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Denver PRJ: [

FIRST AMENDMENT TO INTERGOVERNMENTAL AGREEMENT by and between REGIONAL TRANSPORTATION DISTRICT and CITY AND COUNTY OF DENVER for EAST COLFAX AVENUE BUS RAPID TRANSIT

This First Amendment to Intergovernmental Agreement (**First Amendment**) is made between the Regional Transportation District (**RTD**), a political subdivision of the State of Colorado, and the City and County of Denver (**City**), a municipal corporation of the State of Colorado, each a **Party** and together the **Parties**, to provide a pass-through of Federal Transit Administration (**FTA**) funding awards through RTD to the City as partial funding for the East Colfax Avenue Bus Rapid Transit project (**Project**). This Agreement will be effective (**Effective Date**) when RTD and the City have fully executed the Agreement in conformance with their respective requirements. Capitalized terms not defined in this First Amendment shall have the definitions found in the most current FTA Master Agreement (**FTA Master Agreement**) or the IGA (defined below), as applicable.

I. <u>RECITALS</u>

- A. The Parties entered into an Intergovernmental Agreement dated February 13, 2023 (**IGA**) that describes the Parties' relationship during the design and preconstruction phase of the Project including procurement of an Owner's Representative and procurement of a Construction Manager General Contractor firm.
- B. Section 11.c. of the IGA permits the Parties to amend the IGA in writing executed by both Parties.
- C. The Parties desire to amend the IGA with this First Amendment to address Project construction and Project operations and maintenance within City limits. For clarity, Project operations and maintenance within the City of Aurora (**Aurora**) limits will be addressed in a separate IGA between RTD and Aurora.
- D. The Parties are public entities within the meaning of the Colorado Governmental Immunity Act, §24-10-101, et seq., C.R.S. (the "CGIA"). This Agreement does not limit, waive, or otherwise modify the applicability of the CGIA to the Parties or any CGIA defenses, damage limitations or restrictions for third party claims that may be appropriate under the law.

NOW, THEREFORE, the Parties hereby agree to replace and add certain IGA Exhibits and add the following Sections to the IGA:

12. EXHIBITS.

The attached $\underline{Exhibit\ B}$ hereby replaces the exhibit in the IGA. $\underline{Exhibits\ F}$, \underline{G} and \underline{H} are hereby added to the IGA.

Exhibit B Station Design Concept

Exhibit F Project Station Maintenance Requirements

Exhibit G Project Funding Sources

Exhibit H Transit Signal Priority Locations

13. IGA UPDATES.

- a. <u>Completion Date</u>. The City will be required to complete the Project within a timeframe established in the FTA Small Starts Grant Agreement for the Project, but no later than December 31, 2027, unless otherwise extended in writing by the Parties.
- b. <u>Financial Capacity</u>. The City's local match to the Project is described in <u>Exhibit G</u> and shall comply with the FTA Small Starts Grant Agreement.
- c. <u>RTD Award</u>. The RTD Award for the Project is described in <u>Exhibit G</u>. A portion of the RTD Award will be retained by RTD as described in this IGA and <u>Exhibit G</u>.
- d. <u>Additional Federal Funds</u>. In addition to the RTD Award for the Project, RTD may pass through additional federal funds to the City pursuant to this Agreement as authorized by the RTD Board.
- e. <u>Term.</u> Section 11.f of the IGA is hereby replaced in its entirety with the following: "This IGA shall commence as of the Effective Date and will terminate upon the fifth (5) anniversary of the final close out of the Project, unless sooner as provided in Section 10 or extended in writing by both Parties. The following provisions shall survive termination of this IGA: Sections 8 and 11(g). In the event that the Parties terminate this Agreement, the Parties shall negotiate future operations and maintenance responsibilities for the Project's infrastructure a minimum of six (6) months prior to the termination date."
- f. <u>RTD Small Business Office</u>. RTD SBO has established a DBE goal of sixteen percent (16%) for the Construction Contract (defined below).
- g. <u>Accept/Acceptance</u>. When this Agreement refers to RTD's "Acceptance" of equipment, completed work, an/or Project changes, the City will notify RTD in writing when the equipment, work or Project change is ready for RTD's review and the City will indicate a reasonable timeframe required for such review. After a reasonable timeframe to review the change or inspect the work, RTD will confirm its Acceptance in writing. RTD's failure to respond in writing within a reasonable timeframe shall be deemed an Acceptance. RTD may withhold Acceptance if the change or equipment:
 - i. does not comply with the terms of a grant RTD is administering;

- ii. does not comply with applicable law;
- iii. is not made pursuant to, or otherwise is not compliant with, good industry practice;
- iv. would give rise to a material risk to the health or safety of any person, the community, or property; and/or
- v. would have an adverse impact on:
 - 1. the performance by the Parties to fulfill its obligations under this Agreement;
 - 2. the rights of the Parties under this Agreement; and/or
 - 3. the Project.

14. CONSTRUCTION ACTIVITIES.

- a. The City intends to enter into a construction contract for the Project (Construction Contract) with a general contractor (GC).
- b. The City agrees that RTD shall have the opportunity to monitor, inspect, and accept construction of the Project elements that are critical to RTD operations and maintenance of the BRT such as platform heights, dimensions, and slopes.
- c. The City shall include a provision in the Construction Contract requiring that RTD have the opportunity to inspect and Accept RTD Safety and Security Elements (defined below).
- d. As Project stations and their corresponding blocks are completed, the City shall require the GC to make such stations available to RTD for training and/or revenue service following City's issuance of any partial substantial completion to the GC.
- e. RTD shall coordinate with the City with respect to any required Project elements that must be installed and fully functioning prior to opening any station for training and/or public use. The Parties will document these elements in the Safety and Security Certification Plan for the Project.
- f. The City shall provide a Project construction schedule to RTD for review and Acceptance prior to executing the Construction Contract. Any revised construction schedule submitted by the GC shall be provided to RTD by the City for review and Acceptance by RTD.
- g. The City will include RTD in the construction phase planning so that RTD can provide input related to RTD bus operations and safe bus access to curbside and center station platforms.
- h. RTD shall maintain bus service on Colfax Avenue during Project construction. To facilitate this service, the City and the GC shall maintain one lane of traffic in each direction along East Colfax Avenue or an RTD Accepted detour, accessible temporary stops, and accessible pedestrian access routes to stations/stops (either at existing or temporary locations) within the Project limits throughout construction, unless otherwise approved by the Parties in writing.

i. RTD shall be responsible for all testing, integration, and activation of RTD owned and maintained infrastructure on the Project as described in **Exhibit F**. RTD shall complete these activities in accordance with the Project schedule.

15. MOCK BRT STATION.

- a. The City shall contract with the GC for the construction of a mock BRT station (**Mock Station**) at a mutually agreed upon location on RTD owned property for RTD to test bus operations. RTD shall provide all required permits, temporary construction easements, and other permissions to facilitate the Mock Station construction at no cost to the City or the GC.
- b. The City shall cause the GC to complete the Mock Station prior to providing the GC with the construction notice to proceed so that the City can incorporate any necessary design changes to the center running BRT stations.
- c. The City shall cause the GC to construct the Mock Station in compliance with the NEPA-approved full-length center running station platform design. The Parties shall agree on the Mock Station platform features necessary to train RTD BRT operators on how to facilitate level boarding using the existing bus bridge plates on the current RTD bus fleet prior to Mock Station construction. The City shall avoid modifications or adjustments to the dimensions and features of the center running BRT stations that would result in the need for additional NEPA clearance.
- d. The City is not required to provide equipment, shelter, and amenities not critical to bus training operations at the Mock Station.
- e. RTD will use the Mock Station to test solutions for level boarding with the existing RTD bus fleet along with the approach and departure angles to the platform that are anticipated to be encountered along East Colfax Avenue.
- f. RTD will be responsible for the maintenance and future removal (as applicable) of the Mock Station.

16. FARE COLLECTION EQUIPMENT.

- a. "Fare Collection Equipment" means the devices and equipment utilized by RTD to collect, sell, and validate fare media required for RTD passengers to board and travel between destinations on the BRT system, including fare validators and ticket vending machines (TVMs).
- b. RTD will be responsible for the designation of paid fare zones at center-running BRT station platforms.
- c. RTD shall procure, install, and integrate TVMs at each BRT station that are compatible with RTD's backend TVM system in accordance with the Project schedule. The Parties expect that a total of fifty-four (54) TVMs will be needed for the Project.

- d. RTD shall procure, install, and integrate fare validators at each BRT station in accordance with the Project schedule. The Parties expect that a total of fifty-four (54) fare validators will be needed for the Project.
- e. The City will cause the Construction Contract to include the construction of all conduits, electrical wiring, data cabling, and foundations required for the installation and functionality of the TVMs and fare validators (**Fare Collection Equipment Infrastructure**). RTD shall provide the design and requirements for the foundations to the City no later than December 31, 2024, unless otherwise approved by the Parties in writing.
- f. RTD shall coordinate with the GC and the City's design contractors on the exact locations for the installation of the Fare Collection Equipment Infrastructure at the BRT stations.
- g. The City will require the GC to construct the Fare Collection Equipment Infrastructure prior to RTD's installation of the Fare Collection Equipment in accordance with the Project schedule.
- h. RTD will retain funds from the RTD Award in the estimated amount of \$5,250,325.00 for RTD's procurement, installation, and integration of the Fare Collection Equipment to allow for off-board fare collection and the enforcement of paid fare zones within the Project limits. If the estimated amount for the Fare Collection Equipment listed above varies from RTD's actual procured cost by more than \$250,000.00, the Parties agree to negotiate a revised fund retainage from the RTD Award. RTD will provide copies of contractor invoices for costs incurred for the Fare Collection Equipment to the City within 90 calendar days of delivery of the Fare Collection Equipment to RTD.
- i. RTD shall be responsible for ownership and maintenance of the Fare Collection Equipment, including utility fees and replacement costs.
- j. RTD shall be responsible for ownership and maintenance of the Fare Collection Equipment Infrastructure, including utility fees and replacement costs, upon Acceptance by RTD of the Fare Collection Equipment Infrastructure.

17. COMMUNICATIONS EQUIPMENT.

- a. "Communications Equipment" means the information and communication technologies and infrastructure used to collect and distribute data and information along the BRT Corridor.
- b. The City will cause the Construction Contract to require the construction for RTD of an exclusive Intelligent Transportation Systems (**ITS**) backbone along East Colfax Avenue consisting of 96-strand Single Mode fiber optic cable in an exclusive conduit from Broadway to I-225. This conduit may be located within a shared duct bank.

- c. The City shall require that all conduits, pull-boxes, and manholes supporting the RTD ITS backbone shall be designed, constructed, and tested in accordance with RTD specifications and standards.
- d. The City will cause the Construction Contract to include that the Communications Equipment necessary for the operation of the communications, fare collection, and security equipment will be installed for RTD at the BRT stations. Such Communication Equipment consist of all network switches, pluggable transceivers, power supplies, power cables, surge suppressors, Uninterrupted Power Supplies (UPS), and battery packs for UPS (Network Infrastructure).
- e. The City will cause the GC to provide the Network Infrastructure to RTD for configuration 10 calendar days prior to installation. The GC shall first deliver to and then pick up the Network Infrastructure from RTD at RTD's District Shops location (1900 31st Street, Denver, CO, 80216). RTD will configure the Network Infrastructure for installation by the GC.
- f. The City will not include procurement and installation of speakers and public address systems as part of the Construction Contract. However, the City shall cause the East Colfax Avenue BRT stations between Broadway and Yosemite (within the City) and at Havana Street (within the City of Aurora) to be designed to accommodate installation of these features in the future without modifying the BRT station canopy.
- g. RTD agrees that existing spare lateral communications conduits owned by RTD along the Project corridor at Havana, Moline, and Peoria intersections within the City of Aurora (one conduit at each location) shall be made available by RTD for use by the Project for installation of the ITS backbone. RTD agrees to provide as-built documents of these existing lateral communications conduits to the City to support Project design.
- h. RTD shall be responsible for ownership and maintenance of the Communications Equipment, including utility fees and replacement costs, upon Acceptance by RTD.

18. SAFETY AND SECURITY ELEMENTS AND SECURITY EQUIPMENT.

- a. "Safety and Security Elements," means the systems, devices, and infrastructure that are used to monitor, identify, alert, survey, and protect RTD passengers, employees, contractors, emergency responders, and the general public from hazards and vulnerabilities associated with the Project, including crime, fire, accidents, vandalism, and attacks. Such Safety and Security Elements include security cameras, emergency telephones, public address systems, and information and communications technologies and equipment.
- b. RTD shall be responsible for ownership and maintenance of the Safety and Security Elements, including utility fees and replacement costs, upon Acceptance by RTD.
- c. "Security Equipment" generally means a variety of protection, identification, surveillance, and detection devices, including cameras and Emergency Telephones

- ("**ETels**"). ETels include the emergency telephone tower structure, blue strobe light, and analog phone handset assembly.
- d. The City will cause the Construction Contract to provide and install security cameras at all BRT stations along East Colfax Avenue between Broadway and I-225. These cameras will provide full coverage of the BRT stations and platforms located between Pennsylvania and Uinta and at Havana. At the enhanced 15L BRT stations (located at Broadway and between Yosemite and Wheeling/VA Medical Center), these cameras will provide full coverage of the ETel and TVMs only. The cameras shall have a minimal pixel quality of 2 mega pixel (MP) and will be integrated by RTD into the existing RTD Security Command Center with feeds provided to the RTD, the City, and Aurora Police Departments. RTD shall coordinate with the City on the locations for each security camera at the BRT platforms and stations.
- e. RTD shall procure, install, and integrate Emergency Telephones ETels at BRT stations in Denver and Aurora in accordance with the Accepted Project schedule. The Parties expect that a total of fifty-four (54) ETels are needed for the Project. The City will cause the Construction Contract to include the construction of all conduits, electrical wiring, data cabling, Session Initial Protocol (SIP) devices, and foundations required for the installation and functionality of the ETels (ETel Infrastructure). RTD shall provide the design and requirements for the foundations to the City no later than December 31, 2024, unless otherwise approved by the Parties in writing.
- f. RTD shall coordinate with the GC and the City's design contractors on the exact locations for the installation of the ETel Infrastructure at the BRT stations.
- g. The City will require the GC to construct the ETel Infrastructure prior to RTD's installation of the ETels in accordance with the Accepted Project schedule.
- h. RTD will retain funds from the RTD Award in the estimated amount of \$648,816.00, for RTD's procurement, installation, and integration of the ETels at all stations along East Colfax Avenue between Broadway and I-225. If the estimated amount for the ETels listed above varies from RTD's actual procured cost by more than \$40,000.00, the Parties agree to negotiate a revised fund retainage from the RTD Award. RTD will provide copies of contractor invoices for costs incurred for the ETels to the City within 90 calendar days of delivery of the ETels to RTD.
- i. RTD will cause the ETels to be programmed to call the RTD Security Command Center.
- j. RTD shall be responsible for ownership and maintenance of the Security Equipment, including utility fees and replacement costs, upon Acceptance by RTD.

19. EXISTING 15L SHELTERS.

a. The City will require the GC to remove, store, and reinstall RTD-owned Route 15L bus shelters that are to be reused for this Project pursuant to RTD requirements, including

- reconnecting the drains at the back of these shelters to the stormwater system, as applicable.
- b. The City will require the GC to detach, disassemble, package, and inventory RTD-owned 15L shelters and any related equipment that will not be reused as part of the Project. The GC shall deliver 15L shelters and related components to the RTD Quail Street property at 1405 Quail Street, Lakewood, CO, 80215. The GC shall deliver electronic equipment to RTD District Shops at 1900 31st St, Denver, CO 80216. The City will require the GC to coordinate such deliveries with RTD.
- c. Prior to relocating or removing each 15L shelter, RTD, the GC, and the City shall inspect and document each shelter for any pre-existing damage. Upon delivery of the 15L shelter to RTD or installation on the Project; RTD, the GC, and the Project shall re-inspect and document the condition of each 15L shelter. The City will require the GC to be responsible for repairing any new damage incurred during removal, transport, and/or installation of a 15L shelter.

20. PROJECT STATION MAINTENANCE.

- a. The BRT stations will be maintained in accordance with the maintenance service levels and requirements defined in **Exhibit F** to this Amendment and the Asset Management Plan for the corridor that will be developed by the Parties prior to revenue service.
- b. The Parties shall negotiate a cost sharing methodology for the procurement of spare parts and maintenance of the Project stations prior to the BRT entering revenue service. The City will not maintain BRT stations outside the City limits.
- c. The designations of responsibility in **Exhibit F** do not relieve public or private entities or individual of responsibility for maintenance they have as a result of law, agreement, property ownership or the designation of Colfax Avenue as a State Highway.

21. PASSENGER INFORMATION DISPLAY SYSTEM (PIDS).

- a. RTD shall procure, install, test, and maintain the PIDS under their existing contract with Lamar Transit LLC (Lamar) (RTD Contact Number 120DH005) at the following locations in Denver and Aurora: Broadway/Lincoln (new equipment), Downing, York/Josephine, Colorado, Monaco, Quebec, Havana, and Peoria. The existing PIDs at Colfax Station (R Line) will remain in place. The existing PIDs at Colorado shall be removed from the existing 15L shelters by Lamar prior to relocation of the 15L shelters by the GC. Lamar shall then reinstall these PIDs at the specified relocated 15L shelter BRT station location in Aurora.
- b. The City will cause the Construction Contract to include the construction of all conduits, electrical wiring, data cabling, rack space in the communications cabinets, and foundations required for the installation and functionality of the PIDS (**PIDS Infrastructure**) at the locations identified above (one PID per station platform). RTD shall be responsible for providing and installing any enclosures required to house the

- PIDs. RTD shall provide the design and requirements for the foundations to the City no later than December 31, 2024, unless otherwise approved by the Parties in writing.
- c. Stations without a Lamar-installed PID at Project revenue service (which stations are not described in (a) above) shall be outfitted with stub-ins for future PIDS installation at locations agreed upon by the Parties prior to the 100% design plans.
- d. RTD shall coordinate with the GC and the City's design contractors on the exact locations for the installation of the PIDS Infrastructure at the BRT stations.
- e. The City will require the GC to construct the PIDS Infrastructure prior to RTD's installation of the PIDS in accordance with the Accepted Project schedule.
- f. RTD, or its designee, shall be responsible for ownership and maintenance of the PIDs, including all utility fees.
- g. RTD, or its designee, shall be responsible for ownership and maintenance of the PIDS Infrastructure, including all utility fees and replacement costs, upon Acceptance by RTD.

22. TRANSIT SIGNAL PRIORITY (TSP).

- a. The City will cause the Construction Contract to include TSP equipment in all traffic signal controller cabinets to be installed on the corridor at identified signalized intersections along East Colfax Avenue within the City limits as described in <u>Exhibit H</u>. No TSP equipment will be installed by the Project within the City of Aurora.
- b. RTD will be responsible for owning and maintaining any TSP equipment on the BRT vehicles necessary for the TSP to function.
- c. The City and RTD will jointly operate and maintain the TSP infrastructure at each identified intersection and signal pole necessary for the TSP to function within the City, unless otherwise agreed by the Parties. Operation and maintenance of the TSP infrastructure within the City of Aurora is not a part of this IGA.
- d. The TSP systems shall continue to be the system already in place along East Colfax Avenue or otherwise compatible with RTD's existing on-board equipment prior to revenue service.

23. PROVISION OF FLEET FOR EAST COLFAX AVENUE BRT.

- a. As RTD does not expect to have any new buses for the Project upon commencement of BRT revenue service, RTD agrees to procure and install temporary branding wraps for existing buses to be used for the BRT service.
- b. RTD will retain funds from the RTD Award in the estimated amount of \$220,000.00 for RTD's initial installation of the BRT branding on the existing 44 buses that will be

used temporarily for the East Colfax Avenue BRT service. RTD will utilize any existing RTD contracts with vendors for bus wrap installation as a cost saving measure, as applicable. If the estimated amount for the BRT branding listed above varies from RTD's actual procured cost by more than \$11,000.00, the Parties agree to negotiate a revised fund retainage from the RTD Award. RTD will provide copies of contractor invoices for costs incurred for the BRT branding on the existing buses to the City within 90 calendar days of delivery of the bus wraps to RTD.

- c. RTD and the City will jointly develop a temporary solution for passenger loading at the station platforms that accommodates both the existing and future bus fleet, as needed.
- d. RTD expects to procure a fleet of articulated buses for the East Colfax Avenue BRT service in connection with regular fleet replacement, which is anticipated for 2027.
- e. RTD will require that any articulated buses procured for the East Colfax Avenue BRT service will be branded, have three doors, a bridge plate at the middle door for accessible boarding, and internal bike racks at the rear door.
- f. RTD shall be responsible for all costs associated with branding any new buses used for the East Colfax Avenue BRT service.

24. <u>ELECTRICAL METERS FOR THE PROJECT.</u>

a. The City will cause the Construction Contract to include one new electrical meter at each BRT station [for a total of twenty-two (22) new meters] where they do not currently exist, to provide power to the TVMs, Fare Validators, PIDS, lighting, safety and security equipment, and any other powered station amenities. One meter shall serve both directional platforms. Each electrical meter service shall be assigned to RTD.

25. MISCELLANEOUS, PART 2.

- a. Execution in Counterparts. This First Amendment (and each amendment, modification and waiver in respect of the IGA and this First Amendment) may be executed and delivered in counterparts (including by facsimile or email transmission), each of which will be deemed an original, but all of which when taken together shall constitute a single contract. This First Amendment shall become effective when it shall have been executed by each Party and when each Party shall have received counterparts hereof, which, when taken together, bear the signatures of the other Party hereto, and thereafter shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns. Delivery of an executed counterpart of a signature page to this First Amendment (including by facsimile or email) shall be effective as delivery of a manually executed counterpart of this First Amendment.
- b. Examination of Records and Audits. Any authorized agent of the City, including the City Auditor or his or her representative, has the right to access and the right to examine, copy and retain copies, at City's election in paper or electronic form, any

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pertinent books, documents, papers and records related to RTD's's performance pursuant to this Agreement, provision of any goods or services to the City, and any other transactions related to this Agreement. RTD shall cooperate with City representatives and City representatives shall be granted access to the foregoing documents and information during reasonable business hours and until the latter of three (3) years after the final payment under the Agreement or expiration of the applicable statute of limitations. When conducting an audit of this Agreement, the City Auditor shall be subject to government auditing standards issued by the United States Government Accountability Office by the Comptroller General of the United States, including with respect to disclosure of information acquired during the course of an audit. No examination of records and audit pursuant to this paragraph shall require Parties to make disclosures in violation of state or federal privacy laws. Parties shall at all times comply with D.R.M.C. 20-276.

c. <u>IGA in Full Force and Effect</u>. Except as amended by this First Amendment, the IGA is in full force and effect in accordance with its terms and all other terms remained unchanged.

[Signatures on following pages]

Contract Control Number:

Contractor Name:	Name: Regional Transportation District							
N WITNESS WHEREOF, the part Denver, Colorado as of:	ties have set their hands and affixed their seals at							
SEAL	CITY AND COUNTY OF DENVER:							
ATTEST:	By:							
APPROVED AS TO FORM:	REGISTERED AND COUNTERSIGNED:							
Attorney for the City and County of I	Denver							
By:	By:							
	By:							

DOTI-202472685-01 [202265079-01]

Contract Control Number: Contractor Name:

DOTI-202472685-01 [202265079-01] Regional Transportation District

By: Docusigned by:

By: Dura d. Johnson

 $Name: _^{Debra A. Johnson}$

(please print)

Title: GM/CEO

(please print)

ATTEST: [if required]

By: lime but with

Name: Aimee Beckwith

(please print)

Title: Senior Associate General Counsel

(please print)

Exhibit B Station Design Concept

Background

RTD will be the operator of the proposed Bus Rapid Transit (BRT) service. A portion of the route will be center-running with some form of level boarding, which will be new to RTD. Existing RTD criteria need to be supplemented for this project.

<u>RTD Operations</u>: This term, as used in this document, means RTD Bus service, potential additional repairs to buses, any responsibilities assigned by agreements, and support functions such as passenger information systems, fare collection, and security.

Station Design

The proposed stations/stops for the E Colfax BRT, as of 60% design, are listed in Table B-1 and illustrated in the drawings that follow at the end of this Exhibit B. The full BRT arch stations are new to the metropolitan region, and as such, do not have fully established design standards. The intent for design standards, relative to their components and proposed ownership, is shown below in Table B-2. There are proposed to be 15 center-running arch stations and one side-running arch station. Each station has two platforms.

The stations are located on the near side of the intersection so that buses come to a complete stop before making the angled transition across the intersection. The transition therefore occurs at a lower, safer speed than would otherwise occur if the stops were located on the far side.

<u>BRT Arch Stations</u>: As of the 30% level of design, and as submitted for the purposes of the FTA Small Starts Rating Application, the full BRT stations have the following characteristics:

- Platform dimensions = 10' wide X 130' long (min) x 14" high. The platform length is to accommodate two 60' articulated buses at each stop. The platform height is still under consideration.
- Platform canopies either 30' or 45' long, dependent on location and forecast boarding volumes
- 5% maximum slope walkways on crosswalk end of platform (not included in 130' dimension) = approximately 15' to 30' long, depending on roadway longitudinal slope and assuming 14" tall platform. The design shall consider construction tolerances.
- Raised median on opposite end of platform (not included in 130' dimension) = approx. 28' long, assuming 6" curb

BRT 15L Enhanced Stations: Street and sidewalk construction were completed in 2020, and the installation of bus shelters and additional amenities was completed in October of 2021. The new and improved amenities include a mix of infrastructure, technology, communications, and safety features designed to improve customer experience and operational efficiencies. There are proposed to be 13 side-running 15 L Enhanced stations, most of them currently in-place, with a few 15L Enhanced Stations that may be moved from the Denver section to the Aurora section when the arch stations take their place. There is one unique occurrence at WB Florence where there is an existing building canopy for shelter, and a 15L shelter will not fit between the building and the curb without blocking sidewalk use. This location will still receive BRT branding and other amenities. Moving of the 15 L Enhanced stations may need both FTA and Aurora concurrence.

15L Enhanced Station Image



Colfax BRT - Station Matrix

Station	City	Street	Direction	Bus Lane	Stop Location	Platform Count	Arch Shelter Count	Level Boarding	Existing Enhanced 15L Shelter to Remain	New/ Relocated Enhanced 15L Shelter	BRT Branding & Amenities	New Meter (one meter serves both EB/WB)	Existing PID in 15L Shelters
Denver Union Station (DUS)	Denver	Wewatta	EB/WB	Dedicated	Curbside	2					\checkmark		\checkmark
Lawrence /16th	Denver	Lawrence	WB	Mixed-Flow	Curbside	1					Sign only		NA
California/15th	Denver	15th	WB	Dedicated	Curbside	1					Sign only		NA
Tremont/15th	Denver	15th	WB	Dedicated	Curbside	1					Sign only		NA
Lawrence /17th	Denver	17th	EB	Dedicated	Curbside	1					Sign only		NA
Champa/17th	Denver	17th	EB	Dedicated	Curbside	1					Sign only		NA
Welton/17th	Denver	17th	EB	Dedicated	Curbside	1					Sign only		NA
Subtotal						8							
Civic Center Station/Broadway	Denver	Colfax	WB	Dedicated	Curbside	1			Double		\checkmark		\checkmark
Civic Center Station/Broadway	Denver	Colfax	EB	Mixed-Flow	Curbside	1			Double		\checkmark		\checkmark
Pennslyvania	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Downing	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Franklin/Park	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Josephine/York	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Fillmore	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Madison	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Colorado	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	\checkmark
Cherry	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Elm	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Hudson	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Krameria	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Monaco	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Quebec	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Syracuse	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Uinta	Denver	Colfax	EB/WB	Dedicated	Center	2	2	\checkmark			\checkmark	\checkmark	
Yosemite	Denver	Colfax	WB	Mixed-Flow	Curbside	1			Single		\checkmark		
Subtotal						33	30						
Yosemite	Aurora	Colfax	EB	Mixed-Flow	Curbside	1			Single		\checkmark		
Chester	Aurora	Colfax	EB	Mixed-Flow	Curbside	1				Single	\checkmark	\checkmark	
Chester	Aurora	Colfax	WB	Mixed-Flow	Curbside	1				Single	\checkmark		

Station	City	Street	Direction	Bus Lane	Stop Location	Platform Count	Arch Shelter Count	Level Boarding	Existing Enhanced 15L Shelter to Remain	New/ Relocated Enhanced 15L Shelter	BRT Branding & Amenities	New Meter (one meter serves both EB/WB)	Existing PID in 15L Shelters
Dayton	Aurora	Colfax	EB	Mixed-Flow	Curbside	1			Double		✓		
Dayton	Aurora	Colfax	WB	Mixed-Flow	Curbside	1			Double		\checkmark		
Florence	Aurora	Colfax	EB	Mixed-Flow	Curbside	1				Single	\checkmark	\checkmark	
Florence	Aurora	Colfax	WB	Mixed-Flow	Curbside	1			N/A	N/A	\checkmark		
Havana	Aurora	Colfax	EB	Mixed-Flow	Curbside	1	1	\checkmark	N/A	N/A	\checkmark	\checkmark	
Havana	Aurora	Colfax	WB	Mixed-Flow	Curbside	1	1	\checkmark	N/A	N/A	\checkmark		
Kingston	Aurora	Colfax	EB	Mixed-Flow	Curbside	1				Single	\checkmark	\checkmark	
Kingston	Aurora	Colfax	WB	Mixed-Flow	Curbside	1				Single	\checkmark		
Moline	Aurora	Colfax	EB	Mixed-Flow	Curbside	1				Single	\checkmark		
Moline	Aurora	Colfax	WB	Mixed-Flow	Curbside	1		\checkmark	Double		\checkmark		
Peoria	Aurora	Colfax	EB	Mixed-Flow	Curbside	1		\checkmark		Double	\checkmark		
Peoria	Aurora	Colfax	WB	Mixed-Flow	Curbside	1		\checkmark		Double	\checkmark		
Scranton	Aurora	Colfax	EB	Mixed-Flow	Curbside	1				Single	\checkmark	\checkmark	
Scranton	Aurora	Colfax	WB	Mixed-Flow	Curbside	1			Single		\checkmark		
Children's Way	Aurora	Colfax	EB	Mixed-Flow	Curbside	1			Single		\checkmark	\checkmark	
Children's Way	Aurora	Colfax	WB	Mixed-Flow	Curbside	1			Single		\checkmark		
Wheeling / Fitzsimons (VA)	Aurora	Colfax	EB	Mixed-Flow	Curbside	1				Single	\checkmark	\checkmark	
Wheeling / Fitzsimons (VA)	Aurora	Colfax	WB	Mixed-Flow	Curbside	1				Single	\checkmark		
Colfax Station / R Line LRT	Aurora	Colfax	EB	Mixed-Flow	Curbside	1		✓		Double	\checkmark		\checkmark
Colfax Station / R Line LRT	Aurora	Colfax	WB	Mixed-Flow	Curbside	1		\checkmark		Double	\checkmark		\checkmark
Subtotal						23	2						

Progression of Design

The parties intend to resolve the following, during final design, prior to the submission of the final cost estimate by the CMGC Contractor:

- 1. Level Boarding discussion with affected RTD departments
- 2. Preliminary Hazard Analysis covering functionality, construction, maintenance, and any other relevant aspects.
- 3. Threat and Vulnerability Analysis.
- 4. Security elements
- 5. Incorporate emergency response and maintenance needs

These progression-of-design elements will inform design details for transit related elements.

References with 2016 RTD Bus Infrastructure Design Guidelines & Criteria

While RTDs design standards are more fully developed for the highway setting, the following RTD design standards are cross-referenced in Table B-3 for the arterial street stetting. RTD has additional specifications throughout the RTD guidelines document. Many of these will need to be further considered and coordinated with RTD between the current 30% design stage and the future 100% design/construction documents.

	Table B-3: References to RTD Design Standards
Ref. Section	Reference Text
3.2.2 A	BRT facilities shall be designed to accommodate RTD's current vehicle fleet, unless
	otherwise directed by RTD.
3.2.2 B	BRT facilities shall be designed to accommodate support vehicles, such
	as tow trucks, street supervisor vans and maintenance vehicles.
3.2.2 F	Community involvement is necessary to establish a sense of place of the station in
	the community and to select a design for shelters, windscreens and other elements.
3.2.5 B	BRT architecture shall be shaped and detailed according to its setting and shall be
	conceived as a component of the civic fabric of the place. Architectural shape shall
	respond in scale to the local and corridor context, as well as to the micro-climate
	conditions of the site by providing adequate wind, rain, and solar protection. Street
	furniture including benches, trash receptacles, bicycle parking and information kiosks
	shall be coordinated with the overall site architecture.
3.2.5 C	[BRT] Architecture shall be durable, easy to maintain and cost effective.
3.2.6 E	BRT stations shall also include supporting infrastructure necessary to accommodate RTD
	fare collection technology (TVM, RFID, Smart CARD, etc.), public information displays
	(PIDs), emergency phones (E-phones), CCTV security system, parking pay stations [if
	applicable], and adequate lighting.
3.2.7 A	BRT Superstops are BRT stations that are located on the roadway system of the local
	jurisdiction, typically on arterial streets.
3.2.7 B	Superstop platforms shall be accessible in accordance with ADASAD or other more
	restrictive local standards.

Design Vehicles

The primary design vehicles for the level-boarding platforms are:

- 1. 60-foot articulated low-floor (14" floor height) bus with three doors (preferred is the RTD MetroRide vehicle) or two doors (base RTD articulated fleet in 2022).
- 2. 40-foot standard low-floor (15.7" floor height) bus with two doors

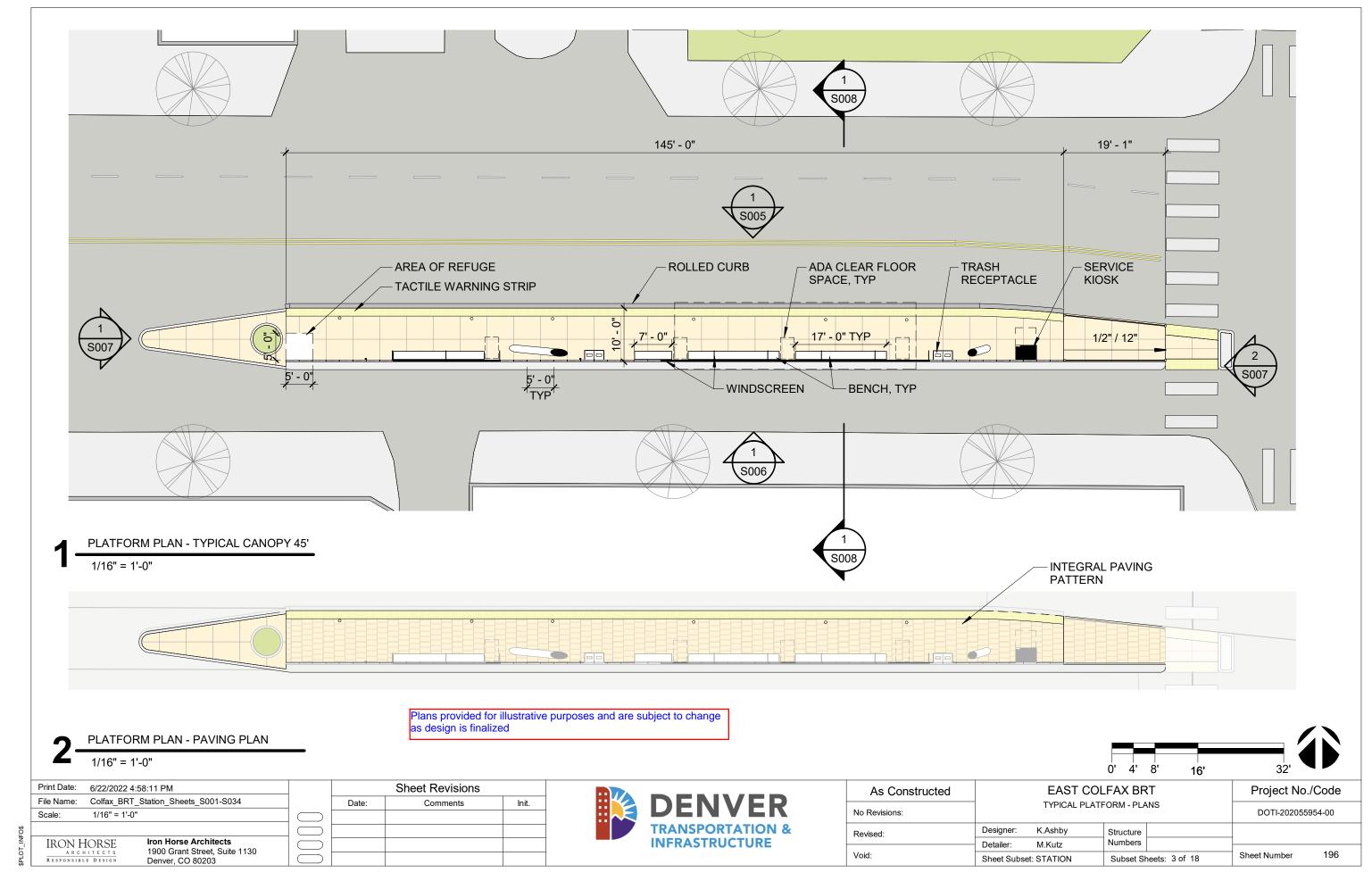
The design vehicles, above, include standard wheelchair lifts/lift cassettes capable of serving standard 6-inch curbs in locations other than level-boarding BRT Arch stations.

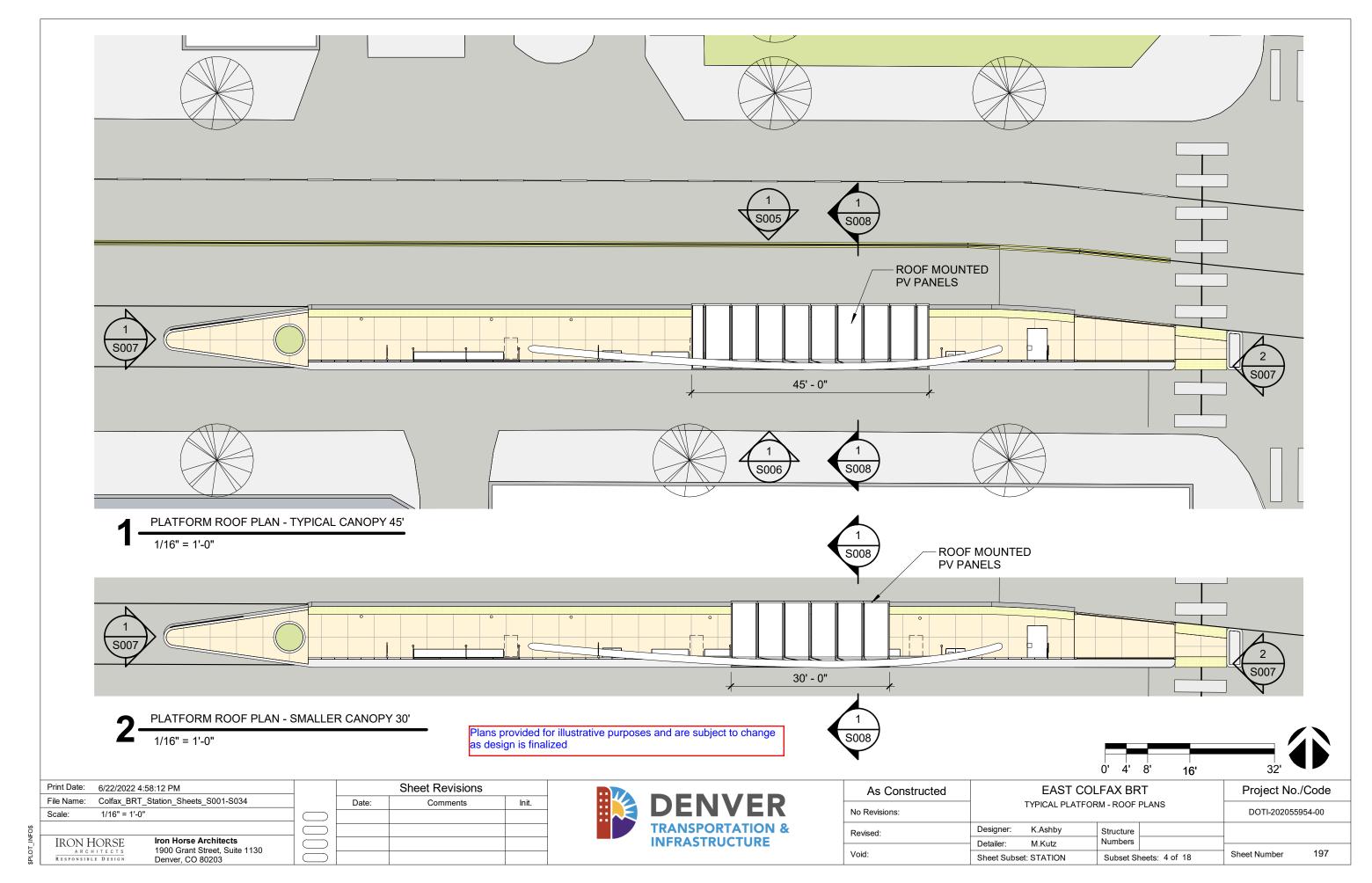
The project, overall, will also need to accommodate ADA Paratransit vehicles of various floor heights, either at the level-boarding platforms (mostly center-running), or at the standard-height curbs at the edges of the street.

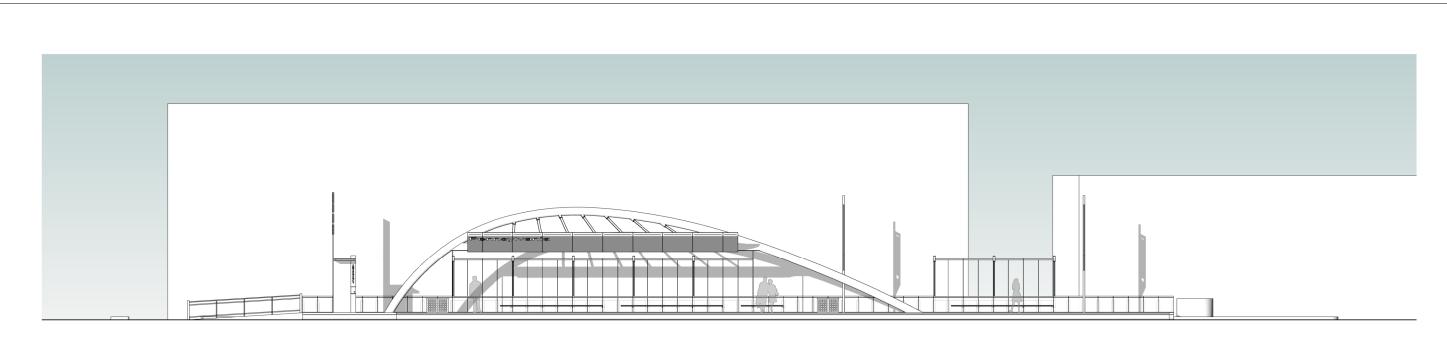
The following Table B-4 excerpts RTDs Bus Design Characteristics for the first two design vehicles noted above.

Table B-4: Design Vehicle Characteristics						
	40' Low Floor	60' Low Floor Articulated Transit				
Bus Features	Transit Bus ¹	Bus ¹				
Body Width, inches ²	102"	102"				
Body Length, feet	40′ 11.5″	60′				
Wheelbase, inches, Axle 1-2	279"	229.2"				
Wheelbase, inches Axle 2-3	NA	292.8"				
Turning Radius, Outer Wheels, feet	43.25'	44'				
Height, inches	122"	126"				
Ground Clearance, inches	11.8"	10"				
Axle Clearance, inches	8.5"	5.6"				
Curb Weight, lbs.	28,200	39,700				
Gross Vehicle Weight Rating (GVWR), lbs.	36,289	66,800				
Approach Angle, degrees	9	9				
Departure Angle, degrees	9	9				
Seating Capacity, seats	36	55				
Ground to Step/Floor Height, inches	15.7"	14"				
Ground to Step/Floor Height – kneeled, inches	10"	10"				
10TD 2016 Bus Infractivities Design Cuidelines and Criteria Table 24 Certion 2, page 10 of 22						

¹RTD 2016 Bus Infrastructure Design Guidelines and Criteria, Table 3A, Section 3, page 10 of 22. ²Excludes mirrors.

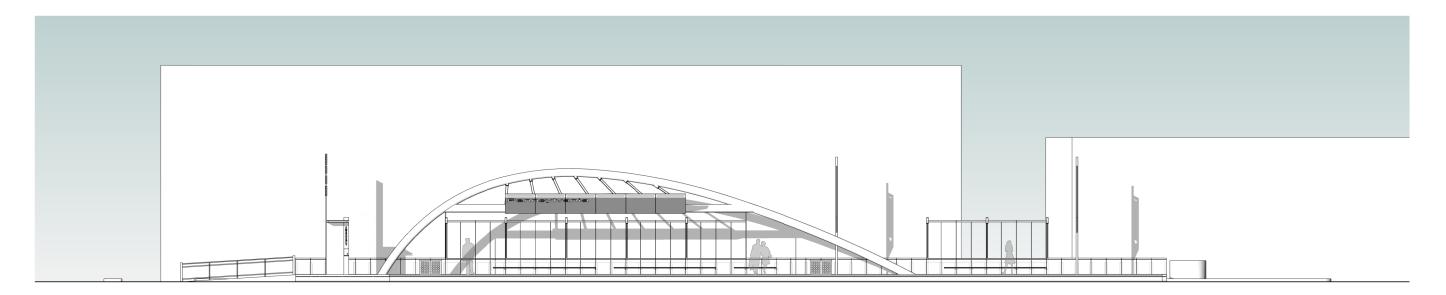






NORTH ELEVATION - TYPICAL CANOPY 45'

1/16" = 1'-0"



NORTH ELEVATION - SMALLER CANOPY 30'

1/16" = 1'-0"

Plans provided for illustrative purposes and are subject to change as design is finalized

Init.	

Sheet Revisions

Comments

Date:

DENVER
TRANSPORTATION & INFRASTRUCTURE

		0 4 6 16	32	
As Constructed	EAST COL		Project No./Code	
No Revisions:	TYPICAL PLATFORM -	DOTI-202055954-00		
Revised:	Designer: K.Ashby	Structure		
	Detailer: M.Kutz	Numbers		
Void:	Sheet Subset: STATION	Sheet Number 198		

Scale:

Print Date: 6/22/2022 4:58:14 PM

IRON HORSE

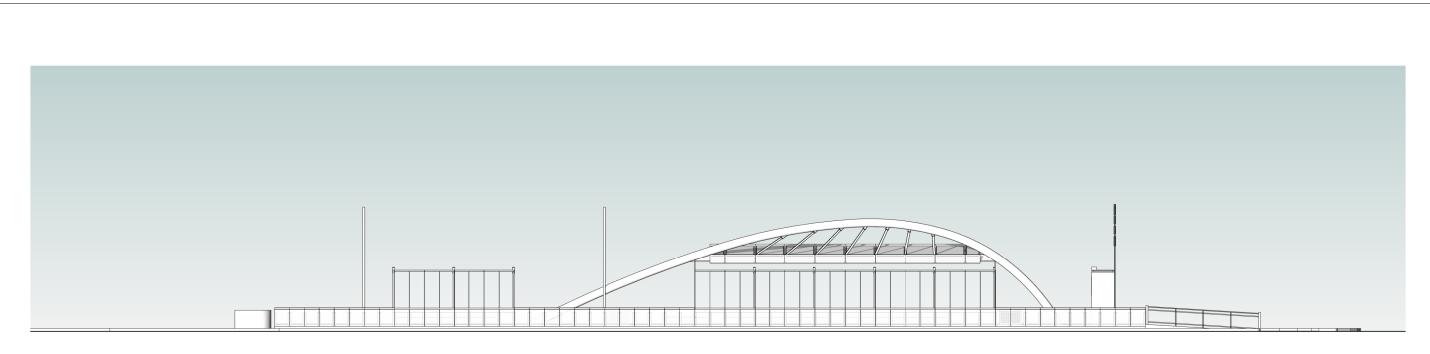
ARCHITECTS

RESPONSIBLE DESIGN

1/16" = 1'-0"

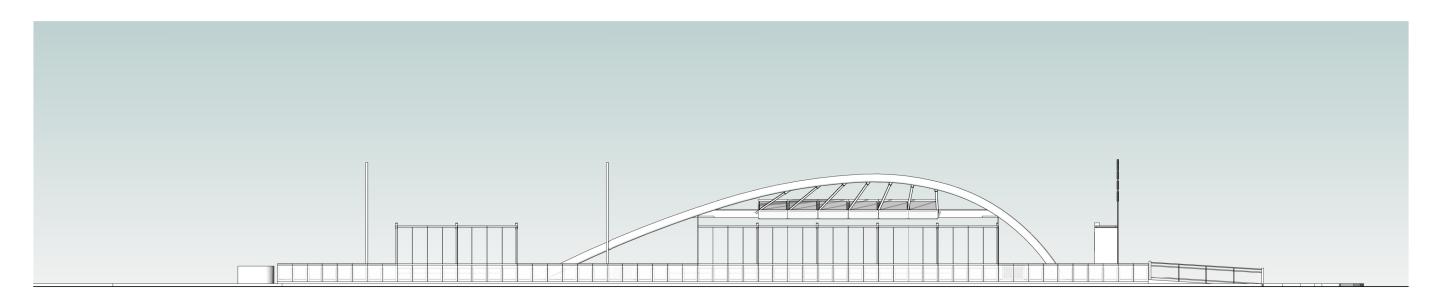
File Name: Colfax_BRT_Station_Sheets_S001-S034

Iron Horse Architects 1900 Grant Street, Suite 1130 Denver, CO 80203



SOUTH ELEVATION - TYPICAL CANOPY 45'

1/16" = 1'-0"



SOUTH ELEVATION - SMALLER CANOPY 30'

1/16" = 1'-0"

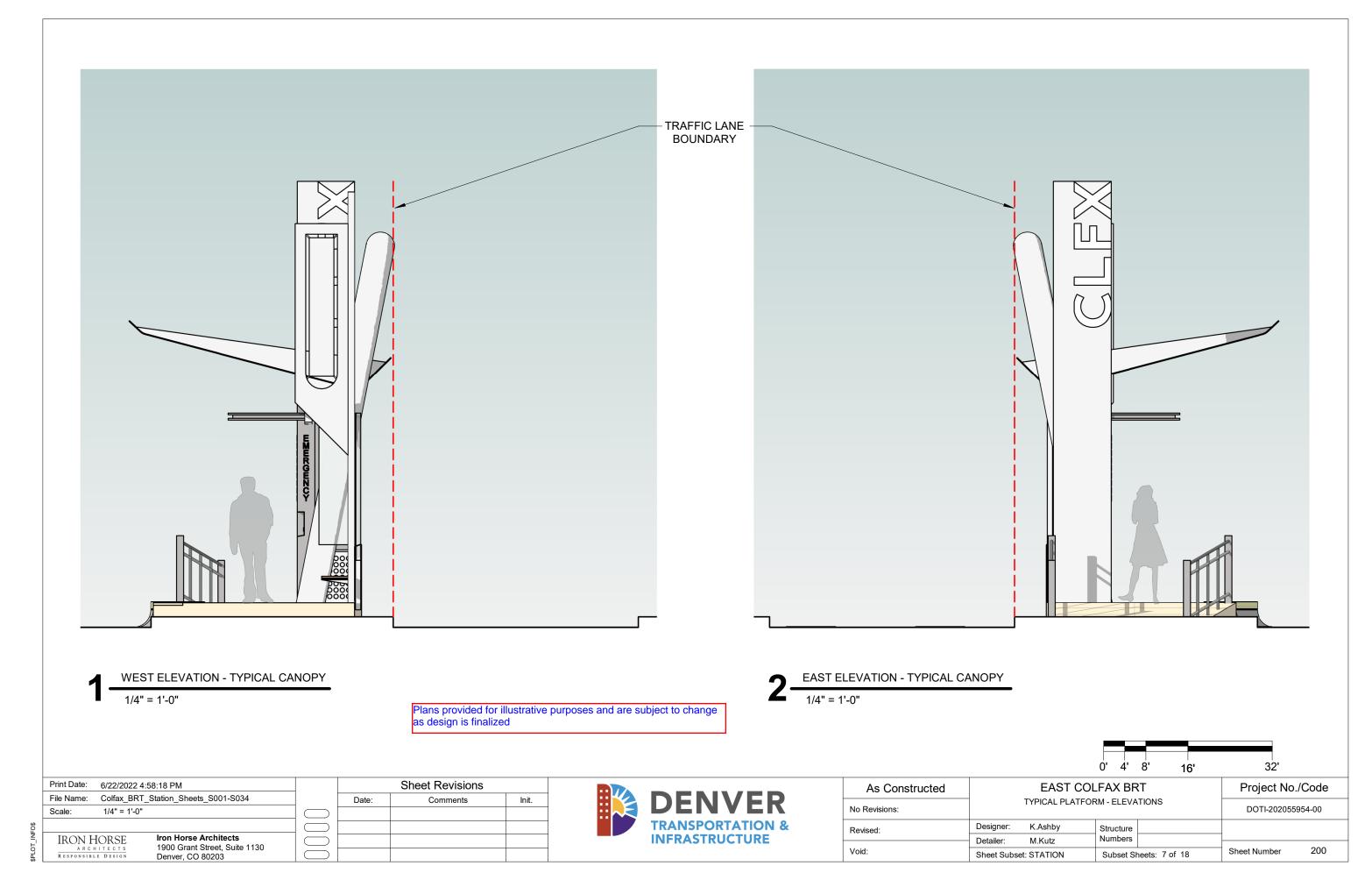
Plans provided for illustrative purposes and are subject to change as design is finalized

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U	4	O	10	32

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File Name: Colfax_BRT_Station_Sheets_S001-S034	Date:	Comments	Init.
Scale: 1/16" = 1'-0"			
IRON HORSE Iron Horse Architects 1900 Grant Street. Suite 1130			
RESPONSIBLE DESIGN Denver, CO 80203			



		- 10	-
As Constructed	EAST COL	Project No./Code	
No Revisions:	TYPICAL PLATFORM -	- SOUTH ELEVATION	DOTI-202055954-00
Revised:	Designer: K.Ashby Structure		
	Detailer: M.Kutz	Numbers	
Void:	Sheet Subset: STATION	Subset Sheets: 6 of 18	Sheet Number 199



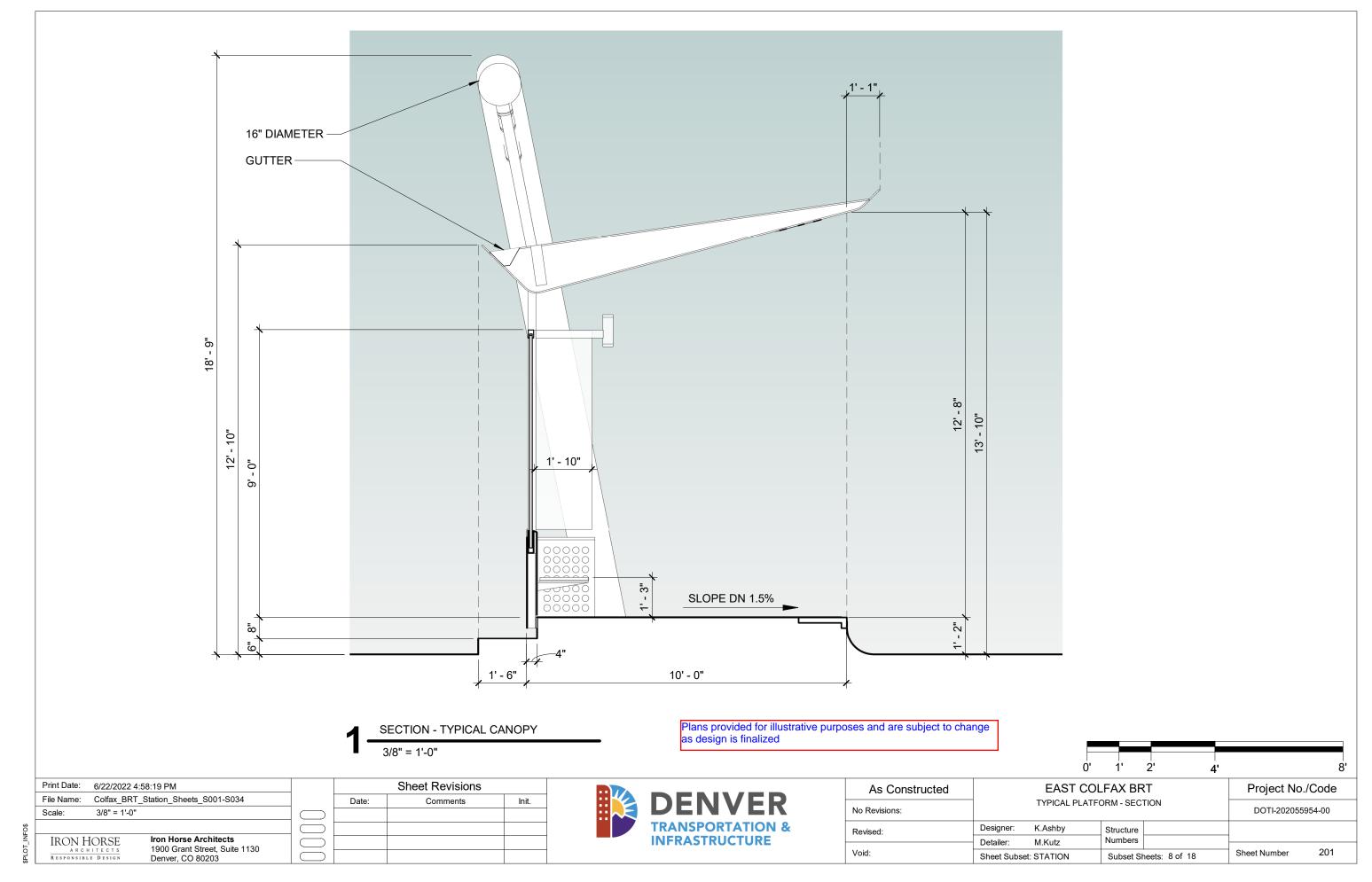


EXHIBIT F PROJECT STATION MAINTENANCE REQUIREMENTS

Maintenance Activity	Frequency	Minimum Acceptable Service Level	Maintenance Action Required If Minimum Acceptable Service Level Not Met	Response Time Goals	Responsibility
BRT Stations					
Custodial Services	Daily	Clean, Clear, Safe	Clean the entire station area. Cleaning to include windscreens, amenities, trash removal, sweeping platform	Response to unacceptable conditions within 1-hour of notification	RTD - Civic Center Station/Broadway and Yosemite CCD - Pennsylvania to Uinta
Platform Washing	Monthly / As needed	Routine / Removal of foreign matter	Wash Station platform or spot clean as needed	Response to request for removal of foreign matter within 1-hour of notification	RTD - Civic Center Station/Broadway and Yosemite CCD - Pennsylvania to Uinta
Graffiti Removal	As needed	No graffiti	Removal of all graffiti within the defined limits of work area	Removal of graffiti within 72-hours of notification	RTD - Civic Center Station/Broadway and Yosemite CCD - Pennsylvania to Uinta
Snow/Ice Removal	Once every 12-hr period/ As needed	Snow and ice removed or treated	Pedestrian areas treated for snow and ice as defined in the snow removal contract.	Response within time defined by the snow removal contract (1-hour).	RTD - Civic Center Station/Broadway and Yosemite CCD - Pennsylvania to Uinta
RTD/Lynx Signage	As needed	No Vandalized / Damaged Signage	Repair / Replace	Replacement within 1-week of notification	RTD
Fare Collection Equipment Repair/Service	As needed	Fully functional	Repair procedures as outlined in RTD contract with vendor	Response times as outlined in RTD contract with vendor	RTD
Emergency Phones Repair/Service	As needed	Fully functional	Repair / Replace	Response time consistent with RTD standard procedures	RTD
Security Cameras Repair/Service	As needed	Fully functional	Repair / Replace	Response time consistent with RTD standard procedures	RTD
PIDS Repair/Service	As needed	Fully functional	Repair procedures as outline in RTD contract with Lamar	Response times as outlined in the RTD/Lamar contract	RTD
Platform Docking Guide Strip Repair/Service	As needed	Fully functional	Repair, replace or notify RTD Bus Operations of location of missing or damaged guide strip	Respond within 24-hours of notification. of missing or damaged guide strips. Replacement timeline based on availability of replacement parts and the nature and extent of damage.	RTD - Yosemite CCD - Pennsylvania to Uinta
Lighting Repair/Service	As needed	All lighting fully functional	Replace light bulbs, repair wiring or fixture	Respond within 24-hours of notification. Replacement timeline based on availability of replacement parts and the nature and extent of damage.	RTD - Civic Center Station/Broadway and Yosemite CCD - Pennsylvania to Uinta
Amenity Repair/Service	As needed	All station amenities are safe for use and in good condition	Repair or replace amenities. Remove temporarily if condition presents a hazard to the public.	Respond within 24-hours of notification. Replacement timeline based on availability of replacement parts and the nature and extent of damage. Remove within 24-hours if presents a hazard to the public.	RTD - Civic Center Station/Broadway and Yosemite CCD - Pennsylvania to Uinta
Handrail Repair/Replacement	As needed	No Loose / Damaged Handrail	Repair / Replace	Respond within 1-hour of notification. Replacement timeline based on availability of replacement parts and the nature and extent of damage.	RTD - Civic Center Station/Broadway and Yosemite CCD - Pennsylvania to Uinta
Standpipe/Water Meter Repair/Service	As needed	Fully functional	Repair/Replacement. Remove temporarily if condition presents a hazard to the public.	Respond within 1-hour of notification. Replacement timeline based on availability of replacement parts and the nature and extent of damage.	To be defined in future amendment after design is completed

Public Art Repair/Replacement	As needed	No Vandalized / Damaged Public Art	Repair/Replacement. Remove temporarily if condition presents a hazard to the public.	Respond within 1-hour of notification. Replacement timeline based on availability of replacement parts and the nature and extent of damage.	CCD -Denver Arts & Venues
Maintenance Activity	Frequency	Minimum Acceptable Service Level	Maintenance Action Required if Minimum Acceptable Service Level Not Met	Response Time Goals	Responsibility
Roadway					
Removal of obstructions in BRT Guideway	As needed	No obstructions	Authorized personnel to remove obstruction from BRT guideway.	To be further defined in the Incident Response Plan for the corridor.	CDOT or CCD pursuant to agreement - Broadway to Yosemite
Removal of deleterious material or debris from BRT Guideway	As needed	No buildup of sediment or debris	Street sweeping	To be further defined. Understand impact to traffic flow based on service times.	CDOT or CCD pursuant to agreement - Broadway to Yosemite
Snow Removal	1 pass per 12-hr period	Maintain bare and wet pavement during the snow event	Plowing, application of magnesium chloride	Further coordination required regarding snow removal from bus lanes at the stations.	CDOT or CCD pursuant to agreement - Broadway to Yosemite

EXHIBIT G EAST COLFAX AVE BRT FUNDING SOURCES

Total Estimated Project Funding*:

\$255.2 million

RTD Award Funds:

FTA FY23 Small Starts	\$8.1 million
FTA FY24 Small Starts	\$118.9 million
DRCOG	\$28.4 million

Total \$155.4 million

Local Match Funds:

Denver Funding \$85.8 million City of Aurora \$14.0 million

Total \$99.8 million

As more specifically described in the IGA, the Parties agree that RTD will retain the following portions of the RTD Award for certain Project elements:

Fare Collection Equipment	\$5,250,325	
Etels		\$648,816
Bus wraps		\$220,000
	Total:	\$6,119,141

^{*}Estimated project funding is the minimum expected, both RTD and the City reserve the right to add funding that does not impact the BRT scope of the project

Exhibit H

Transit Signal Priority Locations – City and County of Denver Limits

Table as shown in Attachment-RTD East Colfax Transit Signal Priority Treatments August 2021 Status

Corridor	Location	Direction	Status	Transit Priority Treatment	Jurisdiction
	Lincoln	WB	Active	TSP	Denver
	Grant	WB	Active	TSP	Denver
	Logan	EB, WB	Active	TSP	Denver
	Washington	EB, WB	Active	TSP	Denver
	Clarkson	EB, WB	Active	TSP	Denver
	Downing	WB	Active	TSP	Denver
	Park	EB, WB	Active	TSP	Denver
	York	EB	Active	TSP	Denver
Colfax	Josephine	WB	Active	TSP	Denver
Collax	Steele	EB, WB	Active	TSP	Denver
	Garfield	EB, WB	Active	TSP	Denver
	Colorado	WB	Active	Queue bypass Lane	Denver
	Colorado	EB, WB	Proposed	TSP	Denver
	Krameria	EB, WB	Active	TSP	Denver
	Monaco Parkway	WB	Proposed	TSP	Denver
	Quebec	WB	Active	Queue bypass Lane	Denver
	Quebec	EB, WB	Active	TSP	Denver
	Yosemite	EB	Active	TSP	Denver