April 20, 2022

Submitted to:

Federal Highway Administration, Office of Transportation Operations
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California Traffic Control Device Committee (CTCDC)
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RE: Permission for Experimental "Left Turn Gates" in the City of Los Angeles (Van Nuys)

The Los Angeles County Metropolitan Transportation Authority (LACMTA) respectively requests permission to conduct a demonstration of a "Left Turn Gates" that would supplement the traffic signals along Van Nuys Boulevard adjacent to the rail tracks of the East San Fernando Valley (ESFV) Transit Corridor Project (Project), a Light Rail system to be operated by the LACMTA.

The "Left Turn Gates", similar to typical parking garage gate arms, are designed to prevent motorist from making illegal left turns in front of oncoming trains or opposing traffic on Van Nuys Boulevard in the City of Los Angeles. The Left Turn Gates will be installed only at intersections/crossings with light rail trains and in conjunction to traffic signals and the internally illuminated raised pavement markers (IIRPM) (subject to separate CTC approval).

The California MUTCD Section 8C allows for gates with flashing-lights as follows:

> Section 8C.01 -
>
> 06 When there is a curb, a horizontal offset of at least 2 feet shall be provided from the face of the vertical curb to the closest part of the signal or gate arm in its upright position. When a cantilevered-arm flashing- light signal is used, the vertical clearance shall be at least 17 feet above the crown of the highway to the lowest point of the signal unit.
>
> Section 8C.05 -
>
> 02 Where a highway-LRT grade crossing is at a location other than an intersection, where LRT speeds exceed 25mph, automatic gates and flashing-light signals may be installed.
>
> 03 Traffic control signals may be used instead of automatic gates at highway-LRT grade crossings within highway intersections where LRT speeds do not exceed 35mph.

Due to street-running configuration and limited clearances, the Left Turn Gate's horizontal offset is proposed a minimum of 18-inches and do *not* include flashing lights or bells since they are not railroad warning devices, but are interconnected to traffic signal left turn phase.

During field reviews, several engineers, including the California Public Utilities Commission (CPUC), requested this Left Turn Gates to supplement traffic signals and MUTCD approved

warning signs. The barrier provided by the Left Turn Gate is expected to decrease the frequency of motorist turning against the red light and colliding with oncoming trains.

Background

The ESFV Project will provide light rail transit (LRT) service along the Van Nuys Boulevard to San Fernando Road. The alignment will include 11 at-grade stations. The Project also includes a Maintenance and Storage Facility (MSF).

The Project will extend north from the Van Nuys Metro Orange Line Station to the Sylmar/San Fernando Metrolink Station, a total of 6.7 miles. Metro LRT trains will operate in the median of Van Nuys Boulevard. The Project is scheduled for Revenue Service in 2028.

Exhibit 1 – LACMTA ESFV Project Map

Statement of Problem

The Project's new at-grade crossings will be incorporated into existing intersections, such that the movement of trains, motorists, and pedestrians are controlled by traffic signals, train control signals, striping, and signage. In accordance with the California Public Utilities Commission (CPUC) crossing approval process, diagnostic meetings were conducted for each crossing, including the Left Turn Gate designs.

During crossing diagnostic meetings, a team of engineers and representatives from LACMTA, CPUC, consultants, and City of Los Angeles reviewed preliminary designs for the crossings and supported Left Turn Gates (and IIRPMs). LACMTA raised concerns that motorist illegal left turn movements in front of oncoming trains account for over 70% of all light rail accidents. LACMTA noted the effectiveness of reducing illegal left turns for similar Left Turn Gate located at Flower St. and 18th St., Los Angeles (See Exhibit 4).

The engineering diagnostic team believes that alternate measures supplemental to standard California MUTCD approved signage should be considered to deter motorists from illegal left turns in front of oncoming trains. The team agreed upon the proposed demonstration for the active Left Turn Gate.

Proposed Solution – Left Turn Gates

As shown in Exhibits 2 and 3, the proposed Left Turn Gate would serve as barrier in addition to the standard traffic signal control devices. The Left Turn Gate is smaller than the typical Standard No. 9 railroad crossing gate to allow for reduced clearances in street running environment (See Exhibit 7 for specifications). The Left Turn Gate does not have flashing-lights and operates in conjunction with red left turn arrow activation on the traffic signal.

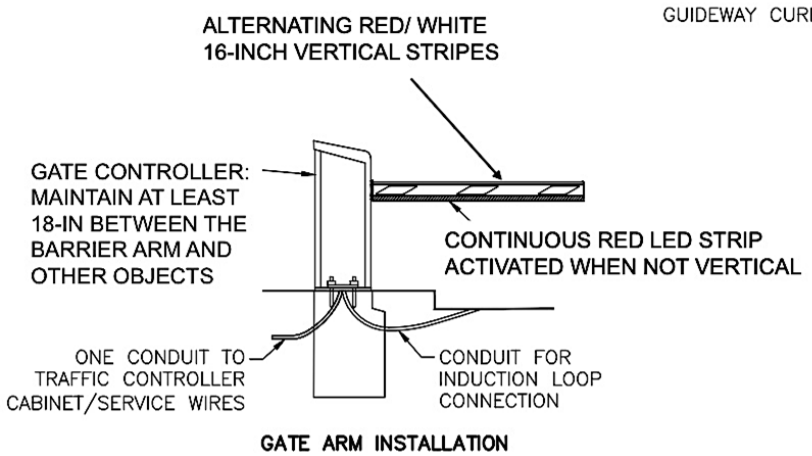

Exhibit 2 – Left Turn Gate Detail

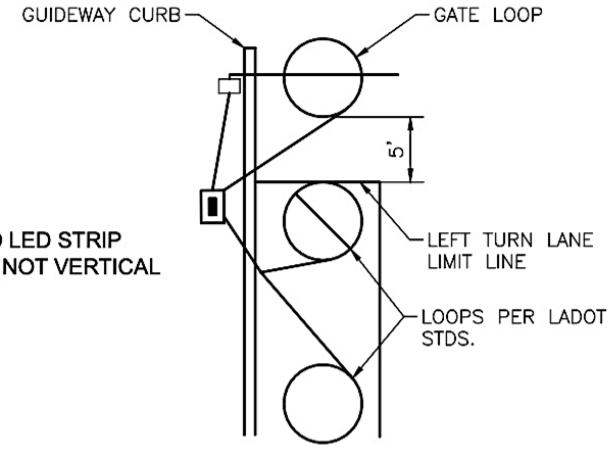

Exhibit 3 – Left Turn Gate Location and Loops

Within 3-5 seconds after the left turn phase is red (restricted), the Left Turn Gate arm is

activated into the horizontal position. The Left Turn Gate then rises 3-5 seconds prior to the green (permitted) turn phase and remains vertical in green and yellow phases. The LACMTA light rail train signal system is interconnected to the traffic signal such that the train will proceed through during the restricted left turn phase with Left Turn Gates are down, being further protecting motorist. The light rail train stops during green left turn phase, to allow for motorist to safely proceed in front of the train. In addition to the Left Turn Gate, IIRPMs also proposed at the intersections, and subject to separate CTCDC approval.

The maintenance and reliability of the Left Turn Gate is another factor that can limit the effectiveness of the warning system. LACMTA and City of Los Angeles will have a formal agreement to ensure gates are maintained and operating per design. LACMTA noted that maintenance has not been an issue from the Flower and 18th Street, Los Angeles location (See Exhibit 4 Below), and the gate manufacture is typical to vendors of common parking facility gates, which have high reliability.

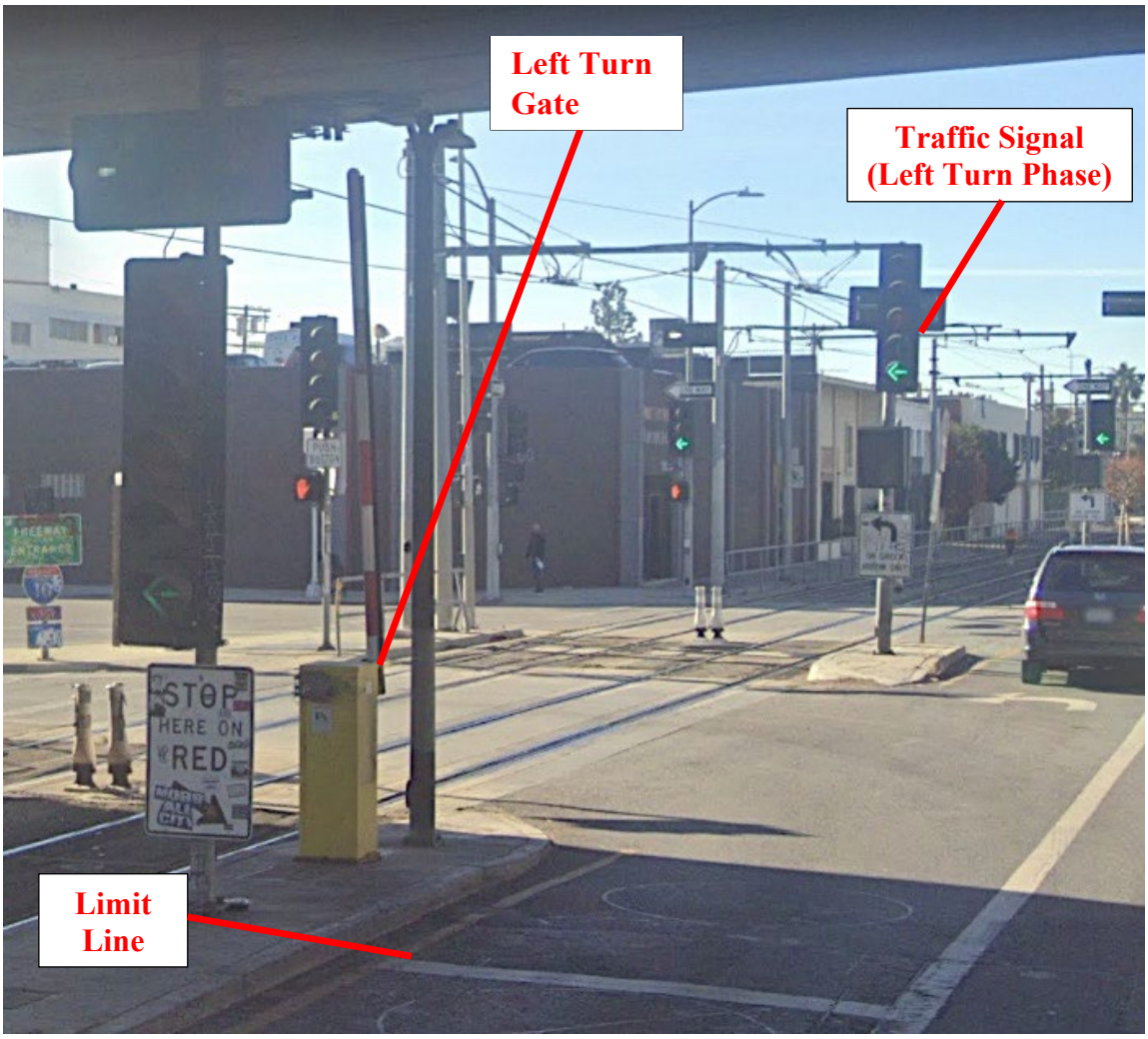

Exhibit 4 – Similar Left Turn Gate for LACMTA Blue Line Train – Flower St. and 18th St.

A. Scope

- As shown in Exhibits 5 and 6, the Left Turn Gate is located 2-feet prior to crosswalks and approximately 5-feet to 8-feet after the limit line.

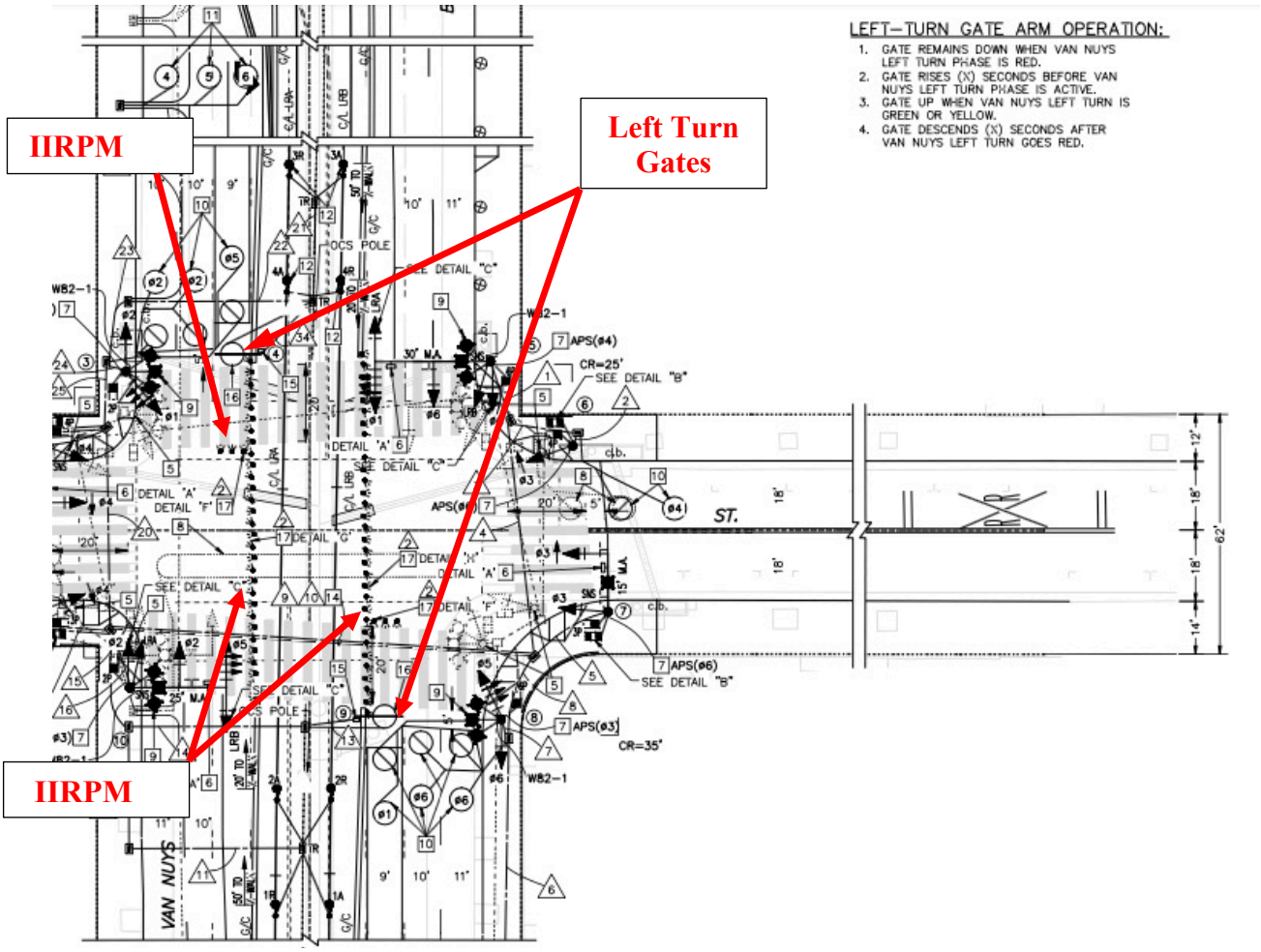

Exhibit 5 –Sample Left Turn Gate Traffic Drawing (Van Nuys Blvd & Kittridge St)

- The Left Turn Gate will be field installed and tested at 16 locations along Van Nuys Boulevard as shown in Table 1 below.

Table 1 – List of Left Turn Gate Locations

#	Crossing at Van Nuys Blvd	LRT Milepost
1	Sylvan St	84F-0.35
2	Victory Blvd	84F-0.49
3	Kittridge St	84F-0.77
4	Vanowen St	84F-0.99

Table 1 – List of Left Turn Gate Locations		
#	**Crossing at Van Nuys Blvd**	**LRT Milepost**
5	Vose St	84F-1.31
6	Valerio St	84F-1.74
7	Arminta Rd	84F-2.33
8	Lanark St	84F-2.64
9	Chase St	84F-3.12
10	Parthenia St/ Vesper	84F-3.29
11	N. Parthenia St	84F-3.41
12	Plummer St	84F-4.37
13	Woodman Ave	84F-4.72
14	Beachy Ave	84F-5.19
15	Laurel Canyon Blvd	84F-5.94
16	Kewen Ave	84F-6.32

B. Workplan

- Consistent with the City of Los Angeles traffic program, hazards, accidents, complaints and reported failures associated with the Left Turn Gates will be investigated. The City's maintenance program includes periodic inspections of traffic signals to ensure proper function and efficiency. Other field inspections will be conducted as needed by LACMTA to ensure proper traffic signal and Left Turn Gate function in connection with crossing equipment. This may include random inspections from oversight agencies including the CPUC.

- LACMTA and the City of Los Angeles does not expect adverse effects on traffic or safety resulting from the Left Turn Gate. However, if the Left Turn Gate(s) fails to meet expectations, the gate is a supplemental measure to the proposed traffic signal and will be removed. The City of Los Angeles and/or LACMTA will determine if the Left Turn Gate(s) should be removed from service and will inform project stakeholders and CTCDC as necessary.

C. Time Periods

- The Left Turn Gate demonstration period will last two years, and is expected between 2028 and 2030, depending on traffic signal installation schedule.
    - For the two-year demonstration period, the City of Los Angeles will conduct traffic observations of the Left Turn Gates to ensure proper functioning.
    - During the first three to six months of train operations (expected during 2028), LACMTA will have assigned personnel on-site at the Left Turn Gate locations to

observe operations, traffic and provide further safety warning.

- At the end of the demonstration period estimated to occur in 2030, and if Left Turn Gates proves effective, LACMTA, in coordination with the City of Los Angeles, will notify CTCDC of the results, summarize the observations, and request that the Left Turn Gates remain permanently.

D. Evaluation Procedures

- The Left Turn Gates evaluation will consist of:
  1) Service reliability measured by communication or electrical failures as a direct result of the active Left Turn Gates
  2) Complaints of Left Turn Gates causing motorist confusion
  3) Collisions contributed of the Left Turn Gates operations
  4) Observations of traffic compliance to the Left Turn Gates

E. Reporting

- LACMTA, in coordination with the City of Los Angeles, will develop a final report within 90 days of the two-year demonstration termination date (2031) and provide to the CTCDC. Status reports will be provided within prior to 2031 if the following issues arise:
  - Experimentation of the Left Turn Gates does not begin by 2028
  - Deviations from the Left Turn Gates work plan or design
  - Significant safety hazards are associated with Left Turn Gates
  - Deviation from the 2028 anticipated conclusion of Left Turn Gate demonstration.

- The Two-Year Demonstration Report (expected in 2031) will summarize the following activities:
  - LACMTA ambassador personnel observation reports from the initial three to six months of train operations (expected during 2028)
  - Field observations or concerns from City of LA, LACMTA, CPUC or other stakeholders.
  - Accident investigation reports involving Left Turn Gates (if any)
  - Repair workorders and major maintenance activities of Left Turn Gates
  - Changes to designs, fit or functions of the Left Turn Gates

F. Administration

LACMTA is the lead agency for the Left Turn Gates experimentation with support from City of

Los Angeles, registered traffic engineers, experienced traffic management staff, consultants and stakeholders supporting the City. The contacts for the Left Turn Gates experimentation are:

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The LACMTA and the City of Los Angeles agree to restore the demonstration sites to a condition that complies with the provisions of the California MUTCD, including removal of Left Turn Gates, if the demonstration determines that the Left Turn Gates are ineffective or at the request of the CTCDC. We will also terminate the demonstration at any time if we determine that the experiment directly or indirectly imposes significant safety hazards. However, if the experiment demonstrates an improvement, the devices will remain in place as a request is made to update the California MUTCD and an official rulemaking action occurs.

Exhibit 6 – Left Turn Signal Drawing (Van Nuys Blvd and Kittridge St.)

CTCDC Request – LACMTA
Left Turn Gates

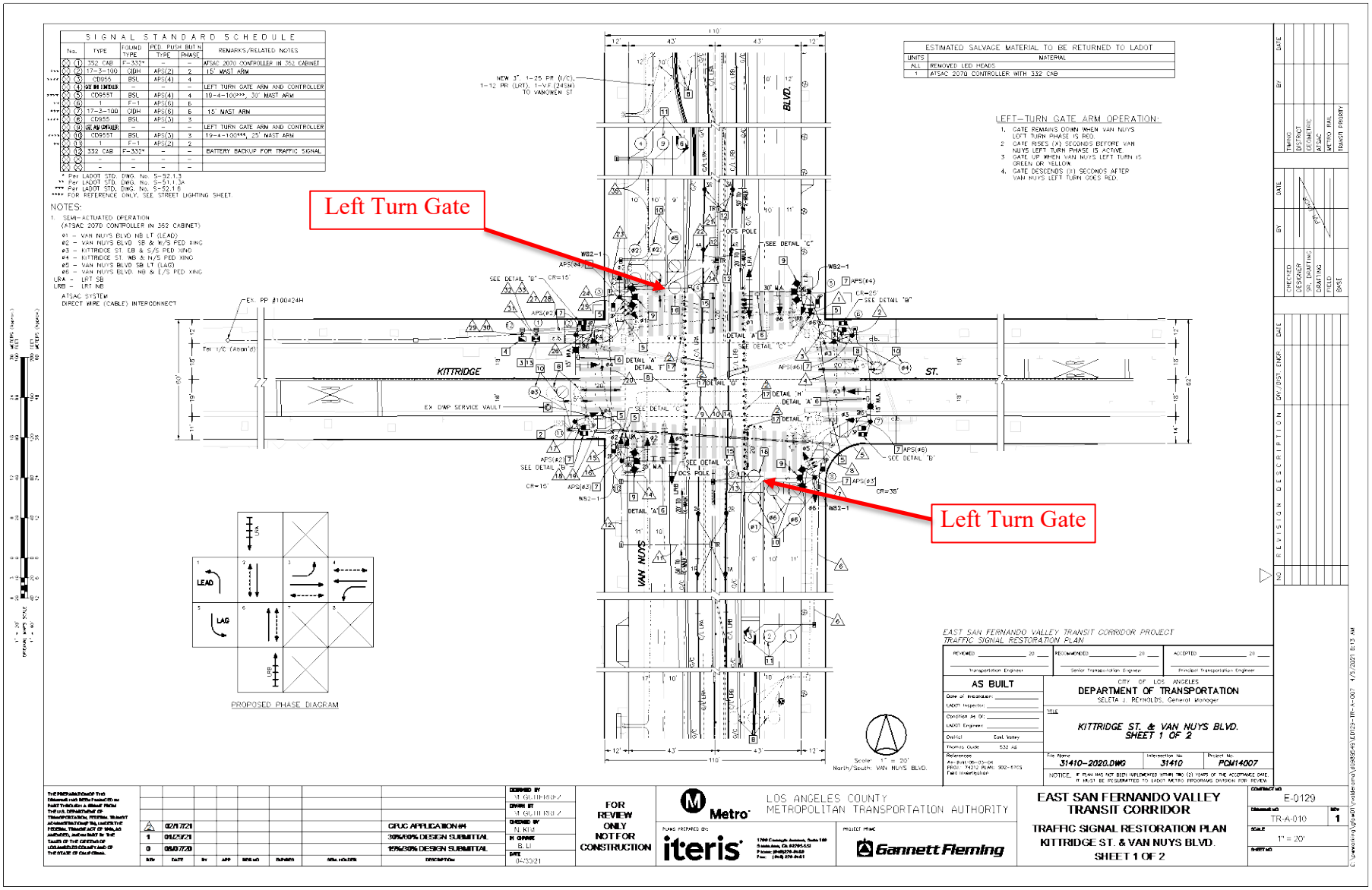

Exhibit 7 – Left Turn Gate Specification