Exhibit I

Vertical Clearance Standards

SUBMITTAL REQUIREMENTS

Vertical Clearance

El Paso Streetcar has identified minimum vertical clearance requirements for all proposed aerial crossings over streetcar infrastructure. Specific design requirements are detailed in Figure I – 1.

General

All drawings and calculations for aerial crossings shall be prepared, sealed and signed by a Professional Engineer (civil or electrical) currently licensed in the State of Texas who has previous experience in the design of the particular aerial system being proposed.

The designer will be responsible for the accuracy of all controlling dimensions as well as the selection of appropriate materials and systems that accurately reflect the actual field conditions. No aerial installation within the operational right-of-way will be allowed until the drawings and calculations are reviewed and accepted by EPSC.

Submittal of forms, drawings and calculations shall be provided to EPSC for review in electronic format transmitted by email, or mail (with CD-R or DVD-R properly labeled). Files shall be Adobe PDF compatible. Each separate document shall be a separate PDF file (drawings, specifications, calculations, forms, etc.).

All submittals, design calculations, specifications and drawings shall be prepared in accordance with a QA/QC process. The QA/QC process may follow the established program of EPSC, Engineer in Responsible Charge firm, or Permittee. At a minimum, the QA/QC process must consist of an independent check of design calculations and an independent QC review of the drawings and specifications prior to submittal to EPSC by qualified individuals. Documentation of the QA/QC process, including names and contact information of independent reviewers, shall be made available to EPSC at their request.

A minimum of **FIVE (5) CALENDAR DAYS** should be allowed for EPSC's review, provided that all required submittal materials are included and properly identified.

Drawings

The aerial crossing drawings must be complete and shall accurately describe the nature of the work. Drawings shall be to scale.

At a minimum, the drawings shall include the following:

- Plan view that includes the following information and meets the following criteria:
    - Streetcar alignment centerline
    - North Arrow
    - All pertinent topographic information
    - Labeling and identification of all Streetcar Operating System elements and facilities (rails, track bed, track centerline, signals, overhead contact system (OCS) poles, OCS wires, and OCS appurtenances)
    - Labeling and identification of all proposed aerial crossings and facilities (utility poles, structures, wires, support elements, etc.)

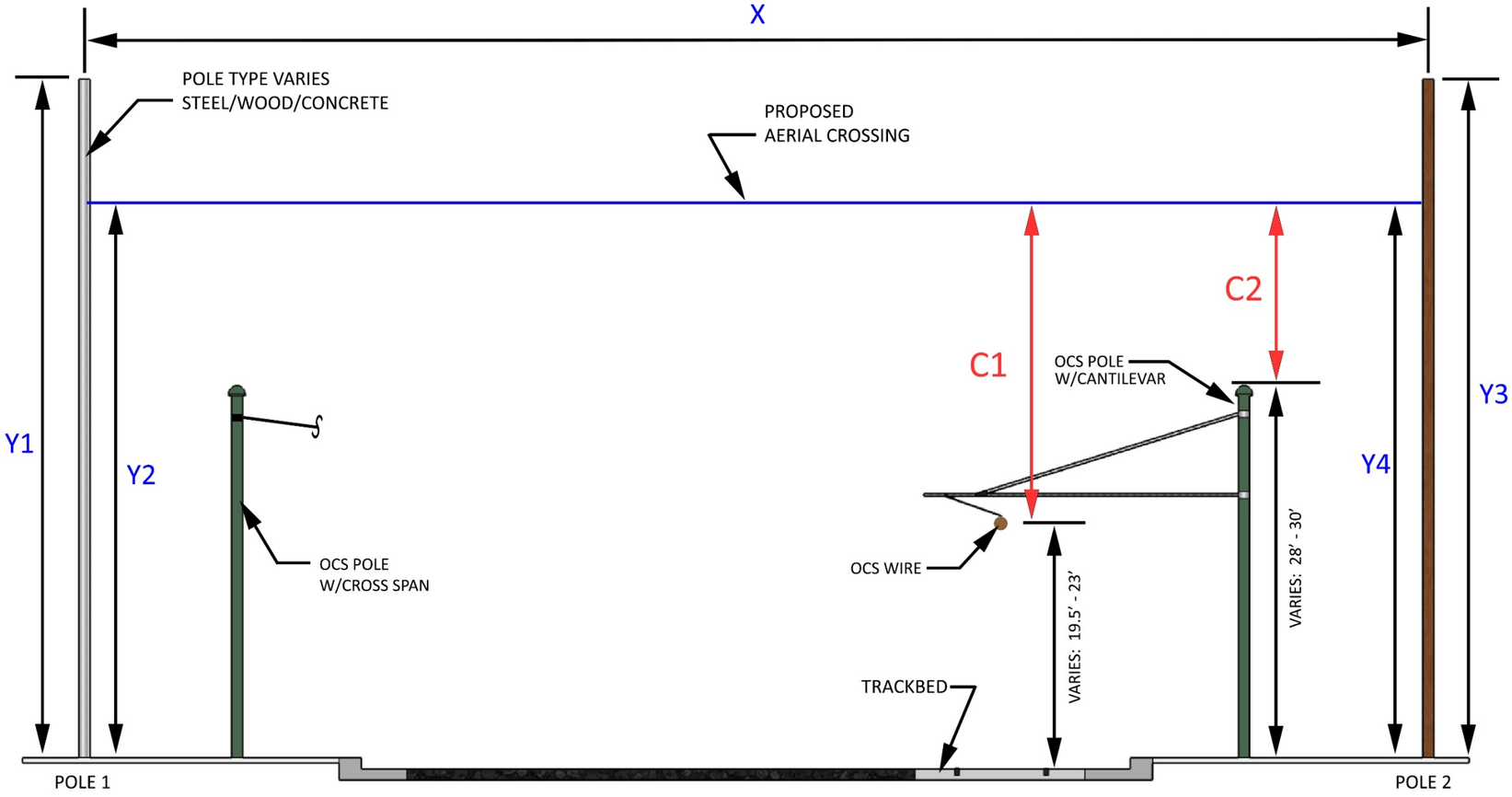
- Section view normal to the track(s) that includes the following information:
    - Length of proposed aerial crossing span between pole 1 and pole 2 (see legend label **X)** as depicted in Figure I -1
    - Height of Pole 1 (see legend label **Y1**) as depicted in Figure I – 1
    - Height of attachment point on Pole 1 (see legend label **Y2**) as depicted in Figure I – 1
    - Height of Pole 2 (see legend label **Y3**) as depicted in Figure I – 1
    - Height of attachment point on Pole 2 (see legend label **Y4**) as depicted in Figure I – 1
    - Height of proposed conductor from top of OCS wire (see label **C1**) as depicted in Figure I – 1
    - Height of proposed conductor from top of OCS pole (see legend label **C2**) as depicted in Figure I – 1 if aerial path is crossing directly above OCS pole

- Specification sheet of cable or proposed material that includes the following information:
    - General specifications
    - Construction materials
    - Dimensions
    - Physical specifications
    - Flame test specifications (if applicable)
    - Environmental specifications
    - Mechanical test specifications
    - Environmental test specifications

- Typical details shall only include those that are pertinent to aerial installations only. Details including any reference to directional boring or trenching shall not be included.

NOTES:

1. ALL CLEARANCES ARE MINIMUM.
2. VERTICAL CLEARANCES APPLY UNDER ALL WEATHER CONDITIONS:
   a. CONDUCTOR TEMPERATURE RANGE OF -20° TO 120° F, NO WIND, WITH FINAL UNLOADED SAG IN THE WIRE.
3. FOR VOLTAGES EXCEEDING 22KV (UP TO 470KV) THE CLEARANCE SHALL BE INCREASED BY 0.4 INCHES FOR EACH 1KV, OR FRACTION THEREOF.
4. VERTICAL CLEARANCES TO NON-OCS CONDUCTORS APPLY UNDER THE FOLLOWING CONDITIONS WHICHEVER PRODUCES THE LARGEST SAG IN THE CONDUCTOR:
   a. CONDUCTOR SAG AT 120° F, NO WIND DISPLACEMENT, OR;
   b. MAXIMUM CONDUCTOR DESIGNED OPERATING TEMPERATURE IF GREATHER THAN 120° F, OR;
   c. 32° F, WITH RADIAL ICE OF 0.25 INCHES.
5. ALL ELECTRICAL CLEARANCES SHALL COMPLY WITH NATIONAL ELECTRICAL SAFETY CODE (NESC). AT LOCATIONS WHERE THERE ARE DISCREPANCIES BETWEEN NESC ICE THICKNESS VALUES FOR CLEARANCE AND STRUCTURAL LOADS, THE MORE CONSERVATIVE VALUE FOR THE APPLICATION SHALL BE USED.
6. NON-OCS EQUIPMENT SHALL NOT BE WITHIN 10 FEET OF OCS EQUIPMENT. NO GROUNDED ITEM SHALL BE WITHIN 4 FEET OF THE OCS WITHOUT ELECTRICAL SHEETING PER SPECIFICATION.
7. TRACK BED MAY BE PRESENT IN ANY LANE WITHIN THE CITY R.O.W.
8. OCS POLES ARE LOCATED ON BOTH SIDES OF THE STREET.
9. OCS POLES WITH CROSS SPAN CABLES ARE TYPICALLY LOCATED AT TURNS ON THE ALIGNMENT BUT MAY BE PRESENT AT OTHER LOCATIONS WHERE NECESSARY.



VERTICAL CLEARANCE REQUIREMENTS SECTION VIEW– SCALE: N.T.S.

OCS WIRE AND POLE CLEARANCE REQUIREMENTS						
LEGEND	**GUYS & SPAN WIRES**	**COMMON WIRES, CABLES & MESSENGERS**	**LIGHTING PROTECTION WIRES**	**SUPPLY LINES 0V - 750V**	**SUPPLY LINES 750V - 22KV**	**SUPPLY LINES GREATER THAN 22KV**
C1 - MINIMUM CLEARANCE ABOVE OCS WIRE	**4' - 0"**	**4' - 0"**	**4' - 0"**	**4' - 0"**	**6' - 0"**	**NOTE 3**
C2 - MINIMUM CLEARANCE ABOVE OCS POLE	**10' - 0"**					

LEGEND

X = LENGTH OF SPAN BETWEEN POLE 1 AND POLE 2

Y1 = HEIGHT OF POLE 1

Y2 = HEIGHT OF ATTACHMENT POINT ON POLE 1

Y3 = HEIGHT OF POLE 2

Y4 = HEIGHT OF ATTACHMENT POINT ON POLE 2

FIGURE **I - 1**

EL PASO STREETCAR

STREETCAR OVERHEAD CONTACT SYSTEM (OCS) WIRE/POLE VERTICAL CLEARANCES

12/12/2019

sunmetro