APPENDIX L – OL- B-4, Montabello to Metro Trail Track

Section Overview

Locations: Montebello Avenue • Glendale Avenue • Northern Avenue • Dunlap Avenue • Mountain View Road • Metro Parkway • Tail Track (North Terminal)
Line: Orange Line (B Line) – Northwest Extension (OL-B-4 Montebello → Metro Tail Track)

Platforms:

- Montebello Ave / 19th Ave – EB / WB
- Glendale Ave / 19th Ave – EB / WB
- Northern Ave / 19th Ave – EB / WB
- Dunlap Ave / 19th Ave – EB / WB
- Mountain View Rd / 25th Ave – EB / WB
- Metro Parkway / 19th Ave – North Terminal

Track Type:
Dual-track median alignment within 19th Avenue corridor, transitioning to a single-track tail track north of Metro Parkway. The alignment features multiple at-grade intersections, three interlockings, and terminal turnback operations. The track runs within a constrained roadway median bordered by live traffic lanes, creating limited safe-zone access and restricted step-off areas.

Crossover: Tuckey (19th Avenue & Tuckey Lane – Northwest Extension)

Switch ID	Track	Description / Function
1A	Track 1	Facing-point crossover switch from Track 1 to Track 2 (northbound direction).
1B	Track 2	Trailing-point crossover switch paired with 1A for southbound movements returning to Track 1.
3A	Track 1	Trailing-point crossover completing Track 1 to Track 2 alignment.
3B	Track 2	Facing-point crossover paired with 3A for Track 2 to Track 1 movements.

Crossover: Morten (19th Avenue & Morten Avenue – Northwest Extension)

Switch ID	Track	Description / Function
1A	Track 1	Facing-point crossover switch from Track 1 to Track 2 (northbound direction).
1B	Track 2	Trailing-point crossover switch paired with 1A for southbound movements returning to Track 1.
3A	Track 1	Trailing-point crossover switch completing Track 1 to Track 2 alignment.
3B	Track 2	Facing-point crossover switch paired with 3A for Track 2 to Track 1 movements.

Crossover: Dunlap (19th Avenue & Dunlap Avenue – Northwest Extension Terminal)

Switch ID	Track	Description / Function
1A	Track 1	Facing-point crossover switch from Track 1 to Track 2 (northbound terminal approach).
1B	Track 2	Trailing-point crossover switch paired with 1A for southbound return movements.
3A	Track 1	Trailing-point crossover completing Track 1 to Track 2 alignment.
3B	Track 2	Facing-point crossover switch paired with 3A for Track 2 to Track 1 movements.

Crossover: Mountain View (25th Avenue & Mountain View Road – Northwest Extension II)

Switch ID	Track	Description / Function
1A	Track 1	Facing-point crossover switch from Track 1 to Track 2 (northbound approach to terminal).
1B	Track 2	Trailing-point crossover switch paired with 1A for southbound return movements.
3A	Track 1	Trailing-point crossover completing Track 1 to Track 2 alignment.
3B	Track 2	Facing-point crossover switch paired with 3A for Track 2 to Track 1 movements.

Grade Crossing

Dunlap Grade Crossing (19th Ave & Dunlap Ave)

High-traffic arterial crossing adjacent to terminal interlocking; includes coordinated signal phasing between Valley Metro signal house and City of Phoenix traffic control. Crossing protection consists of active gates, bells, and flashers with interlocked route control.

Work Activity Description

This section supports turnback operations, switch inspections, OCS tension adjustments, and signal correspondence verification across the northwest terminal zone.

- Access: Entry points available at Montebello Park & Ride, Glendale pocket access, and Dunlap intersection via traffic-controlled work truck setup.
- Protection: Work within the crossover zones or tail track requires Exclusive Track Occupancy (ETO) and coordination with OCC for switch lockouts.
- Safe Zones: Limited shoulder clearances—primary safe zones located at median refuges near Northern and Dunlap; supplemental safe positioning available at Mountain View tail track.
- Visibility: Generally open alignment with long sight distances; however, northbound curvature at Morten and sun glare along 19th Avenue corridor create potential blind spots during morning/evening hours.
- Environmental Factors: High heat reflection from paved medians, heavy vehicle proximity, and noise from adjacent arterial traffic.

Orange Line (B Line) Section 4 – Hazard Assessment

Section Limits: Montebello Avenue → Metro Tail Track
Corridor Type: Dual-track median alignment transitioning to single-track tail track north of Metro Parkway
Interlockings/Crossovers: Tuckey • Morten • Dunlap • Mountain View
Key Features: At-grade arterial crossings, limited shoulder clearance, terminal operations at Metro Tail Track

Hazard Identification

Hazard ID	Hazard Description	Likelihood	Severity	Risk Rating	Controls / Mitigations
H-1	Switch misalignment or loss of correspondence at Tuckey, Morten, Dunlap, or Mountain View crossovers.	Medium	High	High	Perform manual verification and visual inspection of all switches prior to fouling track; confirm switch correspondence with OCC.
H-2	Train movement conflict or route overlap due to terminal operations at Dunlap / Metro tail track.	Medium	High	High	Establish Exclusive Track Occupancy (ETO); maintain constant OCC communication; use proper switch lockouts and radio identification.
H-3	Work vehicle exposure to adjacent live traffic on 19th Avenue median.	High	Medium	High	Deploy cones and signage per 8.8.1 Traffic Control; use flaggers; park vehicles parallel to track where possible.
H-4	Limited shoulder space creating restricted safe zones near Dunlap and Morten intersections.	Medium	Medium	Medium	Use designated median refuges for safe zones; maintain clear escape paths; assign lookout for north/south approaches.
H-5	Sun glare affecting visibility of train operators and	Medium	Medium	Medium	Schedule work to avoid glare periods; require high-visibility

Hazard ID	Hazard Description	Likelihood	Severity	Risk Rating	Controls / Mitigations
	workers (AM/PM along 19th Avenue).				PPE and flashing beacons; position lookout facing approaching trains.
H-6	Heat exposure and dehydration risk from paved median surface and reflected heat.	High	Medium	High	Implement heat illness prevention plan; rotate crews; provide water breaks and shade as feasible.
H-7	Noise and vibration interference from heavy traffic and construction nearby.	Medium	Low	Low	Maintain radio communication checks; position lookout within audible range; use hand signals as backup.
H-8	Unauthorized pedestrian or vehicular entry into track alignment during maintenance.	Low	Medium	Low	Place barricades or cones; deploy flaggers; post “Do Not Enter – Track Work” signage.
H-9	Overhead clearance hazard when performing OCS inspections or using lift trucks near energized wire.	Low	High	Medium	Verify OCS de-energized before overhead work; maintain 10-foot minimum clearance from live wire; ground as required.

Hazard ID	Hazard Description	Likelihood	Severity	Risk Rating	Controls / Mitigations
H-10	Slip/trip hazard from uneven pavement and flange-way gaps within crossovers.	Medium	Low	Low	Maintain situational awareness; use proper footwear; limit crossing of track to perpendicular movements.

Safe Zone Locations

Area	Safe Zone Description	Notes / Lookout Positioning
Northern Ave median	Median refuge area between tracks – suitable for two workers clear of dynamic envelope.	Assign lookout north of Northern Avenue platform.
Dunlap Interlocking	Narrow shoulder refuge near signal bungalow; limited space – single-person occupancy only.	Place lookout near curb facing southbound approach.
Mountain View / 25th Ave	Wider paved shoulder area with tail track clearance – suitable for crew staging and vehicle setup.	Ideal for maintenance truck staging and lookout position.

Operational and Environmental Notes

- Work Access Points: Montebello Park & Ride, Glendale pocket access, Dunlap intersection.
- Protection Type: Exclusive Track Occupancy (ETO) required for all crossover and terminal activities.
- Visibility: Generally open alignment; blind spots at Morten curve and Dunlap approach due to roadway curvature.
- Environmental Considerations: High heat index; reflective glare from adjacent pavement; high vehicle density.
- Radio Channel: Channel 2 (Orange Line – B Line). Identify crew as “Track / Signal Crew in OL-B-4 Zone.”

SEGMENT HAZARD CHECKLIST – OL-B-4 MONTEBELLO → METRO TAIL TRACK

Line: Orange Line (B Line) – Northwest Extension (Track 1 South / Track 2 North)

Line / Section	Segment Limits	Access	Braking	Visibility (Curves / Portals / Distractions)	Environmental	Notes / Comments
OL-B-4: Montebello → Metro Tail Track	Montebello Avenue to Metro Tail Track (19th Avenue Corridor)	☑	☑	☑ (Curves / Distractions)	☑	Median-running alignment with limited shoulder width and multiple high-volume intersections at Glendale, Northern, and Dunlap. All work requires ETO protection; maintain lookout coverage and traffic control setup.
Tuckey Crossover	19th Avenue & Tuckey Lane	☑	☑	☑ (Curves)	☐	Facing- and trailing-point crossovers; verify switch correspondence with OCC prior to fouling. Northbound curve reduces approach visibility.

Line / Section	Segment Limits	Access	Braking	Visibility (Curves / Portals / Distractions)	Environmental	Notes / Comments
Morten Crossover	19th Avenue & Morten Avenue	☑	☑	☑ (Curves / Glare)	☑	Curved alignment with morning sun glare. Assign lookout on southbound approach. Maintain radio contact due to limited sight distance.
Dunlap Crossover / Grade Crossing	19th Avenue & Dunlap Avenue (Terminal)	☑	☑	☑ (Distractions / Traffic Signals)	☑	High-traffic arterial and terminal interlocking with shared signal phasing. Maintain OCC communication and switch lockouts. Noise and visual distractions from adjacent traffic.
Mountain View Crossover	25th Avenue & Mountain View Road	☑	☑	☑ (Curves)	☑	Curved tail-track approach with good overall sight distance but elevated heat and pavement reflection. Suitable area

Line / Section	Segment Limits	Access	Braking	Visibility (Curves / Portals / Distractions)	Environmental	Notes / Comments
						for vehicle staging.
Metro Tail Track (North Terminal)	Terminal pocket north of Metro Parkway	☑	☐	☐ (Open Sight)	☑	Single-track stub with restricted egress; ensure ETO and radio clearance before entry. Exposure to heat and limited refuge areas.

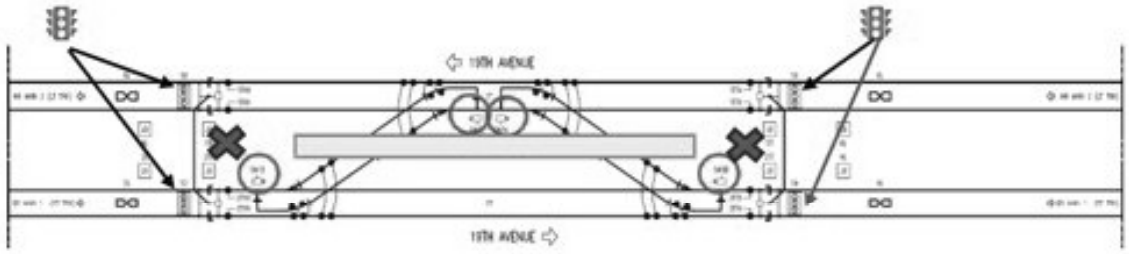
Summary Observations

- **Access Limitations:**
  Median alignment with narrow shoulders and restricted step-off space. Primary safe-zones located near Northern Avenue, Dunlap, and Mountain View Road.
- **Braking Distance:**
  Generally favorable along straight segments but reduced at crossovers and terminal switches; ETO or speed restrictions recommended during active work.
- **Visibility:**
  Mostly open corridor; localized blind-spots at Morten and Dunlap due to curvature and glare. Continuous lookout coverage required in those zones.
- **Environmental Factors:**
  High radiant heat and reflected glare from paved surfaces, heavy traffic noise, and limited ventilation between barriers—workers must adhere to heat-illness prevention protocols and high-visibility PPE standards.

Tuckey Crossover

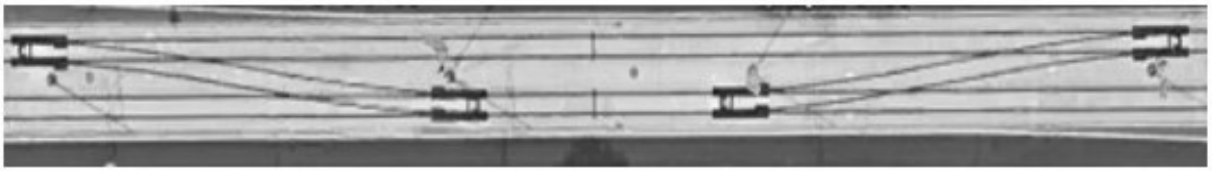


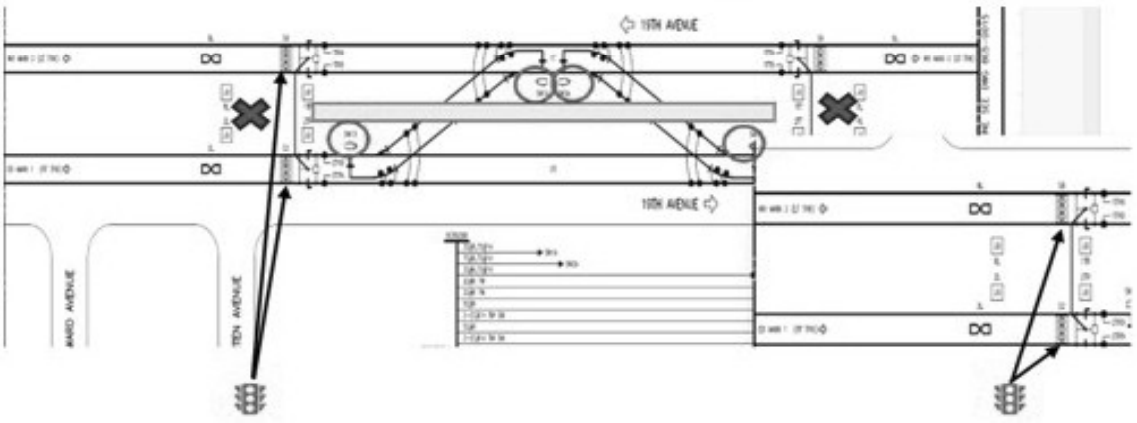




Morten Crossover





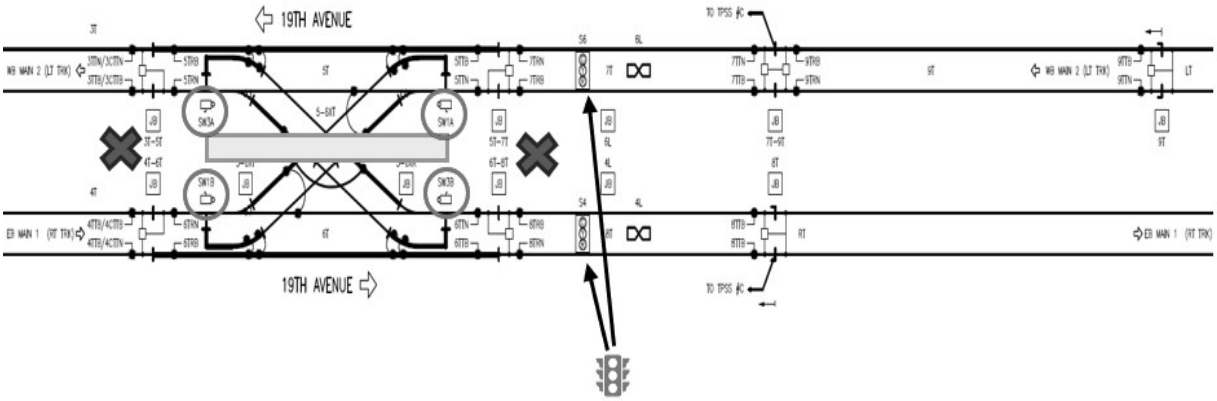


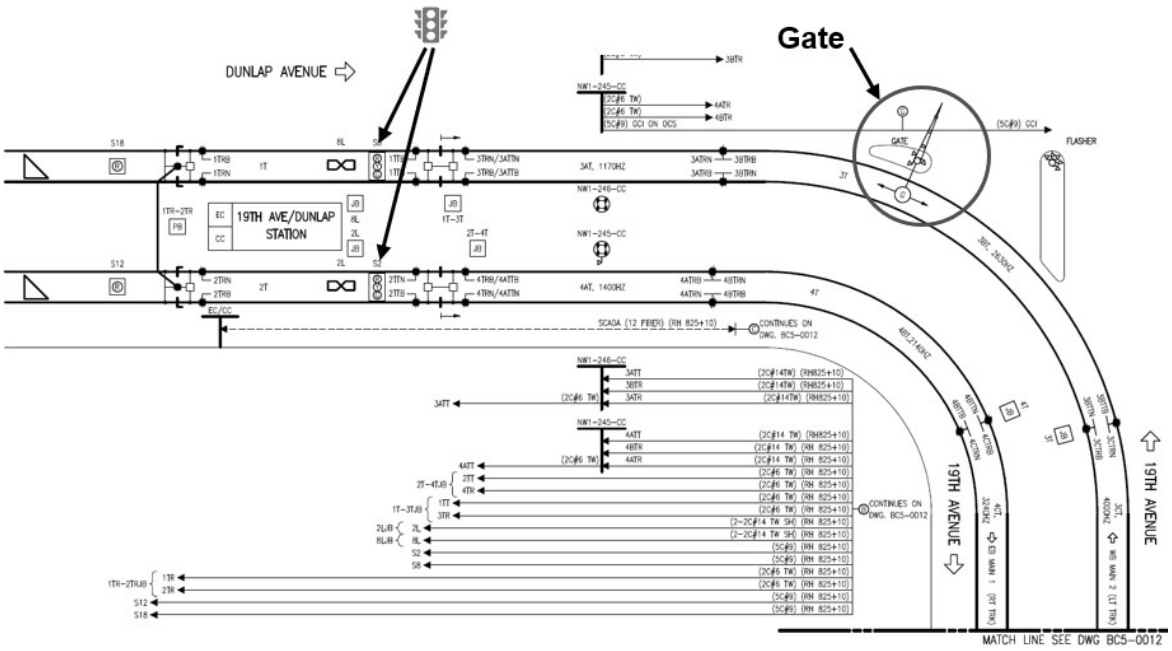
Dunlap Crossover






19th Ave/Dunlap
Dunlap / 19th Ave
Park and Ride
P
N 19th Ave


19TH AVENUE
19TH AVENUE
TO TPSS #5
TO TPSS #5
WB MAIN 2 (LT TRK)
EB MAIN 1 (RT TRK)
SW3A
SW3B
SW1A
SW1B



Dunlap Grade Crossing



Dunlap Curve going into Dunlap & 19th Ave station



Dunlap & 25 Ave Curve













Mountain Point Curve

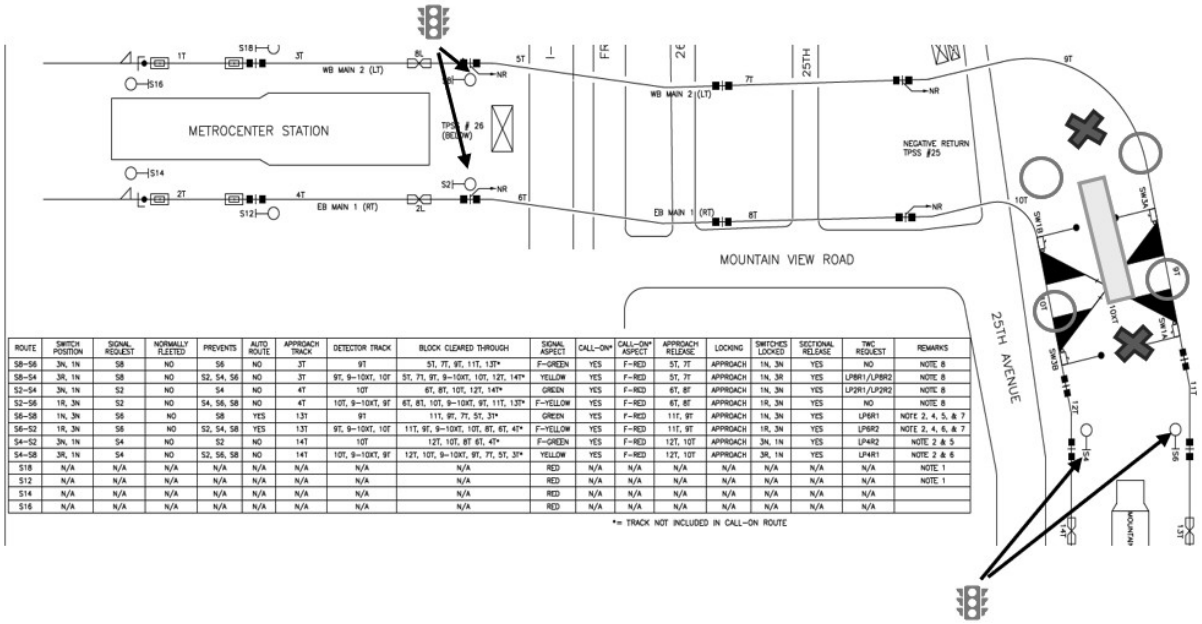


Mountain View Crossover









ROUTE	SWITCH POSITION	SIGNAL REQUEST	NORMALLY FLEETED	PREVENTS	AUTO ROUTE	APPROACH TRACK	DETECTOR TRACK	BLOCK CLEARED THROUGH	SIGNAL ASPECT	CALL-ON*	CALL-ON* ASPECT	APPROACH RELEASE	LOCKING	SWITCHES LOCKED	SECTIONAL RELEASE	TWC REQUEST	REMARKS
S8–S6	3N, 1N	S8	NO	S6	NO	3T	9T	5T, 7T, 9T, 11T, 13T*	F–GREEN	YES	F–RED	5T, 7T	APPROACH	1N, 3N	YES	NO	NOTE 8
S8–S4	3R, 1N	S8	NO	S2, S4, S6	NO	3T	9T, 9–10XT, 10T	5T, 7T, 9T, 9–10XT, 10T, 12T, 14T*	YELLOW	YES	F–RED	5T, 7T	APPROACH	1N, 3R	YES	LPBR1/LPBR2	NOTE 8
S2–S4	3N, 1N	S2	NO	S4	NO	4T	10T	6T, 8T, 10T, 12T, 14T*	GREEN	YES	F–RED	6T, 8T	APPROACH	1N, 3N	YES	LP2R1/LP2R2	NOTE 8
S2–S6	1R, 3N	S2	NO	S4, S6, S8	NO	4T	10T, 9–10XT, 9T	6T, 8T, 10T, 9–10XT, 9T, 11T, 13T*	F–YELLOW	YES	F–RED	6T, 8T	APPROACH	1R, 3N	YES	NO	NOTE 8
S6–S8	1N, 3N	S6	NO	S8	YES	13T	9T	11T, 9T, 7T, 5T, 3T*	GREEN	YES	F–RED	11T, 9T	APPROACH	1N, 3N	YES	LP6R1	NOTE 2, 4, 5, & 7
S6–S2	1R, 3N	S6	NO	S2, S4, S8	YES	13T	9T, 9–10XT, 10T	11T, 9T, 9–10XT, 10T, 8T, 6T, 4T*	F–YELLOW	YES	F–RED	11T, 9T	APPROACH	1R, 3N	YES	LP6R2	NOTE 2, 4, 6, & 7
S4–S2	3N, 1N	S4	NO	S2	NO	14T	10T	12T, 10T, 8T 6T, 4T*	F–GREEN	YES	F–RED	12T, 10T	APPROACH	3N, 1N	YES	LP4R2	NOTE 2 & 5
S4–S8	3R, 1N	S4	NO	S2, S6, S8	NO	14T	10T, 9–10XT, 9T	12T, 10T, 9–10XT, 9T, 7T, 5T, 3T*	YELLOW	YES	F–RED	12T, 10T	APPROACH	3R, 1N	YES	LP4R1	NOTE 2 & 6
S18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RED	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NOTE 1
S12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RED	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NOTE 1
S14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RED	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
S16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RED	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

*= TRACK NOT INCLUDED IN CALL-ON ROUTE

I-17 Bridge











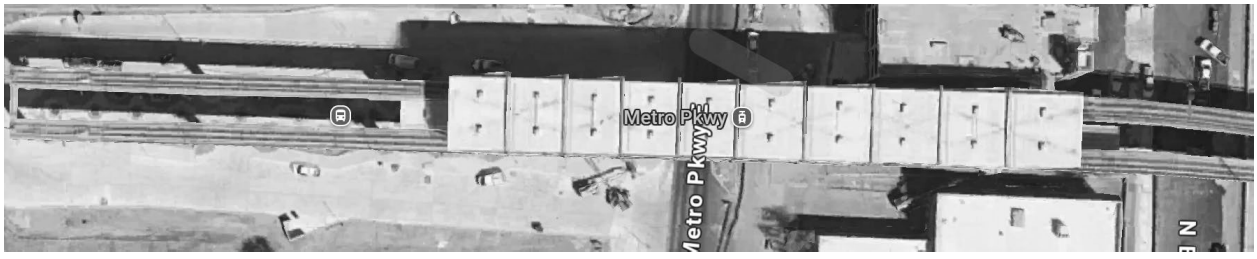




Metro Tail Track




DANGER
HIGH
VOLTAGE
DO
NOT
ENTER


Metro Pkwy
Metro Pkwy

Safe Zone Analysis – OL-B-4 Montebello → Metro Tail Track

Overview

The OL-B-4 segment runs within the 19th Avenue median corridor, where physical refuge areas are limited due to narrow shoulders, active traffic lanes, and high heat exposure from the surrounding pavement.
Safe zones along this section are designated primarily within median refuges and select terminal pockets that provide adequate clearance from the dynamic train envelope. Each area is evaluated for worker visibility, braking distance, and environmental protection.

1. Montebello to Glendale Segment

Safe Zone Type: Curbside refuge and Park-and-Ride access point.
Description:

- Workers can utilize the paved shoulder near the Montebello Park & Ride access gate for short-duration staging.
- Clearance allows two personnel to stand clear of the dynamic envelope while maintaining direct radio line-of-sight to the approaching train.

Notes: Suitable for pre-work briefings or light inspections only — avoid prolonged occupation due to traffic noise and glare.

2. Northern Avenue Median Refuge

Safe Zone Type: Central median refuge between Track 1 and Track 2.
Description:

- Offers a two-person clear zone with visibility in both directions.
- Located mid-block north of Northern Avenue station where the median widens slightly.
- Ideal for watchperson positioning or safe clearance during passing movements.

Refinement: Use designated median refuges (clearly marked on OL-B-4 map) for safe zones.

3. Dunlap Interlocking and Grade Crossing

Safe Zone Type: Narrow shoulder refuge adjacent to signal bungalow.
Description:

- Minimal shoulder width; accommodates one person maximum.
- Use only as temporary refuge while coordinating OCC route confirmation or switch alignment checks.
- Workers must remain alert to simultaneous train and roadway traffic movements.

Refinement: Exposure to high radiant heat and constrained refuge space—enforce rotation and hydration protocol.

4. Mountain View / 25th Avenue Tail Track Area

Safe Zone Type: Paved shoulder and tail-track clearance zone.
Description:

- Provides the widest paved staging area along the section, suitable for maintenance vehicles and two-to-three-person crews.
- Adequate clearance for workers to stand outside the dynamic envelope and perform OCS or signal work.
- Recommended primary safe zone for extended duration work.

Notes: Maintain cone barriers for separation from adjacent roadway; ensure OCS clearance for elevated work.

5. Metro Parkway / North Terminal Pocket

Safe Zone Type: Terminal stub track clearance zone.
Description:

- Located beyond the final switch north of Metro Parkway, within the single-track tail section.
- Provides refuge for small crews performing terminal inspections, switch maintenance, or vehicle staging.
- Constrained egress — must secure Exclusive Track Occupancy (ETO) and OCC clearance prior to entry.

Refinement: Exposure to high radiant heat and limited air flow—apply heat stress prevention measures and limit time-on-track.

General Safe-Zone Practices for OL-B-4

Condition	Required Action
Limited shoulder or median refuge	Position lookout on open sightline side (north/south approach).
Heat index > 100°F	Rotate crews every 30 min minimum; provide hydration and shaded rest areas.
Low visibility or glare	Use flashing beacons and high-visibility PPE; lookout must face direction of travel.
Multi-crew operations	Assign separate lookouts for northbound and southbound tracks.

Summary

Safe-zone opportunities on OL-B-4 are limited but manageable through proper planning and adherence to RWP procedures.

Primary safe areas include:

- Northern Avenue median refuge,
- Dunlap interlocking shoulder, and
- Mountain View tail-track shoulder (preferred).

All zones must be clearly marked on the OL-B-4 line map and verified during the pre-job briefing. When conditions restrict clearance, crews shall use roadside sidewalk staging until ETO and traffic control are in place.

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