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Client: S.W. Cole Engineering, Inc. **Report:** 001
Project: Cumberland County Civic Center
Date: December 18, 2012
Subject: Structural Steel Site Inspection

As requested our initial site visit was made on this date for inspection of structural steel. Upon arrival we met with the general contractor and attended safety orientation. Following the orientation we reviewed structural and approved erection drawings. The erector was not on site. Our activities and observations during this visit were as follows:

1. Welder certifications were reviewed and found acceptable.
2. Bolt storage was reviewed and found to be acceptable with the exception of one keg of bolts which was full of water.
3. Base plates were found to have proper bearing, plate washers were in place and welded and anchor nuts in snug tight condition. All were acceptable with the exception of the column at A1/AC which did not have plate washers welded and anchor nuts were loose.
4. Structural framing at elevation 89’ was inspected. Beam angle clips which were welded to embeds in the foundation were complete and acceptable as detailed. Deck support angles were anchored to the foundation as detailed and the anchor nuts were snug tight and acceptable.
5. Deck and shear studs were in place at elevation 89’. Per the Statement of Special Inspections deck and shear studs will be inspected by the structural engineer. Consequently we did not perform an inspection.
6. Inspection of the structural framing at elevation 102' was performed and we noted several areas with loose or missing bolts.
7. Roof elevation framing and deck are in process.

The contractor was advised of our observations. Discrepancies will be re-inspected after correction.

Inspector; R. Allen Nason
CWI #02050551
ICC #8049937-S1

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Client: S.W. Cole Engineering, Inc. **Report:** 002
Project: Cumberland County Civic Center 12-0034.1
Date: December 26, 2012
Subject: Structural Steel Site Inspection

As requested a site visit was made on this date for continuing inspection of structural steel (see 12/18 report). Our activities and observations were as follows:

1. Base plate washers are now welded and anchor nuts in sung tight condition at elevation 72', column A1/AC.
2. Elevation 89' (eastern area): Five (5) HSS columns are not grouted. Three (3) of these have plate washer to base plate welding in process.
3. Horizontal HSS at storefront/entrance require welding of angle seats and top face angles to the columns they attach to. These welds were not shown on the erection drawings.
4. Bolted connections at elevation 102' are now complete and acceptable.
5. Low roof elevation line AE has loose bolts in several areas.
6. At high roof framing bolted connections are complete and acceptable. The beam clips (angles) which are welded to embeds were not complete at this time.
7. High roof decking was in process at the time of our visit.

The contractor and erector were notified of the results of our inspection. When work is completed a final inspection will be performed.

Inspector; R. Allen Nason
CWI #02050551
ICC #8049937-S1

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Client: S.W. Cole Engineering, Inc. **Report:** 003
Project: Cumberland County Civic Center 12-0034.1
Date: January 3, 2013
Subject: Structural Steel Site Inspection

As requested a site visit was made on this date to perform a final inspection of structural steel on this phase of the project (see 12/18 and 12/26 reports). Our observations were as follows:

1. Elevation 89' plate washers are now welded and anchor rod nuts are snug tight. This was outstanding item #2 in our report dated 12/26.
2. Horizontal HSS at storefront/entrance is now welded per details and is acceptable. This was outstanding item #3 in our report dated 12/26.
3. Bolted connections at low roof elevation line AE are now complete and acceptable. This was outstanding item #5 in our report dated 12/26.
4. Beam clips are now welded to embeds at high roof elevation. All welds were visually inspected and are acceptable. This was item #6 in our report dated 12/26.
5. All framing was verified to be completed.

This completes inspection on this phase of the project. Any discrepancies noted have been corrected. All work inspected is complete and acceptable.

Inspector; R. Allen Nason
CWI #02050551
ICC #8049937-S1

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Client: S.W. Cole Engineering, Inc. **Report:** 004
Project: Cumberland County Civic Center 12-0034.1
Date: May 23, 2013
Subject: Structural Steel Site Inspection

As requested a structural steel inspection was performed on this date. It was requested that we inspect Area A at the Mid and Upper Level Suite floor framing as shown on drawing S2.71A. Our observations were as follows:

1. Bolted connections were as detailed and found to be acceptable at both levels with the exception of 11B17 on the upper level suite. This could not be connected with bolts as detailed due to hole mis-alignment. An RFI will be submitted for approval to weld in lieu of bolts.
2. Moment connections were visually inspected and tested using ultrasound. Welds were acceptable as documented on the attached test report.
3. Framing appeared to be as detailed.

Upon completion of our inspection the contractor and erector were advised of our observations.

Inspector; R. Allen Nason
CWI #02050551
ICC #8049937-S1

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ULTRASONIC TEST REPORT

Date: **May 23, 2013**

Report: **004**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 mhz**

Project: **Cumberland County Civic Center**

Ultrasonic Unit: **Olympus Epoch XT**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1**

Welding Contractor: **ARC**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Tee**

Material: **ASTM A992**

Weld Identification:	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment conn.s Mid Suite														
AC.2/A1-W	**X**		**70**	**A**	**1-3**		**51**							
AC.8/A1-W	**X**													
AD/A1.2-N	**X**													
AD/A1.8-N	**X**													
Upper Suite														
AC.2/A1-W	**X**		**70**	**A**	**1-3**		**51**							
AC.8/A1-W	**X**													
AD/A1.2-N	**X**													
AD/A1.8-N	**X**													

Remarks: **Top flanges were tested. Bottom flange does not require weld per S500 detail 11.**

Technician: **R. Allen Nason** Level: **II**

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Client: S.W. Cole Engineering, Inc. **Report:** 005
Project: Cumberland County Civic Center 12-0034.1
Date: September 18, 2013
Subject: Structural Steel Site Inspection

As requested a structural steel inspection was performed on this date. Moment connections at the third floor were reported to be completed for inspection and testing.

Moment connections were visually inspected and tested using ultrasound as documented on the attached test report. Two discrepancies were noted:

- Many of the welds did not have the required 5/16" fillet weld in the overhead position.
- C3/C East bottom flange required additional backgouging.

Discrepancies were reviewed with the foreman and corrective work began immediately. A re-inspection will be performed upon completion.

All remaining welds are acceptable.

Inspector; Neal J White
CWI #86070201
ICC #8014170-S1

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ULTRASONIC TEST REPORT

Date: **September 18, 2013**

Report: **005 page 1 of 2**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 mhz**

Project: **Cumberland County Civic Center**

Ultrasonic Unit: **Olympus Epoch 6000**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1**

Welding Contractor: **ARC**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Tee, Butt**

Material: **ASTM A992**

Weld Identification:	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment conn.s Third floor														
C3/CE W TF, BF	**X**		**70**	**A**	**1-3**		**60**							
C3/CE E TF	**X**													
C3/CE E BF		**X**												
C2/CE E,WTF,BF	**X**													
C1/CE TF, BF	**X**													
Line C1														
31B51 (2pcs) TF	**X**		**70**	**A**	**1-3**		**60**							
Line CA														
31B1 (2 pcs) TF	**X**		**70**	**A**	**1-3**		**60**							
31B53 (3 pcs) TF	**X**													
Diagonal line														
31B47 TF	**X**		**70**	**A**	**1-3**		**60**							
31B44 TF	**X**													
31B45 TF	**X**													
31B46 TF	**X**													

Remarks: **C3/CE E bottom flange was not properly backgouged. Internal slag was present.**

Technician: **Neal J White** Level: **II**

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ULTRASONIC TEST REPORT

Date: **September 18, 2013**

Report: **005 page 2 of 2**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 mhz**

Project: **Cumberland County Civic Center**

Ultrasonic Unit: **Olympus Epoch 6000**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1**

Welding Contractor: **ARC**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Tee, Butt**

Material: **ASTM A992**

Weld Identification:	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment conn.s Third floor														
Diagonal line														
31B48 TF	**X**		**70**	**A**	**1-3**		**60**							
C5.3/CA TF	**X**		**70**	**A**	**1-3**		**60**							

Remarks:

Technician: **Neal J White** Level: **II**

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Client: S.W Cole Engineering, Inc. #12-0034.1 **Report:** 006
Project: Cumberland County Civic Center
Date: September 24, 2013
Subject: Site Inspection of Structural Steel

As requested a structural steel inspection was performed on this date. The following items were noted during our visit:

1. Base plates were inspected and found to have proper bearing. Anchor rod nuts were snug tight and plate washers welded. All were acceptable with the exception of two locations which were marked.
2. Welding of beam clip angles to embeds were inspected and acceptable per structural details.

Second floor (Event Level)

1. Bolted connections were inspected. One loose connection was noted and marked for correction. Remaining connections are acceptable.
2. Decking was inspected and found to be installed per details and is acceptable.
3. Shear studs were in place with the correct number per member. All were inspected / tested and are acceptable.

Third floor

1. Bolted connections were inspected and found to be acceptable.
2. Welding of clips to embeds at the elevator were inspected and found to be acceptable.
3. Deck installation is in process
4. Weld discrepancies reported 9/18 were corrected and are acceptable.

Roof level

1. Moment connection welds were visually inspected and tested using ultrasound. See attached test report. Two (2) cantilevered beams were not welded at the bottom flange to diagonal beam CC to CB. These were fabricated with the weld preparations upside down.

The contractor and erector were notified of the results of our inspection.

Inspector; R. Allen Nason
CWI #02050551
ICC #8049937-S1

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ULTRASONIC TEST REPORT

Date: **September 24, 2013**

Report: **006**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 mhz**

Project: **Cumberland County Civic Center**

Ultrasonic Unit: **Olympus Epoch XT**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1**

Welding contractor: **ARC**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Tee**

Material: **A992**

Weld Identification:	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment conn.s Roof														
CE/C3.3-S-TF	**X**		**70**	**A**	**1-3**		**50**							
CE/C3.6-S-TF	**X**													
CE/C3-E,W-T&B	**X**													
CE/C3 S-TF	**X**													
CE/2.3-S-T&B	**X**													
CE/2.7-S-T&B	**X**													
CE/C2-E,W-T&B	**X**													
CE/C2 -S-T&B	**X**													
CE/C1.3-S-TF	**X**													
CE/C1.6-S-TF	**X**													
CE/C1-S-T&B	**X**													
Third floor retest														
CE/C3 E BF	**X**		**70**	**A**	**1-3**		**50**							

Remarks: **Welds marked TF do not require bottom flange welds. Discrepancy reported 9/18 at third floor was corrected and re-tested.**

Technician: **R.A. Nason** Level: **II**

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Client: S.W. Cole Engineering, Inc. **Report:** 007
Project: Cumberland County Civic Center 12-0034.1
Date: September 27, 2013
Subject: Site Inspection of Structural Steel

As requested a structural steel inspection was performed on this date.

Moment connections were visually inspected and tested using ultrasound at the roof elevation-SE entry-Quad C. This inspection was a continuation of testing previously performed.

We previously reported two (2) cantilever beams with weld preparations at the bottom flange which were upside down. On this date we found a third beam with the same condition. The three (3) locations where this occurs are: C1/CC, C1/CB, and C2/CA. None of these locations have been welded.

Moment connections are now complete and acceptable with the exception of the three (3) bottom flanges.

No bolting discrepancies were addressed since our previous visit. Bolt inspection at the roof elevation could not be completed on this date as much of the deck below was barricaded and inaccessible.

The contractor and erector were notified of the results of our inspection.

Inspector; R. Allen Nason
CWI #02050551
ICC #8049937-S1

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ULTRASONIC TEST REPORT

Date: **September 27, 2013**

Report: **007 page 1 of 2**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 mhz**

Project: **Cumberland County Civic Center**

Ultrasonic Unit: **Olympus Epoch XT**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1**

Welding Contractor: **ARC**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Tee**

Material: **A992**

Weld Identification:	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment conn.s Roof Quad C														
CC/C1-W-T&B	**X**		**70**	**A**	**1-3**		**50**							
CC/C1- E-TF	**X**													
CB/C1-W-T&B	**X**													
CB/C1- E-TF	**X**													
CA/C2-N-T&B	**X**													
CA/C2-S-TF	**X**													
CA/C2.3-N,S-TF	**X**													
CA/C2.8-N,S-T&B	**X**													
CA/C3.2-N-TF	**X**													
CA/C3.5-N-TF	**X**													
CA/C3.8-N-T&B	**X**													
CA/C4.3-N-TF	**X**													
CA/C4.6-N-TF	**X**													
CA/C5-N-T&B	**X**													
CA/C5.2-N-TF	**X**													

Remarks:

Technician: **R.A. Nason** Level: **II**

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Client: S.W. Cole Engineering, Inc. **Report:** 008
Project: Cumberland County Civic Center 12-0034.1
Date: October 21, 2013
Subject: Site Inspection of Structural Steel

As requested a structural steel inspection was performed on this date at the area noted as "Quad D". The following items were noted:

Slab on grade

1. Base plates were found to have proper bearing, plate washers welded and anchor rod nuts snug tight. All are acceptable.

Club Floor Framing/deck

2. Base plates were found to have proper bearing, plate washers welded and anchor rod nuts snug tight. All are acceptable.
3. All bolted connections are acceptable.
4. Welding of beam clips to embeds was found to be acceptable.
5. Decking was in place, installed per approved deck drawings and acceptable.
6. Shear studs were verified to have correct number per member, visually inspected and tested. Discrepancies found were immediately corrected. All are acceptable.

Club Roof framing

1. Bolted connections found to be acceptable.
2. Moment connections were visually inspected and tested using ultrasound. All are acceptable as documented on the attached test report.
3. Roof decking was in process.
4. Welding of beam clips to embeds was found to be acceptable.
5. One moment connection shown on shop drawing E2.34B was not welded and DA/D2 top flange was not beveled for welding. Erector was notified.

Upper Suite Floor framing

1. No decking was installed at this elevation at the time of our visit.
2. Moment connections were visually inspected and tested using ultrasound. All are acceptable as documented on the attached test report.
3. Welding of beam clips to embeds was found to be acceptable.

Upper Suite Roof framing

1. Two (2) moment connections were visually inspected and tested using ultrasound as documented on the attached test report. The bottom flanges only required complete penetration welds. Top flanges were fillet welds and are acceptable.

Quad C-roof

2. Three (3) bottom flange moment welds previously reported as not welded are now welded and have been accepted by the EOR.
3. Bolting inspection was completed and all connections are acceptable.
4. All bolting discrepancies previously reported are now acceptable.

The project superintendent and erector were notified of the results of our inspection.

Inspector; R. Allen Nason
CWI #02050551
ICC #8049937-S1

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ULTRASONIC TEST REPORT

Date: **October 21, 2013**

Report: **008 page 1 of 2**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 mhz**

Project: **Cumberland County Civic Center**

Ultrasonic Unit: **Olympus Epoch XT**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1**

Welding contractor: **ARC**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Tee**

Material: **A992**

Weld Identification:	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment conn.s Club Roof														
DA/D2.7-N-TF	**X**		**70**	**A**	**1-3**		**51**							
DA/D3-N-TF	**X**													
DA/D3.2-N-TF	**X**													
DA/D3.5-N-TF	**X**													
DA/x6.4-N-TF	**X**													
DA/x7-N-TF	**X**													
DA/D2.4-N-TF	**X**													
Mid Suite Floor														
DC.9/D4-W-TF	**X**		**70**	**A**	**1-3**		**51**							
DD/D3.3-S-TF	**X**													
DD/D3.8-S-TF	**X**													
DC.6/D4-W-TF	**X**													

Remarks:

Technician: **R.A. Nason** Level: **II**

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ULTRASONIC TEST REPORT

Date: **October 21, 2013**

Report: **008 page 2 of 2**

Client: **S.W. Cole Engineering, Inc.**

Transducer: **70 degree 2.25 mhz**

Project: **Cumberland County Civic Center**

Ultrasonic Unit: **Olympus Epoch XT**

Address: **Portland, ME**

Test Method Standard: **AWS D1.1**

Welding contractor: **ARC**

Acceptance Standard: **AWS D1.1 table 6.2**

Description of Joint: **Tee**

Material: **A992**

Weld Identification:	Acceptable	Rejectable	Transducer Angle	From Face	Leg 1-2-3	Decibels				Defect			Distance	
						Indication Level A	Reference Level B	Attenuation Level C	Indication D	Length	Angular Distance (sound path)	Depth from "A" surface	"X"	"Y"
Moment conn.s Upper Suite floor														
DC.9/D4-W-TF	**X**		**70**	**A**	**1-3**		**51**							
DD/D3.3-S-TF	**X**													
DD/D3.8-S-TF	**X**													
DC.6/D4-W-TF	**X**													
Upper Suite roof skewed beam														
D4 to DD-S-BF-(2) locations over elevator	**X**		**70**	**A**	**1-3**		**51**							

Remarks:

Technician: **R.A. Nason** Level: **II**

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Client: S.W. Cole Engineering, Inc. **Report:** 009
Project: Cumberland County Civic Center 12-0034.1
Date: October 28, 2013
Subject: Site Inspection of Structural Steel

As requested a structural steel inspection was performed on this date. Our activities and observations were as follows:

Fan Support Welding –Arena Roof

1. As requested an inspection was performed on fan support steel welded to the underside of the roof joists (bottom chords). Erection drawings show a 1/4" fillet weld at all contact points. As the joist bottom chords are constructed of 1/8" angle a 1/4" weld is not possible. We noted all contact points to be welded with acceptable quality welds. The structural drawing S2.70B does not show the weld size required. Bolts were also inspected and found all to be tensioned and acceptable with A325TC type bolts (splines broken).

Quad D

1. As previously reported welds of beam clips to new concrete are acceptable at all elevations with the exception of location line (DC/X2.2) where the embed location was wrong and an alternate connection was installed. On this date we received verbal approval from structural engineering noting the alternate detail to be acceptable.
2. We also inspected all anchors installed to existing concrete. This includes beam clip to concrete and deck support angles anchors. All anchors were in place and nuts snug tight with the exception of two (2) locations which had anchors installed at an angle due to rebar within the concrete. See attached picture. These angled anchors did not have full contact of the anchor nut. This was mentioned to the erector whom bent the anchors enough to allow the nuts to make full contact with the exception of two (2) anchors at DC/XK where there is no access to perform this same repair. The anchors are angled approximately 20 to 30 degrees.

Quad D (continued)

3. Missing moment connection weld at DA/D2 reported on our last visit was welded. This could not be tested as decking was covering the weld. We were able to do a partial visual inspection and verified that the weld is full section thickness of the beam top flange with an overhead position weld in place.
4. Mid and Upper Suite floor framing bolts are now tensioned and acceptable. Decking was installed as detailed and acceptable. Shear studs were inspected at both elevations and are acceptable.
5. All roof decks were inspected in the Quad D area. We noted that CANAM approved deck drawings show a 36/4 pattern with “Hilti” paf's. The decks were welded at every low flute with a 5/8” puddle weld. We were informed this was verbally approved by the EOR. Side lap screws were installed as detailed.

The contractor and erector were notified of the results of our inspection. This will be our final inspection unless directed otherwise.

Inspector; R. Allen Nason
CWI #02050551
ICC #8049937-S1