

SPECIAL PROVISION

EP 000---SYS

Important Notice to Contractors

The Contractor's attention is directed to the fact that this project will require system integration between the various infrastructure components and the streetcar vehicle in order to achieve operations at the streetcar service opening date. The Contractor shall coordinate with the CRRMA in a reasonable manner to integrate the streetcar infrastructure and streetcar vehicles, and will include such integration efforts into its project work and schedule. The integration of the infrastructure and vehicle is a continuous process starting with construction and ending after integration testing. Interface questions shall be routed to the CRRMA for clarification.

Systems Integration testing begins once the Contractor has successfully passed and submitted the approved Acceptance Test Procedures test results by element (e.g. streetcar signals, track, traction power, OCS traffic signals, etc.) that are required by the Contract Documents. System integration testing involves testing activities between the streetcar infrastructure and the streetcar vehicle. The list of testing activities will be developed by CRRMA based on tests to be performed by the Contractor, the vehicle Contractor and the CRRMA as part of the Integration Test Plan. The integrated tests will also be used as part of the Safety Certification process that certifies that the system is ready for operation. The Contractor shall provide input and assistance to the CRRMA during the development of the Integration Test Plan.

Most contractually required tests are conducted prior to the start of integration tests, and some of these test may satisfy the requirements of an Integration Test and may also be used for that purpose. Test procedures for contractually required tests that may also be used for integration testing shall be submitted to the CRRMA for review and approval. The CRRMA will determine whether the test satisfies an integration testing requirement, and if so, the CRRMA may include it as part of the Integration Testing Plan and integration testing period.

The CRRMA is responsible for the coordination of all integration tests, and where a contractually required test is used as an integration test, the CRRMA coordinates with the responsible parties who need to perform, support and witness the test. For the contractually required tests that are included in the Integration Test Plan, the Contractor shall be responsible for performing, i.e. including equipment, test setup, test result documentation and test tear down.

Integrated testing may include, but not be limited to, the following tests:

Track

- Streetcar / Track Ride Quality
- Streetcar / Track Switch Interface

Clearance

- Streetcar / OCS Clearance / Dead Wire
- Streetcar / OCS Clearance / Live Wire

- Streetcar / Maintenance Facility

Platform Tolerances (ADA)

- Streetcar / Station Platform ADA Compliance Interface
- Streetcar / Station Clearance

Overhead Contact System (OCS)

- Streetcar pantograph/ tracking through Overlap / Section Insulator
- Streetcar pantograph / tracking under entire system OCS
- Streetcar pantograph / Maintenance Facility OCS

Compatibility with Maintenance Equipment

- Streetcar / Shop Interface Equipment

Communications

- Streetcar / Radio Communications

Signals

- Streetcar / Train to Wayside Control / Traffic Interface
- Streetcar / Signals track circuit occupancy

Traction Power

- Streetcars / Simultaneous Streetcar Start Test
- Blue Light Visibility Confirmation

Corrosion Control

- Pre and post construction stray current testing

Maintenance Facility

- Streetcar / Maintenance Facility Equipment
- Streetcar / Maintenance Facility Auxiliary Power

Contractor required support is limited to the items that are installed per the Contract Documents. The Contractor shall identify all of the tests, which are described in the Contract documents, in their construction schedule along with the inclusion of a two month period for Integration Support. The integration support time period is the CRRMA's and shall not be used for construction without CRRMA Approval.

Pre-Revenue

Pre-Revenue Operations are not a part of the Integration Test Plan and will be CRRMA responsibility.

Safety Certification

Satisfactory completion of the Systems Integration Tests also provides the basis for certifying that the systems portion of the project is capable of providing safe passenger service.

Safety certification and integration testing are managed separately by the CRRMA, but they complement and reinforce each other and therefore must be coordinated. One of the steps in Safety Certification is to identify integration tests that need to be monitored, as described in the FTA Handbook for Transit Safety and Security Certification (DOT-FTA-MA-90-5006-02-01).

Payment

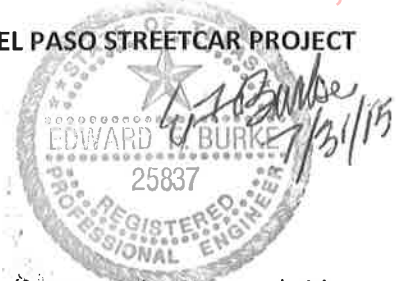
Electrical power for the Startup and Testing will be paid by Force Account.

CAMINO REAL REGIONAL MOBILITY AUTHORITY

EL PASO STREETCAR PROJECT

SPECIAL SPECIFICATION

EP-FENCE GROUND



I-10 Fence Grounding

1. **Description.** This Item shall govern grounding of the decorative railing/fence on the Stanton bridge over IH-10 as indicated on the fence grounding details in the plans.
2. **Materials.** Provide the following materials or approved equivalent (Grounding details called out on Drawing S200):

| Grounding Material | Part Number | Qty. |
|--|---------------------------|-------------|
| Copper ground rod 5/8" x 8 feet w/clamp | | 2 |
| #2 green insulated copper (Strained) conductor [fence to ground rod] | #2 THWN Green | 2 X 10 feet |
| Harger 1/4" two hole insulated bonding jumper kit | GJ67G102A1/4KIT | 2 kit |
| Burndy bonding connector | BCS-23 (Mold # B-2781) | 2 |

3. **Construction.** Construct the materials above in accordance with the plans.
4. **Measurement.** Measure as a lump sum, complete in place as shown on the plans.

Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid at the unit price bid for "Fence Grounding." This price is full compensation for furnishing, preparing, hauling, and installing materials; and for labor, tools, equipment, and incidentals necessary to complete the work.

MSF Fence Grounding

5. **Description.** This Item shall govern grounding of the decorative wrought iron fence surrounding the Maintenance Shop Facility (MSF) as indicated on the fence grounding details in the plans.
6. **Materials.** Provide the following materials or approved equivalent (Grounding details called out on Drawing S200):

| Grounding Material | Part Number | Qty. |
|---|--|-------------|
| Copper ground rod 5/8" x 8 feet w/clamp | | 4 |
| #2 green insulated copper (Strained) conductor [fence to ground rod] | #2 THWN Green | 4 X 10 feet |
| Burndy bonding connector | BCS-23 (Mold # B-2781) | 4 |
| Listed 12" Insulated Wire Rope with listed bonding connectors (each end for gate connection to fence) | By Contractor, #6AWG equivalent minimum size | 4 kits/sets |

7. **Measurement.** Measure as a lump sum, complete in place as shown on the plans.

ADDENDUM 4 - JULY 31, 2015

Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid at the unit price bid for "Fence Grounding." This price is full compensation for furnishing, preparing, hauling, and installing materials; and for labor, tools, equipment, and incidentals necessary to complete the work.

TPSS Fence Grounding

8. **Description.** This Item shall govern grounding of the decorative wrought iron fence surrounding each TPSS building (3 locations), as indicated on the fence grounding details in the plans. Quantities in table are for all 3 locations.
9. **Materials.** Provide the following materials or approved equivalent (Grounding details called out on Drawing S200):

| Grounding Material | Part Number | Qty. |
|---|--|-------------|
| Copper ground rod 5/8" x 8 feet w/clamp | | 6 |
| #2 green insulated copper (stranded) conductor [fence to ground rod] | #2 THWN Green | 6 X 10 feet |
| Burndy bonding connector | BCS-23 (Mold # B-2781) | 6 |
| Listed 12" Insulated Wire Rope with listed bonding connectors (each end for gate connection to fence) | By Contractor, #6AWG equivalent minimum size | 9 kits/sets |

10. **Measurement.** Measure as a lump sum, complete in place as shown on the plans.

Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid at the unit price bid for "Fence Grounding." This price is full compensation for furnishing, preparing, hauling, and installing materials; and for labor, tools, equipment, and incidentals necessary to complete the work.