

Maine Medical Center M.M.C.
Hutchins Drive Renovation

Issue For Construction
December 21, 2017

Structural Statement of Special Inspections

Project: *Maine Medical Center M.M.C. Hutchins Drive Renovation*

Location: *Hutchins Drive, Portland Maine*

Owner: *Maine Medical Center*

This *Statement of Special Inspections* encompass the following discipline: **Structural**

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Structural Special Inspection Coordinator (SSIC) and the identity of other approved agencies to be retained for conducting these inspections and tests.

The Structural Special Inspection Coordinator shall keep records of all Structural inspections and shall furnish inspection reports to the Building Code Official (BCO) and the Structural Registered Design Professional in Responsible Charge (SRDP). Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Structural Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Structural Registered Design Professional in Responsible Charge at an interval determined by the SSIC and the BCO.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted to the BCO prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: *Upon request of Building Official* _____ or per attached schedule.

Prepared by:

Peter Rand, P.E.

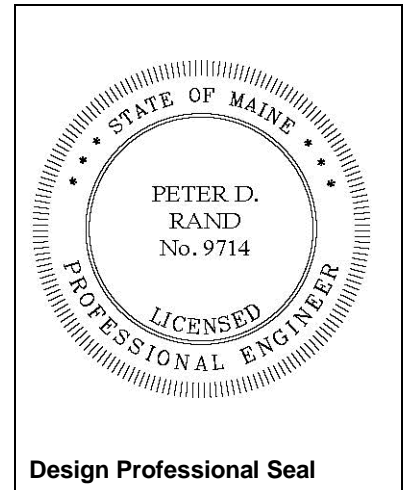
(type or print name of the Structural Registered Design Professional in Responsible Charge)



Signature

07/09/2018

Date



Owner's Authorization:

Lonnie Michaud

Signature

7/9/2018

Date

Building Code Official's Acceptance:

Signature

Date

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Structural Statement of Special Inspections (Continued)

List of Agents

Project: *Maine Medical Center M.M.C. Hutchins Drive Renovation*

Location: *Hutchins Drive, Portland Maine*

Owner: *Maine Medical Center*

This Statement of Special Inspections encompass the following discipline: **Structural**

(Note: Statement of Special Inspections for other disciplines may be included under a separate cover)

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- Soils and Foundations
 Cast-in-Place Concrete
 Precast Concrete System
 Masonry Systems
 Structural Steel
 Wood Construction

 Special Cases

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. STRUCTURAL Special Inspections Coordinator (SSIC) Peter Rand, P.E.	SMRT INC.	144 FORE STREET PORTLAND, ME 04104 207-772-3846 prand@smrtinc.com
2. Special Inspector (SI 1) Brian Steele, P.E.	SMRT INC.	144 FORE STREET PORTLAND, ME 04104 207-772-3846 bsteele@smrtinc.com
3. Special Inspector (SI 2)		
4. Testing Agency (TA 1)	S W Cole Engineering, Inc.	286 Portland Rd Gray, ME 04039 207-657-2866 Gray.Materials@swcole.com
5. Testing Agency (TA 2)		
6. Other (O1)		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

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Structural Statement of Special Inspections (Continued)

Final Report of Special Inspections (SSIC/SI 1)

[To be completed by the Structural Special Inspections Coordinator (SSIC/SI 1). Note that all Agent's Final Reports must be received prior to issuance.]

Project: *Maine Medical Center M.M.C. Hutchins Drive Renovation*
Location: *Hutchins Drive, Portland Maine*
Owner: *Maine Medical Center*
Owner's Address: *22 Bramhall St, Portland Maine, 04102*

Architect of Record: *Rebecca Casey* *SMRT*
(name) *(firm)*
Structural Registered Design
Professional in Responsible Charge: *Peter Rand, PE* *SMRT*
(name) *(firm)*

To the best of my information, knowledge and belief, the Special Inspections required for this project, and itemized in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Structural Special Inspection Coordinator

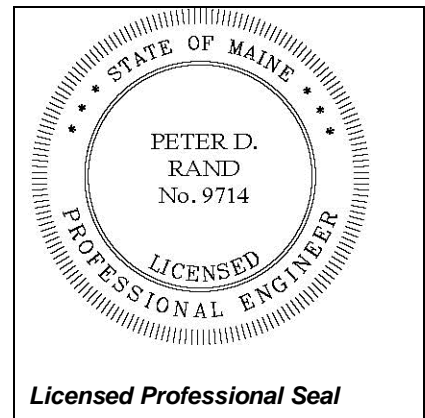
Peter Rand, P.E.
(Type or print name)

SMRT
(Firm Name)



Signature

07/09/2018
Date



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Structural Statement of Special Inspections (Continued)
Special Inspector's/Agent's Final Report

Project: *Maine Medical Center M.M.C. Hutchins Drive Renovation*

Special Inspector or
Agent:

Peter Rand, P.E.
(name)

SMRT
(firm)

Designation: Structural Engineer

To the best of my information, knowledge and belief, the Special Inspections or testing required for this project, and designated for this Inspector/Agent in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Special Inspector or Agent:

Peter Rand

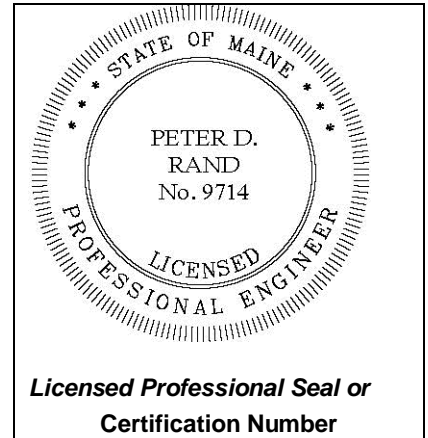
(Type or print name)



Signature

07/09/2018

Date



Structural Schedule of Special Inspections

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided to the Special Inspector for their records. *NOTE VERIFICATION THAT QUALIFIED INDIVIDUALS ARE AVAILABLE TO PERFORM STIPULATED TESTING AND/OR INSPECTION SHOULD BE PROVIDED PRIOR TO SUBMITTING STATEMENT. AGENT QUALIFICATIONS IN SCHEDULE ARE SUGGESTIONS ONLY; FINAL QUALIFICATIONS ARE SUBJECT TO THE DISCRETION OF THE REGISTERED DESIGN PROFESSIONAL PREPARING THE SCHEDULE.*

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge or Special Inspector of Record deems it appropriate that the individual performing a stipulated test or inspection have a specific certification, license or experience as indicated below, such requirement shall be listed below and shall be clearly identified within the schedule under the Agent Qualification Designation.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

Experienced Testing Technician

ETT	Experienced Testing Technician – An Experienced Testing Technician with a minimum 5 years experience with the stipulated test or inspection
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American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.
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International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Other

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Structural Schedule of Special Inspections
SOILS & FOUNDATION CONSTRUCTION

VERIFICATION AND INSPECTION	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
IBC Section 1705.6, 1705.7						
1. Verify existing soil conditions, fill placement and load bearing requirements						
a. Prior to placement of prepared fill, determine that the site has been prepared in accordance with the approved soils report.	N	P	IBC 1705.6		PE/GE, EIT or ETT	
b. During placement and compaction of fill material, verify material being used and maximum lift thickness comply with the approved soils report.	N	C	IBC 1705.6		PE/GE, EIT or ETT	
c. Test in place dry density of compacted fill complies with the approved soils report.	N	P	IBC 1704.7.2		PE/GE, EIT or ETT	
2. Pile foundations:						
a. Observe and record procedures for static load testing of piles.		C	IBC 1705.7		PE/GE, EIT or ETT	
b. Observe and record procedures for dynamic load testing of piles.		C			PE/GE, EIT or ETT	
c. Record installation of each pile and results of load test. Include cutoff and tip elevations of each pile relative to permanent reference.		C			PE/GE, EIT or ETT	
d. Test welded splices of steel piles		C	AWS D1.1		AWS-CWI	
3. Pier foundations: Verify installation of pier foundations for buildings assigned to Seismic Design Category C, D, E or F.	N	C	IBC 1705.7		PE/GE, EIT or ETT	
a. Verify pier diameter and length	N	C			PE/GE, EIT or ETT	
b. Verify pier embedment (socket) into bedrock	N	C			PE/GE, EIT or ETT	
c. Verify suitability of end bearing strata	N	C			PE/GE, EIT or ETT	

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Structural Schedule of Special Inspections CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
IBC Section 1705.7						
1. Inspection of reinforcing steel, including prestressing tendons, and verify placement	Y	P	ACI 318: CH. 20, 25.2, 25.3, 26.1-26.5.3		PE/SE or EIT	
2. Reinforcing bar welding:						
a. verify weldability of reinforcing bars other than ASTM A706	N	P	Welding of Reinf Not Allowed		AWS D1.4, ACI 318: 56.5.4	
b. Inspect single pass fillet welds, maximum 5/16"		P				
c. Inspect all other weld		C				
3. Inspect anchors cast in concrete	N	P	ACI 318 17.8.2		PE/SE or EIT	
4. Inspect anchors post installed in hardened concrete members:						
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	N	C	ACI 318: 17.8.2.4			
b. Mechanical anchors and adhesive anchors not defined in 4.a.	N	P	ACI: 17.8.2			
5. Verifying use of required design mix	Y	P	ACI 318: Ch 19, 26.4.3, 26.4.4		PE/SE or EIT	
6. Prior to concrete placement, fabricate specimens for strength test, perform slump and air content test, and determine the temperature of concrete	Y	C	ASTM C 172 ASTM C 31 ACI 318: 26.4.5, 26.12		ACI-CFTT or ACI-STT	
7. Inspection of concrete and shotcrete placement for proper application techniques	N	C	ACI 318: 26.4.5		PE/SE or EIT	
8. verify maintenance of specified curing temperature and techniques	Y	P	ACI 318: 26.4.7-26.4.9		PE/SE or EIT	
9. Inspection of Prestressed Concrete						
a. Application of prestressing force.	N	C	ACI 318: 18.20		PE/SE or EIT	
b. Grouting of bonded prestressing tendons	N	C	ACI 318: 18.18.4		PE/SE or EIT	
10. Inspect erection of precast concrete members	N	P	ACI 318: Ch 26.8		PE/SE or EIT	
11. Verification of in situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs	N	P	ACI 318: 26.10.2		ACI STT	
12. Inspect formwork for shape, location and dimensions of concrete member being formed.	Y	P	ACI 319: 26.10.1 (b)		PE/SE or EIT	

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Structural Schedule of Special Inspections
MASONRY CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1705.4	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. As masonry construction begins, the following shall be verified to ensure compliance:		INSPECTION ONLY	REQUIRED FOR BEARING MASONRY			
a. Proportions of site prepared mortar.	N	P	ACI530.1, 2.6A		PE/SE or EIT	
b. Construction of mortar joints.	N	P	ACI530.1, 3.3B		PE/SE or EIT	
e. Location of reinforcement and connectors.	N	P	ACI530.1, 3.4, 3.6A		PE/SE or EIT	
d. Prestressing technique.	N	P	ACI530.1, 3.6B		PE/SE or EIT	
e. Grade and size of prestressing tendons and anchorages.	N	P	ACI530.1, 2.4B, 2.4H		PE/SE or EIT	
2. The inspection program shall verify:						
a. Size and location of structural elements.	N	P	ACI530.1, 3.3G		PE/SE or EIT	
b. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.	N	P	ACI530, 1.2.2(e); 2.1.4, 3.1.6		PE/SE or EIT	
c. Specified size, grade and type of reinforcement.	N	P	ACI530, 1.12; ACI530.1, 2.4, 3.4		PE/SE or EIT	
d. Welding of reinforcing bars.	N	E	ACI530, 2.1.10.6.2; 3.2.4 (b)		AWS-CWI	
e. Protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F).	N	P	IBC 2104.3, 2104.4; ACI530.1, 1.8C, 1.8D		PE/SE or EIT	
f. Application and measurement of prestressing force.	N	P	ACI530.1, 3.6B		PE/SE or EIT	
3. Prior to grouting, the following shall be verified to ensure compliance:		NO CMU AT	THIS TIME			
a. Grout space is clean.	N	P	ACI530.1, 3.2D		PE/SE or EIT	
b. Placement of reinforcement and connectors and prestressing tendons and anchorages.	N	P	ACI530, 1.12; ACI530.1, 3.4		PE/SE or EIT	
e. Proportions of site prepared grout and prestressing grout for bonded tendons.	N	P	ACI530.1, 2.6B		PE/SE or EIT	
d. Construction of mortar joints.	N	P	ACI530.1, 3.3B		PE/SE or EIT	
4. Grout placement shall be verified to ensure compliance with code and construction document provisions.	N	E	ACI530.1, 3.5		PE/SE or EIT	
a. Grouting of prestressing bonded tendons.	N	E	ACI530.1, 3.6C		PE/SE or EIT	
5. Preparation of any required grout specimens, mortar specimens and/or prisms shall be observed.	N	E	IBC 2105.2.2, 2105.3; ACI530.1, 1.4		PE/SE or EIT	
6. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.	N	P	ACI530.1, 1.5		PE/SE or EIT	

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Structural Schedule of Special Inspections - STEEL CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1705.2	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Material verification of high strength bolts, nuts and washers:						
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	N	S	Applicable ASTM material specifications; AISC 360-10, Section N5.6		PE/SE or EIT	
b. Manufacturer's certificate of compliance required.	N	S			PE/SE or EIT	
2. Inspection of high strength bolting						
a. Bearing type connections:	N	P	AISC 360-10, Section N5.6		AWS/AISC SSI	
b. Slip critical connections:	N	C or P (method dependent)	IBC Sect 1705.12		AWS/AISC SSI	
3. Material verification of structural steel (IBC Sect 1708.4):						
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	Y	S	ASTM A 6 or ASTM A 568 IBC Sect 1705.12		PE/SE or EIT	
b. Manufacturers' certified mill test reports.	Y	S	ASTM A 6 or ASTM A 568 IBC Sect 1705.12		PE/SE or EIT	
4. Material verification of weld filler materials:						
a. Identification markings to conform to AWS specification in the approved construction documents.	Y	S	AISC 360-10, Section N5.6		PE/SE or EIT	
b. Manufacturer's certificate of compliance required.	Y	S			PE/SE or EIT	
5. Submit current AWS D1.1 welder certificate for all field welders who will be welding on this project.	Y	S	AWS D1.1		PE/SE or EIT	
6. Inspection of welding (IBC 1704.3.1):						
a. Structural steel:						
1) Complete and partial penetration groove welds.	N	C	AWS D1.1		AWS CWI	
2) Multipass fillet welds.	N	C			AWS CWI	
3) Single pass fillet welds > 5/16"	N	C			AWS CWI	
4) Single pass fillet welds < 5/16"	N	P			AWS CWI	
5) Floor deck shear studs	N					
6) Floor and roof deck welds	N	P	AWS D1.3		AWS CWI	
b. Reinforcing steel (IBC Sect 1903.5.2):						
1) Verification of weldability of reinforcing steel other than ASTM A706.			ONLY BY PERMISSION OF SER			
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls and shear reinforcement.	N	C	AWS D1.4 ACI 318: 3.5.2		AWS CWI	
3) Shear reinforcement.	N	C			AWS CWI	
4) Other reinforcing steel.	N	P			AWS CWI	

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7. Inspection of steel frame joint details for compliance (IBC Sect 1704.3.2) with approved construction documents:						
a. Details such as bracing and stiffening.	Y	P			PE/SE or EIT	
b. Member locations.	Y	P			PE/SE or EIT	
c. Application of joint details at each connection.	Y	P			PE/SE or EIT	
d. Floor deck shear stud locations.	N	P				

Structural Schedule of Special Inspection Services

FABRICATION AND IMPLEMENTATION PROCEDURES – STRUCTURAL STEEL

VERIFICATION AND INSPECTION IBC Section 1704.2	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENT S	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Fabrications Procedures: Review of fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents. -OR- 2. AISC Certification	Y	S	Fabricator shall submit one of the two qualifications		PE/SE or EIT	
3. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents.	Y	S	IBC 1704.2		PE/SE or EIT	

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Structural Schedule of Special Inspection Services
FABRICATION AND IMPLEMENTATION PROCEDURES – WOOD TRUSSES

VERIFICATION AND INSPECTION IBC Section 1704.2	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
<p>1. Fabrications Procedures: Review of fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents.</p> <p style="text-align: center;">-OR-</p> <p>2. TPI Inspection Program: Fabricator shall participate in the TPI Quality Assurance Inspection Program, and maintain a copy of the Quality Assurance Procedures Manual, QAP 90. Submit copy of certificate. All trusses shall bear the TPI Registered Mark.</p>	N	S	Fabricator shall submit one of the two qualifications		PE/SE or EIT	
<p>3. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents</p>	N	S	IBC 1704.2.2		PE/SE or EIT	

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Structural Schedule of Special Inspections
WOOD CONSTRUCTION

VERIFICATION AND INSPECTION	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
IBC Section 1705.11.1						
1. Fabrication of diaphragms						
a. Verify wood structural panel sheathing for grade and thickness	N	P	IBC 1705.11.1		PE/SE or EIT	
b. Verify the nominal size of framing members at adjoining panel edges	N	P	IBC 1705.11.1		PE/SE or EIT	
b. Verify the nail or staple diameter and length	N	P	IBC 1705.11.1		PE/SE or EIT	
b. Verify the number of fastener lines	N	P	IBC 1705.11.1		PE/SE or EIT	
b. Verify the spacing between fasteners in each line and at edge margins	N	P	IBC 1705.11.1		PE/SE or EIT	
2. Load Tests for Joist Hangers: Provide evidence of manufacturer's load test in accordance with ASTM D1761 including the vertical load bearing capacity, torsional moment capacity, and deflection characteristics when there is no calculated procedure recognized by the code.	N	S	IBC 1705.11.1 [submit ICBO reports]		PE/SE or EIT	

Structural Schedule of Special Inspections
SPRAYED FIRE-RESISTANT MATERIALS

VERIFICATION AND INSPECTION	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
IBC Section 1704.14						
Submit copies of approved manufacturer's instructions for preparation, application and curing	N	S	-	-	-	
1. Prior to application of sprayed fire resistant materials, surface preparation shall be observed to verify compliance with manufacturer's written instructions.	N	C	IBC 1704.10.1	-	ICC-SFSI	-
2. Substrate shall have a minimum ambient temperature before and after application as specified in the approved manufacturer's written instructions.	N	-	IBC 1704.10.2	-	ICC-SFSI	-

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Proper ventilation of area shall be maintained as required by the approved manufacturer's written instructions.	N	P	IBC 1704.10.2	-	ICC SFSI	-
Thickness of applied fire resistant materials applied to structural elements shall be measured to verify minimums as required by the approved fire resistant design.	N	-	Thickness shall be determined in accordance with ASTM E605.	-	ICC SFSI	-
Individually measured thickness which exceeds the design thickness specified by 1/4" or more shall be recorded as the thickness specified + 1/4"; for design thicknesses 1" or greater the minimum allowable individual thickness shall be the design thickness minus 1/4"; for design thickness less than 1", the minimum allowable individual thickness shall be the design thickness minus 25%.						-
1. Floor, roof and wall assemblies	N	P	average of not less than 4 measurements for each 1,000 sq. ft. of sprayed area	-	ICC SFSI	-
2. Structural framing members	N	P	test a minimum of 25% of framing members on each floor	-	ICC SFSI	-
Density of sprayed fire resistant material shall be not less than specified, test in accordance with ASTM E 605.	N	P	-	-	ICC SFSI	-
Bond strength shall not be less than 150 psf; test in accordance with ASTM E 736 of in place samples	N	-	-	-	ICC SFSI	-
1. Floor, roof and wall assemblies	N	P	one sample per floor per 10,000 sq. ft. of sprayed area	-	ICC SFSI	-
2. Structural framing members	N	-	one sample of each type of framing member per floor per 10,000 sq. ft. of sprayed area	-	ICC SFSI	-

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Structural Schedule of Special Inspections
SEISMIC RESISTANCE - STRUCTURAL

VERIFICATION AND INSPECTION	Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETE D
IBC Section 1707						
1. Special inspections for seismic resistance. Special inspection as specified in this section is required for the following:			Seismic Design Category: B			
a. The seismic force resisting systems in structures assigned to Seismic Design Category C, D, E or F	N	P	IBC 1705.12.2		PE/SE or EIT	
2. Structural steel: Continuous special inspection for structural welding in accordance with AISC 341.	N	P	IBC 1705.13		AWS-CWI	
3. Structural wood:						
a. Continuous special inspection during field gluing operations of elements of the seismic force resisting system.	N	C	IBC 1705.12.2		PE/SE or EIT	
b. Periodic special inspections for nailing, bolting, anchoring and other fastening of components within the seismic force resisting system, including drag struts, braces and hold downs	N	P	IBC 1705.12.2		PE/SE or EIT	
4. Cold formed steel framing: Periodic special inspections during welding operations of elements of the seismic force resisting system. Periodic special inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic force resisting system, including struts, braces, and hold downs	N	N	IBC 1705.11.2			
4. Seismic isolation system. Provide periodic special inspection during the fabrication and installation of isolator units and energy dissipation devices if used as part of the seismic isolation system	N	N	IBC 1705			

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Quality Assurance Plan – Seismic and Wind

QUALITY ASSURANCE FOR SEISMIC RESISTANCE CHECK LIST [IBC 1705.12]

Seismic Design Category	B (NA)
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FOR SEISMIC DESIGN CATEGORY C OR HIGHER:

Structural:

The seismic-force-resisting systems

Steel Braced Frames and associated connections/anchorage

Steel Moment Frames and associated connections

Shear walls: CMU Wood Concrete Diaphragms: Floor Roof

Other:

QUALITY ASSURANCE FOR WIND RESISTANCE CHECK LIST [IBC 1706]

Wind Exposure Category	B (NA)
-------------------------------	-------------------

REQUIRED	NOT REQUIRED	NOT APPLICABLE	QUALITY ASSURANCE PLAN REQUIREMENTS (A Quality Assurance Plan is required where indicated below)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	In wind exposure Categories B, where V_{asd} as determined in accordance with Section 1609.3.1 is 120 miles per hour (mph) (52.8 <i>m/sec</i>) or greater.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	In wind exposure Categories C and D, where V_{asd} as determined in accordance with Section 1609.3.1 is 110 mph (49 <i>m/sec</i>) or greater.

Prepared by:



07/09/2018

Signature

Date

Building Code Official's Acceptance:

Signature

Date

Maine Medical Center M.M.C.
Hutchins Drive Renovation

Issue For Construction
December 21, 2017

Contractor's Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated in the Quality Assurance Plan must submit a Statement of Responsibility. The Statement of Responsibility is required for Seismic Design Category C or higher. Make additional copies of this form as required.

Project: *Maine Medical Center M.M.C. Hutchins Drive Renovation*

Contractor's Name: Consigli Construction Co

Address: 15 Franklin St, Portland ME 04101

Description of designated building systems and components included in the Statement of Responsibility:

Contractor's Acknowledgment of Special Requirements

I hereby acknowledge that I have received, read, and understand the Quality Assurance Plan and Special Inspection program.

I hereby acknowledge that control will be exercised to obtain conformance with the construction documents approved by the Building Official.



7/9/18

Signature

Date

Contractor's Provisions for Quality Control

Procedures for exercising control within the contractor's organization, the method and frequency of reporting and the distribution of reports is attached to this Statement.

Identification and qualifications of the person(s) exercising such control and their position(s) in the organization are attached to this Statement.

1862 - 102 Hutchins Dr Renovation**Project Quality Kickoff - Agenda**

Meeting Date: 02/28/2018

**CONSIGLI PROJECT TEAM**

PX:	Dave Thomas	GEN SUPT:	Larry Choinard
PM / APM:	Travis Kirby	SUPT:	Stacey Harris
PE:	Mike Swett	ASUPT:	
OTHER:	Phil Meyer		

CCIP / Residential Condo Project - requires enhanced plan with additional testing / documentation

SITE-SPECIFIC QUALITY RISK ITEMS**Exterior Quality Risks***Top Risks / Key Areas of Focus / Specific Concerns*

<i>Top Risks / Key Areas of Focus / Specific Concerns</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Bringing UG conduit into the building	Review pathway and procedures with electrician and 3rd tier excav. Sub	4/16/2018
<input type="checkbox"/> Using loading docks/OH doors during construction	Schedule and monitor deliveries / protect critical areas during demo	3/5/2018
<input type="checkbox"/> Moving dumpsters around on existing pavement	Pre-con exterior conditions documented to ID existing damage	3/5/2018
<input type="checkbox"/> Roof damage from mechanical equipment installation	Pre- and post-installation roof inspections	6/4/2018
<input type="checkbox"/>		

Interior Quality Risks*Top Risks / Key Areas of Focus / Specific Concerns*

<i>Top Risks / Key Areas of Focus / Specific Concerns</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Demo and excavation for sewage pump pit	Review prep expectations with demo sub / assist with layout	3/12/2018
<input type="checkbox"/> Coordination of pathways to owner furniture and equipment	Make sure owner equipment layouts are finalized before rough-in	4/16/2018
<input type="checkbox"/> Interface between ceilings/GWB and glass walls	Get owner-supplied glass wall shops early to review and coordinate	4/2/2018
<input type="checkbox"/> ACT removal management	Push LEAN practices for salvaged mat'l storage / supplement w/ Riggs	3/5/2018
<input type="checkbox"/> Owner quality expectations with existing conditions	Matterport used to document existing / ID ways to refresh areas	5/15/2018

MEP+FP Quality Risks*Top Risks / Key Areas of Focus / Specific Concerns*

<i>Top Risks / Key Areas of Focus / Specific Concerns</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Integration of HVAC with existing controls	Coordinate submittal review and control descriptions with Basix	3/26/2018
<input type="checkbox"/> Low voltage cable demolition	Pre-identify active HVAC control cables to remain with mech. Sub	3/19/2018
<input type="checkbox"/> Tough commissioning agent	Pre-commissioning meeting to be held at start of rough-in	3/30/2018
<input type="checkbox"/> Existing equipment startup/maintenance	Coordinate with JB Brown on startups	3/30/2018
<input type="checkbox"/>		

Riggs Quality Risks + Opportunities*Top Risks / Key Areas of Focus / Specific Concerns*

<i>Top Risks / Key Areas of Focus / Specific Concerns</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Firestopping	Added scope from original CDs / Opportunity to prove our skills to MMC	5/21/2018
<input type="checkbox"/>		

SITE-SPECIFIC QUALITY PLAN REQUIREMENTS**Key Contractual Mockups**

<i>Key Contractual Mockups</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> None		
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>		

Additional Recommended Mockups / Field Trips

<i>Additional Recommended Mockups / Field Trips</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Possible site visit millwork	Small sub on millwork scope	6/4/2018
<input type="checkbox"/> Warehouse flooring mockup	Conduct mockup early to account for potential design changes	4/1/2018

Key Pre-op Meetings (Separate Quality / Safety Mtgs)

<i>Key Pre-op Meetings (Separate Quality / Safety Mtgs)</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Pre-Demo	With Architect, Owner, Demo, and MEP Subs	3/1/2018
<input type="checkbox"/> Pre-Commissioning	With Owner's CA / Develop plan for identification of extra work/changes	3/30/2018
<input type="checkbox"/> Flooring	Large scope - demo, prep, supply, install + warehouse	3/23/2018
<input type="checkbox"/> IT/AV	Get design coordinated early between MMC and SMRT	3/30/2018

Material Verification Plan

<i>Material Verification Plan</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Develop plan w/ team roles (min. 2 items verified / week per person)	Forecasting w/ MDL+4WLA / Utilize MDL2 to verify multiple deliveries	3/26/2018

Third Party Testing & Inspections

<i>Third Party Testing & Inspections</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Develop plan w/ team roles (confirm testing agents, key inspections)	List established / Document and schedule through Procure	3/9/2018

Occupancy Turnover & Punch List

<i>Occupancy Turnover & Punch List</i>	<i>Action Items / Upcoming Quality Milestones</i>	<i>Target Date</i>
<input type="checkbox"/> Develop plan w/ team roles	Coordinate sequencing and sched with Owner's vendors / CofO checklist	5/14/2018

CONCRETE SPECIAL INSPECTIONS

- 1) CONCRETE PRE-PLACEMENT INSPECTIONS
- 2) CONCRETE TEST REPORTS
- 3) REBAR MILL CERTIFICATIONS



Concrete Construction Observation Report

Project Name:	102 Hutchins Dr. Renovations	Project No. :	18-0081.1
Location:	102 Hutchins Dr. Portland ME	Date:	4-3-18
Client / Client's Rep:	Maine Medical Center/Lonnie Michaud	S.W.COLE Rep. :	P. Phelan
Weather:	Interior placement High 50's	Arrived on Site:	9:30am
Placement Type:	Footing <input type="checkbox"/> Wall <input type="checkbox"/> Column <input type="checkbox"/> Slab <input checked="" type="checkbox"/> Other <input type="checkbox"/>	Left Site:	10:30am
Placement Location:	Sump pit slab		

Pre-Placement Observations

Bar size and location (diameter, length, bend and coverage)

Yes No

#4 12" o.c.e.w with 1 #7 continuous on perimeter and #3 hooked dowels for wall at 18" o.c.

Splicing (type, overlap)

Yes No

No splicing required

Stability (wiring, chairs, spacers)

Yes No

Concrete Bricks and wiring as required

Reinforcement conditions (cleanliness, temperature, etc.)

Yes No

Clean and ambient

Embedments and anchor bolts installed

Yes No

Wall dowels

Soil subgrade prepared in accordance with project specifications

Yes No

By others

Referenced Drawings

Harris Rebar - Pump Pit

Date: 3/14/18

Page(s): R01

Rev.: Mark up

Bar Reinforcing Grade & Type

ASTM: A615

GRADE: 60

Concrete Placement Observations

Required mix used

Yes No

Not on-site – see notes

Concrete properly conveyed to all areas of placement

Yes No

Internal vibration / consolidation of concrete

Yes No

Even layering around openings and embedments

Yes No

Post placement observations (finishing, curing, etc.)

Yes No

Field Testing of Concrete Performed

Yes No

*CYLINDER SET NO:

←*refer to associated concrete test report

Non-Conformance Items

Person Notified:

Yes No

Notes:

SW Cole was on-site as requested for reinforcement observations and field testing of concrete. The reinforcements appeared to meet the requirements as listed in available project documents. At the time of observation it was noted that some areas of the subgrade had been exposed to free water and foot traffic during construction resulting in surficial disturbance to the subgrade soils. We discussed our observations with Consigli and the disturbed material was removed by hand until undisturbed native silty clay was exposed. The concrete did not arrive on time and Consigli opted to proceed with the placement (less than 5 yards) and will schedule testing for the next placement.

Attachments: PhotosReviewed by: 





Concrete Construction Observation Report

Project Name:	102 Hutchins Dr. Renovations	Project No. :	18-0081.1
Location:	102 Hutchins Dr. Portland ME	Date:	4-9-18
Client / Client's Rep:	Maine Medical Center/Lonnie Michaud	S.W.COLE Rep. :	A. Carr
Weather:	Interior placement High 50's	Arrived on Site:	9:30am
Placement Type:	Footing <input type="checkbox"/> Wall <input checked="" type="checkbox"/> Column <input type="checkbox"/> Slab <input type="checkbox"/> Other <input type="checkbox"/>	Left Site:	10:45am
Placement Location:	Sump pit/Bathroom		

Pre-Placement Observations

Bar size and location (diameter, length, bend and coverage)

Yes No

#4 12" o.c.e.w with 1 #7 continuous on perimeter and #3 hooked dowels for wall at 18" o.c.

Splicing (type, overlap)

Yes No

No splicing required

Stability (wiring, chairs, spacers)

Yes No

Positioners and wiring as required

Reinforcement conditions (cleanliness, temperature, etc.)

Yes No

Clean and ambient

Embedments and anchor bolts installed

Yes No

Slab dowels

Soil subgrade prepared in accordance with project specifications

Yes No

By others

Referenced Drawings

Harris Rebar - Pump Pit

Date: 3/14/18

Page(s): R01

Rev.: Mark up

Bar Reinforcing Grade & Type

ASTM: A615

GRADE: 60

Concrete Placement Observations

Required mix used

Yes No

4000 psi w/air design

Concrete properly conveyed to all areas of placement

Yes No

Wheelbarrow

Internal vibration / consolidation of concrete

Yes No

Mechanically

Even layering around openings and embedments

Yes No

N/O

Post placement observations (finishing, curing, etc.)

Yes No

N/O

Field Testing of Concrete Performed

Yes No

*CYLINDER SET NO: 117-1

←*refer to associated concrete test report

Non-Conformance Items

Person Notified: _____

Yes No

Notes:

SW Cole was on-site as requested for reinforcement observations and field testing of concrete. The reinforcements appeared to meet the requirements as listed in available project documents. We discussed our observations and test results with Consigli. A set of five concrete cylinders were cast to be brought back to the lab for compressive strength testing.

Attachments: Photos

Reviewed by: _____







Report of Concrete Compressive Strength

ASTM C-31 & C-39

Project Name: Portland ME - 201 Hutchins Drive Renovations -
Construction Materials Testing Services

Project Number: 18-0081.1

Client: Maine Medical Center

Client Contract Number:

General Contractor:

Concrete Supplier: AUBURN CONCRETE

PLACEMENT INFORMATION

Date Cast: 4/9/2018 **Time Cast:** 10:18 **Date Received:** 4/10/2018

Placement Location: SUMP PIT/ BATHROOM

Placement Method: WHEELBARROW

Placement Vol. (yd³): 4

Cylinders Made By: ADAM CARR

Aggregate Size (in): 3/4

INITIAL CURING CONDITIONS

Temperatures

Minimum (°F) NT **Maximum (°F)** NT

DELIVERY INFORMATION

Admixtures: MASTER GLENIUM 7500 /
MASTER AIR AE200

TEST RESULTS

Slump (in) (C-143): 5 3/4

Load Number: 1 **Batch**
9:32

Air Content (%) (C-231) 4.8

Mixer Number 115

Air Temp (°F): 44

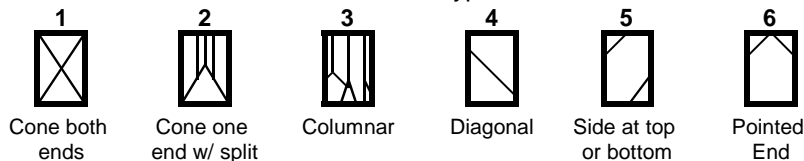
Ticket Number 222225 **Arrive**
10:10

Conc. Temp (°F) (C-1064): 59

Cubic Yards: 4 **Depart**
10:43

Cylinder Designation	Cylinder Weight (lbs)	Cylinder Diameter (in)	Cross Sectional Area(In) ²	Date Of Test	Cure Type	Age (days)	Fracture Type	Load (kips)	Strength (psi)
117-1A	8.35	4.00	12.54	4/16/2018	Lab	7	4	46.0	3670
117-1B	8.40	4.01	12.63	4/16/2018	Lab	7	4	51.0	4040
117-1C	8.35	4.00	12.54	5/7/2018	Lab	28	5	59.4	4740
117-1D	8.40	4.02	12.66	5/7/2018	Lab	28	4	61.0	4820
117-1E	8.30			Hold	Lab				

Fracture Types



Remarks:



Certificate of Compliance

Barker Steel LLC
PO Box 553
450 US Route 4
Canaan, NH 03741
USA

Job No.: 33506617
Job Description: Maine Medical Pump Pit
Shipping Location: 335-CAN
Bill of Lading No. BL226856B
Bill of Lading Date: 03/28/18
Shipping Agent: Ross Express

Mail-To: Riggs Contracting inc
15 Franklin St
Portland, ME 04101
USA

Ship-To: Pump Pit
Hutchins Drive
Portland, ME

<u>Release No.</u>	<u>Description</u>	<u>Bar Weight (Lbs)</u>
0001F	Pit Reinf.	509
Total:		509

<u>Heat No.</u>	<u>Steel Supplier</u>	<u>Grade</u>	<u>Grade Group Description</u>	<u>Bar Size</u>
KN17105636	Nucor Steel Kankakee Inc	60B	A615-60 Black	3
AU16103808	Nucor Steel Auburn Inc.	60B	A615-60 Black	7
AU17104025	Nucor Steel Auburn Inc.	60B	A615-60 Black	6
AU17106157	Nucor Steel Auburn Inc.	60B	A615-60 Black	4

BARKER STEEL certifies that the above material conforms to all current job plans and specifications. We certify that all manufacturing processes for this steel have occurred in the United States.

BY: Martin E Wahl

NUCOR
NUCOR STEEL AUBURN, INC.

Mill Certification
12/27/2017

MTR #: Y1-246526
 25 Quarry Road
 AUBURN, NY 13021
 (315) 253-4561
 Fax: (315) 253-8441

Sold To: BARKER STEEL LLC
 334 S WINDSOR
 30 TALBOT LN
 SOUTH WINDSOR, CT 06074

Ship To: BARKER - SO WINDSOR
 30 TALBOT LN
 SOUTH WINDSOR, CT 06074

Customer P.O.	PO105341B D01-18	Sales Order	344612.1
Product Group	Rebar	Part Number	900000104804200
Grade	ASTM A615/A615M-16 GR 60 AASHTO M31-15	Lot #	KN1710563601
Size	10/#3 Rebar	Heat #	KN17105636
Product	10/#3 Rebar 40' A615M GR420 (Gr60)	B.L. Number	Y1-501634
Description	A615M GR 420 (Gr60)	Load Number	Y1-246526
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 11/4/2017 Melt Date: 10/31/2017 Qty Shipped LBS: 24,815 Qty Shipped Pcs: 1,650

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb
0.36%	0.83%	0.015%	0.051%	0.17%	0.46%	0.21%	0.20%	0.073%	0.0027%	0.001%

Yield 1: 67,535psi

Tensile 1: 104,285psi

Elongation: 14.5% in 8"(% in 203.3mm)

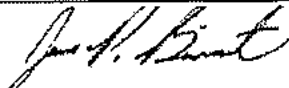
Bend OK

Weight Variation -002.7%

Avg Deformation Height: 0.028in

Specification Comments:

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATE.
 ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.



Jim Biernat
 Division Metallurgist

NUCOR
NUCOR STEEL AUBURN, INC.

Mill Certification
11/17/2017

MTR #: Y1-244695
 25 Quarry Road
 AUBURN, NY 13021
 (315) 253-4561
 Fax: (315) 253-8441

Sold To: BARKER STEEL LLC
 335 CANAAN
 450 US RT 4
 CANAAN, NH 03741

Ship To: BARKER CANAAN - RAIL
 C/O RIVERSIDE RELOAD
 46 STEAMTOWN RD
 BELLOWS FALLS, VT 05101

Customer P.O.	PO105029B D10-17	Sales Order	343688.1
Product Group	Rebar	Part Number	900000137204200
Grade	ASTM A615/A615M-16 GR 60 AASHTO M31-15	Lot #	AU1710615701
Size	13/#4 Rebar	Heat #	AU17106157
Product	13/#4 Rebar 60' A615M GR420 (Gr60)	B.L. Number	Y1-499579
Description	A615M GR 420 (Gr60)	Load Number	Y1-244695
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 10/17/2017 Melt Date: 9/27/2017 Qty Shipped LBS: 53,588 Qty Shipped Pcs: 1,337

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb
0.39%	1.13%	0.040%	0.055%	0.20%	0.35%	0.12%	0.26%	0.032%	0.0020%	0.003%

Yield 1: 69,700psi

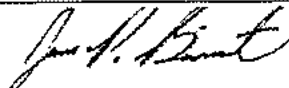
Tensile 1: 103,700psi

Elongation: 16.88% in 8"(% in 203.3mm)

Bend OK

Specification Comments:

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.



Jim Biernat
 Division Metallurgist

NUCOR
NUCOR STEEL AUBURN, INC.

Mill Certification
7/13/2017

MTR #: Y1-238510
 25 Quarry Road
 AUBURN, NY 13021
 (315) 253-4561
 Fax: (315) 253-8441

Sold To: BARKER STEEL LLC
 341 DEERFIELD
 73 OLD STSTE RD
 SOUTH DEERFIELD, MA 01373

Ship To: BARKER - SO DEEFIELD - RAIL
 SIDING C/L
 ROUTES 5 & 10
 SOUTH DEERFIELD, MA 01373

Customer P.O.	PO104679B D07-17	Sales Order	339561.3
Product Group	Rebar	Part Number	900000197204200
Grade	42013 - ASTM A615/A615M-16 GR 60 AASHTO M31-15	Lot #	AU1710402501
Size	19/#6 Rebar	Heat #	AU17104025
Product	19/#6 Rebar 60' A615M GR420 (Gr60)	B.L. Number	Y1-493203
Description	A615M GR 420 (Gr60)	Load Number	Y1-238510
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 7/13/2017 Melt Date: 6/27/2017 Qty Shipped LBS: 46,960 Qty Shipped Pcs: 510

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	Sn
0.43%	1.14%	0.030%	0.034%	0.19%	0.33%	0.11%	0.24%	0.026%	0.0030%	0.001%	0.013%

Yield 1: 72,500psi

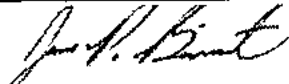
Tensile 1: 112,500psi

Elongation: 12.75% in 8"(% in 203.3mm)

Bend OK

Specification Comments:

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.



Jim Blernat
 Division Metallurgist

NUCOR
NUCOR STEEL AUBURN, INC.

Mill Certification
6/21/2016

MTR #: Y1-221466
 25 Quarry Road
 AUBURN, NY 13021
 (315) 253-4561
 Fax: (315) 253-8441

Sold To: BARKER STEEL LLC
 335 CANAAN
 450 US RT 4
 CANAAN, NH 03741

Ship To: BARKER CANAAN - RAIL
 C/O RIVERSIDE RELOAD
 46 STEAMTOWN RD
 RIVERSIDE, VT 05101

Customer P.O.	PO102491B	Sales Order	326489.1
Product Group	Rebar	Part Number	900000227204200
Grade	ASTM A615/A615M-14 GR 60[420] AASHTO M31-07	Lot #	AU1610380801
Size	22#7 Rebar	Heat #	AU16103808
Product	22#7 Rebar 60' A615M GR420 (Gr60)	B.L. Number	Y1-475159
Description	A615M GR 420 (Gr60)	Load Number	Y1-221466
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 6/19/2016 Melt Date: 6/18/2016 Qty Shipped LBS: 68,680 Qty Shipped Pcs: 560

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb
0.39%	1.04%	0.022%	0.055%	0.22%	0.32%	0.13%	0.20%	0.039%	0.0120%	0.001%

Yield 1: 70,100psi

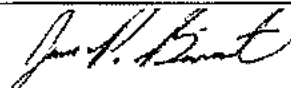
Tensile 1: 104,800psi

Elongation: 13.94% in 8"(% in 203.3mm)

Bend OK

Specification Comments:

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.



Jim Biernat
 Division Metallurgist

STEEL SPECIAL INSPECTIONS

- 1) STATEMENT OF COMPLETED WORK
- 2) STATEMENT OF AISC FABRICATION PRACTICES
- 2) STRUCTURAL STEEL MILL CERTIFICATIONS
- 3) WELDERS CERTIFICATIONS



May 22, 2018
SMRT Job No.: 17123

Brian Stephens
Code Enforcement Officer
City of Portland
389 Congress Street
Room 315
Portland, ME 04101

Dear Mr. Stephens,

Brian Steele, Structural Engineering Intern, was on-site on Thursday, May 3rd 2018 to review the structural modifications to the existing building located at 102 Hutchins Drive in Portland, Maine. All of the structural work appears to be in conformance with the contract documents and is considered complete.

Sincerely,
SMRT Architects and Engineers

A handwritten signature in black ink, appearing to read 'Peter D. Rand', written over a horizontal line.

Peter D. Rand, P.E.
Structural Engineer



A handwritten signature in black ink, appearing to read 'Brian T. Steele', written over a horizontal line.

Brian T. Steele, E.I.
Structural Engineering Intern

144 Fore Street
Portland, ME 04101
P 207.772.3846 f 207.772.1070 email: info@smrtinc.com

LMC Light Iron, Inc.

151 E Range Road, P.O. Box 521

Limerick, Maine 04048

Telephone: (207) 793-9957 Fax: (207) 793-3919

July 3, 2018

American Aerial
75 York St.
Portland, ME 04101

Re: MMC
Hutchins Dr.
Portland, ME 04101

Gentlemen:

Even though LMC Light Iron, Inc., does not participate in the AISC Program, we do incorporate and follow their guidelines for detailing and fabrication, along with our welders being A.W.S. certified per D1.1-2000.

All of our material suppliers provide us with the documents that assure full compliance with the specifications for each job.

Our detailing software is based completely on the AISC Manual of Steel Construction written for Auto-Cadd, which generates all of our shop drawings.

Shop drawings used on the shop floor also serve as record keeping for each project. Typically a drawing will note the following information:

- * Date and initials of the person who did the material layout.
- * Date and sign off from Q.C. indicating layout has been checked.
- * Date and initials of fabricator showing component is complete.

If welding is required on a fabrication, the weld size and a visual inspection is also done prior to painting and shipping.

Before shipping, a separate shop list is written up using the shop drawings for reference. This allows final review of notes on fabrication prior to shipping. This second ship list is also used to do a piece count during loading.

If you have any further questions, please do not hesitate to call.

Sincerely,

Stephen D. Hamilton
President
SDH/km

PO #:



Tue Jul-03-2018

From:

Barbara
Barbara Couming
62 Maple Street

Manchester, NH, USA
03103
603-626-7351
bcouming@millmetals.net

To:

..

Document Summary Page

The MTR's are printed in the following order:

#	Heat	Item ID	Description
1	L111491	A4312516	ANGLE HR 4 X 3-1/2 X 5/16

BAYOU STEEL GROUP

BAYOU STEEL GROUP
 (LAPLACE)
 138 HWY 3217
 LaPlace LOUISIANA 70068
 Telephone (985) 652-4900

MATERIAL CERTIFICATION REPORT

INFRA METALS CO
 WALLINGFORD, CT
 55 Pent Highway
 WALLINGFORD CT 06492

INFRA METALS CO
 WALLINGFORD, CT
 55 Pent Highway
 WALLINGFORD CT 06492
 USA

Tested in Accordance
 With: ASTM A6

Sales Order 184987-6 Date 05/07/2018
 Product Unequal Angles Cust 40005322
 Heat NO. L111491 Grade A3652950
 Cust.Mat. Length 40' 00"
 Size U4X3-1/2X5/16X7.7 * LP

PO: NE-554653
 Ref. 81008341
 Pieces 105
 Weight 32340

A4312516 @ 40'

CHEMICAL ANALYSIS		MECHANICAL PROPERTIES	TEST 1		TEST 2		TEST 3	
			IMPERIAL	METRIC	IMPERIAL	METRIC	IMPERIAL	METRIC
C	0.11	YIELD STRENGTH	52200 PSI	360 MPa	51800 PSI	357 MPa		
Mn	0.82	TENSILE STRENGTH	73700 PSI	508 MPa	73600 PSI	507 MPa		
P	0.015	ELONGATION	30 %	30 %	29 %	29 %		
S	0.025	GAUGE LENGTH	8 IN	203 mm	8 IN	203 mm		
Si	0.20	BEND TEST DIAMETER						
Cu	0.42	BEND TEST RESULTS						
Ni	0.22	SPECIMEN AREA						
Cr	0.34	REDUCTION OF AREA						
Mo	0.066	IMPACT STRENGTH						
Cb	0.010							
V	0							
B								
Al								
Sn	0.013							
N								
Ti								
Cl	6.2							
CE	0.37							

IMPACT STRENGTH	IMPERIAL	METRIC	INTERNAL CLEANLINESS		GRAIN SIZE
AVERAGE			SEVERITY		HARDNESS
TEST TEMP			FREQUENCY		GRAIN PRACTICE
ORIENTATION			RATING		REDUCTION RATIO

This heat makes the following grades: A36-14, A52950-14, G40.21-CSA50W, CSA44W, A70936-13a, ASME SA36-2010, A57250-12a, A70950-13a, and the following AASHTO M270 Grades: 36, 50, and 345. Heat is free of Mercury contamination in the process. This material is Hot Rolled Carbon Steel.EN10204-3.1B.
 La décision d'utilisation a été prise automatiquement

I hereby certify that the material test results presented here are from the reported heat and are correct. All tests were performed in accordance to the specification reported above. All steel is electric arc furnace melted (billets), manufactured, processed, tested in the U.S.A with satisfactory results. No weld repair was performed on this heat.

Notarized upon request:
 Sworn to and subscribed before me on this 7th day of May, 2018

Signed Mark Edwards
 MARK EDWARDS, QUALITY ASSURANCE SUPERVISOR

Notary Public _____ Parish/County _____

Direct any questions or necessary clarifications concerning this report to the Sales Department 1-800-535-7692(USA)

JUN 27 2018
 Shipper No. Heat Number L111491
 1304402
 Invoice No. 1332177
 Customer PO# 76713
 Infra Metals
 MILL METALS INCORPORATED

W1216

ArcelorMittal Gipuzkoa, S.L.U.
 ArcelorMittal Europe - Long Products
 CARRETERA MADRID - IRUN, KM. 419
 20212 OLABERRIA (Gipuzkoa)
 TELEF. (943) 80.50.00 - FAX (943) 88.04.04



MILL TEST CERTIFICATE

OLA P-57119

DISCHARGE ADDRESS		CUSTOMER	
Acier Leroux div of Russel Metals I 1026 BOUL DES ENTREPRISES TERREBONNE CANADA		ArcelorMittal Internat 1 South Dearborn Street/13th Floor CHICAGO ESTADOS UNIDOS	
SHIPPED AND CERTIFIED BY		CREDIT NUMBER	PORT OF LOADING
ARCELORMITTAL OLABERRIA CARRETERA MADRID - IRUN, KM. 419 20212 OLABERRIA (Gipuzkoa) TELEF. (943) 80.50.00 - FAX (943) 88.04.04			PASAJES, SPAIN
		PORT OF DISCHARGE	VESSEL
		THREE RIVERS	VECTIS OSPREY-THREE RIVERS
OUR REFERENCE	CONTRACT NUMBER	ORDER NUMBER	DATE
P1704510	E-61644/1700026774	M 96015609	18/12/2017

AMERICAN WIDE FLANGE BEAMS

"WE HEREBY CONFIRM THAT THE MATERIAL REPORTED IN THE MILL TEST CERTIFICATE (NUMBER ABOVE MENTIONED) WAS MELTED AND MANUFACTURED IN SPAIN"

SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
+//BLUE							
Instrucciones de carga: embarque en bodega							
Expedición por barco mín. T: 040							
WF BEAMS 12x16	35'	1	20	20	5080	5.080	177043
WF BEAMS 12x16	40'	1	17	17	4935	4.935	177042
WF BEAMS 12x16	45'	1	16	16	5225	5.225	177052
WF BEAMS 12x16	50'	2	14	28	5080	10.160	177054
WF BEAMS 12x16	55'	1	12	12	4790	4.790	177052
TOTAL BUNDLES		6		TOTAL WEIGHT		30.190 Kg.	

A02 EN 10204/3.1		CSA G40.21 50WIASTM A572 G50/A992/A6-16a														(80/602/803) A02	
COLADA HEAT		COMPOSICION QUIMICA (%) CHEMICAL COMPOSITION (%)															
		C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	Al	CEV		
177042		.074	.910	.180	.016	.022	.056	.120	.150	.026	.380	.008	.015	.003	.30		
177043		.071	.920	.180	.021	.022	.058	.170	.140	.028	.350	.009	.014	.002	.30		
177052		.072	.910	.180	.021	.022	.053	.130	.210	.039	.340	.009	.015	.003	.30		
177054		.078	.880	.160	.024	.021	.054	.120	.200	.035	.330	.008	.016	.003	.30		
MATERIAL SIZE		COLADA HEAT		PROPIEDADES MECANICAS MECHANICAL PROPERTIES													
				ReH MPa				Rm MPa				A5 %					
WF BEAMS 12x16		177042		423				431				508					
WF BEAMS 12x16		177043		426				410				515					
WF BEAMS 12x16		177052		426				418				529					
WF BEAMS 12x16		177054		439				431				537					
				514				513				22.6					
				22.9				22.9				23.1					
				23.3				23				23					
				23				22.9				23					



LEROUX

W1214

AS:

ArcelorMittal Gipuzkoa, S.L.U.
ArcelorMittal Europe - Long Products
CARRETERA MADRID - IRUN, KM. 419
20212 OLABERRIA (Gipuzkoa)
TELEF: (943) 80.50.00 - FAX (943) 88.04.04



MILL TEST CERTIFICATE

4 análisis
D01: Certificamos que los aceros arriba indicados han sido satisfactoriamente probados de acuerdo con la especificación.
B06: Marca AMO.

OLA P-57119

Responsable del Departamento de Calidad Z01

José María Calindo

W1434

ArcelorMittal Gipuzkoa, S.L.U.
 ArcelorMittal Europe – Long Products
 CARRETERA MADRID - IRUN, KM. 419
 20212 OLABERRIA (Gipuzkoa)
 TELEF. (943) 80.50.00 - FAX (943) 88.04.04



MILL TEST CERTIFICATE

OLA P-57118

DISCHARGE ADDRESS:		CUSTOMER:	
Acelor Leroux div of Russel Metals I 1026 BOUL DES ENTREPRISES TERREBONNE CANADA		ArcelorMittal Internat 1 South Dearborn Street/13th Floor CHICAGO ESTADOS UNIDOS	
SHIPPED AND CERTIFIED BY:		CREDIT NUMBER:	PORT OF LOADING:
ARCELORMITTAL OLABERRIA CARRETERA MADRID - IRUN, KM. 419 20212 OLABERRIA (Gipuzkoa) TELEF. (943) 80.50.00 - FAX (943) 88.04.04			PASAJES, SPAIN
		PORT OF DISCHARGE:	VESSEL:
		THREE RIVERS	VECTIS OSPREY-THREE RIVERS
OUR REFERENCE:	CONTRACT NUMBER:	ORDER NUMBER:	DATE:
P1704510	E-61542/1700026784	M 96016608	18/12/2017

AMERICAN WIDE FLANGE BEAMS

"WE HEREBY CONFIRM THAT THE MATERIAL REPORTED IN THE MILL TEST CERTIFICATE (NUMBER ABOVE MENTIONED) WAS MELTED AND MANUFACTURED IN SPAIN"

SIZE	LENGTH	BUNDLES	PIECES BUNDLES	TOTAL PIECES	WEIGHT BUNDLES	TOTAL WEIGHT	HEAT
+/BLUE							
Instrucciones de carga: embarque en bodega							
Expedicion por barco min. T: 040							
WF BEAMS 14x34	35'	1	6	6	3239	3.239	173072
WF BEAMS 14x34	35'	1	6	6	3239	3.239	173073
WF BEAMS 14x34	40'	1	6	6	3701	3.701	174775
WF BEAMS 14x34	50'	3	6	18	4627	13.881	177272
WF BEAMS 14x34	55'	3	6	18	5090	15.270	177272
WF BEAMS 14x34	60'	3	5	15	4627	13.881	177272

TOTAL BUNDLES 12 TOTAL WEIGHT 53.211 Kg.

A01 EN 10204/3.1		CSA G40.21 50W/ASTM A572 G50/A992/A6-16a														(B01/B02/B03) A03	
COLADA HEAT	COMPOSICION QUIMICA (%)														CHEMICAL COMPOSITION (%)		
	C	Mn	Si	P	S	V	Cr	Ni	Mo	Cu	Nb	Sn	Al	CEV			
173072	0.99	0.10	0.25	0.024	0.018	0.054	0.180	0.160	0.033	0.320	0.003	0.024	0.003	0.34			
173073	0.66	0.880	0.210	0.022	0.021	0.056	0.150	0.150	0.037	0.350	0.003	0.024	0.003	0.30			
174775	0.88	0.940	0.160	0.024	0.019	0.052	0.200	0.110	0.016	0.350	0.003	0.024	0.001	0.33			
177272	0.67	1.030	0.180	0.019	0.020	0.050	0.140	0.150	0.026	0.340	0.009	0.024	0.004	0.31			

MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS			MECHANICAL PROPERTIES		
		R _m MPa	R _m MPa	A ₅ %	R _m MPa	R _m MPa	A ₅ %
WF BEAMS 14x34	173072	432	432	551	535	23.2	22.4
WF BEAMS 14x34	173073	416	409	527	515	22.7	22.6
WF BEAMS 14x34	174775	433	419	541	530	27.8	27.2



W1434

A91:

ArcelorMittal Gipuzkoa, S.L.U.
 ArcelorMittal Europe - Long Products
 CARRETERA MADRID - IRUN, KM. 419
 20212 OLABERRIA (Gulpuzcoa)
 TELEF. (943) 80.50.00 - FAX (943) 88.04.04



MILL TEST CERTIFICATE

OLA P-57118

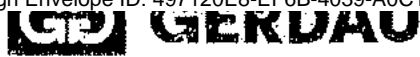
MATERIAL SIZE	COLADA HEAT	PROPIEDADES MECANICAS MECHANICAL PROPERTIES					
		R _m MPa	R _{0.2} MPa	R _m MPa	A ₅₀ Loos		
WF BEAMS 14x34	177272	421	413	517	513	23,5	23,2

4 analisis

D61: Certificates que los aceros en los indizados han sido satisfactoriamente probados de acuerdo con la especificación.
 B05: Marca AMO

Responsable del Departamento de Calidad 201

Jose Maria Gubiado



CA-ML-WHITBY
1 GERDAU CT
WHITBY, ON L1N 5T1
Canada

LEROUX STEEL
1331 RUE GRAHAM BELL
BOUCHERVILLE, QC J4B 6A1
Canada

LEROUX STEEL
1331 RUE GRAHAM BELL
BOUCHERVILLE, QC J4B 6A1
Canada

GGMULTI

Channel / 8 X 11.5#

LENGTH
20'00"

WEIGHT
83.720 LB

HEAT / BATCH
52082170/02

SALES ORDER
5965862/000100

CUSTOMER MATERIAL N°

SPECIFICATION / DATE or REVISION
ASTM A529-14, A572-15
ASTM A6-17, A36-14, ASME SA-36
ASTM A709-17, AASHTO M270-15
CSA G40.20-13/G40.21-13

CUSTOMER PURCHASE ORDER NUMBER
94040097

BILL OF LADING
1302-0000071567

DATE
03/01/2018

CHEMICAL COMPOSITION

C %	Mn %	P %	S %	Si %	Cu %	Ni %	Cr %	V %	Nb %
0.14	0.69	0.012	0.029	0.22	0.39	0.10	0.12	0.016	0.001

MECHANICAL PROPERTIES

YS 0.2% PSI	UTS PSI	YS MPa	UTS MPa	C/L Inch	Elong. %
50200	67100	346	463	8.000	26.30
52300	69500	361	479	8.000	25.00

COMMENTS / NOTES

This grade meets the requirements for the following grades:
ASTM Grades: A36; A529-50; A572-50; A709-36; A709-50
CSA Grades: 44W; 50W
AASHTO Grades: M270-36; M270-50
ASME Grades: SA36



094141782

The above figures are certified chemical and physical test records as contained in the permanent records of company. We certify that these data are correct and in compliance with specified requirements. This material, including the billets, was melted and manufactured in Canada. CMTR complies with EN 10204 3.1.

Bhaskar
BHASKAR YALAMANCHILI
QUALITY DIRECTOR

Leonardo Nunes
LEONARDO NUNES
QUALITY ASSURANCE MGR.

Phone: (409) 769-1014 Email: Bhaskar.Yalamanchili@gerdau.com

Phone: (905) 668-8811 EXT 4055 Email: Leonardo.Nunes@gerdau.com

Heat # AU17108292
Item # 08953

NUCOR
NUCOR STEEL AUBURN, INC.

Mill Certification
3/28/2018

MTR #: Y1-251157
25 Quarry Road
AUBURN, NY 13021
(315) 253-4561
Fax: (315) 253-8441

Sold To: AMERICAN STEEL AND ALUMINUM
PO BOX 620
LIVERPOOL, NY 13088
(315) 451-6990
Fax: (315) 451-8946

Ship To: AMERICAN STEEL AND ALUMINUM
4601 CROWN RD
LIVERPOOL, NY 13088
(315) 451-6990
Fax: (315) 451-8946

Customer P.O.	M 08037394	Sales Order	347225.1
Product Group	Merchant Bar Quality	Part Number	2020025024010W0
Grade	NUCOR MULTIGRADE	Lot #	AU1710829201
Size	2x2x1/4 Angle	Heat #	AU17108292
Product	2x2x1/4 Angle 20' NUCOR MULTIGRADE	B.L. Number	Y1-506185
Description	NUCOR MULTIGRADE	Load Number	Y1-251157
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 1/12/2018 Melt Date: 12/30/2017 Qty Shipped LBS: 10,336 Qty Shipped Pcs: 162

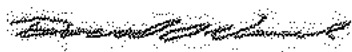
C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	Sn
0.14%	0.96%	0.026%	0.030%	0.19%	0.41%	0.12%	0.21%	0.039%	0.0200%	0.001%	0.012%
Tl	CE4020	CEA529									
0.002%	0.39%	0.42%									

CE4020: C, E, CSA G4020, AASHTO M270
CEA529: A529 CARBON EQUIVALENT

Yield 1: 54,300psi Tensile 1: 76,300psi Elongation: 26% in 8" (% in 203.3mm)
Yield 2: 53,200psi Tensile 2: 76,600psi Elongation 26% in 8" (% in 203.3mm)

Specification Comments: NUCOR MULTIGRADE MEETS THE LATEST REVISION OF: ASTM A36/A36M A529/529M GR50(345) A572/572M GR50(345), A709/709M GR36(250) & GR50(345), CSA G40.21 GR44W(300W) & GR50W AASHTO M270/M270M GR36(270) & GR50(345), ASME SA36/SA36M - 13 MEETS REPORTING REQUIREMENTS OF EN10204 SEC 3.1

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.



Dave Vensel

Division Metallurgist

NUCOR
NUCOR STEEL AUBURN, INC.

Mill Certification
3/29/2018

MTR #: Y1-250954
 25 Quarry Road
 AUBURN, NY 13021
 (315) 253-4561
 Fax: (315) 253-8441

Sold To: AMERICAN STEEL AND ALUMINUM
 115 WALLACE AVE
 SO PORTLAND, ME 04106
 (207) 772-4641

Ship To: AMERICAN STEEL AND ALUMINUM
 115 WALLACE AVE
 SO PORTLAND, ME 04106
 (207) 772-4641

Customer P.O.	M 05043171	Sales Order	347163.1
Product Group	Merchant Bar Quality	Part Number	2040025024010W0
Grade	NUCOR MULTIGRADE	Lot #	AU1810063901
Size	4x4x1/4 Angle	Heat #	AU18100639
Product	4x4x1/4 Angle 20' NUCOR MULTIGRADE	B.L. Number	Y1-506283
Description	NUCOR MULTIGRADE	Load Number	Y1-250954
Customer Spec		Customer Part #	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Roll Date: 2/2/2018 Melt Date: 1/30/2018 Qty Shipped LBS: 10,296 Qty Shipped Pcs: 78

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Cb	Sn
0.16%	0.80%	0.015%	0.039%	0.18%	0.38%	0.15%	0.18%	0.037%	0.0200%	0.001%	0.013%
Ti	CE4020	CEA529									
0.001%	0.35%	0.41%									

CE4020: C. E. CSA G4020, AASHTO M270
 CEA529: A529 CARBON EQUIVALENT

Yield 1: 63,900psi

Tensile 1: 76,500psi

Elongation: 33% in 8" (% in 203.3mm)

Yield 2: 54,100psi

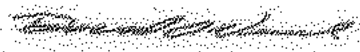
Tensile 2: 75,900psi

Elongation 33.4% in 8" (% in 203.3mm)

Specification Comments: NUCOR MULTIGRADE MEETS THE LATEST REVISION OF: ASTM A36/A36M, A529/529M GR50(345), A572/572M GR50(345), A709/709M GR36(250) & GR50(345), CSA G40.21 GR44W(300W) & GR50W AASHTO M270/M270M GR36(270) & GR50(345), ASME SA36/SA36M - 13, QQ-S-741D
 MEETS REPORTING REQUIREMENTS OF EN10204 SEC 3.1

ALL MANUFACTURING PROCESSES OF THE STEEL MATERIALS IN THIS PRODUCT, INCLUDING MELTING, HAVE OCCURRED WITHIN THE UNITED STATES. ALL PRODUCTS PRODUCED ARE WELD FREE. MERCURY, IN ANY FORM, HAS NOT BEEN USED IN THE PRODUCTION OR TESTING OF THIS MATERIAL.

091104



Dave Venzel

Division Metallurgist

PO #:



Tue Jul-03-2018

From:

Barbara
Barbara Couming
62 Maple Street

Manchester, NH, USA
03103
603-626-7351
bcouming@millmetals.net

To:

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Document Summary Page

The MTR's are printed in the following order:

#	Heat	Item ID	Description
1	55052870/04	MC612	CHANNEL MISC 6" X 12#

CERTIFIED MATERIAL TEST REPORT



US-ML-CARTERSVILLE
384 OLD GRASSDALE ROAD NE
CARTERSVILLE, GA 30121
USA

CUSTOMER SHIP TO ACIER LEROUX INC 1331 RUE GRAHAM BELL CN RAIL B BOUCHERVILLE, QC J4B 6A1 Canada	CUSTOMER BILL TO LEROUX STEEL 1331 RUE GRAHAM BELL BOUCHERVILLE, QC J4B 6A1 Canada	GRADE OGMULTI	SHAPE / SIZE Misc Channel / 6 X 12#	DOCUMENT ID: 000000000
SALES ORDER 6185755/000020		CUSTOMER MATERIAL N°		LENGTH 40'00"
				WEIGHT 17.280 LB
				HEAT / BATCH 55052870/04

CUSTOMER PURCHASE ORDER NUMBER 94040468	BILL OF LADING 1323-000010635K	DATE 02/25/2018	SPECIFICATION / DATE of REVISION ASTM A529-14, A572-15 ASTM A6-17, A36-14, ASME SA-36 ASTM A709-17, AASHTO M270-15 CSA G40.20-13/G40.21-13 <i>McG12 @ 40'</i>
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CHEMICAL COMPOSITION												
C%	Mn%	P%	S%	Si%	Cu%	Ni%	Cr%	Mo%	V%	Nb%	N%	Pb%
0.16	0.88	0.014	0.026	0.19	0.33	0.11	0.11	0.029	0.016	0.000	0.0070	0.0020

CHEMICAL COMPOSITION
Sp%
0.011

MECHANICAL PROPERTIES						
Elong.	G/L Inch	UTS PSI	UTS MPa	YS 0.2% PSI	YS MPa	
23.10	8.000	76900	530	54900	379	
22.10	8.000	75500	521	53600	370	

COMMENTS / NOTES
This grade meets the requirements for the following grades:
ASTM Grades: A36; A529-50; A572-50; A709-36; A709-50
CSA Grades: 44W; 50W
AASHTO Grades: M270-36; M270-50
ASME Grades: SA36



094142004

The above figures are certified chemical and physical test records as contained in the permanent records of company. We certify that these data are correct and in compliance with specified requirements. This material, including the billets, was melted and manufactured in the USA. CMTR complies with EN 10204 3.1.

	BHASKAR YALAMANCHILI QUALITY DIRECTOR		YAN WANG QUALITY ASSURANCE MGR.
Phone: (409) 769-1014 Email: Bhaskar.Yalamanchili@gerdau.com		Phone: (770) 387 5718 Email: yan.wang@gerdau.com	

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operator's Name Paul Barry
 Identification No. 006-62-9462 Qualification Date 10/29/08
 Welder's Social Security No. 006-62-9462
 In Accordance with WPS No. A1-SM-Spot-weld-512-45 Pitch Revision _____
 Welding Process(es) SMAW 6022 Type Manual
 (Automatic, manual, etc.)
 Mode of Transfer for GMAW N/A
 (Short circuiting, spray, globular)

VARIABLE	ACTUAL VARIABLE USED IN QUAL	QUALIFICATION RANGE
JOINT		
Joint Type	<u>Arc Spot Weld</u>	<u>Arc Spot Weld</u>
Backing Material Type		
Groove Welded From: one side or both sides		
BASE METAL (4.7.1.1)		
Material Specification		
Sheet Steel	<u>ASTM A606 to ASTM 653</u>	<u>ASTM A606 to ASTM 653</u>
Supporting Steel	<u>A36</u>	<u>ASTM A36</u>
Sheet Thickness (4.7.2)		
Groove		
Fillet		
Arc Plug		
Arc Spot	<u>18 gauge</u>	<u>18 gauge</u>
Arc Seam		
COATING(S)		
Type	<u>Galvanized</u>	<u>Galvanize or Bare metal</u>
Thickness	<u>Single coat \leq .004 THICK</u>	<u>Single coat \leq .004 THICK</u>
POSITION (4.7.1.5 and 4.7.1.6)		
Groove		
Fillet		
Arc Plug		
Arc Spot	<u>45 Degree Position</u>	<u>45 Degree Position</u>
Arc Seam		
Progression		
GAS (4.7.1.4)		
ELECTRODE (4.7.1.3 and 4.7.1.4)		
Size	<u>1/8"</u>	<u>1/8" to E82"</u>
Group Designation	<u>E1 (E6022)</u>	<u>E1</u>

VISUAL EXAMINATION RESULTS (4.6)

Specimen 1 Acceptable Specimen 2 Acceptable
 Appearance Acceptable Cracks None Undercut None excessive
 Reinforcement 1/2" Diam of Arc Spot Nugget #1: 5/8" #2: 5/8"
 Test Conducted By James Read Per AWS D1.3-98
 Laboratory Test No. _____ Date of Test 10/31/08

The undersigned certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of 4.6 of AWS D1.3 (98), Structural Welding Code—Sheet Steel (year)
 Company American Aerial Services Authorized By _____

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operator's Name Paul Berry
 Identification No. 004-62-9462 Qualification Date 10/29/08
 Welder's Social Security No. 004-62-9462
 In Accordance with WPS No. AWS D1.3-98 Revision _____
 Welding Process(es) SMAW Type Manual
 (Automatic, manual, etc.)
 Mode of Transfer for GMAW N/A
 (Short circuiting, spray, globular)

VARIABLE	ACTUAL VARIABLE USED IN QUAL	QUALIFICATION RANGE
JOINT		
Joint Type	<u>Arc Spot Weld</u>	<u>Arc Spot Weld</u>
Backing Material Type		
Groove Welded From one side or both sides		
BASE METAL (4.7.1.1)		
Material Specification		
Sheet Steel	<u>ASTM A606 to ASTM A653</u>	<u>ASTM A606 to ASTM A653</u>
Supporting Steel	<u>ASTM A36</u>	<u>ASTM A36</u>
Sheet Thickness (4.7.2)		
Groove		
Fillet		
Arc Plug		
Arc Spot	<u>18 gauge</u>	<u>18 gauge</u>
Arc Seam		
COATING(S)		
Type	<u>Galvanized</u>	<u>Galvanized or Bare metal</u>
Thickness	<u>Single coat ≤ .004 Thick</u>	<u>Single coat ≤ .004 Thick</u>
POSITION (4.7.1.5 and 4.7.1.6)		
Groove		
Fillet		
Arc Plug		
Arc Spot	<u>F</u>	<u>F</u>
Arc Seam		
Progression		
GAS (4.7.1.4)		
ELECTRODE (4.7.1.3 and 4.7.1.4)		
Size	<u>1/8"</u>	<u>1/8" to 5/32"</u>
Group Designation	<u>E6022</u>	<u>E6022</u>

VISUAL EXAMINATION RESULTS (4.6)

Specimen 1 <u>Acceptable</u>	Specimen 2 <u>Acceptable</u>
Appearance <u>Uniform</u>	Undercut <u>None excessive</u>
Cracks <u>None</u>	Diam of Arc Spot Nugget <u>9/32"</u>
Reinforcement <u>1/32"</u>	

Test Conducted By James Road Per AWS D1.3-98
 Laboratory Test No. _____ Date of Test 10/31/08

The undersigned certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of 4.6 of AWS D1.3 (98), Structural Welding Code—Sheet Steel (year)

Company American Arcal Services Authorized By _____

05-18-'11 13:31 FROM-Maine OKY AUBURN

12077845383

T-213 P0001/0002 F-832

WELDER PERFORMANCE QUALIFICATION (WPQ) AWS D1.1 Structural Welding Code - Steel (Prequalified)

Welder's Name Paul Berry ID Number 9462
Company American Aerial

TEST DESCRIPTION

WPS Number AA-001 Test Coupon XXX Production Weld _____
Material Specification, Type or Grade A36 to Material Specification, Type or Grade A36
test coupon consisted of two pieces of 1"x3"x5" plate with both plates beveled 22.5 degrees along the 5" side

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>SMAW</u>	<u>SMAW</u>
Type (Manual, Semi, Auto)	<u>Manual</u>	<u>Manual</u>
Backing	<u>A36 1/4 x 1-1/2"</u>	<u>backing required</u>
Plate <u>XXX</u> Pipe _____	<u>1.0" thickness</u>	<u>1/8" - unlimited</u>
	<u>All fillet sizes qualified on all metal thicknesses</u>	
AWS Electrode Classification	<u>E7018 (E4 electrode qualifies for E1 - E4 electrodes)</u>	
AWS Electrode Specification	<u>A5.1</u>	
Deposit Thickness for each process		
Process 1: <u>SMAW</u> 3 layers minimum Yes <u>XXX</u> No _____		<u>1/8" - unlimited</u>
Process 2 _____ 3 layers minimum Yes _____ No _____		
Position	<u>3G and 4G</u>	<u>All positions</u>
Vertical Progression (up or down)		
Current / Polarity	<u>DC Positive</u>	

RESULTS

Visual Examination of Completed Weld Passed 5/16/11
Bend Tests Passed 3G and 4G 5/16/11
3G Bend 1 Passed, no openings
3G Bend 2 Passed, no openings
4G Bend 1 Passed, no openings
4G Bend 2 Passed, one opening < 1/32"

Welding and Testing Supervised by: Warren G. Swan, Jr Company New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of the 2010 American Welding Society D1.1 Structural Welding Code.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361
Date 5/17/11



Warren G. Swan, Jr.
CWI 04050361
QC1 (EXP. 5/1/2013)

Warren G. Swan, Jr.

Manufacturer American Aerial
By: [Signature]

Date: 5/17/11

American Aerial Services

RECORD OF WELDER QUALIFICATION TEST (WPQ) Refer to AWS D1.3 Structural Welding Code-Sheet Steel

Welder Name: Britting, William G. Jr. Identification #: ██████████-2997
 WPS No.: AA-SM-Spotweld- S18- Flat Revision: 0 Date: 10/29/08
 The above welder is qualified for the following ranges:

Variable	Used in Qualification	Qualification
PROCESS	SMAW	SMAW
PROCESS TYPE	Manual	Manual
JOINT		
Joint type	Single Thickness Arc Spot Weld	Single Thickness Arc Spot Weld
Backing Material Type	A36 plate	Pre-qualified per AWS D1.1
BASE METAL (4.7.1.1)		
Material Specification	18 gage sheet steel	18 gage sheet steel
Sheet Steel	A36 plate	Pre-qualified per AWS D1.1
Supporting Steel		
Sheet Thickness (4.7.2.1)	18 gage (.0478")	18 gage (.0478")
Arc Spot		
COATING(S)		
Type	Galvanized	Galvanized or Bare metal
Thickness	Single coat ≤ .004" thick	Single coat ≤ .004" thick
POSITION (4.7.1.5 and 4.7.1.6)		
Arc Spot	Flat	Flat
ELECTRODE (4.7.1.3 and 4.7.1.4)		
Size	1/8"	1/8"
Group Designation	F1 (E6022)	F1

VISUAL EXAMINATION RESULTS (4.6)

Specimen #1: Acceptable Specimen #2: Acceptable
 Appearance: Acceptable Cracks: None Undercut: None
 Reinforcement: 1/32" Diameter of Arc Spot Nugget: #1: 3/4", #2: 1/2"
 Welding Tests Conducted By: American Aerial Services
 Mechanical Tests conducted by: Thomas E. Giles, CWI # 88070281, Welding Test Center / EMCC, Bangor, ME,
 Test date: 10/30/08

The undersigned certifies that the statements in this record are correct and that the test welds were prepared, welded and tested in accordance with the requirements of 4.8 AWS D1.3, Structural Welding Code-Sheet Steel.

Organization: American Aerial Services
 Signed:  Date: 10/31/08

Welder Performance Qualification Record AWS D1.1 Structural Welding Code - Steel

Welder's Name Bill Britting ID Number _____
 Company American Aerial

TEST DESCRIPTION

WPS Number AA - 001 Test Coupon XXX Production Weld _____
 Material Specification, Type or Grade A36 >3/4" to Material Specification, Type or Grade A36 > 3/4"
 Test Thickness 1" Groove
 Thickness Qualified Plate Groove: 1/8" - Unlimited Fillets: Unlimited
 Thickness Qualified Pipe _____
Groove 1/8 - unlimited on pipe equal to or greater than 24" diameter
Fillets: Unlimited

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>SMAW</u>	<u>SMAW</u>
Type (Manual, Semi, Auto)	<u>Manual</u>	<u>Manual</u>
Backing	<u>A36 1/4" x 1-1/2"</u>	<u>Backing required</u>
Material Group Number	<u>Two</u>	<u>Group One and Group Two</u>
Filler Metal AWS Specifications	<u>A5.1</u>	
Filler Metal Classification	<u>E7018 MR</u>	
Filler Metal F Numbers	<u>F4</u>	<u>F1, F2, F3, F4</u>
Position	<u>3G and 4G</u>	<u>All Positions</u>
Vertical Progression (up or down)	<u>Up</u>	<u>Up Only</u>
Inert Gas Backing		
Transfer Mode (GMAW)		
Current / Polarity	<u>115 - 120 amps DC+</u>	

RESULTS

Visual Examination of Completed Weld Passed Date 12/18/07
 Bend Test Results: Side Bend Passed Side Bend Passed Date 12/18/07
 Test conducted by:
Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2006 AWS D1.1 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.
 Affiliation New England School of Metalwork
 Address 7 Albiston Way Auburn, ME 04210



WARREN SWAN
 CWI 04080561
 OCT EXP. 5/01/10

Warren G. Swan

04-29-'11 11:48 FROM-Maine OKY AUBURN

12077845383

T-030 P0001/0001 F-419

WELDER PERFORMANCE QUALIFICATION (WPQ)
AWS D1.1 Structural Welding Code - Steel (Prequalified)

Welder's Name William Britting ID Number 2997
 Company American Aerial

TEST DESCRIPTION

WPS Number AA-002 Test Coupon XXX Production Weld _____
 Material Specification, Type or Grade A36 to Material Specification, Type or Grade A36
test coupon consisted of two pieces of 1"x 3"x 5" plate with both plates beveled 22.5 degrees along the 5" side

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>FCAW</u>	<u>FCAW</u>
Type (Manual, Semi, Auto)	<u>Semi</u>	<u>Semi</u>
Backing	<u>A36 1/4 x 1-1/2"</u>	<u>backing required</u>
Plate <u>XXX</u> Pipe _____	<u>1.0" thickness</u>	<u>1/8" - unlimited</u>
	<u>All fillet sizes qualified on all metal thicknesses</u>	
AWS Electrode Classification	<u>E71T - 8</u>	
AWS Electrode Specification	<u>A5.20</u>	
Deposit Thickness for each process		
Process 1: <u>FCAW</u> 3 layers minimum Yes <u>XXX</u> No _____	<u>1/8" - unlimited</u>	
Process 2 _____ 3 layers minimum Yes _____ No _____		
Position <u>1G</u>	<u>Flat only</u>	
Vertical Progression (up or down)	_____	
Current / Polarity	<u>DC Negative</u>	<u>DC Negative</u>

RESULTS

Visual Examination of Completed Weld Passed 12/7/10
 Bend Tests Passed 1G 12/7/10
1G Bend 1 Passed, no openings 3G Bend 2 Passed, one opening < 1/32"

Welding and Testing Supervised by: Warren G. Swan, Jr Company New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of the American Bureau of Shipping.

Warren G. Swan, Jr.
 Welding Director, NESM
 AWS CWI Number: 04050361
 Date 12/7/10



Warren G Swan, Jr.
 CWI 04050361
 QC1 EXP. 5/1/2013

Warren G Swan, Jr.

Manufacturer American Aerial
 By: _____ Date: _____

12-07-'10 16:34 FROM-Maine OKY AUBURN

12077845383

T-280 P8004/8005 F-505

WELDER PERFORMANCE QUALIFICATION (WPO) AWS D1.1 Structural Welding Code - Steel (Prequalified)

Welder's Name William Britting ID Number 2997
Company American Aerial

TEST DESCRIPTION

WPS Number AA-082 Test Coupon XXX Production Weld _____
Material Specification, Type or Grade A36 to Material Specification, Type or Grade A36
test coupon consisted of two pieces of 1"x3"x5" plate with both plates beveled 22.5 degrees along the 5" side

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>FCAW</u>	<u>FCAW</u>
Type (Manual, Semi, Auto)	<u>Semi</u>	<u>Semi</u>
Backing	<u>A36 1/4 x 1-1/2"</u>	<u>backing required</u>
Plate <u>XXX</u> Pipe _____	<u>1.0" thickness</u> <u>1/8" - unlimited</u>	<u>All flat sizes qualified on all metal thicknesses</u>
AWS Electrode Classification	<u>E71T-8</u>	
AWS Electrode Specification	<u>A5.28</u>	
Deposited Thickness for each process		
Process 1: <u>FCAW</u> 3 layers minimum Yes <u>XXX</u> No _____		<u>1/8" - unlimited</u>
Process 2 _____ 3 layers minimum Yes _____ No _____		
Position <u>1G</u> Flat only _____		
Vertical Progression (up or down)		
Current / Polarity	<u>DC Negative</u>	<u>DC Negative</u>

RESULTS

Visual Examination of Completed Weld Passed 12/7/10
Bend Tests Passed 1G 12/7/10
1G Bend 1 Passed, no openings 3G Bend 2 Passed, one opening < 1/32"

Welding and Testing Supervised by: Warren G. Swan, Jr Company New England School of Machinery

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of the American Bureau of Shipping.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361
Date 12/7/10



Warren G. Swan, Jr.
CWI 04050361
QC1 EXP. 5/12/13

Manufacturer American Aerial

By: _____ Date: _____

WELDING PROCEDURE SPECIFICATIONS (WPS) AWS D1.3 Structural Welding Code - Sheet Steel

Company Name American Aerial Services Date 5/7/12
 WPS Number AA-003 Supporting PQR Number(s) AA-03
 Revision Number _____ Date of Revision _____
 Welding Process(es) PCAW Types (Manual, Auto, Semi-Auto) Semi-auto

JOINTS

Joint Design Fillet Weld in T Joint Sheet to Sheet
 Backing Yes No Backing Material _____
 Back Gouging Yes No Method _____



BASE METALS

Material Group: One Thickness Fillet 12 gauge Groove _____
 Material Specification, A653/A653M to Material Specification, Type or Grade A653/A653M
 Coupons consisted of two 3" x 4" pieces of 12 gauge material set at 90 degrees to each other. Two
 Other complete setups were required per position.

FILLER METALS

Specification Number	AWS A 5.20
AWS Classification Number	E71T- GS
F Number	
Size of Filler Metal	0.030" diameter

POSITIONS

Position of Fillet 2F (horizontal), 3F (vertical), and 4F (overhead) Qualified: All positions

Welding Progression: Up Vertical Up Down _____

GAS	Gas(es)	%Mixture	Flow Rate
Shielding			
Trailing			
Backing			

**WELDING PROCEDURE SPECIFICATIONS (WPS)
AWS D1.3 Structural Welding Code - Sheet Steel**

WPS Number AA-003

FREHEAT

Preheat Temperature Ambient Interpass Temperature _____
Other _____

POSTWELD HEAT TREATMENT

Temperature Range _____ Time Range _____

ELECTRICAL CHARACTERISTICS

Current DC Polarity Negative Amps 100 - 105 Volts 19 - 19.5

Tungsten Size and Type _____

Metal transfer for GMAW _____

Electrode Wire Speed Range 180 ipm

TECHNIQUE

Stringer or Weave Stringer

Gas Nozzle Size _____

Initial Cleaning _____ Interpass Cleaning _____

Method of Back Gouging _____

Oscillation _____

Contact Tip or Nozzle to Work distance 1/4"

Multiple or Single Pass per Side: Weld Side Single Pass Other Side _____

Multiple or Single Electrodes Single

Travel Speed 6 - 8" per minute

Peening _____

Other _____

Weld Layers	Process	Filler Metal Class	Filler Metal Diameter	Current and Polarity	Amp Range	Volt Range	Travel Speed Range	Other
1	FCAW	E717-G8	0.030"	DC -	100 - 105	19 - 19.5	6 - 8" per min	

PREPARED BY

Name: Warren G. Swan, Jr.

Affiliation New England School of Metalwork

Address 7 Albiston Way Auburn, ME 04216

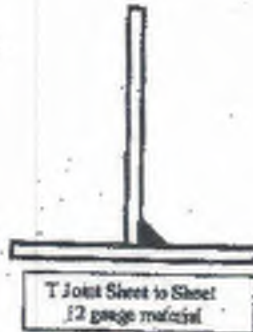
Company Representative _____

Date _____


Warren G. Swan, Jr.
 CWI 04080381
 QC1 EXP. 5/1/2013
Warren G. Swan

PROCEDURE QUALIFICATION RECORD (PQR)
AWS D1.3 Structural Welding Code - Sheet Steel

Company Name American Aerial Services Date 5/7/12
 Procedure Qualification Record AA-03 Welding Procedure Specification AA-003
 Welding Process(es) BCAW
 Types (Manual, Automatic, Semi-Auto) Semi - Auto
 JOINT DESIGN

**BASE METALS**

Material Specification A653/A653M to Material Specification A653/A653M
 Thickness of Test Coupon 12 gauge

Coupons consisted of two 3" x 4" pieces of 12 gauge material set at 90 degrees to each other. Two other complete setups were required per position.

FILLER METALS

AWS Specification A5.20 AWS Classification E71T-GS
 Filler Metal Size 0.030" Weld Thickness _____

Other Required weld size equal to or greater than the sheet steel thickness

POSITION

Position of Fillet 2F, 3F, and 4F Progression (Uphill or Downhill) Vertical Uphill
 Other All positions 1F (flat), 2F (horizontal), 3F (vertical), and 4F (overhead)

GAS	Gas(es)	Mixture	Flow Rate
Shielding			
Tailing			
Backing (Purge)			

ELECTRICAL CHARACTERISTICS

Current DC Polarity Negative Amps 100 - 105 Volts 19 - 19.5

Tungsten Electrode Size _____

Other _____

TECHNIQUE

Travel Speed 6 - 8" per minute Stringer or Weave Stringer Oscillation _____

Single or Multipass Single Single or Multiple Electrodes Single

Other _____

PROCEDURE QUALIFICATION RECORD (PQR)
AWS D1.3 Structural Welding Code - Sheet Steel

PQR Number AA-03

VISIBLE INSPECTION Pass XXX Fail _____ Date 5/7/12

BREAK TEST RESULTS Pass XXX Fail _____ Date 5/7/12

1F Flat

Specimen 1 Pass _____ Fail _____
Specimen 2 Pass _____ Fail _____

2F Horizontal

Specimen 1 Pass XXX Fail _____
Specimen 2 Pass XXX Fail _____

3F Vertical (down)

Specimen 1 Pass XXX Fail _____
Specimen 2 Pass XXX Fail _____

4F Overhead

Specimen 1 Pass XXX Fail _____
Specimen 2 Pass XXX Fail _____

Welder's Name Bill Britting Stamp or Number 2997
Tests conducted by: Warren G. Swan, Jr. CWI Number 04050361
Test Location New England School of Metalwork
7 Albiston Way, Auburn, ME 04210; (207)-753-1360

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of the 2008 edition of the AWS D1.3 Structural Welding Code-Sheet Steel.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361
Signature: [Handwritten Signature]
Date 3/7/12

CWI Stamp



Warren G Swan, Jr.
CWI 04050361
QC1 EXP. 5/1/2013

Welder Performance Qualification Record AWS D1.3 Structural Welding Code -Sheet Steel

Welder's Name Bill Britting ID Number 2997
 Company American Aerial Services

TEST DESCRIPTION

WPS Number AA - 003 Test Coupon XXX Production Weld _____
 Material Specification, Type or Grade A653/A653M to Material Specification, Type or Grade A653/A653M
 Test Thickness 12 gauge
 Thickness Qualified Sheet Steel 12 gauge and thicker as allowed by D1.3
 Coupons consisted of two 3" x 4" pieces of 12 gauge material set at 90 degrees to each other. Two complete setups were required per position.

TESTING CONDITIONS AND QUALIFICATION LIMITS

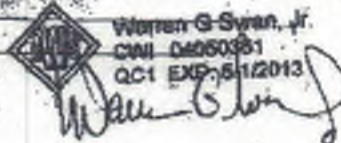
Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>FCAW</u>	<u>FCAW</u>
Type (Manual, Semi, Auto)	<u>Semi</u>	<u>Semi</u>
Backing	_____	_____
Material Group Number	<u>One</u>	<u>Group One steels permitted by D1.3</u>
Filler Metal AWS Specifications	<u>A5.20</u>	_____
Filler Metal Classification	<u>E 71T-GS</u>	_____
Filler Metal F Numbers	_____	_____
Position	<u>3G and 4G</u>	<u>All Positions</u>
Vertical Progression (up or down)	<u>Up</u>	<u>Up only</u>
Inert Gas Shielding or Backing	_____	_____
Transfer Mode (GMAW)	_____	_____
Current / Polarity	<u>100 - 105 amps DC-</u>	_____

RESULTS

Visual Examination of Completed Welds Passed Date 5/7/12
 Vertical Break Test Results: Specimen 1 Passed Specimen 2 Passed
 Overhead Break Test Results: Specimen 1 Passed Specimen 2 Passed
 Date 5/7/12
 Test conducted by:
Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2008 AWS D1.3 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.
 Affiliation: New England School of Metalwork
 Address: 7 Albiston Way Auburn, ME 04210


 Warren G. Swan, Jr.
 CWI 04050381
 QC1 EXP. 5/1/2013

Welder Performance Qualification AWS D1.1 Structural Code - Steel

Welder's Name William Britting ID Number 2997
Company American Aerial

TEST DESCRIPTION

WPS Number AA-04 Test Coupon XXX Production Weld _____
Material Specification A36 Group 1 to Material Specification A36 Group 1
Test coupon: one piece of 3/8" x 6" x 12" welded perpendicular (T joint) to one piece of 1/2" x 6" x 12"
Test Thickness 3/8" x 1/2" T Joint Test Pipe Size _____
Welding Process(es) FCAW Type (Manual, Semi, Auto) Semi-Auto
Backing _____
Filler Metal Classification/Size E71T-11/0.045 Filler Metal AWS Specifications A5.20
Position 2F Horizontal, 3F Vertical, and 4F Overhead Current / Polarity DC-
Inert Gas Shielding or Backing _____ Transfer Mode (GMAW) _____
Vertical Progression (up or down) Up

TESTING RESULTS

Visual Examination of Completed Welds Passed Date 2/25/15
2F Horizontal Test Results: Passed, see Mechanical Test Report WC-14-2248
3F Vertical Test Results: Passed, see Mechanical Test Report WC-14-2248
4F Overhead Test Results: Passed, see Mechanical Test Report WC-14-2248

Testing Coordinated By: Warren G. Swan, Jr., New England School of Metalwork
Destructive Testing Completed By: Bangor Test Center 354 Hogan Rd Bangor ME 04401 (207) 974-4662

QUALIFICATION LIMITS

Process Qualified FCAW
Backing N.A.
Position Qualified All Positions fillets on plate, pipe, and box tubing
Thickness Qualified Plate 1/8" to 1/2" (AWS D1.1 Table 3.1)
Thickness Qualified Pipe 1/8" to 1/2" (AWS D1.1 Table 3.1)
Pipe Diameter Qualified All
Vertical Progression Qualified Up Only
Other: Certified on Fillet Welds Only

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2010 AWS D1.1 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.
Affiliation New England School of Metalwork
Address 7 Albiston Way Auburn, ME 04210
Date 3/10/15

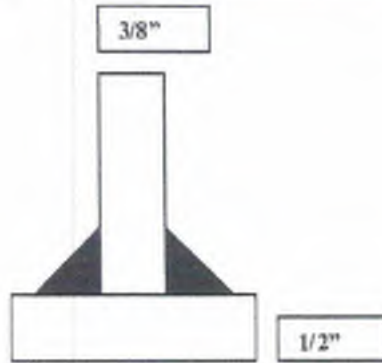

Warren G. Swan Jr
CWI 04050361
QC1 EXP. 5/1/2016

WELDING PROCEDURE SPECIFICATIONS (WPS)
AWS D1.1 Structural Welding Code - Steel

Company Name American Aerial Date 2/25/15
 WPS Number AA - 04 Supporting PQR Number(s) AA - 004
 Revision Number _____ Date of Revision _____
 Welding Processes(es) FCAW Types (Manual, Auto, Semi-Auto) Semi - Auto

JOINTS

Joint Design T Joint
 Backing Yes No Backing Material _____
 Back Gouging Yes No Method _____



BASE METALS

Material Group: One Thickness Groove Fillet 1/2" Pipe(Dia)
 Material Specification, Type or Grade A36 to Material Specification, Type or Grade A36
 Other

FILLER METALS

Specification Number	<u>AWS A 5.20</u>	
AWS Classification Number	<u>E71T-11</u>	
F Number	<u>F6</u>	
Size of Filler Metal	<u>0.045" diameter</u>	

POSITIONS

Position of Groove All Positions
 Vertical Welding Progression : Up XXXX Down

GAS	Gas(es)	%Mixture	Flow Rate
Shielding			
Trailing			
Backing			

WELDING PROCEDURE SPECIFICATIONS (WPS)
AWS D1.1 Structural Welding Code - Steel

WPS Number AA - 04

PREHEAT

Preheat Temperature if below 32 dgreees must preheat to minimum of 70 degrees
 Interpass Temperature Minimum 32 degrees F

POSTWELD HEAT TREATMENT

Temperature Range N.A. Time Range N.A.

ELECTRICAL CHARACTERISTICS

Current DC Polarity Negative Amps 140 - 160 +/- 10%
 Volts 17.5-18 volts +/- 7%
 Tungsten Size and Type _____
 Metal transfer for GMAW _____
 Electrode Wire Speed Range 136 i.p.m. + 10%

TECHNIQUE

Stringer or Weave Stringer
 Gas Nozzle Size _____
 Initial Cleaning Grinding/Brushing Interpass Cleaning Chipping/Grinding/Brushing
 Method of Back Gouging _____
 Oscillation _____
 Contact Tip or Nozzle to Work distance (FCAW) 3/8" - 1/2"
 Multiple or Single Pass per Side: Weld Side Single-Pass Other Side Multi-Pass
 Multiple or Single Electrodes Single
 Travel Speed 5 - 6 " per minute +/- 25%
 Peening _____
 Other _____

Weld Passes	Process	Filler Metal Class	Filler Metal Diameter	Current and Polarity	Amp Range	Volt Range	Travel Speed Range	Wire Speed
1 - 4	FCAW	E71T-11	0.045"	DC -	140-160 +/- 10%	17.5-18 +/- 7%	5- 6 ipm +/- 25%	136 ipm + 10%

PREPARED BY

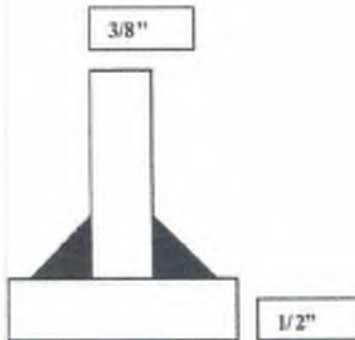
Name: Warren G. Swan, Jr.
 Affiliation New England School of Metalwork
 Address 7 Albiston Way Auburn, ME 04210


 Warren G Swan Jr
 CWI 04050381
 DC EXP- 5/1/2016
Warren Swan
 Date _____

Company Representative _____

PROCEDURE QUALIFICATION RECORD (PQR) AWS D1.1 STRUCTURAL STEEL CODE

Company Name American Aerial Date 3/10/15
 Procedure Qualification Record AA - 004 Welding Procedure Specification AA - 04
 Welding Process(es) FCAW
 Types (Manual, Automatic, Semi-Auto) Semi - Auto
 JOINT DESIGN



T joint Fillet Weld

BASE METALS

Material Specification A36 to Material Specification A36
 Thickness of Test Coupon 3/8" x 1/2" Diameter of Test Coupon _____
 Other Test coupon: one piece of 3/8"x 6"x 12" welded perpendicular (T joint) to one piece of 1/2"x 6" x 12"

FILLER METALS

AWS Specification A5.20 AWS Classification E71T-11
 Filler Metal Size 0.045 Weld Thickness 1/2"
 Other _____

POSITION

Position of Weld 2G Horizontal, 3G Vertical, and 4G Overhead Progression (Uphill or Downhill) 3G Uphill
 Other _____

GAS	Gas(es)	Mixture	Flow Rate
Shielding			
Trailing			
Backing (Purge)			

ELECTRICAL CHARACTERISTICS

Current DC Polarity Negative Amps 140 - 160 Volts 17.5 - 18
 Tungsten Electrode Size _____
 Other _____

TECHNIQUE

Travel Speed 5"-6" per minute Stringer or Weave Stringer Oscillation _____
 Single or Multipass Weld Side Single Other Side Multi - Pass
 Single or Multiple Electrodes Single

PROCEDURE QUALIFICATION RECORD (PQR) AWS D1.1 STRUCTURAL STEEL CODE

PQR Number AA - 004

TENSILE TESTS Pass _____ Fail _____

See attached Mechanical Test Report for tensile test information. Lab Test Number _____

GUIDED BEND TESTS Pass _____ Fail _____

See attached Mechanical Test Report for guided bend test information. Lab Test Number _____

TOUGHNESS TESTS (if required) Pass _____ Fail _____

See attached Mechanical Test Report for toughness test information. Lab Test Number _____

FILLET WELD TEST

Visual Result - Satisfactory: Yes **XXX** No _____ Date 2/25/15

Macro Results Acceptable see Lab Test # WC-14-2248 (Welding Test Center)

Welder's Name William Britting Stamp or Number 2997

Tests conducted by: Warren G. Swan, Jr. CWI Number 04050361

Test Location New England School of Metalwork

7 Albiston Way, Auburn, ME 04210 ; (207)-753-1360

Destructive Tests conducted by: Welding Test Center, Eastern Maine Community College

354 Hogan Rd Bangor, ME 04401; (207) -974-4662

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of the 2010 AWS D1.1 Structural Welding Code - Steel.

Warren G. Swan, Jr.
Welding Director, NESM
AWS CWI Number: 04050361

Signature: *Warren G Swan Jr*

Date 3/10/15

CWI Stamp



Warren G Swan Jr
CWI 04050361
QC1 EXP. 5/1/2016

Manufacturer American Aerial Date _____

By _____

WELDING TEST CENTER / Eastern Maine Community College

354 Hogan Rd., Bangor, ME 04401
 (207) 974-4662 FAX (207) 974-4608
 tgiles@emcc.edu

Mechanical Test Report

Lab Number: WC-14-2248 Date: 03/05/2015
 Customer: NESMW for American Aerial PQR#: AA-004
 Code or Standard: American Welding Society D1.1 Structural Welding Code - Steel: 2010
 Other: Fillet weld procedure qualification per 4.9.4 (figure 4.19)
Welding Process: FCAW self-shielded: E71T-11, Base Material: A36 plate 3/8" x 1/2" T-joint
Welder: William Britting, ID# 2997

Macro Etch Tests

Etchant: Refer to AWS B2.1-Annex G3, Etching Solutions and Procedures
Nitric Acid / H²O (3:1)

Fillet Size: Single Pass: 1/4" x 1/4" leg length Multiple Pass: 1/2" x 1/2" leg length

* Visual Inspection x 10 Magnification:

Specimen #:	Visual Inspection	Result:
1 - 2F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
2 - 2F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
3 - 2F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable

Specimen #:	Visual Inspection	Result:
1 - 3F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
2 - 3F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
3 - 3F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable

Specimen #:	Visual Inspection	Result:
1 - 4F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
2 - 4F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable
3 - 4F	No Defects - meets all requirements of section 4.9.4.1 *	Acceptable

*** Acceptance Criteria for Macroetch Test**

- Fillet welds shall have fusion to the root of the joint, but not necessarily beyond.
- Minimum leg size shall meet the specified fillet weld size.
- No cracks
- Through fusion between adjacent layers of weld metal and between weld metal and base metal.
- Weld profiles conforming to specified detail, but none of the variations prohibited in 5.24
- No undercut exceeding 1/32"

We certify that the above specimens were machined and tested in accordance with the applicable code and/or standard.

Signed: 

Thomas E. Giles
 Lab Director
 AWS CWI No: 88070281
 AWS Accredited Lab Certificate No.: 910201

Keith E Collins
Cert # 0009037W SSN # XXX-XX-3951



AMERICAN WELDING SOCIETY
VALID ONLY IF ACCOMPANIED BY PHOTO ID
This Card is the property of AWS and shall be returned on demand.



Feb. 12. 2008 1:07PM

Maine Oxy Customer Service

No. 7134 P. 2

Welder Performance Qualification Record AWS D1.1 Structural Welding Code - Steel

Welder's Name Zach Johndro ID Number 4984
Company American Aerial

TEST DESCRIPTION

WPS Number AA-001 Test Coupon XXX Production Weld _____
Material Specification, Type or Grade A36 >3/4" to Material Specification, Type or Grade A36 > 3/4"
Test Thickness 1" Groove
Thickness Qualified Plate Groove: 1/8" - Unlimited Fillets: Unlimited
Thickness Qualified Pipe _____
Groove 1/8 - unlimited on structural pipe equal to or greater than 24" diameter
Fillets: Unlimited

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>SMAW</u>	<u>SMAW</u>
Type (Manual, Semi, Auto)	<u>Manual</u>	<u>Manual</u>
Backing	<u>A36 1/4" x 1-1/2"</u>	<u>Backing required</u>
Material Group Number	<u>Two</u>	<u>Group One and Group Two</u>
Filler Metal AWS Specifications	<u>A5.1</u>	
Filler Metal Classification	<u>E7018 MR</u>	
Filler Metal F Numbers	<u>F4</u>	<u>F1, F2, F3, F4</u>
Position	<u>3G and 4G</u>	<u>All Positions</u>
Vertical Progression (up or down)	<u>Up</u>	<u>Up Only</u>
Inert Gas Backing	_____	_____
Transfer Mode (GMAW)	_____	_____
Current / Polarity	<u>115 - 120 amps DC+</u>	_____

RESULTS

Visual Examination of Completed Weld Passed Date 2/7/08
Bend Test Results: Side Bend Passed Side Bend Passed Date 2/7/08
Test conducted by:
Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2006 AWS D1.1 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.
Affiliation New England School of Metalwork
Address 7 Albiston Way Auburn, ME 04210



WARREN SWAN
CWI 04050361
QC1 EXP. 6/01/10

Warren G. Swan

OSHA Occupational Safety and Health Administration


11-004072617

This card acknowledges that the recipient has successfully completed a 10-hour Occupational Safety and Health Training Course in Construction Safety and Health

LARRY LAGUEUX

David Webb
(Printer name - print or type)

5/10/13
(Course and date)



Larry J Lagueux
Cert # 0005090W SSN # XXX-XX-2255

Welder Performance Qualification Record AWS D1.1 Structural Welding Code - Steel

Welder's Name Barry Morrison ID Number 7073
Company American Aerial

TEST DESCRIPTION

WPS Number AA - 001 Test Coupon XXX Production Weld _____
Material Specification, Type or Grade A36 >3/4" to Material Specification, Type or Grade A36 > 3/4"
Test Thickness 1" Groove
Thickness Qualified Plate Groove: 1/8" - Unlimited Fillets: Unlimited
Thickness Qualified Pipe _____
Groove 1/8 - unlimited on pipe equal to or greater than 24" diameter
Fillets: Unlimited

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>SMAW</u>	<u>SMAW</u>
Type (Manual, Semi, Auto)	<u>Manual</u>	<u>Manual</u>
Backing	<u>A36 1/4" x 1-1/2"</u>	<u>Backing required</u>
Material Group Number	<u>Two</u>	<u>Group One and Group Two</u>
Filler Metal AWS Specifications	<u>A5.1</u>	
Filler Metal Classification	<u>E7018 MR</u>	
Filler Metal F Numbers	<u>F4</u>	<u>F1, F2, F3, F4</u>
Position	<u>3G and 4G</u>	<u>All Positions</u>
Vertical Progression (up or down)	<u>Up</u>	<u>Up Only</u>
Inert Gas Backing	_____	_____
Transfer Mode (GMAW)	_____	_____
Current / Polarity	<u>115 - 120 amps DC+</u>	_____

RESULTS

Visual Examination of Completed Weld Passed Date 1/30/08
Bend Test Results: Side Bend Passed Side Bend Passed Date 1/30/08
Test conducted by:
Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2006 AWS D1.1 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.
Affiliation New England School of Metalwork
Address 7 Albiston Way Auburn, ME 04210



WARREN SWAN
CWI 04050361
QC1 EXP. 5/01/10

Warren G. Swan

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operator's Name Raymond J. ...
 Identification No. ... Qualification Date 10/17/72
 Welder's Social Security No. ...

In Accordance with WPS No. ... Revision ...
 Welding Process(es) ... Type ...
 (Automatic, manual, etc.)

Mode of Transfer for GMAW ...
 (Short circuiting, spray, globular)

VARIABLE	ACTUAL VARIABLE USED IN QUAL.	QUALIFICATION RANGE
JOINT		
Joint Type	<u>...</u>	<u>...</u>
Backing Material Type	<u>...</u>	<u>...</u>
Groove Welded From: one side or both sides	<u>...</u>	<u>...</u>
BASE METAL (4.7.1.1)		
Material Specification	<u>...</u>	<u>...</u>
Sheet Steel	<u>...</u> to <u>...</u>	<u>...</u> to <u>...</u>
Supporting Steel	<u>...</u>	<u>...</u>
Sheet Thickness (4.7.2.1)	<u>...</u>	<u>...</u>
Groove	<u>...</u>	<u>...</u>
File	<u>...</u>	<u>...</u>
Arc Plug	<u>...</u>	<u>...</u>
Arc Spot	<u>...</u>	<u>...</u>
Arc Seam	<u>...</u>	<u>...</u>
COATING(S)		
Type	<u>...</u>	<u>...</u>
Thickness	<u>...</u>	<u>...</u>
POSITION (4.7.1.5 and 4.7.1.6)		
Groove	<u>...</u>	<u>...</u>
File	<u>...</u>	<u>...</u>
Arc Plug	<u>...</u>	<u>...</u>
Arc Spot	<u>...</u>	<u>...</u>
Arc Seam	<u>...</u>	<u>...</u>
Progression	<u>...</u>	<u>...</u>
GAS (4.7.1.4)	<u>...</u>	<u>...</u>
ELECTRODE (4.7.1.3 and 4.7.1.4)		
Size	<u>...</u>	<u>...</u>
Group Designation	<u>...</u>	<u>...</u>

VISUAL EXAMINATION RESULTS (4.6)

Specimen 1 ... Specimen 2 ...
 Appearance ... Cracks ... Undercut ...
 Reinforcement ... Diam of Arc Spot Nugget ...
 Test Conducted By ... Per ...
 Laboratory Test No. ... Date of Test ...

The undersigned certify that the statements in this record are correct and that the test welds were prepared and tested in accordance with the requirements of 4.6 of ANS/AWS D1.3 (92), Structural Welding Code—Sheet Steel (year)

Company ... Authorized By ...
 Form A-3

**Welder Performance Qualification
AWS D1.1 Structural Code - Steel**

Failed Overhead Test Coupon

Welder's Name Anthony Patterson ID Number 4767

Company American Aerial

TEST DESCRIPTION

WPS Number AA - 091 Test Coupon XXX Production Weld _____

Material Specification, Type or Grade A36 to Material Specification, Type or Grade A36

Test Thickness 1.0" Groove

Thickness Qualified Plate Groove: 1/8" - unlimited Fillets: Unlimited

Thickness Qualified Pipe _____

Groove 1/8" - unlimited on structural pipe equal to or greater than 24" in diameter with backing or gouging

Other: Fillets Unlimited

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>SMAW</u>	<u>SMAW</u>
Type (Manual, Semi, Auto)	<u>Manual</u>	<u>Manual</u>
Backing	<u>A36 1/4" x 1.5"</u>	<u>Backing required</u>
Material Group Number	<u>Two</u>	<u>Group One and Two steels</u>
Filler Metal AWS Specifications	<u>A5.1</u>	
Filler Metal Classification	<u>E7018</u>	
Filler Metal F Numbers	<u>F4</u>	<u>F1 - F4</u>
Position	<u>3G and 4G</u>	<u>All positions</u>
Vertical Progression (up or down)	<u>Up</u>	<u>Up only</u>
Inert Gas Shielding or Backing		
Transfer Mode (GMAW)		
Current / Polarity	<u>DC+</u>	<u>DC+</u>

RESULTS

Visual Examination of Completed Welds Passed Date 12/7/10

Vertical Bends - Passed, Overhead Bends Failed
Qualified to weld Flat, Horizontal, and Vertical positions only

Vertical Test Results: Bend #1 Passed, three openings <1/32"
Bend #2 Passed, one opening <1/32"

Overhead Test Results: Bend #1 Failed, lack of penetration and slag entrapment in root pass
Bend #2 Failed, lack of penetration and slag entrapment in root pass

Date 12/7/10

Test conducted by:

Warren G. Swan, Jr. New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared and welded in conformance with the 2010 AWS D1.1 welding code and the above noted Welding Procedure Specification.

Name: Warren G. Swan, Jr.

Affiliation New England School of Metalwork

Address 7 Albiston Way Auburn, ME 04210



Warren G. Swan, Jr.
CWS 04080381
QC1 EXP. 8/1/2013

Warren G. Swan, Jr.

Quality Assurance Labs Inc.

NON-DESTRUCTIVE TESTING AND INSPECTION SERVICES

80 PLEASANT AVENUE

SOUTH PORTLAND, MAINE 04106

TEL: (207) 799-8911

FAX: (207) 799-7251

INSPECTION REPORT

CUSTOMER'S NAME: **AMERICAN AERIAL SERVICES INC.** P.O. NO.: 2794 PAGE 1 OF 3

RADIOGRAPHY REPORT NO.: **QAL-04-296** PROCEDURE NO.: 0913 QUANTITY: 1

PART NO.: **WELDER TEST PLATE** JOB NO.: N/A

SOURCE: TYPE **Iridium 192** SIZE: **.107 X .118** CURIES: **23.3** KV: **N/A** MA: **N/A** SPD: **20"**

FILM: TYPE **II** SPEED: **100** SINGLE FRONT
DOUBLE SIZE: **4 1/4 x 17** SCREENS: **0.005"** BACK

WIRE SIZE: **" B WIRE"** GROUP: **I** SENSITIVITY: **.013** WELD: **N/A** SOURCE SIDE

MATERIAL: TYPE **SS** THICKNESS: **3/8"** ACCEPTANCE STANDARD: **AWS D1.6**



OTHER RECEIVED
BRANDER NORTHEAST

TYPE OF DEFECT	COUNT	SEVERITY	ACCEPTED	REMARKS	TYPE OF DEFECT	COUNT	SEVERITY	ACCEPTED	REMARKS
WID	0-1	2	✓						
TM									

REMARKS

METHOD(S), PROCESS(S), PROCEDURE(S) MERCURY FREE

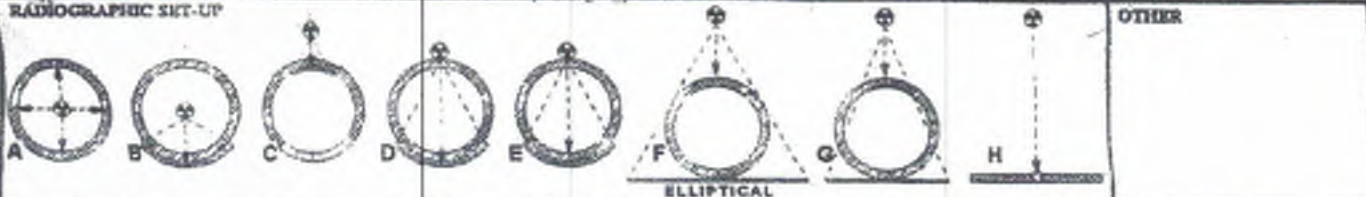
- DEFINITIONS:**
- 1. Crack
 - 2. Porosity
 - 3. Incomplete fusion
 - 4. Incomplete penetration
 - 5. Slag
 - 6. Inclusion
 - 7. Gas holes
 - 8. Shrink
 - 9. No. Approximate Diameter
 - 10. Film Artifact
 - 11. H/W
 - 12. Overlap
 - 13. Undercut
 - 14. Void
 - 15. External cleanliness

SIGNATURE: **R. Russell #2687716**
 DATE: **05/12/2004** LEVEL: **II**

INSPECTION REPORT

CUSTOMER'S NAME: American Aerial Services P.O. NO.: Verbal PAGE 1 OF 1RADIOGRAPHY REPORT NO.: QAL-02-265 PROCEDURE NO.: 1003 QUANTITY: 1PART NO.: 3/8" Test Plate JOB NO.:SOURCE: TYPE Iridium 192 SIZE: 118 x .104 CURIES: 53.6 KV: MA: SFD: 21"FILM: TYPE II SPEED: 100 SINGLE DOUBLE SIZE: 4 1/2 x 10 SCREENS: 0.005" FRONT BACK JOB SIZE ASTM "B" Wire GROUP: I SENSITIVITY: .016 SHIM: FILM SIDE SOURCE SIDE MATERIAL: TYPE CS THICKNESS: 3/8" + ACCEPTANCE STANDARD: AWS D1.1

RADIOGRAPHIC SET-UP



SERIAL NUMBER	VIEW NUMBER	CONDITION OF PART (See Definitions)	ACCEPT	REJECT	SERIAL NUMBER	VIEW NUMBER	CONDITION OF PART (See Definitions)	ACCEPT	REJECT
T. Morton									
Over Head	0-1	9	✓						

REMARKS

DEFINITIONS:

1. Cracks
2. Porosity
3. Incomplete Fusion
4. Incomplete penetration
5. Slag
6. Inclusions
7. Gas Blister
8. Shrink
9. No Apparent Defects
10. Film Artifacts

11. H/Lc
12. Surface
13. Undercut
14. Voids
15. Internal consistency

SIGNATURE: G. Parachian #2447369DATE: 04/05/2002LEVEL: II

WELDER, WELDING OPERATOR OR TACK WELDER QUALIFICATION TEST RECORD

Type of Welder Supplement G
 Name Thomas Morton Identification No. 1
 Welding Procedure Specification No. _____ Rev _____ Date 4-5-02

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type [Table 4.10, Item (2)]	<u>SMaw</u>	<u>SMaw</u>
Electrode (single or multiple) [Table 4.9, Item (9)]	<u>E7018</u>	
Current/Polarity	<u>DC+</u>	
Position [Table 4.10, Item (5)]	<u>4G</u>	<u>4G</u>
Weld Progression [Table 4.10, Item (7)]	<u>Overhead</u>	
Backing (YES or NO) [Table 4.10, Item (8)]	<u>yes</u>	<u>yes</u>
Material/Spec. [Table 4.10, Item (1)]	<u>1/8 to 3/4</u>	
Base Metal		
Thickness: (Plate)		
Groove		
Fillet		
Thickness: (Pipe/tube)	<u>3/8"</u>	<u>Limited 3/4"</u>
Groove		
Fillet		
Diameter: (Pipe)		
Groove		
Fillet		
Filler Metal [Table 4.10, Item (3)]		
Spec. No.	<u>E7018</u>	
Class		
F-No.	<u>F4</u>	<u>F4</u>
Gas/Flux Type [Table 4.10, Item (4)]	<u>N/A</u>	
Other		<u>N/A</u>

VISUAL INSPECTION (4.8.1)
 Acceptable YES or NO _____

Guided Bend Test Results (4.30.5)			
Type	Result	Type	Result

..... Fillet Test Results (4.30.2.3 and 4.30.4.1)

Appearance _____ Fillet Size _____
 Fracture Test Root Penetration _____ Macroetch _____
 (Describe the location, nature, and size of any crack or tearing of the specimen.)

Inspected by _____ Test Number _____
 Organization _____ Date _____

RADIOGRAPHIC TEST RESULTS (4.30.3.1)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks
	<u>PASS</u>				

Interpreted by James E. Panchaniam Test Number QAL-2-265
 Organization Quality Assurance Labs Date 4/5/2002

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of section 4 of ANSI/AWS D1.1, (2002) Structural Welding Code—Steel.

Manufacturer or Contractor American Aerial Services Authorized By Chris Surger
 Form E-4 Date 4-5-02

nealjwhite@gmail.com

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Corey Perro** Identification No.: **CP**
Welding Process: **FCAW** Manual: **Machine:** Semiautomatic: **X**
Position: **Overhead (4F)**
In accordance with Procedure Specification No.: **Weng-1 FCAW**
Joint type: **Tee (ref. AWS D1.1-10 fig.4.37)**
Material Specification: **ASTM A36**
Thickness tested: **1/2"**
Qualified for: **Fillet welds (1F, 2F, 4F)**

FILLER METAL

Specification No **AWS A 5.29** Classification: **E71TG-G** F No.: **6**
Filler metal diameter and trade name: **5/64" Lincoln Innershield NR212** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

TEST RESULT

<u>TYPE</u>	<u>RESULT</u>	<u>TYPE</u>	<u>RESULT</u>
Macroetch	Acceptable	Fillet break	Acceptable

Test conducted by: **Neal J White**
Per: **AWS D1.1 2010 fig.4.37**

Laboratory Test No.: **CP**
Test Date: **April 10, 2011**

We the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of: **AWS D1.1 10**

Name: **Neal J White**
Date: **April 17, 2011**
CWI No.: **86070201**



nealjwhite@gmail.com

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Corey Perro** Identification No.: **CP**
 Welding Process: **FCAW** Manual: Semiautomatic: **X** Machine:
 Position: **Vertical up (3G)**
 In accordance with Procedure Specification No.: **Weng-1 FCAW**
 Joint type: **Groove Weld (ref. AWS D1.1-10 fig.4.30)**
 Material Specification: **ASTM A36**
 Thickness tested: **1"**
 Qualified for: **Unlimited fillet and groove welds flat, horizontal and vertical positions**

FILLER METAL

Specification No. **AWS A 5.29** Classification: **E71TG-G** F No.: **6**
 Filler metal diameter and trade name: **5/64" Lincoln Innershield NR212** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

BEND TEST RESULT

<u>TYPE</u>	<u>RESULT</u>	<u>TYPE</u>	<u>RESULT</u>
Side #1	Acceptable	Side #2	Acceptable

Test conducted by: **Neal J White**
 Per: **AWS D1.1 2010 fig.4.12 & 4.15**

Laboratory Test No.: **CP**
 Test Date: **April 18, 2011**

We the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of: **AWS D1.1 10**

Name: **Neal J White**
 Date: **April 18, 2011**
 CWI No.: **86070201**



nealjwhite@gmail.com

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Corey Perro** Identification No.: **CP**
Welding Process: **FCAW** Manual: **Machine:** **Semiautomatic: X**
Position: **Horizontal (2G)**
In accordance with Procedure Specification No.: **Weng-1 FCAW-1**
Joint type: **Groove weld (ref. AWS D1.1-10 fig.4.30)**
Material Specification: **ASTM A572 Gr50**
Thickness tested: **1"**
Qualified for: **Unlimited fillet and groove welds flat and horizontal positions**

FILLER METAL

Specification No **AWS A 5.29** Classification: **E70T7** F No.: **6**
Filler metal diameter and trade name: **5/64" Lincoln Innershield NR311** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

BEND TEST RESULT

<u>TYPE</u>	<u>RESULT</u>	<u>TYPE</u>	<u>RESULT</u>
Side #1	Acceptable	Side #2	Acceptable

Test conducted by: **Neal J White**
Per: **AWS D1.1 2010 fig.4.13 & 4.15**

Laboratory Test No.: **CP**
Test Date: **April 10, 2011**

We the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of: **AWS D1.1 10**

Name: **Neal J White**
Date: **April 17, 2011**
CWI No.: **86070201**



nealjwhite@gmail.com

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Corey Perro** Identification No.: **CP**
Welding Process: **SMAW** Manual: **X** Semiautomatic: Machine:
Position: **Vertical up (3F), Overhead (4F)**
In accordance with Procedure Specification No.: **Weng-1 SMAW**
Joint type: **Fillet weld (ref. AWS D1.1-10 fig.4.37)**
Material Specification: **ASTM A36**
Thickness tested: **1/2"**
Qualified for: **Fillet welds all positions**

FILLER METAL

Specification No **AWS A 5.1** Classification: **E7018** F No.: **4**
Filler metal diameter and trade name: **1/8" Lincoln Excaliber** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

TEST RESULT

<u>TYPE</u>	<u>RESULT</u>	<u>TYPE</u>	<u>RESULT</u>
Macroetch (V)	Acceptable	Fillet break (V)	Acceptable
Macroetch (OH)	Acceptable	Fillet break (OH)	Acceptable

Test conducted by: **Neal J White**
Per: **AWS D1.1 2010 fig.4.37**

Laboratory Test No.: **CPV, CPOH**
Test Date: **April 10, 2011**

We the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of: **AWS D1.1 10**

Name: **Neal J White**
Date: **April 17, 2011**
CWI No.: **86070201**



Of Massachusetts Inc.
"The Construction Testing People"

WELDER QUALIFICATION TEST RECORD

Welder or welder operator's name: JAMES E READ Identification no: 0534
 Welding process: SMW Manual: XXXX Semi-automatic: _____ Machine: _____
 Position: 3G (vertical upwards) & 4G
 (Flat, horizontal, overhead or vertical) (Vertical, slope whether overhead or downward)
 In accordance with procedure specification no: _____
 Material specification: ASTM A 36
 Diameter and wall thickness of pipe: otherwise give thickness 1/8" PLATE
 Thickness and type of plates: LIMITED THICKNESS

FILLER METAL

Specification no: AWS A5.1 Classification: E7018 F no: F4
 Describe filler metal if not covered by AWS specification: _____
 Is backing strip used? YES
 Filler metal diameter and trade name: MUREX 1/8" DIA. Flux for submerged arc or gas for gas metal
 arc or flux cored arc welding: _____

VISUAL INSPECTION

Appearance: ACCEPTABLE Undercut: NONE Piping defects: NONE

Guided Bend Test Results

Type	Result	Type	Result
3G RB	ACCEPTABLE	4G RB	ACCEPTABLE
3G FB	ACCEPTABLE	4G FB	ACCEPTABLE

Test conducted by: MICHAEL A SCULLY Laboratory test no: 950613
 by: CWI # 88979121 Test date: MAY 13, 1999

Filet Test Results

Appearance: _____ Filet size: _____
 Structure test and penetration: _____ Macro: _____
 (Describe the location, nature, and size of any crack or defect of the specimen)
 Test conducted by: _____ Laboratory test no: _____
 by: _____ Test date: _____

RADIOGRAPHIC TEST RESULTS

Exposure Identification	Results	Remarks	Exposure Identification	Results	Remarks

Test witnessed by: _____ Test no: _____

By the undersigned, certify that the statements in this report are correct and that the welds were prepared and tested in accordance with the requirements of AWS D11.1 - 90 Structural Welding Code - Steel

Contractor: AMERICAN AERIAL
 Authorized by: JAMES E READ
 Date: MAY 13, 1999



HE-049904
STEVEN L SANDERS
 27 WILLIAMS ROAD
 SABATTUS ME 04280

Steven L Sanders

01/13/2016

Restricted To:
 HE-4A- Unlimited Specialty Series
 HE-1A- Derricks/ Lattice Cranes

DIG SAFE CALL CENTER: (888) 344-7233 - In case of an
 accident call (508) 820-1444.
 For DPS Licensing information visit: www.Mass.Gov/DPS

MAINE Charles E. Sullivan Jr. Secretary of State

CDL OPERATOR

SANDERS
 STEVEN L
 27 WILLIAMS ROAD
 SABATTUS, ME 04280


9427057

ISSUED: 01/10/2011 EXPIRES: 01/13/2016 BIRTH DATE: 01/13/1952

WEIGHT: 180 SEX: M HAIR: BR EYES: BR HEIGHT: 60

CLASS: B
 REST: A
 GEND: I

Steven Sanders



005-54-9727

ESTABLISHED FOR
STEVEN L SANDERS

FOR LOCAL DEPARTY AND THE UNITED STATES DEPT OF TRANSPORTATION

Steven L Sanders				Process(es)	GAS	Filler Metal	Base Metal	Pos	Thickness, Backing Thickness, Pipe/OD & Backing	Expires
#	Test Date	Sup	Code	SMAW	N/A	F4	P	A	U	3/13/2014

AWS Certified Welder
 Welders, Brazers and Operators

Steven L Sanders
 Cert # 0710063W SSN # XXX-XX-3727



1-800-443-9353 x 273
 Information relating to identification and certification of the
 bearer of this card may be verified by calling or writing:
 CERTIFICATION DEPARTMENT OF THE AMERICAN WELDING SOCIETY
 8659 Dorset Blvd, #130, Dorset, Florida 33186

AMERICAN WELDING SOCIETY

VALID ONLY IF ACCOMPANIED BY PHOTO ID

This Card is the property of AWS and shall be returned on demand.

WELDER PERFORMANCE QUALIFICATION (WPQ)
AWS D1.1 Structural Welding Code - Steel (Prequalified)

Failed Vertical, Passed Overhead

Welder's Name Ian Cribbins ID Number 2730
 Company American Aerial

TEST DESCRIPTION

WPS Number AA-001 Test Coupon XXX Production Weld _____
 Material Specification, Type or Grade A36 to Material Specification, Type or Grade A36
coupon consisted of two pieces of 1"x 4"x 5" plate with both plates beveled 22.5 degrees along the 5" side

TESTING CONDITIONS AND QUALIFICATION LIMITS

Welding Variables	Actual Values	Range Qualified
Welding Process(es)	<u>SMAW</u>	<u>SMAW</u>
Type (Manual, Semi, Auto)	<u>Manual</u>	<u>Manual</u>
Material Specification	<u>1.0" A36 to 1.0" A36</u>	<u>Group I and II steels</u>
Backing	<u>A36 1/4" x 1-1/2"</u>	<u>backing required</u>
Plate <u>XXX</u> Pipe _____	<u>1.0" thickness</u>	<u>1/8" - unlimited</u>
<u>1/8" to unlimited thickness on plate and pipe 24" or greater diameter with backing or backgouging</u>		
<u>All fillet sizes qualified on plate and pipe (see 4.25 and 4.28 for TYK joint restrictions)</u>		
AWS Electrode Classification	<u>E7018</u>	
AWS Electrode Specification	<u>A5.1</u>	
Single or Multiple Electrodes	<u>Single</u>	<u>Single Only</u>
Deposit Thickness for each process		
Process 1: <u>SMAW</u> 3 layers minimum Yes <u>XXX</u> No _____		<u>1/8" - unlimited</u>
Process 2 _____ 3 layers minimum Yes _____ No _____		
Position <u>4G</u>	<u>Flat (1G) and Overhead (4G) groove qualified, Flat, Horizontal, and Overhead(1F, 2F, 4F) fillet qualified</u>	
Vertical Progression (up or down)	_____	_____
Current / Polarity	<u>DC Positive</u>	
Gas	_____	_____

RESULTS

Visual Examination of Completed Weld Passed 3/4/16

Bend Tests Failed Vertical, Passed Overhead

Vertical

Side Bend 1 Passed, three 1/16" openings, three 1/32" openings

Side Bend 2 Failed, one opening >1/8", one 1/8" opening, two 1/16" openings

Overhead

Side Bend 1 Passed, two 1/32" openings

Side Bend 2 Passed, one 1/32" opening

Welding and Testing Supervised by: Warren G Swan, Jr.

Company New England School of Metalwork

We certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of the 2015 American Welding Society D1.1 Structural Welding Code.

Warren G. Swan, Jr.

Welding Director, New England School of Metalwork

AWS CWI Number: 04050361



Warren G Swan Jr
 CWI 04050361
 DC1 EXP. 5/1/2016

WHITE ENGINEERING, LLC**P.O. Box 878 Glen, N.H. 03838****nealjwhite@gmail.com****Tel. 603-383-9347 Fax. 603-383-8262****WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD**

Welder or Welding Operators Name: **Chris Nye** Identification No.: **CN**
 Welding Process: **SMAW** Manual: **X** Semiautomatic: Machine:
 Position: **Vertical (up), Overhead**
 In accordance with Procedure Specification No.: **WENG SMAW test**
 Joint type: **Groove Weld (ref. AWS D1.1-15 fig.4.31)**
 Material Specification: **ASTM A36**
 Thickness tested: **3/8"**
 Qualified for: **Unlimited fillet (all positions), Limited Groove (3/4" and under – all positions)**

FILLER METAL

Specification No **AWS A 5.1** Classification: **E7018** F No.: **4**
 Filler metal diameter and trade name: **1/8" Lincoln Excaliber** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable V & OH** Undercut: **None V & OH** Porosity: **None V & OH**

BEND TEST RESULT

<u>TYPE</u>	<u>RESULT</u>	<u>TYPE</u>	<u>RESULT</u>
Face V	Acceptable	Root V	Acceptable
Face OH	Acceptable	Face OH	Acceptable

Test conducted by: **Neal J White**
 Per: **AWS D1.1 2015 fig. 4.12 & 4.15**

Laboratory Test No.: **CN SMAW OH, V**
 Test Date: **April 18, 2017**

Note: V = vertical, OH = overhead

We the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of: **AWS D1.1- 15**

Name: **Neal J White**
 Date: **April 18, 2017**
 CWI No.: **86070201**

 **Neal J White**
CWI 86070201
QC1 EXP. 7/1/2019

WHITE ENGINEERING, LLC
 nealjwhite@gmail.com

P.O. Box 878 Glen, N.H. 03838
 Tel. 603-383-9347 Fax. 603-383-8262

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Chris Nye** Identification No.: **CN**
 Welding Process: **FCAW** Manual: Semiautomatic: **X** Machine:
 Position: **Overhead**
 In accordance with Procedure Specification No.: **WENG FCAW test**
 Joint type: **Groove Weld (ref. AWS D1.1-15 fig.4.31)**
 Material Specification: **ASTM A36**
 Thickness tested: **3/8"**
 Qualified for: **Unlimited fillet (1F, 2F, 4F), Limited groove (3/4" and under) (1G, 2G, 4G)**

FILLER METAL

Specification No **AWS A 5.20** Classification: **E71T-8** F No.: **6**
 Filler metal diameter and trade name: **5/64 Lincoln NR-232** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

BEND TEST RESULT

<u>TYPE</u>	<u>RESULT</u>	<u>TYPE</u>	<u>RESULT</u>
Face	Acceptable	Root	Acceptable

Test conducted by: **Neal J White**
 Per: **AWS D1.1 2015 fig. 4.12 & 4.15**

Laboratory Test No.: **CN FCAW OH**
 Test Date: **April 18, 2017**

We the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of: **AWS D1.1- 15**

Name: **Neal J White**
 Date: **April 18, 2017**
 CWI No.: **86070201**

 **Neal J White**
 CWI 86070201
 QC1 EXP. 7/1/2019

WHITE ENGINEERING, LLC
 nealjwhite@gmail.com

P.O. Box 878 Glen, N.H. 03838
 Tel. 603-383-9347 Fax. 603-383-8262

WELDER AND WELDING OPERATOR QUALIFICATION TEST RECORD

Welder or Welding Operators Name: **Chris Nye** Identification No.: **CN**
 Welding Process: **FCAW** Manual: Semiautomatic: **X** Machine:
 Position: **Vertical (up)**
 In accordance with Procedure Specification No.: **WENG FCAW test**
 Joint type: **Groove Weld (ref. AWS D1.1-15 fig.4.21)**
 Material Specification: **ASTM A36**
 Thickness tested: **1"**
 Qualified for: **Unlimited fillet (1F, 2F, 3F), Unlimited groove weld (1G, 2G, 3G)**

FILLER METAL

Specification No **AWS A 5.20** Classification: **E71T-8** F No.: **6**
 Filler metal diameter and trade name: **5/64 Lincoln NR-232** Gas: **NA**

VISUAL INSPECTION

Appearance: **Acceptable** Undercut: **None** Porosity: **None**

BEND TEST RESULT

<u>TYPE</u>	<u>RESULT</u>	<u>TYPE</u>	<u>RESULT</u>
Side	Acceptable	Side	Acceptable

Test conducted by: **Neal J White**
 Per: **AWS D1.1 2015 fig. 4.13 & 4.15**

Laboratory Test No.: **CN FCAW V**
 Test Date: **April 18, 2017**

We the undersigned, certify that the statements in this record are correct and that the welds were prepared and tested in accordance with the requirements of: **AWS D1.1- 15**

Name: **Neal J White**
 Date: **April 18, 2017**
 CWI No.: **86070201**

 **Neal J White**
CWI 86070201
QC1 EXP. 7/1/2019

Neal J White