25-03985VW Meadowbrook BEB Design Build

DESIGN-BUILD AGREEMENT

This Design-Build Agreement is entered into and made effective as of the date of last signature below (the "Effective Date") by and between UTAH TRANSIT AUTHORITY, a public transit district organized under the laws of the State of Utah ("UTA"), and Winn-Marion Companies ("Contractor").

UTA and Design Builder hereby agree as follows:

ARTICLE 1 WORK

Design Builder shall provide all work required by the Contract Documents (the "Scope of Work") contained in Exhibit A. Design Builder agrees to do additional Work arising from changes ordered by the UTA pursuant to Article 7 of the General Conditions. The Work will be performed in Phases identified as follows:

Phase 1 – Design Development Documents

Phase 2 – Construction Documents

Phase 3 – Construction

Milestone	Target Date	Duration
Phase 1		
Contract Award/Design Start	Feb 27, 2026	-
Preliminary Design Submittal	March 29, 2026	30 days
Phase 2		
Final Design Completion / Construction Documents	30 days from Preliminary Design Acceptance	30 days from acceptance
Phase 3		
Construction Notice to Proceed (NTP)	TBD based on acceptance	-
RMP Service Energization (Critical Path)	July 20, 2026	115 days from NTP
Substantial Completion	Sep 19, 2026	176 days from construction NTP
Final Completion	Oct 30, 2026	190 days from construction NTP
Contractual Completion Deadline	Nov 19, 2026	47-day buffer

Project Phase Timeline

The schedule is organized into four sequential phases with deliberate overlaps to maintain progress:
Phase 1 (Weeks 1-8): Electrical Yard and Utility Coordination - Construction begins with electrical infrastructure along 900 West, outside active bus operations. This phase includes coordination with Rocky Mountain Power, duct bank installation, excavation and foundations, contractor-furnished switchgear installation, RMP transformer/service installation, and conduit stub-outs. Underground and concrete work proceeds during winter months with appropriate cold-weather protection measures.

Phase 2 (Weeks 6-12): Charging Cabinet Installation and Distribution - Overlaps with Phase 1 for non-electrical work. Upon UTA delivery of ABB cabinets (expected early 2026), this phase includes cabinet foundations and mounting, setting of five ABB 360kW cabinets, trenching and duct banks for underground feeders, pulling of AC/DC power cables, and communications infrastructure installation. Trenching is sequenced to minimize parking area disruption.

Phase 3 (Weeks 10-14): Dispenser Installation and Site Restoration - Final installation including pedestal bases and bollards, setting and connection of UTA-supplied dispensers, termination of all circuits, final grounding and bonding, and site restoration. Weather-sensitive activities (paving, striping) are scheduled for late spring/summer to mitigate winter weather risks.

Phase 4 (Weeks 14-18): Testing, Commissioning, and Training - Comprehensive component testing, system integration testing, commissioning protocol execution with UTA buses, ABB CMS integration demonstration, punch list resolution, and personnel training.
Detailed installation methodology for each phase is provided in Section 1.1.2.

ARTICLE 2 CONTRACT DOCUMENTS

"Contract Documents" means the Request for Proposals, Design Builder's Proposal, Notice of Selection As Apparent Best Value Proposal, this Agreement, General Conditions, Supplementary Conditions, Exhibits, Specifications, List of Drawings, Drawings, Addenda, Notice to Proceed, Change Orders, Notice of Completion, and all other documents identified in this Agreement that together form the contract between UTA and Design Builder for the Work (the "Contract"). The Contract constitutes the complete agreement between UTA and Design Builder and supersedes any previous agreements or understandings.

ARTICLE 3 CONTRACT SUM

Subject to payment provisions described in Exhibit B for Pricing.

ARTICLE 4 CONTRACT TIME

Design Builder shall commence the Work for Phase 1 and Phase 2 on the date specified in the Notice to Proceed for Phase 1 and fully complete the work within 60 days (30 days for Preliminary Design Submittal plus 30 days from Preliminary Design Acceptance for Final Design Completion), the "Phase 1 & Phase 2 Time." The Contract Time at contract award is the Phase 1 Time.

The time allowed for the completion of Phases 3 shall be as follows:

Phase 3 – The Design Builder shall commence the Work for Phase 3 on the date specified in the Construction Notice to Proceed for Phase 3 and fully complete the Work for Phase 3 within 190 days, the "Phase 3 Time."

Excusable Utility Delays – notwithstanding any other provision of this Agreement, Contractor shall not be liable for any delay in achieving the Phase 1 & Phase 2 Time, Phase 3 Time, or any other milestone to the extent such delay is caused by: (a) Rocky Mountain Power's or other utility provider's failure to timely provide service design information, interconnection approval, or utility-side construction; (b) changes to utility requirements after Contractor's design submittal; or (c) other utility-related conditions beyond Contractor's reasonable control. Upon occurrence of any such delay, Contractor shall promptly notify UTA in writing, and the affected milestone dates shall be extended by the duration of such delay. Contractor shall use reasonable efforts to mitigate the impact of any utility delays but shall not be required to incur extraordinary costs to do so.

By signing this agreement, Design Builder represents to UTA that i) the Phase 1 Time, Phase 2 Time, and Phase 3 Time are reasonable for completion of the Work of the respective Phase; ii) the Contract Time (as defined above) is reasonable for completion of the Work of all the Phases; and iii) Design Builder will complete the Work within the Contract Time.

ARTICLE 5 LIQUIDATED DAMAGES

If Design Builder fails to achieve **Final Completion of the Work** within the Contract Time, Design Builder shall pay to UTA, as liquidated damages and not as a penalty, the amount indicated below as the **Liquidated Damages Daily Rate** for each calendar day after expiration of the Contract Time that **Final Completion remains unachieved**.
Liquidated damages shall **apply solely to Final Completion**. Failure to meet interim milestones—including but not limited to design submissions, design approval, commencement of construction, Substantial Completion, or commissioning—shall **not give rise to liquidated damages**, but shall remain enforceable through schedule compliance requirements, recovery schedules, progress reporting, and other remedies available under the Contract Documents.

Liquidated damages shall be **tolled and shall not accrue** for any period of delay to Final Completion that is **caused by or results from acts or omissions of UTA**, its consultants, other contractors, utility providers, regulatory authorities, or other events beyond the reasonable control of Design Builder, including but not limited to delays in approvals, access to the site, permits, utility coordination, inspections, force majeure events, or changes directed by UTA.

Design Builder shall provide **written notice** of such delay to UTA within a reasonable time after becoming aware of the delaying event. Upon mutual agreement by the parties as to the existence and duration of the delay, the Contract Time shall be equitably adjusted, and **liquidated damages shall be suspended for the agreed period of delay**.

Such suspension of liquidated damages shall apply only to the extent the delay affects the critical path to Final Completion.

Nothing herein shall relieve Design Builder of its obligation to mitigate delays or to proceed with unaffected portions of the Work.

UTA and Design Builder acknowledge that damages resulting from failure to achieve Final Completion within the Contract Time would be difficult or impracticable to determine with certainty, and that the Liquidated Damages Daily Rate represents a reasonable estimate of such damages and is not intended as a penalty.

Liquidated damages shall be $2,500 per day capped at **ten percent (10%) of the total Contract Price**. UTA may deduct assessed liquidated damages from amounts otherwise due to Design Builder under the Contract Documents.

Nothing in this Article shall limit UTA's rights or remedies for defaults **other than failure to achieve Final Completion within the Contract Time**.

ARTICLE 6 ASSIGNMENT

If this Agreement is terminated prior to the exercise of the UTA's issuance of a Notice to Proceed for Phase 3, the Design Builder shall execute an assignment to the UTA of all contracts with Design Professionals for work to be performed on Phases 1 and 2.

ARTICLE 7 DUE AUTHORIZATION

The person or persons signing this Agreement on behalf of Design Builder hereby represent and warrant to UTA that this Agreement is duly authorized, signed, and delivered by Design Builder.

ARTICLE 8 DESIGN BUILDER'S COVENANTS AND REPRESENTATIONS

Without superseding, limiting, or restricting any other representation or warranty set forth elsewhere in the Contract Documents, or implied by operation of law, the Design Builder makes the following covenants and representations to UTA:

8.1 Design Builder and all of its Design Professionals and subcontractors are properly certificated, licensed and qualified to perform the Work required by the Contract Documents.

8.2 Design Builder accepts the relationship of trust and confidence with the UTA established by the Contract Documents. Design Builder will cooperate with UTA.

8.3 Design Builder and its Design Professionals have carefully examined the site of the Project and the adjacent areas, have suitably investigated the nature and location of the Construction Work and have satisfied themselves as to the general and local conditions which will be applicable, including but not limited to: (1) conditions related to site access and to the transportation, disposal, handling and storage of materials; (2) the availability of labor, water, power and roads; (3) normal weather conditions; (4) observable physical conditions at the site and existing site conditions including: size, utility capacities and connection options of external utilities; (5) the surface conditions of the ground and (6) the character and availability of the equipment and facilities which will be needed prior to and during the performance of Construction Work.

8.4 Design Builder and its Design Professionals have suitably reviewed the site survey, record documents, seismic data, preliminary geotechnical and other test reports, environmental documents and any other documentation furnished by UTA in the Exhibits.

8.5 Design Builder and its Design Professionals have carefully reviewed the following exhibits to the Design Build Contract: (1) Scope of Work (including Applicable Codes, Rules and Regulations, Energy Requirements, etc.); (2) the Performance Specifications; (3) Project Program; and (4) Schematic Drawings. Design Builder acknowledges that these Exhibits establish the scope, level of quality, design intent and the procedures for the development of the design to a state of 100% completion.

Design Builder agrees that (1) the Exhibits depict and describe a design for the Project which is partially complete and may vary in degree of completion from 5% to 95% depending on the particular Project; (2) it will manage, coordinate and fully complete the design; (3) Design Builder will cause its Design Professionals to describe and depict the final design for the Project, as approved by the UTA, in Construction Documents which will include all information required by the building trades to complete the construction (other than such details customarily developed by others during construction) and (4) it will manage and timely construct the Project in consideration for the UTA's payment of the Contract Sum.

8.6 Design Builder and its Design Professionals have reviewed the Preliminary Schedule attached to the Request for Proposals and agree that the design and construction tasks and milestones are reasonable and feasible, except as modified by Design Builder's Proposed Contract Schedule, approved by UTA. Design Builder also agrees that time is of importance for the performance of the Work.

8.7 Design Builder agrees that all Construction Documents will be complete, coordinated, and accurate.

8.8 Design Builder agrees that all materials, equipment and furnishings incorporated into or used in the Construction Work will be of good quality, new (unless otherwise required or permitted by the Contract Documents) and free of liens, claims and security interests of third parties. If required by the UTA, Design Builder will furnish satisfactory evidence as to the kind and quality of the materials, equipment and furnishings.

8.9 Design Builder agrees that the Work will be of good quality, free of defects and will conform with the requirements of the Contract Documents. Work not conforming to the requirements of the Contract Documents, including substitutions in design or construction not specifically approved or authorized by the UTA in advance, may be considered defective.

8.10 Design Builder agrees to correct any error(s), omission(s), or deficiencies in the Contract Documents or Construction Documents at no additional cost to UTA; however, this provision in no way limits the liability of Design Builder.

ARTICLE 9 ORDER OF PRECEDENCE

The Order of Precedence for this contract is as follows:

1. UTA Contract including all terms and conditions, exhibits and attachments.
2. Addendum 1 Supplemental Terms and Conditions for Construction Services
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.

ARTICLE 10 INVOICING PROCEDURES

a. Contractor shall submit invoices to UTA's Project Manager for processing and payment in accordance with Exhibit B. If Exhibit B does not specify invoice instructions, then Contractor

shall invoice UTA after delivery of all Software and satisfactory performance of all Services. Invoices shall be provided in the form specified by UTA. Reasonable supporting documentation including cost and pricing data demonstrating Contractor's entitlement to the requested payment must be submitted with each invoice.

b. Contractor shall invoice UTA after delivery of all Goods and satisfactory performance of all Services. Contractor shall submit invoices to Project Manager Greg Thurston at greg.thurston@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

c. Total Dollar Amount Due UTA shall have the right to disapprove (and withhold from payment) specific line items of each invoice to address non-conforming Goods 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.

d. 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 Project Manager greg.thurston@rideuta.com. Invoices not submitted electronically shall be paid thirty (30) calendar days from date of receipt by UTA's accounting department.

e. 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 Project Manager Greg Thurston at greg.thurston@rideuta.com.

ARTICLE 11 OWNERSHIP OF DESIGNS, DRAWINGS, AND WORK PRODUCT

Any deliverables prepared or developed pursuant to the Contract including without limitation drawings, specifications, manuals, calculations, maps, sketches, designs, tracings, notes, reports, data, computer programs, models and samples, 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 termination or final acceptance of the Goods and Services. UTA shall have full rights and privileges to use and reproduce said items. To the extent that any deliverables include or incorporate preexisting intellectual property of Contractor, Contractor hereby grants UTA a fully paid, perpetual license to use such intellectual property for UTA's operation, maintenance, modification, improvement and replacement of UTA's assets. The scope of the license shall be to the fullest

extent necessary to accomplish those purposes, including the right to share same with UTA's contractors, agent, officers, directors, employees, joint owners, affiliates and Contractors.

ARTICLE 12 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.
e. 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.

ARTICLE 13 KEY PERSONNEL

Contractor shall provide the key personnel as indicated in Contractor's Proposal (or other applicable provisions of this Contract) and shall not change any of said key personnel without the express written consent of UTA.

1. Dan Blanchard

2. Joshua Cole

3. Pritam Mazumder

ARTICLE 14 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 this 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 this Contract and/or Contractor's compliance with this Contract. Records shall be retained by Contractor for a period of at least six (6) years after completion of the Work, 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 Work at any tier.

ARTICLE 15 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.

ARTICLE 16 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.

ARTICLE 17 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 Indemnitee, 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.

ARTICLE 18 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.

4. Professional Liability (Errors and Omissions Liability)

The policy shall cover professional misconduct or lack of ordinary skill for those positions defined in the Scope of Services of this contract.

Each Claim	$1,000,000
Annual Aggregate	$2,000,000

a. In the event that the professional liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained or an extended discovery period will be exercised for a period of three (3) years beginning at the time work under this Contract is completed.

5. Contractors' Pollution Legal Liability and/or Asbestos Legal Liability (if project involves environmental hazards) with limits no less than $1,000,000 per occurrence or claim, and $2,000,000 policy aggregate. *(NOTE: Projects over $10,000,000 will require limits of $2,000,000 per occurrence and $4,000,000 aggregate; Projects over $40,000,000 will require limits of $5,000,000 per occurrence and $5,000,000 aggregate)*

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 Contractor. 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 sub-contractors. Utah Transit Authority must be scheduled as an additional insured on any sub-contractor 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.

ARTICLE 19 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 this 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 portion of the Work is in such suit held to constitute such an infringement or an injunction is filed that interferes with UTA's rights under this Contract, Contractor shall, at its expense and through mutual agreement between the UTA and Contractor, either procure for UTA any necessary intellectual property rights, or modify Contractor's services or deliverables 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 or upon the Work or the property on which the Work is located on account of any labor performed or labor, services, and equipment furnished by subcontractors of any tier; and (ii) keep the Work and said property free and clear of all liens or claims arising from the performance of any Work covered by this Contract by Contractor or its subcontractors of any tier. If any lien arising out of this Contract is filed, before or after Work is completed, 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.

ARTICLE 20 INDEPENDENT CONTRACTOR

Contractor is an independent contractor and agrees that its personnel will not represent themselves as, nor claim to be, an officer or employee of UTA by reason of this Contract. Contractor is responsible to provide and pay the cost of all its employees' benefits.

ARTICLE 21 PROHIBITED INTEREST

No member, officer, agent, or employee of UTA during his or her tenure or for one year thereafter shall have any interest, direct or indirect, including prospective employment by Contractor in this Contract or the proceeds thereof without specific written authorization by UTA.

ARTICLE 22 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 6. 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 Business Development Manager	Five calendar days
UTA's Director/Contractor's Compliance officer	Five calendar days
UTA's Chief Officer/Contractor's President	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, then 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.

ARTICLE 23 GOVERNING LAW

This Contract shall be interpreted in accordance with the substantive and procedural laws of the State of Utah. Any litigation between the parties arising out of or relating to this Contract will be conducted exclusively in federal or state courts in the State of Utah and Contractor consents to the jurisdiction of such courts.

ARTICLE 24 ASSIGNMENT OF CONTRACT

Contractor shall not assign, sublet, sell, transfer, or otherwise dispose of any interest in this Contract without prior written approval of UTA, and any attempted transfer in violation of this restriction shall be void.

ARTICLE 25 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.

ARTICLE 26 NOTICES OR DEMANDS

Any formal notice or demand to be given by one party to the other shall be given in writing by one of the following methods: (i) hand delivered; (ii) deposited in the mail, properly stamped with the required postage; (iii) sent via registered or certified mail; or (iv) sent via recognized overnight courier service. All such notices shall be addressed as follows:

If to UTA:

Utah Transit Authority
ATTN: Vicki Woodward
669 West 200 South
Salt Lake City, UT 84101

with a required copy to:

Utah Transit Authority
ATTN: Legal Counsel
669 West 200 South
Salt Lake City, UT 84101

If to Contractor:
Winn-Marion Companies
Lisa Feeney, Sr. Account Manager -EV Charging
lisafeeney@winn-arion.com
7151 S Blackhawk St. Ste 900
Centennial, CO 80112-4823

a. 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. Either party may change the address at which such party desires to receive written notice by providing written notice of such change to any other party.
b. Notwithstanding Section 23.1, the parties may, through mutual agreement, develop alternative communication protocols to address change notices, requests for information and similar categories of communications. Communications provided pursuant to such agreed means shall be recognized as valid notices under this Contract.

ARTICLE 27 CONTRACT ADMINISTRATOR

UTA's Contract Administrator for this Contract is Vicki Woodward, or designee. All questions and correspondence relating to the contractual aspects of this Contract should be directed to said Contract Administrator, or designee.

ARTICLE 28 INSURANCE COVERAGE REQUIREMENTS FOR CONTRACTOR EMPLOYEES

a. The following requirements apply to the extent that: (i) the initial value of this Contract is equal

to or in excess of $2 million; (ii) this Contract, with subsequent modifications, is reasonably anticipated to equal or exceed $2 million; (iii) Contractor has a subcontract at any tier that involves a sub-Contractor that has an initial subcontract equal to or in excess of $1 million; or (iv) any subcontract, with subsequent modifications, is reasonably anticipated to equal or exceed $1 million:

b. Contractor shall, prior to the effective date of this Contract, demonstrate to UTA that Contractor has and will maintain an offer of qualified health insurance coverage (as defined by Utah Code Ann. § 17B-2a-818.5) for the Contractor's employees and the employee's dependents during the duration of this Contract.
c. Contractor shall also demonstrate to UTA that subcontractors meeting the above-described subcontract value threshold have and will maintain an offer of qualified health insurance coverage (as defined by Utah Code Ann. § 17B-2a-818.5for the subcontractor's employees and the employee's dependents during the duration of the subcontract.

ARTICLE 29 COSTS AND ATTORNEYS 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

ARTICLE 30 NO THIRD-PARTY BENEFICIARY

The parties enter into this 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 this Contract.

ARTICLE 31 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.

ARTICLE 32 SEVERABILITY

Any provision of this 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 this Contract.

ARTICLE 33 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.

ARTICLE 34 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. The terms of the Contract supersede any additional or conflicting terms or provisions that may be preprinted on Vendor's work plans, cost estimate forms, receiving tickets, invoices, or any other related standard forms or documents of Vendor that may subsequently be used to implement, record, or invoice Goods and/or Services hereunder from time to time, even if such standard forms or documents have been signed or initialed by a representative of UTA. The terms of the Contract prevail in any dispute between the terms of the Contract and the terms printed on any such standard forms or documents, and such standard forms or documents will not be considered written amendments of the Contract.

ARTICLE 35 AMENDMENTS

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

ARTICLE 36 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.

ARTICLE 37 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 5, 7, 8, 11, 14, 15, 17, 18, 19,,22, 23, 28,29 and ,34.

UTAH TRANSIT AUTHORITY:

By: Date:
Jay Fox
Executive Director

By: Date:
Jon Larsen
Chief Capital Services Officer

Approved as to Content and Form

By: Signed by: David M. Wilkins 0F6F046DE4724A2... Date: 2/2/2026

Winn-Marion Companies

By: DocuSigned by: Dan Blanchard 340256F10FA44C7... Date: 2/2/2026
Dan Blanchard,
EV Business Development Manager
Fed ID#68-0511614

Mike Bell, AAG State of Utah
And UTA Legal Counsel

David Wilkins signing for Mike Bell

Reviewed & Recommended

By:
Greg Thurston,
UTA Project Manager

Date:

Design and/or Construction Special Provisions

(To be used for RFPs and Contracts)

ARTICLE 1

General

1.1 **Cooperation.** UTA and Contractor commit at all times to cooperate fully with each other and proceed on the basis of trust and good faith, so as to permit each party to realize the benefits afforded under the Contract Documents.

1.2 **Professional Standards.** Contractor shall perform the Work in a good and workmanlike manner, and shall use reasonable skill, care, and diligence. If the Work includes professional services, Contractor shall perform those services in a professional manner, using at least that standard of care, skill and judgment that can reasonably be expected from similarly situated professionals.

1.3 **Definitions.** Terms that are defined in the Agreement have the same definition in all the Contract Documents, including in these General Conditions. Unless expressly modified by the Agreement, the following definitions shall also apply to all Contract Documents:

"Agreement" means the document signed by Contractor and UTA to which these General Conditions are attached as an exhibit or into which these General Conditions are incorporated by reference.

"Application for Payment" shall mean an invoice for a progress or final payment made in accordance with the requirements of Article 4.

"Basis of Design Documents" means those preliminary drawings, concept design drawings, technical requirements, performance requirements, project criteria, or other documents that are (i) included in the Contract Documents, and (ii) serve as the basis or starting point for design services to be performed by Contractor, if any.

"Claim" has the meaning indicated in Section 8.1 of these General Conditions.

"Construction Documents" means the final drawings and specifications that set forth in detail the requirements for construction of the Project.

"Contract Documents" means those documents designated as Contract Documents in the Agreement.

"Contract Times" means the guaranteed dates for Substantial Completion, Final Completion (if applicable), and any other deadlines for completion of the Work, or a part thereof, all as set forth in the Agreement.

"Contractor" means the entity that has entered into a contract with UTA to perform construction and other services as detailed in the Contract Documents. The Contractor may be a Design-Builder, general contractor, Construction Manager/General Contractor, or other type of entity.

"Day" means a calendar day unless otherwise specifically noted in the Contract Documents.

"Differing Site Condition" has the meaning indicated in Section 3.2 of these General Conditions.

"Final Completion" has the meaning indicated in Section 4.7 of these General Conditions.

"Final Design Completion" means the submission of Construction Documents prepared in accordance with Sections 2.2.3 and 2.2.4, consisting of: (a) engineering drawings at 90% completion (with 10% reserved for revisions resulting from UTA review comments or field conditions discovered during construction); (b) design documentation sufficient for permitting process submission; and (c) utility coordination documentation reflecting Rocky Mountain Power's service design (to the extent such information has been provided by RMP at time of submission). Final Design Completion marks the conclusion of Phase 1 and Phase 2 design services and enables issuance of the Construction Notice to Proceed.

"Force Majeure Event" means a delay caused by any national or general strikes, fires, riots, acts of God, acts of the public enemy, floods, acts of terrorism, unavoidable transportation accidents or embargoes, or other events: (i) which are not reasonably foreseeable as of the date the Agreement was executed; (ii) which are attributable to a cause beyond the control and without the fault or negligence of the party incurring such delay; and (iii) the effects of which cannot be avoided or mitigated by the party claiming such Force Majeure Event through the use of commercially reasonable efforts. The term Force Majeure Event does not include a delay caused by seasonal weather conditions, inadequate construction forces, general economic conditions, changes in the costs of goods, or Contractor's failure to place orders for equipment, materials, construction equipment or other items sufficiently in advance to ensure that the Work is completed in accordance with the Contract Documents.

"General Conditions" means this document.

"Legal Requirements" means all applicable federal, state, and local laws, codes, ordinances, rules, regulations, orders and decrees of any government or quasi-government entity having jurisdiction over the Project or Site, the practices involved in the Project or Site, or any Work including, without limitation, those related to safety and environmental protection. The terms Legal Requirements shall also include any requirements or conditions included in a permit required for, or issued in conjunction with, the Project.

"Preliminary Design Submittal" means an interim design submission prepared in accordance with Section 2.2.2, consisting of: (a) completed site visit and field verification; (b) single-line electrical drawings; (c) charger location and orientation layout; (d) identification of utility coordination requirements with Rocky Mountain Power; and (e) review of original plans for accuracy. The Preliminary Design Submittal is intended to establish design direction and confirm site conditions prior to development of Construction Documents.

"Potential Change Notice" has the meaning indicated in Section 7.3 of these General Conditions.

"Project" means the construction project described in the Agreement.

"Punchlist" means shall mean a schedule of Work items (developed in accordance with the procedures described in Article 4) which remain to be completed prior to Final Completion, but which do not adversely affect the performance, operability, capacity, efficiency, reliability, cost effectiveness, safety or use of the Project after Substantial Completion.

"Schedule of Values" means the detailed statement furnished by Contractor and approved by UTA in accordance with Section 4.1, which statement outlines the various components of the Contract Price and allocates values for all such components in a manner that can be used for preparing and reviewing invoices.

"Site" means the land or premises on which the Project is located, as more particularly defined and described in the Contract Documents.

"Subcontractor" means any person or entity (including subcontractors at any tier, design engineers, laborers and materials suppliers) retained by Contractor or any other Subcontractor to perform a portion of Contractor's obligations under the Contract Documents.

"Substantial Completion" or "Substantially Complete" has the meaning indicated in Section 4.6 of these General Conditions.

"Work" means all obligations, duties, requirements, and responsibilities for the successful completion of the Project by Contractor, including furnishing of all services and/or equipment (including obtaining all applicable licenses and permits to be acquired by Contractor) in accordance with the Contract Documents.

ARTICLE 2

Contractor's Services

2.1 **General Services.**

2.1.1 Contractor's Project Manager shall be reasonably available to UTA and shall have the necessary expertise and experience required to supervise the Work. Contractor's Project Manager shall communicate regularly with UTA and shall be vested with the authority to act on behalf of Contractor.

2.1.2 Contractor shall provide UTA with a monthly status report detailing the progress of the Work, including: (i) whether the Work is proceeding according to schedule; (ii) whether discrepancies, conflicts, or ambiguities exist in the Contract Documents that require resolution; (iii) whether unusual health and safety issues exist in connection with the Work; and (iv) other items that require resolution so as not to jeopardize Contractor's ability to complete the Work for the Contract Price and within the Contract Time(s).

2.1.3 Unless a schedule for the execution of the Work has been attached to the Agreement as an exhibit at the time the Agreement is executed, Contractor shall prepare and submit, within seven (7) Days of the execution of the Agreement, a schedule for the execution of the Work for UTA's review and response. The schedule must indicate the dates for the start and completion of the various stages of Work, including the required dates when UTA obligations must be completed to enable Contractor to achieve the Contract Time(s). Such UTA obligation dates may include (where contemplated in the Contract Documents): (i) Site availability requirements; and/or (ii) dates when UTA information or approvals are required. The schedule shall be revised as required by conditions and progress of the Work, but such revisions shall not

relieve Contractor of its obligations to complete the Work within the Contract Time(s), as such dates may be adjusted in accordance with the Contract Documents. UTA's review of, and response to, the schedule shall not be construed as relieving Contractor of its complete and exclusive control over the means, methods, sequences and techniques for executing the Work.

2.2 **Design Services.** If the Work includes any design services, provisions 2.2.1 through 2.2.8 apply.

2.2.1 Contractor shall provide the necessary design services, including architectural, engineering and other design professional services, for the preparation of the required drawings, specifications and other design submittals to permit Contractor to complete the Work consistent with the Contract Documents. Contractor shall ensure that design services are performed by qualified, licensed design professionals employed by Contractor, or by qualified, independent licensed design contractors procured by Contractor.

2.2.2 Contractor and UTA shall, consistent with any applicable provision of the Contract Documents, agree upon any interim design submissions that UTA may wish to review, which interim design submissions may include design criteria, drawings, diagrams, and specifications setting forth the Project requirements. Interim design submissions must be consistent with the Basis of Design Documents, as the Basis of Design Documents may have been changed through the design process set forth in this Section 2.2.2. On or about the time of the scheduled submissions, Contractor and UTA shall meet and confer about the submissions, with Contractor identifying during such meetings, among other things, the evolution of the design and any changes to the Basis of Design Documents, or, if applicable, previously submitted design submissions. Changes to the Basis of Design Documents shall be processed in accordance with Article 7. Minutes of the meetings, including a full listing of all changes, will be maintained by Contractor and provided to all attendees for review. Following the design review meeting, UTA will be entitled to at least ten (10) Days to review and approve the interim design submissions and meeting minutes.

2.2.3 To the extent not prohibited by the Contract Documents or Legal Requirements, and with the approval of UTA, Contractor may prepare interim design submissions and Construction Documents for a portion of the Work to permit construction to proceed on that portion of the Work prior to completion of the Construction Documents for the entire Work.

2.2.4 Contractor shall submit proposed Construction Documents to UTA, which must be consistent with the latest set of interim design submissions, as such submissions may have been modified in a design review meeting and recorded in the meeting minutes. The parties shall have a design review meeting to discuss, and UTA shall review and approve, the Construction Documents in accordance with the procedures set forth in Section 2.2.2 above. Contractor shall submit one set of approved Construction Documents to UTA prior to commencement of construction

2.2.5 UTA's review and approval of interim design submissions, meeting minutes, and Construction Documents is for the purpose of mutually establishing a conformed set of Contract Documents compatible with the requirements of the Work. Neither UTA's review nor approval of any interim design submissions, meeting minutes, and Construction Documents shall be deemed to:

(i) relieve Contractor from its obligations to comply with the Contract Documents; (ii) relieve Contractor from its obligations with respect to the accuracy of the design submittals; or (iii) transfer any design liability from Contractor to UTA.

2.2.6 Upon completion of the Work, and as a condition to receiving final payment pursuant to Section 4.7, Contractor shall prepare and provide to UTA a final set of as-built drawings, depicting the Project as completed, including all changes to the Project made subsequent to the approval of the Construction Documents.

2.2.7 All drawings, specifications, interim design submissions, Construction Documents, and other documents furnished by Contractor to UTA pursuant to the Contract Documents (those documents, the "Work Product") are deemed to be instruments of service and Contractor shall retain the ownership and intellectual property rights therein.

2.2.8 Once UTA has made a corresponding payment for the Work required for Contractor to prepare any Work Product, Contractor will be deemed to have granted to UTA a license to use that Work Product in connection with the construction, occupancy, and maintenance of the Project, or any other UTA project or facility.

2.3 **Government Approvals, Permits, and Legal Requirements.**

2.3.1 Except where the Contract Documents expressly state that UTA will be responsible for a specific entitlement, Contractor shall obtain and pay for all necessary permits, approvals, licenses, government charges and inspection fees required for the prosecution of the Work by any government or quasi-government entity having jurisdiction over the Project or Site. Contractor shall provide reasonable assistance to UTA in obtaining any permits, approvals, and licenses that the Contract Documents expressly specify to be a UTA responsibility.

2.3.2 Contractor shall perform the Work in accordance with all Legal Requirements and shall provide all notices applicable to the Work as required by the Legal Requirements.

2.3.2 Contractor shall file a notice of commencement, a notice of completion, and other notices required by Utah Code Title 38 (Liens). Contractor shall file such notices in the manner and within the time periods required by law.

2.3.3 The Contract Price and/or Contract Time(s) will be adjusted to compensate Contractor for the effects of any changes in the Legal Requirements provided that such changes: (i) materially increase Contractor's cost of, or time required for, the performance of the Work; and (ii) are enacted after the effective date of the Agreement.

2.4 **Construction Services.**

2.4.1 Contractor shall proceed with construction in accordance with the approved Construction Documents.

2.4.2 Except to the extent that the Contract Documents expressly identify UTA obligations related to the Work, Contractor shall provide through itself or Subcontractors the necessary supervision, labor, inspection, testing, start-up, material, equipment, machinery, temporary

utilities and other temporary facilities (whether or not expressly stated or depicted in the Contract Documents or Construction Drawings) to permit Contractor to complete construction of the Project consistent with the Contract Documents.

2.4.3 Contractor is responsible for securing the Site until UTA issues a Certificate of Substantial Completion.

2.4.4 Contractor shall perform all construction activities efficiently and with the requisite expertise, skill and competence to satisfy the requirements of the Contract Documents. Contractor shall at all times exercise complete and exclusive control over the means, methods, sequences, techniques and procedures of construction.

2.4.5 Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take necessary precautions for the safety of, and shall provide necessary protection to prevent damage, injury or loss to the following: (i) all Contractor, Subcontractor, UTA employees, the public and other persons who may be affected thereby; (ii) all Work and all equipment and materials to be incorporated into the Work; and (iii) other property at the Site or adjacent thereto. Contractor shall comply with the minimum standards imposed by UTA's Construction Safety and Security Program Manual, as updated from time to time (UTA's Construction Safety and Security Program Manual is incorporated into the Contract Documents by reference). However, Contractor shall be responsible for all additional as necessary to comply protect persons and property and comply with applicable Legal Requirements related to safety.

2.4.6 Contractor shall employ only Subcontractors who are duly licensed and qualified to perform the Work consistent with the Contract Documents. UTA may require Contractor to remove from the Project a Subcontractor or anyone employed directly or indirectly by any Subcontractor, if UTA reasonably concludes that the Subcontractor is creating safety risks at the Site or quality risks to the Project.

2.4.7 Contractor is responsible for the proper performance of the Work by Subcontractors and for any acts and omissions in connection with such performance. Nothing in the Contract Documents is intended or deemed to create any legal or contractual relationship between UTA and any Subcontractor, including but not limited to any third-party beneficiary rights.

2.4.8 Contractor shall coordinate the activities of all of its Subcontractors. If UTA performs other work on the Project or at the Site with separate contractors under UTA's control, Contractor agrees to reasonably cooperate and coordinate its activities with those of such separate contractors so that the Project can be completed in an orderly and coordinated manner without unreasonable disruption.

2.4.9 Contractor shall keep the Site reasonably free from debris, trash and construction wastes to permit Contractor to perform its construction services efficiently, safely and without interfering with the use of adjacent land areas. Upon Substantial Completion of the Work, or a portion of the Work, Contractor shall remove all debris, trash, construction wastes,

materials, equipment, machinery and tools arising from the Work or applicable portions thereof to permit UTA to occupy the Project or a portion of the Project for its intended use.

2.5 **Quality Control, Quality Assurance, Inspection, Rejection and Correction of Work.**

2.5.1 Contractor shall develop a Project-specific construction quality control plan as contemplated in UTA's Quality Management Plan and Construction Quality Plan. The Contractor's plan shall satisfy the minimum requirement imposed by UTA's Construction Quality Plan and shall be sufficient to ensure that Work is performed in compliance with the Contract Documents. If the Work includes any design services, Contractor shall also develop and thereafter comply with a design quality plan that meets the minimum requirements set forth in the UTA Design Quality Plan. The UTA Quality Management Plan, Construction Quality Plan and Design Quality Plan are incorporated into the Contract Documents by reference. The Contractor's plans shall be subject to UTA's review and approval.

2.5.2 Contractor shall comply with the approved quality control plan(s). Responsibilities shall include inspection and testing and related activities including administration, management, supervision, reports, record keeping and use of independent testing agencies and laboratories. Contractor shall provide evidence of compliance with the Contract Documents.

2.5.3 UTA will have the right to audit and spot check the Contractor's quality control procedures and documentation. This will include the Company's right to inspect and test all Work at reasonable times. Contractor shall cooperate with any inspection and testing performed by UTA. All contractor-furnished materials and supplies shall be subject to inspection at the point of manufacture.

2.5.2 Any inspection and testing performed by UTA shall be for the sole and exclusive benefit of UTA. Neither inspection and testing of Work, nor the lack of same nor acceptance of the Work by UTA, nor payment therefore shall relieve Contractor from any of its obligations under the Contract Documents.

2.5.3 At any time prior to Substantial Completion, UTA may reject Work which fails to conform to the Contract Documents. Contractor shall, at its sole expense, promptly re-perform or correct any Work so as to conform to the requirements of the Contract. Contractor shall not be entitled to an adjustment to the Contract Price and/or Contract Times with respect to any corrective action necessary to rectify non-conforming Work.

2.5.4 If Contractor fails to promptly remedy rejected Work, UTA may, without limiting or waiving any other rights or remedies it may have, self-perform (through its own forces or through other contractors) the necessary corrective action(s) and deduct all amounts so incurred from any amount then or thereafter due Contractor.

2.6 **Contractor's Warranty.**

2.6.1 Contractor warrants to UTA that all Work, including all materials and equipment furnished as part of the Work, shall be: (i) of good quality conforming to generally recognized industry standards; (ii) in conformance with the Contract Documents; (iii) free of defects in materials

and workmanship; and (iv) consistent with applicable Legal Requirements. Without limiting the generality of the forgoing, Contractor also specifically warrants that any design, engineering or other professional services provided by Contractor shall be shall satisfy applicable professional standards of care and that all materials and that any equipment furnished as part of the construction shall be new (unless otherwise specified in the Contract Documents). This provision is not intended to limit any manufacturer's warranty that provides UTA with greater warranty rights than set forth in this Section 2.6. Contractor shall provide UTA with all manufacturers' warranties upon Substantial Completion. Similarly, nothing in this Article is intended to limit any other express warranties set forth in the Contract Documents or to limit any other warranties implied by law, custom or usage of trade.

2.6.2 If Contractor becomes aware of any defect in the Work, or non-conformance with the Contract Documents, Contractor shall give prompt written notice of that defect or non-conformance to UTA.

2.6.3 Except as otherwise stated in the Agreement, Contractor shall correct any Work that does not comply with the warranties provided above for a period of two years following the date of Substantial Completion.

2.6.4 Contractor shall, within seven (7) Days of receipt of written notice from UTA that the Work does not comply with the warranties provided above, take meaningful steps to commence corrective action, including the correction, removal, replacement or re-performance of the nonconforming Work and the repair of any damage to other property caused the warranty failure. If Contractor fails to commence the necessary corrective action within such seven (7) Day period (or thereafter fails to continuously and diligently pursue such corrective action to completion), UTA may (in addition to any other remedies provided under the Contract Documents) provide Contractor with written notice that UTA will self-perform (through its own forces or through other contractors) correction of the warranty failure at Contractor's expense. If UTA performs (or causes to be performed) such corrective action, UTA may collect from Contractor all amounts so incurred. If the nonconforming Work creates an emergency requiring an immediate response, the seven (7) Day period identified above shall be deemed inapplicable.

2.6.5 The two-year period referenced in Section 2.6.3 above only applies to Contractor's obligation to correct nonconforming Work and is not intended to constitute a period of limitations for any other rights or remedies UTA may have regarding Contractor's other obligations under the Contract Documents

ARTICLE 3

Bond Requirements

3.1 The contract value exceeds the small purchase threshold, contractor shall provide the following bonds:

3.1.1 A Bid Bond (or equivalent guaranty in the form of a letter of credit, certified check or other negotiable instrument deemed to be equivalent by the Authority) equal to five percent of the proposed Contract price securing performance in accordance with the Bid or Proposal provided with submission of bid or proposal.

3.1.2 A Performance Bond equal to 100% of the Contract price provided prior to formal contract execution; and

3.1.3 A Payment Bond equal to 100% of the Contract price provided prior to formal contract execution.

ARTICLE 4.0

Site Conditions

4.1 **Hazardous Materials.**

4.1.1 Unless otherwise expressly provided in the Contract Documents to be part of the Contractor's Work, Contractor is not responsible for any Hazardous Materials encountered at the Site. "Hazardous Materials" means any substance that: (i) is deemed a hazardous waste or substance under any environmental law; or (ii) might endanger the health of people exposed to it.

4.1.2 If Contractor discovers at the Site any substance the Contractor reasonably believes to be a Hazardous Material, Contractor shall immediately stop Work in the area of the discovery and immediately report the discovery to the UTA Project Manager. UTA shall determine how to deal with the Hazardous Material, and Contractor shall resume Work in the area when directed to do so by the UTA Project Manager.

4.1.3 Contractor will be entitled to an adjustment to the Contract Price and/or Contract Time(s) to the extent Contractor's cost and/or time of performance have been adversely impacted by the presence of Hazardous Materials.

4.1.4 The risk allocation and change provisions of Sections 3.1.1 through 3.1.3 do not apply to any Hazardous Materials introduced to the Site by Contractor, its Subcontractors, or anyone for whose acts Contractor is responsible. Those provisions also exclude Hazardous Materials that were properly stored and/or contained at the Site but thereafter released as a result of the Contractor's negligent performance of the Work. To the extent that Hazardous Materials are introduced and/or released at the Site by Contractor as described above in this Section 3.1.4, then: (i) to the fullest extent permitted by law, Contractor shall defend and indemnify UTA from and against all claims, losses, damages, liabilities and expenses, including attorneys' fees and expenses, arising out of or resulting from such Hazardous Materials; and (ii) Contractor shall not be entitled to and extension of Contract Price and/or Contract Time(s).

4.2 **Differing Site Conditions.**

4.2.1 If Contractor encounters a Differing Site Condition, Contractor will be entitled to an adjustment to the Contract Price and/or Contract Time(s) to the extent Contractor's cost

and/or time of performance have been adversely impacted by the Differing Site Condition. "Differing Site Condition" means concealed or latent physical conditions at the Site that: (i) materially differ from the conditions indicated in the Contract Documents; and (ii) are of an unusual nature, differing materially from the conditions ordinarily encountered and generally recognized as inherent in the Work.

4.2.2 Upon encountering a Differing Site Condition, Contractor shall provide prompt written notice to UTA of such condition, which notice shall not be later than five (5) Days after such condition has been encountered. Contractor shall, to the extent reasonably possible, provide such notice before the Differing Site Condition has been substantially disturbed or altered.

ARTICLE 5

Payment

5.1 **Schedule of Values (Applicable where payment is made on the basis of progress, milestones, or on a periodic basis.)**

5.1.1 Unless required by UTA upon execution of this Agreement, within ten (10) Days of execution of the Agreement, Contractor shall submit for UTA's review and approval a Schedule of Values for all of the Work. The Schedule of Values will: (i) subdivide the Work into its respective parts; (ii) include values for all items comprising the Work; and (iii) serve as the basis for monthly progress payments made to Contractor throughout the Work.

5.1.2 UTA will timely review and approve the Schedule of Values so as not to delay the submission of the Contractor's first application for payment. UTA and Contractor shall timely resolve any differences so as not to delay the Contractor's submission of its first application for payment.

5.2 **Application for Payment.**

5.2.1 To receive payment, Contractor shall submit to UTA an Application for Payment requesting payment to which contractor is entitled depending on the type of payment specified in Article 5 and Exhibit B. Contractor shall not submit Applications for Payment more often than once per month. The Application for Payment must be accompanied by supporting documentation sufficient to establish, to UTA's reasonable satisfaction, Contractor's entitlement to receive payment.

5.2.2 The Application for Payment may request payment for equipment and materials not yet incorporated into the Project, provided that: (i) UTA is satisfied that the equipment and materials are suitably stored at either the Site or another acceptable location; (ii) the equipment and materials are protected by suitable insurance; and (iii) upon payment, UTA will receive the equipment and materials free and clear of all liens and encumbrances.

5.2.3 The Application for Payment will constitute Contractor's representation that the Work described therein has been performed consistent with the Contract Documents, has

progressed to the point indicated in the Application for Payment, and that title to all materials and equipment will pass to UTA free and clear of all claims, liens, encumbrances, and security interests upon the incorporation of the materials and equipment into the Project, or upon Contractor's receipt of payment, whichever occurs earlier.

5.3 **Invoicing Procedures**

5.31. Contractor shall invoice UTA after achievement of contractual milestones or after delivery of all Goods and satisfactory performance of all Services. Contractor shall submit invoices to PM Greg Thurston at greg.thurston@rideuta.com for processing and payment. 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

5.3.2 UTA shall have the right to disapprove (and withhold from payment) specific line items of each invoice to address non-conforming Goods 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.

5.4 Sales Tax Exemption

5.4.1 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.

5.5 **UTA's Payment Obligations.**

5.5.1 UTA shall pay Contractor all amounts properly requested and documented within thirty (30) Days of receipt of an Application for Payment.

5.5.2 Notwithstanding Section 5.5.1, UTA may withhold up to 5% of each payment as retention in accordance with Utah Code Ann. § 13-8-5.

5.5.3 Notwithstanding Section 5.5.1, UTA may offset from such Application for Payment amounts any owed to UTA by Contractor pursuant to the Contract Documents.

5.5.4 If UTA determines that Contractor is not entitled to all or part of an Application for Payment as a result of Contractor's failure to meet its obligations under the Contract Documents,

UTA will notify Contractor of the specific amounts UTA has withheld (or intends to withhold), the reasons and contractual basis for the withholding, and the specific actions Contractor must take to qualify for payment under the Contract Documents. If the Contractor disputes UTA's bases for withholding, Contractor may pursue its rights under the Contract Documents, including those under Article 8.

5.6 **Contractor's Payment Obligations.**

5.6.1 Contractor shall pay Subcontractors, in accordance with its contractual obligations to such parties, all the amounts Contractor has received from UTA on account of their work. Contractor shall indemnify and defend UTA against any claims for payment and mechanics' liens as set forth in Section 6.2 hereof. Contractor may withhold up to 5% of each payment as retention corresponding to retentions withheld by UTA, but must pay the subcontractor all retained monies within 30 days of receipt from UTA by the Contractor. All retentions must be in compliance with Utah Code Ann. § 13-8-5.

5.6.2 Contractor shall pay its employees also ensure its sub-tier contractors at every level pay their eligible employees the prevailing wage rate as established by the Utah State Labor Commission.

5.6.3 If the Contract Documents include Federal Clauses, the terms of those Federal Clauses pertaining to payment of Subcontractors supersede any conflicting terms of this Article 5.

5.7 **Substantial Completion.**

5.7.1 Contractor shall notify UTA when it believes the entire Work is Substantially Complete. As used in the Contract Documents, "Substantially Complete" or "Substantial Completion" refers to the Contractor's satisfactory completion of all Work in accordance with the Contract Documents (excluding Punchlist items) to point such that UTA may safely start-up, occupy or otherwise fully use the Project for its intended purposes in compliance with applicable Legal Requirements. The terms "Substantially Complete" or "Substantial Completion" also require the completion of any items of Work specifically set forth as conditions precedent to Substantial Completion in the Agreement. Within five (5) Days of UTA's receipt of Contractor's notice, UTA and Contractor will jointly inspect such Work to verify that it is Substantially Complete in accordance with the requirements of the Contract Documents. If such Work is Substantially Complete, UTA shall prepare and issue a Certificate of Substantial Completion that will set forth: (i) the date of Substantial Completion of the Work or portion thereof; (ii) the remaining Punchlist items that have to be completed before Final Completion and final payment; and (iii) provisions (to the extent not already provided in the Contract Documents) establishing UTA's and Contractor's responsibility for the Project's security, maintenance, utilities and insurance pending Final Completion and final payment.

5.7.2 Promptly after issuing the Certificate of Substantial Completion, UTA shall release to Contractor all retained amounts, less an amount equal to two times the reasonable value of all remaining Punchlist items noted in the Certificate of Substantial Completion.

5.7.3 Upon Contractor's request or upon UTA's own initiative, UTA may, in its sole discretion, deem a discrete segment of the Project to be Substantially Complete. The provisions of Sections 5.6.1 and 5.6.2 will apply to that discrete segment of the Project. In addition, before UTA may take possession of a discrete segment of the Project, UTA and Contractor shall obtain the consent of their sureties, insurers, and any government authorities having jurisdiction over the Project.

5.7.4 Following Substantial Completion, UTA may restrict Contractor's access to the Site. UTA shall allow Contractor reasonable access to the Site in order for the Contractor to achieve Final Completion.

5.8 **Final Payment.**

5.8.1 When Contractor has achieved Final Completion of the Work, Contractor shall submit a Final Application for Payment. As used in the Contract Documents, "Final Completion" refers to the Contractor's satisfactory completion of all Work in accordance with the Contract Documents including completion of Punchlist items, demobilization from the Site and the transmittal of all deliverables required by the Contract Documents. The Final Application for Payment shall include (at a minimum) the items set forth below.

5.8.1.1 An affidavit that there are no claims, obligations or liens outstanding or unsatisfied for labor, services, materials, equipment, taxes or other items performed, furnished or incurred for or in connection with the Work which will in any way affect UTA's interests;

5.8.1.2 A general release executed by Contractor waiving, upon receipt of final payment, all claims, except those claims previously made in writing to UTA and remaining unsettled at the time of final payment;

5.8.1.3 All as-built drawings, redlined drawings, operating manuals, warranty assignments and other deliverables required by the Contract Documents; and

5.8.1.4 Certificates of insurance confirming that required coverages will remain in effect consistent with the requirements of the Contract Documents.

5.8.2 Deficiencies in the Work discovered after Substantial Completion, whether such deficiencies would have been included on the Punchlist if discovered earlier, will be deemed warranty Work. Contractor shall correct such deficiencies pursuant to Section 2.6, and UTA may withhold from the final payment the reasonable value of completion of the deficient work until that work is completed.

ARTICLE 6

Indemnification and Loss

6.1 **Patent and Copyright Infringement**. If the Work includes any design services, provisions 6.1.1 through 6.1.3 apply.

6.1.1 Contractor shall defend any action or proceeding brought against UTA based on any claim that the Work, or any part thereof, or the operation or use of the Work or any part thereof, constitutes infringement of any United States patent or copyright, now or hereafter issued. UTA shall give prompt written notice to Contractor of any such action or proceeding and will reasonably provide authority, information and assistance in the defense of same. Contractor shall indemnify UTA from and against all damages and costs, including but not limited to attorneys' fees and expenses awarded against UTA or Contractor in any such action or proceeding. Contractor shall keep UTA informed of all developments in the defense of such actions.

6.1.2 If UTA is enjoined from the operation or use of the Work, or any part thereof, as the result of any patent or copyright suit, claim, or proceeding, Contractor shall at its sole expense take reasonable steps to procure the right to operate or use the Work. If Contractor cannot procure such right within a reasonable time, Contractor shall promptly, at Contractor's expense, either: (i) modify the Work so as to avoid infringement of any such patent or copyright; or (ii) replace said Work with Work that does not infringe or violate any such patent or copyright.

6.1.3 Sections 6.1.1 and 6.1.2 above shall not be applicable to any suit, claim or proceeding based on infringement or violation of a patent or copyright: (i) relating solely to a particular process or product of a particular manufacturer specified by UTA and not offered or recommended by Contractor to UTA; or (ii) arising from modifications to the Work by UTA or its agents after acceptance of the Work

6.2 **Payment Claim Indemnification.** Provided that UTA is not in breach of its contractual obligation to make payments to Contractor for the Work, Contractor shall indemnify, defend and hold harmless UTA from any claims or mechanic's liens brought against UTA or against the Project as a result of the failure of Contractor, its Subcontractors, or others for whose acts Contractor is responsible, to pay for any services, materials, labor, equipment, taxes or other items or obligations furnished or incurred for or in connection with the Work. Within three (3) Days of receiving written notice from UTA that such a claim or mechanic's lien has been filed, Contractor shall commence to take the steps necessary to discharge said claim or lien, including, if necessary, the furnishing of a mechanic's lien bond. If Contractor fails to do so, UTA will have the right to discharge the claim or lien and hold Contractor liable for costs and expenses incurred, including attorneys' fees.

6.3 **Contractor's General Indemnification.**

6.3.1 Contractor, to the fullest extent permitted by law, shall indemnify, hold harmless and defend UTA, its officers, trustees, and employees from and against claims, losses, damages, liabilities, including attorneys' fees and expenses, for bodily injury, sickness or death, and

property damage or destruction resulting from or arising out of the negligent acts or omissions of Contractor, Subcontractors, anyone employed directly or indirectly by any of them or anyone for whose acts any of them may be liable.

6.3.2 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 has a claim against UTA, its officers, directors, employees, or agents, Contractor's indemnity obligation set forth in Section 5.3.1 above will not be limited by any limitation on the amount of damages, compensation or benefits payable by or for Contractor, Subcontractors, or other entity under any employee benefit acts, including workers' compensation or disability acts.

6.4 Risk **of Loss.** Contractor bears all risk of loss to the Project, including materials and equipment not yet incorporated into the Project, until final payment is made by UTA. The insurance requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. UTA is 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.

ARTICLE 7

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, medical expenses, 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".
b. The policy must also contain the following endorsement, WHICH MUST BE STATED ON THE CERTIFICATE OF INSURANCE: “Contractual Liability Railroads” ISO from CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing “Utah Transit Authority Property” as the Designated Job Site

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

b. 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, AND when such contractor or subcontractor executes the appropriate waiver form.

4. Professional Liability (Errors and Omissions Liability)

The policy shall cover professional misconduct or lack of ordinary skill for those positions defined in the Scope of Services of this contract.

Each Claim	$1,000,000
Annual Aggregate	$2,000,000

a. In the event that the professional liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained or an extended discovery period will be exercised for a period of three (3) years beginning at the time work under this Contract is completed.

5. Contractors' Pollution Legal Liability and/or Asbestos Legal Liability (if project involves environmental hazards) with limits no less than $1,000,000 per occurrence or claim, and $2,000,000 policy aggregate. *(NOTE: Projects over $10,000,000 will require limits of $2,000,000 per occurrence and $4,000,000 aggregate; Projects over $40,000,000 will require limits of $5,000,000 per occurrence and $5,000,000 aggregate)*

6. Builder's Risk**:** Builder's risk (course of construction) insurance, covering the risk of loss for any damage or loss to the building or structure by any means or occurrence until the final completion of the contract work. Coverage shall utilize an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions. The coverage shall include mechanical breakdown, property in transit, property at temporary storage locations, earthquake damage and flood damage insuring the interests of UTA, SLCDA and their respective subcontractors of any tier providing equipment, materials or services for the project.

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 Contractor. 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.

3. Contractor and their insurers shall endorse the required insurance policy(ies) to waive their right of subrogation against UTA. Contractor's insurance shall be primary with respect to any insurance carried by UTA. Contractor will furnish UTA at least thirty (30) days advance written notice of any cancellation or non-renewal of any required coverage that is not replaced.

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 sub-contractors. Utah Transit Authority must be scheduled as an additional insured on any sub-contractor policies.

G. **APPROVAL**: Any modification or variation from the insurance requirements in this Contract shall be made by Claims and Insurance Department or the Office of General Counsel, whose decision shall be final. Such action will not require a formal Contract amendment, but may be made by administrative action.

Article 8.0

Health Insurance

Insurance Coverage for Employees.

8.1 If the Contract Price is $2,000,000 or more, Contractor shall, prior to the effective date of the Agreement, demonstrate to UTA that Contractor has and will maintain an offer of qualified health insurance coverage (as defined by Utah Code Ann. § 17B-2a-818.5) for the Contractor's employees and the employee's dependents during the duration of the Contract.

8.2 If the Contractor enters into any subcontracts under the Contract Documents in an amount of $1,000,000 or more, then Contractor shall also demonstrate to UTA that such subcontractor(s) have and will maintain an offer of qualified health insurance coverage for the subcontractor's employees and the employee's dependents during the duration of the subcontract

Article 9.0
TIMELINESS

9.1 **Obligation to Achieve the Contract Times.** Contractor shall commence performance of the Work and achieve the Contract Time(s) in accordance with the Contract Documents. The Contract Documents

specify critical completion milestones with which Contractor must comply. All time and schedule requirements included within the Contract Documents are of importance. By executing the Agreement, Contractor confirms that the completion milestones in the Contract Documents are reasonable for the performance of the Work. Unless otherwise excused by the terms of the Contract Documents, Contractor's failure to timely perform the Work in accordance with the completion milestones shall result in the assessment of liquidated damages (if, and to the extent, set forth in the Agreement) and (where no liquidated damages are provided under the Agreement or where the maximum liquidated damages available under the Agreement have been incurred) an event of default.

9.2 **Excusable Delays.** The Contract Time(s) for performance shall be equitably adjusted by Change Order to the extent that Contractor is actually and demonstrably delayed in the performance of the Work because of: (i) Differing Site Conditions (as provided in Section 3.2); (ii) Hazardous Materials (as provided in Section 3.1); (iii) Force Majeure Events (as defined in Section 1.3); (iv) changes in the Work directed by UTA (as provided in Section 7.2); (v) constructive changes (as provided in Section 7.3); (vi) changes in Legal Requirements (as provided in Section 2.3.3); (viii) a suspension without cause (as provided in Section 9.1); or (viii) UTA's unexcused delay in performing any UTA obligation specified in the Contract Documents in accordance with the completion milestones indicated in the approved schedule.

9.3 **Excusable and Compensable Delays.** In addition to Contractor's right to a time extension for those events set forth in Section 6.2 above, Contractor will also be entitled to an appropriate adjustment of the Contract Price provided, however, that the Contract Price will not be adjusted for delays caused by Force Majeure Events.

ARTICLE 10

Changes

10.1 **Change Orders.**

10.1.1 Contractor shall not undertake any activity that materially changes the Work, or materially deviates from the requirements of the Contract Documents, except as authorized in this Article 10. Any costs incurred by Contractor without authorization as provided in this Article 10 will be considered non-compensable.

10.1.2 A Change Order is a written instrument, signed by UTA and Contractor, issued after execution of the Agreement, stating their agreement on a change in: (i) the scope of the Work; (ii) the Contract Price; and/or (iii) the Contract Time(s).

10.1.3 All changes in the Work authorized by applicable Change Orders shall be performed under the applicable conditions of the Contract Documents. UTA and Contractor shall negotiate in good faith and as expeditiously as possible the appropriate adjustments for such changes.

10.2 **UTA-Directed Changes.** UTA may direct changes in the Work. Upon receipt of such direction, Contractor shall prepare an estimate of the cost and schedule impact of the change (if any). Upon agreement between UTA and Contractor on the scope of the change to the Work, and the adjustment,

if any, to the Contract Price and/or Contract Times, UTA and Contractor shall execute a written Change Order.

10.3 **Constructive Changes.**

10.3.1 To the extent that Contractor: (i) receives a written or verbal direction or proceeding from UTA that Contractor believes to constitute a material change to the nature, character or schedule of the Work; and/or (ii) becomes aware of any circumstance or condition that expressly provides Contractor a right to a Change Order under the terms of the Contract Documents, then (in either case) Contractor shall deliver to UTA's Project Manager written notice (hereinafter a "Potential Change Notice") within ten (10) Days after Contractor becomes aware of (or should have reasonably become aware) the facts and circumstances which Contractor believes to give rise to a Change Order.

10.3.2 Contractor's failure to deliver a Potential Change Notice in a timely manner shall constitute a waiver of all of Contractor's rights to a Change Order.

10.3.3 In conjunction with the Potential Change Notice or not longer than 30 days after delivery of notice, Contractor shall submit to UTA all supporting information and documentation necessary for UTA to evaluate the contractual basis for the Potential Change Notice and to also evaluate the relief claimed by Contractor. Contractor shall promptly respond to all UTA inquiries about the Potential Change Notice and the supporting information and documentation.

10.3.4 To the extent UTA concludes that the Potential Change Notice demonstrates Contractor's entitlement to a Contract adjustment, and provided that the parties are able to negotiate mutually agreeable adjustments to the Contract Documents, then UTA and Contractor shall execute a written Change Order.

10.4 Direction or Authorization to Proceed.

10.4.1 Prior to final agreement with respect to a Change Order, UTA may issue a Direction or Authorization to Proceed ("DAP"). A DAP is a written order unilaterally prepared and signed by UTA directing the Contractor to proceed with specified Work while Change Order negotiations or Claim resolution discussions continue. UTA may issue a DAP at any time, and Contractor shall undertake the Work as set forth in the DAP, and in accordance with the Contract Documents.

10.4.2 After issuance of a DAP, UTA and Contractor shall continue to negotiate in good faith to resolve outstanding issues expeditiously.

10.5 **Requests for Information.** UTA shall have the right, from time to time, to issue clarifications to the Work of a non-material nature at any time. Contractor shall have the corresponding right to seek clarification with respect to ambiguous or conflicting provisions of the Contract Documents. Such clarifications or conflicts shall be confirmed, implemented and documented through a Request for Information ("RFI") process to be developed for the Project. The RFI process may also be used to document minor changes in the Work do not involve an adjustment in the Contract Price and/or

Contract Time(s) and do not materially and adversely affect the Work, including the design, quality, performance and workmanship required by the Contract Documents.

10.6 **Contract Price Adjustments.**

10.6.1 The increase or decrease in Contract Price resulting from a change in the Work will be determined by one or more of the following methods:

10.6.1.1 Unit prices set forth in the Agreement or as subsequently agreed to between the parties;

10.6.1.2 A mutually accepted lump sum, properly itemized and supported by sufficient substantiating data to permit evaluation by UTA;

10.6.1.3 Costs, fees and any other markup rates set forth in the Agreement; or

10.6.1.4 If an increase or decrease cannot be agreed to as set forth in items 10.6.1.1 through 10.6.1.3 above and UTA issues a DAP, the cost of the change of the Work shall be determined by the reasonable expense and savings in the performance of the Work resulting from the change, including a reasonable overhead and profit rate, as may be set forth in the Agreement.

10.6.2 If unit prices are set forth in the Contract Documents or are subsequently agreed to by the parties, but application of such unit prices will cause substantial inequity to UTA or Contractor because of differences in the character or quantity of such unit items as originally contemplated, such unit prices shall be equitably adjusted.

10.6.3 Negotiations over changes in the Contract Price will be conducted using an open-book cost-estimating process. UTA defines "open-book" to include all elements of Contractor's costs, including labor hours and rates, units and estimated quantities, unit prices, equipment estimates, material costs, and subcontractor costs. Contractor shall openly share its detailed cost estimate, material and subcontractor quotations and any other information used to compile its cost estimate.

10.7 **Disputes Regarding Change Orders.** If the parties are not able to agree as to whether a Change Order is warranted under the Contract Documents, or cannot agree upon the extent of relief to be granted under a Change Order after good faith negotiations, either party may refer the dispute to the Claim resolution provisions of Article 11. Pending resolution of such Claim, Contractor shall proceed with the Work as directed by UTA under a reservation of rights. UTA shall continue to pay any undisputed payments related to such Claim.

10.8 **Emergencies**. In any emergency affecting the safety of persons and/or property, Contractor shall act, at its discretion, to prevent threatened damage, injury or loss. Any change in the Contract Price and/or Contract Time(s) on account of emergency work shall be determined as provided in this Article 7.

ARTICLE 11

Claims and Dispute Resolution

11.1 Claims**.**

11.1.1 "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 8. Claims must be made by written notice. The responsibility to substantiate claims rests with the party making the claim.

11.1.2 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.

11.2 **Dispute Resolution.**

11.2.1 The parties shall attempt in good faith to resolve promptly through negotiation any Claim arising out of or relating to the Contract Documents. If a Claim should arise, UTA's Project Manager and Contractor's Project Manager will meet at least once to attempt to resolve the Claim. For such purpose, either may request the other to meet within seven (7) Days of the date the Claim is made, at a mutually agreed upon time and place.

11.2.2 If UTA's Project Manager and Contractor's Project Manager are not able to resolve the Claim within fourteen (14) Days after their first meeting (or such longer period of time as may be mutually agreed upon), either party may request that UTA's Senior Representative and the Contractor's management representative ("Contractor's Management Representative") meet at least once to attempt to resolve the Claim.

11.2.3 If the Claim has not been resolved within sixty (60) Days of the date the Claim is made, either party may refer the Claim to non-binding mediation by sending a written mediation request to the other party. In the event that such a request is made, the Parties agree to participate in the mediation process. Non-binding mediation of claims or controversies under the Contract Documents shall be conducted by a professional mediator that is mutually acceptable to and agreed upon by both parties (the "Mediator"). The parties and the Mediator may join in the mediation any other party necessary for a mutually acceptable resolution of the Claim. The mediation procedure shall be determined by the Mediator in consultation with the parties. The fees and expenses of the Mediator shall be borne equally by the parties.

11.2.4 If the Claim is not resolved within thirty (60) days after the commencement of mediation, or if no mediation has been commenced within one hundred and twenty (120) days of the date the Claim is made, either party may commence litigation to resolve the Claim. The exclusive forum for any such litigation is the Third District Court in and for Salt Lake County, Utah.

ARTICLE 12

Suspension and Termination

12.1 **UTA's Right to Stop Work.**

12.1.1 UTA may, without cause and for its convenience, order Contractor in writing to stop and suspend the Work. Such suspension shall not exceed one hundred and twenty (120) consecutive Days or aggregate more than two hundred and forty (240) Days during the duration of the Project. In the event a suspension continues longer than the above-referenced periods, Contractor shall have the right to terminate the Agreement. Any such termination shall be considered to be a termination for convenience by UTA.

12.1.2 If a suspension is directed by UTA without cause, Contractor shall be entitled to seek an adjustment of the Contract Price and/or Contract Time(s) if its cost or time to perform the Work has been adversely impacted by any suspension or stoppage of the Work by UTA.

12.1.3 In addition to its rights under Section 12.1.1, UTA shall have the right to order a suspension for cause if the Work at any time ceases to comply with the workmanship, safety, quality or other requirements of the Contract Documents or any Legal Requirements. Contractor shall not be entitled to seek an adjustment the Contract Price and/or Contract Time(s) with regard to any such suspension.

12.2 **UTA's Right to Terminate for Convenience.** Upon written notice to Contractor, UTA may, for its convenience and without cause, elect to terminate this Agreement. In such event, UTA shall pay Contractor for the following:

12.2.1 All Work satisfactorily completed or commenced and in process as of the effective date of termination;

12.2.2 The reasonable and demonstrable costs and expenses attributable to such termination, including demobilization costs and amounts due in settlement of terminated contracts with Subcontractors; and

12.2.3 The fair and reasonable sums for overhead and profit on the sum of items 12.2.1 and 12.2.2 above. UTA shall not be liable for anticipated profits, costs or overhead based upon Work not yet performed as of the date of termination.

12.3 **UTA's Right to Terminate for Cause; Other Remedies for Default.**

12.3.1 Subject to the cure provision of Section 12.3.2 below and other limitations set forth in these General Conditions, Contractor shall be in default of its obligations under the Contract Documents if Contractor: (i) fails to provide a sufficient number of skilled workers; (ii) fails to supply the materials required by the Contract Documents; (iii) fails to comply with applicable Legal Requirements; (iv) fails to timely pay its Subcontractors without proper cause; (v) makes a materially false or misleading representation or certification in conjunction with the Contract Documents; (vi) fails to prosecute the Work with promptness and diligence to ensure that the Work is completed by the Contract Time(s), as such times may be adjusted; (vii) fails to satisfy any guaranteed interim or completion milestone set forth in the Contract Documents; or (viii) fails to

perform any other material obligations under the Contract Documents. In any such event, UTA (in addition to any other rights and remedies provided in the Contract Documents or by law) shall have the rights set forth in Sections 12.3.2 through 12.3.5 below.

12.3.2 Upon the occurrence of an event of default set forth in Section 12.3.1 above, UTA may provide written notice to Contractor that it intends to terminate the Agreement (in whole or in part) or pursue other available remedies unless the grounds for default are cured within ten (10) Days of Contractor's receipt of such notice. If Contractor fails to cure the grounds for default within such period, then UTA may declare the Agreement, or portions of the Agreement, terminated for default by providing written notice to Contractor of such declaration; provided, however, that to the extent that an item included is the notice of default and demand for cure is capable of cure, but not within the ten-Day cure period, then the Agreement shall not be terminated so long as Contractor commences actions to reasonably cure such breach within the 10-Day cure period and thereafter continuously and diligently proceeds with such curative actions until completion (such additional period not to exceed 45 Days). UTA may terminate the Agreement without opportunity to cure if the breach involves the Contractor's material failure to comply with any Legal Requirements pertaining to safety or environmental compliance.

12.3.3 Upon the continuance of a breach described in Section 12.3.1 for more than ten (10) Days following delivery of written notice to Contractor (and regardless of whether the Agreement, or any portion hereof, has been terminated as provided above), UTA shall be entitled to self-perform (through its own forces or through other contractors) the corrective action necessary to cure Contractor's event of default and deduct all costs so incurred from any amount then or thereafter due to Contractor.

12.3.4 Upon the continuance of a breach described in Section 12.3.1 for more than ten (10) Days following delivery of written notice to Contractor (and regardless of whether the Agreement, or any portion hereof, has been terminated as provided above), UTA shall be entitled to seek performance by any guarantor of Contractor's obligations hereunder or draw upon any surety or security provided for in the Contract Documents.

12.3.5 Upon declaring the Agreement terminated pursuant to Section 12.3.2 above, UTA may enter upon the premises and take possession, for the purpose of completing the Work, of all materials, equipment, scaffolds, tools, appliances and other items thereon, which have been purchased or provided for the performance of the Work, all of which Contractor hereby transfers, assigns and sets over to UTA for such purpose, and to employ any person or persons to complete the Work and provide all of the required labor, services, materials, equipment and other items. In the event of such termination, Contractor shall not be entitled to receive any further payments under the Contract Documents until the Work shall be finally completed in accordance with the Contract Documents. At such time, if the unpaid balance of the Contract Price exceeds the cost and expense incurred by UTA in completing the Work, such excess shall be paid by UTA

to Contractor. If UTA's cost and expense of completing the Work exceeds the unpaid balance of the Contract Price, then Contractor shall pay the difference to UTA. Such costs and expenses include not only the cost of completing the Work, but also losses, damages, costs and expenses, including attorneys' fees and expenses, incurred by UTA in connection with the reprocurement and defense of claims arising from Contractor's default.

12.3.6 All rights and remedies set forth in the Contract Documents are cumulative, and unless otherwise specifically provided in the Contract Documents are not exclusive of any other rights or remedies that may be available, whether provided by law, equity, statute, in any other agreement between the Parties or otherwise. Upon the occurrence of any such default, following the applicable process described in this Article, UTA shall be entitled to pursue any and all other rights and remedies, including without limitation damages, that UTA may have against Contractor under the Contract Documents or at law or in equity.

12.3.7 If UTA improperly terminates the Agreement for cause, the termination for cause will be converted to a termination for convenience in accordance with the provisions of Section 12.2 above.

12.4 **Bankruptcy of Contractor.**

12.4.1 If Contractor institutes or has instituted against it a case under the United States Bankruptcy Code, such event may impair or frustrate the Contractor's ability to perform its obligations under the Contract Documents. Accordingly, should such event occur:

12.4.1.1 Contractor, its trustee or other successor, shall furnish, upon request of UTA, adequate assurance of the ability of the Contractor to perform all future material obligations under the Contract Documents, which assurances shall be provided within ten (10) Days after receiving notice of the request; and

12.4.1.2 Contractor shall file an appropriate action within the bankruptcy court to seek assumption or rejection of the Agreement within sixty (60) Days of the institution of the bankruptcy filing and shall diligently prosecute such action. If Contractor fails to comply with its foregoing obligations, UTA shall be entitled to request the bankruptcy court to reject the Agreement, declare the Agreement terminated and pursue any other recourse available to the UTA under this Article 12.

12.4.2 The rights and remedies under Section 12.4.1 above shall not be deemed to limit the ability of UTA to seek any other rights and remedies provided by the Contract Documents or by law, including its ability to seek relief from any automatic stays under the United States Bankruptcy Code.

ARTICLE 13

Value Engineering

13.1 **Value Engineering Change Proposals.**

13.1.1 A Value Engineering Change Proposal ("VECP") is a proposal developed, prepared, and submitted to UTA by the Contractor, which reduces the cost of the Work without impairing essential functions or characteristics of the Project, as determined by UTA in its sole discretion. UTA encourages Contractor to submit VECPs whenever it identifies potential savings or improvements. UTA may also request the Contractor to develop and submit a specific VECP.

13.1.2 In determining whether a VECP will impair essential functions or characteristics of the Project, UTA may consider: (i) relative service life; (ii) maintenance effort and frequency; (iii) environmental and aesthetic impacts; (iv) system service; (v) effect of other system components; and (vi) other issues as UTA deems relevant. A VECP must not be based solely on a change in quantities.

13.1.3 Contractor must include the following information in any VECP:

13.1.3.1 A narrative description of the proposed change,

13.1.3.2 A discussion of differences between existing requirements and the proposed change, together with advantages and disadvantages of each changed item;

13.1.3.3 A complete cost analysis, including the cost estimate of any additional rights-of-way or easements required for implementation of the VECP;

13.1.3.4 Justification for changes in function or characteristics of each item and effect of the change on the performance on the end item;

13.1.3.5 A description of any previous use or testing of the proposed approach and the conditions and results. If the VECP was previously submitted on another UTA project, the Contractor shall indicate the date, contract number, and the action taken by UTA;

13.1.3.6 Costs of development and implementation; and

13.1.3.7 Any additional information requested by UTA, which must be provided in a timely manner.

13.2 **Review and Approval of VECPs**

13.2.1 Upon receipt of a VECP, UTA shall process it expeditiously, but will not be liable for any delay in acting upon any VECP. Contractor may withdraw all or part of any VECP at any time prior to approval by UTA, but shall, in any case, be liable for costs incurred by UTA in reviewing the withdrawn VECP, or part thereof. In all other situations, each party will bear its own costs in connection with preparation and review of VECPs.

13.2.2 UTA may approve in whole or in part any VECP submitted. The decision of UTA regarding rejection or approval of any VECP will be at the sole discretion of UTA and will

be final and not subject to appeal. Contractor will have no claim for any additional costs or delays resulting from the rejection of a VECP, including development costs, loss of anticipated profits, or increased material or labor costs

13.3 **Cost Savings.** Except as otherwise stated in the Agreement, any savings resulting from an approved VECP will accrue to the benefit of UTA and Contractor on a 50/50 cost sharing basis. Nevertheless, a Contractor shall not be eligible to share in cost savings where the Contractor had responsibility under its scope of work for drafting, reviewing or approving the designs or processes involved in the VECP.

13.4 **Ownership of VECPs.** All approved or disapproved VECPs will become the property of UTA and must contain no restrictions imposed by Contractor on their use or disclosure. UTA retains the right to use, duplicate, and disclose, in whole or in part, any data necessary for the utilization of the VECP on any other projects without any obligation to Contractor. This provision is not intended to deny rights provided by law with respect to patented materials or processes.

ARTICLE 14

Miscellaneous

14.1 **Confidential Information:** "Confidential Information" means information that is determined by the transmitting party to be of a confidential or proprietary nature and: (i) the transmitting party identifies in writing as either confidential or proprietary; (ii) the transmitting party takes steps to maintain the confidential or proprietary nature of the information; and (iii) the document is not otherwise available in or considered to be in the public domain. To the extent permitted by law (including specifically UCA Title 63G Chapter 2), the receiving party shall maintain the confidentiality of the Confidential Information and shall use the Confidential Information solely in connection with the Project. The parties agree that the Agreement itself (including all incorporated Contract Documents) does not constitute Confidential Information.

14.2 **PUBLIC INFORMATION:** Vendor acknowledges that the Contract and related materials (invoices, orders, etc.) will be public documents under the Utah Government Records Access and Management Act (GRAMA). Vendor'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.

14.3 **Prohibited Interest.** No member, officer, agent, or employee of UTA during his or her tenure or for one year thereafter shall have any interest, direct or indirect, including prospective employment by, Contractor or the proceeds under the Contract Documents without specific written authorization by UTA.

14.4 **Assignment.** Contractor acknowledges that the Work to be performed by Contractor is considered personal by UTA. Contractor shall not assign or transfer its interest in the Contract Documents without prior written approval by UTA.

14.5 **Successors.** Contractor and UTA intend that the provisions of the Contract Documents are binding upon the parties, their employees, agents, heirs, successors and permitted assigns.

14.6 **Governing Law.** The Agreement and all Contract Documents are governed by the laws of the State of Utah, without giving effect to its conflict of law principles. Actions to enforce the terms of this Agreement may only be brought in the Third District Court for Salt Lake County, Utah.

14.7 **Attorneys Fees and Costs**. 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.

14.8 **Severability.** If any provision or any part of a provision of the Contract Documents is finally determined to be superseded, invalid, illegal, or otherwise unenforceable pursuant to any applicable Legal Requirements, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Contract Documents, which shall remain in full force and effect as if the unenforceable provision or part were deleted.

14.9 **No Waiver.** The failure of either Contractor or UTA to insist, in any one or more instances, on the performance of any of the obligations required by the other under the Contract Documents shall not be construed as a waiver or relinquishment of such obligation or right with respect to future performance.

14.10 **Headings.** The headings used in these General Conditions, or any other Contract Document, are for ease of reference only and shall not in any way be construed to limit or alter the meaning of any provision.

14.11 **Amendments.** The Contract Documents may not be changed, altered, or amended in any way except in writing signed by a duly authorized representative of each party.

14. 12 **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.

14.13 **ENTIRE AGREEMENT:** The Contract constitutes the entire agreement between the parties with respect to the subject matter, and supersedes any and all other prior and contemporaneous agreements and understandings between the parties, whether oral or written. The terms of the Contract supersede any additional or conflicting terms or provisions that may be preprinted on Vendor's work plans, cost estimate forms, receiving tickets, invoices, or any other related standard forms or documents of Vendor that may subsequently be used to implement, record, or invoice Goods and/or Services hereunder from time to time, even if such standard forms or documents have been signed or initialed by a representative of UTA. The terms of the Contract prevail in any dispute between the terms of the Contract and the terms printed on any such standard forms or documents, and such standard forms or documents will not be considered written amendments of the Contract.

Exhibit A – Scope of Work

A. OVERVIEW OF THE PROJECT

UTA is planning for charging capabilities of twenty (20) battery electric buses with at the existing Meadowbrook Campus. The project will utilize five (5) 360 kW charging cabinets to energize ground-mounted dispensers in the existing parking area. The chargers will be configured and operated in a 1:4 configuration (1 charging cabinet to 4 depot connections) for a total of 20 connections. UTA will be supplying the remote charging cabinets and plug-in pedestal dispensers. The Contractor will be responsible for all other design and construction work as outlined in this Scope of Work.

UTA intends to work with a contractor design-build team to perform the design, supply, and installation of the following items to allow for charging of up to 20 BEB's at the Meadowbrook site:

A. Coordination with Rocky Mountain Power (RMP) to provide new secondary service to the Meadowbrook site via a new electrical feed to meet the needs of this project's maximum charging demand.
    a. UTA intends to expand the zero-emission fleet at the Meadowbrook site in subsequent years to an eventual fully zero-emission fleet. This project is intended to provide a design which does not preclude further expansion in the electrical yard to afford an eventual 100% BEB deployment.

B. Design, Supply, and Installation for all ductwork, civil improvements, and electrical infrastructure as required by RMP to accept the new feed and house utility-owned disconnects, interrupters, utility-owned 480-volt transformers, and UTA owned low voltage switchboards to feed the BEB chargers. The electrical yard is expected to be located on the east side of the Meadowbrook site at approximately 900 West. All electrical yard improvements must be aligned to RMP requirements as dictated by RMP design standards.

C. Design and Installation of remote charging cabinets based on a minimum performance of 360 kW unit capable of serving up to 4 charging positions simultaneously via remote island mounted plug-in dispensers.

    a. Dispensers will be located between parking berths on raised islands with bollard protection against vehicle strikes and a cable management solution to keep dispenser cables out of harm's way. Dispensers will be designed to minimize special impacts to existing bus parking and operations.

    b. All trenching, distribution, and repaving required to feed electricity and data between all Chargers, and Dispensers.

D. Commissioning and Testing Plan of each individual component (electrical infrastructure yard, distribution throughout the site, chargers and dispensers) coordinated combined

commissioning of the complete charging setup inclusive of all items to ensure all charging positions can complete a 25% to 95+% SOC for all connected buses, up to twenty total, during a single 7 hour nightly service cycle.

a. Commissioning and Testing of the complete charging setup will also be required to demonstrate integration with UTA's existing CMS EV charging platform provided by ABB.

B. DELIVERABLES

Contractor will provide a project schedule including deliverables for each type of product and service and anticipated due date in-line with the design, construction, and final completion timeline outlined in Section F. UTA will review and approve the project schedule.

C. DESIGN REQUIREMENTS FOR COMMERICAL ELECTRIC VEHICLE CHARGING UNIT FOR TRANSIT FACILITIES

This section of the Scope of Work defines the design requirements for the facility and identifies design concepts and strategies proposed to meet these requirements. The concepts included in these specifications will be identified at a conceptual level and serve as the basis for the design builder to develop a final design including the project plans and technical memos.

PART 1 – GENERAL

The General Provisions of the Contract, including General and Special Conditions and the requirements of Division 1, apply to the Work in this Section.

1.01 WORK INCLUDED

A. Equipment items as listed below:

1. CHARGING CABINET, BATTERY ELECTRIC BUS, 360kW DC POWER OWNER FURNISHED CONTRACTOR INSTALLED (OFCI)

2. REMOTE PLUG-IN DISPENSER - OWNER FURNISHED CONTRACTOR INSTALLED (OFCI)

B. Installation of equipment with labor, services, and incidentals necessary for complete and operational equipment installation.

C. All processes as specified below are the responsibility of the respective Party.

D. Observe and witness testing and commissioning of equipment.

E. Utilities to be roughed in at location recommended by manufacturer.

F. Coordination with other equipment and/or items shall include, but not necessarily be limited to, the following:

1. Ability to connect and communicate with a third-party charge management system adhering to OCPP 2.0.1 or higher to allow for yard management and data collection as noted below:

a. Charge management services (charge management solution) for the chargers shall be integrated with UTA's existing service provided by ABB (EV Charger Portal) and installed as an owner furnished contractor installed item. The charge management solution will be utilized to monitor and report operational data and to control installed EVSE to energize buses. The cloud service shall broadcast charging information from the Contractor's charging solution via the OCPP 1.6 or newer protocol as well as control and manage the connected charger cabinets and dispensers. The software provider shall provide the necessary data and integration requirements to capture charger operational data in real time for smart charging.

G. Coordination of equipment and vehicle to allow for remote operation and communication of the Remote Plug-In Dispenser with the Owner's battery electric bus fleet.

1.02 QUALITY ASSURANCE

A. Equipment shall be produced by a manufacturer of established reputation with a minimum of five years' experience supplying specified equipment.

B. Manufacturer's Representative:
1. Installation: Provide a qualified manufacturer's representative at site to supervise work related to equipment installation, check out and start up.

2. Training: Provide technical representative to train Owner's maintenance personnel in operation and maintenance of specified equipment.

3. Testing: Provide technical representative for final testing of equipment.

B. Installation of this equipment item requires initial mock-up and acceptance by design team and owner. Refer to Part 3.02 "INSTALLATION" of this specification for more details.

1.03 STANDARD AND REGULATORY REQUIREMENTS

A. Equipment indicated within this specification section shall comply with all applicable national, state and local codes and regulations, including seismic, fire, and racking codes

and regulations. Additional, more specific compliance requirements may be listed under individual equipment headings.

1.04 SUBMITTALS

A. Submittal requirements for all equipment items included in this section are listed below.

B. Product Data:

1. Submit Product Data in accordance with Division 1 - General Requirements of these specifications.

2. All Product Data submittals shall identify proposed project specific items marked by arrow, circle, underline, reproducible highlight, or other markings clearly discernable by the reviewer, to show which specific items, parts and accessories are being submitted for the project product data review. Non-marked or generic product data submittals with no marks indicating specific items, parts and accessories will be a cause for rejection.

3. Restrict submitted material to pertinent data. For instance, do not include manufacturer's complete catalog when pertinent information is contained on a single page.

C. Operation and Maintenance Manual:

1. Provide a Complete parts list, operating instructions, and maintenance manual covering equipment at time of installation including, but not limited to:

   a. Description of system and components.

   b. Manufacturer's printed operating instructions.

   c. Printed listing of periodic preventive maintenance items and recommended frequency required to validate warranties. Failure to provide maintenance information will indicate that preventive maintenance is not a condition for validation of warranties.

   d. List of original manufacturer's parts, including suppliers' part numbers and cuts, manufacturer’s recommended spare parts stockage quantity and local parts and service source based on anticipated frequently replaced and or long lead (more than five workdays) components.

2. Assemble and provide copies of manual in 8-1/2 by 11-inch word format. Foldout diagrams and illustrations are acceptable. Manual to be reproducible by dry copy method. Provide copies per provisions of Division 1 - General Requirements.

D. Shop Drawings: Submit shop drawings in accordance with Division 1 -General Requirements of these specifications.

1. Submitted shop drawings shall be project specific and shall include a minimum 1/8 inch to 1 foot scaled (or larger standard architectural imperial scale), dimensioned, graphical representation of the size, orientation, and location for all instances of submitted equipment in a floor plan view and reflected ceiling plan view for DC charging cabinets, dispenser and other system elements. The drawings shall further include dimensions from structural elements or architectural grid lines, to each major charging equipment item operational clearances, locations of any utility service connection points, power and communication output points, mounting requirements, and structural supports required for the submitted equipment. Indicate which specific dispensers are connected to and energized by which specific DC charging cabinet.

2. Manufacturer's standard installation drawings will be accepted and reviewed but are not considered as a replacement to project specific shop drawings.

E. Test Reports: Testing and Commissioning reports are required for all systems included in this specification and shall be included as part of the close-out documents. Provide to the equipment consultant a copy of all testing and commissioning reports for equipment specified herein. Refer to Part 3.03 "SYSTEM TESTING AND COMMISSIONING", of this specification.

F. Required Documents for Permit and Local Jurisdictional Approval: Where required by local jurisdiction and/or code officials, the contractor/supplier shall be responsible for producing and submitting all documentation required for obtaining all applicable approvals related to the specified equipment. This documentation may include, but may not be limited to, engineered signed and stamped plans, details, anchorage layouts for equipment on stands and as racks to show compliance with locally adopted ASCE, seismic, fire, and other codes. A copy of these required documents shall be included with the product submittal to the Design Team/consultant team for their review.

1.05 WARRANTY

A. Warranty work specified herein for two years from substantial completion against defects in materials, function, workmanship and charging system operational design.

B. Warranty shall include materials and labor necessary to correct defects including replacement of charging system operational elements with re-designed components.

C. Defects shall include, but not be limited to loose, damaged and missing parts and abnormal deterioration of finish, excessive cord wear.

D. Operational design defects for dispenser include failure or intermittent failure to instigate charging process or non-communications with vehicle properly connected to the plug-in

dispenser and failure to complete charging process once initiated. Submit warranties in accordance with Division 1 - General Requirements of these specifications.

E. All parts shall be readily available locally in the United States.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver equipment in manufacturer's containers, appropriately packaged and/or crated for protection during shipment and storage in humid, dusty conditions. Equipment shall be stored per manufacturer's recommendation.

B. Indelibly label all containers, including those contained in others, on outside with item description(s) per title of this specification.

C. Provide equipment and materials specified complete in one shipment for each equipment item. Split or partial shipments are not permissible.

1.07 LABELING

A. Manufacturer shall securely attach in a prominent location on each major item of equipment a non-corrosive nameplate showing manufacturer's name, address, model number, serial number, and pertinent utility or operating data.

B. All electrical equipment and materials shall be new and shall be listed by Underwriter's Laboratories, Inc. (U.L.), or other US National Recognized Testing Laboratory (NRTL) acceptable to both the design team and local code officials, in categories for which standards have been set by that agency and labeled as such in the manufacturer's plant.

PART 2 - PRODUCTS

2.01 CHARGING CABINET, BATTERY ELECTRIC BUS, 360KW DC POWER – OWNER FURNISHED CONTRACTOR INSTALLED (OFCI)

A. General:

1. Description: Upright cabinet(s) connected to multiple charger dispensers including:
   a. Pedestal mounted remote plug-in dispensers, and capable of automatically charging the connected battery electric bus (BEB) utilizing direct current (DC) electrical power. Intended for long term charging of BEBs in overnight parking positions. Unit must be capable of operating in dense installation of multiple charging cabinet units located in same general area.

2. Coordination: Specification information indicated herein is intended as general requirement only. Final design of the system shall be by the manufacturer and shall

be presented in the project specific shop drawings in coordination with the Remote Plug-In Dispenser as a fully coordinated, complete design.

3. Compliance: The equipment and final design shall comply with the most current editions of all applicable local, state, and federal codes and regulations, including, but not limited to, those listed below.

    a. SAE International Standard J1772, SAE Electric Vehicle and Plug in Hybrid Electric Vehicle Conductive Charge Coupler, most recent edition

    b. NFPA 70: National Electric Code (NEC), most recent edition.

    c. NFPA 70E: Standard for Electrical Safety in the Workplace, most recent edition

    d. Underwriter's Laboratory UL 2202, Standard for Electric Vehicle (EV) Charging System Equipment, most recent edition.

    e. Underwriter's Laboratory UL 2231-1, Standard for Safety for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: General Requirements

    f. Underwriter's Laboratory UL 2231-2, Standard for Safety for Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Particular Requirements for Protection Devices for Use in Charging Systems.

    g. ANSI/IEC 60529: Degrees of Protection Provided by Electrical Enclosures (IP Code), most recent edition.

    h. IEC 61851-1; 23; 24: Electric Vehicle Conductive Charging System, most recent edition.

    i. IEC 61000-6-2: Electromagnetic Compatibility (EMC) – Part 6-2: Generic Standards – Immunity Standard for Industrial Environment.

    j. ISO 15118: Road Vehicles – Vehicle to Grid Communication Interface.

    k. 29 CFR 1910.147: General Environmental Controls, The Control of Hazardous Energy (Lockout/Tagout), as enforced by OSHA, most recent edition.

    l. International Electrotechnical Commission (IEC) 60309, most recent edition.

    m. Federal Communications Commission (FCC) rules and regulations, as applicable.

    n. Open Charge Point Protocol OCPP 2.0.1 or higher to allow charger control and monitoring by a third-party charge management system.

4. Components:

    a. Power Cabinet(s).

    b. All components, interconnecting cabling and conduits/ducts between components, software, and accessories for a fully and properly operational device.

B. Capacities and Dimensions:

1. Total output charge power, direct current (DC): Nominal 360 kilowatts (kW), minimum capable to charge a 520kWh battery electric bus (BEB) from a ten percent usable by vehicle state of charge to ninety five percent usable by vehicle state of charge in a consecutive four-hour period from a single dispenser.

    a. Systems that employee a single larger kW cabinet with multiple outputs to dispensers that produce the total output charge power of the nominal 360kW minimum and charger time are acceptable and considered equivalent to a single 360kW cabinet unit.

    b. Quantity of charging dispensers in bus parking areas, output charge power from entire DC charging system to be capable of charging full quantity of electrically charged vehicles identified on the project drawings in a single consecutive (8) eight-hour period minimum.

2. Output voltage range: 150-940 volts, DC.

3. Rated DC output current range: single output, 500 A, 360kW, dynamic output 90 / 180 / 270 / 360.

4. Operating temperature range: -31 degrees Fahrenheit (F) to 131 degrees F.

5. Input connections: L1, L2, L3, GND (no neutral)

6. Input power rating: nominal 391 kVa (full load)

7. Input AC line-line voltage range: 480 VAC +/-10%, 3-ph 60 Hz

8. Input AC phase current: nominal 470 A

9. Power factor, total harmonic distortion: 0.97, minimum, <5%.

10. Power conversion efficiency at full load: 94-96 percent

11. Network connection: 4G / 3G / Ethernet, minimum, utilizing Open Charge Point Protocol (OCPP) 2.0.1 or later network communication.

12. Protection: IP-54 and IK-10 or equivalent NEMA 3R rating.

13. Operational noise level: 61 decibels at 1 meter, maximum.

14. Overall dimensions, power cabinet(s), maximum nominal:

    a. Width: 46.1 inches.

    b. Depth: 30.3 inches.

    c. Height: 85.8 inches.

    d. Weight: 2,094 pounds.

C. Features and Construction:

1. Each electrical cabinet to be a standalone unit capable of meeting the specification herein. The cabinet shall include capability for entry of alternating current (AC) electrical supply, main isolation transformer cabinet, AC to DC power conversion, AC grid coupling and protective devices, DC output coupling and protective devices, controller for charger circuit and the communication equipment, and forced-air over coolant chiller functions.

2. Capable of being connected to power supply grid or low voltage power distribution station.

3. Charge cabinet configurable to support multiple plug-in dispensers capable of concurrent charging across all connected dispensers.

4. Capable of being configured to operate dispenser configuration and energizing a minimum quantity of:

    a. Four (4) Remote Plug-In Dispensers and capable of providing charging power to each dispenser concurrently at a minimum. Includes all interconnecting electrical cabling, data cabling, conduit / ducts, distribution boxes, DC switches (internal to charging cabinet and external from charging cabinet) and all other components necessary for interconnection.

5. Capable of providing bi-directional charging to facilitate gird to vehicle (G2V) and vehicle to grid (V2G) power transfers.

6. Intended for, and fully capable of, installation in an outdoor environment, with a thermal and water-resistant enclosure. Cabinet(s) shall include an integral raised base for protection of equipment and fastening to sub-structure. Raised base should allow for mounting to an elevated steel support frame and not require direct to concrete pad installations.

7. Includes an on-board transformer / rectifier, allowing the power cabinet to receive an alternating current (AC) input power connection from the facility electrical supply and convert it to direct current (DC) electrical output to the charge box and connected bus.

8. Includes a chiller unit capable of maintaining manufacturer's required temperature for power conversion components. Chiller shall include protective air intake grill(s) and fan(s).

9. Include internal DC distribution box / DC Switch to control and manage DC outputs within the charger cabinet enclosure.

    a. Charging cabinets relying on DC distribution boxes / DC switches that are external to the charging cabinet are acceptable but all components of the external multiple DC output control / management system are to be supplied and installed as part of the charging cabinet system including additional conduits, power and control wiring, DC distribution boxes / DC switches, mounting and supporting structural elements to locate the DC distribution boxes / DC switches from the building structure.

    1) All additional structural loading (weights and reactions), physical space requirements (sizes, clearances, requirements for manual interactions) of an external to charging cabinet DC distribution box / DC Switch to be included with initial approval submission of charging system by owner. Additional charging system components, installation labor, software, or physical controls added to approved charging cabinet system that were not presented as required in initial charging cabinet system review are grounds for negating original submission approval.

10. Unit is designed to be installed with multiple similar charging cabinet units in a dense location and vent locations of cabinets to facilitate close proximity installations between similar cabinets to sides and rear of unit.

11. Include forklift pockets at base of unit or lifting lugs on top and or side of unit. Units that utilize no mechanical connections for lifting and rely solely on wrapped / strapping connections around unit cabinet case to install, position or remove unit are not acceptable.

12. Controller shall include the protective ground connection, the DC output voltage connections, and the supervisory control components.

13. Communications portion of the controller equipment shall be capable of being connected to other computer networks, including networks with charge management systems, through Ethernet and/or wireless connection. The power cabinet shall be capable of communicating to that charge management system by means of an open source, non-proprietary, communication protocol.

14. Includes a cellular antenna, 4G/LTE or better, enabling connection to cellular networks.

15. Includes on-board computer and/or programmable logic devices, software, and wireless communication devices that, at a minimum, also provide the following functionality to the power cabinet:

    a. Once communication is established with the bus, to communicate with, request and receive from the BEB the following information: bus identification and battery information such as charge status, temperature, etc.

    b. Information collected shall be stored, and able to be transmitted to a charge management system.

    c. To automatically start, stop, and regulate any charge to any bus battery connected by means of the charge connector.

    d. To request, receive, and store bus battery information such as ID, charge status, temperature, etc. from the bus by means of wireless communication with the bus being charged.

    e. To allow Owner's charge management system to control and report a minimum feature set of each charging cabinet in real time:

        1) Cabinet connected dispenser status – connected to a vehicle / not connected to a vehicle

        2) Cabinet on (allowing charging to occur) / off (not allow charging to occur)

        3) Total cabinet power output

        4) Report vehicle ID connected to each dispenser connected to DC charging cabinet

        5) Cabinet not operational / unit issuing trouble code

16. Lock-out / Tag-out functions – preference is for AC input to charging cabinet to enter at a charging cabinet internally integrated disconnecting means compliant with NEC 625.42 and not require a separate external disconnect. Systems requiring external disconnects will be considered but requirement of need for separate disconnect means and inclusion of external disconnects are required on all submitted product data and project specific shop drawings and charger layouts. Lock-out / Tag-Out functions shall include, at a minimum, the following:

    a. AC supply entry cabinet shall not be allowed to open under live grid conditions and shall only be allowed to open only if the main power supply to the charger is locked out.

    b. Main transformer cabinet(s) and AC/DC converter cabinet shall not be allowed to open under live grid conditions and shall only be allowed to open if there are no live grid conditions to the charger and if the main power supply breaker is locked out.

    c. The chiller cabinet shall not be allowed to open while the charger is energized but shall only be allowed to open if the charger is de-energized and the auxiliary switch is locked out.

17. Emergency Stop Button directly accessible on the outside of the power cabinet. Allows for emergency stopping of the charger and de-energizing of the charging system.

18. Group Remote Emergency Stop Button capable. Allows for connections to auxiliary emergency stop buttons remotely located in the facility and connected to multiple charging cabinet units to stop / reset charging cabinet units as a group. Remote emergency stop reset should not require individual resetting of charging cabinet's factory installed cabinet integrated emergency stop button after remote emergency stop button reset.

19. Includes all other components for necessary and proper function of the unit including, but not necessarily limited to, metal support frame and protective panel enclosure, foundation support base, air intake and exhaust vents, forced air cooling fans, air filters, grounding devices and connections, cables, cords, connectors, etc.

D. Finish: Exterior panels of power cabinet to have protective finish to prevent corrosion of enclosure. Provide in Owner's choice of manufacturer's standard colors.

A. Accessories:

1. Plug-in dispenser as specified in section 2.02.

2. Coolant, in quantity and type as required by manufacturer.

3. Emergency Stop Button (E-Stop) – directly accessible on the outside of the DC power cabinet. Allows for emergency stopping / de-energizing output of all remote dispenser units connected to a single DC power cabinet whose E-Stop button is activated

4. External DC Output Distribution Box / DC Output switches if required

F. Utilities:

1. Electrical: 480 VAC, 3 Phase, 60 Hz, nominal 470 amps maximum.

G. Manufacturers Reference:

1. Prime manufacturer: Specifications are based on equipment identified herein by manufacturer's name and model to establish acceptable standards of quality, performance, features, and construction.

a. ABB Installation Products 860 Ridge Lake Boulevard Memphis, TN 38120 Phone: (901) 252-5000 Fax: (800) 816-7809
Website: www.nw.abb.com

b. Model: HVC 360-4D UL

2. Other manufacturers: Contingent upon compliance with these specifications and documentation requirements set forth in SUBMITTALS, equipment produced by other manufacturers may be considered as equal.

a. Heliox
De Waal
24 5684 Best
Netherlands
Phone: 31-88-5016-300
Website: www.heliox.nl

2.02 REMOTE PLUG-IN DISPENSER - OWNER FURNISHED CONTRACTOR INSTALLED (OFCI)

A. General:

1. Description: A stationary upright a pedestal-mountable depot box with a flexible power cord and corded handheld plug (charge connector) capable of being manually connected to the charging port of buses in the Owner’s electric bus fleet, and then automatically charging the connected bus utilizing direct current (DC) electrical power output generated from a connected 360kW DC Power Cabinet.

2. Compliance: The equipment and final design shall comply with the most current editions of all applicable local, state, and federal codes and regulations, including, but not limited to, those listed below.

    a. NFPA 70: National Electric Code (NEC), most recent edition.

    b. SAE J1772: SAE Electric Vehicle and Plug-in Hybrid Electric Vehicle Conductive Charge Coupler, most recent edition.

    c. ANSI/IEC 60529: Degrees of Protection Provided by Electrical Enclosures, most recent edition.

    d. Open Charge Point Protocol OCPP 2.0.1 or higher to allow charger control and monitoring by a third-party charge management system

    e. NFPA 70E: Standard for Electrical Safety in the Workplace, most recent edition.

    f. CFR 1910.147: Code of Federal Regulations, Occupational Safety and Health Standards, General Environmental Controls, The Control of Hazardous Energy (Lockout / Tagout), most recent edition.

B. Capacities and Dimensions:

1. Output voltage range at the remote dispenser, refer to 360 kW DC Power Cabinet

2. Output current at the remote dispenser, refer to 360 kW DC Power Cabinet

3. Output power at the remote dispenser, refer to 360 kW DC Power Cabinet Overall dimensions, remote dispenser, nominal:

    a. Width: 23.6 inches.

    b. Depth: 8.3 inches.

    c. Height: 31.5 inches.

    d. Weight: 135 lbs (including weight of cord and charge connector below)

    e. Cable length: 23 feet (7 m). Coordinate length with the Remote Dispenser Operating System to allow plug-in connector / charge connector to be mated with BEB charging port without straining or damaging BEB port, charge connector or charging cord.

    f. Charging Connector – SAE J1772 CCS Level 2 plug-in connector with strain relief

C. Features and Construction:

1. Remote dispenser unit shall be connected to and receive power output (voltage, current, power, charging telemetrics and controls) from the DC power cabinet, then regulate and transmit that output to the bus, when manually connected by the charging connector.

   a. Include glass fiber (or similar) communications lines between the DC power cabinet and remote dispenser, as well as all necessary protective conduits, seals, and fasteners.

   b. Remote dispenser enclosure shall be rated IP65 protection, per ANSI/IEC 60529.

2. Charging connector and attached cord shall be capable of being manually connected to, and disconnected from, the bus charger. Charging connector shall conform to SAE J1772 SAE standard.

3. Charger Status Indicator Light on bottom or side of remote dispenser cabinet and visible to an operator below the pedestal mounted remote dispenser. Three (3) color or more to indicate via color and blinking the following:

   a. Charger Energized and Ready

   b. Charger Connected and Charging

   c. Charger Connected and Charge Complete

   d. Charger Not Ready / Not Charging / Warning Indicator

4. Coordinate installation of the dispenser cord, the dispenser cabinet, and the charging connector in the field so that, once installed, there is minimal bending and/or twisting of the dispenser cord, or ‘flipping’ of the charge connector, when personnel attempt to plug the charge connector into a battery electric bus.

D. Finish: Exterior panels of charger box to have protective powder coat finish in Owner's choice of manufacturer's standard colors.

E. Accessories:

1. Pedestal mounting system parking island installation.

2. Cable management system, , capable of holding the charge cable within manufacturer’s acceptable bend radius and maintaining clear parking areas when not in use.

F. Manufacturers Reference:

1. Prime manufacturer: Specifications are based on equipment identified herein by manufacturer's name and model to establish acceptable standards of quality, performance, features, and construction.

   a. ABB Installation Products
   860 Ridge Lake Boulevard
   Memphis, TN 38120
   Phone: (901) 252-5000
   Fax: (800) 816-7809
   Website: www.nw.abb.com

   b. Model: 200A Depot Box – Pedestal Mounted

2. Other manufacturers: Contingent upon compliance with these specifications and documentation requirements set forth in SUBMITTALS, equipment produced by other manufacturers may be considered as equal.

   a. Heliox
   De Waal 24
   5684 Best
   Netherlands
   Phone: 31-88-5016-300
   Website: www.heliox.nl

PART 3 - EXECUTION

3.01 INSPECTION

A. Coordinate location of rough-in work and utility stub-outs to assure match and/or non-interference with equipment to be installed.

B. Inspect delivered equipment for damage from shipping and exposure to weather. Compare delivered equipment with packing lists and specifications to assure receipt of all items.

3.02 INSTALLATION

A. Perform work under direct supervision of Foreman or Construction Superintendent with authority to coordinate installation of scheduled equipment with Design Team.

B. Coordinate work with Manufacturer’s Representative indicated in Part 1.02 “QUALITY ASSURANCE” of this specification section.

C. Install equipment in accordance with plans, approved shop drawings, and manufacturer's instructions:

1. Positioning: Place equipment in accordance with any noted special positioning requirements generally level, plumb and at right angles to adjacent work.

2. Fitting: Where field cutting or trimming is necessary, perform in a neat, accurate, professional manner without damaging equipment or adjacent work.

3. Anchorage: Attach DC charging cabinet equipment in conformance with manufacturer's instructions and as directed by Design Team, to prevent damage resulting from inadequate fastening and to resist seismic movement. Installation fasteners shall be installed to avoid scratching or damaging adjacent surfaces. Upon completion of work, finish surfaces shall be free of tool marks, scratches, blemishes, and stains.

3.03 SYSTEM TESTING AND COMMISSIONING

A. General

1. Contractor will commission and test all installed charging systems using authorized engineers experienced with the system(s)

2. Contractor will demonstrate during the testing and commissioning phase that the installed EVSE properly integrates with UTA’s existing ABB CMS.

3. UTA will not accept any system or authorize payment until commissioning activities are complete and testing has verified that the installed system meets the full performance requirements of the technical specification

4. Commissioning and testing shall be completed for each unique charging position to confirm performance as specified above of each complete charging system. The complete charging system consists of the dispenser, its associated charging cabinet, and all associated equipment to fully perform the charging process as specified.

5. UTA will provide battery electric buses (BEB) for commissioning tests, and will arrange for a technical representative of the Vehicle Supplier to be present during testing. Availability of the bus and commissioning timeframe to be dictated by UTA staff and vehicle availability.

6. The Contractor is expected to coordinate and collaborate with Vehicle Supplier to ensure that installed charging systems are able to operate with full functionality when charging BEBs provided by the Vehicle Supplier

B. Commissioning Protocol

1. The contractor shall develop a Commissioning Protocol that includes the following:

   a. Draft documentation and checklists

   b. Test procedures which specify required equipment, test conditions, and acceptance criteria

   c. Process for resolving problems and deficiencies

2. A draft commissioning protocol shall be submitted to UTA for review and approval a minimum of 90 days prior to scheduled commissioning of the first charging system

3. At a minimum the Commissioning Protocol will include procedures and tests to verify:

   a. Equipment alignment and calibration

   b. Proper functioning of components and features

   c. Proper functioning of safeguards and protective functions

   d. Ability to initiate, complete, and terminate charging for buses supplied by the Vehicle Manufacturer

      1) Each system shall be tested with at least two (2) different buses supplied by UTA.

      2) At a minimum buses will be charged from less than 40% to greater than 95% state of charge during each test

   e. Ability to integrate installed EVSE into UTA's existing ABB CMS, and collect and report real-time and historical charging data via manufacturer's cloud-based reporting system.

4. Contractor shall submit to UTA certified test reports for all commissioning tests included in the Commissioning Protocol

3.04 CLEANUP

A. Touch-up damage to painted finishes.

B. Wipe and clean equipment of any oil, grease, and solvents, and make ready for use.

C. Clean area around equipment installation and remove packing or installation debris from job site.

D. Notify Design Team for acceptance inspection.

3.05 TRAINING

A. Direct the technical representative to provide specified hours of training to designated Owner's maintenance personnel in operation and maintenance of the following equipment. Coordinate, with Owner, training schedule and list of personnel to be trained.

1. CHARGING CABINET, BATTERY ELECTRIC BUS, 360KW DC POWER – OWNER FURNISHED CONTRACTOR INSTALLED (OFCI) Hours Required: 24

2. REMOTE PLUG-IN DISPENSER – OWNER FURNISHED CONTRACTOR INSTALLED (OFCI) Hours Required: Included in training for Equipment items listed above.

B. Obtain, from technical representative, a list of Owner's personnel trained in equipment operations and maintenance.

C. Provide a Windows compatible movie file in MP4 format recording on USB stick of the training session. The training movie can be a recording of a live session or a produced training video.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT AND PAYMENT

A. No separate measurement or payment will be made for Commercial Electric Vehicle Charging Unit for Transit Facilities. Work under this section will be paid for as part of the Contract Lump Sum bid items requiring the work specified in this Section, as applicable.

D. ELECTRICAL INFRASTRUCTURE OVERVIEW

This section of the SOW provides an overview of the electrical infrastructure that is to be designed and constructed by the Contractor as part of the Project SOW.

The Contractor is responsible for constructing the infrastructure for a new low-voltage service from Rocky Mountain Power (RMP), which will consist of a single feeder powered from an RMP substation. The feeder will connect to a 480V main disconnect located on the exterior of the facility. The Contractor is also responsible for coordinating and confirming the incoming service requirements with RMP, based on the latest Electric Service Requirements Manual. The

size and quantity of electrical equipment (including the main service disconnect) shall be adequate to meet the anticipated load. The contractor is to construct the following:

- Secondary service trench, conduit, equipment foundations, or excavations for equipment foundations within the legal rights-of-ways required by RMP.
- The contractor must provide and install the meter socket, complete with terminal lugs, meter jaws, manual link bypasses or safety sockets (when required), and sealing means for all non-meter conductors and bypass sections.
- Cable trays, conduits and wiring (AC, DC, Comms) from Chargers to each dispenser position.
- Contractor will be responsible for constructing new duct banks outside of the property line. Contractor is to coordinate location, quantities, sizes and length of duct bank with RMP.
- The contractor shall ensure that the maximum connected load remains below 750 kVA to comply with the service contract agreement.

The electrical system for the BEBs is independent from the existing electrical system (normal and emergency) serving the UTA facility. The local building power cannot be used for EV auxiliary systems or EV chargers. There are no plans to update/upgrade any of the current facility normal and emergency systems. The Contractor needs to provide warning labels at the main service circuit breakers for both the existing building service and the new service (vehicle chargers). Contractor to coordinate with Salt Lake City Fire Department during design process for exact requirements. The Contractor is responsible for the continuing coordination (design, submittal reviews, inspections, construction timelines, etc.) with RMP.

E. ELECTRICAL PERFORMANCE SPECIFICATIONS

The Contractor shall adhere to the electrical specifications and requirements outlined in this section of the Scope of Work.

1. Electrical General requirements

a. Refer to UTA Standard Specification book 2024, SP26 05 00.
b. Specification section includes furnishing and installation of direct buried conduits.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

2. Conductors and Cables

a. Refer to UTA Standard Specification book 2024, SP26 05 13.

b. Specification section includes installation of wires or cables required for power distribution, service, feeders, and branch circuits.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

3. Low-Voltage Electrical Power Conductors and Cables

a. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.

b. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for THHN-2-THWN-2, Type XHHW-2 and Type SO.

c. Material for Feeders shall be Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

d. Material for Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

e. Insulation for Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground shall be Type XHHW-2, single conductors in raceway unless otherwise noted.

f. Insulation for AC Feeders in Cable Tray shall be Type THHN-2-THWN-2, single conductors in raceway.

g. Insulation for DC Feeders shall be Type XHHW-2, single conductors in raceway.

h. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

i. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

j. Tighten electrical connectors and terminals shall be used according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

k. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than non-spliced conductors.

l. Identify and color-code conductors and cables according to Section 10.

m. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 9

n. Apply firestopping to electrical penetrations of fire-rated wall assemblies to restore original fire-resistance rating of assembly.

o. Perform the following tests and inspections:

   i. After installing conductors and cables and before electrical circuitry has been energized, test feeder conductors and conductors feeding critical equipment and services for compliance with requirements.

   ii. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

   iii. After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner. Correct deficiencies determined during the scan.

      1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.

      2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

      3. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

p. After test completion the contractor shall prepare a written report to record the following:

   i. Procedures used.

   ii. Results that comply with requirements.

   iii. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

q. Cables will be considered defective if they do not pass tests and inspections.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

4. Grounding and Bonding for Electrical Systems

a. This Section includes grounding systems and equipment, plus Ground bonding common with lightning protection system.

b. The contractor shall provide plans showing dimensioned as-built locations of grounding features including the following:
   i. Ground rods.
   ii. Ground rings (if applicable).

c. Contractor will be responsible to provide field quality-control reports.

d. Comply with UL 467 for grounding and bonding materials and equipment.

e. All insulated conductors shall be copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

f. Bare Copper Conductors shall be stranded Conductors following ASTM B 83 or Tinned Conductors as per ASTM B 33.

g. Bonding cable shall be No. 4 or No. 6 AWG, stranded conductor.

h. Switchboard bus bar shall be as minimum predrilled rectangular bars of annealed copper, 1/4 by 4 inches (6.3 by 100 mm) in cross section, with 9/32-inch (7.14-mm) holes spaced 1-1/8 inches (28 mm) apart. Stand-off insulators for mounting shall comply with UL 891, 600 V. Lexan or PVC, impulse tested at 5000 V.

i. Connector shall be listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

j. Underground connections to ground rods or ground rings shall be welded with exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions. All welding or splicing points shall be accessible via ground access wells or inspection boxes as required to provide adequate access for testing and inspection, but not less than the minimum size below:

   i. Round wells: not less than 8 inches in diameter.

   ii. Rectangular wells: not less than 12 by 12 inches.

   iii. Depth: as required to extend below the frost line to prevent frost upheaval, but not less than 10 inches.

k. Connections to bus bars shall be mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

l. Grounding electrodes shall be Copper-clad steel 3/4 inch in diameter by 10 feet (19 mm by 3 m).

m. Install solid conductor for No. 10 AWG and smaller, and stranded conductors for No. 8 AWG and larger unless otherwise indicated.

n. Underground Grounding Conductors shall be bare copper, No. 2/0 AWG minimum, and buried at least 30 inches (750 mm) below grade.

o. The grounding underground distribution system shall comply with IEEE C2 grounding requirements.

p. For utility Pad-Mounted Transformers and Switches, the contractor shall install ground rods and ground ring around the pad as required by the utility company.

q. For each secondary service disconnect, the contractor shall provide grounding electrode conductor to connect neutral (grounded) service conductor to grounding electrode system as indicated in NFPA 70. Unless otherwise indicated, make connection at neutral (grounded) bus in service disconnect enclosure. For each service disconnect, provide main bonding jumper to connect neutral (grounded) bus to equipment ground bus where not factory-installed. Do not make any other connections between neutral (grounded) conductors and ground on load side of service disconnect.

r. Install insulated equipment grounding conductors with all feeders and branch circuits.

s. Contractor to route grounding conductors along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

t. Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor and install in conduit.

u. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.

v. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells. Make tests at ground rods before any conductors are connected.

i. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.

ii. Perform tests by fall-of-potential method according to IEEE 81.

w. Grounding system will be considered defective if it does not pass tests and inspections. Prepare test and inspection reports.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

5. Hangers and Supports for Electrical

a. Systems This Section includes the minimum requirements for Hangers and supports for electrical equipment, and Construction requirements for concrete bases.

b. All Steel Slotted Support Systems shall comply with MFMA-4, factory-fabricated components for field assembly.

c. Raceway and Cable Supports shall follow NECA 1 and NECA 101 descriptions.

d. For conduit and cable support devices use Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.

e. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.

f. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.

g. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
   i. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened Portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

ii. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened Portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.

iii. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.

iv. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.

v. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.

vi. Toggle Bolts: All-steel springhead type.

vii. Hanger Rods: Threaded steel

h. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems.

i. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.

j. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits. Secure raceways and cables to these supports with two-bolt conduit clamps.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

6. Raceway and Boxes for Electrical Systems

a. Refer to UTA Standard Specification book 2024, SP26 05 33.

b. Specification section includes metal conduits and fittings, nonmetallic conduits and fittings, metal wireways, nonmetal wireways, surface raceways, boxes, enclosures and cabinets.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

7. Electrical Boxes and Fittings

a. Refer to UTA Standard Specification book 2024, SP26 05 34.

b. Specification section includes Junction boxes, pull boxes and fittings to be implemented during construction.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

8. Underground Ducts and Raceways for Electrical Systems

a. This section includes providing conduits as shown on the Drawings and as specified herein. Each conduit consists of ducts and fittings. Conduit construction includes excavation, installation and backfill.

b. All conduits shall be PVC Schedule 40 as minimum or as indicated in drawings.

c. Ducts, fittings, and labels shall comply with Section 10

d. Duct spacers shall be plastic, lock together, and sized to create clear spaces between ducts as indicated on the contract drawings. Acceptable manufacturers: Carlon, PW Pipe, or equal.

e. Install yellow warning tape 6 to 12 inches above conduit.

f. Warning Tape shall be heavy-gauge, yellow, and plastic, for direct burial, 6-inch minimum width for use in trenches containing electric circuits. Tape shall be made of material resistant to corrosive soil. Tape shall have printed warning that an electric circuit is located below the tape. Approved manufacturers and types: ITT Blackburn Type YT, Griffolyn Co., Terra-Tape, or equal.

g. The designer/contractor shall coordinate the installation of underground conduits with other construction work. Maintain any existing utilities in operation unless otherwise directed by the Project Manager.

h. Concrete encasement shall be limited to the neat lines shown on the Contract Drawings. The Designer/Contractor shall be responsible for coordinating placement of the concrete with other work. If the conduit conflicts with other work, it shall be relocated by Contractor.

i. Protect and maintain all new or existing benchmarks or other reference points necessary for the completion of the work.

j. All ducts shall have a nylon pull-cord installed and secured at each end. Identify each duct at each end with brass tags inscribed or stamped with the circuit number shown on the Drawings. Attach the tag with a sunlight resistant nylon tie.

k. Provide a minimum cover of 36 inches over all underground duct bank unless otherwise indicated.

l. Excavations shall be dewatered and cleaned prior to duct and concrete placement.

m. Provide a compacted base under the conduit.

n. The Contractor's QC Inspector in accordance with the Contractor's QC procedures shall inspect conduits.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

9. Sleeves And Sleeve Seals for Electrical Raceways and Cabling

a. This section includes sleeves for raceway and cable penetration of non-fire-rated construction walls and floors, sleeve-seal systems, sleeve-seal fittings, grout and silicone sealants.

b. Sleeves:

i. Wal Sleeves: Steel pipe sleeves: ASTM A 53/A 53M, Type E, Grade B Schedule 40, zinc coated, plan ends

ii. Sleeves for conduits penetrating Non-Fire Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs with screw-fastening the sleeve to the board

iii. Sleeves for Rectangular Openings: Galvanized sheet steel material.

c. Sleeves-Seal Systems

i. Modular sealing device, designed for field assembly, to fill annual space between sleeve and raceway or cable.

ii. Sealing elements: EPDM rubber interlocking links shaped to fit surface of pipe.

iii. Pressure plates: Carbon steel

iv. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating, of length required to secure pressure plates to sealing elements.

d. Sleeve-Seal Fittings

i. Manufactured plastic, sleeve-type, water stop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.

e. Grout
   i. Non-shrink, recommended for interior and exterior sealing openings in non-fire rated walls or floors.

   ii. ASTM C 1107/C 1107M, Grade B, post-hardening and volume adjusting, dry, hydraulic-cement grout.

   iii. Design Mix: 5000-psi, 28-day compressive strength.

f. Silicone Sealants

   i. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:

      1. Grade: Pourable formulations for openings in floors and other horizontal surfaces that are not fire rated.

      2. Sealants shall comply with the testing and product requirements the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers"

      3. Silicon Foams: Multicomponent, silicone-based liquid elastomers.

g. Sleeve installation for non-fire rated electrical penetrations:
   i. Comply with NECA 1, NEMA VE 2 for cable tray and cable penetrations

   ii. Sleeves for Conduits Penetrating Above-Grade Non-Fire Rated Concrete and Mansory-Unit Floors and Walls:

      1. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant, seal space outside sleeves with mortar or grout.

      2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.

      3. Size pipe sleeves to provide ¼ inch annular clear space between sleeve and raceway.

4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used.

h. Sleeve-seal system installation

i. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on grade at raceways entries into building.

ii. Install type and number of sealing elements recommended by manufacturer for raceway and cable material and size.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

10. Identification for Electrical Systems

a. This section includes providing identification labels for raceways, power and control cables, conductors, underground-line warning tape, warning labels and signs, instruction signs, equipment identification labels and miscellaneous identification products.

b. Power and control raceway, armored and metal-clad cable identification materials:

i. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size, cable size.

ii. Colors for raceway carrying circuits at 600V or less: Black letters on an orange field. Indicate voltage and system or service type in legend.

iii. Self-Adhesive Vinyl Tape for armored and metal-clad cable: Colored, heavy duty, waterproof, fade resistant, 2 inches wide, compounded for outdoor use.

c. Power and control and control cable identification materials:

i. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size, cable size.

ii. Vinyl Labels: Preprinted, flexible label laminated with a clear, weather and chemical-resistant coating.

iii. Write-On Tags: Polyester tag, 0.015 inch thick with corrosion-resistant grommet and cable tie for attachment to conductor or cable.

d. Conductor identification materials:

i. Color-Coding Conductor tape: Colored, self-adhesive vinyl type not less than 3 mils thick by 1 to 2 inches wide

ii. Self-Adhesive, Self-Laminating Polyester Labels: Preprinted, 3 mil thick flexible label with acrylic pressure-sensitive adhesive. Labels sizes to fit the conductor diameter.

iii. Write-On Tags: Polyester tag, 0.015 inch thick with corrosion-resistant grommet and cable tie for attachment to conductor or cable.

e. Underground-Line Warning Tape: Tape: Recommended by manufacturer for the method of installation and suitable to identify and locate underground and electrical and communication utility lines.

i. Printing tape shall be permanent and shall not be damaged by burial operations

ii. Table material and ink shall be chemically inert.

iii. Color and Printing: Comply with ANSI Z535.1 through ANSI Z535.5.

f. Warning Labels and Signs:

i. Comply with NFPA 70 and 29 CFR 1910.145

ii. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels.

iii. Baked-Enamel Warning Signs: Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend and size required for application. Nominal size, 7 by 10 inches.

g. Instruction Signs:

i. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes. Engraved legend with black letters on white face. Punched or drilled for mechanical fasteners and framed with mitered acrylic molding and arranged for attachment at applicable equipment.

ii. Adhesive Film Label: Machine printed in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.

h. Equipment Identification Labels

i. Adhesive Film Label: Machine printed in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch

ii. Adhesive Film Label with Clear Protective Overlay: Machine printed in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV resistant seal for label.

iii. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

iv. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch.

i. Installation

i. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.

ii. Apply identification devices to surfaces that require finish after completing work

iii. Self-Adhesive Identification products

iv. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

v. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

vi. Underground-line warning tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finish grade.

vii. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication and control wiring and optical fiber cable. Install underground-line warning tape for all underground electrical lines.

viii. Equipment Identification Labels: On each unit of equipment. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and rack of each system.

1. Equipment to be labeled are: Panelboards, enclosures and electrical cabinets, access doors and panels for concealed electrical items, switchboards, transformers, emergency system boxes and enclosures, enclosed switches, enclosed circuit breakers, enclosed controllers, push button stations, contactors, remote-controlled switches, and control devices, monitoring and control equipment.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

11. Lightning Protection

a. To safeguard the infrastructure against lightning strikes, it is required a comprehensive lightning protection system in accordance with manufacturer recommendations and relevant standards and codes, including building codes, and NFPA 780.

b. The system shall encompass air terminals, down conductors, grounding electrodes, and surge protection devices to minimize potential damage and operational disruptions.

c. The risk of lightning strikes in the facility's location shall be assessed and consider factors such as building height, materials, and local climate to optimize the protection system's effectiveness.

d. Design documents shall require testing and verification of installed lightning protection systems.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

12. Panelboards

a. Interchangeability: Components of the same type size rating, functional characteristics and make are to be interchangeable.

b. Finish for enclosures:

   i. Clean and degrease metallic surfaces.

   ii. Prime with zinc primer.

   iii. Finish with one coat of light-gray enamel, ANSI Z55.1, Color 61. Minimum dry-film thickness: Two mils.

c. Circuit Breaker: NEMA AB1, UL 489, molded-case, bolt-on, quick- make/quick-break, mechanically trip-free switching mechanism, with magnetic trip only for instantaneous

short-circuit protection. Shunt-trip device for tripping by ground-fault relay as shown. Frame size 225 amperes and above equipped with adjustable magnetic-trip unit. Designed to carry continuous rating in ambient temperature of 40 degrees Celsius with the following parameters:

i. Number of poles.

ii. Rated voltage.

iii. Rated interrupting current.

iv. Trip setting.

v. Frame size.

d. Panelboard:

i. Enclosure:

1. Surface-mounted unless otherwise shown.

2. NEMA 250 Enclosure Type:

3. Conditioned space above grade: Type 1.

4. Open shop areas: Type 12

5. Exterior, exposed: Type 4X

6. Outside non-conditioned electrical rooms: Type 4X.

7. Gutter size:

Main Bus Rating (A)	Min Top and Bottom Gutter Size (In)	Min Side Gutter Size (In)
100 & below	4	4
225	6	4
400 & over	8	4

8. Interior components mounted on back plate of reinforced steel for rigid support and accurate alignment.

9. Provide latch and handle in accordance with UL 50; screw fastenings will not be accepted in lieu of latch.

10. Provision for enclosure grounding.

ii. Busbars:

1. ASTM B187/B187M-06.

2. 98-percent-conductivity copper.

3. Contact surface silver-plated or tin-plated.

4. Rating of neutral and ground bus: Equal to that of phase bus.

5. Neutral bus mounted on insulating block.

6. Neutral and ground busbars equipped with integral mechanical connectors.

iii. AC panelboards:

1. Conform to NEMA PB 1.

2. Type of service: Three-phase, four-wire, 277/480 volt or 120/208 volt.

3. Type of main: Main lugs or circuit breakers as required, conforming to requirements specified, located at top or bottom as necessary

4. Branch circuit: Circuit breakers as required.

5. Circuit breaker: Trip device coordinated with that of Upstream circuit breakers to provide selective tripping.

6. Suitable for service entrance where necessary.

iv. DC Panelboard:

1. Type of service: 600-volt dc, two-wire.

2. Type of main: Two-pole circuit breaker, 400-ampere frame, 400- ampere trip and 10,000-ampere interrupting capacity.

3. Branch circuit: Two-pole circuit breakers, 100-ampere frame and 10,000-ampere interrupting capacity, in accordance with specified requirements, minimum quantity of 2 per 20A, 30A, and 50A trips.

4. Enclosure finish: As specified above except color to be OSHA red.

v. Emergency-power panelboard:

1. NEMA PB1, UL 67, circuit breaker type, unless shown otherwise.

2. Enclosure:

a. Galvanized steel, surface mounted.

b. Above-ground indoor locations and electrical rooms: NEMA 250, Type 1.

c. Minimum of four inches side gutter and six inches top and bottom gutter.

d. Mounting channel drilled and tapped to accommodate any combination of fused switch.

3. Busbar:

a. ASTM B187/B187M-06.

b. 98-percent-conductivity copper.

c. Contact surface silver-plated or tin-plated.

d. Rating of neutral and ground bus: Equal to that of phase bus.

e. Neutral bus mounted on insulating block.

f. Drilled and tapped to accommodate any combination of fused switch unit.

g. Neutral and ground bus equipped with integral mechanical connectors.

4. Type of service: As required.

5. Type of mains: Main lugs or main circuit breaker as shown, located at top or bottom as necessary.

6. Branch circuit: Equipped with circuit breakers, number of circuits as required.

e. Nameplates:

i. Three-ply, laminated phenolic plates engraved through black face to white core and attached by stainless-steel rivets or screws.

ii. Lettering: Vertical gothic using round or square cutter. V- shape groove is prohibited.

iii. Each panelboard labeled with nameplate one-inch-high bearing ½ inch high inscriptions as appropriate.

iv. Nameplate for emergency-power panelboard to bear inscription EMERGENCY POWER.

f. Install panelboards at locations shown, with bottom not less than 12 inches above floor. Use multiple section panelboards to meet such spacing if necessary.

g. Mount panelboards with front straight and plumb.

h. When feeder serves more than one panelboard or panelboard section, install separate junction box or provide adequate gutter area for termination of feeders and bus taps.

i. Connect branch circuit wires as shown. Connect neutral wire of branch circuit to neutral bar in panelboard.

j. Make power cable connections to circuit breakers, integrally fused circuit breakers, fused switch units, neutral and ground bus bars in panelboard and load centers and enclosed circuit breakers by means of integral mechanical connectors. If such items are not furnished with integral mechanical connectors, make connections using compression connectors.

k. Apply matching touch-up paint where necessary.

i. Engage a qualified testing and inspection agency to ensure that the work is in conformance with applicable specifications and perform tests required by this specification.

m. Submit test procedures in accordance with the Contract documents for approval and perform approved tests. Do not perform tests without approved test procedure. Furnish the equipment, personnel to perform the following tests:

i. Molded-case circuit breakers: Perform pole-to-pole and pole-to- ground insulation resistance tests with 1,000V dc megger. Insulation resistance to be 50 me ohms minimum.

ii. Panel boards and load centers: Perform insulation-resistance tests of each bus section phase-to-phase and phase-to-ground for one minute using 1,000V megger. Insulation resistance to be not less than manufacturer's recommended minimum or two me ohms minimum.

iii. Test circuit connections in accordance with wiring diagram.

iv. Test panelboard and load-center enclosures for continuity to grounding system.

v. Check cable connections to circuit breakers and fused switch unit for tightness.

vi. Check setting of adjustable magnetic trips for compliance with approved coordination study.

n. Submit certified test reports.

o. Submit Operation and Maintenance Manual.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

13. Wiring Devices

a. Snap Switches:

i. Comply with UL 20, FS-W-S-896, and NEMA WD1, specification grade.

ii. Rating:

1. Twenty amperes at 120-277 Volts AC.

2. Horsepower-rated when used as disconnecting device for motor circuit.

iii. Body and base: Fully enclosed, brown, fire-resistant, non- absorptive thermosetting urea or nylon.

iv. Contacts: Silver alloy.

v. Mounting yoke: Corrosion-resistant metal with plaster ears.

vi. Poles: Single-pole, double-pole, three-way or four-way.

b. Receptacles and Plugs:

i. Comply with UL 498, FS-W-C-596, and NEMA WD1, specification grade.

ii. Rating: 20 amperes at 125 or 250 Volts as shown.

iii. Base and body: Brown, fire-resistant, non-absorptive thermosetting urea or nylon.

iv. Receptacles:

1. Outlet: Single or duplex as shown.

2. Mounting yoke: Corrosion-resistant metal with plaster ears.

3. Configuration:

Rating	NEMA Configuration
2-pole, 3-wire, 20A, 125V	5-20 R
2-pole, 3-wire, 20A, 250V	6-20 R

c. For use in restroom; water service room; locker room; wash rooms; elevator machine room, pit and hoistway; and outdoor locations: Equipped with solid-state ground-fault circuit interrupter with five- milliampere trip level.

d. Plugs: Configuration and design:

Rating		NEMA Configuration
2-pole, 3-wire, 20A, 125V	Urea or neoprene w/ cord grip	5-20 P
2-pole, 3-wire, 20A, 250V	Armored cap w/ cord grip	6-20 P

e. Wall Plates:

i. NEMA WD1, suitable for specified receptacles and switches, size suitable for recess-mounted or surface-mounted associated outlet box, stainless steel, ASTM A276-00a, Type 304, or approved equal.

ii. For use in indoor public areas: Bronze, with M32 medium satin finish.

iii. For above ground indoor service areas and electrical rooms: Steel, stainless steel or aluminum plate, as standard with the manufacturer.

iv. For receptacles in outdoor locations, except electrical rooms: Stainless steel, ASTM A276-00a, Type 304, wall plate with gasketed spring- loaded hinged cover.

f. Lighting Contactors:

i. NEMA ICS 2, UL 508, electrically held, equipped with silver-alloy contacts, designed to control incandescent, tungsten, halogen, fluorescent, high-intensity discharge lamp load.

ii. Number of poles: As required.

iii. Continuous current rating: As required.

iv. Line and load voltage: 480-Volt or 208-Volt three-phase or 277-Volt or 120-Volt single-phase.

v. Control coil rated 120 Volts.

vi. 480-Volt or 277-Volt to 120-Volt control transformer fused on secondary and primary as required.

vii. Control:

1. Heavy-duty, three-position selector switch with positions labeled HAND/OFF/AUTO for lights controlled by SCADA RTU. Provide additional contacts as required for SCADA monitoring.

2. ON-OFF push button for indoor lights.

viii. Enclosure: NEMA 250, Type 1; fabricated from steel, cleaned, degreased, primed with zinc primer and finished with light-gray enamel, ANSI Z55.1, Color 61; minimum dry-film thickness, two mils.

ix. Contactor status auxiliary relay for SCADA: 10 amp dry contacts, 2 pole, DPDT, voltage as required.

g. Photoelectric Control:

i. The use of photoelectric cell to control lights may be acceptable in special cases and shall be specifically approved by UTA.

ii. UL 773, designed to respond to natural daylight with 15-second inherent delay to prevent functioning due to sudden bright light such as vehicle lights or lightning and to operate in ambient temperature from minus 40°C to plus 60°C.

iii. Adjust to turn lights ON at two plus-or-minus one foot-candles, unless otherwise specified. ON to OFF ratio: One to three.

iv. Rating: 1,800VA at 120 Volts or 277 Volts, 60 Hertz.

v. Contacts: For control of outdoor lights: SPST, NC contact.

vi. Cells: Hermetically sealed.

vii. Enclosure: Weatherproof and tamper proof aluminum or non- metallic enclosure equipped with locking receptacles when mounted on fixture or designed for mounting on outlet box as necessary.

h. Limit Switches:

i. NEMA ICS 2, industrial control.

ii. Suitable for mounting in folding-gate cabinet. Switch contacts closed when cabinet door is fully closed and latched. Switch contacts opened when respective cabinet door is not fully closed.

iii. Voltage rating: 120 Volts AC.

iv. Current rating: 10-amperes continuous.

v. Enclosure: NEMA 250, Type 13.

vi. Actuator: Lever-operated and adjustable, with spring return.

vii. Mounting: Plug-in type with receptacle tapped for conduit size as shown or required.

viii. Contacts: Single-pole double-throw; one NO, one NC; snap action.

ix. Enclosure:

1. NEMA 250, Type 1, steel, surface-mounted.

2. Hinged flush front door with catches and spring-loaded door pull.

3. Finish: Metallic surfaces cleaned and degreased, primed with zinc primer and finished with one coat of light-gray enamel, ANSI Z55.1, Color 61; minimum dry-film thickness, two mils.

i. Occupancy Sensor:

i. UL 508, passive infra-red motion detector designed for wall mounting over single-gang outlet box, minimum radio frequency interference and use with incandescent and fluorescent lighting fixtures and electronic ballasts.

1. Use dual-technology (both passive infrared and ultrasonic) occupancy sensors for toilets, locker rooms, enclosed office spaces, conference rooms, control rooms, and electric rooms. Select sensors that automatically adjust time delay and sensitivity to accommodate changing occupancy patterns.

ii. Voltage rating: 120-277 Volts AC.

iii. Switching capacity:

iv. 120-Volt operation: 800 watts minimum.

v. 277-Volt operation: 1,500 watts minimum.

vi. Coverage area: 1,000 square feet.

vii. Detection zone:

1. Horizontal: 180 degrees.

2. Vertical: 5 degrees.

viii. Ambient light sensing: Photocell for preventing operation of lights at ambient light levels above an adjustable setting.

ix. Adjustments: Adjustable settings for time delay, sensitivity and light level concealed by tamper proof cover. Time delay adjustable from 10 seconds to 15 minutes after motion stops.

x. Operating mode: OFF/AUTO.

xi. Detection indicator: LED.

j. Install cover plates on switches and receptacles.

k. Install cover plate with gasketed spring-loaded cover, on each receptacle in outdoor and underground locations except electrical rooms.

l. Make power cable connections to snap switches, plugs, occupancy sensors, photoelectric controls, receptacles, automatic transfer switches and lighting contactors by means of integral mechanical connectors. If such items are not furnished with integral mechanical connectors, make connections using compression connectors.

m. Make power cable connections to snap switches and receptacles using their side screw wiring connection terminals.

n. Apply matching touch-up paint as necessary.

o. Furnish necessary test equipment and perform the following in the presence of the UTA representative, in accordance with approved procedures:

i. Test time switches, receptacles, and contactors for connection in accordance with wiring diagram.

ii. Test equipment enclosure for continuity to grounding system.

iii. Check tightness of cable connections of snap switches, receptacles, time switches, occupancy sensors, disconnect switches, lighting contactors and limit switches.

iv. Test operation of circuits and controls of switches, occupancy sensors, receptacles and contactors.

p. Submit certified test reports for compliance with field quality control requirements.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

14. Enclosed Switches and Circuit Breakers

a. Interchangeability: Components of the same type size rating, functional characteristics and make are to be interchangeable.

b. Finish for enclosures for enclosed circuit breakers and switches:

i. Clean and degrease metallic surfaces.

ii. Prime with zinc primer.

iii. Finish with one coat of light-gray enamel, ANSI Z55.1, Color 61. Minimum dry-film thickness: Two mils.

c. Disconnect (Safety) Switches:

i. UL 98, NEMA KS1, heavy-duty, fusible or non-fusible as required.

ii. UL 489, enclosed molded-case switch; permitted for non-motor loads only.

iii. Voltage rating: 240 Volts AC, 480 Volts AC or 600 Volts DC as necessary.

iv. Number of poles and current rating: As shown and as necessary.

v. Fuses:

1. UL 198D.

2. For fused disconnect switch associated with motor load: UL Class RK5 with time delay.

3. For fused disconnect switch associated with other loads: UL Class RK1.

4. Current rating: As required.

vi. Enclosure:

1. Type:

a. For aboveground indoor locations and electrical rooms: Type 1.

b. For outdoor locations: Type 3R or Type 4X.

2. Materials:

a. Steel sheet: ASTM A507-00.

b. Malleable iron: ASTM A47/A47M-99.

c. Finish: Metallic surface cleaned, degreased, primed with zinc primer and finished with light-gray enamel, ANSI Z55.1, Color 61; minimum dry-film thickness, two mils.

viii. Quick-make/quick-break switching mechanism with operating handle external to enclosure with positions labeled ON/OFF and capable of being padlocked in OFF position, defeatable interlock to prevent opening of enclosure door when switch is closed.

d. Enclosed Circuit Breaker (with thermal magnetic overload):

i. NEMA AB1.

ii. Circuit breaker: As shown and as specified. Overcurrent trip device coordinated to provide selective tripping under overload conditions.

iii. Enclosure:

1. Galvanized steel, surface-mounted, unless otherwise shown.

2. Type:

a. Above-ground indoor locations and electrical rooms: NEMA 250, Type 1 or Type 12.

b. Outdoor locations: NEMA 250, Type 3R.

e. Enclosed Circuit Breaker (with magnetic trip for motor protection only):

i. NEMA AB1.

ii. Circuit breaker: As shown and as specified. Overcurrent trip device coordinated to provide selective tripping under overload conditions.

iii. Enclosure:

1. Stainless steel, surface-mounted, unless otherwise shown.

2. Type: Above-ground indoor locations and electrical rooms:

iv. NEMA 4X. Outdoor locations: NEMA 250, Type 3R.

f. Nameplates:

i. Three-ply, laminated phenolic plates engraved through black face to white core and attached by stainless-steel rivets or screws.

ii. Lettering: Vertical gothic using round or square cutter. V- shape groove is prohibited.

iii. Each panelboard labeled with nameplate one-inch high bearing ½ inch high inscriptions as appropriate.

iv. Nameplate for emergency-power panelboard to bear inscription EMERGENCY POWER.

g. Make power cable connections to circuit breakers, integrally fused circuit breakers, fused switch units, neutral and ground bus bars in enclosed circuit breakers by means of integral mechanical connectors. If such items are not furnished with integral mechanical connectors, make connections using compression connectors.

h. Apply matching touch-up paint where necessary.

i. Submit test procedures in accordance with the Contract documents for approval and perform approved tests. Do not perform tests without approved test procedure. Furnish the equipment, personnel to perform the following tests:

i. Check cable connections to circuit breakers and fused switch unit for tightness.

ii. Check setting of adjustable magnetic trips for compliance with approved coordination study.

j. Submit certified test reports

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

15. Surge Protective Devices for Low-Voltage Electrical Power Circuits

a. Manufacturer' Warranty: Manufacturer agrees to replace or replace Surge Protective Device (SPD)s that fail in materials or workmanship within specified warranty period.

b. Internal thermal protection that disconnects the SPD before damaging internal suppressor components.

c. Indicator light display for power and protection status.

d. All SPDs shall comply with UL 1449 and UL 1283.

e. Form-C contacts rated at 5 A and 250-V ac, one normally open and one normally closed, for remote monitoring of protection status. Contacts shall reverse on failure of any surge diversion module or on opening of any current-limiting device. Coordinate with building power monitoring and control system.

f. The Maximum continuous operating voltage shall be the nominal system voltage.

g. Peak Surge Current Rating: The minimum single-pulse surge current withstand rating per phase shall not be less than the maximum kA rating determined by the coordination study, 200 kA minimum. The peak surge current rating shall be the arithmetic sum of the ratings of the individual Metal-oxide varistors in a given mode.

h. Protection modes and UL 1449 VPR shall not exceed the following:

Circuit Type	Line to Neutral (V)	Line to Ground (V)	Neutral to Ground (V)	Line to Line (V)
480Y/277V	1200	1200	1200	2000
208Y/120V	700	700	700	1200
240/120V	700	700	700	1200

i. Short-circuit current rating: Equal or exceed 200 kA

j. Nominal Rating: 20 kA

k. Service Entrance and Transfer Switch Suppressors shall be integral to the disconnect switch and contain a Surge Counter.

l. Indoor Enclosures: NEMA 250, Type 1.

m. Outdoor Enclosures: NEMA 250, Type 4X.

n. Installation shall comply with NECA 1.

o. Install an Overcurrent protective device or disconnect as required to comply with the UL listing of the SPD.

p. Install SPDs with conductors between suppressor and points of attachment as short and straight as possible and adjust circuit-breaker positions to achieve shortest and straightest leads. Do not splice and extend SPD leads unless specifically permitted by manufacturer. Do not exceed manufacturer's recommended lead length. Do not bond neutral and ground.

q. Use crimped connectors and splices only. Wire nuts are unacceptable.

r. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
   i. Compare equipment nameplate data for compliance with Drawings and Specifications.
   ii. Inspect anchorage, alignment, grounding, and clearances.
   iii. Verify that electrical wiring installation complies with manufacturer's written installation requirements.

s. Complete startup checks according to manufacturer's written instructions.

t. Do not perform insulation-resistance tests of the distribution wiring equipment with SPDs installed. Disconnect SPDs before conducting insulation-resistance tests and reconnect them immediately after the testing is over.

u. Submit test and inspection reports.

v. Energize SPDs after power system has been energized, stabilized, and tested.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

16. Electrical Power Monitoring and Control Monitoring

a. This section includes equipment and systems used to monitor and control electrical consumption.

b. Contractor shall submit shop drawings for power monitoring and control equipment that include plans, elevations, sections, attachment details and details of equipment assemblies. Indicate dimensions, method of field assembly, components, and location and size of each field connection.

c. Coordinate features of distribution equipment and power monitoring and control components to form and integrated interconnection of compatible components.

d. Microprocessor-based monitoring and control of electrical power distribution system(s) that includes the following:
   i. Electrical meters that monitor, control, and connect to the data transmission network.

   ii. LAN: High-speed, multi-access, open, nonproprietary, industry-standard communication protocols. The electrical power monitoring and control system shall be Internet based.

e. The electrical power monitoring and control system shall be Internet based.

f. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

g. UL Compliance: Listed and labeled as complying with UL 61010-1.

h. Surge Protection: For external wiring of each conductor entry connection to components to protect components from voltage surges originating external to equipment housing and entering through power, communication, signal, control, or sensing leads.

i. Addressable Devices: All transmitters and receivers shall communicate unique device identification and status reports to monitoring and control clients.

j. Backup Power Source: Electrical power distribution equipment served by a backup power source for controls shall have associated power monitoring and control system products that monitor and control such systems and equipment also served from a backup power source.

k. Multifunctioning Energy Meters
   i. Multifunction Energy Meter: Separately mounted, modular, permanently installed, solid-state, digital I/O instrument for power and energy metering and monitoring; complying with UL 61010-1.
   ii. Accuracy:
      1. Comply with ANSI C12.20, Class 0.5.
      2. Neutral Current Measurement: Not more than 65 percent.
      3. Power Factor: 100 percent.
      4. Frequency: 10 percent.
      5. THD: 10 percent.
      6. Waveform Sampling: 64 per cycle
   iii. Data Link
   iv. RS-485 Modbus, RTU protocol, 4-wire connection to host devices with a compatible port or TCP/IP.
   v. Meter Physical Characteristics:
      1. Display: Backlit LCD with antiglare and scratch-resistant lens.
      2. Display of Metered Values:
         a. One screen to show at least [three] user-selected values displayed at the same time. Selections available to display shall include the following:

i. All meters.
ii. Measurements.
iii. THD.
iv. Energy.
v. Demand.
vi. Minimum and maximum values.
vii. Power demand

vi. Meters:
1. Instantaneous, rms:
a. Current: Each phase, three-phase average.
b. Voltage: L-L each phase, L-L three-phase average.
c. Active Power (kW): Each phase and three-phase total.
d. Reactive Power (kVAR): Each phase and three-phase total.
e. Apparent Power (kVA): Each phase and three-phase total.
f. Power Factor: three-phase total.
2. Energy:
a. Active Energy (kWh): Three-phase total.
3. Demand, Derived from Instantaneous rms Meters:
a. Current: Present and maximum.
b. Active: Present and maximum.
c. Reactive: Present and maximum.
d. Apparent: Present and maximum.
4. Power Quality Measurements:
a. THD: Current and voltage from measurements simultaneously from the same cycle, as can be calculated from the specified sampling rate.

i. Power Meters
i. Meter Physical Characteristics:
1. Display: Backlit LCD with antiglare and scratch-resistant lens.
2. Display of Metered Values: One screen to show at least four lines of user-selected values on one screen at the same time. Provide graphical representation of user-selected values. The screen selections available at the display shall include the following:
a. All meters, including those listed under the following:
b. Measurements.
c. THD.
d. Energy.
e. Demand.
f. Minimum and maximum values.
g. Power demand.
ii. Accuracy:
1. Comply with ANSI C12.20, Class 0.5.
2. Eight paragraphs below exceed requirements of ANSI C12.20.
3. Neutral Current Measurement: Not more than 65 percent.
4. Power: 60 percent.

5. Power Factor: 50 percent.
6. Active Energy: 60 percent.
7. Reactive Energy: 250 percent.
8. Frequency: 5 percent.
9. THD: 100 percent.
10. Waveform Sampling: 32 per cycle.

iii. Meters: Measurements:
1. Instantaneous, in real time, rms to the 15th harmonic.
a. Voltage: L-L each phase and three-phase average.
b. Current: Each phase, three-phase average.
c. Unbalanced current, L-L V.
d. Active Power (+/- kW): Each phase and three-phase total.
e. Reactive Power (+/- kVAR): Each phase and three-phase total.
f. Apparent Power (+/- kVA): Each phase and three-phase total.
g. Displacement Power Factor: Each phase and three-phase total.
h. Distortion Power Factor: Each phase and three-phase total.
i. Frequency.
2. THD from measurements simultaneously from the same cycle, through 15th harmonic.
a. Voltage THD: L-L each phase and three-phase average.
b. Current THD: Each phase and three-phase average.
c. Total demand distortion.
3. Energy: Accumulated, indicate whether in-flow or out-flow, net and absolute values. Store the values in instrument's nonvolatile memory.
a. Active kWh.
b. Reactive kVARh.
c. Apparent kVAh.
4. Demand: Present, last, predicted, peak.
a. Three-phase average current.
b. Three-phase total active power (kW).
c. Reactive power (kVAR).
d. Apparent power (kVA)

m. Power monitoring and control equipment shall be able to communicate to the current UTA monitoring software

n. Networked PC operating system software: System software shall monitor, analyze, display, control, and save parameters and features available at each of the connected meters. System software minim requirements shall be coordinated with UTA IT department.

o. Power monitoring and control software:
i. Data Storage and Sharing:
1. Query and download logs of interval data stored on metering devices.
2. Query and download logs of alarm and event data stored on metering devices.
3. Query and download logs of waveform capture data stored on metering devices.

4. Query and download logs of interval data generated by the software and calculated by the meters.
5. Query and download logs of alarm and event data generated by the software and calculated by the meters.
6. Automatically re-arm the waveform recorders, on upload of information.
7. Provide a facility to archive, trim, and back up the database on demand, or on a schedule.
8. Provide a facility to view historical data from archived databases.
9. Support user changes to the database.

p. Monitoring and control of power distribution equipment
   i. Power Distribution Equipment: Web-enabled, direct connection the LAN or intranet.
   ii. Instrument Transformers: Comply with IEEE C57.13.
      1. Potential Transformers: Secondary voltage rating of 120 V and NEMA C12.11 accuracy class of 0.3 with burdens of W, X, and Y.
      2. Current Transformers: Burden and accuracy class suitable for connected relays, meters, and instruments.
   iii. Ethernet Connectivity:
      1. A multipoint, RS-485 Modbus serial communications network shall be included within the equipment to interconnect breaker trip units, protective relays, drives, and metering devices equipped with communications.
      2. Serial communications network shall be wired to an Ethernet server in the incoming section of the equipment. Hardware and cabling required for the connection to the network shall be included within the power distribution equipment.
      3. Serial communications devices within the equipment shall be factory addressed and tested to verify reliable communications to the equipment's Ethernet Server.
   iv. Distribution Equipment Monitoring:
      1. Main menu and summary pages, factory configured, to display data for each communicating device within the power equipment lineup.
      2. Display Data:
         a. Circuit summary page to display circuit name, three-phase average rms current, real power (kW), power factor, and breaker status (if applicable)
         b. Load current summary page to display circuit name, and phase a, b, and c rms current values.
         c. Demand current summary page to display circuit name, and phase a, b, and c average demand current values.
         d. Power summary page to display circuit name, present demand power (kW), peak demand power (kW), and recorded time and date.
         e. Energy summary page to display circuit name, real energy (kWh), reactive energy (kVARh), and time/date of last reset.

q. Raceway and Boxes: Comply with requirements in Section 6 for electrical power wiring and NFPA 70 Class 1 remote-control and signaling circuits.

r. Suge Protection Devices

i. SPDs: Comply with UL 1449
ii. SCCR: Equal or exceed 100kA.
iii. Outdoor Enclosures: NEMA 250, Type 4X

s. Power Monitoring and Control System Installation
   i. Wiring Method: Install cables in raceways and cable trays except within consoles, cabinets, desks, and counters. Conceal raceway and cables except in unfinished spaces.

t. Network Naming and Numbering
   i. Coordinate with Owner and provide unique naming and addressing for networks and devices.

u. Grounding
   i. For data communication wiring, comply with NECA/BICSI 568.
   ii. For low-voltage control wiring and cabling, comply with requirements in Section 4 "Grounding and Bonding for Electrical Systems."

v. Field Quality Control
   i. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
   ii. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
   iii. Perform the tests and inspections with the assistance of a factory-authorized service representative

w. Maintenance Service

   i. Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by manufacturer's authorized service representative. Include semiannual preventive maintenance, repair or replacement of defective components, cleaning, and adjusting as required for proper system operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

x. Demonstration: Train owner's maintenance personnel to adjust, operate, and maintain the power monitoring and control system.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

17. Exterior Lighting
   a. Refer to UTA Standard Specification book 2024, SP26 56 00.
   b. Specification section includes Exterior luminaires, Poles and accessories to be implemented during construction.

This specification is basic minimum criteria to be met in preparing the final specification for this section, which is the responsibility of the Designer.

Exhibit B – Price

Description	Quantity	Rate	Cost
Demolition			
Excavation for conduit	1	$0	$0
Excavation for Switchgear	1	$0	$0
Labor	1	$0	$0
Construction			
Conduit Installation	1	$142,500	$142,500
Concrete Work	1	$142,500	$142,500
Concrete Finishing	1	$31,667	$31,667
Labor	1	$0	$0
Electrical			
Wire installation	1	$162,500	$162,500
Wire material	1	$134,783	$134,783
Switchgear installation	1	$11,375	$11,375
Switchgear material	1	$60,000	$60,000
Charger Installation	1	$20,000	$20,000
Other material	1	$70,727	$70,727
Other Installation	1	$70,727	$70,727
Design			
Civil Design	1	$0	$0
Electrical	1	$15,270	$15,270
Drawings (AIS included)	1	$5,000	$5,000
Administration			
Permitting	1	$20,588	$20,588
Mobilization	1	$37,582	$37,582
Bond & Insurance *(Estimated cost of Performance & Payment Bond package.)*	1	$27,750	$27,750
Overhead & Profit %	1	$0	$0 (included in line items)
TOTALS			$952,970