Alaska Railroad Corporation
327 W. Ship Creek Avenue, Anchorage, AK 99501
P.O. Box 107500, Anchorage, AK 99510-7500
Telephone 907.265.2593 Facsimile 907.265.2439

August 27, 2015

Invitation to Bid

#15-40-204085

ARRC Passenger Coaches 352 & 452 Repainting and Repair

Fax Cover Sheet

Response Required: This page must be completed and returned to ensure receipt of future addenda or additional information. Please fax this form to (907) 265-2439. All addenda will be forwarded to the contact name and number listed below.

Firms that have not returned the cover sheet will not be informed of addendums and will only be alerted to addendums by checking with the ARRC procurement officer or by checking ARRC's internet site: www.akrr.com, select Suppliers and then Solicitations. Bidders must acknowledge the receipt of all issued addendums in their proposal/bid submittal.

Company Name _____

Mailing Address _____

City, State, Zip _____

Contact Name _____

Phone Number _____ Fax _____

Email Address _____

The Alaska Railroad Corporation web site www.akrr.com

THIS IS NOT AN ORDER

INVITATION NUMBER: 15-40-204085
DATE OF INVITATION: August 27, 2015

SEALED BIDS WILL BE RECEIVED AT:

Alaska Railroad Corporation
327 West Ship Creek,
Anchorage, Alaska 99501

UNTIL 3:00 P.M. LOCAL TIME ON **September 17,** AT THAT TIME BIDS WILL BE PUBLICLY OPENED.

ARRC Passenger Coaches 352 & 452 Repainting and Repair

The Alaska Railroad Corporation ("ARRC") is soliciting bids from interested parties to repaint and repair passenger coaches as specified herein. Interested parties are invited to submit a bid to supply said items to ARRC. Bids must be submitted on the bid form contained herein and must be mailed or delivered to the above address. Bids received via facsimile transmission will be considered non-responsive. The bid shall be in a sealed envelope with the bid number 15-40-204085 clearly printed on the face of the envelope. Bids must be complete and in U.S. dollars. See instructions and conditions enclosed herein.

ARRC reserves the right to reject any and all bids, or any part thereof, negotiate changes in bids, accept any bids or any part thereof, waive minor informalities or defects in any bids, and not to award the proposed contract if it is in the best interest of the ARRC.

An Alaska Business license is not a prerequisite to bid. Bidders who possess an Alaska Business license and also meet the other criteria of an Alaska Bidder shall receive a preference per the "Alaska bidder preference".

ARRC shall not be held responsible for bidder's lack of understanding of what is required by this bid. Should a bidder not understand any aspect of this bid, or require further explanation, or clarification regarding the intent or requirements of this bid, it shall be the responsibility of the bidder to seek guidance from the ARRC.

ARRC may award a contract resulting from this solicitation to the responsive offeror whose offer conforming to this solicitation will be the most advantageous to the ARRC. ARRC may reject any or all offers if such action is in the best interest of ARRC, and waives informalities and minor irregularities in offers received. Any resulting contract from this solicitation shall incorporate the Standard Instructions, and General Terms and Conditions incorporated in this solicitation.

This solicitation is not to be construed as a commitment of any kind nor does it commit the ARRC to pay for any costs incurred in the submission of an offer or for any other incurred cost prior to the execution of a formal contract

BIDDER/VENDOR TERMS AND CONDITIONS: PROSPECTIVE BIDDERS ARE CAUTIONED TO PAY PARTICULAR ATTENTION TO THIS CLAUSE. Bidder/contractor imposed terms and conditions which conflict with this Invitation to Bid terms and conditions are considered counter offers and, as such, will cause the Alaska Railroad Corporation to consider the bid non-responsive.

If a bidder attaches additional terms and conditions as part of the bid, such attachments must be accompanied by a disclaimer stating that in the event of conflict between the terms and conditions of this Invitation to Bid and the terms and conditions of the bidder/contractor, the terms and conditions of the Invitation to Bid will prevail.

ARRC Disadvantaged Business Enterprise (DBE) Program

ARRC is an equal opportunity corporation that encourages the participation of DBEs as prime contractors and subcontractors on its contracts funded in whole or in part by the Federal Transit or Federal Highway Administrations. The ARRC currently has a 100% race-neutral DBE program and does not set DBE goals on individual contracts. Nonetheless, the ARRC aspires to achieve an overall DBE participation of 3.63% in FY 2015.

The Alaska Railroad is a member of Green Star (http://www.greenstarinc.org/). ARRC earned an initial Green Star Award in 1994 and a Green Star Air Quality Award in 2007. The Alaska Railroad considers Green Star membership to be a positive business attribute, and regards a Green Star award as a tangible sign of an organization's commitment to environmental stewardship and continual improvement within its operations.

Please direct all responses and/or questions concerning this invitation to bid to Greg Goemer, Alaska Railroad Corporation, Supply Management, 327 W. Ship Creek Avenue, Anchorage, AK 99501, telephone number 907-265-2593, email address goemerg@akrr.com. Questions must be submitted in written form prior to July 20. Questions submitted after that date will not be accepted.

Sincerely,

Greg Goemer
Sr. Contract Administrator

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SUBMITTALS: Bids will not be considered if the following documents are not completely filled out and submitted at the time of bidding:

1. Cost Schedule
2. Bidder's Questionnaire
3. Supply Bid Form
4. Welding Qualifications

APPENDIX A

ALASKA BIDDERS PREFERENCE

1. ALASKA BIDDER PREFERENCE: Award will be made to the lowest responsive and responsible bidder after an Alaska bidder preference of five percent (5%) has been applied. The preference will be given to a person who: (1) holds a current Alaska business license at the time designated in the invitation to bid for bid opening; (2) submits a bid for goods or services under the name on the Alaska business license; (3) has maintained a place of business within the state staffed by the bidder, or an employee of the bidder, for a period of six months immediately preceding the date of the bid; (4) is incorporated or qualified to do business under the laws of the state, is a sole proprietorship and the proprietor is a resident of the state, is a limited liability company organized under AS 10.50 and all members are residents of the state, or is a partnership under AS 32.06 or AS 32.11 and all partners are residents of the state; and, (5) if a joint venture, is composed entirely of ventures that qualify under (1) - (4) of this subsection.

2. ALASKA VETERAN PREFERENCE: If a bidder qualifies for the Alaska bidder preference and is a qualifying entity as defined herein, they will be awarded an Alaska veteran preference of five percent (5%). The preference will be given to a (1) sole proprietorship owned by an Alaska veteran; (2) partnership under AS 32.06 or AS 32.11 if a majority of the partners are Alaska veterans; (3) limited liability company organized under AS 10.50 if a majority of the members are Alaska veterans; or (4) corporation that is wholly owned by individuals and a majority of the individuals are Alaska veterans, and may not exceed $5,000. The bidder must also add value by actually performing, controlling, managing, and supervising the services provided, or for supplies, the bidder must have sold supplies of the general nature solicited to other state agencies, other governments, or the general public.

In order to receive the Alaska Bidder Preference and/or Alaskan Veteran Preference, the bid must also include a statement certifying that the bidder is eligible to receive said preferences. The application of preferences is for bid evaluation purposes only.

APPENDIX B

MINIMUM QUALIFICATIONS /SCOPE OR WORK

Alaska Railroad Passenger Coach Repair Notes:

Neither manufacturer's drawings nor specifications are available for these coaches. Both coaches have been modified from their original construction.

Coach windows and gaskets are to be removed and glass stored; protected from damage. The coach exterior is to be stripped of coatings including body filler and repainted per Appendix C Specifications for Repainting of Passenger Cars and Locomotive Exteriors. All references to sand blasting and painting in the following text are per Appendix C Specifications.

With the coach exterior stripped an assessment of coach structure is to be made by Owner's representative with the contractor. It is anticipated that removal of some components will be necessary to complete the assessment especially at the side sills. Alaska Railroad has made temporary repairs to two of the 352 window frames and knows that these will require long term repairs.

Coach 352 appears to be in the worst condition and work is to begin on it first. Coach 452 is anticipated to require less repair and work on it may begin only after the assessment of 352 is complete, the full cost of repairs are known, and a determination that adequate funds remain.

Based on the assessment a repair plan shall be prepared by owner's representative and Contractor that addresses each failed or damaged item or member with a general repair approach.

Minimum Qualifications:

Contractor shall have its own rail accessible shop in which to perform all of the work required in this solicitation. Contractor's paint and repair facility shall meet all State and Federal requirements for performing this work. Image is important to Alaska Railroad and therefore Contractor shall have a minimum of five (5) years' experience in painting and repair of heavy equipment. Experience painting railcars or locomotives are preferred. These minimum qualifications may not be satisfied by use of a sub-contractor.

Contractor will need to allow Alaska Railroad employees or its authorized representative to make repairs to passenger coaches in contractor's shop if necessary.

During removal of metal from passenger coaches measures must be taken to protect interior and exterior surfaces of the coach.

Requirements for Welding:

Welding methods are restricted to shielded metal arc welding (SMAW), gas metal arc welding (GMAW), or flux core arc welding (FCAW). FCAW with dual shield is the preferred method.
Approved weld types include but are not limited to: groove welds, fillet welds, plug welds, slot welds, and butt welds. The method of depositing metal shall be chosen to minimize warpage.

All welders performing work in accordance with listed welding procedures and types shall be qualified.

Technique and Workmanship:

Equipment: Welding and cutting equipment shall be so designed and manufactured and shall be in such condition as to enable qualified welders to obtain sound welds.

Welding Conditions: Welding shall be restricted to enclosed areas with temperatures not less than 50^{O} Fahrenheit.

Discontinuities Repair. The amount of metal removed shall be the minimum necessary to remove the discontinuity.

Weld Profiles: Fillet welds, face of fillet welds may be slightly convex, flat or slightly concave.

Repairs after welding: Joint preparation methods. Removal of weld material or portion of the base metal shall only be performed by machining, grinding, chipping, oxygen gouging, air arc, or plasma arc gouging. Unacceptable portion of the weld shall be removed without substantial removal of the base metal.

Extent of Repair: The contractor has the option of either repairing an unacceptable weld or removing and replacing the entire weld.

Distortion Control (Steel): Where required, steel members distorted by welding shall be straightened by mechanical means or by carefully supervised application of a limited amount of localized heating.

Arc Strikes: Arc strikes outside the area of permanent welds should be avoided on any base metal. Cracks or blemishes caused by arc strikes shall be ground to a smooth contour and inspected to ensure soundness.

Cleaning of Single Pass and Multi Pass Welds: Before welding over previous deposited metal, all slag shall be removed and the weld and adjacent base metal shall be clean. This requirement shall apply not

only to successive layers but also to successive beads and to the crater area when welding is resumed after any interruption.

Weld Appearance: Weld splatter adhesions shall be removed by sanding or grinding, as required.

Weld Termination: Welds shall be terminated at the end of a joint in a manner that will ensure sound welds.

Body Work:

1. Remove all plastic body filler and assess the condition of side sheeting with Owner's representative.
2. Replace or repair sheeting as directed by Owner's representative.
3. Repaint.

Window Frame Repair:

1. Pull all windows.
2. Inspect all sheeting around windows after sand blasting.
3. Replace side sheeting as needed to bring window structure back into tolerance.

Upper Belt Rail Repair:

1. Sand blast all rust out of belt rail.
2. Inspect belt rail for scale and remove decay.
3. Apply primer paint coat per Alaska Railroad paint specification.
4. Install ASTM A36 steel angle cover over the belt rail and stitch weld to keep angle from warping the side sheets. Weld gaps in stitch weld to provide continuous weld top and bottom. Provide taper the angle at the ends of the car, for appearance.
5. Apply primer paint coat to new angle per Alaska Railroad paint specification.

Bottom Side Skirts Repair:

1. Remove all plastic body filler (bondo).
2. Remove side skirts sheet metal.
3. Sand blast inner structure, replace all decayed steel and paint with primer.
4. Install new skirt using high strength, low alloy (HSLA) sheeting, skim coat and paint.

Side Sill Repair:

1. Block trucks solid.
2. Install jacks to support side sill at four feet on center within area where side sheeting is to be removed and extend support four feet beyond both ends of opening. Mirror side sill support on opposite side of coach to balance coach. Supports shall be located in a manner to minimize any sagging or distortion to any part of the undamaged vehicle when damaged areas are cut away. Supports shall be placed where contact with the structure will be at a place that has sufficient strength to carry the anticipated load.
3. Cut and remove side sheeting to expose side sill in lengths not exceed ten (10) feet long nor exceeding two (2) feet high.

4. Inspect inner framing, sand blast, and repair or replace decayed steel parts as needed.
5. Coat all inner structure with paint primer.
6. Weld on new HSLA side sheeting by stitch welding to old upper sheeting and plug welding to vertical supports keeping the sheeting from warping. Plug weld horizontal slots down the sides of the side sill.
7. Leave the repaired end open from welding to allow removal of the adjoining section of side sheeting to expose the next section of side sill.
8. Repeat the previous steps until the whole side sill is completely repaired, including the opposite side of coach.
9. Repaint.

APPENDIX C

SPECIFICATIONS

SPECIFICATION FOR THE REPAINTING OF PASSENGER CAR AND LOCOMOTIVE EXTERIORS

Revision No. 1 March 2014

1.0 GENERAL

1.1 Scope: This specification covers the surface preparation and coating application requirements for performing maintenance painting on the exterior of railroad passenger cars and locomotives for the Alaska Railroad Corporation (ARRC). In this context, exterior refers to the sides, roof, ends, vestibule interior(s) and underframe equipment. Substrates include existing intact and adherent coating, high strength low alloy carbon steel, aluminum and durable epoxy body filler. Maintenance painting may include any of the following strategies: spot repairs, spot repairs and over coating, zone repairs and full removal and replacement.

Surface preparation shall include methods for spot repairs, spot repairs and overcoating, zone repairs and full removal and replacement of existing coating systems.

Power Washing, LPWC	SSPC-SP WJ-4/NACE WJ-4
Solvent Cleaning	SSPC-SP 1
Hand and Power Tool Cleaning	SSPC-SP 2, SSPC-SP 3, SSPC-SP 15, SSPC, SP 11
Abrasive Blast Cleaning	SSPC- SP 7/NACE No. 4, SSPC-SP 6/NACE No. 3, SSPC-SP 16
Aluminum Preparation	ASTM D1730

Coating application methods include brush, roller, dauber, conventional spray, HVLP (high volume low pressure) spray, airless spray and plural component airless spray for polyurea application.

1.2 Reference Documents: The following is a listing of the publications referenced in this section of the Technical Specifications. Unless otherwise noted, the latest revision of the standards in effect at the time of bid shall apply. The absence of a reference otherwise identified does not negate the requirements or information therein.

American Society for Testing Materials

ASTM D1730 09	Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting
ASTM D 3359	Standard Test Methods for Measuring Adhesion by Tape Test

ASTM D 4138	Standard Test Methods for Measurement of Dry Paint Thickness of Protective Coating Systems by Destructive Means
ASTM D 4285	Standard Test Method for Indicating Oil or Water in Compressed Air
ASTM D 4414	Standard Practice for Measurement of Wet Film Thickness by Notch Gages
ASTM D 4417	Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel. Method C
ASTM D 4541	Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers
ASTM D4752	Standard Test Method for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub"
ASTM D 6386	Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting
ASTM D 7091	Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals

SSPC: The Society for Protective Coatings (SSPC)

SSPC-SP 1	Solvent Cleaning
SSPC-SP 2	Hand Tool Cleaning
SSPC-SP 3	Power Tool Cleaning
SSPC-SP 15	Commercial Grade Power Tool Cleaning
SSPC- SP 7/ NACE No. 4	Brush-Off Blast Cleaning
SSPC-SP 6/ NACE No. 3	Commercial Blast Cleaning
SSPC-SP WJ-4/NACE WJ-4	Waterjet Cleaning of Metals WJ-4 – Light Cleaning

SSPC-SP 16	Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals
SSPC-VIS 1	Visual Standard for Abrasive Blast Cleaned Steel
SSPC-VIS 3	Visual Standard for Hand and Power Tool Cleaned Steel

Equipment and Coating Manufacturer Published Instructions
Code of Federal Regulations (CFR)

29 CFR 1910, Occupational Safety and Health Regulations for General Industry

29 CFR 1926, Occupational Safety and Health Regulations for the Construction Industry

40 FR 261-268, Resource Conservation and Recovery Act (RCRA)

2.0 MATERIALS: All supplied materials shall be finest quality, suitable for the intended purpose and supplied in original unopened containers. Provide Manufacturer's Warranties for coating performance including blisters and adhesion to properly prepared surfaces. All finish coating products shall also be supplied with the Manufacturer's Warranty for gloss and color retention. Provide manufacture technical data sheets and material safety data sheets for all materials supplied and incorporated into the work.

2.1 Abrasives: Supply abrasives meeting the requirements of SSPC-AB 1 (Mineral and Slag Abrasives) and/or SSPC-AB 4 (Recyclable Encapsulated Abrasive Media). In no case shall steel or iron abrasives be used on stainless steel, aluminum or galvanized surfaces.

2.1.1 Mineral abrasives shall be Type 1[1], Grade 1[2] Class A[3] mineral abrasives per SSPC-AB 1 that will remove existing coating, rust, and scale from substrates to be prepared by abrasive blast cleaning. Abrasives shall be free of oil and meet the water soluble contaminant requirements of Section 4.1.4. When recyclable abrasives are used verify the cleaned recycled abrasive meets the requirements of 4.4 Quality Control Tests for Recycled Work Mix.

2.1.2 Encapsulated abrasive (e.g. Spongjet) shall contain mineral abrasives meeting the requirements of 2.1.1. and produce an anchor profile of 0.5 to

[1] Natural mineral Abrasives
[2] Abrasives that produce surface profiles of 1.5 to 2.5 mils (38 to 64 micrometers [μm]) when tested in accordance with Section 4.1.8.
[3] Containing no more than 1.0% free silica

1.5 mils. Recycled and cleaned encapsulated abrasive media shall conform to the requirements of SSPC-AB 4 Sections 6.2.1.2 Test for Classifier Efficiency, 6.2.2 Water-Soluble Contaminants and 6.2.3 Oil Content.

2.2 Coatings and Thinners: Provide paints, coatings, thinners in original unopened containers. Products or product components that have exceeded their shelf life before the date of application shall not be used. Use only thinners recommended by the coating manufacturer. The coating products listed herein are representative of the type and quality required for application. All coatings shall be provided by the same manufacturer[4].

2.2.1 Substitutions - Materials specified are those which have been evaluated for the specific service. Products are listed to establish a standard of quality. ARRC approved equal(s) for each product may be substituted. Submit requests for material substitution no later than two weeks[5] prior to date of surface preparation. No substitution of materials is allowed without ARRC written approval. All coatings shall be provided by the same manufacturer[4]. Products of manufacturers other than those specified or approved by ARRC will be accepted when proven to the satisfaction of the County they are equal in composition, durability, usefulness and convenience for the purpose intended. Substitutions will be considered provided the following minimum conditions are met:

The proposed coating or paint system shall have a dry film thickness (DFT) equal to or greater than that of the specified system.

The proposed coating or paint system shall employ an equal or greater number of separate coats.

The proposed coating or paint system shall employ coatings or paints of the same generic type.

All requests for substitution shall carry full descriptive literature and directions for application, along with complete information on generic type, non-volatile content by volume and a list of 10 similar projects, all at least three years old, where the coatings or paints have been applied to a similar exposure.

If the above mentioned data appears to be in order, the ARRC may require that the Contractor provide certified laboratory data sheets showing the results

[4] Should use of materials from different manufacturers be requested include a letter from at least one of the manufacturers that states it will warranty against all compatibility related failures.
[5] material availability may require a different lead time

of complete spectrographic and durability tests accomplished on the proposed substitute. An independent testing laboratory satisfactory to the ARRC shall accomplish tests and all costs incurred in the testing program shall be borne by the Contractor. In any case, the ARRC shall be sole and final judge of the acceptability of any proposed substitution. Requests for substitution must be approved in writing.

2.2.2 Primer: Primer coats may include wash primers for aluminum, galvanized and stainless substrates, epoxy primer for steel surfaces or penetrating sealers to serve as tie- coats for application over existing coatings.

Dupont WP™ Chrome-Free Wash/Etching Pre-Treatment Primer

Corlar® 2.1-St™ Satin High Solids Epoxy Mastic

Imron® Industrial Strength Low VOC Polyurethane Primer

DuPont™ Epoxy DTM Primer/Sealer 2510S/2540S/2570S/2580CR under filler

2.2.3 Intermediate Coat: Intermediate coats may include epoxy, polyurethane or moisture cure polyurethane to provide barrier protection and film build.

Corlar® 2.1-St™ Satin High Solids Epoxy Mastic

2.2.4 Finish Coat: The finish coat shall be a two component polyurethane product with excellent color retention weather resistance. Fluoropolymer coatings based on urethane chemistry may be submitted for review. Provide finish coating products in the colors required for the work. See Section 2.3 and Section 4.0 of this specification.

Imron® 3.5 HG™ +Polyurethane High Gloss Topcoat

Clear Coat- The clear coat shall be two-component polyurethane compatible with the finish coat

Imron® 3.5 HG-C™ High Gloss Clear Polyurethane

2.3 **Colors:** Provide finish coats to match the following color designations even if the coating supplier is not the manufacturer identified.

Aluminum:	Seymour of Sycamore, Inc. #620-1411
	Sherwin Williams B59S11

Other Colors:

Exterior	Dupont Imron 5000 (numbers for Imron 3.5HG):
Yellow:	54701
Blue:	63203
Black:	24926
Silver:	Aluminum (see 2.3.1)
Clear Coat:	Imron 3.5HG-C clear
Interior-	Dulux Color Numbers):
Beige:	LFQ4G34P (locomotive cabs and short hoods)
Grey:	LF25W34P (locomotive engine rooms)

2.4 Caulks, Sealants and Body Fillers: Provide paintable caulks and sealants recommended by the coating manufacturer. Use high solids epoxy body putty suitable for repair of dents, buckles and depressions in the car bodies.

Suitable products include:

DuPont™ Premier Filler™ LE 3401S™/LE 3404S™/ LE 3407S™ Urethane Primer Filler

DuPont Premium Lightweight Body Filler 313

3.0 EXECUTION

3.1 Workmanship: The performance of all work will be in accordance with industry standards, best practices and applicable state local and federal safety and environmental rules and regulations. Public image is very important to ARRC and the major purpose in undertaking this work is to promote that image including appearance and stewardship.

3.2 Surface Preparation

NOTE: The contractor is hereby advised that many passenger cars still in service were built long before lead-based paints went out of favor and it is most likely that such paint will be found on them.

3.2.1 Surfaces shall be prepared in accordance with paint manufacturer's requirements and recommendations to the extent that they exceed this specification. The contractor shall bring to the attention of ARRC's project manager for resolution any conflict between these specifications and the manufacturer's published data. Table 1 provides summary

directions for surface preparation based on the substrate and maintenance painting requirements. Do not conduct final surface preparation unless the substrate temperature is a minimum of 5°F above the dew point. Provide clean dry compressed air for all operations where air may be used for surface preparation, surface blow-down, and coating application.

3.2.2 Cleaning- Prior to beginning surface preparation power wash and solvent clean (SSPC-SP 1) all surfaces to be prepared and coated. Use cleaning aids acceptable to the Engineer as necessary to remove soot, soils, sap, and surface dirt. Do not conduct surface preparation unless the substrate temperature is a minimum of 5°F above the dew point.

3.2.3 Spot Repairs- All areas of rust, corrosion, defective paint, cracked, lifting, deformed or otherwise defective caulks, sealers and fillers and oxidation shall be removed Exposed bare metal shall be solvent cleaned and prepared by abrasive blast cleaning (SSPC-SP 6) or may be prepared using power tool cleaning (SSPC-SP 11 or SSPC-SP 15). Produce an anchor profile of 1.5 to 2.0 mils as measured in accordance with ASTM D4417 Method C. Any defects on passenger cars requiring more than 1/8" of filler shall be brought to the attention of ARRC and work held pending a decision as to best method for repair/

Prepare existing adherent existing coating that will remain around the spot repair by sanding using hand or power tools (SSPC-SP 2 or SSPC-SP 3). Feather the edges of the coating around all spot repairs a minimum of 2 inches onto the existing coating and provide a smooth transition for the coating to be applied. Note that removed caulks, sealants and fillers will be replaced in kind. 3.2.3.

3.2.4 Spot Repairs and Overcoating- Perform spot repairs as required in Section 3.2.2. Adherent paint that will remain and be overcoated shall be etched or sanded in accordance with SSPC-SP 3 or SSPC-SP 7 for Steel and SSPC-SP 3 or SSPC-SP 16 for Aluminum and/or Stainless Steel.

3.2.5 Removal and Replacement- Complete or zone removal[6] of the existing coatings shall be performed by abrasive blast cleaning in accordance with SSPC-SP 6. Provide an anchor profile of 1.5 to 2.0 mils as measured in accordance with ASTM D4417 Method C. Conduct the cleaning with care when moving from steel to aluminum or stainless steel surfaces to avoid excess damage and unacceptable anchor profiles.

[6] Zone removal refers to large surface areas that require removal and replacement but not to the extent that the entire car requires maintenance painting. For example, the work may be limited to trucks or roofs.

3.2.6 Use of Abrasives- Whenever abrasive blasting is performed; protect all surfaces not to be painted from damage and contamination by abrasives. This shall include air intakes, vents, bright metal, glass, gaskets, machined surfaces and mechanical and electrical equipment. All dust, abrasives and other interference materials shall be removed before priming.

3.2.7 Cleanliness-Verify the degree of cleanliness meets the applicable surface preparation criteria. Use SSPC-Vis 1 as an aid in evaluating surfaces prepared by abrasive blast cleaning. Use SSPC-Vis 3 as an aid in evaluating surfaces prepared by hand and power tool cleaning.

3.3 Seams and Uneven Surfaces

All seams and uneven surfaces, dents (depressions) in surface shall be roughened, feathered out primed and filled with compatible body filler suitable for temperature extremes of -60 to +100 F. Some patch work may need to be continuous from seam to seam, to prevent an undesirable finish variation. Old lettering (unless it is to be reapplied) shall be sanded out or filled so as to be illegible after application of the primer coat.

3.3.1 In preparation for painting, girder sheets shall be repaired and any loose side sheeting re-secured using fastening techniques standard to the car's original construction.

3.3.2 Holes, large dents, tears and corroded areas shall be patched (by welding with applicable type of stainless steel, aluminum or steel rod). Small dents (up to 1/8" deep) shall be filled using an epoxy or polyurethane body filler. Patch all damaged areas. Priming of mild carbon steel and non-ferrous metals shall be done before occurrence of any corrosion (detectable by eye or touch). Total film thickness of primer shall be 5 to 6 mils (wet) applied in one coat.

3.4 Application

3.4.1 All materials shall be applied and allowed to cure in strict accordance with manufacturer's requirements and recommendations. All applications and curing shall be done in a warm, dry and dust free atmosphere.

Ambient Conditions - Apply coatings under the following conditions unless the requirements of the coating manufacturer are more restrictive. .

Surface and Air Temperatures - Between 50ºF and 110ºF.

Relative Humidity - Less than 85%.

Dew Point - Surface temperature at least 5ºF above the dew point temperature of the surrounding air.

Frost/Rain - Do not apply coatings to surfaces containing frost or during rain, fog, or similar conditions.

Remove and replace any paint that is exposed to unacceptable conditions (e.g. rain or dew) prior to adequate curing.

It is the responsibility of the contractor to assure that the old finish is compatible with the new materials for spot repairs and overcoating. Any rework necessary due to reaction between the two materials shall be performed at no charge to ARRC.

3.4.2 Pre-treat prepared bare aluminum surfaces with Dupont WP™ Chrome-Free Wash/Etching Pre-Treatment Primer

Primer	Urethane	DFT	3-5
Primer	Epoxy Mastic	DFT	5-8

3.4.3 Primer shall be applied immediately after completion of surface preparation. In the case of bare metal, it shall be completed before the formation of any oxides.

3.4.4 Total film thickness of primer shall be 5 to 6 mils.

3.4.5 Finish coat and lettering

3.4.6 Finish coats shall be applied well within the time limits after immediately prior coat as specified by the paint manufacturer.

3.4.7 Application shall consist of two coats totaling 1.5 to 2 mils DFT.

3.4.8 Lettering shall be applied as shown on the detailed diagram.

3.4.9 Any logos required will be supplied by ARRC and applied by the contractor.

3.4.10 Edges of all logos and any other decals or Scotch-Lite shall be sealed with a coat of clear lacquer prior to final (clear) coat.

3.4.11 Final Coat: After all painting and lettering is complete the entire car body shall be given one coat of Dupont Imron 611 clear-coat within the recoat window of the pigmented finish coats. The finished product shall present a high gloss "wet" appearance.

4.0 Color Scheme

Paint scheme shall be as described on the specific painting diagram for the particular piece of equipment involved. The basic color scheme is described here for information only:

4.1 Aluminum, HSLA steel and flat panel Budd built ("smooth side") passenger cars:

Car body:

Blue with two yellow strips (on sides only, corner post to corner post):

On girder sheet: $21\frac{7}{8}$ " wide from 57 ¼ " to 79 $\frac{1}{8}$" Above Top of Rail (ATR).

On letter board: 3 $\frac{7}{8}$" wide from 131 $\frac{7}{8}$" to 135 $\frac{3}{4}$ " ATR.

Roof: Blue

Lettering:

Blue, on 21 $\frac{7}{8}$" yellow stripe as follows:

"**ALASKA**" in 9 1/4" (nominal) stylized font at left end of stripe (BR and AL), centered over truck.

Road number In 8" (nominal) stylized font, right end of strip (BR and AL), centered over truck.

Alaska Railroad logotype, 24" roundel, (yellow letters with open background allowing 63203 Blue to show), located at right end of each side (BL and AR) centered vertically on blue and horizontally 30" to the right of the visual end of the area (corner post or door post) if space permits, but not less than 21". (Omit where space is insufficient.)

4.2 **Underframe equipment**: Black. Protect all tags, nameplates and stainless steel. Do not paint these items.

4.3 **Trucks**: Silver (aluminum color enamel per 2.2.1 applied without primer)

4.4 **Fluted Stainless** steel passenger cars shall be unpainted except as follows:

Striping: A blue stripe shall run the full length of the letter board

Lettering: "ALASKA" in extended yellow stylized font visually centered[7] on the letter board. Name or road number in yellow stylized font on a blue background (applied to badge plate provided)

Logotype, underframe equipment and trucks: same as smooth side cars (5.1)

5.0 QUALITY CONTROL

5.1 Contractor - The Contractor shall be held in strict accordance with the requirements and intent of the Specifications.

5.1.1 The Contractor shall perform and document Quality Control inspections and testing specified herein on all phases of surface preparation and coating application throughout the duration of the contract. Procedures or practices not specifically defined herein may be used provided they meet recognized and acceptable professional standards and are approved by the ARRC.

Ambient Conditions – Sling Psychrometer, Electronic Gages

Cleanliness of compressed air supplies- ASTM D4285 at least once per shift

Degree of Cleanliness – As defined in the appropriate preparation standard aided by use of SSPC-Vis 1 and SSPC-Vis 3

Anchor Profile - ASTM D4417 Method C

Coating Mixing and Thinning - Products and thinner batch numbers

Include induction time and Potlife as appropriate.

Coating Wet Film Thickness (WFT) - ASTM D4414

Coating Dry Film Thickness (DFT) - SSPC-PA 2, Level 3 Criteria

5.1.2 All materials furnished and all work accomplished under the Contract shall be subject to Quality Assurance (QA) inspections by the ARRC at its discretion. The Contractor shall provide access and allow for adequate time to perform all inspections. The ARRC will pay the cost of its own inspection

5.1.3 Work accomplished in the absence of prescribed inspections and may be required to be removed and replaced under the proper inspection. The entire cost of removal and replacement, including the cost of all materials

[7] On dome cars "visually centered" means centered on the dome.

used in the work thus removed, shall be borne by the Contractor regardless of whether the work removed is found to be defective or not.

6.0 UNACCEPTABLE DEFECTS: Unacceptable defects in the applied coating system shall be corrected at no cost to the ARRC. Unacceptable defects include deficiencies in surface preparation or coating application that are:

6.1 Detectable by touch or unaided eye at any distance such as:

Off spray or dry spray (rough, sandy finish)

Bubbles, blistering, cracked, lifting or peeling coating

Over-spray or any paint on bright metal, glass and surfaces not scheduled for painting

6.2 Visible from a distance of three feet or more in any lighting condition as determined by ARRC: These include:

Sags, curtains, runs or wrinkles

Air bubbles, pin holes, craters, fish eyes or other poor wetting

Blushing, color bleeding

Fuzzy color separation

Orange peel finish visible from a distance of 10 feet or greater

7.0 COMPLETION

7.1 All masking shall be removed and touch-up work complete before equipment is released or shipped to ARRC.

7.2 ARRC reserves the right to perform a final inspection before shipping is permitted.

8.0 WARRANTEE: The contractor shall warrantee the finish against defects in materials and workmanship for two years of normal service anywhere on the Alaska Railroad.

8.1 The Contractor warrantee shall include the adhesion of paint including bubbles, blisters, cracking, delamination, peeling and flaking between coats or between the underlying substrates and coating materials. If any repairs become necessary, the contractor shall perform the work at a time and place convenient to ARRC. ARRC shall make every effort to release the equipment to the contractor at a time

and place convenient to the contractor, but actual performance will of necessity be constrained by operational considerations.

8.2 The coating manufacturer shall provide a ten year warranty against color or gloss change of the finish coat and clear coats following its inspection of the [completed] work.

Table 1 – Surface Preparation and Maintenance Painting Guidance for the Exterior Surfaces of Rail Cars.

Exterior Railcar Substrate	Maintenance Painting	Surface Preparation	Bare Metal Treatment	Primer	Finish	Clear Coat
Aluminum	Spot	SP 2, SP 3, SP 15, SP 16	Wash Primer	Epoxy	Polyurethane	Polyurethane
	Zone	SP 2, SP 3, SP 15, SP 6	Wash Primer	Epoxy	Polyurethane	Polyurethane
	Overcoat	SP 2, SP3, SP 16	Wash Primer	Epoxy	Polyurethane	Polyurethane
	Replace	SP 6	Wash Primer	Epoxy	Polyurethane	Polyurethane
Steel	Spot	SP 2, SP 3, SP 15, SP 16	Epoxy	Epoxy	Polyurethane	Polyurethane
	Zone	SP 2, SP 3, SP 15, SP 6	Epoxy	Epoxy	Polyurethane	Polyurethane
	Overcoat	SP 2, SP3	Epoxy	Epoxy	Polyurethane	Polyurethane
	Replace	SP 6	Epoxy	Epoxy	Polyurethane	Polyurethane
Stainless Steel	Spot	SP 2, SP 3, SP 15, SP 16	Wash Primer	Epoxy	Polyurethane	Polyurethane
	Zone	SP 2, SP 3, SP 15, SP 6	Wash Primer	Epoxy	Polyurethane	Polyurethane
	Overcoat	SP 2, SP3, SP 16	Wash Primer	Epoxy	Polyurethane	Polyurethane
	Replace	SP 6	Wash Primer	Epoxy	Polyurethane	Polyurethane

Table 2 – Surface Preparation and Maintenance Painting Guidance for the Exterior HVAC Wells and Roofs.

Exterior	Maintenance Painting	Surface Preparation[1]	Bare Metal Treatment	Primer	Finish[2]	Clear Coat
Railcar Roof	Spot	SP 2, SP 3, SP 15, SP 16	Immersion Grade Epoxy	Recommended Epoxy Primer	Polyurea	N/A
	Zone	SP 2, SP 3, SP 15, SP 6	Immersion Grade Epoxy	Recommended Epoxy Primer	Polyurea	N/A
	Replace	SP 6	Immersion Grade Epoxy	Recommended Epoxy Primer	Polyurea	N/A

1. Polyurea does not lend itself to overcoating.
2. Polyurea shall be used to line HVAC wells to achieve a water tight seal from standing water. Other roof top surfaces may be coated with the systems identified for the metal substrate of the roof.

10. APTA PR-CS-S-020-03 Standard for Passenger Rail Vehicle Structural Repair

Approved on May 23, 2003
APTA PRESS Task Force

Approved on September 28, 2003
APTA Commuter Rail Executive Committee

Abstract: This Safety Standard provides a standardized method for structural repairs to passenger rail vehicles. This Safety Standard emphasizes the proper methods, procedures and quality assurance processes to be used.

Key Words: passenger rail vehicles, structural repair, structural repair procedure, welding repair

Participants

The American Public Transportation Association greatly appreciates the contributions of the following individual(s), who provided the primary effort in the drafting of the *Standard for Passenger Rail Vehicle Structural Repair*.

Al Bieber	Ed Murphy	Rich Stegner
Gordon Campbell	Tom Peacock	Gary Widell
Wayne Krahn	Bill Ruprecht	Cliff Woodbury

At the time that this standard was completed, the APTA PRESS Construction & Structural Committee included the following members:

Ken Barnish, Chair

Al Bieber	William Koran	Vinya Sharma
George Binns	Wayne Krahn	Phil Strong
Harvey Boyd	James Lamond	Rich Stegner
David Bremner	Otto Masek	Thomas Thumpassery
George Brunner	Ron Mayville	David Tyrell
Gordon Campbell	James Michel	Richard Vadnal
Gary Fairbanks	Tom Peacock	Caroline VanIngen-Dunn
Ken Hesser	John Pearson	Bill Verdeyen
Larry Kelterborn	Ken Reed	Gary Widell
Bill Kleppinger	Steven Roman	Cliff Woodbury
Steve Kokkins	Kris Severson	Steve Zuiderveen

Table of Contents

APTA PR-CS-S-020-03
Standard for Passenger Rail Vehicle Structural Repair

1. Overview

1.1 Scope

This standard applies to repairs and modifications that concern structural integrity or crashworthiness of passenger cars or passenger locomotives. Repairs or modifications to equipment mounts for any piece of equipment weighing 150 pounds or more are covered by this standard. This standard does not cover repairs to trucks, motors, engines, HVAC systems, doors, wiring and piping, nor minor repairs, such as roof leaks or side sheet tears.

Although the cosmetic appearance of repaired passenger equipment is important, it is not within the scope of this standard. Limits on flatness, indentations, surfaces preparation prior to painting, etc. shall be established by mutual agreement between the contractor and the equipment owner.

1.2 Purpose

This document provides minimum repair guidelines for structural repairs of passenger rail vehicles performed to reproduce the strength of the vehicle as originally delivered by the original equipment manufacturer (OEM).

2. References

This standard shall be used in conjunction with the latest revision of the following publications.

APTA PR-CS-S-004-98, Standard for Austenitic Stainless Steel for Railroad Passenger Equipment.

APTA PR-CS-S-015-99, Standard for Aluminum and Aluminum Alloys for Passenger Car Body Construction.

APTA PR-CS-S-034-99, Standard for the Design and Construction of Passenger Railroad Rolling Stock.

ASTM C 1490 Standard Guide for the Selection, Training and Qualification of Nondestructive Assay (NDA) Personnel

ASTM D S67-A Handbook of Comparative World Steel Standards.

ASTM E 94 Method for Controlling Quality of Radiographic Testing

ASTM E 114-95 (2001) Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Examination by the Contact Method

ASTM E 164 Standard Practice for Ultrasonic Contact Examination of Weldments

ASTM E 165 Standard Test Method for Liquid Penetrant Examination

ASTM E 390Standard Reference Radiographs for Steel Fusion Welds

ASTM E 709Standard Guide for Magnetic Particle Examination

ASTM E 1032Standard Test Method for Radiographic Examination of Weldments

ASTM E 1417Standard Practice for Liquid Penetrant Examination

ASTM E 1444 Standard Practice for Magnetic Particle Examination

ASTM E 1742Standard Practice for Radiographic Examination

ASTM E 1901 Standard Guide for Detection and Evaluation of Discontinuities by Contact Pulse-Echo Straight-Beam Ultrasonic Methods

AWS D1.1, Structural Welding Code – Steel.

AWS D1.2, Structural Welding Code – Aluminum.

AWS D1.3, Structural Welding Code – Sheet Steel.

AWS D1.6, Structural Welding Code - Stainless Steel.

AWS D15.1, Railroad Welding Specification – Cars and Locomotives.

MIL-W-5868

3. Definitions, abbreviations and acronyms

3.1 Definitions

3.1.1 hidden damage: Damage found after the repair work has started.

3.1.2 unseen but anticipated damage: Hidden damage that is expected based upon the assessment inspection of the damaged vehicle.

3.2 Abbreviations and acronyms

ASNT	The American Society for Nondestructive Testing
ASTM	ASTM International (formerly the American Society for Testing and Materials)
AWS	American Welding Society
APTA	American Public Transportation Association
LAHT	low-alloy high-tensile *Syn:* High-Strength Low Alloy
HSLA	High-Strength Low Alloy (steel) *Syn:* low-alloy high-tensile
MIL-HDBK	Department of Defense Military Handbook
NDT	non-destructive test
OEM	original equipment manufacturer

4. Repair facilities

All weld repairs shall be conducted by a qualified repair shop/maintenance facility whose processes, quality standards, equipment and welders comply in all respects with requirements of the appropriate American Welding Society (AWS) code for the materials used. Previous experience, as well as personnel, management and engineering shall be considered when selecting the repair shop/maintenance facility.

5. Inspection of repair area

Prior to beginning any work on damaged equipment, an assessment of the vehicle structure in the area where the repairs are to be made shall be performed to ensure that the car structure can be returned to the same level of structural integrity as when first manufactured. Removal of some components or members may be necessary to complete this assessment.

A report shall be made of the assessment, stating each item or member damaged, its location on the vehicle and the type and extent of damage, e.g., "Draft sill buckled, web torn, weld at web/bottom plate joint failed". The report shall indicate whether each part is to be repaired in place or replaced with a new one. Missing components shall also be noted in the report.

The report should address possible hidden damage and unseen but anticipated damage.

Depending on the extent of the damage, a second inspection should be performed after removal of all damaged parts, and any new information should be included in the inspection report.

6. Materials and design information

For all repairs, the original equipment manufacturer (OEM) drawings and/or specifications shall be consulted prior to beginning the repair in order to identify the base materials and to ensure the selection of the proper processes and procedures. Vehicle owners shall approve all material changes. All steel changes shall be in accordance with ASTM D S67-A Handbook of Comparative World Steel Standards. If available, vehicle owners shall make the OEM drawings and/or specifications available to the contractors for review. If not, inspection and analysis of the as-built structure and materials can suffice with the approval of the owner.

7. Preparation

Prior to beginning any repair, the vehicle shall undergo a thorough inspection to determine the best method of supporting the structure during the repair procedure. Where necessary, supports shall be located in a manner to minimize any sagging or distortion to any part of the undamaged vehicle when damaged areas are cut away. Supports shall be placed where contact with the structure will be at a place that has sufficient strength to carry the anticipated load. Timbers or other means shall be used to distribute the load when necessary.

The existing damaged material shall be removed by an appropriate method for the

material involved (plasma arc cutting, carbon arc cutting/gouging, oxyfuel cutting, saw, grinding, etc.), giving due consideration for how the damaged area will be rebuilt.

8. Repair plan

Based on the analysis, a repair plan shall be prepared that addresses each failed or damaged item or member with a general repair approach. The approach shall state whether the item will be repaired or replaced, and how. If a structural member is to be replaced, the plan shall include the removal and reinstallation techniques, whether the replacement is partial or entire, location of cutting, location of splices, material and welding information, including heat treatment.

The Repair Plan shall be reviewed with the vehicle owner before any further work is done. If drawings and/or sketches are required as part of the Repair Plan, see Section 11.1.

9. Repair strength

The goal of structural repairs shall be to restore the vehicle to its original configuration, strength level and crashworthiness, unless the equipment owner intends to modify the car or locomotive. The equipment owner and repair contractor shall agree on an allowance for corrosion. If the repair plan calls for replacing members in kind, i.e., with pieces of the same material (alloy, thickness, temper and finish), size, shape and connection details, no calculations shall be required. However, if any members are to be spliced, made of different material or assembled from components differently than the original, calculations shall be required to show that the original strength levels will be achieved.

Calculations shall take into account yield and ultimate strengths of materials applied as compared to original ones, shape factors, buckling strength, strength and stiffness of splices and connections, the effect of welding on strength, residual stresses and the service performance, collision loading, and crashworthiness. The original vehicle design calculations may be used where appropriate.

The calculations shall be submitted, for review, in a format acceptable to the equipment owner.

10. Workmanship and qualifications

All repairs shall be done in accordance with the written procedures specific to the application as indicated in Section 12 of this Standard and in accordance with the workmanship requirements of the applicable AWS ; D1.1, D1.2, D1.3, D1.6 and D15.1.

Welding procedures shall be either pre-qualified or test qualified in accordance with the requirements of the applicable AWS; D1.1, D1.2, D1.3, D1.6 and D15.1.Personnel performing any welding shall have valid AWS qualifications specific to the application, in accordance with the AWS; D1.1, D1.2, D1.3, D1.6 and D15.1.

Personnel inspecting welds shall be qualified in accordance with AWS Certified Welding Inspector program requirements. Personnel performing nondestructive testing of welds shall be qualified to ASTM International (ASTM) and/or American Society for

Nondestructive Testing (ASNT) standards for the non destructive testing (NDT) method applied.

11. Repair process

11.1 General

Process sheets or equivalent procedures for the repair shall be prepared by the contractor and approved by the owner. These sheets shall be based on the repair plan and shall include removal procedures and sequence, bracing and layout procedures and the installation of new members, including detailed welding and clamping procedures. Any deviations from the process sheets shall require approval by the owner.

11.2 Quality control

Prior to beginning any repair, a quality control Plan shall be prepared for the overall project and be specific to the tasks to be accomplished.

The repair operations shall be available for inspection by the equipment owner at all times. Process sheets for all work in progress shall be available at the work site. Welder qualification records shall be maintained at the work site or as agreed to by the owner. Material certifications shall be submitted to the owner prior to any fabrication.

11.3 Fabrication

Drawings and/or sketches shall be prepared for all parts to be fabricated, showing material, temper, thickness, bend radii, grain orientation (if necessary), size and shape.

Stainless steel shall be processed only on machines reserved for stainless steel or which have been completely cleaned of any carbon steel residue.

Aluminum alloys shall not be cut by thermal means, and stainless steel and aluminum alloys shall not be heated for fabrication, unless the specific process has been reviewed with and agreed to by the owner

Welds shall be made only where and as shown on drawings and process sheets.

Aluminum components shall not be heated for straightening, fit correction or any other purpose. Carbon steel and stainless steel components shall be heated only when the proposed heating process and temperature limits are specifically approved by the owner.

Before welding is started, all parts to be joined shall be properly cleaned of coatings and films such as paint, zinc, rust, oxides, mill scale, oil, grease, and other foreign materials. Cleaning materials and processes shall be approved by the equipment owner.

11.4 Welding procedure

All welding processes and procedures shall comply with applicable AWS codes specified in Section 2 of this document. As required by the owner, a detailed Welding Procedure Specification Form (Data Sheet) specific to the application shall be completed prior to performing the weld repair.

The owner shall have the right to require the making of test welds to settle any question that may arise as to the suitability of any welding method or procedure used during production. AWS codes shall be followed in the making of tests and the settlement of other questions that may arise regarding welding practice.

All welding consumables shall be purchased to conform to applicable AWS specifications, in packages of convenient size, which shall be marked with the manufacturer's name and the specification, classification, diameter, net weight and other characteristics of the material. The consumables shall be stored conforming to the applicable AWS codes so as to protect it from damage, and so that it can be easily identified. Material shall be issued and handled in such a way as to prevent it from being mixed with that of another specification.

Joint welding procedures that are to be employed shall be qualified by conforming to AWS standards above. When the procedure is required to be qualified by test, a written procedure qualification record shall be prepared in accordance with the applicable AWS codes. When the appropriate AWS standard listed in Section 2 above allows the use of pre-qualified joints, these joints shall conform in all respects to the provisions of the applicable AWS codes in order to be exempt from testing.

All parts to be joined by welding shall be adequately supported or held in their proper position by appropriate tables, jigs, and/or fixtures. The method of depositing weld metal shall be chosen to minimize warp age. Complete penetration welds shall be used for all structural welds. All complete penetration welds made from one side without backing or back gouging shall be qualified by test using production welding techniques and welders. Where partial penetration welds are proposed, the contractor shall provide design calculations supporting the weld size desired and conduct tests to prove that production welding shall achieve the required penetration with an acceptable margin of safety.

Finished welds shall present a clean appearance and quality consistent with the AWS standards referenced in Section 2 of this specification. Grinding of welds and surface restorations such as paint, buffing of stainless steel, etc. shall be consistent with the owner's specifications and directives.

Heat treatment or stress relief, if required, shall be performed in accordance with the applicable AWS codes and ASTM specification for the material involved, or the recommendations of the material manufacturer.

Plug welds shall only be permitted with extra low carbon stainless steel and shall not be used in aluminum alloys. Ring welds are acceptable in both stainless steels and aluminum alloys.

If spot welds are used, they shall be in accordance with AWS C1.1 and MIL-W-5868.

The extent to which these referenced publications are applied shall be in accordance with the original fabrication configuration or as agreed upon between repair contractor and owner.

12. Materials

12.1 General

If OEM material specifications are not available, a metallurgical analysis shall be made of a material sample taken from the damaged part or from structure adjacent to the area to be repaired. Care shall be taken to ensure that excessive heat or corrosion has not compromised the sample characteristics. Materials selected for repair shall equal or exceed the characteristics determined by analysis regarding their yield and ultimate strength, ductility and chemistry.

12.2 HSLA and low-carbon steel

HSLA and low-carbon steel shall be per APTA PR-CS-S-034-99, Standard for the Design and Construction of Passenger Railroad Rolling Stock or an equivalent approved by the owner.

12.3 Stainless steel

Stainless steel shall be per APTA PR-CS-S-004-98, Standard for Austenitic Stainless Steel for Railroad Passenger Equipment or an equivalent approved by the owner.

12.4 Aluminum

Aluminum shall be per APTA PR-CS-S-015-99, Standard for Aluminum and Aluminum Alloys for Passenger Car Body Construction or an equivalent approved by the owner.

13. Inspection

After completing the repair, a thorough inspection of welds shall be performed by authorized personnel in accordance with the requirements of the applicable AWS standard and under the supervision of an AWS-certified welding inspector. All welds shall be visually inspected. In addition, welds in critical (highly stressed) areas shall be inspected using appropriate NDT methods. The repair procedure shall specify critical areas, and NDT methods for specific welds. Welds not meeting the inspection acceptance criteria specified in the referenced AWS documents shall be repaired and re-inspected.

The following industrial standards and specifications are recommended for inspection of welds:

Visual Examination

AWS D 1.1, Part C (Use criteria for cyclically loaded structures.)

Dye Penetrant Examination

ASTM E 165, E 1417

Magnetic Particle Examination

ASTM E 709, E 1444

Radiographic Examination

ASTM E 94, E 390, E 1032, E 1742

AWS D 1.1-2002, Part E

Ultrasonic Examination

ASTM E 114, E 164, E 1901

AWS D 1.1-2002, Part F or Annex K

Qualification of NDT Personnel

ASTM C 1490

APPENDIX D

COST SCHEDULE

A bidder's failure to provide the information requested in this appendix will be cause for rejection of the offer on the basis of non-responsiveness. All prices quoted must be F.O.B. Ex Works, facility that work is being performed at.

Evaluation Factors:
Per Alaska Railroad Procurement Rules 1300.4-A the following factors may be used in determining the low bid but not limited to:
(8) Transportation charges (shipping costs for the coaches to and from the contactor)
(10) other factors determined to be pertinent or peculiar to the procurement. (Airfare or other costs associated for inspections)

For the purposes of this bid the number of hours used to calculate the labor rate is based off the ARRC internal estimate**.** The estimated quantities of hours of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Amount**.** Payment to the Contractor shall be made only for the actual quantities of hours of Work performed and accepted or materials furnished, in conformance with the Contract Documents. Markup on materials will be limited to 10% and receipts will be required for payment.

Award Criteria: An award will be made to the low, responsive, responsible bidder that meets the requirements as set forth in the specifications and compliance thereof. The Alaska Railroad Corporation reserves the right to determine that all offered materials will serve the application intended and be in the best interest of the Alaska Railroad. Award will be made in the aggregate, and is contingent on the availability of Alaska Railroad Corporation funds.

Description	Price
Painting of ARR Coach 352 per specifications	$_____
Painting of ARR Coach 452 per specifications	$_____
Labor Rate for Repair of coach 352 per hour	
Total Cost based on 600 hours $ _____/ hr * 600 =	$ _____
Labor Rate for Repair of coach 452 per hour	
Total Cost based on 200 hours $ _____/ hr * 200 =	$_____
Lump Sum Total:	**$ _____**

_____	_____
COMPANY NAME	SIGNATURE BY AND FOR THE BIDDER
_____	_____
COMPANY ADDRESS	PRINTED NAME OF ABOVE BIDDER
_____	_____
	DATE OF BID
_____	_____
CONTACT PHONE NUMBER	CONTACT EMAIL OR FAX NUMBER

APPENDIX E

BIDDER'S QUESTIONNAIRE

Note: Failure to provide the information requested in this questionnaire may be cause for rejection of the solicitation on the basis of non-responsiveness.

Name of Your Business: _____

Street Address:
_____

Mailing Address if Different: _____

City:_____ **State:** _____**Mailing Zip:**_____.

Telephone:_____ **Fax:** _____**E-Mail:**_____

Date Firm Established:
_____

How many years has the business been under the above name? _____

Previous business name(s)if any: _____

Federal Tax ID Number: _____

Business License Number: _____

Bid Acceptance Period _____ **Days. (Bids providing less than thirty (30) calendar days for acceptance may be considered non-responsive and may be rejected.)**

Discount for prompt pay _____**%** _____ **days.**

The bidder shall list any variations from or exceptions to the Terms, Conditions or Specifications of the Solicitation: _____

_____

Briefly Describe Work to be Performed:

The bidder shall list any variations from or exceptions to the Terms, Conditions or Specifications of the Solicitation:

_____

_____

List three current contracts (where the commodity or service requested in this solicitation is the primary product being supplied) include the client's name, contract amount, and person to contact regarding performance, their telephone, facsimile number and e-mail.

Clients name, Contact person, Contact info. (Telephone, fax, and email)	**Description of Work and Contract Amount**
List any other business related experience:	

Are you acting as a broker or the primary supplier in this transaction?

☐ Primary Supplier
☐ Broker
☐

Business Information (Please check all that apply):

☐ My business is Individual
☐ My business is a Partnership
☐ My business is a Non-Profit
☐ My business is a Joint-Venture
☐ My business is a Corporation incorporated under the laws of the State of _____
☐ My business is full-time
☐ My business is part-time
☐ My business **is not** a certified Disadvantaged Business (DBE)
☐ My business **is** a certified DBE
☐ My DBE was certified by State DOTPF
☐ My DBE was certified by the Municipality of Anchorage
☐ My business is an 8(a)/WBE/MBE and is certified by SBA
☐ My business was certified by _____
☐ My DBE Certification # is _____

Firms Annual Gross Receipts:

☐ <$500,000
☐ $500,000 - $999,999
☐ $1,000,000 - $4,999,999
☐ $5,000,000 - $9,999,999
☐ $10,000,000 - $16,999,999
☐ >$17,000,000

Completed by: _____ Title: _____

Signature: _____ Date: _____

APPENDIX F

ALASKA RAILROAD CORPORATION
SUPPLY BID FORM

NAME _____ **ADDRESS**

_____

_____

To the CONTRACTING OFFICER, ALASKA RAILROAD CORPORATION:

In compliance with your Invitation for Bids No.: _____, dated _____, the Undersigned proposes to furnish and deliver all the supplies, materials or equipment and perform all the work required in said Invitation according to the specifications and requirements contained therein and for the amount and prices named herein as indicated on the Cost Schedule, which is made a part of this Bid.

The Undersigned hereby agrees to execute the said contract and bonds, if any, within **Ten (10) Calendar Days**, or such further time as may be allowed in writing by the Contracting Officer, after receiving notification of the acceptance of this Bid, and it is hereby mutually understood and agreed that in case the Undersigned does not, the accompanying bid guarantee, if any, shall be forfeited to the Alaska Railroad Corporation as liquidated damages, and said Contracting Officer may proceed to award the contract to others.

The Undersigned agrees to commence performance within **Ten (10) Calendar Days** after the effective date of the Notice to Proceed and to complete performance by _____, unless extended in writing by the Contracting Officer.

The Undersigned acknowledges receipt of the following addenda to the requirements and/or specifications for this Invitation for Bids (give number and date of each).

Addendum Number/Dated	Addendum Number/Dated	Addendum Number/Dated
_____	_____	_____
_____	_____	_____

NON-COLLUSION AFFIDAVIT

The Undersigned declares, under penalty of perjury under the laws of the United States, that neither he/she nor the firm, association, or corporation of which he/she is a member, has, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this Bid.

The Undersigned has read the foregoing proposal and hereby agrees to the conditions stated therein by affixing his/her signature below:

_____ _____

Name and Title of Person Signing Signature

_____ _____

Telephone Number Facsimile Number

APPENDIX H

GENERAL TERMS AND CONDITIONS
(General Service Contracts)
(Revised 4/29/08)

The following terms and conditions supersede the terms and conditions on the reverse side of ARRC's purchase order to the extent that they are inconsistent therewith and shall be deemed to have the same force and effect as though expressly stated in any such purchase order into which this document is incorporated.

1. Definitions.

"ARRC" shall mean the Alaska Railroad Corporation.

"Contractor" shall mean the person or entity entering into the contract to perform the work or services specified therein for ARRC.

"Contract" shall mean these General Terms and Conditions, the contract form to which they are annexed, and all other terms, conditions, schedules, appendices or other documents attached to the contract form or incorporated by reference therein.

"Services" shall mean any work, labor, time, effort or other services furnished by Contractor to ARRC under the contract.

2. Inspection and Reports. ARRC may inspect all of the Contractor's facilities and activities under this contract in accordance with the provisions of ARRC Procurement Rule 1600.9. The Contractor shall make progress and other reports in the manner and at the times ARRC reasonably requires.

3. Claims. Any claim by Contractor for additional compensation or equitable adjustment arising under this contract which is not disposed of by mutual agreement must be made by Contractor in accordance with the time limits and procedures specified in sections 1800.12 et seq. of ARRC's Procurement Rules, which by this reference are hereby incorporated herein.

4. Nondiscrimination.

4.1 The Contractor may not discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, physical or mental handicap, sex, marital status, change in marital status, pregnancy or parenthood when the reasonable demands of the positions do not require distinction on the basis of age, physical handicap, sex, marital status, changes in marital status, pregnancy, or parenthood. To the extent required by law, the Contractor shall take affirmative action to insure that the applicants are considered for employment and that employees are treated during employment without unlawful regard to their race, color, religion, national origin, ancestry, physical or mental handicap, age, sex, marital status, changes in marital status, pregnancy or parenthood. This action must include, but need not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship. The Contractor shall post

in conspicuous places, available to employees and applicants for employment, notices setting out the provisions of this paragraph.

4.2 The Contractor shall cooperate fully with ARRC efforts which seek to deal with the problem of unlawful discrimination, and with all other ARRC efforts to guarantee fair employment practices under this contract, and promptly comply with all requests and directions from the State Commission for Human Rights or any of its officers or agents relating to prevention of discriminatory employment practices.

4.3 Full cooperation in Paragraph 4.2 includes, but is not limited to, being a witness in any proceeding involving questions of unlawful discrimination if that is requested by any official or agency of the State of Alaska; permitting employees of the Contractor to be witnesses or complainants in any proceeding involving questions of unlawful discrimination, if that is requested by any official or agency of the State of Alaska; participating in meetings; submitting periodic reports on the equal employment aspects of present and future employment; assisting inspection of the Contractor's facilities; and promptly complying with all State directives considered essential by any office or agency of the State of Alaska to insure compliance with all federal and state laws, regulations, and policies pertaining to the prevention of discriminatory employment practices.

4.4 Failure to perform under this section constitutes a material breach of the contract.

5. Cancellation/Termination.

5.1 ARRC may, for its sole convenience, cancel this contract in whole or in part, at any time by giving written notice of its intention to do so. In the event of such cancellation, Contractor shall be entitled to receive payment in accordance with the payment provisions of this contract for services rendered or charges incurred prior to the effective date of termination. Contractor shall not be paid for any work done after receipt of a notice of cancellation or for any costs incurred by Contractor's suppliers or subcontractors which Contractor could reasonably have avoided. In no event shall ARRC be liable for unabsorbed overhead or anticipatory profit on unperformed services.

5.2 In addition to ARRC’s right to cancel this contract for its convenience, ARRC may, by written notice of default to Contractor, terminate the contract in whole or in part in the following circumstances:

(1) The Contractor refuses or fails to perform its obligations under the contract, or fails to make progress so as to significantly endanger timely completion or performance of the contract in accordance with its terms, and Contractor does not cure such default within a period of ten (10) days after receipt of written notice of default from ARRC or within such additional cure period as ARRC may authorize; or

(2) Reasonable grounds for insecurity arise with respect to Contractor’s expected performance and Contractor fails to furnish adequate assurance of due performance (including assurance of performance in accordance with the time requirements of the contract) within ten (10) days after receipt of a written request by ARRC for adequate assurance; or

(3) Contractor becomes insolvent or makes an assignment for the benefit of creditors or commits an act of bankruptcy or files or has filed against it a petition in bankruptcy or reorganization proceedings.

5.3 Upon receipt of a notice of cancellation or termination, Contractor shall immediately discontinue all service and it shall immediately cause any of its suppliers or subcontractors to cease such work unless the notice directs otherwise and deliver immediately to ARRC all reports, plans, drawings, specifications, data, summaries or other material and information, whether completed or in process, accumulated by Contractor in performance of the contract. In the event of termination for default, Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the amount to be paid on this contract exceeds the expense of finishing the work, compensation for additional managerial and administrative services and such other costs and damages as ARRC may suffer as a result of Contractor's default, such excess shall be paid to Contractor. If such expense, compensation, costs and damages shall exceed such unpaid balance, Contractor shall be liable for and shall pay the differences to ARRC. The rights and remedies of ARRC provided in this section shall not be exclusive and are in addition to any other rights and remedies provided by law.

6. No Assignment or Delegation. The Contractor may not assign, subcontract or delegate this contract, or any part of it, or any right to any of the money to be paid under it, except with the prior written consent of ARRC. The hiring or use of outside services, subcontractors or consultants in connection with the work shall not be permitted without the prior written approval of ARRC. No such approval shall relieve Contractor from any of its obligations or liabilities under this contract.

7. Independent Contractor. The Contractor's relationship to ARRC in performing this contract is that of an independent contractor and nothing herein shall be construed as creating an employer/employee relationship, partnership, joint venture or other business group or concerted action. The personnel performing services under this contract shall at all times be under Contractor's exclusive direction and control and shall be employees of the Contractor, and not of ARRC.

8. Payment of Taxes. As a condition of performance of this contract, the Contractor shall pay all federal, state, and local taxes incurred by the Contractor and shall require their payment by any subcontractor or any other persons in the performance of this contract. Satisfactory performance of this paragraph is a condition precedent to payment by ARRC under this contract.

9. Governing Law. This contract, and all questions concerning the capacity of the parties, execution, validity (or invalidity) and performance of this contract, shall be interpreted, construed and enforced in all respects in accordance with the laws of the State of Alaska.

10. Alaska Executive Branch Ethics Act Requirements. No officer or employee of the State of Alaska or of the ARRC and no director of the ARRC or legislator of the state shall be admitted to any share or part of this contract or to any benefit that may arise therefrom. Contractor shall exercise reasonable care and diligence to prevent any actions or conditions which could be a violation of Alaska Statute 39.52 et seq. Contractor shall not make or receive any payments, gifts, favors, entertainment, trips, secret commissions, or hidden gratuities for the purpose of securing preferential treatment or action from or to any party. This obligation will apply to the activities of Contractor's employees and agents in their relations with ARRC employees, their families, vendors, subcontractors, and third parties arising from this contract and in accomplishing work hereunder. Certain gratuities may be given or accepted if:

(1) there is no violation of any law or generally accepted ethical standards;

(2) the gratuity is given as a courtesy for a courtesy received and does not result in any preferential treatment or action;

(3) the gratuity is of limited value (less than$150) and could not be construed as a bribe, payoff or deal; and

(4) public disclosure would not embarrass ARRC.

ARRC may cancel this contract without penalty or obligation in the event Contractor or its employees violate the provisions of this section.

11. Non-Disclosure of Confidential Information. Contractor acknowledges and agrees that for and during the entire term of this contract, any information, data, figures, projections, estimates, reports and the like received, obtained or generated by Contractor pursuant to the performance of this contract shall be considered and kept as the private, confidential and privileged records of ARRC and will not be divulged to any person, firm, corporation, regulatory agency or any other entity except upon the prior written consent of ARRC. Furthermore, upon termination of this contract, Contractor agrees that it will continue to treat as private, privileged and confidential any information, data, figures, projections, estimates, reports and the like received, obtained or generated by Contractor during the term of the contract and will not release any such information to any person, firm, corporation, regulatory agency or any other entity, either by statement, deposition or as a witness except upon the express written authority of ARRC. ARRC shall be entitled to an injunction by any competent court to enjoin and restrain the unauthorized disclosure of such information.

Contractor's agreement of non-disclosure as specified in this section applies except to the extent required for (1) performance of services under this contract; (2) compliance with standards of conduct for preservation of the public safety, health, and welfare (so long as Contractor has given ARRC prior notice of the potential hazard and ARRC has had a reasonable opportunity to correct the hazard prior to disclosure); (3) compliance with a court order or subpoena directed against Contractor (so long as Contractor has given ARRC prior notice of such and ARRC has had an opportunity to contest the same in a court of law); or (4) Contractor's defense against claims arising from performance of services under this contract.

12. Covenant Against Contingent Fees. Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for Contractor, to solicit or secure this contract, and that it has not paid or agreed to pay any person, company, individual, or firm any commission, gift, percentage, fee, contingent upon or resulting from the award or making of this contract. For the breach or violation of this warranty, ARRC may terminate this contract without liability and, at its discretion, deduct from the contract price or otherwise recover the full amount of the commission, percentage, gift, or fee.

13. Standard of Performance. Contractor shall perform its services with care, skill and diligence in accordance with normally accepted industry standards and shall be responsible for the quality, accuracy, and completeness all services furnished under this Contract. Contractor shall comply with all applicable federal, state and local laws and ordinances, codes, and regulations in performing its services. If any failure to meet the foregoing standard of performance appears within one (1) year after the services are accepted by ARRC, Contractor shall, at a minimum, reperform the work at no cost to ARRC and shall reimburse ARRC for any additional costs that may be incurred by ARRC or any of its contractors or subcontractors as a

result of such substandard work. If Contractor should fail to reperform the work, or if ARRC determines that Contractor will be unable to correct substandard services before the time specified for completion of the project, if any, ARRC may correct such unsatisfactory work itself or by the use of third parties and charge Contractor for the costs thereof. The rights and remedies provided for in this section are in addition to any other remedies provided by law.

14. Warranty. In the event Contractor supplies equipment, goods, materials or other supplies in addition to services under this contract, Contractor warrants that said items: (a) shall be of good quality and free from all defects and deficiencies in workmanship, material and design; (b) shall be fit, suitable and operate successfully for their intended purpose; (c) shall be new; (d) shall be free from all liens, claims, demands, encumbrances and other defects in title; and (e) shall conform to the specifications, if any, stated in the contract. Contractor shall honor all guarantees and warranties offered by the manufacturer of the equipment, goods, materials or other supplies provided under this contract. The rights and remedies provided for in this section are in addition to any other remedies provided by law.

15. Indemnification. Contractor shall defend, indemnify and hold ARRC harmless from and against all claims and actions asserted by a third party (or parties) and related damages, losses and expenses, including attorney's fees, arising out of or resulting from the services performed or neglected to be performed by Contractor or anyone acting under its direction or control or in its behalf in the course of its performance under this contract and caused by any error, omission or negligent act, provided that Contractor's aforesaid indemnity and hold harmless agreement shall not be applicable to any liability based upon the independent negligence of ARRC. If there is a claim of, or liability for, the joint negligent error or omission of the Contractor and the independent negligence of ARRC, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. The term "independent negligence" is negligence other than ARRC's selection, administration, monitoring, or controlling contractor and in approving or accepting Contractor's work.

16. Insurance. Without limiting Contractor's indemnification, it is agreed that Contractor shall purchase at its own expense and maintain in force at all times during the performance of services under this contract the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the Contractor's policy contains higher limits, ARRC shall be entitled to coverage to the extent of such higher limits. Certificates of Insurance must be furnished to the ARRC contracting officer prior to beginning work and must provide for a 30-day prior notice of cancellation, non-renewal or material change. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach and grounds for termination of the Contractor's services.

16.1 Workers' Compensation Insurance: The Contractor shall provide and maintain, for all employees of the Contractor engaged in work under this contract, worker's compensation insurance as required by applicable law. The Contractor shall be responsible for worker's compensation insurance for any subcontractor who directly or indirectly provides services under this contract. This coverage must include statutory coverage for states in which employees are engaging in work and employer's liability protection not less than $100,000 per person, $100,000 per occurrence. Where applicable, coverage for all federal acts (i.e. U.S.L. & H. and Jones Acts) must also be included.

16.2 Comprehensive (Commercial) General Liability Insurance: Covering all errors, omissions or negligent acts of the Contractor, its subcontractor(s) or anyone directly or indirectly employed by them, made in the performance of this contract which result in financial loss to ARRC. Said policy shall include premises-operations, independent contractors, products/completed operations, broad form property damage, blanket contractual and personal injury endorsements and shall name ARRC as an additional insured and contain a waiver of subrogation against ARRC and its employees. Combined single limits required are per the following schedule:

Contract Amount	Minimum Required Limits
Under $100,000	$ 500,000 per Occurrence/Annual Aggregate
$100,000-$499,999	$1,000,000 per Occurrence/Annual Aggregate
$500,000-$999,999	$2,000,000 per Occurrence/Annual Aggregate
Over $1,000,000	Negotiable-Refer to Risk Management

16.3 Comprehensive Automobile Liability Insurance: Covering all owned, hired and non-owned vehicles with coverage limits not less than $100,000 per person/$300,000 per occurrence bodily injury and $50,000 property damage. Said policy shall name ARRC as an additional insured and contain a waiver of subrogation against ARRC and its employees.

17. ARRC's Rights Not Waived by Payment. No payment made by ARRC shall be considered as acceptance of satisfactory performance of Contractor's obligations under this contract. Nor shall any payment be construed as acceptance of substandard or defective work or as relieving Contractor from its full responsibility under the contract.

18. Nonwaiver. A party's failure or delay to insist upon strict performance of any of the provisions of this contract, to exercise any rights or remedies provided by this contract or by law, or to notify the other party of any breach of or default under this contract shall not release or relieve the breaching or defaulting party from any of its obligations or warranties under this contract and shall not be deemed a waiver of any right to insist upon strict performance of this contract or any of the rights or remedies as to any subject matter contained herein; nor shall any purported oral modification or rescission of this contract operate as a waiver of any of the provisions of this contract. The rights and remedies set forth in any provision of this Agreement are in addition to any other rights or remedies afforded the nonbreaching or nondefaulting party by any other provisions of this contract, or by law.

19. Savings Clause. If any one or more of the provisions contained in thee contract shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this contract, but this contract shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

20. Headings. The headings of sections and paragraphs of this contract are for convenience of reference only and are not intended to restrict, affect, or be of any weight in the interpretation or construction of the provisions of such sections or paragraphs.

21. Forum Selection. The parties shall not commence or prosecute any suit, proceeding or claim to enforce the provisions of the contract, to recover damages for breach or default under the contract, or otherwise arising under or by reason of the contract, other than in the courts of

the State of Alaska for the Third Judicial District at Anchorage. The parties hereby irrevocably consent to the jurisdiction of said courts.

22. Conflict of Interest. Contractor shall act to prevent any actions or conditions which could result in a conflict with ARRC's best interests. This obligation shall apply to the activities of Contractor's employees and agents in their relationships with ARRC's employees, their families, vendors, subcontractors and third parties accomplishing work under this contract.

23. Publicity. Contractor shall not release any information for publication or advertising purposes relative to this contract or to the material, equipment and/or services furnished under this contract without the prior written consent of the ARRC.

24. Audit. ARRC has the right to audit at reasonable times the accounts and books of the Contractor in accordance with the provisions of ARRC Procurement Rule 1600.10.

25. Internal Controls and Record Keeping. Contractor shall keep full and accurate records and accounts of all of its activities in connection with this contract, including, without limitation, reasonable substantiation of all expenses incurred and all property acquired hereunder.

26. Force Majeure. Neither ARRC nor Contractor shall be responsible for failure to perform the terms of this contract when performance is prevented by force majeure, provided that: (1) notice and reasonably detailed particulars are given to the other party and (2) the cause of such failure or omission is remedied so far as possible with reasonable dispatch. The term “force majeure” shall mean acts of God, earthquakes, fire, flood, war, civil disturbances, governmentally imposed rules, regulations or other causes whatsoever, whether similar or dissimilar to the causes herein enumerated, which is not within the reasonable control of either party and which through the exercise of due diligence, a party is unable to foresee or overcome. In no event shall force majeure include normal or reasonably foreseeable or reasonably avoidable operational delays.

27. Permits and Licenses. The Contractor shall, at its own expense, obtain all necessary permits, licenses, certifications and any other similar authorizations required or which may become required by the government of the United States or any state or by any political subdivision of the United States or of any state except where laws, rules or regulations expressly require the ARRC to obtain the same.

28. Environmental Protection. When performing all obligations under the contract, Contractor shall comply with all specific instructions of ARRC with regard to environmental concerns, regardless of whether such instructions are based upon specific law, regulation or order of any governmental authority.

29. Set Off. If ARRC has any claim against the Contractor related or unrelated to this contract, it may set off the amount of such claim against any amount due or becoming due under this contract.

30. Observance of Rules. The Contractor’s personnel performing work or services hereunder on ARRC’s premises shall observe all fire prevention, security, and safety rules in force at the site of the work. ARRC may, in writing, require the Contractor to remove from the work site any employee ARRC deems to be incompetent, careless, or otherwise detrimental to the progress of the work, but ARRC shall have no duty to exercise this right.

31. No Third-Party Beneficiary Rights. No provision of this contract shall in any way inure to the benefit of any third parties (including the public at large) so as to constitute any such person a third-party beneficiary of the contract or of any one or more of the terms hereof, or otherwise give rise to any cause of action in any person not a party hereto.

32. Entire Agreement. This contract represents the entire and integrated agreement between ARRC and the Contractor and supersedes all prior negotiations, representations, or agreements, either written or oral. This contract may be amended only by a written instrument signed by both ARRC and the Contractor.

33. Key Personnel Changes. Contractor shall secure prior written approval from ARRC for any changes of key personnel assigned to perform services under this contract. ARRC reserves the right to reject any of Contractor's employees whose qualifications and/or experience in ARRC's good faith and reasonable judgment do not meet the standards necessary for the performance of the services required under this contract.