

UTAH TRANSIT AUTHORITY

GOODS AND SERVICES SUPPLY AGREEMENT

UTA CONTRACT # 24-03900

Jordan River Rail Service Center Wheel Truing Machine.

THIS GOODS AND NON-PROFESSIONAL SERVICES SUPPLY AGREEMENT (“Contract”) is entered into and made effective as of the date of last signature below. (“Effective Date”) by and between UTAH TRANSIT AUTHORITY, a public transit district organized under the laws of the State of Utah (“UTA”), and NSH USA Corporation, a member of the NSH Group (the “Contractor”).

RECITALS

WHEREAS, on January 15th 2025 UTA received competitive proposals to provide The Jordan River Rail Service Center with a Wheel Truing Machine and (as applicable) all associated hardware, software, tools, installation services, commissioning and testing services, training and documentation (the “Goods and Services”) according to the terms, conditions and specifications prepared by UTA in 24-03900 (the “RFP”); and

WHEREAS, UTA wishes to procure the Goods and Services according to the terms, conditions and specifications listed in the RFP (as subsequently amended through negotiation by the parties); and

WHEREAS, the NSH, USA Proposal submitted by the Contractor in response to the RFP (“Contractor’s Proposal”) was deemed to be the most advantageous to UTA; and

WHEREAS, Contractor is willing to furnish the Goods and Services according to the terms, conditions and specifications of the Contract.

AGREEMENT

NOW, THEREFORE, in accordance with the foregoing Recitals, which are incorporated herein by reference, and for and in consideration of the mutual covenants and agreements hereafter set forth, the mutual benefits to the parties to be derived here from, and for other valuable consideration, the receipt and sufficiency of which the parties acknowledge, it is hereby agreed as follows:

1. GOOD AND SERVICES TO BE PROVIDED BY CONTRACTOR

Contractor hereby agrees to furnish and deliver the Goods and/or Services in accordance with the Contract as described in Exhibit A (Statement of Work or Services) (including performing any installation, testing commissioning and other Services described in the Contract).

2. TERM

This Contract shall commence as of the Effective Date. The Contract shall remain in full force and effect until all Goods have been delivered and all Services have been performed in accordance with the Contract (as reasonably determined by UTA). Contractor shall deliver all Goods and perform all Services no later than December 31st 2027. This guaranteed completion date may be extended if Contractor and UTA mutually agree to an extension evidenced by a written Change Order. The rights and obligations of UTA and Contractor under the Contract shall at all times be subject to and conditioned upon the provisions of the Contract.

3. COMPENSATION AND FEES

UTA shall pay Contractor in accordance with the payment milestones or other terms described in Exhibit B. If Exhibit B does not specify any milestones or other payment provisions, then payment shall be invoiced after the Goods have been delivered and the Services have been performed. In no event shall advance payments be made.

4. INCORPORATED DOCUMENTS

- a. The following documents hereinafter listed in chronological order, with most recent document taking precedence over any conflicting provisions contained in prior documents (where applicable), are hereby incorporated into the Contract by reference and made a part hereof:
 1. The terms and conditions of this Goods and Services Supply Agreement (including any exhibits and attachments hereto).
 2. Contractor's Proposal including, without limitation, all federal certifications (as applicable);
 3. UTA's RFP including, without limitation, all attached or incorporated terms, conditions, federal clauses (as applicable), drawings, plans, specifications and standards and other descriptions of the Goods and Services;
- b. The above-referenced documents are made as fully a part of the Contract as if hereto attached or herein repeated. The Contract (including the documents listed above) constitute the complete contract between the parties.

5. ORDER OF PRECEDENCE

The Order of Precedence for this contract is as follows:

1. UTA Contract including all attachments
2. UTA Terms and Conditions
3. UTA Solicitation Terms
4. Contractor's Bid or Proposal including proposed terms or conditions

Any contractor proposed term or condition which is in conflict with a UTA contract or solicitation term or condition will be deemed null and void.

6. LAWS AND REGULATIONS

Contractor and any and all Goods and/or Services furnished under the Contract will comply fully with all applicable Federal and State laws and regulations, including those related to safety and environmental protection. Contractor shall also comply with all applicable licensure and certification requirements.

7. INSPECTION, DELIVERY AND TRANSFER OF TITLE

- a. Upon UTA's request, UTA's representative shall be provided access to Contractor's facilities to obtain information on production progress and to make inspections during the manufacturing or assembly process. Contractor will make reasonable efforts to obtain, for UTA, access to subcontractor facilities for the purposes described above. If the specifications include pre-shipment inspection requirements, Goods shall not be shipped until UTA or its designee has inspected the Goods, and authorized Contractor to proceed with the shipment.
- b. Delivery of the Goods is a substantial and material consideration under the Contract. Unless otherwise specifically set forth in the pricing schedule: (i) Contractor shall be solely responsible for the delivery of the Goods FOB to the delivery point specified in the Contract (or otherwise designated by UTA) and all costs related thereto are included in the pricing; and (ii) Contractor shall retain all liabilities and risk of loss with respect to the Goods until the Goods are delivered to, and accepted by, UTA.
- c. After delivery, the Goods shall be subject to inspection, testing and acceptance by UTA, including any testing or commissioning process described in the specifications. UTA shall have the right to reject any Goods or Services that are defective or do not conform to the specifications or other Contract requirements. Goods or Services rejected shall be replaced, repaired or re-performed so as to conform to the Contract (and to UTA's reasonable satisfaction). If Contractor is unable or refuses to correct such Goods within a time deemed reasonable by UTA, then UTA may cancel the order in whole or in part. Any inspection and testing performed by UTA shall be solely for the benefit of UTA. Neither UTA's inspection of the production processes, production progress and/or Goods or Services (nor its failure to inspect) shall relieve Contractor of its obligations to fulfill the requirements of the Contract, or be construed as acceptance by UTA.
- d. Contractor warrants that title to all Goods covered by an invoice for payment will pass to UTA no later than the time of payment. Contractor further warrants that upon submittal of an invoice for payment, all Goods and/or Services for which invoices for payment have been previously issued and payments received from UTA shall be free and clear of liens, claims, security interests or encumbrances in favor of Contractor or any subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided equipment, materials, and labor related to the equipment and/or work for which payment is being requested.

8. INVOICING PROCEDURES

- a. Contractor shall invoice UTA after achievement of contractual milestones or delivery of all Goods and satisfactory performance of all Services or in accordance with an approved progress or periodic billing schedule. Contractor shall submit invoices to ap@rideuta.com for processing and payment. In order to timely process invoices, Contractor shall include the following information on each invoice:
 - i. Contractor Name
 - ii. Unique Invoice Number
 - iii. PO Number
 - iv. Invoice Date

- v. Detailed Description of Charges
- vi. Total Dollar Amount Due

- b. UTA shall have the right to disapprove (and withhold from payment) specific line items of each invoice to address non-conforming Software or Services. Approval by UTA shall not be unreasonably withheld. UTA shall also have the right to offset (against payments) amounts reasonably reflecting the value of any claim which UTA has against Contractor under the Contract. Payment for all invoice amounts not specifically disapproved or offset by UTA shall be provided to Contractor within thirty (30) calendar days of invoice submittal to ap@rideuta.com . Invoices not submitted electronically will shall be paid thirty (30) calendar days from date of receipt by UTA's accounting department.
- c. Invoices must include a unique invoice number, UTA's Purchase Order number, a description of the Good or Service provided, line-item pricing, total amount due, and must be submitted electronically to ap@rideuta.com.

9. WARRANTY OF GOODS AND SERVICES

- a. Contractor warrants that all Goods (including hardware, firmware, and/or software products that it licenses) and Services shall conform to the specifications, drawings, standards, samples, and other descriptions made a part of (or incorporated by reference into) the Contract. Contractor further warrants that all Goods and Services shall be of the quality specified, or of the best grade if no quality is specified, and, unless otherwise provided in the Contract, will be new, and free from defects in design, materials and workmanship.
- b. Contractor warrants that all Goods and Services shall be in compliance with applicable federal, state, and local laws and regulations including, without limitation, those related to safety and environmental protection.
- c. At any time for a period of two (2) years from the date that all Goods have been delivered and all Services have been performed in accordance with the Contract, Contractor shall at its own expense promptly repair, replace and/or re-perform any Goods or Services that are defective or in any way fail to conform to the Contract requirements.
- d. If Contractor fails to promptly make any repair, replacement or re-performance as required herein, UTA may conduct the necessary remedial work at Contractor's expense. Contractor cannot void the warranty for repair, replacement or re-performance performed under these circumstances. Provided that such repair, replacement or re-performance is conducted in a reasonable manner and with workmanship and care consistent with industry standards, Contractor shall reimburse UTA for the cost of any warranty repair, replacement or re-performance self-performed by UTA. Contractor will have the right to review and approve warranty work prior to the work being performed by UTA.
- e. The foregoing warranties are not intended as a limitation, but are in addition to all other express warranties set forth in the Contract and such other warranties as are implied by law, custom, and usage of trade. Contractor (seller) acknowledges that all warranties granted to the buyer by the Uniform Commercial Code of the State of Utah apply to the Contract. Product liability disclaimers and/or warranty disclaimers from the seller are

not applicable to the Contract unless otherwise specified and mutually agreed upon elsewhere in the Contract. In general, Contractor warrants that: (1) the Good will do what the salesperson said it would do, (2) the Good will live up to all specific claims that the manufacturer makes in their advertisements, (3) the Goods will be suitable for the ordinary purposes for which such items are used, (4) the Goods will be suitable for any special purposes that UTA has relied on Contractor's skill or judgment to consider when it advised UTA about the Good, (5) the Goods have been properly designed and manufactured, and (6) the Goods are free of significant defects or unusual problems about which UTA has not been warned. Nothing in this warranty will be construed to limit any rights or remedies UTA may otherwise have under the Contract.

10. OWNERSHIP OF DESIGNS, DRAWINGS, AND WORK PRODUCT

Any deliverables and related materials prepared or developed pursuant to the Contract shall become the property of UTA when prepared, and, together with any documents or information furnished to Contractor and its employees or agents by UTA hereunder, shall be delivered to UTA upon request, and, in any event, upon final acceptance of the Goods and Services. UTA shall have full rights and privileges to use and reproduce said deliverables and related materials.

Any Contractor preexisting intellectual property, proprietary information, or trade secrets, including but not limited to software, subassembly drawings, calculations, and vehicle interface component drawings that may be included in the deliverables and related materials will remain the sole property of Contractor and will not be considered property of UTA.

11. GENERAL INDEMNIFICATION

Contractor shall indemnify, hold harmless and defend UTA, its officers, trustees, agents, and employees (hereinafter collectively referred to as "Indemnitees") from and against all liabilities, claims, actions, damages, losses, and expenses including without limitation reasonable attorneys' fees and costs (hereinafter referred to collectively as "claims") related to bodily injury, including death, or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the acts or omissions of Contractor or any of its owners, officers, directors, agents, employees or subcontractors. This indemnity includes any claim or amount arising out of the failure of such Contractor to conform to federal, state, and local laws and regulations. If an employee of Contractor, a subcontractor, anyone employed directly or indirectly by any of them or anyone for whose acts any of them may be liable brings a claim against UTA or another Indemnatee, Contractor's indemnity obligation set forth above will not be limited by any limitation on the amount of damages, compensation or benefits payable under any employee benefit acts, including workers' compensation or disability acts. The indemnity obligations of Contractor shall not apply to the extent that claims arise out of the sole negligence of UTA or the Indemnitees.

12. INSURANCE REQUIREMENTS

Standard Insurance Requirements

The insurance requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. The Utah Transit Authority in no way warrants that the minimum limits contained herein are sufficient to protect the Contractor from

liabilities that might arise out of the performance of the work under this contract by the Contractor, his agents, representatives, employees or subcontractors and Contractor is free to purchase additional insurance as may be determined necessary.

A. MINIMUM SCOPE AND LIMITS OF INSURANCE: Contractor shall provide coverage with limits of liability not less than those Stated below. An excess liability policy or umbrella liability policy may be used to meet the minimum liability requirements provided that the coverage is written on a “following form” basis.

1. Commercial General Liability – Occurrence Form

Policy shall include bodily injury, property damage and broad form contractual liability coverage.

- General Aggregate \$4,000,000
 - Products – Completed Operations Aggregate \$1,000,000
 - Personal and Advertising Injury \$1,000,000
 - Each Occurrence \$2,000,000
- a. The policy shall be endorsed to include the following additional insured language: "The Utah Transit Authority shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor".

2. Automobile Liability

Bodily Injury and Property Damage for any owned, hired, and non-owned vehicles used in the performance of this Contract.

- Combined Single Limit (CSL) \$2,000,000
- a. The policy shall be endorsed to include the following additional insured language: "The Utah Transit Authority shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor, including automobiles owned, leased, hired or borrowed by the Contractor".

3. Worker's Compensation and Employers' Liability

Workers' Compensation	Statutory
Employers' Liability	
Each Accident	\$100,000
Disease – Each Employee	\$100,000
Disease – Policy Limit	\$500,000

- a. Policy shall contain a waiver of subrogation against the Utah Transit Authority.
 - b. This requirement shall not apply when a contractor or subcontractor is exempt under UCA 34A-2-103, AND when such contractor or subcontractor executes the appropriate waiver form.
- B. **ADDITIONAL INSURANCE REQUIREMENTS:** The policies shall include, or be endorsed to include, the following provisions:
 1. On insurance policies where the Utah Transit Authority is named as an additional insured, the Utah Transit Authority shall be an additional insured to the full limits of liability purchased by the Contract. Insurance limits indicated in this agreement are minimum limits. Larger limits may be indicated after the Contractor's assessment of the exposure for this contract; for their own protection and the protection of UTA.
 2. The Contractor's insurance coverage shall be primary insurance and non-contributory with respect to all other available sources.
- C. **NOTICE OF CANCELLATION:** Each insurance policy required by the insurance provisions of this Contract shall provide the required coverage and shall not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to the Utah Transit Authority, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice shall be sent directly to (Utah Transit Authority agency Representative's Name & Address).
- D. **ACCEPTABILITY OF INSURERS:** Insurance is to be placed with insurers duly licensed or authorized to do business in the State and with an "A.M. Best" rating of not less than A-VII. The Utah Transit Authority in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.
- E. **VERIFICATION OF COVERAGE:** Contractor shall furnish the Utah Transit Authority with certificates of insurance (on standard ACORD form) as required by this Contract. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

All certificates and any required endorsements are to be sent to utahta@ebix.com and received and approved by the Utah Transit Authority before work commences. Each insurance policy required by this Contract must be in effect at or prior to commencement of work under this Contract and remain in effect for the duration of the project. Failure to maintain the insurance policies as required by this Contract or to provide evidence of renewal is a material breach of contract.

All certificates required by this Contract shall be emailed directly to Utah Transit Authority's insurance email address at utahta@ebix.com. The Utah Transit Authority

project/contract number and project description shall be noted on the certificate of insurance. The Utah Transit Authority reserves the right to require complete, certified copies of all insurance policies required by this Contract at any time. DO NOT SEND CERTIFICATES OF INSURANCE TO THE UTAH TRANSIT AUTHORITY'S CLAIMS AND INSURANCE DEPARTMENT.

- F. **SUBCONTRACTORS:** Contractors' certificate(s) shall include all subcontractors as additional insureds under its policies or subcontractors shall maintain separate insurance as determined by the Contractor, however, subcontractor's limits of liability shall not be less than \$1,000,000 per occurrence / \$2,000,000 aggregate. Sub-contractors maintaining separate insurance shall name Utah Transit Authority as an additional insured on their policy. Blanket additional insured endorsements are not acceptable from subcontractors. Utah Transit Authority must be scheduled as an additional insured on any subcontractor policies.
- G. **APPROVAL:** Any modification or variation from the insurance requirements in this Contract shall be made by Claims and Insurance Department or the UTA Legal Services, whose decision shall be final. Such action will not require a formal Contract amendment, but may be made by administrative action.

13. OTHER INDEMNITIES

- a. Contractor shall protect, release, defend, indemnify and hold harmless UTA and the other Indemnitees against and from any and all claims of any kind or nature whatsoever on account of infringement relating to Contractor's performance under the Contract. If notified promptly in writing and given authority, information and assistance, Contractor shall defend, or may settle at its expense, any suit or proceeding against UTA so far as based on a claimed infringement and Contractor shall pay all damages and costs awarded therein against UTA due to such breach. In case any Good or Service is in such suit held to constitute such an infringement or an injunction is filed that interferes with UTA's rights under the Contract, Contractor shall, at its expense and through mutual agreement between UTA and Contractor, either procure for UTA any necessary intellectual property rights, or modify Contractor's Goods and Services such that the claimed infringement is eliminated.
- b. Contractor shall: (i) protect, release, defend, indemnify and hold harmless UTA and the other Indemnitees against and from any and all liens or claims made or filed against UTA on account of any Goods or Services furnished by subcontractors of any tier; and (ii) keep UTA property free and clear of all liens or claims arising in conjunction with any Goods or Services furnished under the Contract by Contractor or its subcontractors of any tier. If any lien arising out of the Contract is filed in conjunction with any Goods or Services furnished under the Contract, Contractor, within ten (10) calendar days after receiving from UTA written notice of such lien, shall obtain a release of or otherwise satisfy such lien. If Contractor fails to do so, UTA may take such steps and make such expenditures as in its discretion it deems advisable to obtain a release of or otherwise satisfy any such lien or liens, and Contractor shall upon demand reimburse UTA for all costs incurred and expenditures made by UTA in obtaining such release or satisfaction.

If any non-payment claim is made directly against UTA arising out of non-payment to any subcontractor, Contractor shall assume the defense of such claim within ten (10) calendar days after receiving from UTA written notice of such claim. If Contractor fails to do so, Contractor shall upon demand reimburse UTA for all costs incurred and expenditures made by UTA to satisfy such claim.

- c. Contractor will defend, indemnify and hold UTA, its officers, agents and employees harmless from liability of any kind or nature, arising from Contractor's use of any copyrighted or un-copyrighted composition, trade secret, patented or un-patented invention, article or appliance furnished or used in the performance of the Contract.

14. INDEPENDENT CONTRACTOR

The parties agree that Contractor, in the carrying out of its duties hereunder, is an independent contractor and that neither Contractor nor any of its employees is or are agents, servants or employees of UTA. Neither Contractor nor any of Contractor's employees shall be eligible for any workers compensation insurance, pension, health coverage, or fringe benefits which apply to UTA's employees. Neither federal, state, nor local income tax nor payroll tax of any kind shall be withheld or paid by UTA on behalf of Contractor or the employees of Contractor. Contractor acknowledges that it shall be solely responsible for payment of all payrolls, income and other taxes generally applicable to independent contractors.

15. STANDARD OF CARE.

Contractor shall perform any Services to be provided under the Contract in a good and workmanlike manner, using at least that standard of care, skill and judgment which can reasonably be expected from similarly situated independent contractors (including, as applicable, professional standards of care).

16. USE OF SUBCONTRACTORS

- a. Contractor shall give advance written notification to UTA of any proposed subcontract (not indicated in Contractor's Proposal) negotiated with respect to the Work. UTA shall have the right to approve all subcontractors, such approval not to be withheld unreasonably.
- b. No subsequent change, removal or substitution shall be made with respect to any such subcontractor without the prior written approval of UTA.
- c. Contractor shall be solely responsible for making payments to subcontractors, and such payments shall be made within thirty (30) days after Contractor receives corresponding payments from UTA.
- d. Contractor shall be responsible for and direct all Work performed by subcontractors.

Contractor agrees that no subcontracts shall provide for payment on a cost-plus-percentage-of-cost basis. Contractor further agrees that all subcontracts shall comply with all applicable laws

17. CONTRACTOR SAFETY COMPLIANCE

Contractor, including its employees, subcontractors, authorized agents, and representatives, shall comply with all UTA and industry safety standards, NATE, OSHA, EPA and all other State and Federal regulations, rules and guidelines pertaining to safety and environmental management, and will be solely responsible for any fines, citations or

penalties it may receive or cause UTA to receive pursuant to this Contract. Each employee, contractor and subcontractor must be trained in UTA environmental and Safety Management principles. Contractor acknowledges that its Goods and Services might affect UTA's environmental obligations. A partial list of activities, products or Services deemed as have a potential environmental effect is available at the UTA website www.rideuta.com. Upon request by UTA, Contractor shall complete and return a *Contractor Activity Checklist*. If UTA determines that the Goods and/or Services under the Contract has the potential to impact the environment, UTA may require Contractor to submit additional environmental documents. Contractor shall provide one set of the appropriate safety data sheet(s) (SDS) and container label(s) upon delivery of a hazardous material to UTA.

18. ENVIRONMENTAL RESPONSIBILITY

Contractor acknowledges that its Goods and/or Services might affect UTA's ability to maintain environmental obligations. A partial list of activities, products or Services deemed as have a potential environmental effect is available at the UTA website www.rideuta.com. Upon request by UTA, Contractor shall complete and return a *Contractor Activity Checklist*. If UTA determines that the Goods and/or Services under the Contract has the potential to impact the environment, UTA may require Contractor to submit additional environmental documents. Contractor shall provide one set of the appropriate safety data sheet(s) (SDS) and container label(s) upon delivery of a hazardous material to UTA.

19. ASSIGNMENT OF CONTRACT

Contractor shall not assign any of its rights or responsibilities, nor delegate its obligations, under this Contract or any part hereof without the prior written consent of UTA, and any attempted transfer in violation of this restriction shall be void.

20. SUSPENSION OF WORK

- a. UTA may, at any time, by written order to Contractor, require Contractor to suspend, delay, or interrupt all or any part of the Work called for by this Contract. Any such order shall be specifically identified as a "Suspension of Work Order" issued pursuant to this Article. Upon receipt of such an order, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of further costs allocable to the Work covered by the order during the period of Work stoppage.
- b. If a Suspension of Work Order issued under this Article is canceled, Contractor shall resume Work as mutually agreed to in writing by the parties hereto.
- c. If a Suspension of Work Order is not canceled and the Work covered by such order is terminated for the convenience of UTA, reasonable costs incurred as a result of the Suspension of Work Order shall be considered in negotiating the termination settlement.
- d. If the Suspension of Work causes an increase in Contractor's cost or time to perform the Work, UTA's Project Manager or designee shall make an equitable adjustment to compensate Contractor for the additional costs or time, and modify this Contract by Change Order.

21. **TERMINATION**

- a. **FOR CONVENIENCE**: UTA shall have the right to terminate the Contract at any time by providing written notice to Contractor. If the Contract is terminated for convenience, UTA shall pay Contractor: (i) in full for Goods delivered and Services fully performed prior to the effective date of termination; and (ii) an equitable amount to reflect costs incurred (including Contract close-out and subcontractor termination costs that cannot be reasonably mitigated) and profit on work-in-progress as of to the effective date of the termination notice. UTA shall not be responsible for anticipated profits based on the terminated portion of the Contract. Contractor shall promptly submit a termination claim to UTA. If Contractor has any property in its possession belonging to UTA, Contractor will account for the same, and dispose of it in the manner UTA directs.
- b. **FOR DEFAULT**: If Contractor (a) becomes insolvent; (b) files a petition under any chapter of the bankruptcy laws or is the subject of an involuntary petition; (c) makes a general assignment for the benefit of its creditors; (d) has a receiver appointed; (e) should fail to make prompt payment to any subcontractors or suppliers; or (f) fails to comply with any of its material obligations under the Contract, UTA may, in its discretion, after first giving Contractor seven (7) days written notice to cure such default:
1. Terminate the Contract (in whole or in part) for default and obtain the Goods and Services using other contractors or UTA's own forces, in which event Contractor shall be liable for all incremental costs so incurred by UTA;
 2. Pursue other remedies available under the Contract (regardless of whether the termination remedy is invoked); and/or
 3. Except to the extent limited by the Contract, pursue other remedies available at law.
- c. **CONTRACTOR'S POST TERMINATION OBLIGATIONS** : Upon receipt of a termination notice as provided above, Contractor shall (i) immediately discontinue all work affected (unless the notice directs otherwise); and (ii) deliver to UTA all data, drawings and other deliverables, whether completed or in process. Contractor shall also remit a final invoice for all services performed and expenses incurred in full accordance with the terms and conditions of the Contract up to the effective date of termination. UTA shall calculate termination damages payable under the Contract, shall offset such damages against Contractor's final invoice, and shall invoice Contractor for any additional amounts payable by Contractor (to the extent termination damages exceed the invoice). All rights and remedies provided in this Article are cumulative and not exclusive. If UTA terminates the Contract for any reason, Contractor shall remain available, for a period not exceeding 90 days, to UTA to respond to any questions or concerns that UTA may have regarding the Goods and Services furnished by Contractor prior to termination.

22. CHANGES

- a. UTA's Project Manager or designee may, at any time, by written order designated or indicated to be a Change Order, direct changes in the Work including, but not limited to, changes:

1. In the Scope of Services;
2. In the method or manner of performance of the Work; or
3. In the schedule or completion dates applicable to the Work.

To the extent that any change in Work directed by UTA causes an actual and demonstrable impact to: (i) C's cost of performing the work; or (ii) the time required for the Work, then (in either case) the Change Order shall include an equitable adjustment to this Contract to make Contractor whole with respect to the impacts of such change.

- b. A change in the Work may only be directed by UTA through a written Change Order or (alternatively) UTA's expressed, written authorization directing Contractor to proceed pending negotiation of a Change Order. Any changes to this Contract undertaken by Contractor without such written authority shall be at Contractor's sole risk. Contractor shall not be entitled to rely on any other manner or method of direction.
- c. Contractor shall also be entitled to an equitable adjustment to address the actual and demonstrable impacts of "constructive" changes in the Work if: (i) subsequent to the Effective Date of this Contract, there is a material change with respect to any requirement set forth in this Contract; or (ii) other conditions exist or actions are taken by UTA which materially modify the magnitude, character or complexity of the Work from what should have been reasonably assumed by Contractor based on the information included in (or referenced by) this Contract. In order to be eligible for equitable relief for "constructive" changes in Work, Contractor must give UTA's Project Manager or designee written notice stating:
 1. The date, circumstances, and source of the change; and
 2. That Contractor regards the identified item as a change in Work giving rise to an adjustment in this Contract.

Contractor must provide notice of a "constructive" change and assert its right to an equitable adjustment under this Section within ten (10) days after Contractor becomes aware (or reasonably should have become aware) of the facts and circumstances giving rise to the "constructive" change. Contractor's failure to provide timely written notice as provided above shall constitute a waiver of Contractor's rights with respect to such claim.

- d. As soon as practicable, but in no event longer than 30 days after providing notice, Contractor must provide UTA with information and documentation reasonably demonstrating the actual cost and schedule impacts associated with any change in Work. Equitable adjustments will be made via Change Order. Any dispute regarding the Contractor's entitlement to an equitable adjustment (or the extent of any such equitable adjustment) shall be resolved in accordance with Article 20 of this Contract.

23. INFORMATION, RECORDS and REPORTS; AUDIT RIGHTS

Contractor shall retain all books, papers, documents, accounting records and other evidence to support any cost-based billings allowable under Exhibit B (or any other provision of the Contract). Such records shall include, without limitation, time sheets and other cost documentation related to the performance of labor services, as well as subcontracts, purchase orders, other contract documents, invoices, receipts or other documentation supporting non-labor costs. Contractor shall also retain other books and records related to the performance, quality or management of the Contract and/or Contractor's compliance with the Contract. Records shall be retained by Contractor for a period of at least six (6) years, or until any audit initiated within that six-year period has been completed (whichever is later). During this six-year period, such records shall be made available at all reasonable times for audit and inspection by UTA and other authorized auditing parties including, but not limited to, the Federal Transit Administration. Copies of requested records shall be furnished to UTA or designated audit parties upon request. Contractor agrees that it shall flow-down (as a matter of written contract) these records requirements to all subcontractors utilized in the performance of the Contract at any tier.

24. FINDINGS CONFIDENTIAL

Any documents, reports, information, or other data and materials delivered or made available to or prepared or assembled by Contractor or subcontractor under this Contract are considered confidential and shall not be made available to any person, organization,

or entity by Contractor without consent in writing from UTA. If confidential information is released to any third-party without UTA's written consent as described above, contractor shall notify UTA of the data breach within 10 days and provide its plan for immediate

mitigation of the breach for review and approval by UTA.

- a. It is hereby agreed that the following information is not considered to be confidential:
 1. Information already in the public domain.
 2. Information disclosed to Contractor by a third-party who is not under a confidentiality obligation.
 3. Information developed by or in the custody of Contractor before entering into this Contract.
 4. Information developed by Contractor through its work with other clients; and
 5. Information required to be disclosed by law or regulation including, but not limited to, subpoena, court order or administrative order.

25. PUBLIC INFORMATION.

Contractor acknowledges that the Contract and related materials (invoices, orders, etc.) will be public documents under the Utah Government Records Access and Management Act (GRAMA). Contractor's response to the solicitation for the Contract will also be a public document subject to GRAMA, except for legitimate trade secrets, so long as such trade secrets were properly designated in accordance with terms of the solicitation.

26. PROJECT MANAGER

UTA's Project Manager for the Contract is Ryan Gardner, or designee. All questions and correspondence relating to the technical aspects of the Contract should be directed to UTA's Project Manager at UTA offices located at 669 West 200 South, Salt Lake City, Utah 84101, office phone (801) 514-6453.

27. CONTRACT ADMINISTRATOR

UTA's Contract Administrator for the Contract is Jackie Marra, or designee. All questions and correspondence relating to the contractual aspects of the Contract should be directed to UTA's Grants & Contracts Administrator at UTA offices located at 669 West 200 South, Salt Lake City, Utah 84101, office phone (801) 287-3059.

28. CONFLICT OF INTEREST

Contractor represents that it has not offered or given any gift or compensation prohibited by the laws of the State of Utah to any officer or employee of UTA to secure favorable treatment with respect to being awarded the Contract. No member, officer, or employee of UTA during their tenure or one year thereafter shall have any interest, direct or indirect, in the Contract or the proceeds thereof.

29. NOTICES OR DEMANDS

a. Any and all notices, demands or other communications required hereunder to be given by one party to the other shall be given in writing and may be electronically delivered, personally delivered, mailed by US Mail, postage prepaid, or sent by overnight courier service and addressed to such party as follows:

If to UTA:

Utah Transit Authority
ATTN: Jackie Marra
669 West 200 South
Salt Lake City, UT 84101
Jackie.marra@rideuta.com

If to Contractor:

NSH USA Corporation
ATTN: Curtis Goffinski
1700 North Broadway
Albany, NY 12204
Cgoffinski@nsh-usa.com

b. Either party may change the address at which such party desires to receive written notice of such change to any other party. Any such notice shall be deemed to have been given, and shall be effective, on delivery to the notice address then applicable for the party to which the notice is directed; provided, however, that refusal to accept delivery of a notice or the inability to deliver a notice because of an address change which was not properly communicated shall not defeat or delay the giving of a notice.

30. CLAIMS/DISPUTE RESOLUTION

a. "Claim" means any disputes between UTA and the Contractor arising out of or relating to the Contract Documents including any disputed claims for Contract adjustments that cannot be resolved in accordance with the Change Order negotiation process set forth in Article 20. Claims must be made by written notice. The responsibility to substantiate claims rests with the party making the claim.

- b. Unless otherwise directed by UTA in writing, Contractor shall proceed diligently with performance of the Work pending final resolution of a Claim, including litigation. UTA shall continue to pay any undisputed payments related to such Claim.
- c. The parties shall attempt to informally resolve all claims, counterclaims and other disputes through the escalation process described below. No party may bring a legal action to enforce any term of this Contract without first having exhausted such process.
- d. The time schedule for escalation of disputes, including disputed requests for change order, shall be as follows:

Level of Authority	Time Limit
UTA's Project Manager /Contractor's Project Manager	Five calendar days
UTA's Director of Fleet Engineering/ Contractor's Director, Project Management	Five calendar days
UTA's Chief Operating Officer]/Contractor's President & COO	Five calendar days

Unless otherwise directed by UTA's Project Manager, Contractor shall diligently continue performance under this Contract while matters in dispute are being resolved.

If the dispute cannot be resolved informally in accordance with the escalation procedures set forth above, than either party may commence formal mediation under the Juris Arbitration and Mediation (JAMS) process using a mutually agreed upon JAMS mediator. If resolution does not occur through Mediation, then legal action may be commenced in accordance the venue and governing law provisions of this contract.

31. GOVERNING LAW

The validity, interpretation and performance of the Contract shall be governed by the laws of the State of Utah, without regard to its law on the conflict of laws. Any dispute arising out of the Contract that cannot be solved to the mutual agreement of the parties shall be brought in a court of competent jurisdiction in Salt Lake County, State of Utah. Contractor consents to the jurisdiction of such courts.

32. COSTS AND ATTORNEY FEES.

If any party to this Agreement brings an action to enforce or defend its rights or obligations hereunder, the prevailing party shall be entitled to recover its costs and expenses, including mediation, arbitration, litigation, court costs and attorneys' fees, if any, incurred in connection with such suit, including on appeal

33. SEVERABILITY

Any provision of the Contract prohibited or rendered unenforceable by operation of law shall be ineffective only to the extent of such prohibition or unenforceability without invalidating the remaining provisions of the Contract.

34. AMENDMENTS

Any amendment to the Contract must be in writing and executed by the authorized representatives of each party.

35. FORCE MAJEURE

Neither party to the Contract will be held responsible for delay or default caused by fire, riot, acts of God and/or war which are beyond that party's reasonable control. UTA may terminate the Contract after determining such delay or default will reasonably prevent successful performance of the Contract.

36. NO THIRD-PARTY BENEFICIARIES

The parties enter into the Contract for the sole benefit of the parties, in exclusion of any third-party, and no third-party beneficiary is intended or created by the execution of the Contract.

37. ENTIRE AGREEMENT

This Contract shall constitute the entire agreement and understanding of the parties with respect to the subject matter hereof, and shall supersede all offers, negotiations and other agreements with respect thereto.

38. COUNTERPARTS

This Contract may be executed in any number of counterparts and by each of the parties hereto on separate counterparts, each of which when so executed and delivered shall be an original, but all such counterparts shall together constitute but one and the same instrument. Any signature page of the Contract may be detached from any counterpart and reattached to any other counterpart hereof. The electronic transmission of a signed original of the Contract or any counterpart hereof and the electronic retransmission of any signed copy hereof shall be the same as delivery of an original.

39. NONWAIVER

No failure or waiver or successive failures or waivers on the part of either party in the enforcement of any condition, covenant, or article of this Contract shall operate as a discharge of any such condition, covenant, or article nor render the same invalid, nor impair the right of either party to enforce the same in the event of any subsequent breaches by the other party.

40. SALES TAX EXEMPT

Purchases of certain materials are exempt from Utah sales tax. UTA will provide a sales tax exemption certificate to Contractor upon request. UTA will not pay Contractor for sales taxes for exempt purchases, and such taxes should not be included in Contractor's Application for Payment.

41. UTAH ANTI-BOYCOTT OF ISRAEL ACT

Contractor agrees it will not engage in a boycott of the State of Israel for the duration of this contract.

42. SURVIVAL

Provisions of this Contract intended by their nature and content to survive termination of this Contract shall so survive including, but not limited to, Articles 7, 9, 10, 11, 12, 13, 15, 17, 18, 19, 21, 23, 24, 25, 30, 31, 32, and 40.

43. Tariff Pass-Through Clause

Contractor pricing does not contain any mechanism for changes to tariff rates assessed by any government or import authority. Pricing from Contractor's vendors to Contractor may increase thereby causing Contractor costs to increase. Applicable taxes, tariffs, duties, etc. imposed on third-party equipment and/or services will be passed through to UTA.

Hence, any increased tariffs imposed by any government(s) or import authorities after contract signing will be passed through to UTA. In the event of any new or increased tariffs, duties, or trade restrictions imposed by any government(s) or import authorities affecting the cost of materials or finished goods, the contract price shall be adjusted accordingly. In the event of a decrease in tariffs or duties, the price decrease shall be passed along to UTA.

In order to be reimbursed under this section, contractor shall submit a proposal for price increase accompanied by sufficient justification and documentation demonstrating that the increased taxes, tariffs, or duties are the proximate cause of the price increase with no additional markup of any type. The justification shall include an explanation of mitigating measure taken by contractor to avoid cost impact to the project.

IN WITNESS WHEREOF, the parties hereto have caused the Contract to be executed by officers duly authorized to execute the same as of the date of last signature below.

UTAH TRANSIT AUTHORITY:

By _____
Jay Fox
Executive Director

By _____
Patrick Preusser
Chief Operating Officer

DocuSigned by:
By Mike Bell
70E33A415BA44F6...
Mike Bell
UTA Legal Counsel

NSH USA Corporation:

Signed by:
By David William Davis 4/15/2025
David William Davis
President and CEO

Signed by:
By Brandon Teal 4/15/2025
26B471A5C237453...
Brandon Teal
Director Railway Machine Systems

Exhibit A



UTAH TRANSIT AUTHORITY

2264 S 900 West

Salt Lake City, UT 84119

Jordan River Rail Service Center Wheel Truing Machine Technical Specifications

Rev : 2

Release Date : 3/21/2025

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1.00 System Overview

- A** UTA's Jordan River Rail Service Center (JRRSC) was built with a provision for the future installation of a wheel truing machine. The purpose of this procurement is to equip the JRRSC with a state of the art underfloor dual axle CNC wheel lathe.
- B** The wheel truing machine will be operated by UTA personnel to service UTA's fleet of rail vehicles. The truing machine shall be capable of completing necessary turning operations for all applicable wheels, tires, and brake discs on UTA rail vehicle applications.
- C** UTA has in operation the following rail vehicles:
 - i 23 Siemens SD-100 Light Rail Vehicles
 - ii 17 Siemens SD-160 Light Rail Vehicles
 - iii 77 Siemens S70 Light Rail Vehicles
 - iv 18 Motive Power MP36PH-3C Locomotives
 - v 16 Bombardier Bi-Level Coach Cars
 - vi 5 additional used Bombardier Bi-Level Coach Cars (procured from North County Transit District)
 - vii 22 Bombardier Bi-Level Cab Cars
 - viii Replacement of the SD-100 and SD-160 light rail vehicles is currently in process. The planned replacement vehicle is a Stadler CITYLINK light rail vehicle.

2.00 Scope of Work

- A** The Contractor shall provide design, build, test, deliver, prepare equipment for installation, install equipment, and commission a state-of-the-art CNC Dual Axle Under Floor Wheel Lathe capable of performing all operations required to maintain UTA's current and future rail vehicles.
- B** The Contractor shall be responsible for roughing-in, installation of equipment, and final connection of utilities, with labor, services, and incidentals necessary for complete and operational equipment installation at the JRRSC.
- C** The Contractor shall be responsible for Piping, wiring, and switching between equipment and utilities.
- D** The Contractor shall provide slings, cradles, and other lifting equipment as applicable.
- E** All adapters required to perform work as outlined in this specification shall be provided as part of this Contract.
- F** The Contractor shall provide all necessary tooling required to perform work as outlined in this specification, that is not commercially available, as part of this Contract.
- G** A list of Tooling that is commercially available, shall be provided with the information, including but not limited to, description of tool, supplier, model #, specification, cost etc. UTA may choose to procure these tools on its own.



- H** The Contractor shall demonstrate that all machine operations meet or exceed the specifications and tolerances of the carbuilder or equipment manufacturer for the equipment being serviced.
- I** The Contractor shall provide training to UTA employees on the operation of the wheel truing machine.
- J** The Contractor shall provide training to UTA employees on the maintenance of the wheel truing machine.
- K** The Contractor shall provide documentation for maintaining and operating the wheel truing machine.
- L** The design, documentation, and turning operations shall be compliant with Association of American Railroads (AAR), Federal Railroad Administration (FRA), American Public Transportation Association (APTA), and manufacturer's recommendations applicable to the equipment being serviced. The Contractor shall be responsible for demonstrating conformance to relevant standards for each machine operation.
- M** The Proposer shall provide a description of its recent design and manufacturing experience in providing a wheel truing machine for the service of Light Rail and Commuter Rail vehicles.

3.00 Wheel Truing Machine Operations:

The wheel truing machine shall, at minimum, be equipped to perform all operations as outlined in this section.

- A** UTA Siemens S70, SD-100, SD-160 and Stadler CITYLINK Light Rail Vehicle Operations:
 - i Wheel truing of power truck wheels
 - ii Wheel truing of center truck wheels
 - iii Turning power truck friction brake discs
 - iv Turning center truck friction brake discs
- B** UTA Bombardier Bi-Level, MP36PH-3C Locomotive, and Future DMU Operations¹:
 - i Wheel truing of all wheelsets
 - ii Turning of all friction brake discs

¹ UTA is in the process of procuring Diesel Multiple Unit (DMU) trainsets. The details of these trainsets are unknown at the time of writing this specification. The Contractor is responsible for providing equipment that is capable of servicing common DMU trainsets in operation in North America.

- C** UTA Commuter Rail wheel truing machine operations will be conducted with the axles or trucks removed from the vehicle and transported to the truing machine.
- D** UTA Light Rail Vehicle wheel truing machine operations will typically be conducted with the complete vehicle driven onto the truing machine. The machine shall be designed to minimize or eliminate the need for truck components to be removed or adjusted to achieve clearance to interface with the wheel truing machine and accomplish the truing operations.
- E** UTA Light Rail Vehicle wheel truing machine operations may be conducted with the truck or individual axles placed directly onto the wheel truing machine.

4.00 General Requirements

- A** The Contractor shall be responsible for the successful installation, integration, and commissioning of the wheel truing machine at UTA's facility to provide UTA with a fully operational wheel truing machine capable of performing all operations outlined in section 3.00.
- B** The wheel truing machine shall be designed for a minimum of a 30-year service life.
- C** The wheel truing machine design shall take into consideration the human factors engineering of the U.S. adult population anthropomorphic data and be based on human factors engineering, with the range of people from the fifth percentile female to the 95th percentile male as defined by "The Measure of Man and Woman," revised edition, at a minimum. The design shall accommodate the widest range of people where feasible.
 - i** Design ergonomics, and other system design requirements of this sections shall be demonstrated in the CDR, PDR, and FDR package.
- D** Hydraulic connections shall be made using corrosion resistant rigid piping, except in locations where relative motion between components occurs. Flexible hoses may be used to prevent the transmission of vibration between components. All flexible hoses shall be protected against abrasion.
- E** Oils, greases, additives, and other consumables required to service and maintain the wheel truing machine shall be readily available for purchase in the United States.
- F** Electrical systems shall be designed in conformance with NFPA 70.
- G** All wiring and cabling shall be placed inside of suitable hard conduit for cable runs external to the equipment. Exceptions may be made on a case by case basis provided an equivalent level of protection is provided, subject to UTA review and approval during CDR.
- H** The machine shall be designed to maximize operator safety, designed with features to automatically prevent chip buildup, prevent operator exposure to sharp machining chips, and provide the operator a safe workspace protected from falling dislodged wheelsets.
- I** The machine and installation shall be compliant with all relevant OSHA safety requirements.
- J** The control system shall be equipped and programmed to detect system faults. The Contractor shall provide a functional description of the fault detection system and a list of all faults, as applicable, for UTA review and approval (CDRL 01).

- K** All components shall be treated to prevent corrosion, with the exception of components which must remain unfinished or uncoated due to their function, such as drive rollers, guide rollers, ball screws, guideways, probes, tool block guarding, etc. All unfinished components must be identified during CDR, including justification for why the component is unfinished for UTA review and approval. The use of dissimilar metals in contact is prohibited.

The machine colors shall be as follows:

Light Grey RAL 7035:

- Stand
- Crossbeam
- Rails and vertical supports
- Hydraulic unit
- Machine covering
- Electrical cabinet
- Lifting devices
- Chip conveyor
- Chip protection door

Signal Yellow RAL 1003:

- Longitudinal slide
- Surface lathe tool
- Moving parts

Bauhaus Blue RAL 2604035:

- Roller carriers and positioning mechanism
- Gear for the friction roller drive
- Outer or inner bearing fixing

Jet Black RAL 9005:

- Hold down adapter

- L** The wheel truing machine shall be equipped with an electric jib crane or equivalent device(s) to remove and install tooling and adapters.
- M** The Contractor shall provide a design package demonstrating the wheel truing machine design for each machine operation as outlined in section 3.00 for UTA review and approval. The design package shall include at a minimum:
- i Fully dimensioned drawings for wheel truing machine detailed to the sub-assembly level.
 - ii Fully dimensioned drawings for all adapters required to interface with each piece of equipment.
 - iii Electrical and hydraulic schematics.
 - iv Fully dimensioned drawings detailing the interfaces for each operation outlined in section 3.00.
 - v A stress analysis demonstrating no permanent deformation of the machine, adapters, or work piece will occur during any wheel truing machine operation.
 - vi An overload analysis demonstrating no permanent deformation, buckling, or overload of any machine element when operated at maximum capacity.

- vii The design package shall provide analysis demonstrating that all reaction forces are transmitted through the machine frame, and not the building foundation.
- viii Detailed functional descriptions of each operation outlined in section 3.00.
- ix The design package shall be reviewed according to the following review phases: Conceptual Design Review (CDR) (CDRL 02), Preliminary Design Review (PDR) (CDRL 03), and Final Design Review (FDR) (CDRL 04).
 - a The primary objectives of the conceptual design review (CDR) phase shall be to affirm the basis of design with the Contractor.
 - b The preliminary design review (PDR) shall confirm the design concept. The PDR shall contain the preliminary design package, a preliminary hazard analysis (PHA), and a requirements traceability matrix clearly demonstrating how all technical specifications will be met.
 - c The final design review (FDR) shall confirm the design is conformant with all specifications and ready for manufacturing. The FDR shall demonstrate the completion of the requirements traceability matrix, resolution of all items from the PHA, and finalize the design package.
 - d Manufacturing shall not commence until the Contractor receives written approval of the FDR from UTA, and all comments from previous design review phases have been addressed.
 - e CDR and PDR may be combined if sufficient design information is available with written approval from UTA.
 - f If the Contractor decides to proceed with material procurement and/or manufacturing prior to FDR approval, any non-conformance shall be corrected at the Contractor's expense.
- N The Contractor shall develop a wheel truing machine facility integration plan (CDRL 05). At a minimum this plan shall contain the following:
 - i Engineering drawings demonstrating the machine placement and interfaces with the JRRSC facility. The drawings shall consider all aspects of wheel truing machine operation including jib crane access for installation of adapters.
 - ii All facility requirements such as electrical requirements, network requirements, structural reinforcement, structural modifications, etc, shall be defined in the plan.
 - iii The integration plan shall contain a detailed installation plan and procedure including details for material offload, storage, and transport into the facility.
 - iv The integration plan shall clearly define any necessary facility modifications that must be conducted prior to the wheel truing machine installation, if applicable. All necessary facility modifications shall be clearly identified at the proposal phase for UTA review and approval. UTA responsibilities were identified during the proposal phase of the project, and have been added to section 22.00. Facility modifications that have not received prior approval by UTA shall be at the Contractor's expense.

- O** The Contractor shall be responsible for programming, verifying, and validating all necessary machine operations. The Contractor shall supply “go/no-go” gauges to physically verify the conformance of all wheel profiles.
- P** The Contractor shall be responsible for verifying the accuracy of any drawings, dimensions, or other information provided by UTA.

5.00 Product Requirements: Wheel Truing Machine, Dual Axle with Chip Removal, and Dust Collection

5.01 General Information:

- A** The base machine shall be a tandem, CNC controlled lathe, and designed to lift, measure and machine two-wheel sets together in the configurations listed in section 3.00. The following components, or approved equivalent, belong to the standard unit:
 - base frame,
 - crossbeams,
 - 4 tool blocks with integrated wear probes,
 - 4 friction roller drives (roller carrier with drive unit),
 - electrical equipment,
 - hydraulics,
 - machine housing,
 - CNC control in English language,
 - outer or inner bearing support with adapters,
 - rail system, and
 - chip disposal system.
 - dust collection system, and
 - necessary extensions for machining tasks.

5.02 Main Dimensions and Operational Data:

- A** Wheel Set and Vehicle Data:
 - Shall have the ability to machine wheel sets as defined in section 3.00.
- B** Machining Accuracy:
 - max . diameter difference of two wheels on one axle: 0.1 mm (0.004 inch) in the case of rubber-cushioned wheel sets, max. diameter difference of two wheels on one axle: 0.3mm (0.012 inch)
 - max. diameter difference of four wheels on two axles: 0.3 mm (0.012 inch) in the case of rubber-cushioned wheel sets, the value may increase by up to 0.3 mm (0.012 inch).
 - radial run-out measured at the tapping line: 0.1 mm (0.004 inch) in the case of rubber-cushioned wheel sets, the value may increase by up to 0.3 mm (0.012 inch).
 - axial run-out: 0.3 mm (0.012 inch)

- profile conformity: 0.2 mm (0.008 inch) in the case of rubber cushioned wheel sets, the value may increase by up to 0.3 mm (0.012 inch).
- surface finish, profile machining: $R_z < 60 \mu\text{m}$.
- If tighter tolerance requirements are identified for any of the equipment during the design review phase, the machine shall be designed to meet the most stringent requirements.

C Machine Data, minimum requirements:

- drive rating: 2 x 30 kW (2 x 40 hp)
- cutting force (if axle load is sufficient): 23 kN (5170 lbs)
- max. cutting cross-section, approximate: 10 mm² (0.0155-inch²)
- cutting speed (re-profiling): 40 – 120 m/min (131 – 394 ft/min)
- max. cutting speed (taping line): 305 m/min (1000 ft/min)
- tool block rapid traverse (longitudinal and cross): 4.7 m/min (15.4 ft/min)
- feed range (infinitely variable from – to): 0 - 2.5 mm/rev (0 – 0.1 inch/rev)
- max. noise level of the machine: < 80 dB (A) (except cutting noise)
- measuring system of the machine: metric
- language: CNC screen, signs; documentation: English.

D Connection Data:

- i Unless otherwise approved, equipment shall be designed in accordance to prevailing specifications:
 - operating voltage (controls): 480 V
 - operating voltage (main drive): 415 V
 - voltage tolerance: Contractor shall coordinate with utility.
 - frequency: 60 Hz
 - type of main power source: 3P 1N connected power, depending on the equipment, approximately: 96 kVA
 - maximum machine weight: As dictated by facility structure, and other project constraints such as shipping and movement for assembly. Contractor's responsibility to conduct the necessary analysis.
 - Available space to install the machine, approximately: 22.5ft x 20.5ft x 91in depth.
 - Available foundation pit depth, approximately: 91 inch
 - Exact truing pit dimensions to be verified by the Contractor.

5.03 Technical Specifications

5.03.01 Machine General Description and Requirements

- A** The machine shall be of a durable construction designed for reliable operation under UTA's service conditions.
- B** The machine shall be designed to machine 100 wheelsets per month with machine service necessary no more frequently than annually, and greater than 95% availability.

- C** Annual machine service shall take less than 1 week.
- D** The machine shall be designed for a major service no less than every 10 years.
- E** All moving equipment shall be equipped with provisions for grease lubrication with service locations accessible without machine disassembly.
- F** Machining operations shall be conducted without the removal of any surrounding truck or vehicle equipment. Sanding nozzles and rail clearers may be adjusted to accommodate necessary machine clearances, but a machine design requiring no adjustments to vehicle equipment to accommodate machine operations is preferable.
- G** The machining operations shall be an automated sequence, minimizing manual operator setup. All automated aspects of the sequence shall also have a manual operating mode with built in fail safes.
- H** The system shall be designed with features to optimize process times and minimize the material removal requirements.
- I** Critical systems shall be designed with redundancy to minimize machine down time.
- J** Machine Bases:
 - i The machine shall be designed with adequate adjustment to accommodate proper machine alignment with the facility, and rails.
 - ii The machine shall allow for seamless operation of the vehicle and/or transfer of wheelset to and from the existing facility track to the machine.
- K** Crossbeam:
 - i The machine shall be equipped with a crossbeam, or equivalent which allows the cutting and measurement tools to reach from axle center to axle/brake disc end (whichever is further) to accommodate reprofiling all wheelsets as well as reconditioning all brake disk types required of this specification.
 - ii The crossbeam for all tool blocks shall be built of spheroid graphite cast iron GGG 40 with rigid longitudinal and cross ribbing, or approved equivalent.
 - iii The guide tracks shall be adequately lubricated and covered with reinforced telescoping covers to protect the tracks, spindles, and other mechanisms from dust and chips.
- L** Friction Roller Drives:
 - i Rotation of a wheelset on an Underfloor wheel lathe shall be accomplished by the use of a friction roller drive assembly.
 - ii Each roller drive shall have four drive rollers (per wheelset).
 - iii The drive rollers shall make secure contact to the tread surface minimizing the risk of dislodged wheelsets.
 - iv The drive rollers shall be designed to prevent interference with machine operations.
 - v The machine shall be equipped with a provision to safely and automatically transfer the wheelset from the running rail to the drive rollers and vice versa.

- vi The friction roller drives shall be designed to precisely support the wheelset with adequate loading during machining operations to prevent any machining abnormality.
- vii The friction roller drives shall be equipped with transducers to monitor the axle load.

M Axial Guide Rollers

- i The machine shall be equipped with axial guide rollers to ensure the wheelset is securely retained horizontally in position during machine operations.
- ii Axial guide rollers shall guide the wheels (monoblock)/ tires (resilient) from the inner surface. The guide roller interface location shall be designed to ensure it does not interfere with any machine operation, and shall be adjustable to prevent interference with stamped serial numbers.
- iii The axial guide rollers shall follow an automated synchronized clamping sequence to ensure the wheelset is secure and does not shift during machine operations.

N Inner Axle Centering Units for radial centering of wheelsets equipped with inner or outer bearings commonly used on light and heavy rail passenger transit.

- i The machine shall be equipped with axle centering units which attach to the inboard portion of the axle. This provision will be used to interface with the S70 center truck axle bridge assembly.
- ii The Equipment Comprises:
 - two fixing devices per wheelset, mounted to the crossbeam,
 - two sets of hold down equipment.
 - The Contractor shall provide two additional spare sets of fixing devices and hold down equipment.

O Tailstock/ Outer Axle Box Centering Units:

- i The machine shall be equipped with two tailstock centering units per wheelset, one on either side of each wheel set.
- ii The units shall be adjustable in height, and be manually swiveled from the parallel-to-the-rail-track-position into 90°-to-the-rail-track-position (parallel to machine center line) via a handheld pendant in a location providing the operator access to safely view the alignment and positioning of the centering unit and adapters.
- iii The units shall be equipped with removable adapters to clamp the wheel set via hold down clamps interfacing with either the journal bearing housing, or directly on the journal bearing, or live centers, dependent on the design of the application. Adapters shall be designed to be positively retained in position.
- iv The tailstock centering units and adapters shall be designed to allow the operator to swap adapters in the parallel to the rail track position using a built in jib crane or equivalent to support the load and transfer the adapter from the storage location to the tailstock centering unit. The adjustment and geometry of the tailstock centering units and adapters shall be designed to move into position without the requirement to remove any vehicle equipment to provide clearance for the positioning operation.
- v The machine shall be equipped with platforms to provide the operator access and clear viewing of the work. The platforms shall be gated and interlocked to prevent access during machine operation.
- vi Tailstock centering units and adapters shall be designed to resist the forces developed during the machine operation with a minimum safety factor of 3.
- vii The Contractor shall be responsible for providing 4 sets of each adapter type, two sets for operation, and two spare sets.
- viii Tailstock centering unit positioning drive shall be of an electro-mechanical, hydraulic, or hybrid design, ensuring the mechanism safely and reliably retains the wheelset.

P CNC Turning Tool Blocks

- i The CNC turning tool block shall be of a rigid design meeting all machine tolerances across the full range of travel.
- ii The machine shall be designed to simultaneously re-profile both wheels (monoblock) or tires (resilient) on a wheelset e.g. be equipped with a minimum of two independently operating CNC tools per wheelset.
- iii The CNC turning tool blocks shall be equipped with a quick-change tool holder, which may be either automatic or manual.
- iv The assembly shall be protected against dirt, debris, and chips, accomplished by solid wipers for all guideways, or approved equivalent.
- v The design shall have necessary provision to make adjustments to compensate for wear and minor defects to ensure free play is minimized.
- vi The system shall be design for rapid movement to optimized and minimize machine process times.
- vii Feed drives shall be controlled by a multi-axis CNC control system.

- viii Actuation of each feed axis shall be by precision ball screw spindle with enclosed spindle nut, or approved equivalent.

Q Turning Tools

- i Turning tools and inserts shall be designed to optimize tool life.
- ii The equipment shall be designed to utilize indexable inserts.
- iii The Contractor shall provide 12 complete sets of all turning tools.
- iv The Contractor shall provide a 2-year supply of consumables, calculated on the basis of processing 100 wheelsets per month.

R Automatic Measuring Devices

- i The machine shall be equipped with automatic measuring devices to simultaneously measure the profile of both wheels (monoblock) or tires (resilient) on a wheelset.
- ii The Contractor shall demonstrate the accuracy and precision of the measurement equipment is adequate to reliably verify all tolerances have been met, and are representative of the requirements of the equipment, wheel profile, or brake disc design.
- iii Pre-machining automatic measurements shall be used to identify special machine operations required to maintain acceptable material removal rates. Examples: false flanges and deformed wheel profile.
- iv The automatic measuring devices shall be used to conduct a pre-machining measurement to be used in a calculation which minimizes the required material removal to meet the re-profiling tolerances. The machine shall be designed to present the calculated optimum plan to the machine operator, and allow the machine operator to make modifications to the planned re-profiling operation.
- v The automatic measurement system shall be designed and calibrated to provide results equivalent and consist to a Winchester Finger Gauge for pre-machining measurements.
- vi The automatic measurement system shall be designed and calibrated to output measurements consistent with the callouts on the corresponding wheel profile drawing, post re-profiling operations.
- vii The automatic measuring equipment shall be designed with compensation parameters to account for equipment wear.
- viii The wheel profile shall be measured with a minimum of 100 measurement points. Measurement points may be evenly distributed across the profile or with increased density in certain locations as required, subject to UTA review and approval.

S Rail System

- i The machine shall be equipped with a complete rail system to allow seamless transition between the facility (shop) rails and the truing machine.
- ii The strength of the machine and rail system shall be designed to support worst-case loading with a minimum safety factor of 3.

- iii The rail system shall allow a vehicle to pass completely across the machine e.g. vehicle enters from the South travels across the machine, and exits out of the North of the shop and vise versa.
- iv The machine rail system shall be integrated with the overhead catenary system (OCS) to allow the LRV to safely operate under it's own power to position and travel across the machine. UTA will take the responsibility to provision controls hardware on the OCS control side. The Contractor will provide the connection point in the machine electrical panel located in the wheel truing pit.
- v The machine shall be equipped with OCS interlocks to prevent any unsafe conditions.
- vi The rail system will be used to position and support a vehicle (train), individual wheelsets, and truck assemblies over the lathe.
- vii The machine rails shall be designed to safely transition between the wheelset being supported by the machine rails to being supported by the drive rollers and holding clamps and vise versa using an automated electro-mechanical or hydraulic drive system.
- viii The machine rails shall be mechanically locked into position.
- ix The machine shall be equipped with audible alarms for e-stop conditions.
- x The position of wheelsets shall be monitored by the machine with the information provided to the operator through visual indicators or HMI monitor as appropriate.
- xi The machine shall tolerate wheelset positioning +/- 2" of centered at a minimum.

T Machine Enclosures, Covers, and Safety Features

- i The machine shall be equipped with machine enclosures to protect the operator.
- ii Machine enclosures shall allow the operator to have adequate viewing of the machine operation while providing protection from machining chips, tool breakage, dislodged and/or falling wheelsets, and all other hazards identified in the preliminary hazard analysis (PHA).
- iii The viewing windows shall be equipped with an interlock which allows the operator to access the work.
- iv All interlocks shall be equipped with a keyed override function to support maintenance activities.
- v Electrical equipment shall be installed into enclosures designed, labeled, and positioned appropriately to the service environment to ensure reliability and minimize hazards.
- vi The Contractor shall provide UTA with the necessary information to ensure the machine is properly interfaced with UTA's facility to mitigate hazards associated with the placement of the wheelsets onto the machine. The scenarios shall be reviewed and addressed with the PHA.
- vii The machine shall be in conformance with relevant OSHA regulations.
- viii All enclosures and covers shall be designed to be easily removed for equipment maintenance access.

- ix All hazardous machine locations shall be equipped with interlocked light barriers or gates as necessary to prevent personnel from accessing hazardous areas during machine operation.
- x System controls shall display a fault in the event of a tripped interlock condition.
- xi Chip disposal conveyers and equipment shall be adequately covered with metal plates to prevent unintended personnel exposure.

Automatic Chip Disposal System

- i The machine shall be equipped with an automatic chip disposal system which automatically and continuously carries the chips away from all turning operations.
- ii The chip disposal system shall be coordinated with the turning operation to minimize operator intervention and exposure to hazardous machining chips, including the incorporation of chip breakers as necessary.
- iii A chip conveyor system shall be provided to carry the chips out of the pit area into exterior chip bins. The chip bins shall be located at the shop floor level, positioned in a location to allow removal by forklift to facilitate emptying the chip bin.
- iv The conveyor system shall be equipped with a chip shredder which shreds and reduces the chip size prior to discharging into the chip bin.
- v The chip disposal system shall automatically start and stop, and be integrated into the machine electrical control system.
- vi The chip conveyor shall be equipped with two chip bins and a diverter chute to allow the selection between the two chip bins to allow for continued operation while the chip bin is being emptied.
- vii The chip conveyor shall be equipped with removable covers to allow access to the entire length of the conveyor system without conveyor disassembly.
- viii The system shall be designed to accommodate maximum material removal rates, and shall not impose any constraints on the machining process times.
- ix The chip disposal system shall be of a durable construction with a minimum of 10 year service life without the need for major overhaul.
- x Minimum Requirements:
 - conveying speed: 6 m/min, 20 ft/min
 - drive rating: 0.5 kW, 0.67 hp
 - conveying capacity (short chips): 250 kg/h, 550 lbs/hour

U Hydraulic Unit System to supply and control the entire machine hydraulics.

- i Hydraulic system components and control equipment shall be designed to be easily accessible for maintenance in a central location for like-equipment.
- ii Critical system functions shall have built in redundancy to minimize single point failures.

- iii Equipment shall be adequately sized and protected for the service environment to ensure reliable operation.
- iv Hydraulic systems shall be equipped with both pressure transducers for monitoring by the machine control system, as well as test ports and installed mechanical pressure gauges for maintenance and troubleshooting activities.
- v Oil tanks shall be equipped with manual and electronic/electrical oil level indicators for maintenance and automatic fault detection.
- vi The oil tank and hydraulic filters shall be located with easy access for replacement and cleaning.

V Machine Control System

- i The machine shall be equipped with networked controls systems to automate and monitor machine operation, ensuring co-ordination between the various machine functions such as computerized numerical control (CNC), and Human Machine Interfaces (HMI).
- ii The control system shall be designed with diagnostic fault messages to support the operator diagnosis of system fault.
- iii The Contractor shall submit a complete machine control function description for UTA review and approval.
- iv The machine control system shall guide the operator with step-by-step procedures through the control panel which result in successful machine operation.
- v The control system shall allow the operator to make adjustments to the machining process or configuration from the control panel, within pre-determined failsafe parameters.
- vi Fault Handling and Diagnostics:
 - Fault messages shall be displayed to the machine operator through the control panel.
 -
- vii Functions:

The following tasks and control functions are performed in automatic cycles by the machine control system.

 - wheelset clamping procedure with automatic determination and control of additional load to the roller carriers (permanent pressure). The movement of the hold-down equipment is performed manually or automatically, depending on the selected machining type,
 - control of profile wear and diameter measurements,
 - data transfer, storage and processing of profile wear and diameter measurements,
 - input of variables via the numeric keyboard,
 - determination of the wheelset position by the use of the measuring devices,
 - calculation of nominal wheelset diameter in order to remove a minimum of material off the wheelset,

- calculation of the maximum cutting depth with automatic subdividing of the cuts when preset machining limits are exceeded,
- intermediate measurement of the wheel diameter before proceeding to the final cut. This measurement allows the control system to recalculate the depth of the final cut. This recalculation assures the achievement of precise diameter conformity between two wheels on a wheelset.
- complete profile machining or machining of profile sections, if necessary,
- program control for automatic tool wear corrections,
- in the event of a tool insert fracture a manual tool retraction can be triggered by the operator. An automatic re-positioning to the spot of retraction will take place after the operator continues the machining process.
- availability of measurements data, nominal calculations and profile data on the operator screen or via the record printer,
- fault monitoring of all important machine functions, such as motor protection, limit switches, hydraulic valves, electrical and electronically control devices. The fault messages shall be displayed as text messages on the operator control panel.

viii At a minimum, the Equipment Comprises:

- a modular micro-processed CNC control system
- a control panel component with keyboard and TFT color screen, minimum 15" with 16-menu softkeys for operator support,
- high resolution color graphics for operator support,
- screen shall be of an industrial design protected against damage
- input/output modules,
- tool radius compensation,
- tool correction memory,
- continuously adjustable feeds for the vertical and horizontal axis, independent from wheelset revolution, adjustable up to rapid traverse speed,
- override of axis feeds and drive speeds,
- universal interface, V 24 (RS 232 C), or equivalent
- screen texts in the English language.

W Machining Programs for the CNC Control System.

i The Programs Contain:

- Automated clamping and unclamping programs
- measuring programs
- basic machining programs
- special machining programs, if required
- support of at least three profile subroutines

X Wheel Truing Records

- i The final configuration shall be agreed upon between the Contractor and UTA during the design review process. The existing report format shall be the basis

for the report, and shall have the ability to create the provided example as a minimum.

- ii Example for record data. Manual numeric data input via the numeric keyboard of the CNC in interactive mode:

- Date / Time
- Operator ID
- Reason For Machining
- Mileage
- Machining Type
- Profile Type
- Wheel Set Id
- Wheel Set Position
- Wheel Set Direction
- Bogie ID
- Vehicle ID
- Vehicle Direction
- Vehicle Type
- Workorder

- iii In addition to the manually entered data, the following data will be printed and displayed on the control panel:

Before machining:

- Back To Back
- Gauge
- Diameter Difference
- Diameter Left
- Diameter Right
- Axial Runout Left
- Axial Runout Right
- Radial Runout Left
- Radial Runout Right
- Flange Height Left
- Flange Height Right
- Flange Thickness Left
- Flange Thickness Right
- Qr Cross Measure Left
- Qr Cross Measure Right
- Variant
- Diameter Nominal

- Flange Thickness Nominal Left
- Flange Thickness Nominal Left

After Machining:

- Back To Back
- Gauge
- Diameter Difference
- Diameter Left
- Diameter Right
- Axial Runout Left
- Axial Runout Right
- Radial Runout Left
- Radial Runout Right
- Flange Height Left
- Flange Height Right
- Flange Thickness Left
- Flange Thickness Right
- QR Cross Measure Left
- QR Cross Measure Right
- Variant
- Diameter Nominal
- Flange Thickness Nominal Left
- Flange Thickness Nominal Left
- Diagram of the final wheel profile, including the profile limits as a reference to demonstrate compliance. Profile tolerance shall developed in accordance with ASME Y14.5.

iv The Equipment Comprises:

- an ink jet printer,
- driver software for CNC,
- 500 pages printing paper,
- connecting cable between CNC and printer.
- TCP / FTP data storage capability and connections
- Data storage capability with local removable and networked storage

Y Central control panel:

- i The machine shall be equipped with a central control panel for each workstation, which panel integrates the operating elements of the CNC control system (axis and drives). It shall also allow the input of production data and the operation of standard and optional machine functions. The enclosure of the control panel shall be located at the front right hand side of the base frame and

can be swiveled for more convenient viewing during machine operation. Alternative locations will be considered, subject to UTA review and approval.

- ii The Equipment Comprises:
 - control panel including CNC control system, monitor and keyboard,
 - necessary operation elements and indicator lights,
 - auxiliary control panels for the wheelset centering equipment
 - Emergency-stop button at an easy accessible position,
 - USB drive.
- iii The machine reports generated shall save the files locally to the machine, and shall also have the capability of automatically saving the files to a network storage location.
- iv The machine shall save the raw data in .CSV , or JSON, or XML format. Each machine operation shall add a new data file that can be stored on local removable and network storage, and shall have the ability to also add the data to a single file combining the data.
- v Reports and data files saved locally shall be able to be downloaded using a USB drive, as well as be sent to a network file location.
- vi The Contractor shall provide a sample report demonstrating the documentation generated by each wheel truing machine operation, as well as a sample .csv file to demonstrate the tabular data storage (CDRL 06).
- vii Displayed messages including:
 - CNC functions in English,
 - Software functions including the operator guide in English.

Z Electrical Enclosure for the Electrical Power and Control Units

- i The machine shall be equipped with an electrical cabinet constructed in a dust-proofed sheet metal construction.
- ii The electrical cabinet comprises:
 - a completely installed and wired control unit with contacts for the additional electrical components to be controlled,
 - the input and output modules of the PLC control system, or equivalent
 - the logic parts of the machine control system,
 - the feed and main drive control system.
 - temperature monitoring of the cabinet interiors shall be regulated by an integrated air conditioner,
 - the enclosure shall be equipped with a service hour counter,
 - pre-wired terminals to hook up OCS interlock system.

AA Lighting

- i The machine shall be equipped with lighting to sufficiently illuminate the machining area and wheel truing pit.
- ii Lighting shall be provided in areas requiring access for equipment maintenance.

BB Wheel Set Positioning Indicators

- i The machine shall be equipped with two wheelset positioning indicators to monitor wheelset positioning, centered to the machine.
- ii An optical signal shall be given if a wheelset is located on the center of the machine.
- iii The equipment comprises of two light barrier systems with fasteners and electrical control, and two clearly visible optical indicators, or approved equivalent.

CC Machine Grounding

- i The machine shall be adequately grounded and designed for operation with the OCS system.
- ii The machine shall be equipped with an adequately sized grounding bar with connecting cables to the machine and the rail system.

DD Wheelset Lubrication

- i The Contractor shall provide a machine with the ability to allow the lubrication of flanges following the completion of the re-profiling operations.
- ii Lubrication may be manually applied by the operator with the machine providing the rotation and re-position of the wheelset, but a fully automatic system is preferred.

EE Dust and Fume Extractor Systems

- i Function:

Equipment for extraction of dust and fumes generated during the wheelset re-profiling operation and for minor housekeeping.
- ii Description:

This unit is anticipated to be placed within the pit and can be operated in either an automatic or manual operating mode. The suction pipes are to be positioned close to the working area of the tooling. The equipment shall provide a suction diversion valve to accommodate vacuum hose connection when lathe is not in use, or if the suction diversion valve is not feasible a standalone commercial vacuum shall be provided by the Contractor.
- iii Minimum Technical Requirements:
 - Power rating: 5.5 kW
 - Operating voltage: same as basic machine
 - Suction volume: 720 m³/h
 - Vacuum: 22,000 Pa
 - Noise level: ≤ 80 dB (A), measured in conjunction with fully operational truing machine
- iv The Equipment Comprises:
 - Connection diameter: 70 mm
 - Effective filter area: 2.8 m²
 - Noise level: ≤ 80 dB (A)
 - Weight: 166 kg

- A moveable unit with steering rollers
- One pressure and vacuum gauge for checking the filter saturation with indicating range.
- One set of suction pipe mains for connecting the extracting system with the suction nozzles.
- 2-inch diameter 30-foot long crushable hose with cuff and hand tool, two total.
- Alternative designs will be considered, subject to UTA review and approval.

6.00 Design Verification and Validation Requirements

- A** The Contractor shall submit a Requirements Traceability Matrix (RTM) that proposes a process for the verification and validation of all requirements. The RTM shall be submitted in the PDR, and the finalized and completed RTM shall be submitted in the FDR.
- B** At a minimum, the Requirements Traceability Matrix shall include the following information:
- i Subsystem;
 - ii Test type (component or system level);
 - iii Subject;
 - iv Verification method (e.g., analysis, test, etc.);
 - v Test or process number. The test number shall be coordinated with and referenced to the project schedule;
 - vi Date performed;
 - vii Status (e.g., passed, failed); and
 - viii Technical specification section reference
- C** The Contractor shall track and report progress on requirements verification to UTA and submit a revised RTM at an interval of no greater than every 60 days (CDRL 07).

7.00 System Documentation Requirements

- A** The manuals shall be submitted at 90% completion, and again at final completion to allow for an incremental review processes for the manuals. The 90% manuals shall be submitted with a cover page describing the planned additions and changes to facilitate an efficient review process for UTA.
- B** The Contractor shall provide an operation and maintenance manual (CDRL 08).
- i The manual shall contain detailed instructions for the general operation of the wheel truing machine.
 - ii The manual shall contain a periodic maintenance index defining the required maintenance tasks for the wheel truing machine. To maintain warranty coverage, UTA must adhere to the time-based maintenance chart provided by the Contractor in the O&M manual.
 - iii The manual shall contain work instructions for the maintenance, troubleshooting, and repair of all wheel truing machine system components. Replacement and adjustment/calibration instructions shall be included for all

major components. The Contractor shall provide a sample manual demonstrating their approach for UTA review and comment.

- iv The manual shall contain detailed instructions for each wheel truing machine operation listed under section 3.00.
- v The manual shall contain hydraulic system diagrams, electrical wiring diagrams.
- vi Specific safety cautions, special procedures, warnings, or other information needed to maintain safe conditions shall be included in the manual.
- vii The Contractor shall provide 5 hard copies of the operation and maintenance manual.

C The Contractor shall provide an illustrated parts catalog (CDRL 09).

- i The Illustrated Parts Catalog (IPC) shall identify and describe every component with its related parts, including:
 - a The OEM name and part number;
 - b The Contractor's part number; and
 - c Quantities per assembly.
 - d Engineering drawings with detailed component/part identification callouts relating to an accompanying parts lists may be provided in lieu of the illustrated parts catalog, subject to UTA review and approval.
- ii Diagrams, cutaways and exploded drawings or a mix of two dimensional and isometric drawings shall be used to identify and index every removable or replaceable part, including breakdowns of each subcomponent of each LRU.
- iii Each illustration shall be accompanied by a corresponding page listing every item in the associated diagram and providing complete ordering data for every item.
- iv Materials purchased commercially for hydraulic and electrical systems shall include manufacturer and manufacturer part numbers.
- v Assigned part numbers shall not exceed 19 alphanumeric characters.
- vi Space shall be provided for UTA to insert its own 26-digit code.
- vii The shelf life of certain parts shall be listed in the catalog as appropriate and as specified during the design review process. The parts shall include but not be limited to consumables, elastomeric and rubber parts, gaskets, adhesives, paints, oils, greases, additives as applicable.
- viii The Contractor shall provide 5 hard copies of the Illustrated Parts Catalog.

D The Contractor shall provide the Agency with a complete list of as-built drawings to be supplied by the Contractor (CDRL 10).

- i As a minimum, the list of drawings is to include drawings down to the subassembly level.
- ii Component-level drawings for items specific to UTA's vehicles shall also be included.
- iii Drawings for all special Tooling and adapters shall be included.
- iv Drawings shall contain all material specifications, dimensions, tolerances, relevant standards the components are manufactured to, and inspection drawings.

- E** The Contractor shall provide the Agency a complete set of all drawings identified in the as-built drawing list (CDRL 11).
 - i Drawings shall include all interfaces and interaction with the UTA facility.
 - ii Drawings shall be supplied in electronic .DWG format, and pdf or alternate file formats as approved by the Agency.
 - iii The media for drawing submittal shall be agreed upon by the Contractor and the Agency.
 - iv Two complete sets of as-built drawings shall be provided in hard copy.
- F** Documents shall be developed using editable publishing software that is commercially available for the narrative text and vector format software for illustrations.
- G** Raster illustrations and artwork will not be acceptable.
- H** Photographs will be permitted in lieu of illustrations when applicable and appropriate. The Agency shall have the final decision in accepting photographs.
- I** In addition to the hard copies, all documentation shall be delivered in a searchable PDF file. Non-searchable documentation provided by sub-suppliers, and outside of the Contractor's control is allowed.
- J** All printed material shall be clearly reproducible, without loss of resolution when copied using common high-contrast copying machines.
- K** The Agency shall have all rights to these drawings for, but not limited to rail vehicle and wheel truing equipment maintenance, refurbishment, repairs and replacement of parts. The Agency shall have the right to reproduce all manuals, drawings and other submittal documents.
- L** The Contractor shall provide calibration certificates for all measurement instruments integrated into the wheel truing machine as well as instruments used to construct or calibrate the wheel truing machine or supporting equipment. Reports generated by automatic quality assurance tracking software are considered acceptable documentation, provided they include the necessary information for UTA to verify the tools are calibrated, subject to UTA review and approval.
- M** All documents shall be supplied in English. If the source document is not in English, a translated version shall be submitted, subject to UTA review and approval of the quality of the translation.

8.00 Installation, Testing, and Final Acceptance

- A** The Contractor shall be responsible for the installation, testing, and commissioning of the wheel truing machine at UTA's JRRSC facility in accordance with plans, shop drawings and manufacturer's instructions.
- B** The Contractor shall ensure the wheel truing machine is installed, configured, calibrated, and operating with full functionality prior to conducting commissioning.
- C** Upon completion of the work, finished surfaces shall be free of tool marks, scratches, blemishes and stains. The Contractor shall be responsible for disposal of all packing

materials and removal of debris from the work site. Equipment shall be wiped clean of any oil, grease, and solvents to make ready for use.

- D** UTA will provide vehicles and materials for the Contractor to demonstrate each machine application.
- E** The Contractor shall demonstrate the equipment is fully functional by successfully completing each machine operation for all UTA vehicle applications (CDRL 12-b).
 - i** The Contractor shall conduct a factory acceptance testing (FAT) to demonstrate the equipment is fully functional by successfully completing each machine operation. The Contractor shall submit a test procedure detailing the test procedure for UTA review and approval. The FAT shall be designed to cover the same items as the site acceptance test to the greatest extent practical. (CDRL 12-a).
- F** The site acceptance testing plan shall be submitted to UTA for review and approval prior to conducting the testing. All testing shall be conducted with UTA personnel present.
- G** The Contractor shall provide UTA with a completed commissioning report, including test results with a clear pass/fail criteria, and a final calibration certificate.

9.00 Materials and Workmanship

- A** The Contractor shall design the equipment and perform all work at their facilities in accordance with all Federal, State and Local regulatory requirements.
- B** The Contractor shall ensure that the wheel truing machine is functioning and operating properly, was inspected, measured, and painted according to the procedures and specifications mutually agreed upon with UTA.
- C** Manufacturer shall securely attach in a prominent location on each major item of equipment a noncorrosive nameplate showing manufacturer's name, address, model number, serial number, and pertinent utility or operating data.
- D** All electrical equipment and materials shall be new and shall be listed by Underwriter's Laboratories, Inc. (U.L.) in categories for which standards have been set by that agency and labeled as such in the manufacturer's plant.
- E** The Contractor shall submit tool and equipment calibration certificates for the equipment used to construct the machine, as well as the instrumentation the machine is equipped with (CDRL 13).
- F** Materials and workmanship standards for manufacturing, installation, and maintenance of the equipment shall be submitted to UTA for review and approval with the Quality Plan.

10.00 Shipment

- A** The wheel truing machine shall be prepared for shipping and securely packaged to prevent damage and rust/corrosion during shipping.
- B** All containers, including those contained in others, shall be indelibly labeled on the outside with item description(s) per title and contract number with vendor and UTA contact information.

- C** The Contractor shall deliver the wheel truing machine and all necessary installation hardware, tooling, and adapters to UTA's Jordan River Rail Service Center at 2264 South 900 West, Salt Lake City, 84119, unless otherwise advised by UTA.
- D** Any damage incurred in shipping to UTA is the sole responsibility of the Contractor.
- E** Shipping costs of all materials, equipment, or other shipments during the course of the project to and from UTA's facility shall be the responsibility of the Contractor.
- F** Shipment and installation shall be coordinated to minimize disruption at UTA's facility. If storage is unable to be accommodated, the equipment shall be shipped in partial shipments and installed prior to receipt of the next shipment.
- G** The Contractor is responsible of all aspects of transporting the equipment into the building to the installation site, including any necessary structural analysis for transportation of the equipment into the facility.

11.00 Training

- A** The Contractor shall provide UTA with training on the operation and maintenance of the wheel truing machine (CDRL 14). The training shall include both classroom and hands-on training.
- B** The training shall include, but not limited to, the following:
 - i** The classroom training shall cover all machine applications listed under section 3.00.
- C** The hands-on training shall cover all application for UTA's current fleet.
 - i** The training shall include a course covering the required maintenance task for the wheel truing machine.
 - ii** Training shall include a section covering operator safety and the safety features of the wheel truing machine.
 - iii** The training shall cover the interpretation of the reports generated by the machine, including how to troubleshoot and correct errors that could occur during machine operation.
- D** The training shall assume that the maintenance personnel have no knowledge of the new wheel truing machine, but do have the skills required of their employment classification.
- E** Conduct of the training course shall be supported by the direct use of the manuals developed for the project. See Section 7.00, System Documentation Requirements.
- F** A primary objective of the program shall be to develop within UTA the capability to perform similar training under its own training program subsequent to the Contractor's involvement.
 - i** All training materials, including but not limited to training aids, lesson plans, models, mock-ups, video recordings, drawings, procedures, or other documents shall become the property of UTA at the completion of the training program. UTA shall have unrestricted rights to reproduce, distribute and modify all materials.



- ii UTA shall have the right to video record any classroom training sessions. UTA will retain the ownership of the recordings, and will have the right to use them for future training sessions.
- G** The formal classroom instruction will be conducted in a suitable classroom furnished by UTA in its facilities. The location and class times shall be at the convenience of UTA.
- H** The Contractor shall submit a training program plan and course training materials for UTA review and approval a minimum of 30 days prior to the scheduled training date. All UTA comments shall be resolved and the training materials updated prior to conducting the training.
- I** The Contractor shall provide pricing for additional training required for UTA's future LRVs.
- J** Up to three (3) 40 hour training courses will be provided by the Contractor. The maximum class size shall be five (5), accommodating a total of fifteen (15) UTA personnel.

12.00 Project Documentation Requirements

- A** Prior to the commencement of work the Contractor shall submit the following documentation in a UTA approved format:
 - i Project Schedule – NTP + 30 days
 - ii Quality Assurance Plan – NTP + 30 days
 - iii Receiving Inspection and Test Procedures – NTP + 60 days
 - iv Pre-shipment Inspection and Test Procedures – NTP + 60 days
 - v Shipping preparation and securement procedures – NTP + 60 days
 - vi Inspection and Test Reports – 10 days prior to Shipment to UTA

13.00 Milestone Payments

See Exhibit B

14.00 Project Schedule

- A** The wheel truing machine shall be installed, commissioned, and all project deliverables completed and invoiced prior to 4/30/2027.
- B** The project schedule submitted for evaluation by Proposers shall assume NTP occurs 5/1/2025

15.00 Quality Requirements

- A** Experience: Equipment shall be produced by a manufacturer of established reputation with a minimum of 10 years' experience supplying specified equipment.
- B** Installation: The Contractor shall provide a qualified manufacturer's representative at site to supervise work related to equipment installation, testing, start up and training.
- C** UTA shall have the right to inspect the Contractor's facility and processes at any time. UTA shall also have the right to witness any step of the manufacturing, adjustment, testing, commissioning, or any other project processes.
- D** The Contractor shall prepare and submit a Quality Assurance plan for UTA review and approval (CDRL 15).

16.00 Spare Parts

- A** The Contractor shall provide a list of recommended spare parts. The list shall include sensors, transducers, solenoids, valves, encoders, switches, and other long lead time items with a long shelf life (CDRL 16).
- B** Spare parts costs shall not exceed \$200,000.
- C** Spare parts shall be provided with machine delivery to UTA. Verification of receipt of the spare material delivery will be completed by UTA during the site acceptance testing. (CDRL 21)

17.00 Program Management Requirements

- A** The Contractor shall develop a Project Management Plan (PMP) describing their approach. The PMP shall describe management approaches to provide UTA insight into the project management structure and to describe the mechanisms that ensure the project requirements will be met. The approaches described in the Project Management Plan shall be tailored to fit this project

CDRL 17 Project Management Plan (PMP).

- B** The Contractor shall enter discussions with UTA to agree on the concept of the PMP. Contractor shall draft the detailed plan including the information listed below. It shall be used to guide and track the project through to successful completion. The Project Management Plan shall as a minimum provide the following:
- Detailed Project Organization chart
 - Identifies key individuals and their roles in the project
 - Includes both UTA and Contractor
 - Describes the major activities as well as the roles and responsibilities by individual to accomplish them
 - Authority level and decision process definition
 - Schedule/time management
 - Project schedule showing key milestones for project phases, deliverables, critical action points, decision hold points, UTA and Contractor reviews, major action points.

The PMP shall be kept up to date, and shall be re-submitted to UTA when details of the plan change, such as a change in personnel assigned to the project.

- C** A monthly progress report shall be submitted no later than 10 working days after the end of the reported month. Reports shall be based upon actual progress of the work, including any problems that have been identified and material affecting the project schedule. The monthly progress report shall include two schedules. The first schedule is the baseline project schedule in the form of a Gantt chart with all current project schedule deviations shown, and the second a current and up-to-date schedule. The monthly progress report shall include photographic progress of the work and include all work sign-offs, engineering activities, quality inspection documentation, and other work completed during the reporting period. Completion status of monthly progress reports will be reviewed prior to each milestone payment. In the event of missing progress reports, UTA may request documentation to fulfill any missing information prior to payment of milestone payments.

CDRL 18 Monthly Progress Reports

- D** Project Review Meetings shall be held as required to review progress, respond to open action items, discuss design problems and issues, to witness tests and discuss their results, to review fabrication and assembly status, and to conduct equipment and/or facility inspections as required. Meetings shall be held monthly at a minimum, unless otherwise directed by UTA. Progress meetings may be held more frequently if requested by UTA. The Contractor shall submit meeting minutes including the meeting agenda, discussion notes, and actions and assignments at a minimum.

CDRL 19 Project Review Meetings

18.00 Warranty

- A** Additional warranty information is covered under the standard contract terms.
- B** The Contractor shall warrant that all labor and materials supplied under the Contract shall:
 - i. Conform to the Specifications and all other requirements of the Contract.
 - ii. Fulfill their design function and be fit for both their ordinary and intended purposes.
 - iii. Be free of all patent and latent defects in design, materials, and workmanship.
 - iv. Perform satisfactorily.
 - v. Be of the quality specified, or of the best grade if no quality specified.
- C** Unless a longer warranty period is identified in the RFP or the Contract, The Contractor warrants all Materials furnished and Work performed by the Contractor to be free of defects and faults for a period of two (2) years from UTA's approval of the commissioning and acceptance test following installation at UTA's facility.
- D** The Contractor's warranty shall apply regardless of any lesser period of warranty provided by the manufacturer of Materials furnished by Contractor.
- E** UTA shall not be required to perform unusual or extraordinary maintenance or overhauls to keep warranties in effect.
- F** Defects shall include, but not be limited to noisy, rough or substandard operation, loose, damaged, and missing parts, and abnormal deterioration of finish.
- G** Warranty shall include materials and labor necessary to correct defects.
- H** All parts shall be readily available in a reasonable amount of time, not to exceed 30 days.
- I** The Contractor shall provide a clear process, including names and contact information, for UTA to submit warranty claims. This process shall be delivered to UTA prior to equipment delivery (CDRL 20).

19.00 Wheel Truing Machine Preventive Maintenance Service

- A** The Proposer shall provide UTA with pricing for an optional service agreement to support the preventive maintenance requirements of the wheel truing machine. The duration of the agreement shall be 2 years with the option of two 1-year extensions.
- B** The Contractor shall propose an onsite service visit interval in accordance with the needs of the machine maintenance and calibration requirements. The determined interval shall be justified by a clear description of system and component service and calibration needs.
- C** The visit shall include completion of any and all necessary checks, calibration adjustments, and minor repairs.
- D** The final visit at the end of the service agreement shall be used for any necessary major repairs.



- E** Any parts or consumable materials required shall be used from UTA's customer shelf stock, or invoiced separately. If not provided by UTA, any and all parts must either be OEM certified OR an acceptable equivalent approved in advance by UTA's Project Manager.
- F** UTA may provide a minimum of one Facilities mechanic to assist with any and all preventive maintenance work required during each visit.
- G** Upon completion of each visit, the Contractor shall provide a complete, concise summary of all work, checks, adjustments, repairs, and recommendations, including suggestions for parts and materials that will be required for the next maintenance interval.
- H** If the service call identifies a serious problem, and the parts needed are not available on site, then either of these two solutions would be determined by both the supplier and jointly with the UTA Project Manager, to occur as soon as possible after the required parts become available on site.
 - i A one-time visit would need to be scheduled and repairs made as soon as possible.
 - ii Determine IF the repair could wait until the next scheduled onsite service/inspection.
 - iii If a one-time visit is needed, then budgetary approval and appropriate authorization must be obtained prior to any follow-on costs of parts, labor or transportation.

20.00 CDRL List

CDRL#	Title	Reference	Additional CDRL Notes:	Associated Milestone Payment
01	Functional Description of Fault Detection System	4.00J	FDR approval dependency.	3
02	Conceptual Design Review (CDR)	4.00M		2
03	Preliminary Design Review (PDR)	4.00M		2
04	Final Design Review (FDR)	4.00M		3
05	Facility Integration Plan	4.00N	FDR approval dependency.	3
06	Wheel Truing Machine Report	5.03.01Yvi	FDR approval dependency.	3
07	Requirements Traceability Progress Reports	6.00C	60 day interval max, final completed matrix approved at FDR	3
08	Operation and Maintenance Manual	7.00A	90% Manuals are FDR approval dependency.	4, 10
09	Illustrated Parts Catalog	7.00B	90% Manuals are FDR approval dependency.	4, 10
10	As-Built Drawing List	7.00C	FDR approval dependency.	3
11	As-Built Drawings	7.00D	FDR approval dependency.	3
12a	Factory Acceptance Testing	8.00E	Completed prior to shipment of machine at Contractor's facility.	7
12b	Site Acceptance Testing	8.00E		8
13	Tool and Equipment Calibration Certificates	9.00E	Submit prior to initiation of machine construction	5
14	Wheel Truing Machine Operation and Maintenance Training	11.00		9
15	Quality Assurance Plan	15.00D	NTP +30 days	1
16	Spare Parts List Delivery	16.00	NSH Delivery of tooling to occur with the machine delivery.	5
17	Project Management Plan (PMP)	17.00A	Review and approval prior to PDR.	2
18	Monthly Progress Reports	17.00C	Monthly Submittal	All
19	Project Review Meetings	17.00D	Monthly Meeting at a minimum.	
20	Warranty Process	18.00I	Submit prior to equipment delivery.	5
21	Spare Parts Delivery	5.03.01N, 5.03.01Q	To ship with equipment delivery	8

21.00 JRRSC Shop Information

- A The JRRSC Shop was built with a provision for the installation of a wheel truing machine on track 11 (see Figure 1).
- B Details are provided in the attached Truing Pit drawing.



Figure 1 - JRRSC Truing Pit

22.00 Wheel Truing Machine Installation Responsibilities Matrix

UTA Responsibilities	
1	UTA will be responsible to provision any controls hardware on the OCS control side. NSH will provide the connection point in the machine electrical panel located in the wheel truing pit.
2	UTA will be responsible for the main power cables in the JRRSC wheel truing pit. Main power cables must be delivered to the pit and tied off with a 10' long pigtail of extra cable.
3	UTA will be responsible for providing any UTA specific training for NSH personnel.
4	UTA will provide a storage area for the heavy lift equipment, to be delivered by NSH personnel.
5	UTA will provide personnel to sawcut the shop rail with instruction from the NSH representative. There will be a rough cut to fit the equipment, and a final cut of the rail to provide the shop rail/ wheel truing machine interface. UTA is responsible for both cuts, under the instruction of the NSH representative.
6	UTA will be responsible for the disposal of the removed rail.
7	UTA will be responsible for OCS shutdown in the yard and shop to facilitate the delivery and movement of the equipment into track 10.

UTA Responsibilities	
8	UTA will be responsible for providing the shop space to unpack and store the equipment while installation is taking place.
9	UTA technicians will be jointly responsible for the termination of the main power in the two locations of the main power cabinets of the machine.
10	UTA will be required to provide vehicles and operator for the drive-over test of the machine.
11	UTA will be required to provide a vehicle of each type to test all machine functions.
12	UTA will be required to provide personnel for the training class, and a training classroom and access to the equipment. Training is planned for 3 weeks to meet the RFP requirements, the majority of the time will be spent at the machine.

Exhibit B

Price Form

Base Order

Ref	Scope	Price
1.	Unit Cost of Wheel Truing Machine including all requirements of this RFP	\$5,282,074.00

All shipping costs must be included in the price above.

Milestone Payments

No	Milestone	Percentage (%)	Estimated Invoicing Date
1	Project Documentation Approval (Schedule, QA Plan, Test Procedures, Shipping Procedures)	5.0%	NTP + 60 days
2	CDR/PDR Approval	5.0%	NTP + 60 days
3	FDR Approval	7.0%	NTP + 120 days
4	90% Manuals Approval (Operation, Maintenance, IPC)	7.0%	NTP + 60 days
5	Receipt of all Documentation Deliverables	5.0%	NTP + 60 days
6	Purchase of raw materials	34.0%	NTP + 120 days

No	Milestone	Percentage (%)	Estimated Invoicing Date
7	UTA approval of successful factory acceptance testing	15.0%	NTP + 18 months
8	Final acceptance - UTA approval of successful site acceptance test	14.0%	NTP + 22 months
9	Completion of UTA Training	4.5%	NTP + 22 months
10	Final Manuals Approvals (Operation, Maintenance, IPC)	3.5%	NTP + 18 months