 feet 0 feet 157 feet 179 feet 180 feet 180 feet 176 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet	rick Wall, when I arrived of some of the unused pile dvanced Bent 1 Pile 4 Selt was onsite and collecte got off the tracks at 2:00p	s into the leagment 3 to ad some surment.	ngths we needed a depth of appro vey data along th	l to achie ximately	eve the r 157 feet	equired depths. (t. No problems w	Once we received ere encountered
	E	Bent 4 Pile 4:	120 feet							
(5)					Ryan Lawr	ence, P.E.			7/2	28/2013
-				OE	SERVER'S	SIGNATURE				DATE





Photo 2: View of the Bent 1 Pile 4 weld at 117 feet. Yellow crayaon marks used for collecting restrike data are visible on the pile.

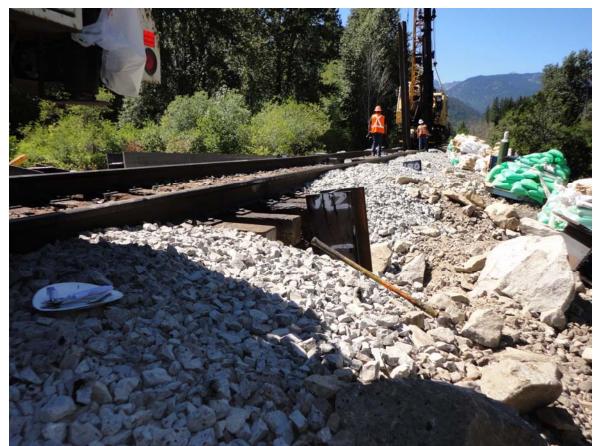


Photo 3: View of Bent 1 Pile 4 (center of photo) at the end of pile driving.





Cŀ	12M	HILL						ECT NO		47667		
							PROJ	ECT NA	ME	Nasor	n Creek	
(1)	DAY:	Monday	DATE: _ <u>7/29</u>	/2013 WORK PER	IOD:	8:00	X a.m.	p.m.	то _	4:00	a.m X p.m.	REPORT. 29
	WEAT	THER	Sunny	TEMP. MAX	90	°F MIN	90	°F PRE	ECIPITAT	ION	No	ne
(2)	KEY	PERSONNE	L ON SITE:									
(-)		Mains – BNS										
	Rvan	Lawrence -	CH2M HILL									
	,		<u> </u>	<u> </u>								
(2)												
(3)		1		MAJOR EQU		NT ON PR	OJECT A	AND AM	OUNT C	-		1
	No.			Desc	ription						Size/Capacity	Hrs. Oper.
	1	Pile driving	hammer – Ber	minghammer B35	05							Varies
	1	Rail-mounte	ed crane to lift	pile driving hamm	er							Varies
	1	Deere 200D	Excavator									0
	Segm betwee welding splice approximately spline approximately splice approximately spline approximately spline app	nent 4 to a de een pile segm ng that they ve piles togethe eximately 1.5 the site at 4:0 attached phot	pth of approximents was with vould normally er on this proje hours. We got opm os. f pile was drive are: 158 feet 0 feet 157 feet 200 feet 180 feet 180 feet 176 feet 180 feet 176 feet 180 feet 180 feet 176 feet 180 feet	mately 200 feet. Nn 15 feet of the fi perform to splice cct. It took roughly off the tracks at 4	lo prob nal grou pile se an add ::00pm	lems were und surfac gments to ditional 1 h	encount e elevati gether. T our to we	ered dur on, BNS his was eld on th	ing pile F welded the first e stiffend	driving. d on stiff time BN er plates	et and advanced E At Bent 2 Pile 1, s fener plates in ad SF has used stiffs s, for a total splice	since the splice dition to the ener plates to time of
		Bent 4 Pile 4:										
(5)						Ryan Law	rence, P.	E.			7/2	29/2013
					OB	CEDVED'	S CICNIV	TUDE) ATE

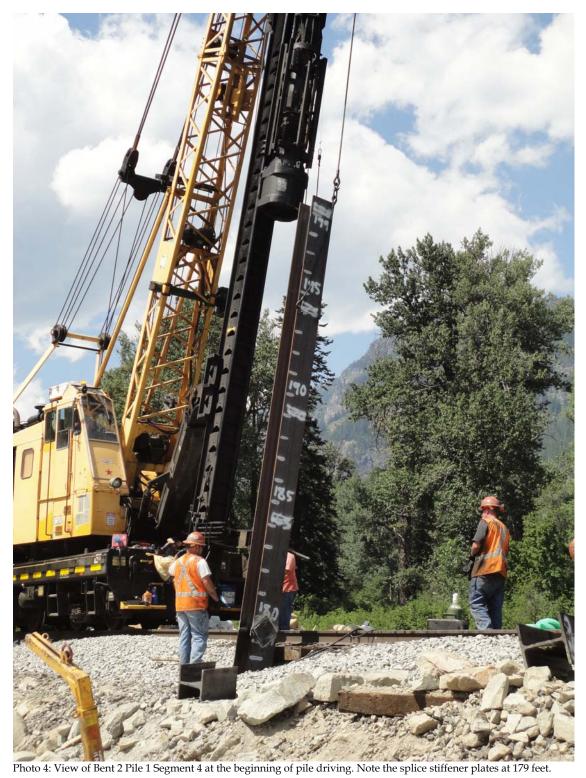


Photo 1: View of the weld at Bent 1 Pile 1 at a depth of 120 feet. Most of the splices on this project look similar to this.



Photo 2: View of the weld at Bent 2 Pile 1 at a depth of 179 feet. Note the diamond shaped stiffener plates that were added because this splice location will be within 15 feet of finish grade.







CH	12M	HILL	PROJECT NO.	476670	476670			
			PROJECT NAME	Nason	Creek			
(1)	DAY:	Tuesday DATE: 8/1/2013 WORK PERIOD: 9:00	X a.m. p.m. TO	16:00	a.m X p.m. R	EPORT. <u>801</u>		
	WEAT	THER Partly Cloudy TEMP. MAX 80 °F MIN	65 °F PRECIPITAT	TION	Non	e		
(2)	KEY	PERSONNEL ON SITE:						
	Todd	Mains – BNSF Foreman						
	Josh	Butler – CH2M HILL						
(3)		MAJOR EQUIPMENT ON PRO	DJECT AND AMOUNT	OF USE				
	No.	Description		5	Size/Capacity	Hrs. Oper.		
	1	Pile driving hammer – Berminghammer B3505				Varies		
	1	Rail-mounted crane—Ohio X3550				Varies		
	1	Deere 200D Excavator				0		
(4)	I arriv I met mobil No pr We m I left t A tota Curre E E E E E E E E E E E E E E E E E E	the the BNSF foreman, Todd Mains, when I arrived onsite. We lized from Merritt to the bridge work site. The BNSF crew advarablems were encountered during pile driving. Inobilized back to Merritt at 15:45. Ithe site at 16:00. Ithe of 60 feet of pile was driven today. Ithe pile totals are: Ithe are is a feet in the pile in th						
(5)		Josh But	ler, P.E.		8/1	/2013		
		OBSERVER'S	SIGNATURE		D	ATE		



CH	2M l	HILL	PROJECT NO.	476670		
			PROJECT NAME	Nason	Creek	
(1)	DAY:	Tuesday DATE: 8/2/2013 WORK PERIOD: 8:00	X a.m. p.m. TO	12:00	a.m X p.m. R	EPORT. 802
	WEAT	THER Cloudy TEMP. MAX 65 °F MIN	55 °F PRECIPITAT	ION	Sligh	nt
(2)	KEY	PERSONNEL ON SITE:				
` '	Todd	Mains – BNSF Foreman				
	Josh	Butler – CH2M HILL				
(3)		MAJOR EQUIPMENT ON PRO	LIFCT AND AMOUNT (OF USF		
	No.	Description			Size/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berminghammer B3505				Varies
	1	Rail-mounted crane—Ohio X3550				Varies
	1	Deere 200D Excavator				0
				•		
(4)	WOR	RK ACCOMPLISHED TODAY:				
()	I arriv	ved onsite at 8:00am.				
	mobil	the the BNSF foreman, Todd Mains, when I arrived onsite. We lized from Merritt to the bridge work site. The BNSF crew advaroblems were encountered during pile driving.				
	We m	nobilized back to Merritt at 11:45.				
	I left t	the site at 12:00.				
	A tota	al of 40 feet of pile was driven today.				
		ent pile totals are: Bent 1 Pile 1: 158 feet				
		Bent 1 Pile 2: 0 feet Bent 1 Pile 3: 0 feet				
	E	Bent 1 Pile 4: 157 feet Bent 2 Pile 1: 200 feet				
	Е	Bent 2 Pile 2: 201 feet				
	Е	Bent 2 Pile 3: 180 feet Bent 2 Pile 4: 180 feet				
	E	Bent 3 Pile 1: 197 feet Bent 3 Pile 2: 180 feet				
		Bent 3 Pile 3: 180 feet Bent 3 Pile 4: 215 feet				
		Bent 4 Pile 1: 120 feet Bent 4 Pile 2: 120 feet				
	Е	Bent 4 Pile 3: 167 feet Bent 4 Pile 4: 160 feet				
(5)		Josh But	er. P.E.		8/1	/2013
(-)		OBSERVER'S			•	ATE



Cŀ	I2M	IHILL	PROJECT NO.	476670		
			PROJECT NAME	Nason (Creek	
(1)		Saturday DATE: 8/3/2013 WORK PERIOD: 10:00		15:00	a.m X p.m. F	
	WLA	TENT PARTY CIOUDY TENT NAME 05 1 WIN	00 I PRECIPITA		INOII	е
(2)	KEY	PERSONNEL ON SITE:				
	Todd	d Mains – BNSF Foreman				
	Josh	n Butler – CH2M HILL	_	-		
				-		
	-					
(3)		MAJOR EQUIPMENT ON PR	OJECT AND AMOUNT	OF USE		
	No.	Description		S	ize/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berminghammer B3505				Varies
	1	Rail-mounted crane—Ohio X3550				Varies
	1	Deere 200D Excavator				0
		200.0 2002 2.00.00				
	I met mobi No p Just 1 See We r A tota Curre	ived onsite at 9:00am. It the the BNSF foreman, Todd Mains, when I arrived onsite. Whilized from Merritt to the bridge work site. The BNSF crew advance or oblems were encountered during pile driving. It is prior to demobilizing, additional track time was granted. The Begment 3 to a depth of approximately 156 feet. No problems were mobilized back to Merritt at 15:00. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15:20. I left the site at 15:20. It is at 15	anced Bent 4 Pile 4 Seg NSF crew then picked a	ment 3 to a	a depth of approx	imately 169 feet.
		Bent 4 Pile 4: 160 feet				
(5)		Josh Bu	tler, P.E.		8/3	3/2013
		OBSERVER'S	SIGNATURE		D	ATE







CH	IZWI	HILL		PROJECT NO. PROJECT NAME	4/66/0 Nason Creek	
(1)	DAY:	Sunday DATE: 8/4/20	013 WORK PERIOD: 10:30		14:15 a.m X p.m.	REPORT. 804
	WEAT	THER Partly Cloudy	TEMP. MAX90 °F MIN		ATION Slig	ıht
(2)		PERSONNEL ON SITE: Mains – BNSF Foreman				
	Josh	Butler – CH2M HILL				
(3)			MAJOR EQUIPMENT ON PR	OJECT AND AMOUNT	OF USE	
	No.		Description		Size/Capacity	Hrs. Oper.
	1	Pile driving hammer – Berm	inghammer B3505			Varies
	1	Rail-mounted crane—Ohio	X3550			Varies
	1	Deere 200D Excavator				0
(4)	I arriv I met mobil 120 f We n bene A tota Curre	lized from Merritt to the bridge eet. No problems were encou	d Mains, when I arrived onsite. We work site. The BNSF crew advantered during pile driving. 1:15. After waiting for 2 trains, we driving was completed.	anced Bent 1 Pile 3 Seg	ments 1 and 2 to a depth o	f approximately
(5)	E	Bent 4 Pile 4: 160 feet		utler, P.E. S SIGNATURE		4/2013 DATE
			0202.172110		-	

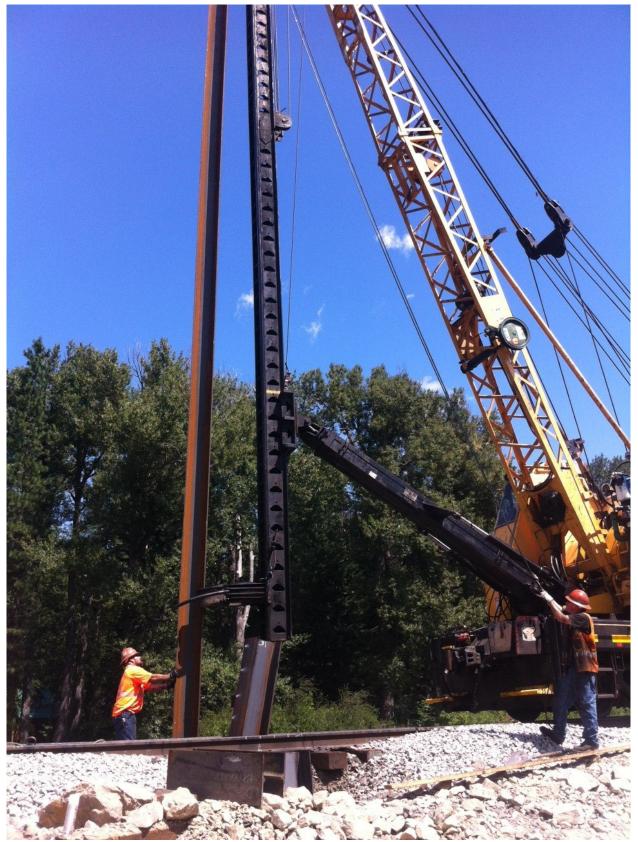


Photo 1: Preparing to set segment 2 of Pile 3, at Bent 1.



CH	I2M	HILL				PR	OJECT NO).	47667	0	
						PR	OJECT NA	ME	Nasor	n Creek	
(1)	DAY:	Monday	DATE:	8/5/2013 WORK PEF	IOD: <u>14:</u>	:30 :	.m. X p.m.	то _	16:30	a.m X p.m.	REPORT. 805
	WEAT	THER	Sunny	TEMP. MAX	95°F	MIN <u>85</u>	°F PRE	ECIPITAT	ΓΙΟΝ	٨	lone
(2)		PERSONNEI									
	Todd	Mains – BNS	F Forem	ian							
	Josh	Butler – CH2	M HILL								
(3)				MAJOR EQU	IPMENT OF	N PROJEC	T AND AM	OUNT (OF USE		
	No.			Desc	ription					Size/Capacity	Hrs. Oper.
	1	Pile driving I	nammer -	– Berminghammer B35	505						Varies
	1	Rail-mounte	d crane-	-Ohio X3550							Varies
	1	Deere 200D	Excavat	or							0
	I met mobil No pr We n A tota Curre E E E E E E E E E E E E E E E E E E	lized from Me roblems were nobilized back	rritt to the encount to Merrit to the encount to Merrit to Merrit f pile was are: 158 feet 158 feet 161 feet 157 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet 180 feet	n, Todd Mains, when I e bridge work site. The ered during pile driving	BNSF crew						
(5)					Jos	sh Butler, P	.E.				8/5/2013
					OBSERV	/ER'S SIGN	IATURE				DATE





Pile Type: HP 14x117	Size: 60 foot long sections	PROJECT: Nason Creek
Top Elev:	Basic Length:	PROJECT No: 476670
Cutoff EI:	Penetration:	Pile Location: Bent No 1
Ground El:	Cutoff Length:	Pile Number: 1
Tip Elev:	Pay Length:	Min. Penetration:
Hammer Type: OED	Model: Berminghammer B3505	Driving Completed:
Сар Тур:	Weight: 12,000lb + 4,000 piston	Driving Started: 7/12/2013 at 9:00am
Cushion: Steel striker plate	Thickness: 6"	Flansed Time/Date:

(feet) Blows (psi) (Bl/min) Height (ft) Remarks 1.0 BNSF hammer operator had difficulty getting Setup 2.0 the hammer to start and continue. Irregular blows until 14' Setup 3.0 N/A N/A Single blows 5.0 8 N/A N/A Single blows 6.0 8 N/A N/A Single blows 7.0 6 51 5.5 8.0 7 N/A N/A Single blows 9.0 4 52 5 10.0 6 N/A N/A Single blows 11.0 5 55 4.6 12.0 4 N/A N/A 13.0 5 N/A N/A			1	1	ı	1				1	1	1	ı
1.0 BNSF hammer operator had difficulty getting Setup	DEPTH		Press.	Speed	Stroke			DEPTH		Press.	Speed	Stroke	
2.0	· /							_ ,		(psi)	\ /	U ()	Remarks
Setup Setu													
30.0 2		tne namm			ie. irregular								
5.0 8 N/A N/A Single blows 52.0 17 42 7.9 6.0 8 N/A N/A Single blows 53.0 19 42 7.9 8.0 7 N/A N/A N/A Single blows 53.0 19 42 7.7 8.0 7 N/A N/A N/A Single blows 55.0 16 44 7.2 98.0 10.0 6 N/A N/A N/A Single blows 55.0 16 44 7.2 Pause 11.0 5 55 4.6 55 4.4 7.5 Follower 11.0 5 55 4.6 8 5.0 11 44 7.3 Follower 15.0 9 48 6 consistent 66.0 13 44 7.1 Slop 7/12 16.0 13 48 6 blows 14* 63.0 32 48 6.2 <td< td=""><td></td><td></td><td>DIOW</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>			DIOW										
6.0 8 N/A N/A Single blows 53.0 19 42 7.7 7.0 6 51 5.5 5.5 15 5.5 15 43 7.5 9.0 4 52 5 16 44 7.2 9.0 4 52 5 16 44 7.2 9.0 4 52 5 16 44 7.2 9.0 4 52 5 16 44 7.2 9.0 10.0 6 N/A N/A Single blows 56.0 13 44 7.7 Pause 56.0 11 44 7.7 Pause 68.0 11 44 7.7 Pause 68.0 13 44 7.3 Follower 59.0 13 44 7.3 Follower 69.0 13 44 7.3 Follower 66.0 25 48 6.2 38 49 6.6 69.0 15 44 7.4 7.4 61.0													
7.0 6 51 5.5 N/A N/A Single blows 55.0 15 43 7.5 Pause 9.0 4 52 5 5 5 5 5 5 5 4 7.2 Pause 10.0 6 N/A N/A N/A Single blows 56.0 13 44 7.2 Pause 11.0 5 55 4.6 55 4.6 55.0 12 43 7.5 Follower 12.0 4 N/A N/A N/A Sind of 60.0 13 44 7.3 Follower 15.0 9 48 6 consistent 60.0 13 44 7.1 Stop 7/12 16.0 13 48 5.9 61 61 63.0 32 48 6.2 19.0 14 48 5.9 61 63.0 32 48 6.2 20.0 12		ļ											
8.0 7 N/A N/A Single blows 55.0 16 44 7.2 Pause 9.0 4 55.2 5 5 5 56.0 13 44 7.2 Pause 11.0 6 N/A N/A N/A N/A Single blows 55.0 12 43 7.5 Follower 12.0 4 N/A S.B 0 13 44 7.3 Follower 15.0 13 48 6 blows 14* 6.1 11.1 48 5.9 14.2 <						Single blov	VS						
9.0 4 52 5 10.0 6 N/A N/A Single blows 11.0 5 55 4.6 12.0 4 N/A N/A N/A 12.0 4 N/A N/A N/A N/A 15.0 5 N/A N/A N/A 15.0 9 48 6 consistent 60.0 13 44 7.3 Follower 15.0 9 48 6 consistent 60.0 13 44 7.1 Stop 7/12 16.0 13 48 6 blows 14* 61.0 51 44 5 Restrike 7 18.0 12 48 5.9 66.0 25 45 6.9 19.0 14 48 6.1 66.0 25 46 6.9 22.0 12 48 5.9 66.0 22 44 7.1 22.0 12 48 5.9 7.0 22													
10.0 6						Single blov	VS						
111.0 5 55 4.6													
12.0 4 N/A N/A N/A Solution 13.0 5 N/A 15.0 9 48 6 consistent 60.0 13 44 7.1 Stop 7/12 15.0 12 48 6 blows 14° 62.0 38 49 5.6 Restrike 7 61.0 13 44 5.8 Restrike 7 62.0 38 49 5.6 Restrike 7 62.0 38 49 5.6 62.0 38 49 5.6 62.0 48 6.2 45 6.9 66.0 25 45 6.9 66.0 25 45 6.9 66.0 22 44 7.1 1.1 50 5.8 66.0 22 44 7.3 7.3 1.2 24.0 1.2						Single blov	VS						
13.0 5 N/A N/A 60.0 13 44 7.1 Stop 7/12 14.0 5 51 5.2 Start of 16.0 61.0 51 44 5 Restrike 7 15.0 9 48 6 consistent 62.0 38 49 5.6 16.0 13 48 6 blows 14' 66.0 25 48 6.2 17.0 12 48 5.9 66.0 25 46 6.8 19.0 14 48 5.9 66.0 22 46 6.8 19.0 14 N/A N/A Pause 66.0 25 46 6.9 21.0 14 N/A N/A Pause 66.0 22 44 7.1 22.0 12 48 6.1 70.0 22 44 7.3 22.0 15 48 5.9 77.0 22 44 7.3 25.0													
14.0 5 51 5.2 Start of 15.0 9 48 6 consistent 16.0 13 48 6 blows 14' 17.0 12 47 6.1 62.0 38 49 5.6 18.0 12 48 5.9 66.0 22 46 6.8 19.0 14 48 5.9 66.0 22 46 6.8 20.0 12 48 5.9 66.0 22 46 6.8 20.0 12 48 5.9 66.0 22 46 6.8 20.0 12 48 6.1 66.0 22 44 7.1 21.0 14 N/A N/A Pause 66.0 22 44 7.3 22.0 12 48 6.1 69.0 21 44 7.3 23.0 16 49 5.8 70.0 22 44													
15.0 9											44		
16.0 13 48 6 blows 14' 63.0 32 48 6.2 17.0 12 47 6.1 64.0 25 45 6.9 18.0 12 48 5.9 65.0 22 46 6.8 19.0 14 48 6.1 66.0 25 46 6.9 20.0 12 48 5.9 66.0 25 46 6.9 21.0 14 N/A N/A Pause 66.0 25 46 6.9 22.0 12 48 6.1 66.0 25 44 7.1 23.0 16 49 5.8 70.0 22 44 7.3 24.0 16 48 5.9 71.0 25 44 7.3 25.0 11 50 5.6 72.0 23 44 7.1 26.0 10 50 5.4 73.0 21 <td< td=""><td></td><td></td><td></td><td></td><td>5.2</td><td>Start of</td><td></td><td></td><td>51</td><td></td><td>44</td><td></td><td>Restrike 7</td></td<>					5.2	Start of			51		44		Restrike 7
17.0 12 47 6.1 66.0 25 45 6.9 18.0 12 48 5.9 66.0 22 46 6.8 19.0 14 48 6.1 66.0 25 46 6.9 20.0 12 48 5.9 67.0 22 44 7.1 21.0 14 N/A N/A Pause 68.0 22 44 7.3 22.0 12 48 6.1 69.0 21 44 7.3 23.0 16 49 5.8 70.0 22 44 7.3 24.0 16 48 5.9 71.0 25 44 7.3 25.0 11 50 5.6 72.0 23 44 7.1 26.0 10 50 5.4 74.0 20 43 7.4 28.0 13 49 5.6 72.0 22 44 7.4<				48	6	consistent		62.0	38		49	5.6	
18.0 12 48 5.9 65.0 22 46 6.8 19.0 14 48 6.1 66.0 25 46 6.9 20.0 12 48 5.9 67.0 22 44 7.1 21.0 14 N/A N/A Pause 68.0 22 44 7.3 22.0 12 48 6.1 68.0 22 44 7.3 23.0 16 49 5.8 70.0 22 44 7.3 24.0 16 48 5.9 71.0 25 44 7.3 25.0 11 50 5.6 72.0 23 44 7.1 26.0 10 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 74.0 20 43 7.4 29.0 16 49 5.8 76.0 22 44 7.4<	16.0	13		48	6	blows 14'		63.0	32		48	6.2	
19.0 14 48 6.1 66.0 25 46 6.9 20.0 12 48 5.9 67.0 22 44 7.1 21.0 14 N/A N/A Pause 68.0 22 44 7.3 22.0 12 48 6.1 68.0 21 44 7.3 23.0 16 49 5.8 70.0 21 44 7.3 24.0 16 48 5.9 71.0 25 44 7.3 25.0 11 50 5.6 72.0 23 44 7.1 26.0 10 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 73.0 21 44 7.4 29.0 16 49 5.8 75.0 21 43 7.4<	17.0	12		47				64.0	25		45	6.9	
20.0 12 48 5.9 67.0 22 44 7.1 21.0 14 N/A N/A N/A Pause 68.0 22 45 7.3 22.0 12 48 6.1 69.0 21 44 7.3 23.0 16 49 5.8 70.0 22 44 7.3 24.0 16 48 5.9 70.0 22 44 7.3 25.0 11 50 5.6 71.0 25 44 7.3 27.0 11 50 5.4 72.0 23 44 7.1 28.0 13 49 5.6 75.0 21 44 7.3 29.0 16 49 5.8 75.0 21 43 7.4 31.0 16 45 6.9 77.0 22 43 7.4 32.0 13 43 7.4 78.0 21 44<	18.0	12		48	5.9			65.0	22		46	6.8	
21.0 14 N/A N/A Pause 22.0 12 48 6.1 49 5.8 23.0 16 49 5.8 70.0 22 44 7.3 24.0 16 48 5.9 70.0 22 44 7.3 25.0 11 50 5.6 72.0 23 44 7.3 25.0 11 50 5.4 73.0 21 44 7.3 26.0 10 50 5.4 72.0 23 44 7.1 26.0 11 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 75.0 21 44 7.4 28.0 13 49 5.6 75.0 21 43 7.4 29.0 16 49 5.8 76.0 22 44 7.4 31.0 16 45 6.9 78.0 </td <td></td> <td>14</td> <td></td> <td>48</td> <td>6.1</td> <td></td> <td></td> <td></td> <td>25</td> <td></td> <td>46</td> <td></td> <td></td>		14		48	6.1				25		46		
22.0 12 48 6.1 69.0 21 44 7.3 23.0 16 49 5.8 70.0 22 44 7.3 24.0 16 48 5.9 71.0 25 44 7.3 25.0 11 50 5.6 72.0 23 44 7.1 26.0 10 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 73.0 21 44 7.3 28.0 13 49 5.6 73.0 21 44 7.3 29.0 16 49 5.8 76.0 22 44 7.4 30.0 15 47 6.3 77.0 22 43 7.4 31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.6 80.0 22 43 7.5	20.0	12		48	5.9			67.0	22		44	7.1	
23.0 16 49 5.8 70.0 22 44 7.3 24.0 16 48 5.9 71.0 25 44 7.3 25.0 11 50 5.6 72.0 23 44 7.1 26.0 10 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 73.0 21 44 7.3 28.0 13 49 5.6 75.0 21 43 7.4 29.0 16 49 5.8 76.0 22 44 7.4 30.0 15 47 6.3 77.0 22 43 7.4 31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.4 79.0 22 45 7 34.0 16 43 7.6 81.0 23 43 7.6	21.0	14		N/A	N/A	Pause		68.0	22		45	7.3	
24.0 16 48 5.9 71.0 25 44 7.3 25.0 11 50 5.6 72.0 23 44 7.1 26.0 10 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 74.0 20 43 7.4 28.0 13 49 5.6 75.0 21 43 7.4 29.0 16 49 5.8 76.0 22 44 7.4 30.0 15 47 6.3 77.0 22 43 7.4 31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.4 79.0 22 45 7 33.0 14 43 7.6 81.0 23 43 7.5 36.0 18 43 7.6 81.0 23 43 7.6	22.0	12		48	6.1			69.0	21		44	7.3	
25.0 11 50 5.6 72.0 23 44 7.1 26.0 10 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 73.0 21 44 7.3 28.0 13 49 5.6 75.0 21 43 7.4 29.0 16 49 5.8 76.0 22 44 7.4 30.0 15 47 6.3 77.0 22 43 7.4 31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.4 79.0 22 45 7 33.0 14 43 7.6 80.0 22 43 7.5 34.0 16 43 7.7 82.0 24 47 6.8 35.0 15 43 7.7 82.0 24 47 6.8	23.0	16		49	5.8			70.0	22		44	7.3	
26.0 10 50 5.4 73.0 21 44 7.3 27.0 11 50 5.4 74.0 20 43 7.4 28.0 13 49 5.6 75.0 21 43 7.4 29.0 16 49 5.8 76.0 22 44 7.4 30.0 15 47 6.3 77.0 22 43 7.4 31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.4 79.0 22 45 7 33.0 14 43 7.5 80.0 22 43 7.5 34.0 16 43 7.6 81.0 23 43 7.6 35.0 15 43 7.7 82.0 24 47 6.8 36.0 18 43 7.6 83.0 32 50 6.3		16		48	5.9			71.0	25		44		
27.0 11 50 5.4 74.0 20 43 7.4	25.0	11		50	5.6			72.0	23		44		
28.0 13 49 5.6 75.0 21 43 7.4 29.0 16 49 5.8 76.0 22 44 7.4 30.0 15 47 6.3 77.0 22 43 7.4 31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.4 79.0 22 45 7 33.0 14 43 7.5 80.0 22 43 7.5 34.0 16 43 7.6 81.0 23 43 7.6 35.0 15 43 7.7 82.0 24 47 6.8 37.0 16 43 7.6 83.0 32 50 6.3 38.0 17 43 7.7 86.0 28 47 7 40.0 17 43 7.6 88.0 24 43 7.6	26.0	10		50	5.4			73.0	21		44	7.3	
29.0 16 49 5.8 76.0 22 44 7.4 30.0 15 47 6.3 77.0 22 43 7.4 31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.4 79.0 22 45 7 33.0 14 43 7.5 80.0 22 43 7.5 34.0 16 43 7.6 81.0 23 43 7.6 35.0 15 43 7.7 82.0 24 47 6.8 37.0 16 43 7.6 83.0 32 50 6.3 38.0 17 43 7.7 85.0 27 48 6.6 39.0 18 43 7.6 86.0 28 47 7 40.0 17 43 7.6 88.0 24 43 7.6	27.0	11		50	5.4			74.0	20		43	7.4	
30.0 15 47 6.3 77.0 22 43 7.4 31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.4 79.0 22 45 7 33.0 14 43 7.5 80.0 22 43 7.5 34.0 16 43 7.6 81.0 23 43 7.6 35.0 15 43 7.7 82.0 24 47 6.8 36.0 18 43 7.6 83.0 32 50 6.3 37.0 16 43 7.6 84.0 24 44 7.5 38.0 17 43 7.7 86.0 28 47 7 40.0 17 43 7.6 87.0 24 43 7.6 42.0 18 43 7.6 88.0 24 43 7.6 43.0 30 46 6.5 Unbolt 90.0 25 43 7.6 <td>28.0</td> <td>13</td> <td></td> <td>49</td> <td>5.6</td> <td></td> <td></td> <td>75.0</td> <td>21</td> <td></td> <td>43</td> <td></td> <td></td>	28.0	13		49	5.6			75.0	21		43		
31.0 16 45 6.9 78.0 21 44 7.4 32.0 13 43 7.4 79.0 22 45 7 33.0 14 43 7.5 80.0 22 43 7.5 34.0 16 43 7.6 81.0 23 43 7.6 35.0 15 43 7.7 82.0 24 47 6.8 37.0 16 43 7.6 83.0 32 50 6.3 38.0 17 43 7.7 85.0 27 48 6.6 39.0 18 43 7.6 86.0 28 47 7 40.0 17 43 7.6 88.0 24 43 7.6 42.0 18 43 7.6 89.0 29 43 7.6 44.0 22 43 7.6 90.0 25 43 7.6	29.0				5.8				22		44		
32.0 13 43 7.4 79.0 22 45 7 33.0 14 43 7.5 80.0 22 43 7.5 34.0 16 43 7.6 81.0 23 43 7.6 35.0 15 43 7.7 82.0 24 47 6.8 37.0 16 43 7.6 83.0 32 50 6.3 38.0 17 43 7.7 85.0 27 48 6.6 39.0 18 43 7.6 86.0 28 47 7 40.0 17 43 7.6 87.0 24 43 7.7 41.0 19 43 7.6 88.0 24 43 7.6 42.0 18 43 7.6 89.0 29 43 7.6 44.0 22 43 7.6 91.0 26 43 7.7					6.3								
33.0 14 43 7.5 80.0 22 43 7.5 34.0 16 43 7.6 81.0 23 43 7.6 35.0 15 43 7.7 82.0 24 47 6.8 36.0 18 43 7.6 83.0 32 50 6.3 37.0 16 43 7.6 84.0 24 44 7.5 38.0 17 43 7.7 85.0 27 48 6.6 39.0 18 43 7.7 86.0 28 47 7 40.0 17 43 7.6 87.0 24 43 7.6 42.0 18 43 7.6 89.0 29 43 7.6 43.0 30 46 6.5 Unbolt 44.0 22 43 7.6 91.0 26 43 7.7 45.0 19 42 7.9 92.0 26 43 7.7 46.0 17 42 8.1 93.0 27 42 7.7		16		45	6.9			78.0	21		44		
34.0 16 43 7.6 35.0 15 43 7.7 36.0 18 43 7.6 37.0 16 43 7.6 38.0 17 43 7.7 39.0 18 43 7.6 40.0 17 43 7.6 41.0 19 43 7.6 42.0 18 43 7.6 44.0 22 43 7.6 45.0 19 42 7.9 46.0 17 42 8.1	32.0	13		43	7.4			79.0	22		45	7	
35.0 15 43 7.7 82.0 24 47 6.8 36.0 18 43 7.6 83.0 32 50 6.3 37.0 16 43 7.6 84.0 24 44 7.5 38.0 17 43 7.7 85.0 27 48 6.6 39.0 18 43 7.7 86.0 28 47 7 40.0 17 43 7.6 87.0 24 43 7.7 88.0 24 43 7.6 88.0 24 43 7.6 89.0 29 43 7.6 89.0 29 43 7.6 44.0 22 43 7.6 90.0 25 43 7.6 45.0 19 42 7.9 92.0 26 43 7.7 46.0 17 42 8.1 93.0 27 42 7.7	33.0	14		43	7.5			80.0	22		43	7.5	
36.0 18 43 7.6 37.0 16 43 7.6 38.0 17 43 7.7 39.0 18 43 7.7 40.0 17 43 7.6 41.0 19 43 7.6 42.0 18 43 7.6 43.0 30 46 6.5 Unbolt 44.0 22 43 7.6 45.0 19 42 7.9 46.0 17 42 8.1	34.0	16		43	7.6			81.0	23		43	7.6	
37.0 16 43 7.6 84.0 24 44 7.5 38.0 17 43 7.7 85.0 27 48 6.6 39.0 18 43 7.7 86.0 28 47 7 40.0 17 43 7.6 87.0 24 43 7.7 41.0 19 43 7.6 88.0 24 43 7.6 42.0 18 43 7.6 89.0 29 43 7.6 43.0 30 46 6.5 Unbolt 90.0 25 43 7.6 45.0 19 42 7.9 92.0 26 43 7.7 46.0 17 42 8.1 93.0 27 42 7.7	35.0	15		43	7.7			82.0	24		47	6.8	
38.0 17 43 7.7 39.0 18 43 7.7 40.0 17 43 7.6 41.0 19 43 7.6 42.0 18 43 7.6 43.0 30 46 6.5 Unbolt 44.0 22 43 7.6 45.0 19 42 7.9 46.0 17 42 8.1	36.0	18		43	7.6			83.0	32		50	6.3	
39.0 18 43 7.7 40.0 17 43 7.6 41.0 19 43 7.6 42.0 18 43 7.6 43.0 30 46 6.5 Unbolt 44.0 22 43 7.6 45.0 19 42 7.9 46.0 17 42 8.1	37.0			43				84.0	24		44	7.5	
40.0 17 43 7.6 41.0 19 43 7.6 42.0 18 43 7.6 43.0 30 46 6.5 Unbolt 44.0 22 43 7.6 45.0 19 42 7.9 46.0 17 42 8.1 87.0 24 43 7.7 88.0 24 43 7.6 89.0 29 43 7.6 90.0 25 43 7.6 91.0 26 43 7.7 92.0 26 43 7.7 93.0 27 42 7.7	38.0	17		43	7.7			85.0	27		48	6.6	
41.0 19 43 7.6 42.0 18 43 7.6 43.0 30 46 6.5 Unbolt 44.0 22 43 7.6 45.0 19 42 7.9 46.0 17 42 8.1 88.0 24 43 7.6 89.0 29 43 7.6 90.0 25 43 7.6 91.0 26 43 7.7 92.0 26 43 7.7 93.0 27 42 7.7	39.0	18		43	7.7			86.0	28		47	7	
42.0 18 43 7.6 89.0 29 43 7.6 43.0 30 46 6.5 Unbolt 90.0 25 43 7.6 44.0 22 43 7.6 91.0 26 43 7.7 45.0 19 42 7.9 92.0 26 43 7.7 46.0 17 42 8.1 93.0 27 42 7.7	40.0	17		43	7.6			87.0	24		43	7.7	
42.0 18 43 7.6 89.0 29 43 7.6 43.0 30 46 6.5 Unbolt 90.0 25 43 7.6 44.0 22 43 7.6 91.0 26 43 7.7 45.0 19 42 7.9 92.0 26 43 7.7 46.0 17 42 8.1 93.0 27 42 7.7	41.0	19		43	7.6			88.0	24		43	7.6	
43.0 30 46 6.5 Unbolt 90.0 25 43 7.6 44.0 22 43 7.6 91.0 26 43 7.7 45.0 19 42 7.9 92.0 26 43 7.7 46.0 17 42 8.1 93.0 27 42 7.7	42.0	18		43	7.6			89.0	29		43	7.6	
44.0 22 43 7.6 45.0 19 42 7.9 46.0 17 42 8.1 91.0 26 43 7.7 92.0 26 43 7.7 93.0 27 42 7.7	43.0	30		46		Unbolt		90.0	25		43	7.6	
45.0 19 42 7.9 46.0 17 42 8.1 92.0 26 43 7.7 93.0 27 42 7.7	44.0	22		43	7.6			91.0	26		43	7.7	
46.0 17 42 8.1 93.0 27 42 7.7		19											
				42									

Pile Driving Record CH2MHILI Pile Type: HP 14x117 PROJECT: Size: 60 foot long sections Nason Creek Top Elev: ___ Basic Length: ___ PROJECT No: 476670 Cutoff EI: Penetration: Pile Location: Bent No. _ 1 Cutoff Length: _____ Ground EI: Pile Number: Tip Elev: Pay Length: Min. Penetration: OED Hammer Type: Model: Driving Completed: Berminghammer B3505 Cap Typ: Weight: 12,000lb + 4,000 piston Driving Started: 7/12/2013 at 9:00am Cushion: Elapsed Time/Date: Steel striker plate Thickness: 6" **DEPTH DEPTH** Press. Stroke Press. Stroke Speed Speed (feet) Blows (psi) (Bl/min) Height (ft) Remarks (feet) Blows (psi) (Bl/min) Height (ft) Remarks 95.0 25 43 7.7 142.0 61 42 8 96.0 24 43 7.7 143.0 60 41 8.2 7.7 43 97.0 28 144.0 56 41 8.1 7.7 98.0 29 43 145.0 58 41 8.1 99.0 27 43 7.7 146.0 60 8.1 100.0 26 43 7.7 147.0 56 42 8.1 28 43 42 101.0 7.6 148.0 58 8.1 102.0 30 43 149.0 42 7.6 56 8 103.0 28 43 7.6 150.0 56 42 8 104.0 27 43 7.7 151.0 57 42 8 105.0 30 43 7.6 152.0 54 42 8.1 43 7.6 106.0 32 153.0 61 42 8 27 43 7.7 42 8.1 107.0 154.0 56 108.0 32 43 7.7 155.0 59 42 8 Pause Follower 109.0 31 43 7.7 156.0 70 41 8.3 32 43 157.0 65 41 Follower 110.0 7.6 8.2 51/10" Stop 7/29 35 43 7.6 41 8.1 111.0 158.0 112.0 34 43 7.6 159.0 37 43 113.0 7.5 160.0 114.0 43 7.5 End of pile at 157.8 feet below top of railroad ties. 36 161.0 Finished on 7/29/2013. 115.0 43 43 7.4 162.0 7.4 116.0 35 43 163.0 117.0 49 44 7.3 Cutoff 7/27 164.0 11<u>8.0</u> 40 Restrike 7/29 165.0 67 9 119.0 58 39 9 166.0 120.0 63 40 8.9 167.0 121.0 61 40 8.8 168.0 122.0 61 40 8.8 169.0 123.0 61 40 8.8 170.0 124.0 53 40 8.8 171.0 125.0 52 40 8.8 172.0 126.0 52 40 8.7 173.0 40 127.0 51 8.8 174.0 60 40 175.0 128.0 8.8 129.0 63 40 8.6 176.0 130.0 57 41 8.5 177.0 131.0 59 40 8.7 178.0 40 132.0 61 179.0 8.6 41 133.0 59 8.5 180.0 134.0 58 41 181.0 8.4 135.0 56 40 8.5 182.0 136.0 55 40 183.0 8.7

57

52

55

52

59

137.0

138.0

139.0

140.0

141.0

40

41

41

41

41

8.6

8.4

8.4

8.3

8.2

Inspector: Ryan Lawrence, P.E.

184.0

185.0

186.0

187.0

188.0



Pile Type: HP 14x117	Size: 60 foot long sections	PROJECT: Nason Creek		
Top Elev:	Basic Length:	PROJECT No: 476670		
Cutoff EI:	Penetration:	Pile Location: Bent No3		
Ground EI:	Cutoff Length:	Pile Number: 1		
Tip Elev:	Pay Length:	Min. Penetration:		
Hammer Type: OED	Model: Berminghammer B3505	Driving Completed:		
Сар Тур:	Weight: 12,000lb + 4,000 piston	Driving Started: 7/4/2013 at 9:15am		
Cushion: Steel striker plate	Thickness: 6"	Elapsed Time/Date:		

						'					
DEPTH		Press.	Speed	Stroke		DEPTH		Press.	Speed	Stroke	
(feet)	Blows	(psi)	(Bl/min)	Height (ft)	Remarks	(feet)	Blows	(psi)	(Bl/min)	Height (ft)	Remarks
1.0					Setup	48.0	14		48	5.9	
2.0					Setup	49.0	15		49	5.8	
3.0					Setup	50.0	10		49	5.8	
4.0	11				Soft	51.0	12		49	5.8	
5.0	16			3.5	hammer	52.0	13		49	5.8	
6.0	15		62	3.5	blows	53.0	12		48	6.2	
7.0	18		62	3.5	were used	54.0	10		49	5.8	
8.0	18		62	3.5	to 33 feet	55.0	13		49	5.6	
9.0	19		63	3.4	to help	56.0	11		49	5.6	stop 7/4
10.0	17		63	3.4	get the	57.0	11				Restrike 7
11.0	18		62	3.4	pile to go	58.0	12		Not Obsrv	Not Obsrv	
12.0	18		64	3.2	into the	59.0	16		46	6.6	
13.0	16		65	3.2	ground	60.0	22		46	6.5	
14.0	17		65	3.1	straight.	61.0	16		45	6.9	
15.0	18		65	3.2		62.0	17		46	6.6	
16.0	17		64	3.3		63.0	20		46	6.6	
17.0	18		64	3.2		64.0	18		46	6.6	
18.0	22		65	3.1		65.0	20		45	6.7	
19.0	16		66	3		66.0	19		46	6.7	
20.0	16		67	2.9		67.0	18		45	6.8	
21.0	15		66	3.1		68.0	19		45	6.8	
22.0	31		63	3.4		69.0	16		45	6.9	
23.0	36		62	3.5		70.0	17		45	6.9	
24.0	31		62	3.4		71.0	19		45	6.8	
25.0	29		64	3.2		72.0	17		45	6.8	
26.0	12		64	3.2		73.0	17		47	6.3	
27.0	22		63	3.3		74.0	19		45	6.9	
28.0	12		61	3.6		75.0	16		45	6.9	
29.0	14		60	3.7		76.0	20		44	7.3	
30.0	18		59	3.8		77.0	16		45	6.9	
31.0	18		58	4		78.0	21		45	6.9	
32.0	24		57	4.1		79.0	17		45	7	
33.0	17		53	5.1		80.0	19		45	7	
34.0	10		48	6.1		81.0	18		45	7	
35.0	13		48	6.1		82.0	19		45	7	
36.0	10		48	6.1		83.0	18		45	6.9	
37.0	10		48	6		84.0	19		45	7	
38.0	10		47	6.1		85.0	19		44	7	
39.0	13		47	6.2		86.0	21		45	7	
40.0	13		47	6.2		87.0	20		44	7	
41.0	13	1	47	6.4	I I also a la	88.0	20		44	7.1	
42.0	17		50	5.7	Unbolt	89.0	21		44	7.1	
43.0	23		54	4.7	Unbolt	90.0	20		44	7.1	
44.0	26		57	4.4	Unbolt	91.0	22		45	7	
45.0	13		48	6.1		92.0	20		44	7.1	
46.0	12	1	48	5.9		93.0	21		44	7	
47.0	11		49	6.1		94.0	21		44	7.1	



Pile Type: HP 14x117	Size: 60 foot long sections	PROJECT:	Nason Creek	
Top Elev:	Basic Length:	PROJECT No:	476670	
Cutoff EI:	Penetration:	Pile Location:	Bent No3	
Ground EI:	Cutoff Length:	Pile Number:	1	
Tip Elev:	Pay Length:	Min. Penetration:		
Hammer Type: OED	Model: Berminghammer B3505	Driving Completed:		
Сар Тур:	Weight: 12,000lb + 4,000 piston	Driving Started:	7/4/2013 at 9:15am	
Cushion: Steel striker plate	Thickness: 6"	Elapsed Time/Date:		

(feet) Blows (psi) (Bl/min) Height (ft) Remarks 95.0 22 44 7.1 142.0 86 42 7.8 97.0 22 44 7.1 143.0 94 42 7.8 98.0 26 44 7 145.0 85 42 7.8 100.0 25 44 7.1 145.0 85 42 7.8 100.0 25 44 7.1 145.0 85 42 7.8 100.0 25 44 7.1 145.0 85 42 7.8 100.0 28 44 7.1 148.0 91 43 7.6 103.0 28 44 7.1 148.0 91 43 7.5 105.0 40 47 6.4 151.0 87 43 7.6 105.0 39 44 7.2 151.0 87 43 7.5		ı	1	ı	ı	1		ı		1	1	ı	ı
95.0	DEPTH		Press.	Speed	Stroke			DEPTH		Press.	Speed	Stroke	
98.0 23	, ,		(psi)	,		Remarks		_ `		(psi)	(Bl/min)		Remarks
98.0													
98.0													
99.0 25													
100.0 25													
101.0													
102.0 29													
103.0													
104.0 29													
105.0													
106.0 38													
107.0 39				47					88				
108.0 37													
109.0 37				44					89				
110.0 30	108.0			44					96				
111.0 40 44 7.1 158.0 88 43 7.5 112.0 33 44 7.3 159.0 90 43 7.4 159.0 113.0 56 44 7.1 Follower 160.0 95 44 7.3 159.0 90 43 7.4 159.0 116.0 95 44 7.3 159.0 90 43 7.4 169.0 95 44 7.3 169.0 95 44 7.3 169.0 95 44 7.4 169.0 95 44 7.4 169.0 96 43 7.4 169.0 94 43 7.4 169.0 94 43 7.4 169.0 96 40 8.9 169.0 96 43 7.4 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0		37		44					89				
112.0 33 44 7.3 Follower 113.0 56 44 7.1 Follower 114.0 68 45 6.8 Follower 115.0 52 44 7 Follower 116.0 53 44 7 Stop 7/6 117.0 124 40 8.9 Restrike 7/15 118.0 104 40 9 119.0 95 40 8.8 120.0 106 40 8.9 121.0 91 40 8.9 122.0 88 40 8.9 122.0 88 40 8.9 122.0 88 40 8.9 122.0 88 40 8.9 122.0 84 40 8.9 122.0 84 40 8.7 125.0 79 40 8.7 126.0 82 40 8.7 127.0	110.0	30		44	7.1				91		43		
113.0 56 44 7.1 Follower Follower Follower 115.0 52 44 7 Follower 162.0 94 43 7.4 115.0 52 44 7 Follower 162.0 94 43 7.4 115.0 100 44 7.4 115.0 100 44 7.4 115.0 100 44 7.2 115.0 100 44 7.2 115.0 100 44 7.2 115.0 100 44 7.2 115.0 100 44 7.2 115.0 100 44 7.2 115.0 100 44 7.2 115.0 100 44 7.2 115.0 100 44 7.4 115.0 100 44 7.4 115.0 100 44 7.4 115.0 100 44 7.2 115.0 100 44 7.2 115.0 100 110 43 7.4 115.0 110 110 45 6.9 115.0 110 110 45				44					88		43		
114.0 68 45 6.8 Follower 115.0 52 44 7 Follower 116.0 53 44 7 Stop 7/6 117.0 124 40 8.9 Restrike 7/15 118.0 104 40 9 163.0 100 44 7.2 118.0 104 40 9 165.0 101 43 7.4 119.0 95 40 8.8 166.0 107 43 7.4 121.0 91 40 8.9 166.0 111 44 7.2 122.0 88 40 8.9 166.0 111 44 7.2 123.0 82 40 8.9 168.0 110 45 6.9 124.0 84 40 8.8 170.0 103 45 6.8 125.0 79 40 8.7 172.0 88 45 7 127.0<	112.0	33		44	7.3			159.0	90		43	7.4	
115.0 52 44 7 Follower 116.0 53 44 7 Stop 7/6 163.0 100 44 7.2 117.0 1124 40 8.9 Restrike 7/15 15 163.0 100 44 7.2 163.0 100 44 7.2 118.0 104 40 8.9 166.0 101 43 7.4 119.0 95 40 8.8 166.0 107 43 7.4 166.0 111 44 7.2 166.0 111 44 7.2 166.0 111 44 7.2 166.0 111 44 7.2 166.0 111 44 7.2 166.0 111 44 7.2 166.0 111 44 7.2 166.0 111 45 6.9 166.0 111 45 6.9 170.0 103 45 6.8 171.0 97 45 6.9 172.0 88 45 7 172.0 88 45 7	113.0	56		44	7.1	Follower		160.0	95		44		
116.0 53 44 7 Stop 7/6 117.0 124 40 8.9 Restrike 7/15 164.0 101 43 7.4 118.0 104 40 9 166.0 101 43 7.4 118.0 104 40 9 40 8.8 166.0 107 43 7.4 118.0 106 40 8.9 166.0 111 44 7.2 118.0 106 40 8.9 166.0 111 44 7.2 118.0 110 45 6.9 166.0 111 44 7.2 166.0 111 44 7.2 166.0 111 44 7.2 166.0 110 45 6.9 166.0 110 45 6.9 166.0 110 45 6.9 166.0 110 45 6.9 170.0 103 45 6.9 170.0 103 45 6.9 170.0 103 45 6.9 172.0 48 45 <td< td=""><td>114.0</td><td>68</td><td></td><td>45</td><td>6.8</td><td>Follower</td><td></td><td>161.0</td><td>100</td><td></td><td>44</td><td>7.4</td><td></td></td<>	114.0	68		45	6.8	Follower		161.0	100		44	7.4	
117.0 124 40 8.9 Restrike 7/15 164.0 101 43 7.4 118.0 104 40 9 165.0 107 43 7.4 119.0 95 40 8.8 166.0 111 44 7.2 120.0 106 40 8.9 167.0 114 45 7 121.0 91 40 8.9 168.0 110 45 6.9 122.0 88 40 8.9 168.0 110 45 6.9 123.0 82 40 8.9 169.0 97 45 6.9 124.0 84 40 8.7 170.0 103 45 6.9 125.0 79 40 8.7 172.0 88 45 7 126.0 82 40 8.7 172.0 88 45 7 129.0 81 41 8.3 177.0 103	115.0	52		44	7	Follower		162.0	94		43	7.4	
118.0 104 40 9 119.0 95 40 8.8 120.0 106 40 8.9 121.0 91 40 8.9 121.0 91 40 8.9 122.0 88 40 8.9 123.0 82 40 8.9 124.0 84 40 8.9 125.0 79 40 8.7 126.0 82 40 8.7 127.0 81 40 8.7 127.0 81 40 8.7 128.0 80 40 8.7 129.0 81 41 8.5 130.0 85 41 8.3 131.0 83 41 8.3 132.0 78 41 8.4 133.0 85 41 8.4 133.0 85 42 8 136.0 72 42 8 <td>116.0</td> <td>53</td> <td></td> <td>44</td> <td>7</td> <td>Stop 7/6</td> <td></td> <td>163.0</td> <td>100</td> <td></td> <td>44</td> <td></td> <td></td>	116.0	53		44	7	Stop 7/6		163.0	100		44		
119.0 95 40 8.8 166.0 111 44 7.2 120.0 106 40 8.9 167.0 114 45 7 121.0 91 40 8.9 168.0 110 45 6.9 122.0 88 40 8.9 169.0 97 45 6.9 123.0 82 40 8.9 177.0 103 45 6.8 124.0 84 40 8.9 177.0 97 45 6.9 125.0 79 40 8.7 172.0 88 45 7 126.0 82 40 8.7 173.0 93 44 7.1 Pause 128.0 80 40 8.7 174.0 100 44 7.1 Pause 129.0 81 41 8.3 176.0 108 44 7.3 Stop 7/15 130.0 85 41 8.3	117.0	124		40	8.9	Restrike 7/	15	164.0	101		43	7.4	
120.0 106 40 8.9 167.0 114 45 7 121.0 91 40 8.9 168.0 110 45 6.9 122.0 88 40 8.9 169.0 97 45 6.9 123.0 82 40 8.9 170.0 103 45 6.8 124.0 84 40 8.8 171.0 97 45 6.9 125.0 79 40 8.7 172.0 88 45 7 126.0 82 40 8.7 173.0 93 44 7.1 127.0 81 40 8.7 173.0 93 44 7.1 Pause 128.0 80 40 8.7 175.0 104 43 7.4 Follower 131.0 83 41 8.3 177.0 108 44 7.3 Stop 7/15 133.0 88 42 8	118.0	104		40	9			165.0	107		43	7.4	
121.0 91 40 8.9 168.0 110 45 6.9 122.0 88 40 8.9 169.0 97 45 6.9 123.0 82 40 8.9 170.0 103 45 6.8 124.0 84 40 8.8 171.0 97 45 6.9 125.0 79 40 8.7 172.0 88 45 7 126.0 82 40 8.7 173.0 93 44 7.1 Pause 127.0 81 40 8.7 174.0 100 44 7.1 Pause 128.0 80 40 8.7 175.0 104 43 7.4 Follower 129.0 81 41 8.5 176.0 108 44 7.3 Stop 7/15 131.0 83 41 8.3 177.0 180.0 179.0 180.0 180.0 180.0 180.0	119.0	95		40	8.8			166.0	111		44	7.2	
122.0 88 40 8.9 169.0 97 45 6.9 123.0 82 40 8.9 170.0 103 45 6.8 124.0 84 40 8.8 171.0 97 45 6.9 125.0 79 40 8.7 172.0 88 45 7 126.0 82 40 8.7 172.0 88 45 7 127.0 81 40 8.7 173.0 93 44 7.1 Pause 128.0 80 40 8.7 174.0 100 44 7.1 Pause 129.0 81 41 8.5 175.0 104 43 7.4 Follower 130.0 85 41 8.3 177.0 175.0 108 44 7.3 Stop 7/15 133.0 88 42 8 180.0 180.0 180.0 180.0 180.0 180.0 <t< td=""><td>120.0</td><td>106</td><td></td><td>40</td><td>8.9</td><td></td><td></td><td>167.0</td><td>114</td><td></td><td>45</td><td>7</td><td></td></t<>	120.0	106		40	8.9			167.0	114		45	7	
123.0 82 40 8.9 170.0 103 45 6.8 124.0 84 40 8.8 171.0 97 45 6.9 125.0 79 40 8.7 172.0 88 45 7 126.0 82 40 8.7 173.0 93 44 7.1 127.0 81 40 8.7 174.0 100 44 7.1 Pause 128.0 80 40 8.7 175.0 104 43 7.4 Follower 129.0 81 41 8.5 176.0 108 44 7.3 Stop 7/15 130.0 85 41 8.3 177.0 178.0 178.0 179.0 179.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0 189.0	121.0	91		40	8.9			168.0	110		45	6.9	
124.0 84 40 8.8 171.0 97 45 6.9 125.0 79 40 8.7 172.0 88 45 7 126.0 82 40 8.7 173.0 93 44 7.1 127.0 81 40 8.7 174.0 100 44 7.1 Pause 128.0 80 40 8.7 175.0 104 43 7.4 Follower 129.0 81 41 8.5 176.0 108 44 7.3 Stop 7/15 130.0 85 41 8.3 177.0 178.0 179.0 17	122.0	88		40	8.9			169.0	97		45	6.9	
125.0 79 40 8.7 172.0 88 45 7 126.0 82 40 8.7 173.0 93 44 7.1 93 127.0 81 40 8.7 174.0 100 44 7.1 Pause 128.0 80 40 8.7 175.0 104 43 7.4 Follower 129.0 81 41 8.5 176.0 108 44 7.3 Stop 7/15 130.0 85 41 8.3 177.0 44 7.3 Stop 7/15 131.0 83 41 8.3 178.0 44 7.3 Stop 7/15 133.0 88 42 8 180.0 48 44 7.3 Stop 7/15 135.0 87 42 8 181.0 48 49 49 48 181.0 48 49 49 49 49 49 49 48 183.0	123.0	82		40	8.9			170.0	103		45	6.8	
126.0 82 40 8.7 173.0 93 44 7.1 93 44 7.1 128.0 128.0 80 40 8.7 174.0 100 44 7.1 129.0 129.0 81 41 8.5 175.0 104 43 7.4 Follower 175.0 108 44 7.3 Stop 7/15 177.0 108 177.0 108 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 177.0 175.0 175.0 175.0 175.0 175.0	124.0	84		40	8.8			171.0	97				
127.0 81 40 8.7 174.0 100 44 7.1 Pause 128.0 80 40 8.7 175.0 104 43 7.4 Follower 129.0 81 41 8.5 176.0 108 44 7.3 Stop 7/15 130.0 85 41 8.3 177.0 44 7.3 Stop 7/15 132.0 78 41 8.4 179.0 1	125.0	79		40	8.7			172.0	88		45	7	
128.0 80 40 8.7 175.0 104 43 7.4 Follower 129.0 81 41 8.5 176.0 108 44 7.3 Stop 7/15 130.0 85 41 8.3 177.0 108 44 7.3 Stop 7/15 131.0 83 41 8.3 177.0 178.0 179.0	126.0	82		40	8.7			173.0	93		44	7.1	
129.0 81 41 8.5 176.0 108 44 7.3 Stop 7/15 130.0 85 41 8.3 177.0 178.0 178.0 178.0 178.0 178.0 179.0 <td< td=""><td>127.0</td><td>81</td><td></td><td>40</td><td>8.7</td><td></td><td></td><td>174.0</td><td>100</td><td></td><td>44</td><td>7.1</td><td>Pause</td></td<>	127.0	81		40	8.7			174.0	100		44	7.1	Pause
130.0 85 41 8.3 177.0 131.0 83 41 8.3 178.0 178.0 179.0	128.0	80		40	8.7			175.0	104		43	7.4	Follower
131.0 83 41 8.3 178.0 178.0 179.0 </td <td>129.0</td> <td>81</td> <td></td> <td>41</td> <td>8.5</td> <td></td> <td></td> <td>176.0</td> <td>108</td> <td></td> <td>44</td> <td>7.3</td> <td>Stop 7/15</td>	129.0	81		41	8.5			176.0	108		44	7.3	Stop 7/15
132.0 78 41 8.4 179.0 179.0 133.0 88 42 8 180.0 180.0 134.0 85 42 8.1 181.0 181.0 135.0 87 42 8 182.0 183.0 137.0 91 42 8 184.0 184.0 138.0 87 42 7.9 185.0 185.0 139.0 80 43 7.7 186.0 187.0 140.0 98 42 7.8 187.0 187.0	130.0	85		41	8.3			177.0					
133.0 88 42 8 134.0 85 42 8.1 135.0 87 42 8 136.0 72 42 8 137.0 91 42 8 138.0 87 42 7.9 139.0 80 43 7.7 140.0 98 42 7.8	131.0			41	8.3			178.0					
134.0 85 42 8.1 181.0 181.0 135.0 87 42 8 182.0 183.0 137.0 91 42 8 184.0 184.0 138.0 87 42 7.9 185.0 185.0 139.0 80 43 7.7 186.0 187.0 140.0 98 42 7.8 187.0 187.0	132.0	78		41	8.4			179.0					
135.0 87 42 8 136.0 72 42 8 137.0 91 42 8 138.0 87 42 7.9 139.0 80 43 7.7 140.0 98 42 7.8	133.0	88		42	8			180.0					
135.0 87 42 8 136.0 72 42 8 137.0 91 42 8 138.0 87 42 7.9 139.0 80 43 7.7 140.0 98 42 7.8	134.0	85		42	8.1			181.0					
136.0 72 42 8 183.0 183.0 137.0 91 42 8 184.0 184.0 138.0 87 42 7.9 185.0 185.0 139.0 80 43 7.7 186.0 187.0 140.0 98 42 7.8 187.0 187.0													
137.0 91 42 8 138.0 87 42 7.9 139.0 80 43 7.7 140.0 98 42 7.8													
138.0 87 42 7.9 185.0 185.0 139.0 80 43 7.7 186.0 186.0 140.0 98 42 7.8 187.0 187.0		91		42									
139.0 80 43 7.7 186.0 140.0 98 42 7.8 187.0		87											
140.0 98 42 7.8 187.0													



Pile Type: HP 14x117	Size: 60 foot long sections	PROJECT:	Nason Creek
Top Elev:	Basic Length:	PROJECT No:	476670
Cutoff EI:	Penetration:	Pile Location:	Bent No4
Ground El:	Cutoff Length:	Pile Number:	1
Tip Elev:	Pay Length:	Min. Penetration:	
Hammer Type: OED	Model: Berminghammer B3505	Driving Completed:	
Сар Тур:	Weight: 12,000lb + 4,000 piston	Driving Started:	7/10/2013 at 2:15pm
	l		

Cushion: Steel striker plate Thickness: 6" Elapsed Time/Date:

DEPTH Press. Speed Stroke DEPTH Press. Speed

DEPTH		Press.	Speed	Stroke			DEPTH		Press.	Speed	Stroke	
(feet)	Blows	(psi)	(Bl/min)	Height (ft)	Remarks		(feet)	Blows	(psi)	(Bl/min)	Height (ft)	Remarks
1.0		, ,	,	<u> </u>	Setup		48.0	18	,	48	6.1	Unbolt
2.0					Setup		49.0	24		53	4.8	Unbolt
3.0	5		N/A	N/A	Single blov	NS	50.0	30		55	4.5	Unbolt
4.0	5		N/A	N/A	Single blov		51.0	29		53	5.1	Unbolt
5.0	5		68	2.8	Soft		52.0	15		46	6.6	
6.0	3		Not obsrvd	Not obsrvd	hammer		53.0	15		46	6.6	
7.0	4		Not obsrvd	Not obsrvd	blows		54.0	15		46	6.6	
8.0	3		Not obsrvd	Not obsrvd	were used		55.0	18		46	6.5	
9.0	7		67	2.9	to 19 feet		56.0	15		46	6.5	
10.0	6		66	3	to help		57.0	14		46	6.5	Pause
11.0	6		67	3	get the		58.0	17		46	6.7	Follower
12.0	6		68	2.8	pile to go		59.0	13		47	6.5	Follower
13.0	5		Not obsrvd	Not obsrvd	into the		60.0	15		45	6.7	Stop 7/10
14.0	5		Not obsrvd	Not obsrvd	ground		61.0	29		46	6.7	Restrike 7/
15.0	5		67	3	straight.		62.0	18		42	8	
16.0	2		70	2.7			63.0	25		42	8.1	
17.0	12		60	3.8			64.0	22		42	8	
18.0	18		58	4			65.0	23		42	8	
19.0	15		53	4.9			66.0	21		42	7.9	
20.0	10		47	6.3			67.0	20		42	7.8	
21.0	8		47	6.4			68.0	25		43	7.7	
22.0	9		47	6.2			69.0	20		43	7.6	
23.0	9		47	6.2			70.0	22		43	7.6	
24.0	6		48	6			71.0	20		43	7.6	
25.0	7		49	5.7			72.0	24		43	7.5	
26.0	6		49	5.7			73.0	21		43	7.5	
27.0	6		49	5.8			74.0	24		43	7.5	
28.0	7		52	5.3			75.0	20		43	7.5	
29.0	10		50	5.8			76.0	23		43	7.5	
30.0	8		47	6.6			77.0	24		43	7.7	
31.0	7		47	6.2			78.0	23		43	7.7	
32.0	9		50	6.3			79.0	24		43	7.5	
33.0	9		47	6.2			80.0	23		43	7.4	
34.0	9		47	6.4			81.0	23		42	7.8	
35.0	11		47	6.4			82.0	22		42	7.9	
36.0	14		46	6.6			83.0	23		42	8	
37.0	12		46	6.5			84.0	23		42	7.9	
38.0	16		46	6.6			85.0	25		42	7.9	
39.0	12		46	6.7			86.0	23		42	7.9	
40.0	14		45	6.8			87.0	23		42	7.9	
41.0	15		45	6.8			88.0	25		42	7.9	
42.0	15		46	6.7			89.0	25		42	7.9	
43.0	17		45	6.7			90.0	24		42	7.8	
44.0	17		45	6.8			91.0	20		42	7.9	
45.0	14		46	6.7			92.0	23		42	7.8	
46.0	16		46	6.6			93.0	24		42	7.9	
47.0	14		46	6.6			94.0	21		42	7.9	

Pile Driving Record CH2MHILI PROJECT: Pile Type: HP 14x117 Size: 60 foot long sections Nason Creek Top Elev: ___ Basic Length: ___ PROJECT No: 476670 Penetration: _ Bent No. _4 Cutoff EI: Pile Location: Cutoff Length: Ground EI: Pile Number: Tip Elev: Pay Length: _ Min. Penetration: Hammer Type: OED Driving Completed: Model: Berminghammer B3505 Cap Typ: Weight: 12,000lb + 4,000 piston Driving Started: 7/10/2013 at 2:15pm Cushion: Thickness: 6" Elapsed Time/Date: Steel striker plate **DEPTH DEPTH** Press. Press. Stroke Speed Stroke Speed (feet) Blows (psi) (Bl/min) Height (ft) Remarks (feet) Blows (psi) (Bl/min) Height (ft) Remarks 95.0 24 42 7.9 142.0 96.0 24 42 7.8 143.0 97.0 25 42 7.8 144.0 98.0 30 42 8 145.0 99.0 27 42 8 146.0 42 100.0 28 8 147.0 31 42 8 101.0 148.0 102.0 30 42 7.9 149.0 103.0 29 42 7.9 150.0 104.0 31 42 7.9 151.0 105.0 32 42 8 152.0 42 7.9 153.0 106.0 31 34 42 107.0 8 154.0 108.0 31 42 8 155.0 109.0 33 42 8 156.0 30 42 157.0 110.0 8 36 42 7.9 111.0 158.0 112.0 35 42 7.9 159.0 113.0 42 7.9 31 160.0 114.0 37 42 8 161.0 115.0 38 42 7.8 162.0 116.0 40 42 7.8 163.0 117.0 40 42 7.7 164.0 118.0 53 42 Pause 165.0 8 42 119.0 48 7.8 Follower 166.0 59 42 Follower 120.0 7.8 167.0 121.0 17/4" 42 7.8 Stop 7/16 168.0 122.0 169.0 123.0 170.0 124.0 171.0 125.0 172.0 126.0 173.0 127.0 174.0 175.0 128.0 129.0 176.0 130.0 177.0 131.0 178.0 132.0 179.0 180.0 133.0 134.0 181.0 135.0 182.0 136.0 183.0 137.0 184.0 138.0 185.0 139.0 186.0

140.0

141.0

Inspector: Ryan Lawrence, P.E.

187.0

188.0