



## REQUEST FOR APPROVED DEVIATIONS - 1

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for some of the Approximate dimensions required, to be used in place of Page TS-3, Vehicle Description, 4.1 General Description, 4.1.i (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
For the 40' Catalyst Bus:

- Wheelbase: The wheelbase for the 40' Catalyst is 296" instead of the desired 279".
- Front Step Height (Maximum): The height of the front step is 17" instead of the desired 15.5".
- Floor Height (Maximum): The floor height is 17" instead of the desired 16".
- Break-over Angle: The breakover angle of the 40' Catalyst is 7.7 degrees, below the desired 10.7 degrees.

For the 35' Catalyst Bus:

- Wheelbase: The wheelbase for the 35' Catalyst is 237" instead of the desired 230".
- Front Step Height (Maximum): The height of the front step is 17" instead of the desired 15.5".
- Floor Height (Maximum): The floor height is 17" instead of the desired 16".
- Break-over Angle: The breakover angle of the 35' Catalyst is 8.8 degrees, below the desired 12.8 degrees.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Purpose of these deviations is to allow for the placement of the High Voltage (HV) batteries under the floor, between the axles.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

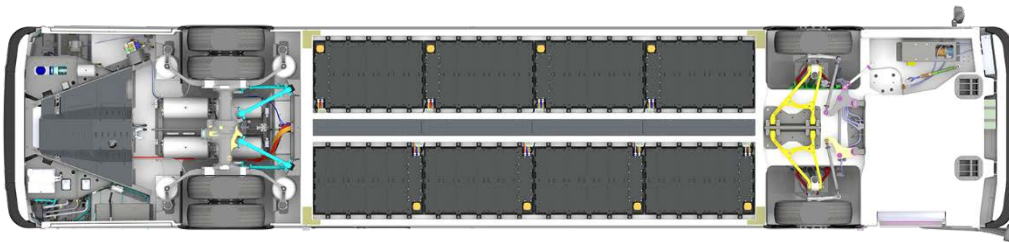
6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

One of the major benefits of the Catalyst vehicle is the placement of the battery packs under the floor and between the wheels. Having the batteries located in this location allows for the following benefits:

- Lower center of gravity, better handling
- Increased safety
- No HV batteries inside the passenger compartment
- Batteries are lower than the side impact height for automobiles

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

Below is a screen shot of the underbody of the Proterra Catalyst vehicle:



Much like major automotive electric vehicle designs (Tesla, GM, Nissan, etc.), Proterra locates the batteries below the floor in order to optimize the design.

**REQUEST FOR APPROVED DEVIATIONS - 2**

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1. Approved deviation is being requested for a composite, monocoque body, to be used in place of Page TS-5, 5. Crashworthiness, (f) side impact barrier (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The 35' and 40' Catalyst vehicles have a composite, monocoque body that provides side impact protection without the need of a steel plate between the front wheel arches and the rear suspension.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: The composite, monocoque body is the primary structure for the Catalyst vehicles.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):
  - A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
  - B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
  - C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The composite body design produces a bus body that's stronger and more durable than a traditional metal built bus, while simultaneously offering a lighter weight, which allows the Catalyst vehicles to be the lightest, most efficient low-floor electric buses as measured at Altoona.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

The body design was vetted by a third-party engineering firm that conducted a separate, independent Finite Element Analysis that confirmed the conclusions from the analysis that Proterra and its body manufacturer had already completed. Additionally, LA Metro has the most experience operating composite body vehicles in the North American transit industry and they recently released a report titled *Composite Structure Buses: Current Experience & Recommendations for Future Bus Purchases* which indicates that the "Projected average life-time total costs (\$/mile) are approximately 9% lower for CompoBuses than for steel buses despite higher purchase and overhaul costs. This is due both to lower annual maintenance costs and longer bus life (18 years rather than 14)". The full report can be found using the link below (starting on page 9):

[http://media.metro.net/board/Items/2015/07\\_july/20150715atvcitem5.pdf](http://media.metro.net/board/Items/2015/07_july/20150715atvcitem5.pdf)

**REQUEST FOR APPROVED DEVIATIONS - 3**

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1. Approved deviation is being requested for the use of fiber reinforced plastics and composite material, to be used in place of Page TS-6, 6. Materials, (b) restrictions on use of fiberglass or plastic (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Approval to use fiber reinforced plastics and composite in the main structure of the vehicle; as the bus body is a composite, monocoque design and therefore utilizes these materials.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Provide primary structure for the vehicles.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
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Street Address: PO Box 201010  
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Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution: See REQUEST FOR APPROVED DEVIATIONS - 2

- 7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

See REQUEST FOR APPROVED DEVIATIONS - 2

**REQUEST FOR APPROVED DEVIATIONS – 4**

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LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for organic corrosion inhibitor coatings, to be used in place of Page TS-6, 6. Materials, (g) Exterior bolts, nuts, and washers corrosion protection (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Exterior nuts and washers will have organic corrosion inhibitor coatings that meet ASTM B117 1,000 hour requirement with no red rust formation or loss of mass.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Prevent corrosion.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
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- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution: Interior fasteners may be zinc coated, but exterior nuts, bolts, and washers are coated with an organic corrosion inhibitor that has superior corrosion performance to zinc, cadmium, or phosphate along with more environmentally friendly processes when used.
  
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A



**REQUEST FOR APPROVED DEVIATIONS - 5**

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1. Approved deviation is being requested for all nuts and bolts to be of Domestic origin, to be used in place of Page TS-6, 6. Materials, (h) domestic manufacture requirement (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Proterra is requesting a deviation from this requirement as we cannot verify that 100% of our bolts, nuts, and washers are of Domestic manufacture. We can attest to their quality, but not that their all of Domestic origin.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Securements and fasteners.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:



Proterra easily meets the FTA's Buy America requirements for our electric buses and source nuts, bolts, and washers from qualified, trusted sources that provide high quality products.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 6**

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1. Approved deviation is being requested for applying powder-coating over e-coating to the metallic structural components under the bus for corrosion protection, to be used in place of Page TS-7, Corrosion/Undercoating, 7.b (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The metallic structural components under the bus body (ProDrive, Axles) are first electrocoated (e-coated), then powder-coated to ensure maximum corrosion protection to meet the 1,000 hour ASTM B117 requirement with no red rust or weight loss.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Corrosion protection.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
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Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Superior corrosion protection when compared to zinc chromate or zinc phosphate prime paints.
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

E-coating is an organic coating method that uses electrical current to deposit paint onto a part or assembled product. Parts are placed in an e-coat dip tank and an electric current is applied which attracts the paint to the part. The parts are then removed from the dip tank, rinsed and then baked to cure the paint. The e-coating is great for complex shaped parts to ensure that all surfaces are coated. Powder coating on top of the e-coat provides an additional layer of coating and corrosion protection that's more durable than having the part e-coated only.

**REQUEST FOR APPROVED DEVIATIONS - 7**

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1. Approved deviation is being requested for black underbody and wheel housings, to be used in place of Page TS-6, Corrosion/Undercoating, 7.c, silver or light grey undercoating (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst underbody has a black gel-coat and black protective liner in the wheel housings.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Color of underbody and wheel housings

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
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Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
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Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

It would be very difficult to adjust the gel-coat process by the body manufacturer to move away from the black gel-coat underbody and the black protective liner in the wheelhousings.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 8**

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1. Approved deviation is being requested for the use of an Independent Front Suspension manufactured by ZF, to be used in place of Page TS-8, 8.1 Front Axle, Rockwell - Meritor heavy-duty standard axle (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst utilizes an independent front axle system provided by ZF.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Front Axle

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

Benefits include: a smaller turning radius, better ride quality, improved vehicle handling, higher roll stiffness, and less load on road surface by reducing unsprung masses.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**



**REQUEST FOR APPROVED DEVIATIONS - 9**

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1. Approved deviation is being requested for using a ZF Rear Axle, to be used in place of Page TS-7, 8.2 Rear Axle, Rockwell – Meritor standard single reduction axle (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses a ZF rear axle in lieu of the Rockwell – Meritor standard single reduction axle.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Drive axle

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

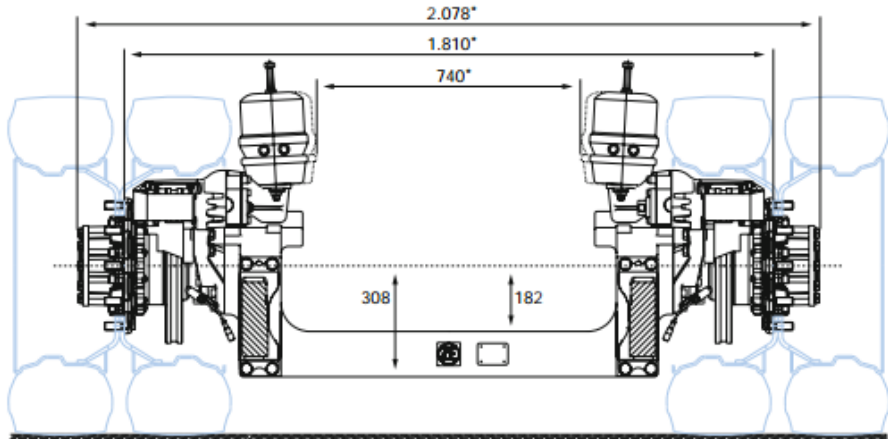
B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

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City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:









Standard drive axle for Proterra vehicles, would require heavy redesign to incorporate a new rear axle.

7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.



AVN 132

\* andere Maße auf Anfrage / other dimensions upon request

Achs-Bezeichnung	Fahrzeugbreite	Achslast max.	Abtriebsmoment max.	Motorleistung max.	Seitlicher Eintriebswinkel <sup>1</sup>	Übersetzungen	Reifengröße <sup>1</sup>
Axle designation	Vehicle width	Axle load max.	Output torque max.	Engine performance max.	Lateral collection angle <sup>1</sup>	Ratio	Tire size <sup>1</sup>
							
AV 133 / 80°	2300 – 2600	11500 – 13000	50000 / 36900	300	6°	5.12/5.73/6.19/ 9.81 <sup>2</sup>	275/70 R22.5 Zwilling / twin tires
AV 133 / 87°	2300 – 2600	11500 – 13000	50000 / 36900	300	6.5°	5.30/5.76/6.20 <sup>2</sup>	275/70 R22.5 Zwilling / twin tires
AV 133 / 90°	2300 – 2600	11500 – 13000	50000 / 36900	300	6°	5.12/5.73/6.19 <sup>2</sup>	275/70 R22.5 Zwilling / twin tires
AVN 132	2300 – 2600	11500	-	-	-	-	275/70 R22.5 Zwilling / twin tires

**REQUEST FOR APPROVED DEVIATIONS - 10**

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1. Approved deviation is being requested for using tires size 305 70R22.5, to be used in place of Page TS-8, 8.5 Wheels and Tires, standard tire size (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Seeking approval to utilize tires that are sized 305 70R22.5.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Tires

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
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C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
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Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Standard Proterra Catalyst tire sizes.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 11**

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1. Approved deviation is being requested for use of a Hadley Smart Air Management Systems (SAMS) ride height system, to be used in place of Page TS-8, 8.6 Air Suspension, 8.6.e Barksdale height control valves (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proposing the use of Proterra's standard Hadley Smart Air Management Systems (SAMS) ride height system in lieu of the Barksdale height control valves.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Height control valves

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

D. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

E. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

F. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The SAMS system offers the following benefits:

- The Smart Air Management System by Hadley is an electronically controlled air management system that automatically levels the vehicle even in soft terrains or parking lots that prohibit jacks.
- The SAMS system is the first system in the industry to be able to raise and lower the chassis while moving at slow speeds.
- The only automated system integrated with the suspension to control jacks and air leveling
- Eliminates extra control panel for jacks
- Automatically controls the ride height of vehicle during normal road use resulting in a smoother ride over mechanical control valve systems
- Built-in diagnostics

**7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

**SAMS™ LEVELING SYSTEM**

The Smart Air Management System (SAMS™) by Hadley is an electronically controlled air management system that automatically levels the vehicle even in soft terrains or parking lots that prohibit jacks. The SAMS system is also the first system in the industry to be able to raise and lower the chassis while moving at slow speeds.

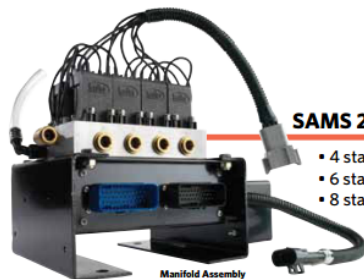
- Hadley systems are designed to meet each customers' specific needs



SAMS™ control panel

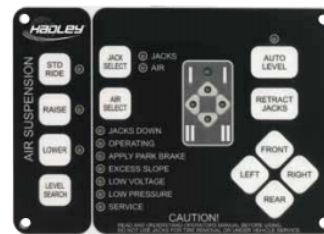
**SAMS 2™ LEVELING SYSTEMS WITH INTEGRATED CONTROLS**

- The only automated system integrated with the suspension to control jacks and air leveling
- Full integration results in greater dependability and less service and warranty issues
- Eliminates extra control panel for jacks
- Automatically controls the ride height of vehicle during normal road use resulting in a smoother ride over mechanical control valve systems
- Built-in diagnostics



Manifold Assembly

- SAMS 2**
- 4 station
  - 6 station
  - 8 station



SAMS 2™ integrated control panel



Sensor

35

**REQUEST FOR APPROVED DEVIATIONS - 12**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using ZF front radius rods and rear radius rods included in the axle systems, to be used in place of Page TS-8, 8.6 Air Suspension, 8.6.f Clevite front and O & S rear radius rods (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
ZF front radius rods and rear radius rods included in the axle systems in lieu of the specified Clevite front radius rods and O&S rear radius rods.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Radius rod arms.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

See benefits from using Proterra's standard ZF axles (Requests for Approved Deviation No. 8 &9)

- 7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

See tech data from Requests for Approved Deviation No. 8 &9



**REQUEST FOR APPROVED DEVIATIONS - 13**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using SACHS shock absorbers, to be used in place of Page TS-9, 8.6 Air Suspension, 8.6.i Koni shock absorbers (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra's Catalyst vehicles use shock absorbers manufactured by SACHS as they are specific to our axles.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Shock absorbers in the air suspension system.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

Using the SACHS shock absorbers will not require any redesign efforts on the Proterra Catalyst vehicles.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS -14**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for having no rubber axle stops, to be used in place of Page TS-9, 8.6 Air Suspension, 8.6.j use of rubber axle stops (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
External rubber axle stops are not required due to the design of the Catalyst; where the bus will hit the bump stop before the axle would come into contact with the body.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Eliminate jounce.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Design does not require the rubber axle stops.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 15**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using an 18" steering wheel from Vehicle Improvement Products with a Proterra logo and a TRW Model TAS85 Power steering system, to be used in place of Page TS-9, 8.7 Steering System, 8.7.a Power steering and steering wheel (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Substitute a TRW Model TAS85 Power steering system and an 18" steering wheel from Vehicle Improvement Products with Proterra logo.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Steering wheel and power steering.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager


6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The steering wheel provides the same benefit as the one specified and the power steering system is from the same manufacturer, but rated for a heavier axle.

7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.

**Commercial Steering Systems**

## TAS Series Power Steering Gears




---

This product is engineered for superior torque output and performance for both on and off-highway vehicles with medium and heavy front axle loads. The TAS gear operates with fewer moving parts and maintains responsive handling and positive steering control.

**FEATURES**

- Improved rotary valve design
- Automatic poppets
- Increased pressure torque ratings
- Optional automatic bleed systems



**SPECIFICATIONS**

	TAS37	TAS40	TAS55	TAS65	TAS66	TAS85
<b>Front Axle Weight</b>	8,000 lbs 3,500 kg	9,000 lbs 4,000 kg	12,000 lbs 5,500 kg	14,300 lbs 6,500 kg	14,600 lbs 6,600 kg	18,000 lbs 8,200 kg
<b>Pressure Rating</b>	1,950 psi 135 bar	2,175 psi 150 bar	2,175 psi 150 bar	2,175 psi 150 bar	2,364 psi 163 bar	2,175 psi 150 bar
<b>Output Torque at Rated Pressure 90% Efficiency</b>	25,925 in/lbs 2,930 N-m	28,450 in/lbs 3,214 N-m	35,300 in/lbs 3,988 N-m	43,050 in/lbs 4,864 N-m	46,737 in/lbs 5,280 N-m	58,650 in/lbs 6,649 N-m
<b>Gear Travel</b>	100°	95°	95°	95°	95°	95°
<b>Gear Ratio(s)</b>	17.8:1	20.4:1, 18.4:1	20.4:1, 18.4:1	20.4:1, 18.4:1	20.4:1, 18.4:1	23.3:1, 21:1
<b>Output Shaft Diameter</b>	1.75 in 44.5 mm	1.75 in 44.5 mm	2.00 in 50.8 mm	2.00 in 50.8 mm	2.00 in 50.8 mm	2.25 in 57.15 mm
<b>Output Shaft Serrations</b>	1.75 x 46 Straight	1.75 x 46 Straight	1.937 x 52 Straight	1.937 x 52 Straight	1.937 x 52 Straight	2.25 x 59 Straight
<b>Input Shaft Serrations</b>	.812 x 36 Straight	.812 x 36 Straight	.812 x 36 Straight	.812 x 36 Straight	.812 x 36 Straight	.812 x 36 Straight
<b>Maximum Operating Temperature</b>	250°F 121°C	250°F 121°C	250°F 121°C	250°F 121°C	250°F 121°C	250°F 121°C
<b>Minimum Pump Flow for 1.5 hwt/sec</b>	2.5 gpm 9.5 lpm	2.2 gpm 8.3 lpm	2.7 gpm 10.2 lpm	3.0 gpm 11.3 lpm	3.0 gpm 11.3 lpm	3.6 gpm 13.6 lpm
<b>Recommended Pump Flow Control Range</b>	3.6-5.0 gpm 13.6-18.9 lpm	3.6-6.0 gpm 13.6-18.9 lpm	3.6-6.0 gpm 13.6-18.9 lpm	3.6-6.0 gpm 13.6-18.9 lpm	3.6-6.0 gpm 13.6-18.9 lpm	4.2-8.0 gpm 16-30 lpm
<b>Approximate Dry Weight</b>	55.4 lbs 25.1 kg	60 lbs 27 kg	73 lbs 33 kg	78 lbs 35 kg	78 lbs 35 kg	98 lbs 44 kg

**REQUEST FOR APPROVED DEVIATIONS - 16**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for a Bendix-Westinghouse SR-7 Spring Brake Control Valve, to be used in place of Page TS-10, 9.1 General, 9.1.b Bendix-Westinghouse SR-1 Spring Brake Control Valve (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Swap the specified SR-1 spring brake control valve with Proterra's standard SR-7 spring brake control valve.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Brake control valve

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The SR-7 Spring Brake Modulating Valve is a slightly different model by the same manufacturer as the one specified.

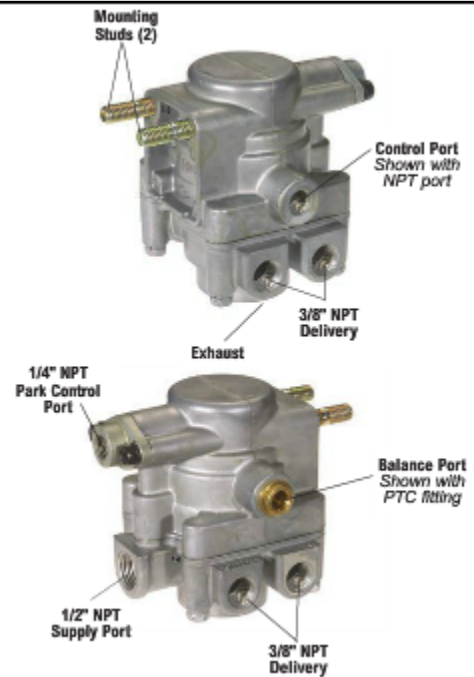
- Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.

**Bendix® SR-7® Spring Brake Modulating Valve**

SD-03-4516

Service New Pc. No.	Mounting Stud		Control Port		Balance Port	
	Thd.	Length	Size*	Fitting	Size*	Fitting
K021557	3/8"-16	.94"	1/4" NPT	-	1/4" NPT	-
K021558	3/8"-16	.94"	3/8" NPT	Straight	3/8" NPT	Straight
K021559	3/8"-16	.94"	3/8" PTC	90°	3/8" PTC	Straight
K021580	M10	1.38"	3/8" PTC	90°	3/8" PTC	90°
K021582	-	-	1/4" NPT	-	1/4" NPT	-
K021583	-	-	3/8" PTC	Straight	3/8" PTC	Straight

\*PTC - Push-To-Connect Fillings





**REQUEST FOR APPROVED DEVIATIONS - 17**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of ZF Brake the Brake Chambers, to be used in place of Page TS-10, Brakes 9.2.a (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses ZF brake chambers.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Brake chambers.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 18**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using regenerative braking, to be used in place of Page TS-10, 9.3 Service Brakes, 9.3.a brake retarder (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Swap the brake retarder with regenerative braking.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose:  
Retarders (and regenerative braking) serve to slow vehicles, or maintain a steady speed while traveling down a hill, and help prevent the vehicle from "running away" by accelerating down the hill.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The Catalyst electric bus uses regenerative braking that recaptures up to 92% energy which helps the overall vehicle efficiency and also serves to slow the vehicle and extend the life of the service brakes.
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 19**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of a separate regenerative braking light, to be used in place of Page TS-10, 9.3 Service Brakes, 9.3.c brake lights during auxiliary braking (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst comes with a separate, standard Regen braking light (yellow) that activates while the bus is using regenerative braking.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Indicates that the vehicle is being slowed to alert people that the bus is being slowed down.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The regenerative brake light is a standard function of the Catalyst vehicles and serves the same function as lighting up the brake lights during auxiliary braking.
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 20**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of Proterra's standard parking brake, to be used in place of Page TS-10, 9.3 Service Brakes, 9.3.d MGM #E3636T parking brake (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Using Proterra's standard parking brake (Bendix P/N 284726) instead of the one specified in the spec.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Parking brake.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

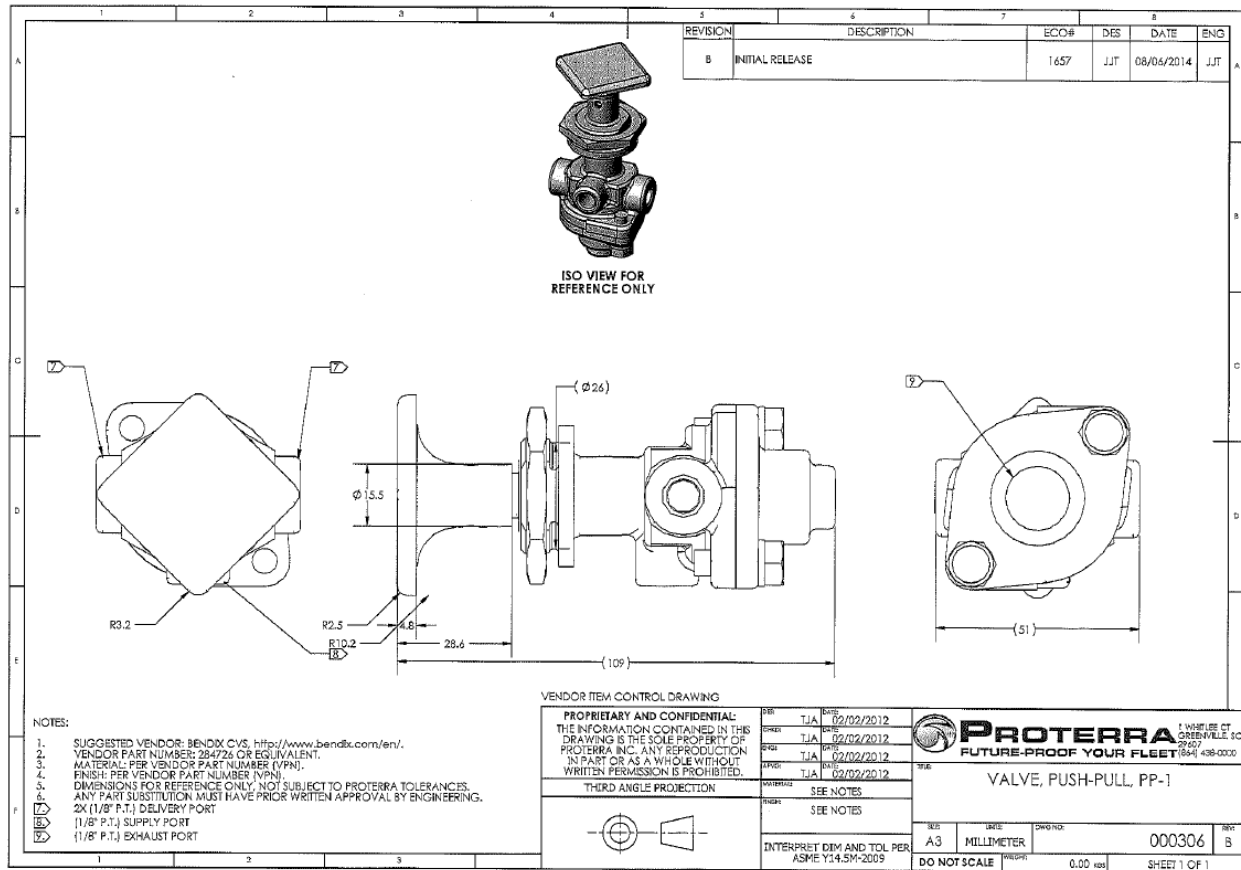
A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Provides the same functionality as the one specified in the RFP.

7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.





**REQUEST FOR APPROVED DEVIATIONS - 21**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for the use of Knorr-Bremse disc brakes, to be used in place of Page TS-11, 9.5 Brake Drums, Shoes and Linings, 9.5.a drum brakes (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Replace drum brakes with disc brakes from Knorr-Bremse

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Brakes.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

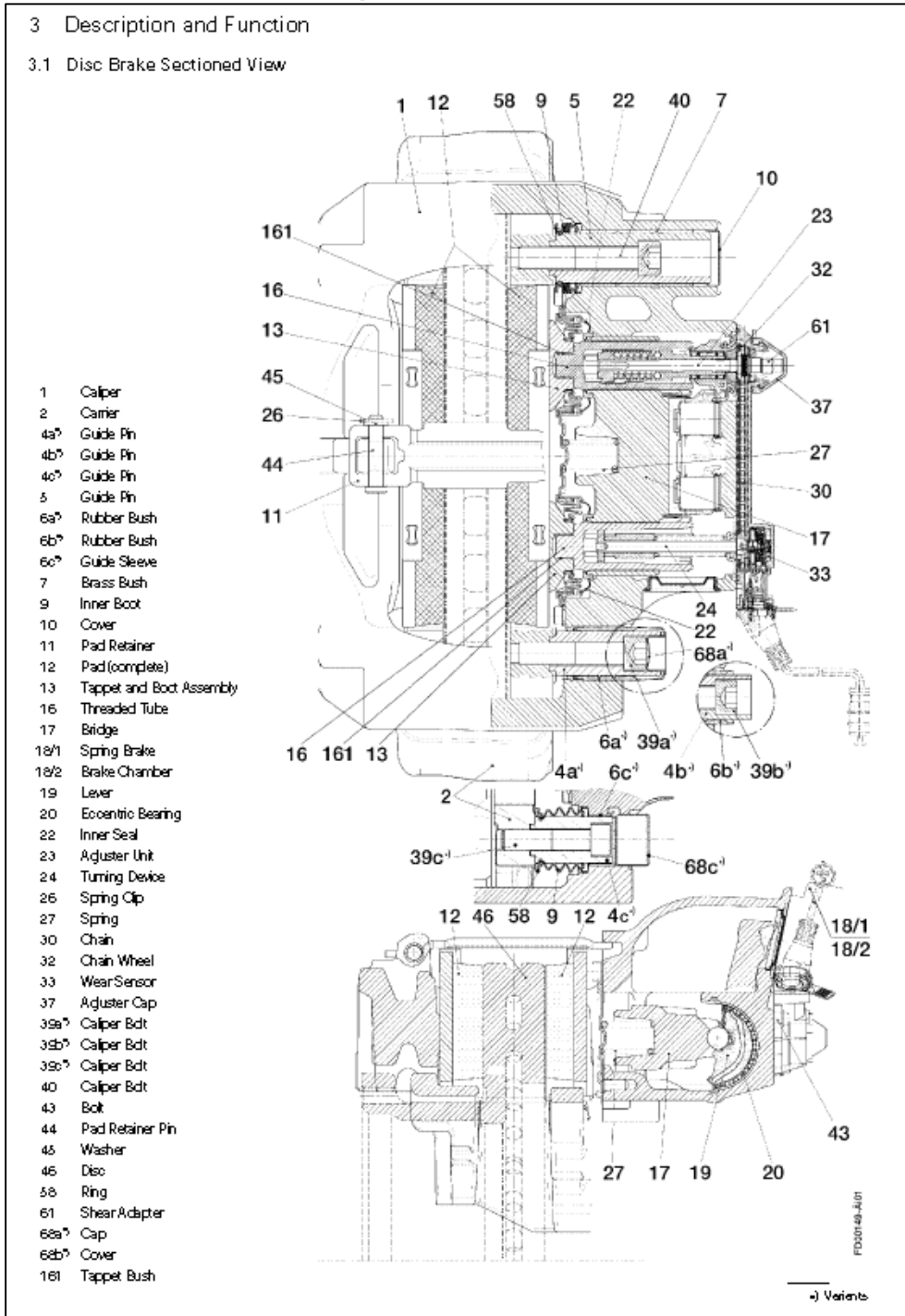
A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Disc brakes are standard on Proterra Catalyst vehicles and superior to drum brakes in performance.

7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.



**REQUEST FOR APPROVED DEVIATIONS - 22**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using regenerative braking, to be used in place of Page TS-11, 9.7 Brake Retarder (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
See Request for Approved Deviation No. 18

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: See Request for Approved Deviation No. 18

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
See Request for Approved Deviation No. 18

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** See Request for Approved Deviation No. 18

**REQUEST FOR APPROVED DEVIATIONS - 23**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using a Hyrdrovane electric motor driven air compressor, to be used in place of Page TS-12, Air Compressor 10.1 (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses a Hydrovane electric motor driven air compressor instead of the specified Wabco air compressor.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Support bus pneumatic system.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The Hydrovane air compressor is electric motor driven and sized appropriately for the air system requirements and duty cycle of the bus.

**7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

**6.1 Compressor Assembly**

A Hydrovane rotary vane compressor (Fig 3-1) with water cooler (Fig 3-6) coupled directly to an AC electric motor (Fig 3-2).

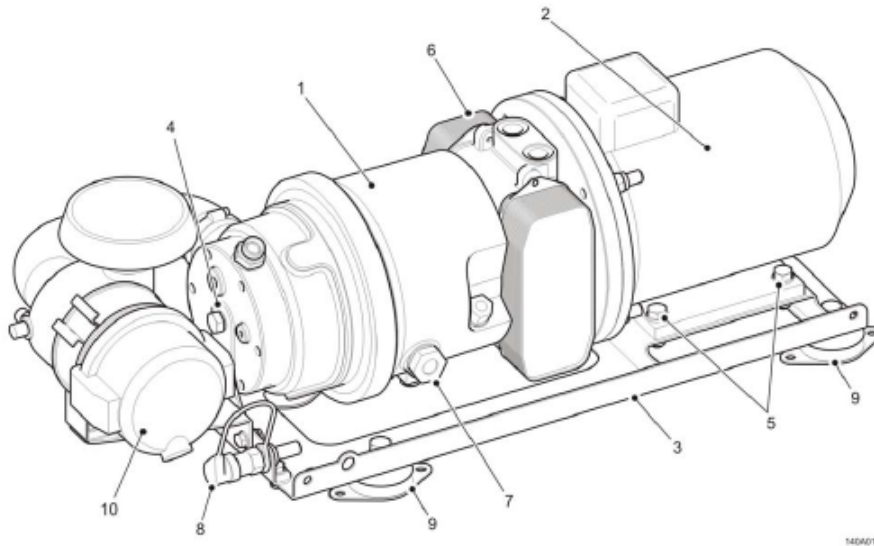


Fig 3

Two types of air cleaner arrangement are available, either type may be fitted.

The motor (Fig 3-2) and compressor assembly (Fig 3-1) is bolted to a sub-frame (Fig 3-3) by a front mounting support (Fig 3-4) and the motor mounting feet (Fig 3-5).

**6.2 Compressor**

Compressor oil circulation is by internal pressure differential through the water cooler. Coolant temperature is maintained by a customer supplied radiator.

Oil level can be viewed through a sight glass (Fig 3-7) and topped up at the oil filler point (Fig 3-8)

The compressor (Fig 3-1) is directly driven by the drive motor (Fig 3-2) with a flexible element housed between two half couplings. Pressure regulation is automatic within a range specified by the customer, excessive air is released through an internal pressure control valve.

**6.3 Air Cleaner**

Compressor inlet air is pre-filtered by a three-stage air cleaner (Fig 3-10). The primary stage induces a vortex for large particle removal; a main element removes particles down to 7 micron protected by a final safety element.

**6.4 Electric Motor**

The electric motor (Fig 3-2) is a multiwound inverter quality 3-phase AC motor.

**6.5 Sub Frame**

The sub frame (Fig 3-3) is constructed from welded profile plate protected by black nylon powder coating.

**6.6 Anti Vibration Mounts**

The sub frame is mounted on four transit specification antivibration mounts (Fig 3-9).

**REQUEST FOR APPROVED DEVIATIONS - 24**

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LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for the use of a single analog air pressure gauge, to be used in place of Page TS-12, 10.2 Air Tanks, 10.2.c dual needle air pressure gauges (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses a single analog needle to display the lowest air pressure in both the primary and secondary reservoirs instead of the specified dual needle air pressure gauges.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Display air pressure.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:



The single air pressure gauge serves the same purpose by displaying the lowest of the two systems.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

Displayed air pressure is calculated by the body controller where it calculates the minimum of three tank pressures and is displayed:

- Analog gauge on instrument panel
  - White “AIR” symbol lights up RED in low air situations
- Number displayed on driver’s display and detail available in air system screen
- Buzzer will sound and red light will flash in LOW air pressure situations while in service



CONFIDENTIAL | 15



**REQUEST FOR APPROVED DEVIATIONS - 25**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for a Bendix air dryer, to be used in place of Page TS-12, 10.3 Air Dryer, Duraguard air dryer (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst vehicles utilize a Bendix AD-IS Air Dyer instead of the requested SKF, HCT-2000 Duraguard air dryer.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Collect and remove air system contaminants.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The Bendix air dryer provides the same / similar performance as the Duraguard air dryer

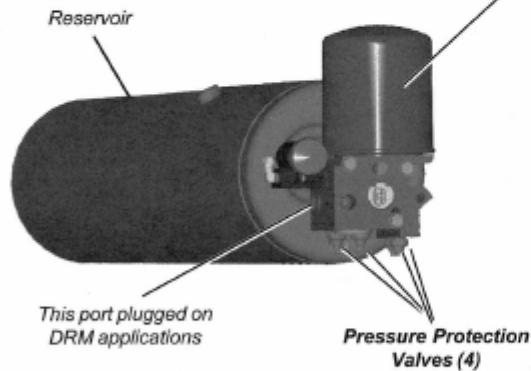
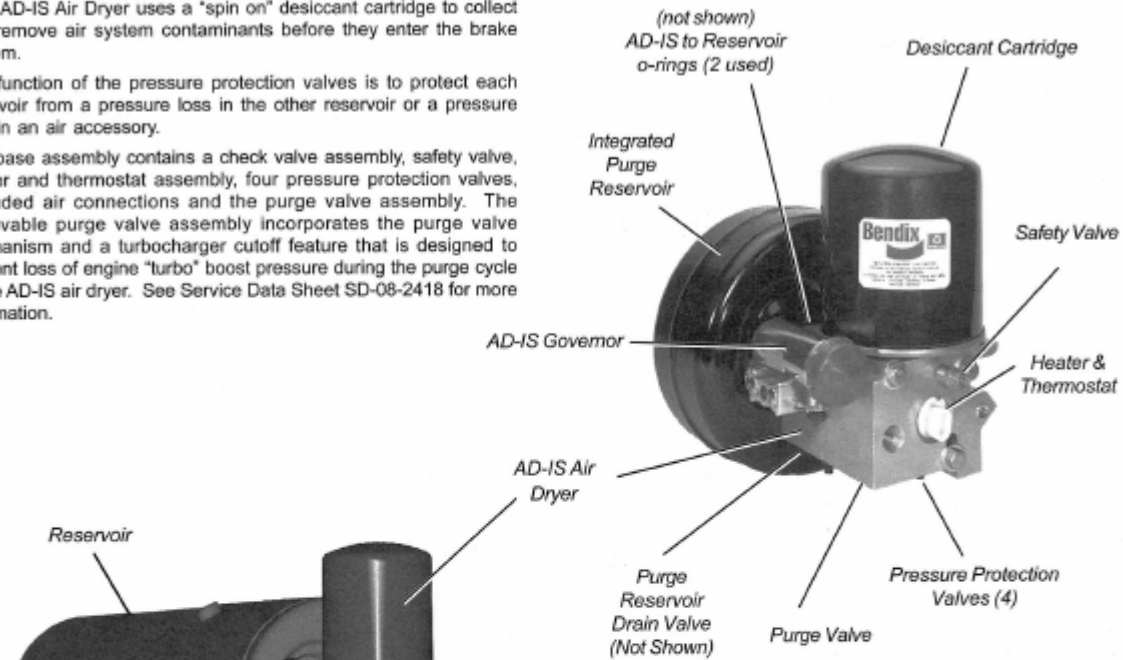
7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.

CATALOG <b>08-A-24</b>	AD-IS	<b>AIR DRYER</b>
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The AD-IS Air Dryer uses a "spin on" desiccant cartridge to collect and remove air system contaminants before they enter the brake system.

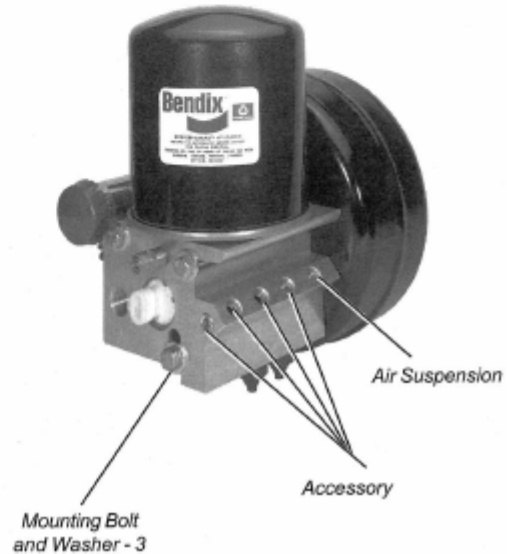
The function of the pressure protection valves is to protect each reservoir from a pressure loss in the other reservoir or a pressure loss in an air accessory.

The base assembly contains a check valve assembly, safety valve, heater and thermostat assembly, four pressure protection valves, threaded air connections and the purge valve assembly. The removable purge valve assembly incorporates the purge valve mechanism and a turbocharger cutoff feature that is designed to prevent loss of engine "turbo" boost pressure during the purge cycle of the AD-IS air dryer. See Service Data Sheet SD-08-2418 for more information.



The function of the Dryer Reservoir Module (DRM) is to provide heavy vehicles with an integrated vehicle air dryer, secondary reservoir, purge reservoir, governor and a number of the charging valve components in a module. The DRM includes an Integrated Solution Air Dryer, the AD-IS, a reservoir (including a separate purge reservoir section) a governor and four pressure protection valves. See Service Data Sheet SD-98-9808 for more information.

Weight 62 lbs (Air Dryer assembly 14.2 lbs.) approx.  
(Air Dryer) VMRS 13-010-033  
Device Code 9808



**REQUEST FOR APPROVED DEVIATIONS - 26**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for the use of Continental ContiTech GR5-04 brake lines , to be used in place of Page TS-13, 10.5 Brake Lines at Wheels, Parker Hannifin Model 293 flexible brake lines (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Authorize Proterra to use the use of Continental ContiTech GR5-04 brake lines instead of Parker Hannifin Model 293 flexible brake lines.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Brake lines.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):
  - A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
  - B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
  - C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager
6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.

## SR5 - SAE 100R5

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SAE 100R5 | Fleet Application

**Application:**  
3/16"–1-13/16" hose for general-purpose, medium-pressure applications including petroleum-based hydraulic oil, air and water for use in air brakes, power steering, turbo oil lines, tilt cab cylinders, transmission coolant and filtration lines.

**Construction:**


**Inner Tube:** Nitrile

**Reinforcement:** One braid of high-tensile steel wire

**Cover Compound:** Impregnated textile braid

**Temperature Range:** -40°F to 212°F (-40°C to 100°C)

**Branding:** Continental ContiTech GR5-04 SAE 100R5 (FMVSS 106 All, J1402) DOT GYAB 3/16" (4.8mm) WP 3000 psi (20.7 MPa)



Part	Hose Size ID		Hose OD		Max. Working Pressure		Min. Bend Radius		Min. Burst Pressure		Weight (lbs./ft.)
	in.	DIN	in.	mm	psi	MPa	in.	mm	psi	MPa	
<a href="#">SR5-04</a>	3/16	4.8 MM	0.52	13.2	3000	20.7	3	76	12000	82.7	0.14
<a href="#">SR5-05</a>	1/4	6.4 MM	0.58	14.8	3000	20.7	3.38	86	12000	82.7	0.18
<a href="#">SR5-06</a>	5/16	7.9 MM	0.67	17.1	2250	15.5	4	102	9000	62.1	0.22
<a href="#">SR5-08</a>	13/32	10.3 MM	0.76	19.5	2000	13.8	4.62	117	8000	55.2	0.29
<a href="#">SR5-10</a>	1/2	12.7 MM	0.92	23.4	1750	12.1	5.5	140	7000	48.3	0.36
<a href="#">SR5-12</a>	5/8	15.9 MM	1.07	27.4	1500	10.3	6.5	165	6000	41.4	0.44
<a href="#">SR5-16</a>	7/8	22.2 MM	1.23	31.4	800	5.5	7.38	187	3200	22.1	0.47
<a href="#">SR5-20</a>	1-1/8	28.6 MM	1.5	38.1	625	4.3	9	229	2500	17.2	0.58
<a href="#">SR5-24</a>	1-3/8	35 MM	1.75	44.4	500	3.4	10.5	267	2000	13.8	0.72
<a href="#">SR5-32</a>	1-13/16	46 MM	2.22	56.4	350	2.4	13.25	337	1400	9.7	0.90

**REQUEST FOR APPROVED DEVIATIONS - 27**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of electronic motor diagnostics and sensors and diagnostic ports at the street side wheel well and rear interior of the vehicle, to be used in place of Page TS-14, 11.2 Engine Protection, electronic sensors, Engine Control Module self-diagnostic tool, and locations for plug-ins for a diagnostic reader (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst vehicles use electronic sensors to monitor and diagnose issues with our electronic motor. Additionally, our diagnostic ports are located at the street side wheel well and rear interior of the vehicle.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Electronic motor protection and locations for plug-in diagnostic readers.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Proterra's vehicles have a monitoring system that enables the vehicle to protect the traction motor that is similar to the engine protection system described in the specification. And the two diagnostic ports just happen to be located in a different place on our vehicles.
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A



**REQUEST FOR APPROVED DEVIATIONS - 28**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for Adjustable pedals from Kongsburg, to be used in place of Page TS-15, 11.3 Engine Throttle Systems, 11.3.a Williams adjustable pedals (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst employs an adjustable pedal solution from Kongsberg in place of the Williams adjustable pedals specified.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Throttle and brake pedals.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

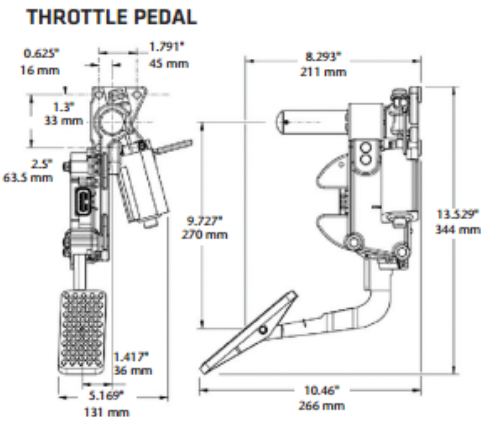
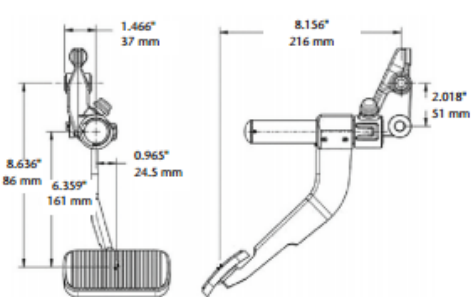
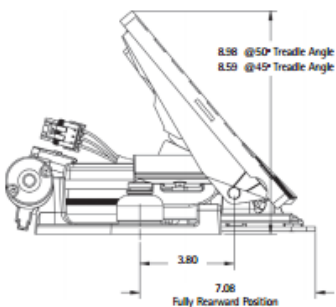
6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The Kongsberg pedals provide similar performance as the ones from Williams.

7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.




**AT A GLANCE**

- Rugged and versatile design for RV, Commercial and Transit vehicles
- Easy installation for either floor or suspended applications
- 3" of travel optimizes pedal location
- Push button operation
- Applications:
  - Heavy Over-the-Road Trucks
  - Medium & Delivery Trucks
  - Buses
    - School
    - Urban
    - Transit
    - Interstate Coach
  - Recreational Vehicles
  - Motor Homes

PEDAL SPECIFICATIONS	PARAMETER	SPECIFICATION
<p><b>THROTTLE PEDAL</b></p> 	<p>Travel</p> <p>Travel time</p> <p>Specification compliance</p> <p>Operating temperature</p> <p>Operating Voltage</p> <p>Protection</p> <p>Humidity</p> <p>Salt test</p> <p>Maximum applied load</p> <p>Rated life</p> <p>10,000,000 pedal actuation cycles @ 39,000 adjustment cycles</p>	<p>3" linear motion</p> <p>&lt;6 seconds</p> <p>SAE J1455, FMVSS 124</p> <p>-40°C to +70°C</p> <p>9-16 VDC</p> <p>Thermal overload</p> <p>90% relative humidity per SAE J1455</p> <p>4 hours per SAE J1455</p> <p>250 lbf - throttle 600 lbf - brake</p>
<p><b>BRAKE PEDAL PNEUMATIC</b></p> 		
<p><b>FLOOR PEDAL</b></p> 		



**REQUEST FOR APPROVED DEVIATIONS - 29**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for not supplying an air cleaner, to be used in place of Page TS-15, 11.4 Air Cleaner (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Electric buses do not require an air cleaner.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: N/A

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

D. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

E. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

F. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution: N/A

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 30**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using Hellermannntyton heavy-duty Polyamide mounts, to be used in place of Page TS-16, 11.6 Clamps, stainless steel Breeze clamps (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses Hellermannntyton heavy-duty Polyamide mounts instead of the specified stainless steel Breeze clamps.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Clamps that support wires, cables, harness hose or line.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

Because the Proterra Catalyst is an electric vehicle, the temperatures in and around the “engine” compartment do not reach the temperatures that an internal combustion engine reaches and therefore these Hellermannntyton clamps are adequate for our application.

**7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

**Durability Suited for Heavy Duty Application**

Ratchet P Clamp is manufactured from impact modified, heat- and UV-stabilized PA66. That makes it rugged enough for the shock and vibration of heavy duty applications and capable of standing up to extreme temperatures, chemicals, salt spray and heavy UV light exposure.

There's no coating to wear away over time. And the patented living hinge not only is extremely robust, but includes interlocking “fingers and pockets.” The result is releasability that streamlines installation and maintenance for the life of application.



**REQUEST FOR APPROVED DEVIATIONS - 31**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of an Eaton 2-Speed Transmission , to be used in place of Page TS-17, 11.10 Transmission, 11.10.a Allison B400R automatic transmission (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses an electronically-controlled pneumatically shifted 2-speed gear box (transmission) provided by Eaton.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Allows electric motor to achieve ideal efficiency during start up and at high speeds.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

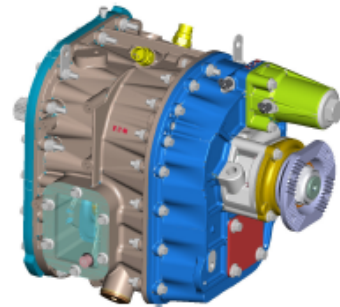
The Eaton transmission is one of the reason that the Catalyst broke acceleration and efficiency records at Altoona.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

## General Description

### Features

- 2 speed range section as in current successful product
- Planetary transmission
- Pneumatic gear activation system
- Aluminum housings
- Baulk ring synchronizer
- Forced lubrication (oil pump)
- Main gear set above oil level for increased efficiency
- Gear position sensor: L – low, H – high, N – neutral
- Aperture for oil temperature sensor
- Vertical installation
- Oil cooler ports option
- Suitable for rear support



The Eaton 2-speed transmissions have one low & one high speed selection and are part of a medium duty range of synchromesh transmissions. An epicyclic reduction gear with air operated synchromesh engagement is located rear section of the transmission and the output flange. Traction motor is constantly connected with transmission (no clutch). Gear change will be done by air pressure. Neutral is default position. If there is no air pressure in system bias spring will shift to neutral. Gear disengage would be possible with torque of traction motor reduced to zero.



**Note** - Air valves and filter / pressure regulator to be fitted by Customer.

### Epicyclic Reduction Gear

Epicyclic reduction gear consists of three main components:

An annulus, a sun gear and a planet gear:

**Annulus**, which is the outer, internally toothed ring gear, is secured to the sliding sleeve of the range change synchronizer assembly.

**Sun gear**, which is splined and bolted to the transmission mainshaft, runs concentrically with, but independent of the annulus.

**Planet gear** runs in mesh with both the annulus and the sun gear. It consists of five planet gears, each running independently on its axis by which it is attached to the planet gear carrier. The carrier is an integral part of the transmission output shaft.



**REQUEST FOR APPROVED DEVIATIONS - 32**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for the use of a “low level” light on the service fill panel, to be used in place of Page TS-19, 12.1 Engine Cooling, ground level sight glass for the expansion tank (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra’s Catalyst vehicles have a “low level” light on the service fill panel and can be displayed on the dash. Additionally, the cooling expansion tank is located on the roof, although the system fillable and purgable from ground level service panel on the rear curbside of the vehicle.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Indicator of cooling fluid levels.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The Catalyst vehicles cooling level indicator and access for filling and purging the cooling system meet the intent of the specification.
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A



**REQUEST FOR APPROVED DEVIATIONS - 33**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for the use of DC Spal fans, to be used in place of Page TS-19, 12.1 Engine Cooling, EMP electric fan cooling (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses five (5) DC Spal fans on the primary device coolant loop and enable Proterra to optimize the cooling system for electronic components.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Cooling the primary electronic components (electronic motor, transmission, etc.)

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The DC Spal fans allow Proterra to optimize the cooling system for the electronic components.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 34**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using no charge air coolers, to be used in place of Page TS-20, 12.3 Chare Air Cooling (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Charge air coolers are not required for electric vehicles.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: N/A

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

D. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

E. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

F. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution: N/A

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 35**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for the use of EPDM hoses, to be used in place of Page TS-21, 12.6 Hose/Clamps, premium quality Armet or Flex-Fab silicon hose (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses an EPDM hose for the cooling system as the lower system temperatures present on an electric bus do not require silicone.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Cooling system hoses.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

G. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

H. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

I. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
EPDM hoses are rated for the temperatures present on an electric bus.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

Thermal properties of EPDM	
Property	Value
Coefficient of thermal expansion, linear	160 $\mu\text{m}/\text{m}\cdot\text{K}$
Maximum service temperature <sup>[5]</sup>	150 °C
Minimum service temperature <sup>[5]</sup>	-50 °C
Glass transition temperature	-54 °C

**REQUEST FOR APPROVED DEVIATIONS - 36**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of Mubea constant tension spring band clamps, to be used in place of Page TS-21, 12.6 Hose/Clamps, Breeze or Oetiker stainless steel worm type clamps (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst vehicles use 15mm wide Mubea constant tension spring band clamps.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Attaching cooling hoses.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The Mubea clamps provide the same sealing benefit with an assembly and maintenance advantage over the ones specified in the RFP.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

## Technology and Advantages

Advantages of the Mubea Spring Band Clamp compared to a typical screw type clamp:

**Self-tensioning sealing component**

- which always produces sufficiently high sealing forces

**High-tensile alloy spring steel 51CrV4**

- with a high safety towards brittle fracture especially at low temperatures

**Environmentally friendly surface protection**

- with a distinctive corrosion resistance
- 100 % Chrome VI free

**Leakproof immediately upon assembly**

- in all systems with liquid and gaseous media

**Assembly advantage**

- to simple, safe, quick, and cost-efficient handling

**Standard part - shelf items**

- according to DIN 3021

**Temperature range**

- from -40°F up to 392°F





**REQUEST FOR APPROVED DEVIATIONS - 37**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of a DC-DC Converter, to be used in place of Page TS-24, 14.1 Alternator and Regulator (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses a DC-DC Converter in place of an alternator.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Supply correct voltage power to the bus electronics and charge the house batteries.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager


6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

Electric vehicles do not need an alternator, instead deploying DC-DC Converters to convert power from the high voltage batteries into low-voltage power.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

## 4 KW DC-DC

### LIQUID COOLED SEALED MODULE FOR VEHICLE APPLICATIONS



The 4000W LiquaCore® power module is a high voltage liquid cooled DC-DC converter which steps down 700V and provides 24V output, common in hybrid and electric vehicle applications. The output voltage is electrically isolated from the input voltage and suits the conventional 24V accessories and HVAC system requirements of industrial and ecofriendly vehicles.

Specifications	
<b>Input</b>	
<b>Voltage</b>	550-850VDC. Power delivered in the operational range will depend on Operating Envelope
<b>Transient Voltage</b>	Up to 900VDC
<b>Inrush Current</b>	25A Maximum under cold start conditions
<b>Efficiency</b>	>90% Typical
<b>Output</b>	
<b>Voltage</b>	28VDC Nominal / 20 – 32VDC Adjustment
<b>Current</b>	150A Maximum
<b>Power</b>	4200W Maximum
<b>Ripple and Noise</b>	400mVp-p (20MHz Bandwidth)
<b>Load Regulation</b>	700mV Droop from No Load to Full Load (Designed to support droop current share when paralleled with other similar units)
<b>Parallel Use</b>	May be paralleled with other like units or for increased system output – Standard unit must be paralleled with a battery for normal operation.
<b>Temperature Coefficient</b>	<+/- 0.02% per °C
<b>Dimensions</b>	17 x 7.6 x 2.3" (483 x 194 x 59mm)
<b>Weight</b>	12.3lbs, 5.6kg
<b>Model Number</b>	LSM4k0-700-24

**Features:**

- 150A Battery Charger
- Liquid Cooled
- IP67 and IP6k9k Environmental Protection
- 550-850VDC Input Voltage Range
- 20-32VDC Output Voltage Range
- Galvanic Isolation Input - Output
- High Efficiency - Greater then 90%
- Automotive Grade Components
- Field Configurable CAN parameters

• **RoHS**

**REQUEST FOR APPROVED DEVIATIONS - 38**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for X2 Power Group 31 Batteries, to be used in place of Page TS-24, 14.2 Battery, 14.2a Deka batteries (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses X2 Power Group 31 house batteries.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Low voltage batteries.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The X2 Power Group 31 batteries provide similar performance as the Deka house batteries.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

## X2Power Battery Deep Cycle BCI Group 31M

**Item Number:** SLI31AGMDPM  
**Brand:** X2Power  
**Voltage:** 12  
**Format:** BCI Group 31M  
**Lead Acid Type:** Deep Cycle, Dual Purpose (Starting/Cycling), Starting  
**Cold Cranking Amps:** 1150  
**Battery Type:** Ultimate  
**Capacity 20hr:** 100AH  
**Chemistry:** Lead Acid  
**Color:** Blue Top  
**Lead Acid Design:** AGM  
**Made in the USA:** True  
**Product Category:** Marine/RV  
**Product Sub Category:** Starting Lighting And Ignition  
**Usage:** RV, Sump Pump  
**Warranty:** 48 Month Full Replace, 0 Month Pro Rated  
**Weight:** 75 lbs



- 2 complete batteries in 1 - 100% starting and 100% reserve power to handle electronics
- AGM technology - non-spillable, non-gassing, and maintenance free
- Pure lead is great for fast recharge; ideal for extended usage and seasonal storage
- Stands up to vibration and install in any orientation (except inverted)
- Group 31 - approximate dimensions of 13" x 6.75" x 9.5"
- Deep Cycle BCI Group 31M Marine and Boat battery

**REQUEST FOR APPROVED DEVIATIONS - 39**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for battery tray material and partial extension, to be used in place of Page TS-24, 14.3 Battery Terminals/Wiring/Protection (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst low-voltage battery tray is manufactured out of a corrosion resistant material and can extend partially while the battery cables are connected.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Battery tray.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The battery tray can be partially extended while the cables are connected, but not fully extended. There is ample room service the batteries with the partial extension.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 40**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for the Multi-Plex System, to be used in place of Page TS-25, 14.3 Battery Terminals/Wiring/Protection, 14.3.d disconnect switch, (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst battery disconnect switch is located in an outdoor compartment although it's not totally sealed.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Battery disconnect switch.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

D. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

E. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

F. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The battery disconnect switch is an outdoor rated switch behind an access panel.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**



**REQUEST FOR APPROVED DEVIATIONS - 41**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for emergency flashers driven by controls system, to be used in place of Page TS-25, 14.3 Battery Terminals/Wiring/Protection, 14.3.d emergency flashers, (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst emergency flashers are powered through our vehicle controls system which must be powered on to use.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Emergency flashers.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

G. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

H. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

I. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

Proterra's standard electrical design uses the flashers as a wake-up to the system when turning the vehicle on. Redesigning for a discreet power supply to the emergency flashers would be cost prohibitive.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 42**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using a Kibes multiplex system provided by Continental VDO, to be used in place of Page TS-26, 14.7 Multi-Plex System Electrical, I/O Controls Dinex (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses a Continental VDO Kibes Multi-Plex system that uses Continental VDO system style connectors in lieu of I/O Controls Dinex and a "ring loop" hookup.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Multiplex controls system.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

J. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

K. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

L. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Houses all of Proterra's proprietary controls software and allows for excellent diagnostic tools to be deployed either through a plug-in diagnostic tool or on-dash display. Additionally the Kibes system has a much simpler architecture than many of its competitors.
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

### Competitor Comparison

#### Sample Competitor Architecture

**Competitor System**

- › Needs more Modules in the Front and rear
- › 2 module in parcel Rack
- › In total Needs more than 12 or 14 modules depending on bus architecture
- › Needs a separate Junction box housing each side to accommodate group of modules
- › Needs fans for active cooling
- › Complex wiring and connectors inside the junction box
- › Complex accessibility for service

#### KIBES Body Controller Architecture

**KIBES System**

- › Less modules in Front and rear
- › In total Needs only 5 or 6 modules depending on bus architecture
- › No Need of a separate Junction box
- › No need of fans for cooling
- › More simpler wiring harness design
- › More simpler service accessibility

Commercial Vehicles & Aftermarket  
Confidential

Wednesday, March 2, 2016  
Davin S. CVAM VE © Continental AG

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### Diagnostic Comparison

#### Competitor diagnostic System

LED Diagnostics

**Competitor System**

- › A technician Should open the junction box and should check for complex LED flashing techniques

#### KIBES diagnostics system

Modular cluster

**KIBES System**

- › On Board Diagnostics, Diagnostic error message on cluster display
- › Buzzer information can be provided to critical diagnostics message
- › No need of a technician, Driver can see the information in cluster and take action accordingly.
- › Outputs can be disabled if there is a short circuit or open circuit which improves safety of the bus
- › Diag Messages available over CAN
- › On Line testing capabilities which make serving more easier
- › Less servicing time

Commercial Vehicles & Aftermarket  
Confidential

Wednesday, March 2, 2016  
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**REQUEST FOR APPROVED DEVIATIONS - 43**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

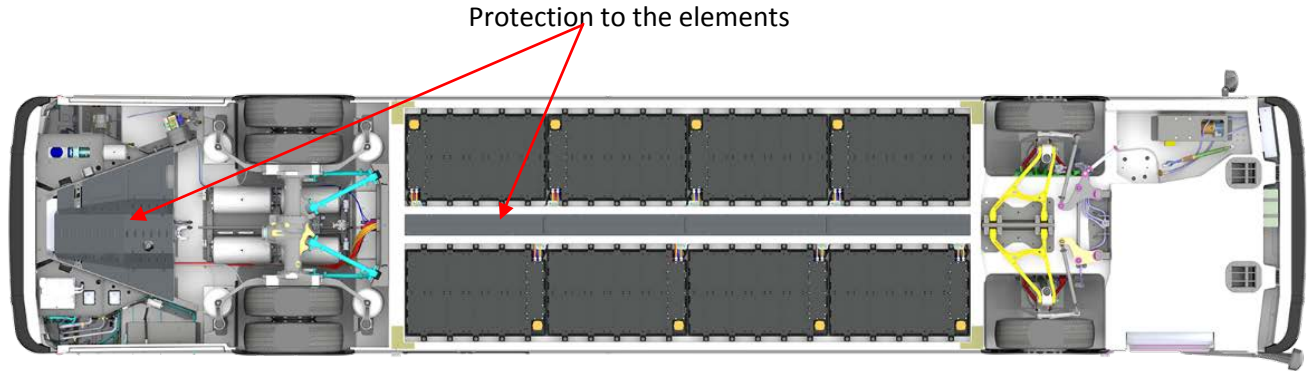
1. Approved deviation is being requested for routing under vehicle harnesses in loom only, to be used in place of Page TS-27, 14.8 Wiring, 14.8.d. under coach wiring in sealed flexible plastic conduit (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst vehicles have protective coverings over the high voltage wiring from the battery packs and for wiring to the ProDrive area where the traction motor, transmission, and air system is located. The only exposed wiring in loom only is a short span of wiring in the front of the coach to the power steering system.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Under coach wiring protection.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

- 6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The Proterra design sufficiently protects wiring under the coach from the elements.
- 7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**



View of Underbody of Coach

**REQUEST FOR APPROVED DEVIATIONS - 44**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for not coating the pins/sockets of sealed connectors with dielectric grease, to be used in place of Page TS-27, 14.8 Wiring, H. Connector terminals shall be coated with approved dielectric grease (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra does not currently coat sealed connectors with dielectric grease.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Sealed connectors.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

Proterra is concerned that adding dielectric grease to the already sealed connectors could compromise the connections which were designed specifically to keep intrusions from the connection.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A



**REQUEST FOR APPROVED DEVIATIONS - 45**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for having no weather proof junction box under the farebox mounting plate, to be used in place of Page TS-28, 14.10 Farebox Wiring and Mounting, 14.10.a weather proof junction box (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst vehicles do not have a weather proof junction box under our farebox platform.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Electrical provisioning for the farebox.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The farebox wiring comes from under the walking floor, which is a weather protected area that exists between the bottom of the composite body and the composite walking floor (where the farebox platform is). No weatherproof junction box is therefore required.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 46**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using Proterra's standard customer equipment cabinet, to be used in place of Page TS-28, 14.11 AVL, Camera and Communications Power Supply and Cabling, 14.11.a. Sliding Plywood Shelves (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra's Catalyst vehicles have a location above the street side wheel well that is designated for customer electronic equipment.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Customer electronics cabinet.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

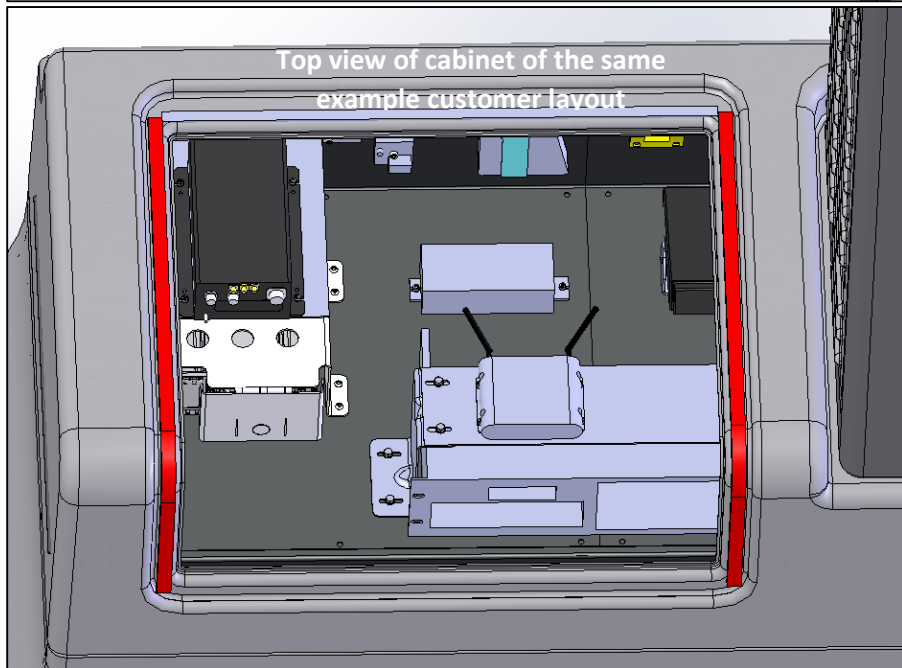
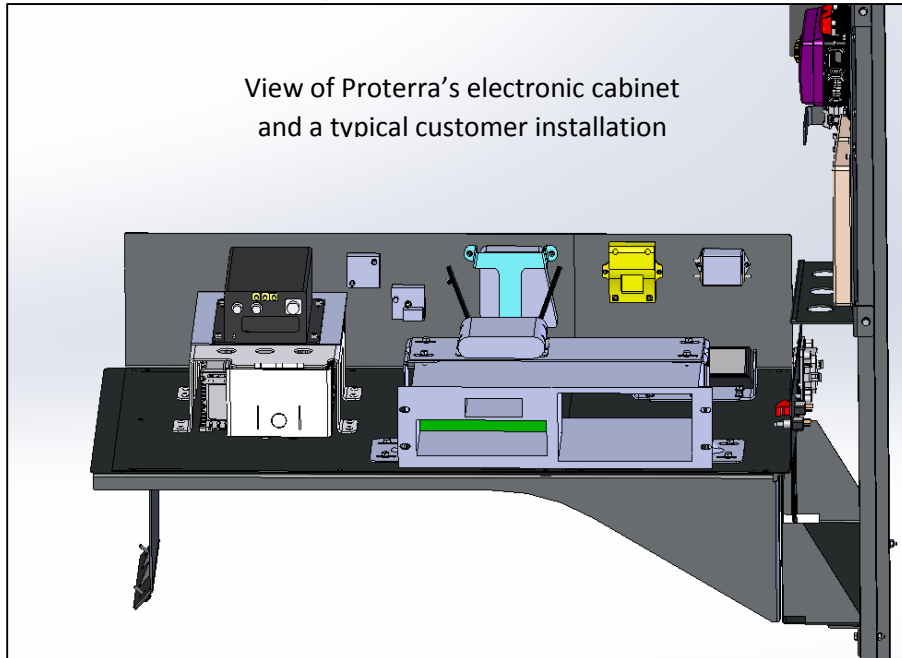
B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The Proterra standard customer electronics cabinet provides enough space for standard amounts of customer equipment typically installed on customer vehicles, i.e. ITS, Surveillance, Communications equipment, etc...

- 7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.



**REQUEST FOR APPROVED DEVIATIONS - 47**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using a Roxtec conduit sealing system pass through, to be used in place of Page TS-28, 14.11 AVL, Camera and Communications Power Supply and Cabling, 14.11.a. 0.75 inch inside diameter conduit (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Proterra uses a Roxtec connector instead of conduit when passing antenna cabling from the roof into the interior of bus.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Cable pass-through.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

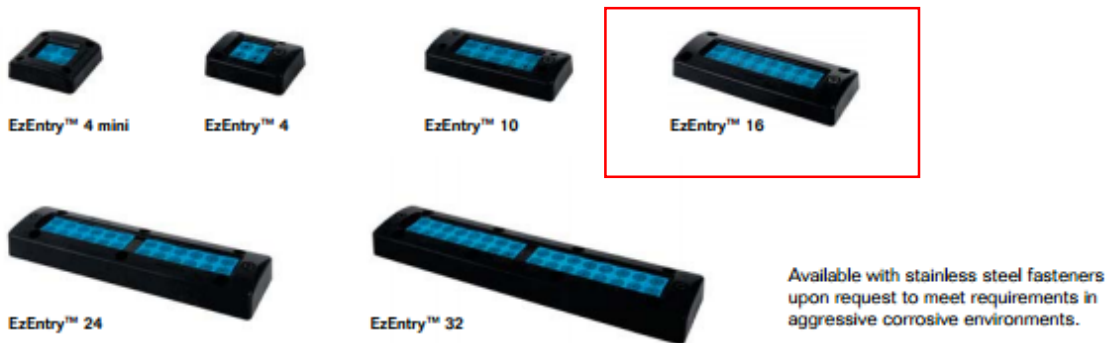
6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The Roxtec product is superior to a standard conduit pass-through.

- Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.

## EzEntry™ kit, integrated compression unit, PA 66 25% GF

EzEntry™ 套件, 集成压紧装置, PA 66, 25% GF | EzEntry™ Kit, integrierte Kompressionseinheit, PA 66, 25 % Glasfaser | Kit EzEntry™, unidad de compresión integrada, PA 66, 25% de fibra de vidrio | Kit EzEntry™, unité de compression intégrée, PA 66, 25 % fibre de verre



See also Installation guidelines on page 189.

RATINGS		EzEntry™ 4 mini: IP 55, UL/NEMA 12, 13				EzEntry™ 4, 10, 16, 24, 32: IP 66/67, UL/NEMA 4, 4x, 12, 13				
<b>CN</b>	套件	所能密封电缆/管道的直径范围和数量						重量 (千克)   (磅)		货号
<b>DE</b>	Kit	Durchmesserbereich und Anzahl der Kabel/Rohre						Gewicht (kg)   (lb)		Art.-Nr.
<b>ES</b>	Kit	Intervalo de diámetros y número de cables/tuberías						Peso (kg)   (libra)		Nº art.
<b>FR</b>	Kit	Plage des diamètres et nombre de traversants possibles						Poids (kg)   (lb)		Nº d'article
<b>EN</b>	Kit	Diameter range and number of cables/pipes						Weight (kg)   (lb)		Art No.
		0+3.5-10.5 mm 0+0.138-0.413 in (GM 13.3w40)	0+3.5-16.5 mm 0+0.138-0.650 in (GM 20w40)	0+3.5-16.5 mm 0+0.138-0.650 in (EM 20w40)	0+9.5-32.5 mm 0+0.374-1.280 in (EM 40 10-32)	0+3.5-16.5 mm 0+0.138-0.650 in (CM 20w40)	0+9.5-32.5 mm 0+0.374-1.280 in (CM 40 10-32)			
	EzEntry™ 4 mini/4		4 cables/pipes					0.10	0.22	EZ00000000440
	EzEntry™ 4 mini/9	9 cables/pipes						0.10	0.22	EZ00000000490
	EzEntry™ 4/4			4 cables/pipes				0.13	0.29	EZ00000000044
	EzEntry™ 10/4			2 cables/pipes	2 cables/pipes			0.30	0.65	EZ00000001004
	EzEntry™ 10/7			6 cables/pipes	1 cable/pipe			0.30	0.65	EZ00000001007
	EzEntry™ 10/10			10 cables/pipes				0.30	0.65	EZ00000001010
	EzEntry™ 16/4				4 cables/pipes			0.39	0.86	EZ00000001604
	EzEntry™ 16/10			8 cables/pipes	2 cables/pipes			0.39	0.86	EZ00000001610
	EzEntry™ 16/16			16 cables/pipes				0.39	0.86	EZ00000001616
	EzEntry™ 24/6					6 cables/pipes		0.80	1.77	EZ00000002406
	EzEntry™ 24/15					12 cables/pipes	3 cables/pipes	0.80	1.77	EZ00000002415
	EzEntry™ 24/24					24 cables/pipes		0.80	1.77	EZ00000002424
	EzEntry™ 32/8						8 cables/pipes	1.03	2.27	EZ00000003208
	EzEntry™ 32/20					16 cables/pipes	4 cables/pipes	1.03	2.27	EZ00000003220
	EzEntry™ 32/32						32 cables/pipes	1.03	2.27	EZ00000003232

**REQUEST FOR APPROVED DEVIATIONS - 48**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using Proterra's standard side console and instrument panel, to be used in place of Page TS-29, 14.12 Console Assembly and Instrument Panel (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Request to authorize Proterra's standard side console and instrument panel as detailed herein instead of the requirement from the RFP.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Side console and instrument panel.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):
  - A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
  - B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
  - C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager
6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

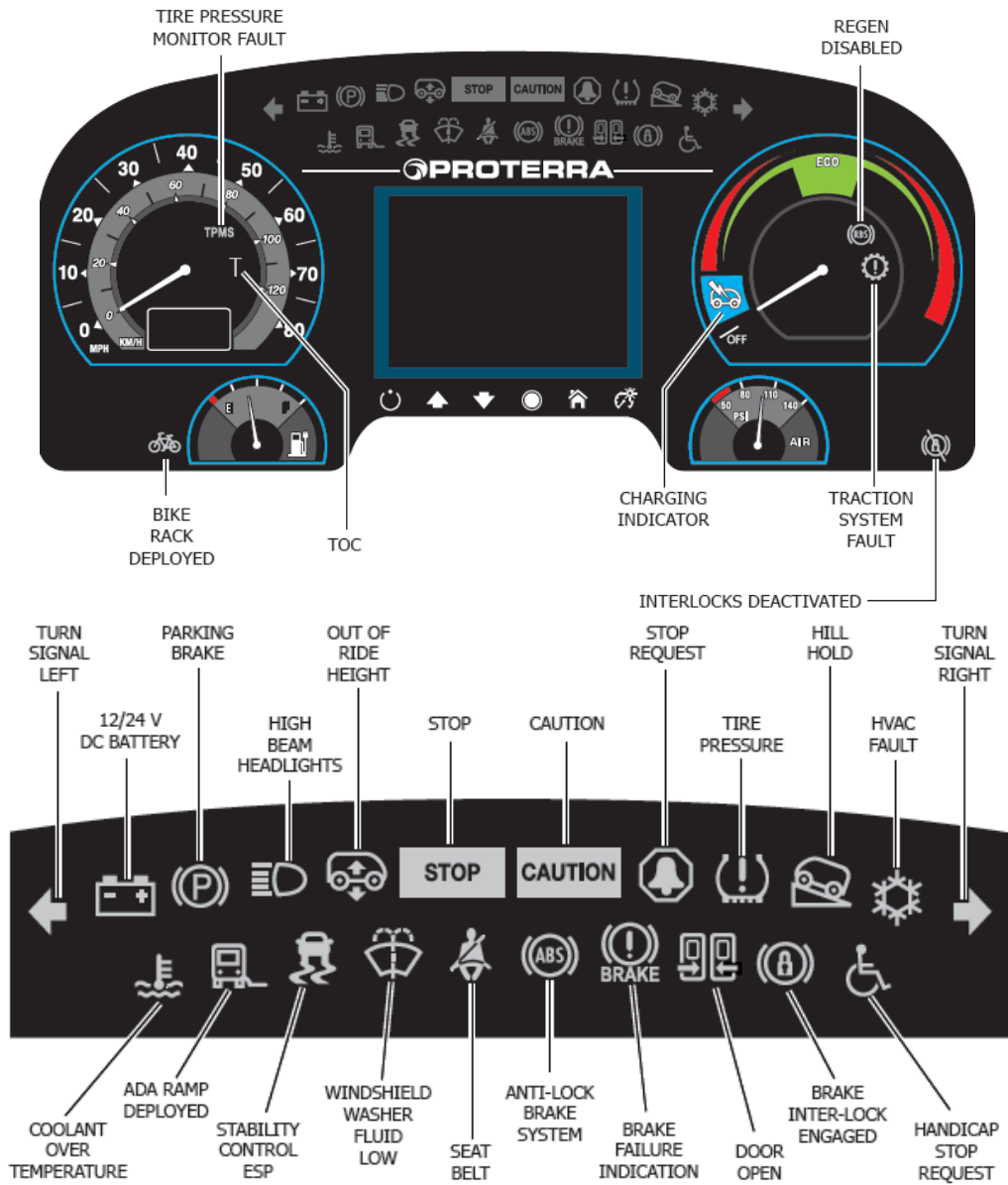


Proterra's side console and instrument panel were designed to be similar to existing heavy-duty bus designs in order to make operators feel comfortable behind the steering wheel.

- 7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**







**REQUEST FOR APPROVED DEVIATIONS - 49**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using a push button door control, to be used in place of Page TS-31, 14.13 Door Electrical, 14.13.b door-control handle (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Doors on the Proterra Catalyst vehicles are opened and closed using a push button on the side console.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Open and close the door.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The Proterra push button controls offer the same functionality as the door-control handle.

- 7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.



**REQUEST FOR APPROVED DEVIATIONS - 50**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using a NAPA Horn, to be used in place of Page TS-32, 14.15 Horn, Fiamm Technologies Inc. 12 Volt horns (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Use Proterra's standard 12 Volt horn from NAPA.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Horn.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Same functionality with Proterra's standard horn.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 51**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using Deutsch and Molex series connectors on exterior lights, to be used in place of Page TS-33, 14.17 Exterior Lighting, 14.17.g Packard Weather Pak Connectors (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra Catalyst vehicles use automotive grade Deutsch and Molex series connectors on our exterior lights.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Connectors for exterior lights.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

Proterra's standard Deutsch and Molex series connectors offer similar function and benefit as the connectors required by the specification.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 52**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for Hadley overhead the Interior Lighting , to be used in place of Page TS-34, 14.18 Interior Lighting, 14.18.a Dinex interior lighting (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses a Hadley XD Overhead system with integrated LED lighting.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Interior lighting.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:



The Proterra Catalyst vehicles are equipped with a Hadley XD overhead system that provides LED lighting with same / similar functionality to the Dinex overhead interior lighting system.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**


TRANSIT INTERIORS

# XD™

## INTERIOR SYSTEM



The XD Interior System is a complete interior system; window to window, modular in length, and upgradable to satisfy every request from end users and OEMs. The XD Interior System has a flexible design and is fully adaptable to all bus structures.

### FEATURING

- Exceptional panel linearity with robust and durable material
- Rattle free system
- Hidden hand rail integration and easy position adjustment
- Hidden fasteners for a cleaner design
- Disguised air slots prevents trash/gum entry
- Easily customizable with luggage rack option, speakers, reading lamps, additional air rotaries modules, advertisement cards, optional mood light
- Glare reduction on the windshield due to better positioning of the light source
- No dust on the light channel due to fewer lens seams and separation from A/C flow
- Maintenance free and easy access to all mechanical elements behind panels



**REQUEST FOR APPROVED DEVIATIONS - 53**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using a Hella driver overhead light, to be used in place of Page TS-35, 14.18 Interior Lighting, 14.18.i Xantech Model 107276 driver's light, (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Proterra's Catalyst vehicles use a driver's light from Hella with control switch on the left-hand arm rest.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Driver's overhead light.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The Hella light provides the same functionality as the Xantech light.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 54**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for not using any additional insulation material, to be used in place of Page TS-37, 15.5 Insulation, roof, sidewall, and engine compartment insulation (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst has a composite body that provides even better insulation performance than adding insulation to a metal body bus.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Insulation.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

Composite body offers better U-factor properties.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 55**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for a composite, monocoque body, to be used in place of Page TS-36, Construction: 15.2 Chassis (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra's Catalyst vehicles are made with a durable, light-weight composite body.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Primary structure for the bus.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The composite body is the backbone of the Proterra Catalyst vehicles, both in terms of serving as the body structure which everything else connects to and in terms of allowing Proterra to have the most efficient, lightest weight electric buses on the market.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 56**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for rear ditch extraction only, to be used in place of Page TS-36, Construction: Chassis 15.2.d, rear towing (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra's Catalyst vehicles were designed to support rear ditch extraction, but not necessarily rear towing. If the rear axle locks, the bus can be towed via a flatbed trailer.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Rear towing.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:



Adding in true rear towing capability would require significant redesign and therefore additional cost and time.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 57**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using our Hellermannntyton heavy-duty cable management system, to be used in place of Page TS-36, 15.2 Construction: Chassis, 15.2.f PVC tubing as protective conduit for wires and cables (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst vehicles use a Hellermannntyton heavy-duty cable management system, consisting of Hellermannntyton clamps spaced approximately 18" apart instead of PVC piping.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Secure cabling in underbody.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Secures the wires and cables under the vehicle, most of which are protected behind panels or by the belly pan.
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 58**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using Composite flooring, to be used in place of Page TS-37, 15.6 Flooring: Plywood or approved composite material (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Request authorization to use our composite walking floor.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Interior floor.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Same benefit as plywood, although lighter and more durable.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 59**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for not having distinct water-deflecting roof gutters , to be used in place of Page TS-38, 15.12 Drip Moldings (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra's Catalyst vehicles employ a uniquely designed roof profile that channels water away from passenger entrance and exit areas.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Water deflection from the roof.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
Provide similar functionality via the body design and roof profile.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 60**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for not providing sealed externally accessible electrical compartments, to be used in place of Page TS-39, 15.13 Access Panels, 15.13.i sealed electrical compartments, (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Proterra utilizes outdoor rated components behind access panels, although the compartment is not completely sealed.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Electrical compartments
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:



The combination of outdoor rated components and access doors mitigate any risk from not completely sealing the externally accessible electrical compartments.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request. N/A**

**REQUEST FOR APPROVED DEVIATIONS - 61**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of a one-piece windshield, to be used in place of Page TS-41, 16.1 Windshield (two-piece) (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses a one-piece windshield design.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Windshield.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The one-piece windshield offers better vehicle efficiency through improved aerodynamics, and a better (larger) operator's viewing area. Additionally, Proterra has patented the rubber gasket used to install the windshield, meaning no epoxy / sealants are used during install.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 62**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for the use of Arow Global flush windows, to be used in place of Page TS-41, 16.3 Side Windows, 16.3.a Ricon windows (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses Storm-Tite Flush windows manufactured by Arow Global.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Passenger Windows.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The Arow Global windows provide similar functionality as the specified Ricon windows.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

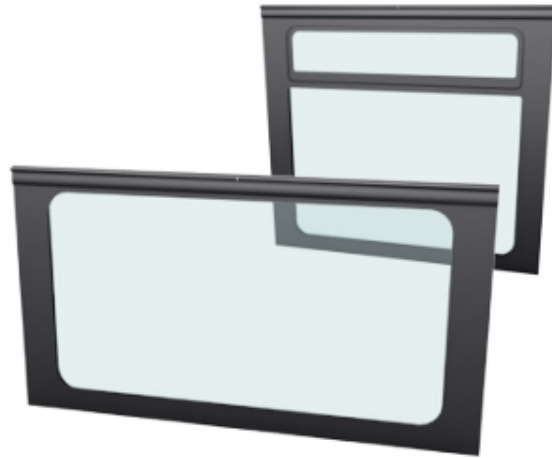
 **STORM-TITE**  
FLUSH WINDOW SERIES

### Flush Window Series

Our signature Storm-Tite brand Flush Window Series was designed to address the needs of the more style-conscious fleet operators that place a high value on "road appeal". The flush window's streamlined appearance creates an aerodynamic and visually appealing effect that is truly impressive on the road.

With an exterior comprised entirely of tempered safety glass or polycarbonate, the windows do not include the use of painted metal panels that are susceptible to fading from environmental exposure.

Available in either serviceable or non-serviceable design configuration, this model series utilizes the same superior water management system that is typical for AROW Global products and combines a simple, high performance design with attractive interior and exterior aesthetics.



### Product Features:

- Fixed, full-height-slider, and tip-in combination configurations available
- All configurations available in egress or non-egress style
- Glazing available in tempered glass and polycarbonate
- Interior graffiti protection options available for additional vandal resistance
- Superior weather tight design
- Premium fasteners and hardware
- Exceptional functional performance
- Built and tested in accordance with FMVSS 217 guidelines with materials that conform to the applicable requirements of ANSI Z26.1 and the recommended practices defined in SAE J673

**REQUEST FOR APPROVED DEVIATIONS - 63**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for use of Ventura Systems pneumatic doors, to be used in place of Page TS-42, 17 Passenger Doors, 17.1.c and 17.2.b Vapor doors (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
The Proterra Catalyst standard door options include Ventura pneumatic and Ventura electric doors (at a higher cost).

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Doors.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The Proterra Catalyst vehicles are designed to accommodate the Ventura doors and using a Vapor door would require body changes only possible by tooling changes at the body manufacturer.

**7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

**1.2 Overview Door Mechanism**



Figure: Door system description

Front / Entrance Door

**1.1 Product diagram**



Figure: System description

Rear / Exit Door



**REQUEST FOR APPROVED DEVIATIONS - 64**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using a push button door control, to be used in place of Page TS-43, 17.3 Door Controls and Interlocks (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
See Request for Approved Deviation No. 49

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: See Request for Approved Deviation No. 49

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
See Request for Approved Deviation No. 49



7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** See Request for Approved Deviation No. 49

**REQUEST FOR APPROVED DEVIATIONS - 65**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for using Hadley B&R adjustable external mirrors, to be used in place of Page TS-43, 18 Exterior Mirrors, 18.2.a. adjustable Metagal mirrors (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
The Proterra Catalyst uses Hadley B&R remote adjustable, heated external mirrors with LED turn lights

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: External mirrors.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The Hadley B&R mirrors provide the same or better functionality than the specified Metagal mirrors.

7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.** N/A

**REQUEST FOR APPROVED DEVIATIONS - 66**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for Kydex cool grey ceiling panels, to be used in place of Page TS-45, 19.4 Interior Trim, Melamine panels in Wilson Art Frosty White (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Proterra's Catalyst vehicles are equipped with Kydex cool grey ceiling panels.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Ceiling panels.
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
The Kydex ceiling panels are FMVSS 302 certified and provide same functionality as the Melamine ceiling panels.

**7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

**Kydex® 6200 High Fire Rate Sheet for Mass Transit**

Kydex 6200 is a proprietary, high performance thermoplastic sheet. It is designed for use in mass transit vehicles such as subways, vans, buses, and trains. It meets the recommended fire safety practices of both the Federal Transit Administration (FTA) and the Federal Rail Administration (FRA) for smoke emission and flammability as tested under ASTM E-662 and ASTM E-162. It is the ideal thermoplastic for to solve your mass transportation equipment needs.

**SUGGESTED END-USES**

Kydex 6200 sheet is specifically designed for mass transit railcars, subway, and bus interiors where the UMTA requirements and/or Docket 90-A requirements must be met. Typical Applications include:

- Dashboards
- Seatbacks
- Armrests
- Tray tables
- Window reveals
- Cabin liners

**FEATURES**

Kydex 6200 is available in over 200 developed colors, eight surface textures, and thicknesses from 0.028" (.71mm) and up enabling you to satisfy both the functional and aesthetic requirements of any mass transit vehicle interior.

Kydex 6200 is easy to clean. Graffiti/spray paint, lipstick, ball point pen, felt pen, grease, and grime are all easily removed using cleansers such as Soft Scrub, Fantastic, and citrus -based cleansers such as Citri Kleen HD. Ammoniated cleaners should be avoided since they can leave a residue.

Kydex 6200 is very resistant to a wide range of concentrated chemicals and solvents, so it withstands frequent cleaning with harsh cleaners without fading or staining.

**FABRICATION**

Kydex 6200 forms to deep draws with low forces when heated to the upper range of 350°F to 390°F (176-199°C), and has unusually high resistance to hot tearing.

Kydex 6200 sheet can be formed on all standard presses, and cut on all standard die-cutting machines.

PROPERTY	TEST METHOD	TYPICAL VALUE <sup>1</sup>
Specific Gravity	ASTM D-792	1.38
Tensile Strength, psi (MPa)	ASTM D-638	6,000 (41)
Elongation at Break, %		55
Flexural Strength, psi (MPa)	ASTM D-790	9,200 (63)
Modulus of Elasticity, psi (MPa)		350,000 (2413)
Rockwell Hardness, R	ASTM D-785	98
Notched Izod Impact Resistance, 73°F (23°C),ft-lbs/in (J/m)	ASTM D-256	3.5 (187)
Heat Deflection Temperature, HDT, @264psi (1.8MPa), annealed,°F (°C)	ASTM D-648	172° (78°)
Flammability Resist: Independant Test Lab	UL Standard 94	V-0
Fed. Aviation Admin.	FAR 25.853a	Pass
Motor Veh. Sfty. Std.	MVSS 302	Pass
Radiant Panel, FS	ASTM E-162	3.99
Smoke Gen, Ds@ 4.0 Minutes	ASTM E-662	76

<sup>1</sup>All values based on 0.125" (3.12mm) sheet unless otherwise specified.  
<sup>2</sup>All gauges from 0.028" (.71mm) and greater. Not intended for specification purposes.

**REQUEST FOR APPROVED DEVIATIONS - 67**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for Kydex cool grey sidewall panels, to be used in place of Page TS-45, 19.4 Interior Trim, 19.4.c Melamine side wall panels in Nepal Teak (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).

2. Description of approved deviation request/substitution:  
Proterra's Catalyst vehicles are equipped with Kydex cool grey sidewall panels.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: Sidewall panels.

4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES

5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director

B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO

C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager

6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:

The Kydex sidewall panels are FMVSS 302 certified and provide same functionality as the Melamine sidewall panels.

**7. Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

**Kydex® 6200 High Fire Rate Sheet for Mass Transit**

Kydex 6200 is a proprietary, high performance thermoplastic sheet. It is designed for use in mass transit vehicles such as subways, vans, buses, and trains. It meets the recommended fire safety practices of both the Federal Transit Administration (FTA) and the Federal Rail Administration (FRA) for smoke emission and flammability as tested under ASTM E-662 and ASTM E-162. It is the ideal thermoplastic for to solve your mass transportation equipment needs.

**SUGGESTED END-USES**

Kydex 6200 sheet is specifically designed for mass transit railcars, subway, and bus interiors where the UMTA requirements and/or Docket 90-A requirements must be met. Typical Applications include:

- Dashboards
- Seatbacks
- Armrests
- Tray tables
- Window reveals
- Cabin liners

**FEATURES**

Kydex 6200 is available in over 200 developed colors, eight surface textures, and thicknesses from 0.028" (.71mm) and up enabling you to satisfy both the functional and aesthetic requirements of any mass transit vehicle interior.

Kydex 6200 is easy to clean. Graffiti/spray paint, lipstick, ball point pen, felt pen, grease, and grime are all easily removed using cleansers such as Soft Scrub, Fantastic, and citrus -based cleansers such as Citri Kleen HD. Ammoniated cleaners should be avoided since they can leave a residue.

Kydex 6200 is very resistant to a wide range of concentrated chemicals and solvents, so it withstands frequent cleaning with harsh cleaners without fading or staining.

**FABRICATION**

Kydex 6200 forms to deep draws with low forces when heated to the upper range of 350°F to 390°F (176-199°C), and has unusually high resistance to hot tearing.

Kydex 6200 sheet can be formed on all standard presses, and cut on all standard die-cutting machines.

PROPERTY	TEST METHOD	TYPICAL VALUE <sup>1</sup>
Specific Gravity	ASTM D-792	1.38
Tensile Strength, psi (MPa)	ASTM D-638	6,000 (41)
Elongation at Break, %		55
Flexural Strength, psi (MPa)	ASTM D-790	9,200 (63)
Modulus of Elasticity, psi (MPa)		350,000 (2413)
Rockwell Hardness, R	ASTM D-785	98
Notched Izod Impact Resistance, 73°F (23°C),ft-lbs/in (J/m)	ASTM D-256	3.5 (187)
Heat Deflection Temperature, HDT, @264psi (1.8MPa), annealed,°F (°C)	ASTM D-648	172° (78°)
Flammability Resist: Independant Test Lab	UL Standard 94	V-0
Fed. Aviation Admin.	FAR 25.853a	Pass
Motor Veh. Sfty. Std.	MVSS 302	Pass
Radiant Panel, FS	ASTM E-162	3.99
Smoke Gen, Ds@ 4.0 Minutes	ASTM E-662	76
<sup>1</sup> All values based on 0.125" (3.12mm) sheet unless otherwise specified.		
<sup>2</sup> All gauges from 0.028" (.71mm) and greater. Not intended for specification purposes.		



**REQUEST FOR APPROVED DEVIATIONS - 68**

**IMPORTANT: USE A SEPARATE FORM FOR EACH SEPARATE SOLICITATION, PROVISION, OR SPECIFICATION ITEM REQUEST. COPY THIS FORM AS NEEDED.**

LAVTA requires that all prospective bidders completely fill out and attach this form **with every separate specification item request** for an Approved Deviation pertaining to this Contract. Failure to completely fill out this form and submit with the request may result in denial of the request. Any further information that may be useful in reviewing such a request should also be attached to this form.

1. Approved deviation is being requested for Proterra's HVAC system and dual cylinder compressor provided by Eberspächer, to be used in place of Page TS-65, 22. Heating, Defrosting, Ventilating, & Air Conditioning Systems (list technical specification or other reference number, [e.g. page TS-11, title, subsection, item]).
2. Description of approved deviation request/substitution:  
Proterra's vehicles were designed from a clean sheet, allowing us to find the optimal HVAC system for our electric bus. The unit we selected from Eberspächer allows us to maximize efficiency and performance. Additionally, this unit allows us to cool the energy storage system and the primary electronic devices.

**This deviation request only applies to Category 2 vehicles.**

3. Product purpose: HVAC
4. Does this proposed approved deviation request/substitution meet all applicable federal, state and local laws and regulations? (If NO, please explain): YES
5. List three (3) commercial firms within the United States, which have used the proposed approved deviation request/substitution (list California properties first):

- A. Company Name: Foothill Transit  
Street Address: 100 S. Vincent Avenue, Suite 200  
City/State/Zip Code: West Covina, CA 91790  
Area Code/Telephone No.: 626-931-7200  
Name of Contact Person: Doran Barnes, Executive Director
- B. Company Name: San Joaquin RTD  
Street Address: PO Box 201010  
City/State/Zip Code: Stockton, CA 95201  
Area Code/Telephone No.: 209-467-6612  
Name of Contact Person: Donna DeMartino, General Manager/CEO
- C. Company Name: King County Metro Transit  
Street Address: 201 S. Jackson Street  
City/State/Zip Code: Seattle, WA 98104  
Area Code/Telephone No.: 206-477-6876  
Name of Contact Person: George Stites, Battery-Electric Program Manager





6. List the benefits and any other reason why LAVTA should approve this request for approved deviation/substitution:  
 Maximizing efficiency by selecting the right, proven HVAC system that can tackle many issues with the same system allows the Proterra Catalyst to be the most efficient electric bus on the market.
7. **Attach pertinent test data, technical data, and background information on the approved deviation/substitution request.**

### AC 136 AE (ALL ELECTRIC) ROOF-MOUNTED A/C SYSTEM

With the AC 136 AE (All Electric), Eberspächer has developed a tailor made air conditioning system design that sets new standards in the area of custom comfort concepts for electric buses. Less installation effort and maximum operating reliability are just two of the product characteristics of the AC 136 AE. A variable-frequency voltage provides full automatic closed-loop control and constant air conditioning, even in stop-and-go traffic. Other desirable features of the AC 136 AE include: light weight and modular system design, excellent energy efficiency, reduced impact on the environment, and largely reduced life cycle costs thanks to easy maintenance and upkeep.

**ADDITIONAL BENEFITS:**

- Cooling capacity independent of engine speed
- Condenser suitable for tropical conditions
- Reduced life-cycle cost thanks to speed-controlled brushless motors
- Heating (coolant standard, electric optional)
- Integrated coolant box for front box and battery (optional)
- Prefilled with R134a refrigerant
- Built for side or central air duct (air extraction above windows) system

BUS AC SYSTEM	AC 136 AE I	AC 136 AE II
Cooling Capacity (kW/BTU)	28 / 95600	37 / 126300
Heating Capacity (kW/BTU)	39 / 133100	39 / 133100
Evaporator Air Flow Capacity (m <sup>3</sup> h/cfm)	5800 / 3415	5800 / 3415
Total Power Input at 24 VDC (amps)	96	96
Total Power Input at 400 VAC (amps)	14	27.5
Weight (kg/lbs)	220 / 485	220 / 485
Dimensions (cm/in)	243 x 201 x 39.5 95.7 x 79.1 x 15.6	243 x 201 x 39.5 95.7 x 79.1 x 15.6
Refrigerant	R 134a	R 134a