

TRACK ACCESS GUIDE

RAIL OPERATIONS—LIGHT RAIL



INTRODUCTION

The RTD Light Rail Roadway Worker Protection (RWP) Manual is a fundamental document required by Federal Transit Administration (FTA) regulations, specifically 49 CFR Part 671 and Colorado Code of Regulations 4-723-7. These regulations mandate that transit agencies establish comprehensive safety procedures to protect personnel working on or near rail tracks. The RWP Manual serves as the primary authority outlining these essential rules, responsibilities (such as the Roadway Worker In Charge), and methods of protection.

This Track Access Guide serves as a crucial supplementary resource, designed to be utilized in conjunction with the RWP Manual. It leverages site-specific survey data of the guideway to provide detailed context and identify conditions requiring additional attention when selecting and applying the appropriate form of roadway worker protection outlined in the RWP Manual.

When using both the Manual and this Guide, always remember that site conditions are dynamic. Atmospheric changes (light, precipitation, temperature) and changes in ambient noise can significantly impact safety. Always refer to the Maximum Authorized Speed (MAS) indicated; if uncertain, default to the higher speed to ensure adequate time to reach a place of safety before a train arrives. The sight distances referenced are minimums for a 15-second warning; allow additional time when conditions dictate or when the nature of the work requires extra time to clear personnel, tools, or equipment to a place of safety.

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INDEX OF HOT SPOTS

Areas of limited sight distance, loud ambient noise, or sharp clearances including bridges or tunnels.

Corridor	Segment	Location	Limited Sight Distance	Loud Ambient Noise	Tight Clearance
Central	01CC	I-25 and Broadway to Alameda	X (bridge piers, sharp curves)	X (adjacent rail tracks)	
	02CC	Alameda to Bayaud Crossing		X (adjacent rail tracks)	
	03CC	Bayaud Crossing to South Mariposa Interlocking	X (Santa Fe flyover, sharp curve)		X (Santa Fe Flyover)
	04CC	Mariposa to 10th and Osage	X (bridge piers)		X (fence along A-track)
	05CC	10th and Osage to Auraria East	X (bridge piers, sharp curves)		
	06CC	Auraria East to Convention Center	X (Convention Center curves)		X (Bridge over Cherry Creek, Convention Center)
	07CC	Downtown Loop	X (sharp curves)		
	08CC	19th and California to 30th and Downing	X (sharp curves)		

Corridor	Segment	Location	Limited Sight Distance	Loud Ambient Noise	Tight Clearance
Central Platt Valley	01CP	CPV Junction to Auraria West	X (bridge piers, sharp curves)		
	02CP	Auraria West to Mile High	X (bridge piers, sharp curves)		
	03CP	Mile High to Ball Arena	X (sharp curves)	X (adjacent rail tracks)	X (along fence)
	04CP	Ball Arena to Union Station	X (bridge piers)	X (adjacent rail tracks)	X (along wall)
	05CP	Union Station Tail Track		X (adjacent rail tracks)	X (along wall and fence)
South West	01SW	I-25 and Broadway to Evans	X (Iowa Flyover)	X (adjacent rail tracks)	X (Iowa Flyover)
	02 SW	Elati Yard and Shop			
	02SW	Evans to Englewood		X (adjacent rail tracks)	X (along fence to yard)
	03SW	Englewood to Oxford		X (adjacent rail tracks)	X (Bridge over Oxford Ave)
	04SW	Oxford to Littleton	X (Tufts Flyover)	X (adjacent rail tracks)	
	05SW	Littleton to Mineral	X (bridge piers, sharp curves, heavy vegetation)	X (adjacent rail tracks)	
	06SW	Mineral Tail Track			

Corridor	Segment	Location	Limited Sight Distance	Loud Ambient Noise	Tight Clearance
West Corridor	01WC	Auraria West to Decatur and Federal	X (CML Flyover, tunnel under I-25)		X (Tunnel under I-25, bridge over south Platt river)
	02WC	Decatur and Federal to Knox	X (sharp curves)		
	03WC	Knox to Perry	X (sharp curves)		
	04WC	Perry to Sheridan	X (sharp curves)		
	05WC	Sheridan to Lamar	X (sharp curves)		
	06WC	Lamar to Wadsworth	X (Wadsworth Flyover/Station)		
	07WC	Wadsworth to Garrison	X (Wadsworth Flyover/Station)		
	08WC	Garrison to Oak	X (Kipling Flyover)		X (along walls)
	09WC	Oak to 8th Ave	X (sharp curves)		
	10WC	8th Ave to North Ave East			
	11WC	North Ave East to North Ave West	X (sharp curves)		
	12WC	North Ave West to RCH1140	X (sharp curves, tunnel under Union Blvd)		
	13WC	RCH1082 to Red Rocks			
	14WC	Red Rocks to Indiana Flyover	X (sharp curves, Indiana Flyover)		
	15WC	Indiana Flyover to Colfax Flyover	X (tunnel under I-70, Colfax Flyover)		
	16WC	Colfax Flyover to Jefferson County	X (sharp curves, Colfax Flyover, parking garage over track)		

Corridor	Segment	Location	Limited Sight Distance	Loud Ambient Noise	Tight Clearance
South East	01SE	I25 and Broadway to Louisiana and Pearl	X (Broadway Flyover, bridge piers)	X (highway traffic)	
	02SE	Louisiana and Pearl to University	X (bridge piers, sharp curves)	X (highway traffic)	
	03SE	University to Colorado	X (University Flyover, Colorado tunnel, sharp curves)	X (highway traffic)	
	04SE	Colorado to Yale	X (sharp curves, bridge piers)	X (highway traffic)	
	05SE	Yale to Southmoore	X (sharp curves, tunnel under Hampden)	X (highway traffic)	
	06SE	Southmoore to TPSS22SE	X (bridge piers, trains from other directions in junction)	X (highway traffic)	
	07SE	TPSS22SE to Belleview	X (trains from other directions in junction)	X (highway traffic)	
	08SE	Belleview to Orchard	X (Belleview Flyover)	X (highway traffic)	
	09SE	Orchard to Arapahoe	X (Orchard Flyover)	X (highway traffic)	
	10SE	Arapahoe to Dry Creek	X (Arapahoe Flyover, Drycreek Flyover)	X (highway traffic)	
	11SE	Dry Creek to County Line	X (County Line Flyover)	X (highway traffic)	
	12SE	County Line to Lincoln	X (bridge piers for C-470, sharp curves)		X (Bridge for I-25 ramp)
	13SE	Lincoln to Sky Ridge	X (bridge piers for C-470, sharp curves)		
	14SE	Sky Ridge to Lone Tree	X (I-25 Flyover, sharp curves)		
	15SE	Lone Tree to Ridge Gate			
	16SE	Ridge Gate Tail Track			

Corridor	Segment	Location	Limited Sight Distance	Loud Ambient Noise	Tight Clearance
Parker Road	01PR	225 Junction to Dayton	X (bridge piers, sharp curves)	X (highway traffic)	X (next to wall)
	02PR	Dayton to Nine Mile	X (bridge piers, sharp curves)	X (highway traffic)	X (next to wall)
	03PR	Nine Mile to Iliff	X (I-225 Flyover)	X (highway traffic)	X (next to wall)
	04PR	Iliff to Florida	X (sharp curves, Iliff Flyover)	X (highway traffic)	
	05PR	Florida to Sable and Exposition	X (sharp curves, Mississippi Flyover)		
	06PR	Sable and Exposition to 2nd and Abilene	X (sharp curves)		X (along walls)
	07PR	2nd and Abilene to 13th Ave	X (6th Ave Flyover)		
	08PR	13th Ave to 17th Place	X (sharp curves, Colfax Flyover/ station)		X (bridge over Toll Gate Creek)
	09PR	17th Place to Fitzsimons	X (sharp curves)		
	10PR	Fitzsimons to 30th	X (Peoria Flyover)		X (Peoria Flyover)
	11PR	30th to Peoria	X (sharp curves)		
	12PR	Peoria Tail Track			

DEFINITIONS

Advance flagger means a qualified Flagger working with the work zone flagger for the sole purpose of warning of oncoming trains or rail equipment. Flaggers must always be within sight and audible warning of each other.

CC means it is a naming convention for assets or segments within the Central Corridor.

CPV means it is a naming convention for assets or segments within the Central Platte Valley Corridor.

Flag person / Flagger – means a roadway worker designated to direct or restrict the movement of rail transit vehicles or equipment past a point on a track to provide on-track-safety for roadway workers, while engaged solely in performing that function.

Forms of protection means various methods of protection to provide on-track safety for a roadway worker.

Individual rail transit vehicle detection or Individual train detection means a process by which a lone worker acquires on-track safety by visually detecting approaching rail transit vehicles or equipment and leaving the track in ample time.

Job safety briefing means a meeting addressing the requirements of this part that is conducted prior to commencing work by the Roadway Worker in Charge, typically at the job site, to notify roadway workers or other transit workers about the hazards related to the work to be performed and the protections to eliminate or protect against those hazards. Alternatively, briefings can be conducted virtually for those individuals who are working remotely on the job site.

Maximum authorized speed means the highest speed permitted for the movement of rail transit vehicles established by the rail transit vehicle control system, service schedule, and operating rules. This speed is used when calculating ample time.

MPH means miles per hour.

Place of safety means a space an individual or individuals can safely occupy outside the track zone, sufficiently clear of any rail transit vehicle, including any on-track equipment, moving on any track.

PR means it is a naming convention for assets or segments within the Parker Road Corridor.

R means it is a naming convention for assets or segments within the Parker Road Extension Corridor (R-Line).

Rail transit vehicle approach warning or Train Approach Warning means a method of establishing on-track safety by warning roadway workers of the approach of rail transit vehicles in ample time for them to move to or remain in a place of safety in accordance with the requirements of this part.

RC means Relay Case.

RCH means Relay Case/House.

Roadway worker means a transit worker whose duties involve inspection, construction, maintenance, repairs, or providing on-track safety such as flag persons and watchpersons on or near the roadway or right-of-way or with the potential of fouling track.

Roadway Worker In Charge means a roadway worker who is qualified under this part to establish on-track safety.

SE means it is a naming convention for assets or segments within the Southeast Corridor.

SERE means it is a naming convention for assets or segments within the Southeast Rail Extension Corridor.

Sight distance means the length of roadway visible ahead for a roadway worker.

SW means it is a naming convention for assets or segments within the Southwest Corridor.

SWT means it is a nomenclature for naming switches.

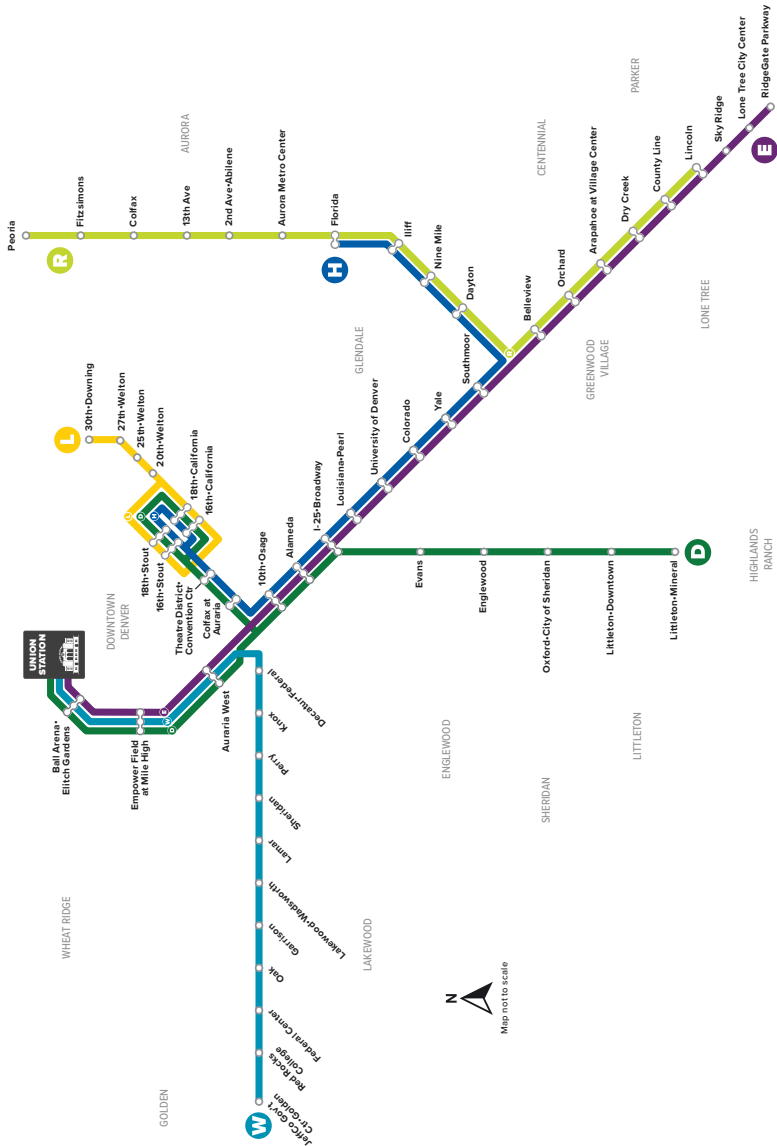
TPSS means Traction Power Substation.

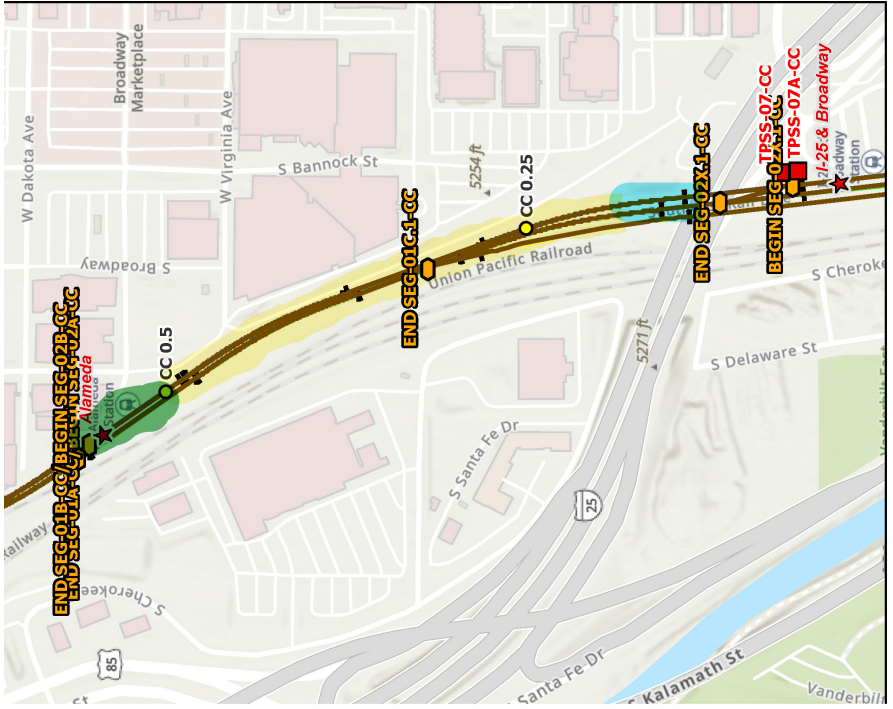
Watchperson means a roadway worker qualified to provide warning to roadway workers of approaching rail transit vehicles or track equipment whose sole duty is to look out for approaching rail transit vehicles and track equipment and provide at least 15 seconds advanced warning plus time to clear based on the maximum authorized track speed for the work location to transit workers before the arrival of rail transit vehicles.

WC means it is a naming convention for assets or segments within the West Corridor.



SYSTEM MAP





Segment 01CC

Station I-25 and Broadway to Station Alameda

Maximum authorized speed (MAS) 30, 45, 20 MPH

If uncertain of speed utilize highest for greatest protection

Sight distance required for MAS 660, 990, 440 feet

Special considerations for area

- o adjacent heavy rail tracks Over 100' away can be a source of high noise
- o SWT70A&CCC
- o SWT65BCC
- o Bridge piers for I-25 could cause line of sight issues

Access points: West side drive in from gate at South Cherokee Street, East side gate near Switch 65B, I-25 Broadway station, Alameda station

Unallowable forms of Protection: No restrictions

Segment 02CC

Station Alameda to Station Bayaud Crossing

Maximum authorized speed (MAS) 55 MPH

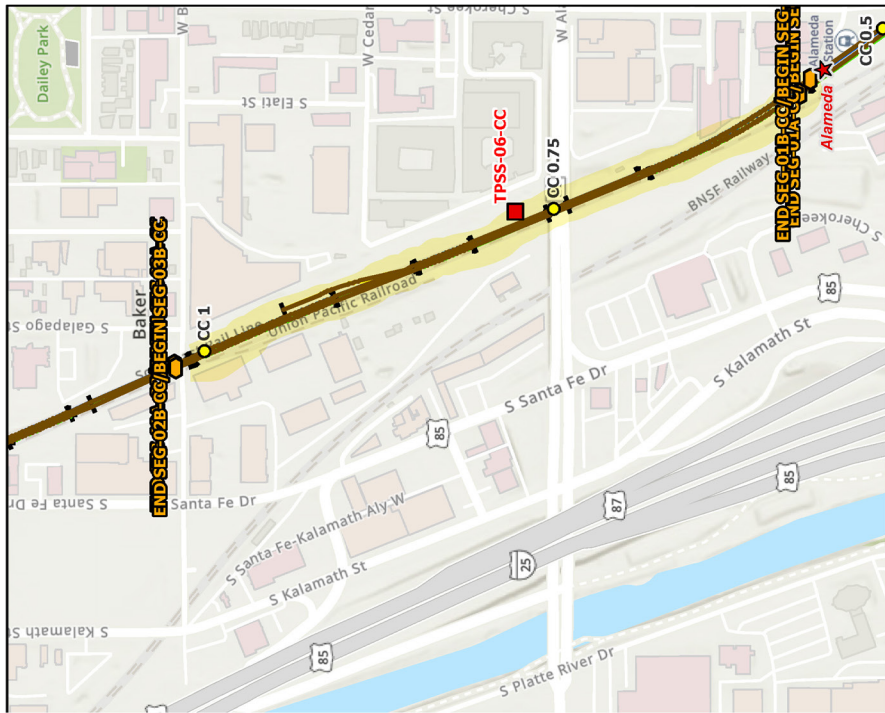
Sight distance required for MAS 1210 feet

Special considerations for area

- Union Pacific spur track maintain a minimum 25 feet clearance
- Rail lubricators watch footing
- bridge over Alameda
- SWT62ACC turnout for maintenance track
- Bayaud crossing watch for vehicle traffic
- Steep grade may require additional braking distance

Access points: Alameda station, West side of track accessed by vehicle, Gate at maintenance yard, Bayaud crossing

Unallowable forms of Protection: No restrictions



Segment 03CC

Bayaud Crossing to South Mariposa interlocking

Maximum authorized speed (MAS) **55** MPH

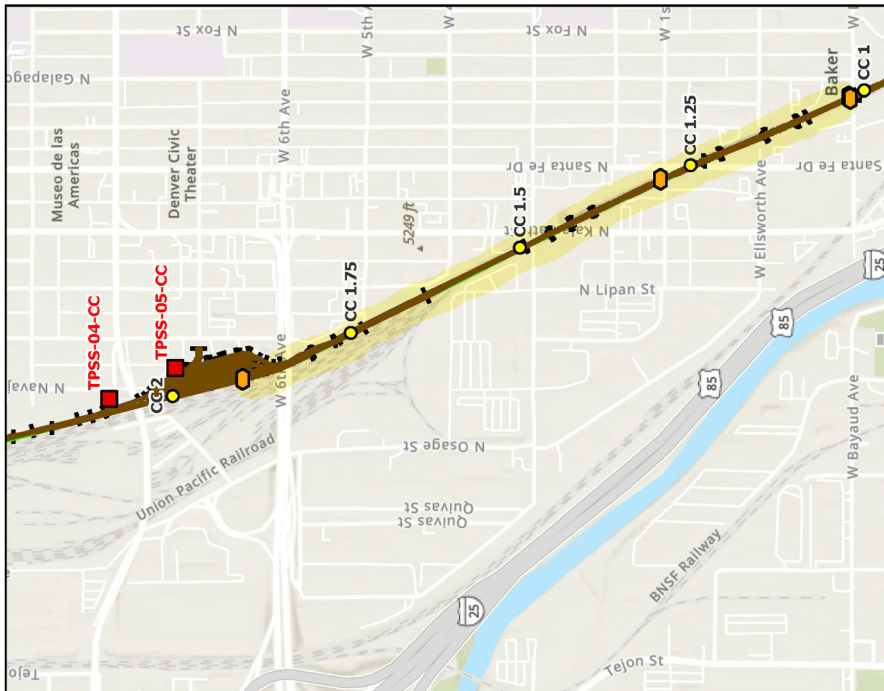
Sight distance required for MAS **1210** feet

Special considerations for area

- o Santa Fe Flyover, call control prior to ascending
- o limited sight distance curve and flyover
- o steep grade may require additional braking distance
- o Must set red signals prior to entering south Mariposa interlocking at RCH358CC

Access points: Bayaud crossing, Gate at south mariposa interlocking (RCH 358CC)

Unallowable forms of Protection: Individual train detection, Flagger protection



Segment 04CC

Station Mariposa to Station 10th and Osage

Maximum authorized speed (MAS) 50 MPH

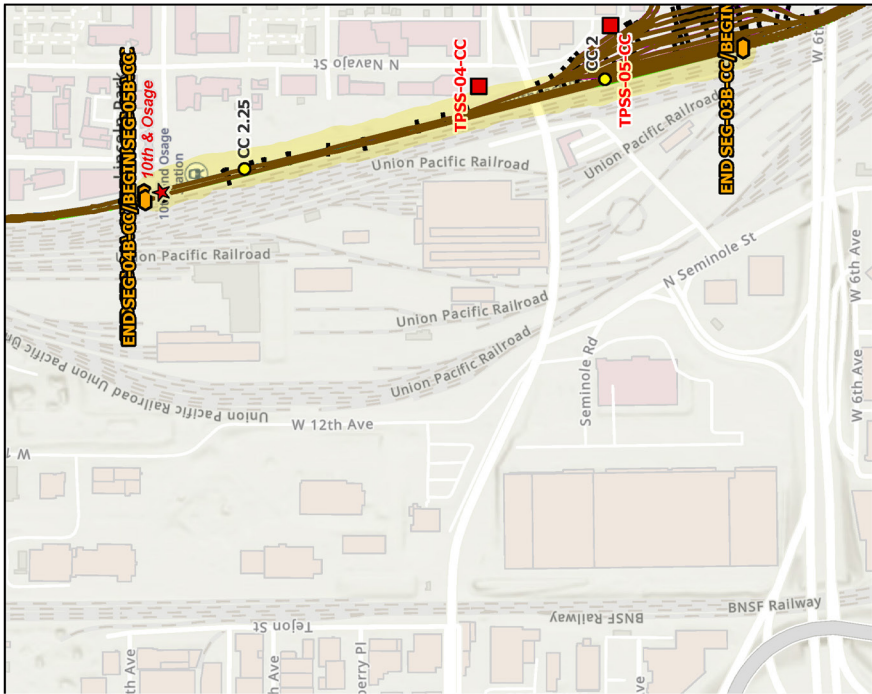
Sight distance required for MAS 1100 feet

Special considerations for area

- o Tight clearance between A-track and fence
- o Heavy rail spur track adjacent to B-track maintain a minimum 25 feet clearance
- o North Mariposa interlocking
- o Bridge piers may affect sight distance

Access points: Mariposa Yard leads, 10th and Osage station, stairs from RCH324CC

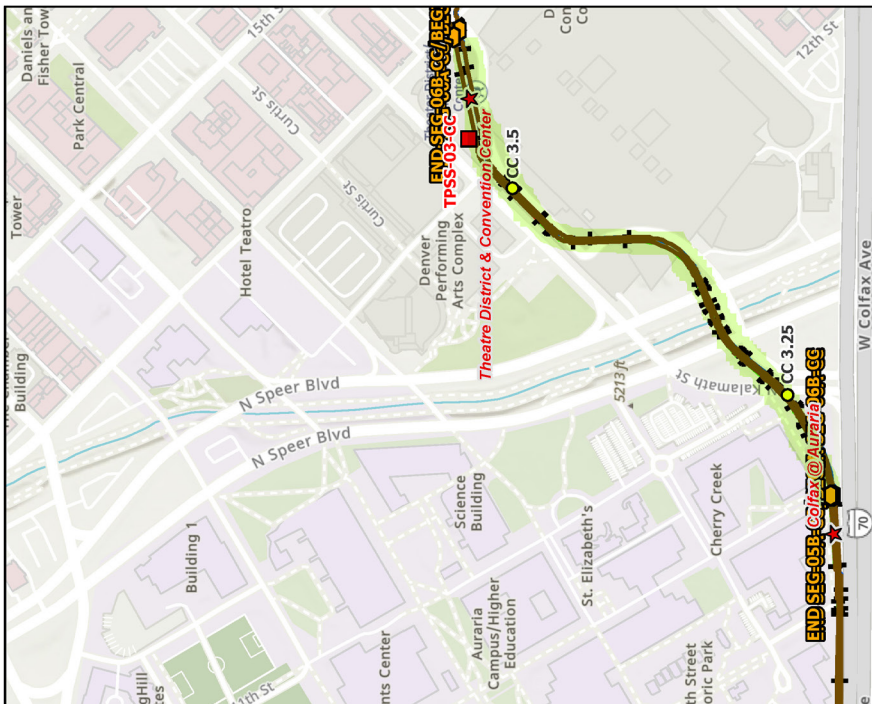
Unallowable forms of Protection: no restrictions



Segment 06CC
Station Auraria East **to Station** Convention Center
Maximum authorized speed (MAS) 15 **MPH**
Sight distance required for MAS 330 **feet**
Special considerations for area

- o Kalamath Street crossing watch for vehicle traffic
- o Speer Blvd North and South crossing watch for vehicle traffic
- o bridge over Cherry Creek limited clearance
- o Convention Center curves and tight clearances
- o SWT30A&BCC SWT25A&BCC crossover switches

Access points: all along
Unallowable forms of Protection: no restrictions



Segment 07CC

Station Downtown Loop to Station Downtown Loop

Maximum authorized speed (MAS) 20.10 MPH

If uncertain of speed utilize highest for greatest protection

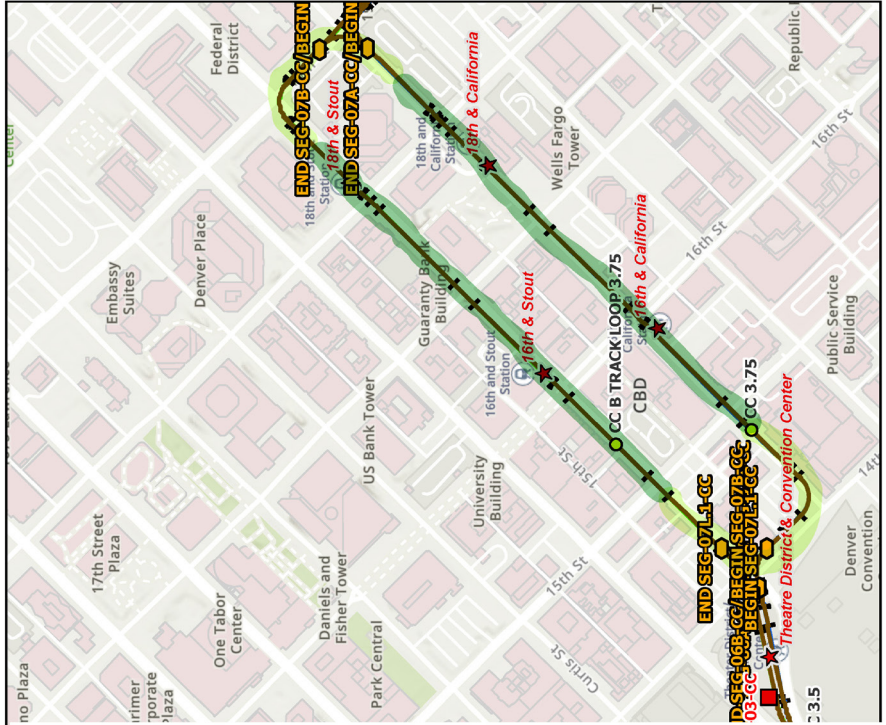
Sight distance required for MAS 440, 220 feet

Special considerations for area

- o Pedestrian traffic
- o Automobile traffic
- o Sharp Curves
- o 13-street crossings
- o SWT20ACC
- o SWT31ACC
- o SWT31BCC
- o SWT20BCC

Access points: anywhere

Unallowable forms of Protection: no restrictions



Segment 08CC

Station 19th and California to Station 30th and Downing

Maximum authorized speed (MAS) 20 MPH

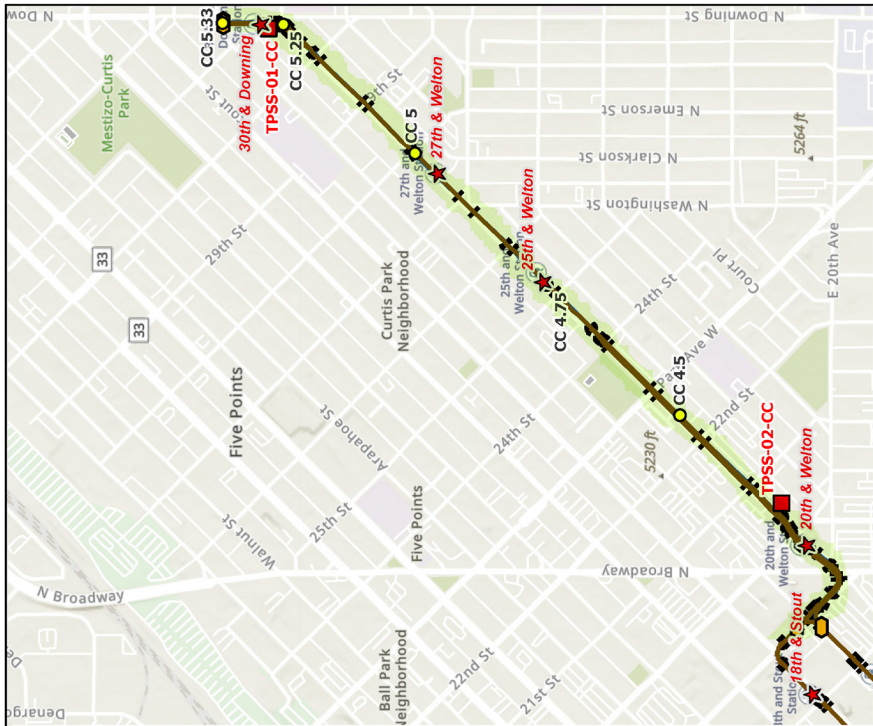
Sight distance required for MAS 440 feet

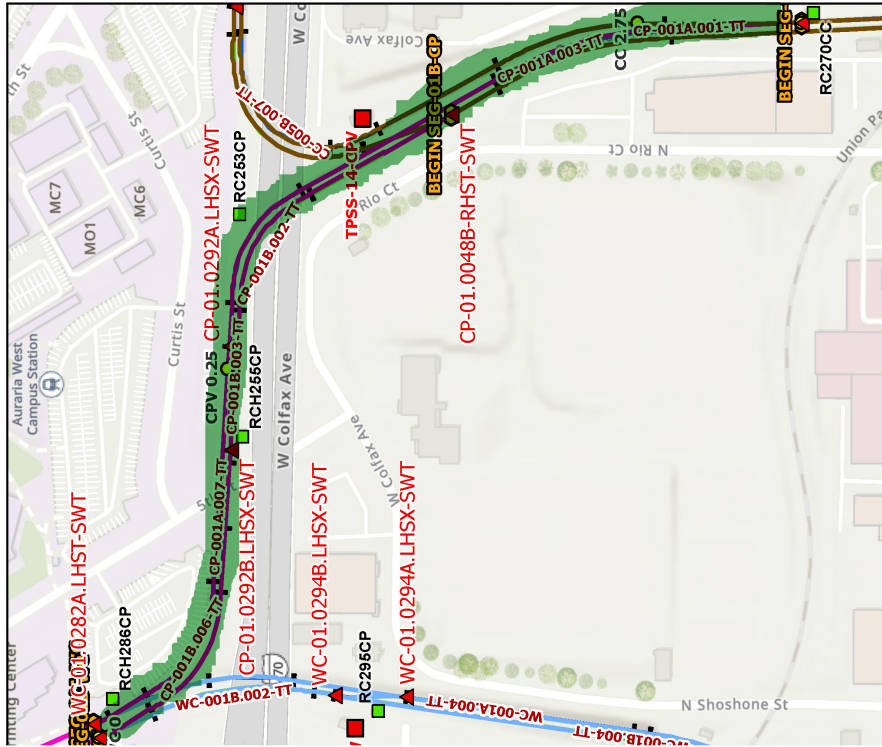
Special considerations for area

- automobile traffic
- pedestrian traffic
- sharp curves
- 15 - street crossings
- SWT21CC
- SWT11CC
- Single track bi-directional train traffic

Access points: anywhere

Unallowable forms of Protection: no restrictions





Segment 01cp

Station CPV Junction to Station Auraria West

Maximum authorized speed (MAS) 30 MPH

Sight distance required for MAS 660 feet

Special considerations for area

- o Tight curves
- o bridge piers
- o Junction with Central Corridor
- o SWT292A&BCP
- o 5th street crossing watch for vehicle traffic
- o SWT 282ACP & SWT285BCP
- o Junction with west corridor steep grade may require additional braking distance

Access points: Gate at SWT48BCC, Gate from campus parking lot, 5th street crossing, Auraria West station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance



Segment 03CP

Station Mile High to Station Ball Arena

Maximum authorized speed (MAS) 10.35 MPH

If uncertain of speed utilize highest for greatest protection

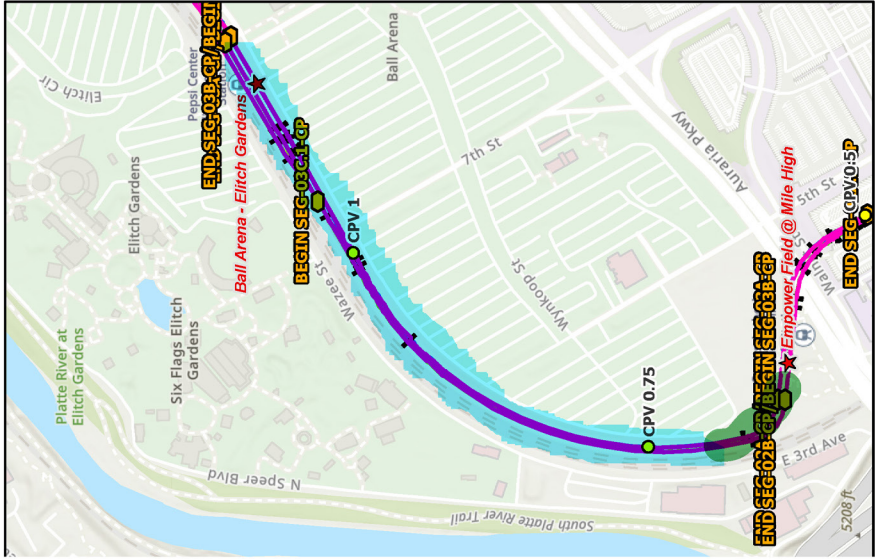
Sight distance required for MAS 220, 770 feet

Special considerations for area

- o sharp curve
- o limited clearance with fence
- o Heavy Rail track adjacent maintain a minimum 25 feet of clearance
- o SWT150A&BCP
- o SWT152BCP
- o Sidetrack bi-directional traffic on sidetrack
- o limit sight distance due to curve and fence

Access points: Mile High station, Ball Arena station, gate at crossover switches

Unallowable forms of Protection: Individual Train Detection, may require advance flagger due to sight distance



Segment 04CP

Station Ball Arena to Station Union

Maximum authorized speed (MAS) 55 MPH

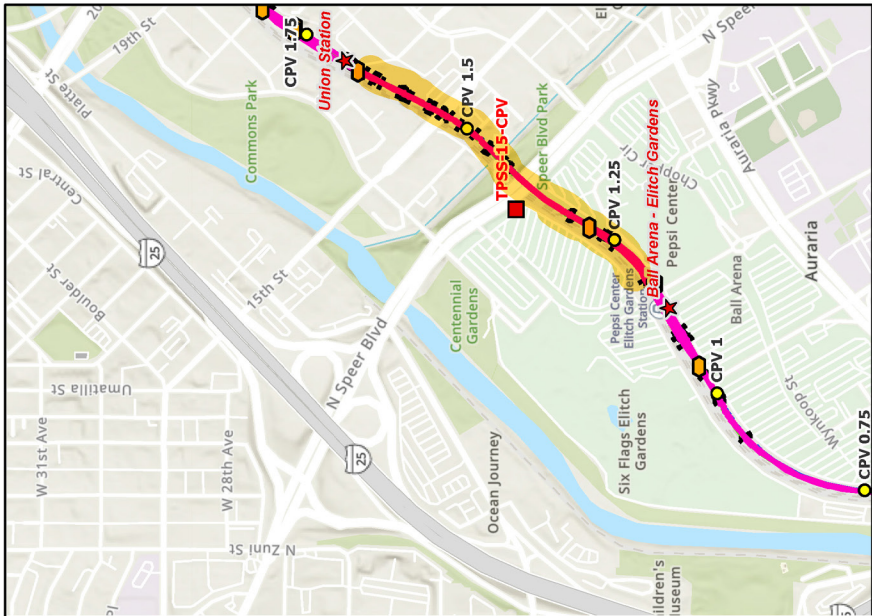
Sight distance required for MAS 1210 feet

Special considerations for area

- o Speer Boulevard bridge piers
- o bridge over Cherry Creek
- o Bridge over 15th Street
- o Millennium bridge
- o SWT175A&BCC
- o SWT180BCC
- o limited clearance along wall
- o Adjacent heavy rail track maintain a minimum 25 feet clearance

Access points: Ball Arena station, Union Station, gates in Ball Arena parking lot

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance



Segment 05CP

Station Union Station Tail track

Maximum authorized speed (MAS) **15** MPH

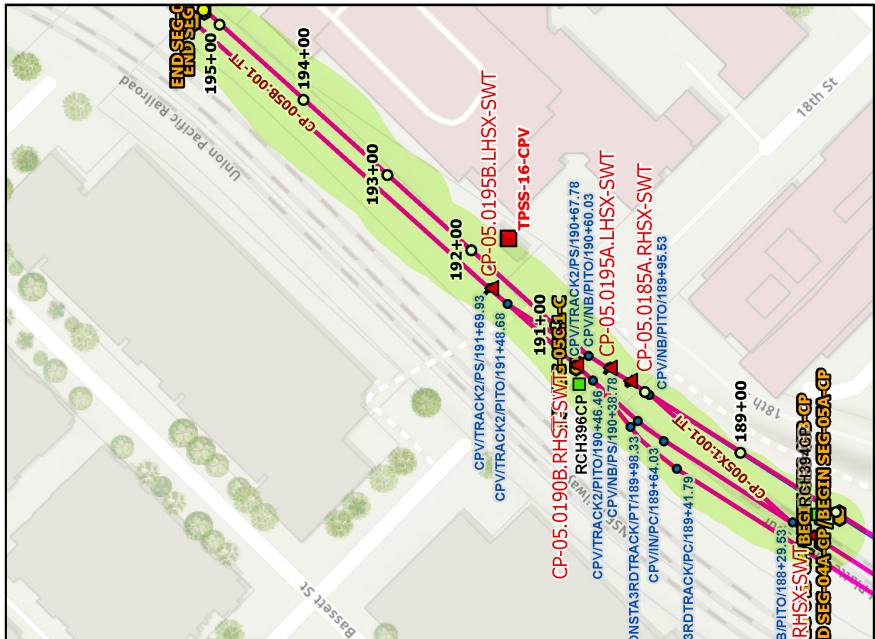
Sight distance required for MAS **330** feet

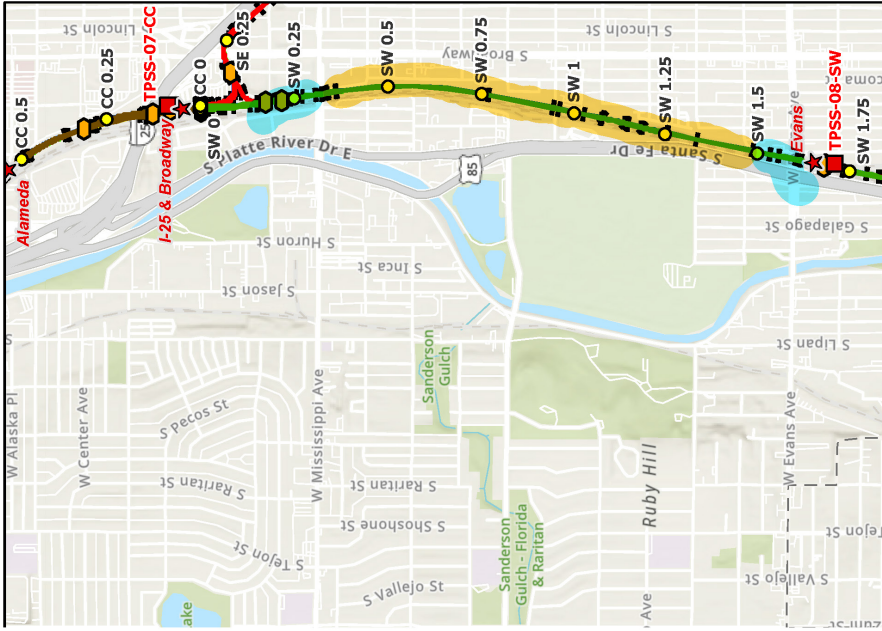
Special considerations for area

- limited clearance along wall
- limited clearance along substitution fence
- SWT185A&BCP, SWT195A&BCP, SWT190BCP
- heavy rail tracks adjacent maintain a minimum 25 feet clearance
- bi-directional train traffic on all tracks

Access points: Union station, Gate at end of tail track

Unallowable forms of Protection: no restrictions





Segment 01 SW

Station I-25 and Broadway to Station Evans

Maximum authorized speed (MAS) 30, 40, 55 MPH

Sight distance required for MAS 660, 880, 1210 feet

Special considerations for area

- Heavy rail adjacent maintain a minimum 25 feet clearance
- Broadway junction SWT71ACC, SWT72CSE, SWT73A&C, SWT74A, SWT75C, SWT76A, SWT76BSW
- Bridge over Mississippi Ave
- Bridge over Iowa Ave.
- Flyover call control prior to ascending
- steep grade may require additional braking distance
- bridge piers for Evans Ave.

Access points: I-25 and Broadway station, access road west side between Broadway and Iowa Ave, gate at Louisiana Ave, Gate at Florida Ave, gate at Jewell Ave, Evans station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance

Segment 02sw

Station Elati Yard and Shop

Maximum authorized speed (MAS) 15 MPH

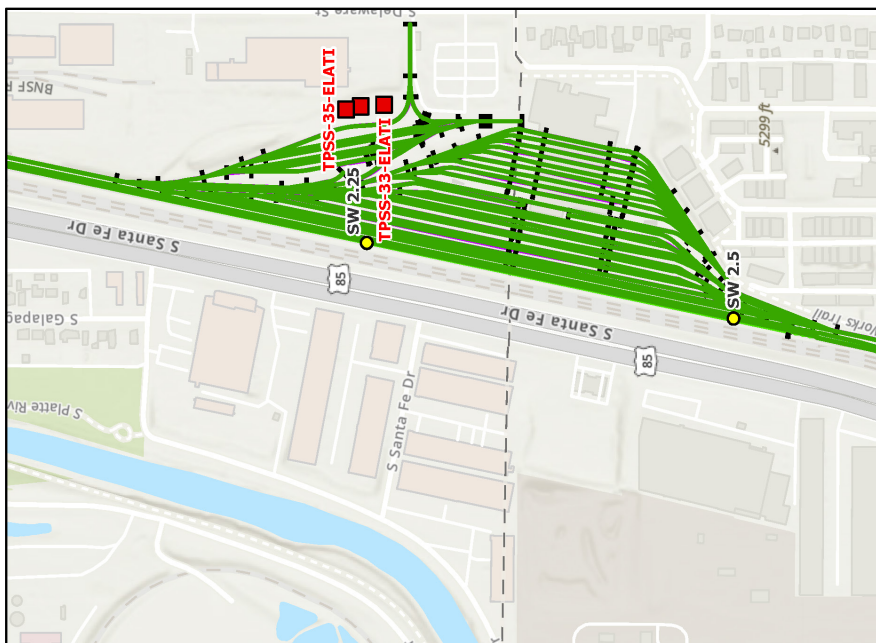
Sight distance required for MAS 330 feet

Special considerations for area

- Yard track trains moving bi-directionally on all tracks
- Contact Yard supervisor and Maintenance Supervisor prior to making tracks inaccessible
- follow shop practices for accessing shop tracks

Access points: Access gates on north and south of building

Unallowable forms of Protection: no restrictions



Segment 02SW

Station Evans to Station Englewood

Maximum authorized speed (MAS) 55 MPH

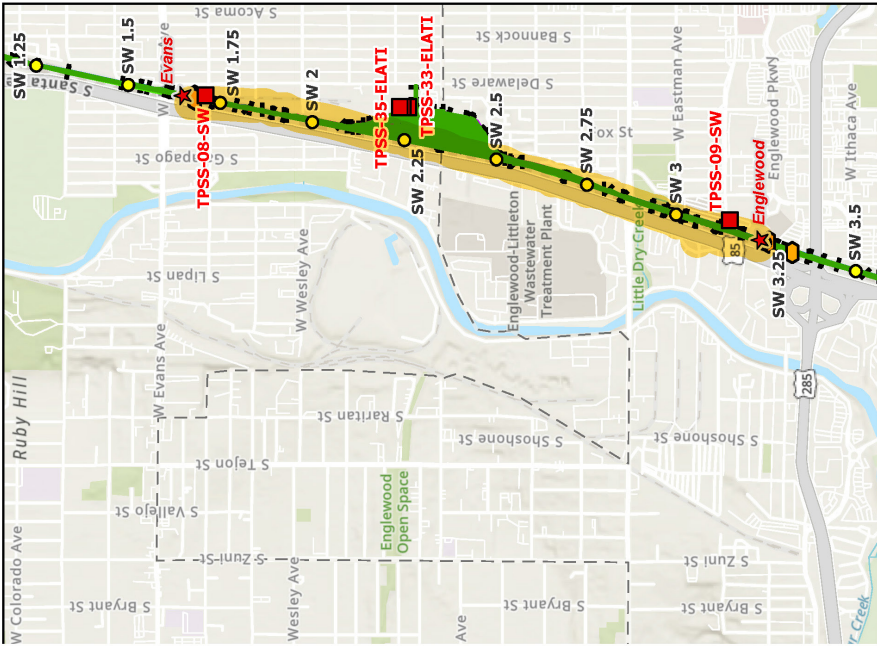
Sight distance required for MAS 1210 feet

Special considerations for area

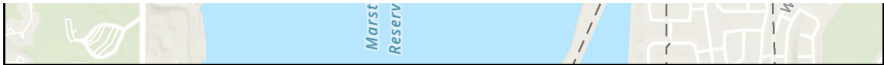
- heavy rail tracks and spur adjacent maintain a minimum 25 feet clearance
- North Elati interlock SWT86A&BSW, SWT87ASW
- tight clearance along Elati yard fence
- South Elati interlock SWT88ASW, SWT89A&BS
- bridge over Dartmouth Ave

Access points: Evans station, gate at Warren Ave, gate at Iliff Ave, gate at Wesley Ave. north Elati Lead, South Elati Lead, gate at Dartmouth Ave, Gate in Englewood station parking lot, Englewood station

Unallowable forms of Protection: no restrictions



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Segment 04SW

Station Oxford to Station Littleton

Maximum authorized speed (MAS) 55 MPH

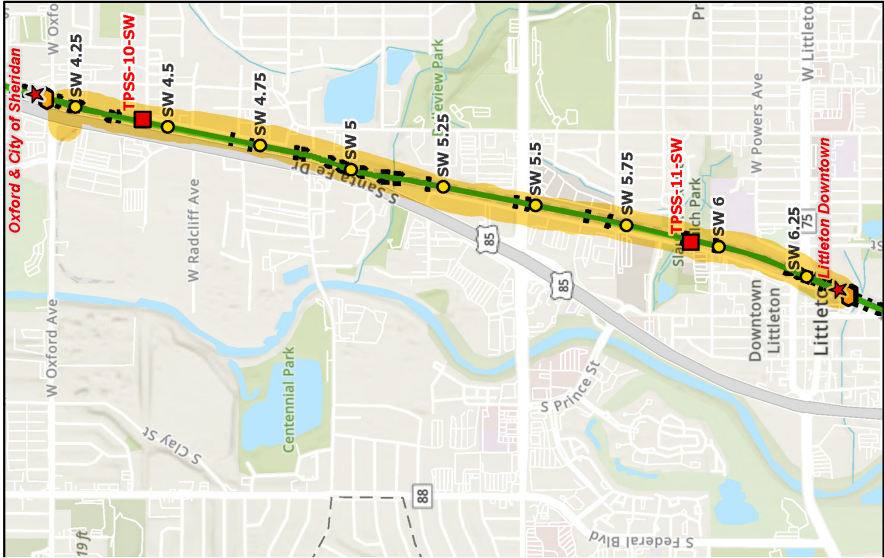
Sight distance required for MAS 1210 feet

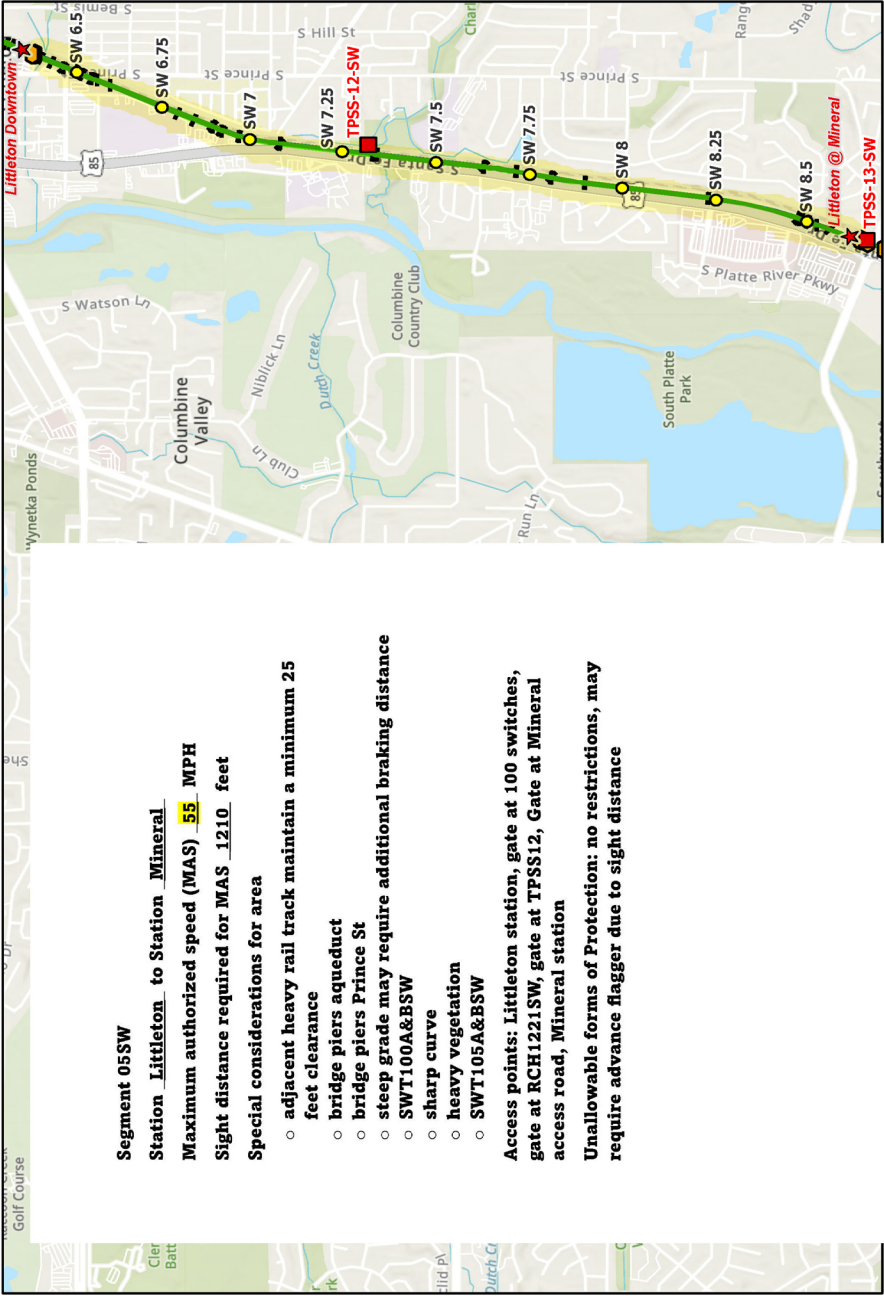
Special considerations for area

- Heavy rail tracks adjacent maintain a minimum 25 feet clearance
- Bridge over Oxford limited clearance
- Tufts Flyover call control prior to ascending distance
- steep grade may require additional braking distance
- Bridge over Bellevue Ave. limited clearance

Access points: Oxford station, gate at TPSS10, gate off Windermere, gate on Rio Grande St, gate at TPSS11, Littleton station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance





Segment 06SW

Station Mineral Tail track

Maximum authorized speed (MAS) 15 MPH

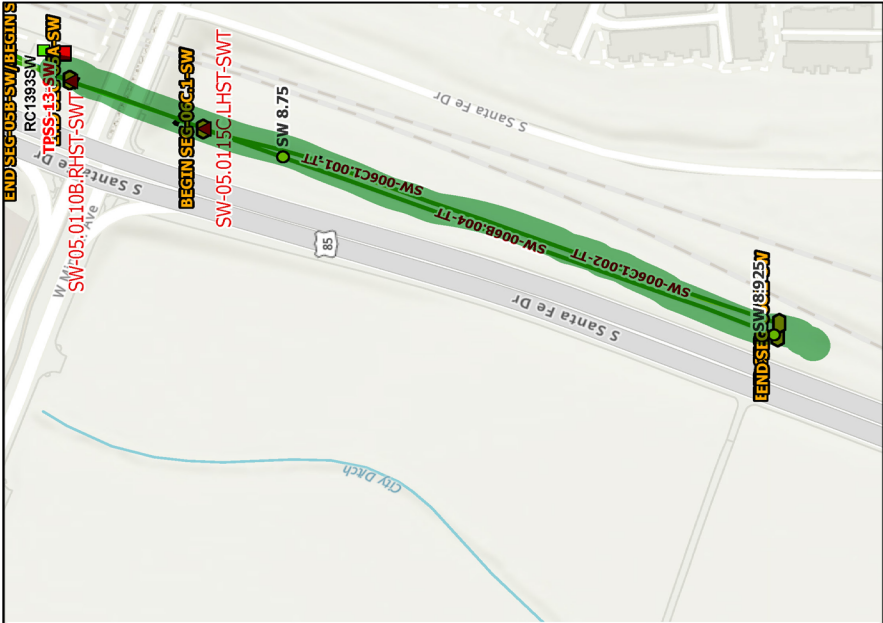
Sight distance required for MAS 330 feet

Special considerations for area

- SWT110BSW
- bridge over Mineral Ave.
- SWT115BSW
- trains operating bi-directionally on both tracks

Access points: Mineral station, gate at 115B switch, Gate at end of tail track

Unallowable forms of Protection: no restrictions



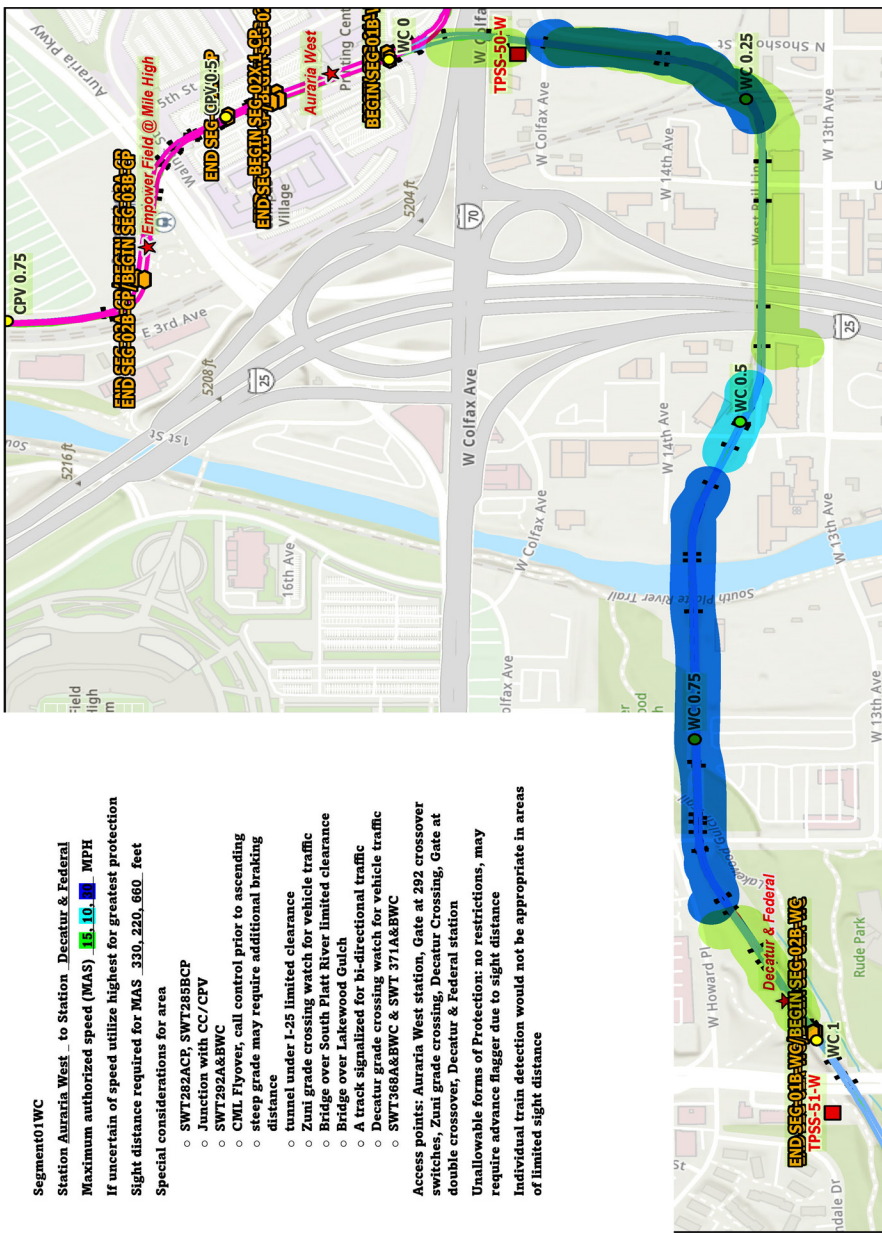
Segment 01W/C Station Auraria West to Station Decatur & Federal
Maximum authorized speed (MAS) 35, 10, 30 MPH
If uncertain of speed utilize highest for greatest protection
Sight distance required for MAS 330, 220, 560 feet
Special considerations for area

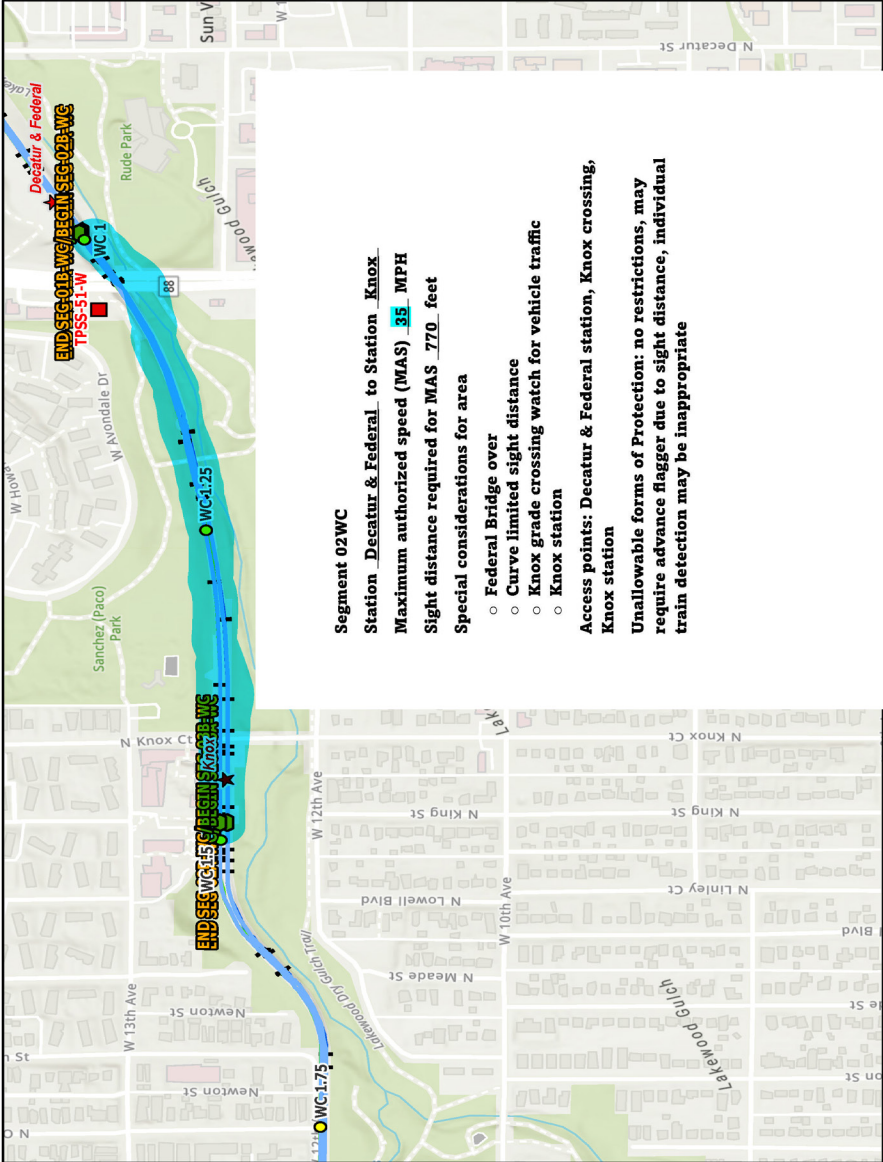
- **SWT282ACF, SWT285BCF**
- Junction with CC/CPV
- **SWT292A&BWC**
- CML Flyover, call control prior to ascending
- steep grade may require additional braking distance
- tunnel under 1.25 limited clearance
- Zuni grade crossing watch for vehicle traffic
- Bridge over South Platt River limited clearance
- Bridge over Lakewood Gulch
- A track signalized for bi-directional traffic
- Decatur grade crossing watch for vehicle traffic
- **SWT368A&BWC & SWT 371A&BWC**

**Access points: Auraria West station, Gate at 292 crossover
switches, Zuni grade crossing, Decatur Crossing, Gate at
double crossover, Decatur & Federal station**

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance

Individual train detection would not be appropriate in areas of limited sight distance





Segment 02WC

Station Decatur & Federal to Station Knox

Maximum authorized speed (MAS) 35 MPH

Sight distance required for MAS 770 feet

Special considerations for area

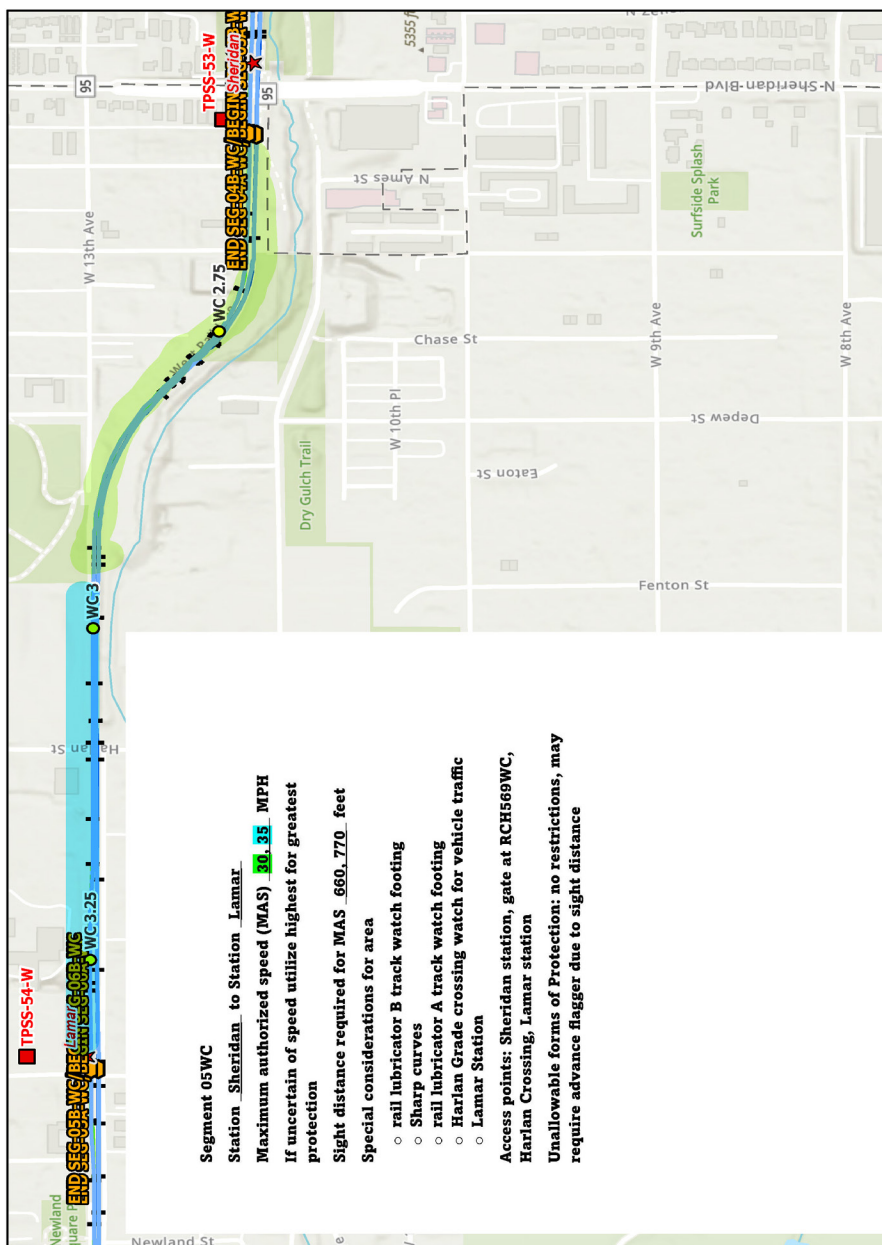
- o Federal Bridge over
- o Curve limited sight distance
- o Knox grade crossing watch for vehicle traffic
- o Knox station

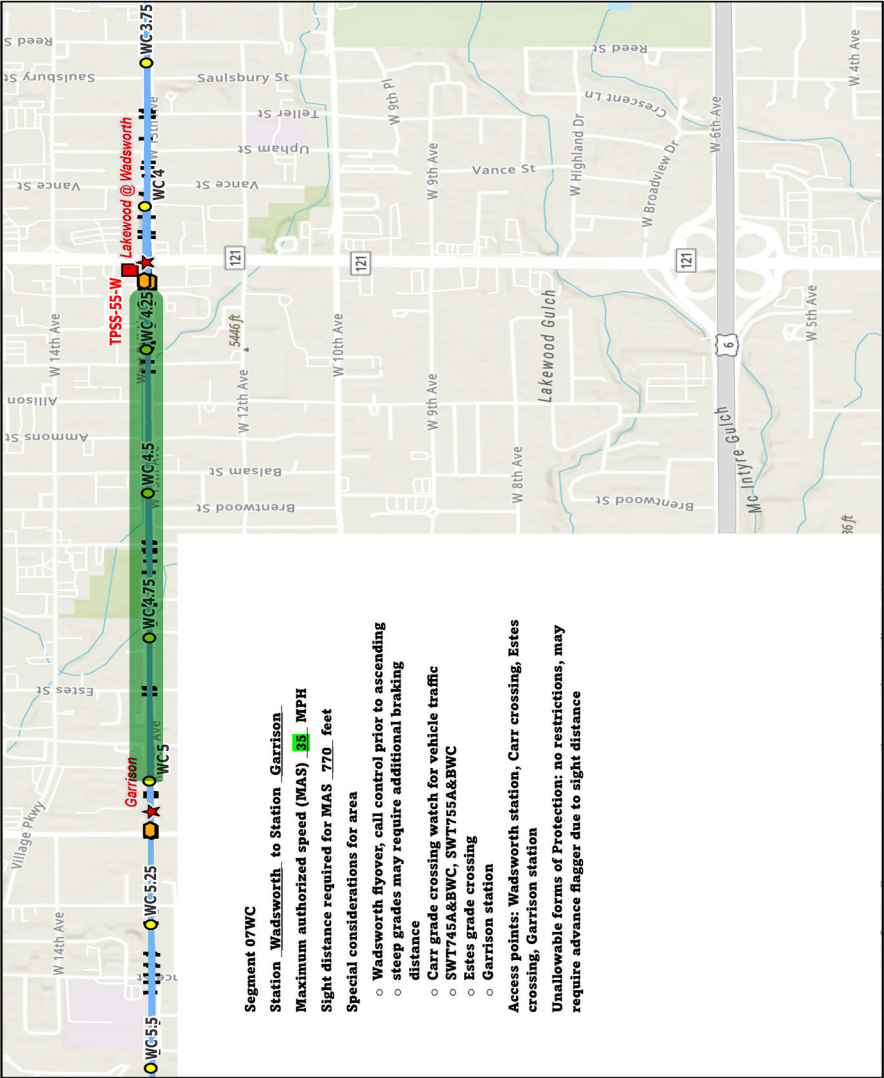
Access points: Decatur & Federal station, Knox crossing, Knox station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance, individual train detection may be inappropriate









Segment 09WC

Station Oak to Station 8th Avenue crossing

Maximum authorized speed (MAS) 35 MPH

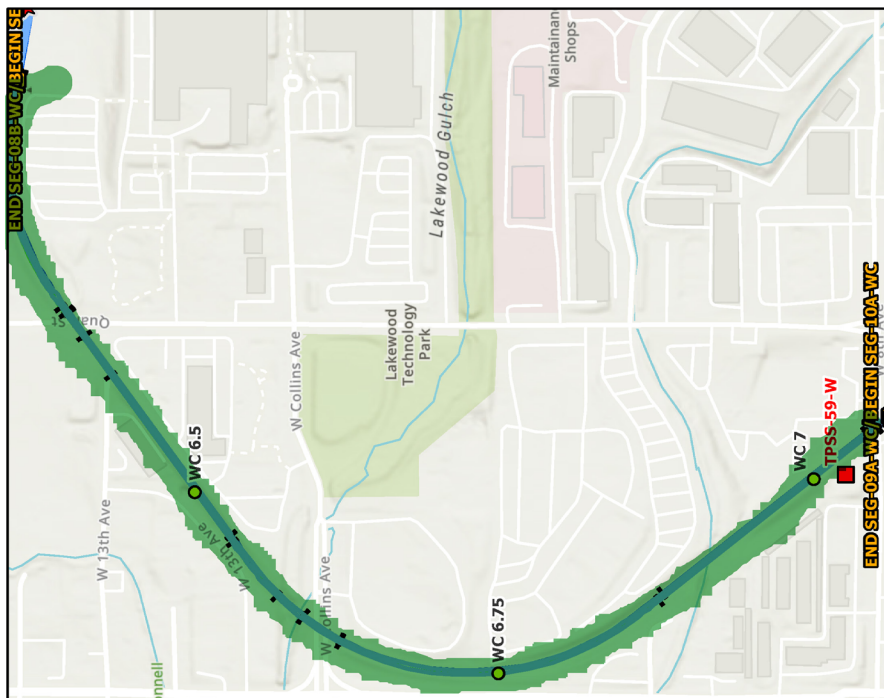
Sight distance required for MAS 770 feet

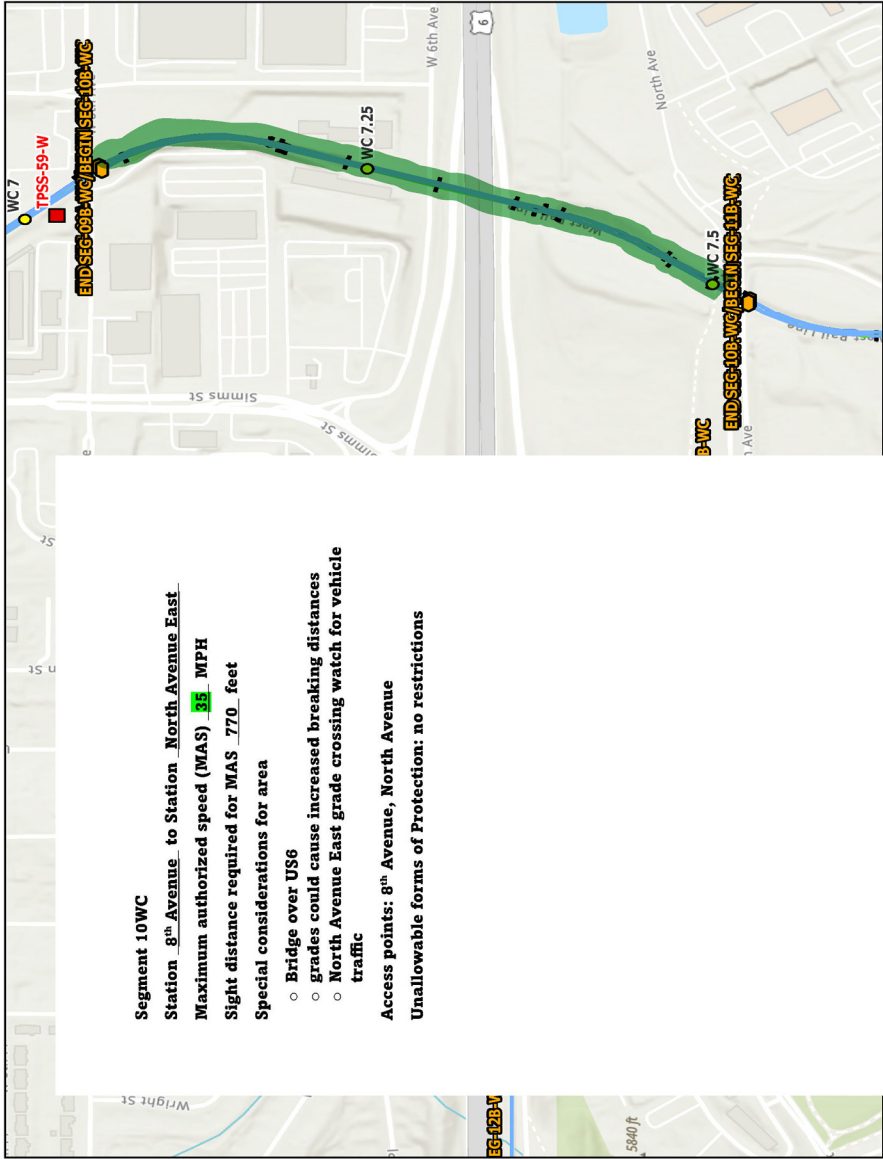
Special considerations for area

- tight curves
- Quail Street grade crossing watch for vehicle traffic
- Collins Avenue grade crossing watch for vehicle traffic
- 8th Avenue grade crossing watch for vehicle traffic

Access points: Oak station, Quail crossing, Collins crossing, 8th Ave crossing

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance





Segment 10WC

Station 8th Avenue to Station North Avenue East

Maximum authorized speed (MAS) 35 MPH

Sight distance required for MAS 770 feet

Special considerations for area

- Bridge over US6
- grades could cause increased breaking distances
- North Avenue East grade crossing watch for vehicle traffic

Access points: 8th Avenue, North Avenue

Unallowable forms of Protection: no restrictions

Segment 11 WC

Station North Avenue East to Station North Avenue West

Maximum authorized speed (MAS) 35, 10, 15 MPH

If uncertain of speed utilize highest for greatest protection

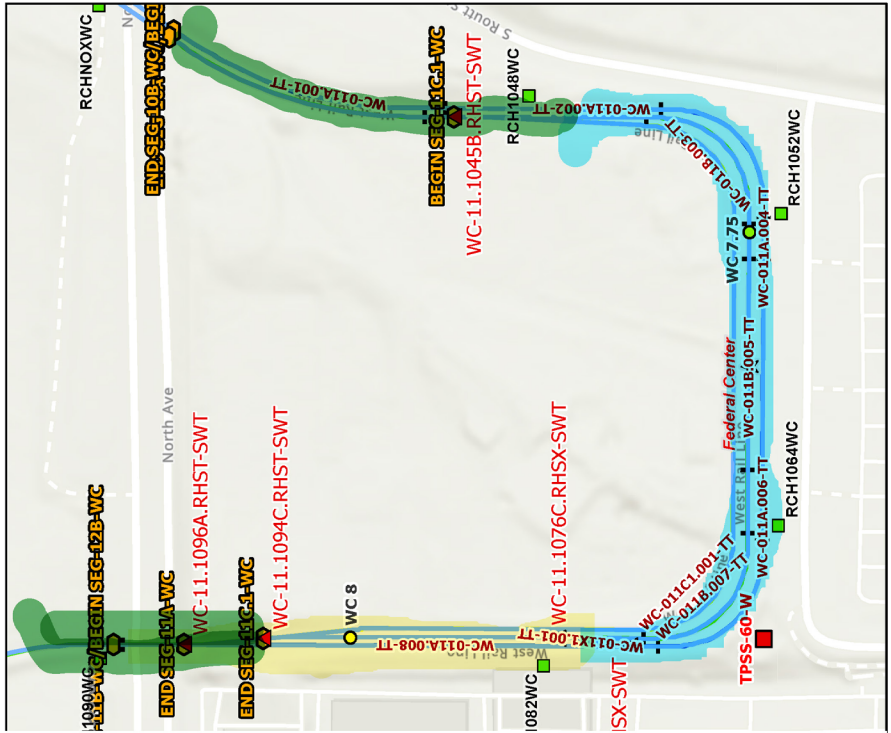
Sight distance required for MAS 770, 220, 330 feet

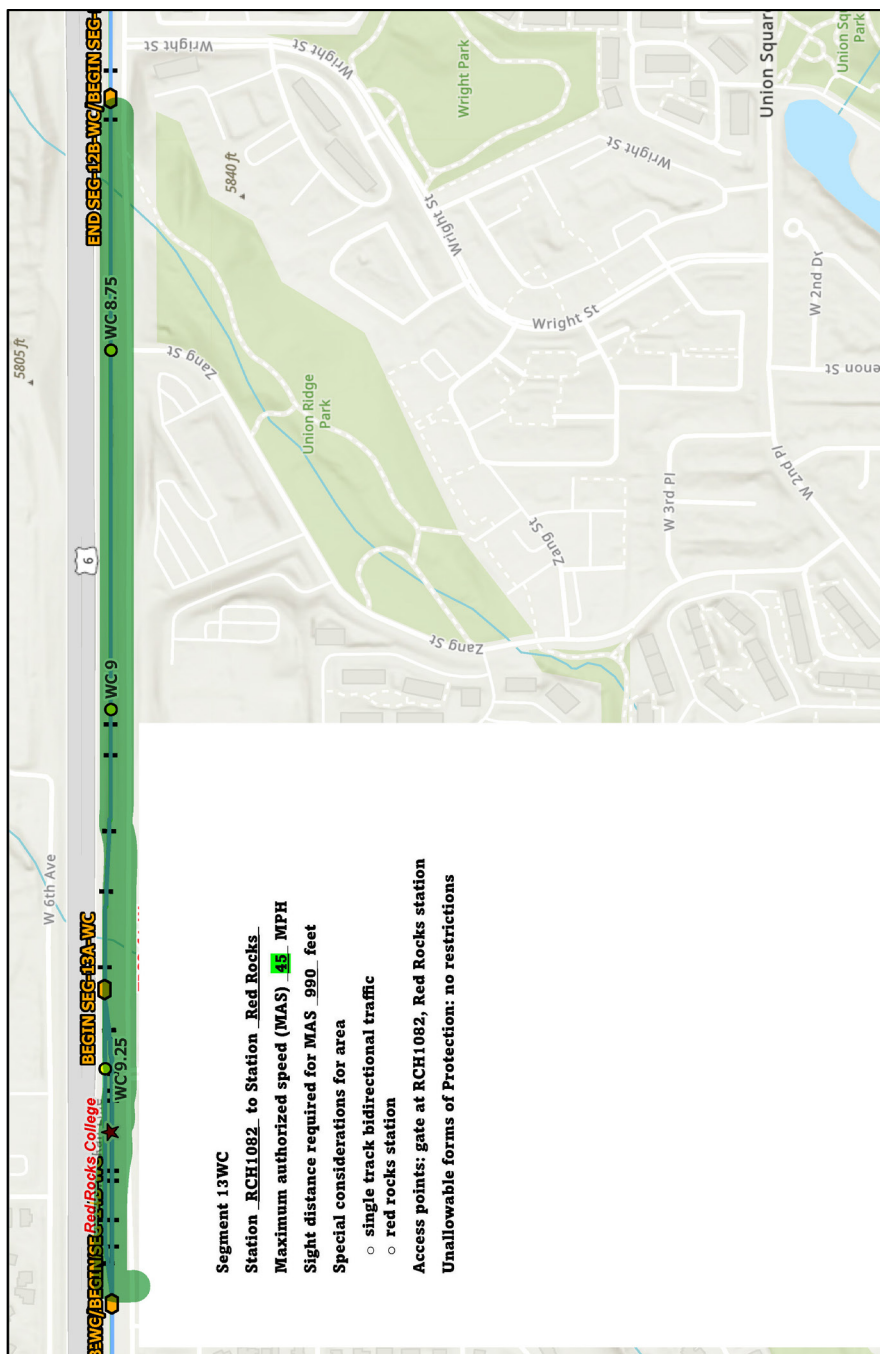
Special considerations for area

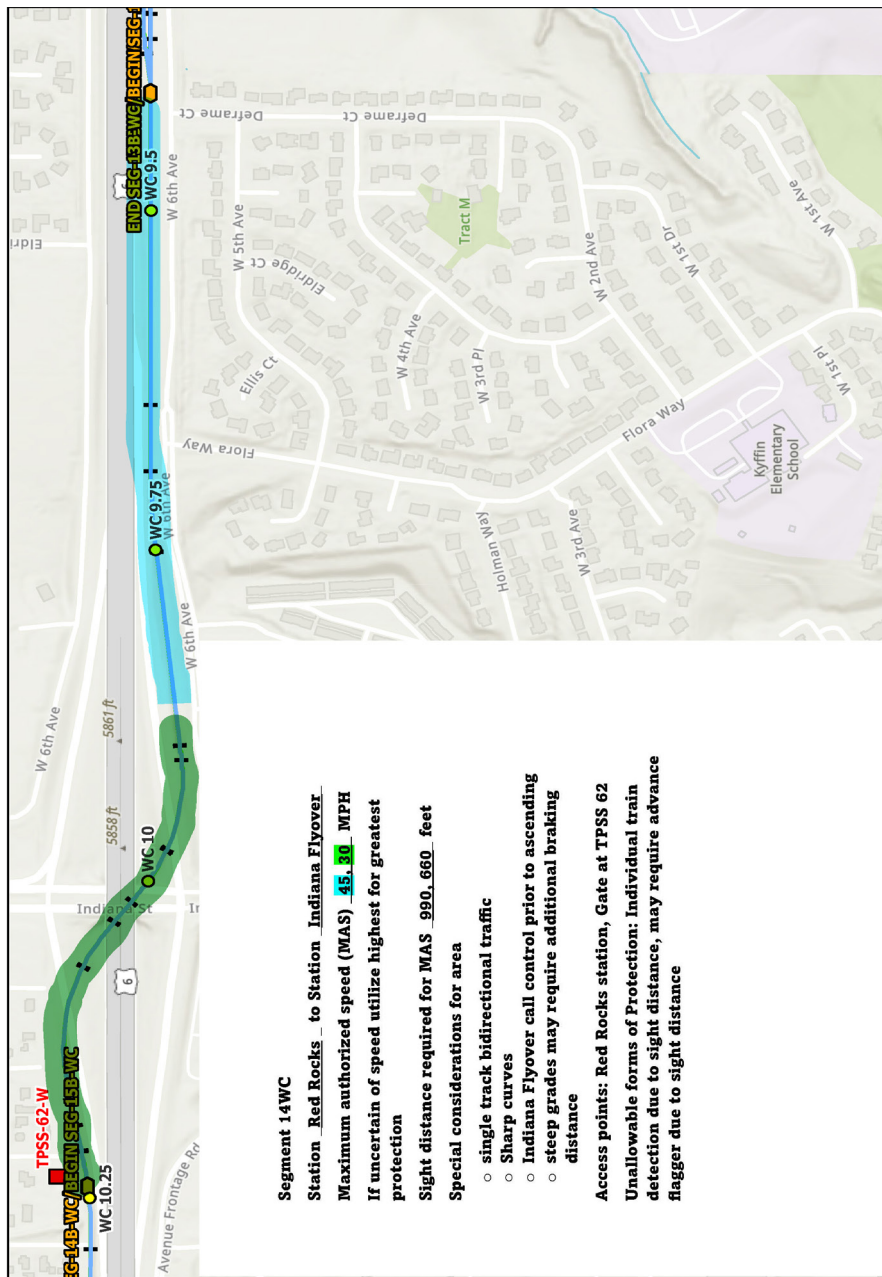
- o center track bidirectional traffic
- o Very tight curves limited sight distance
- o Federal Center station
- o north Avenue west grade crossing watch for vehicle traffic

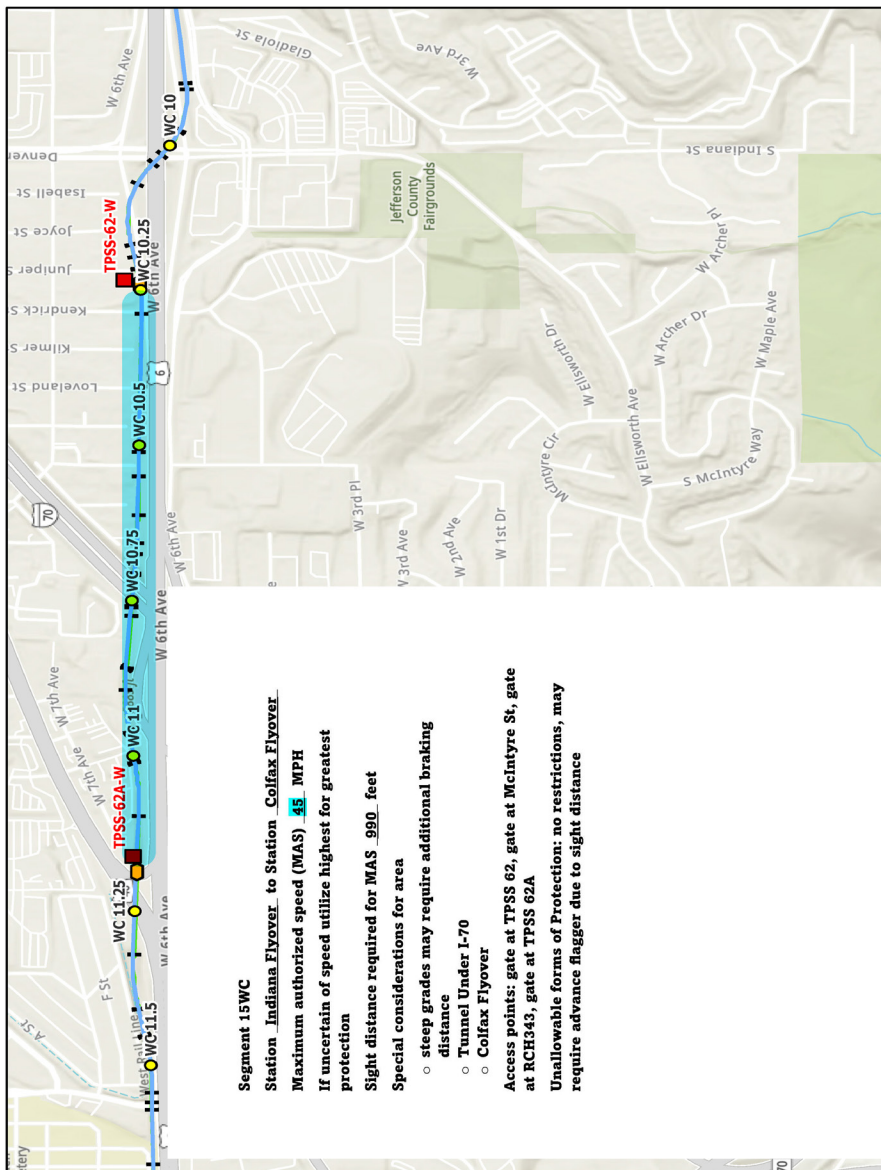
Access points: North Avenue East crossing, gate at RCH 1048, Federal Center station, Gate at RCH 1082, North Avenue West crossing

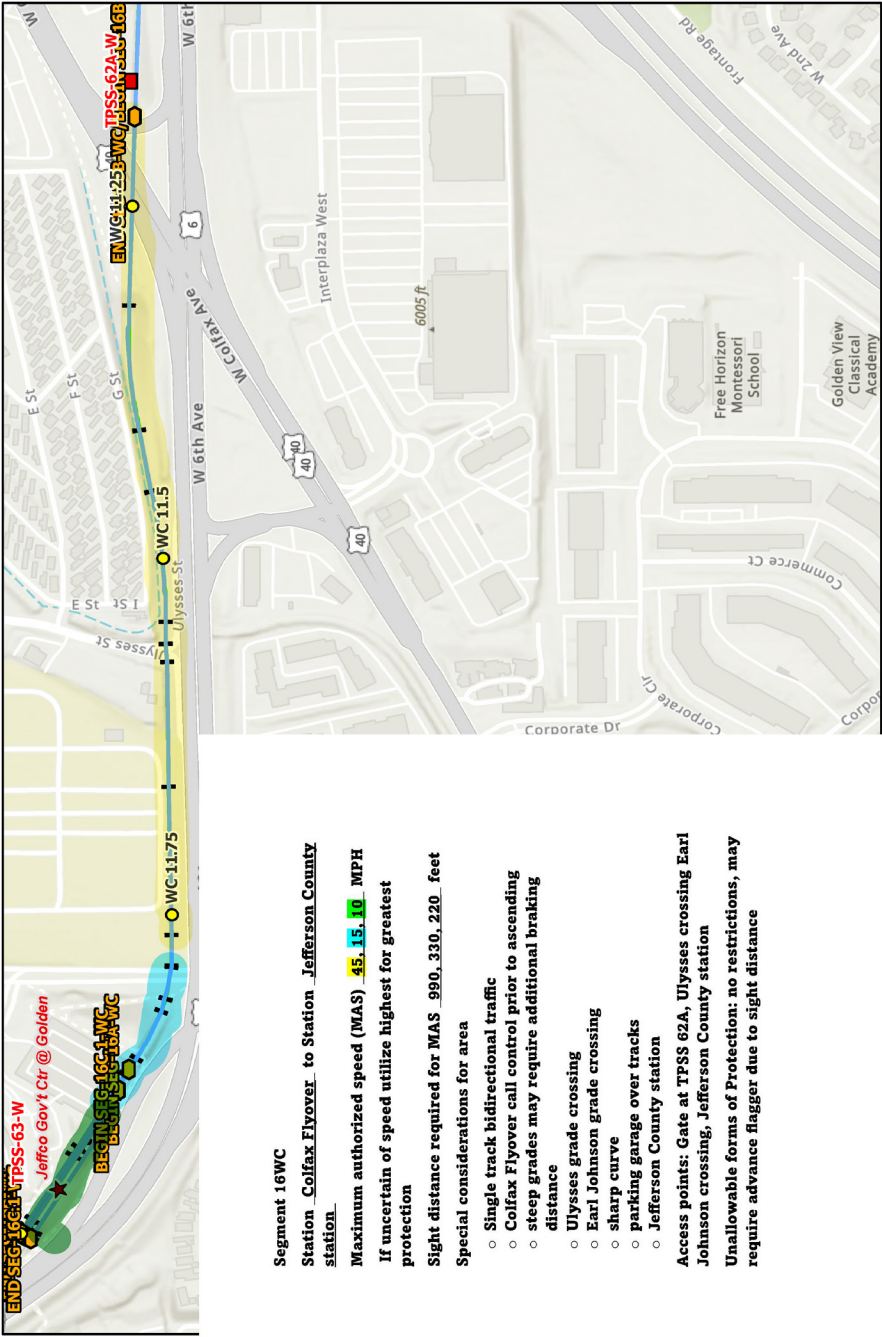
Unallowable forms of Protection: Individual train detection due to sight distance, may require advance flagger due to sight distance











Segment 16WC

Station Colfax Flyover to Station Jefferson County station

Maximum authorized speed (MAS) 45, 15, 10 MPH

If uncertain of speed utilize highest for greatest protection

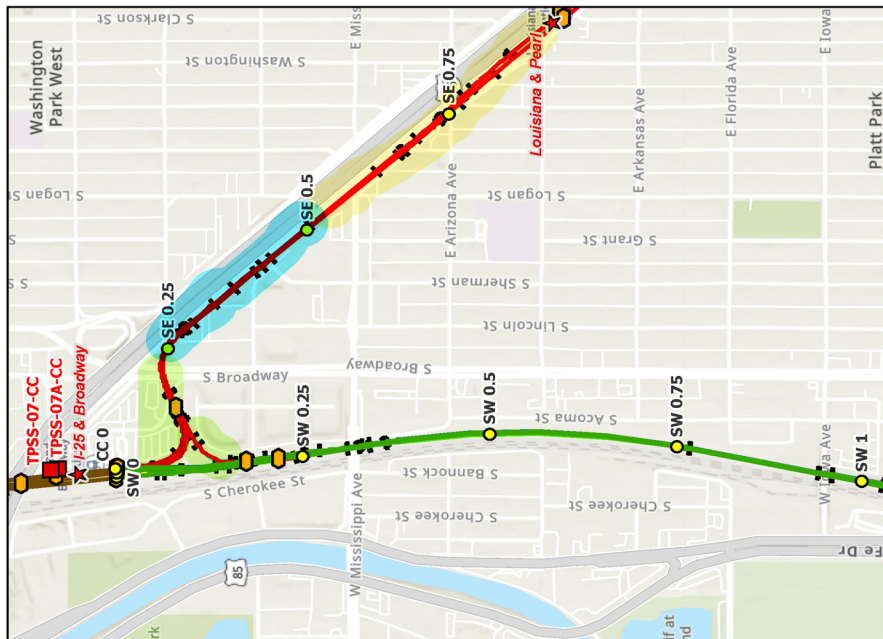
Sight distance required for MAS 990, 330, 220 feet

Special considerations for area

- Single track bidirectional traffic
- Colfax Flyover call control prior to ascending
- steep grades may require additional braking distance
- Ulysses grade crossing
- Earl Johnson grade crossing
- sharp curve
- parking garage over tracks
- Jefferson County station

Access points: Gate at TPSS 62A, Ulysses crossing Earl Johnson crossing, Jefferson County station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance



Segment 01SE

Station 125 and Broadway to Station Louisiana & Pearl

Maximum authorized speed (MAS) **15, 35, 55** MPH

If uncertain of speed utilize highest for greatest protection

Sight distance required for MAS **330, 770, 1210** feet

Special considerations for area

- o SWT71ASE, SWT72CSE, SWT74ASE, SWT78BSE
- o Broadway flyover, call control prior to ascending
- o steep grade may require additional braking distance
- o non-revenue track bidirectional operation
- o crossover switches SWT190A&BSE
- o crossover switches SWT195A&BSE
- o bridge piers Logan St.
- o station under bridge
- o very heavy traffic noise, train approach warning may require whistle or air horn

Access points: Broadway station, crossing into Broadway triangle, Gate 01SE at Sherman St. and Tennessee AVE., Louisiana & Pearl station

Unallowable forms of Protection: Individual train detection, May need advance flagger due to sight distance

Segment 02SE

Station Louisiana & Pearl to Station University

Maximum authorized speed (MAS) 45.55 MPH

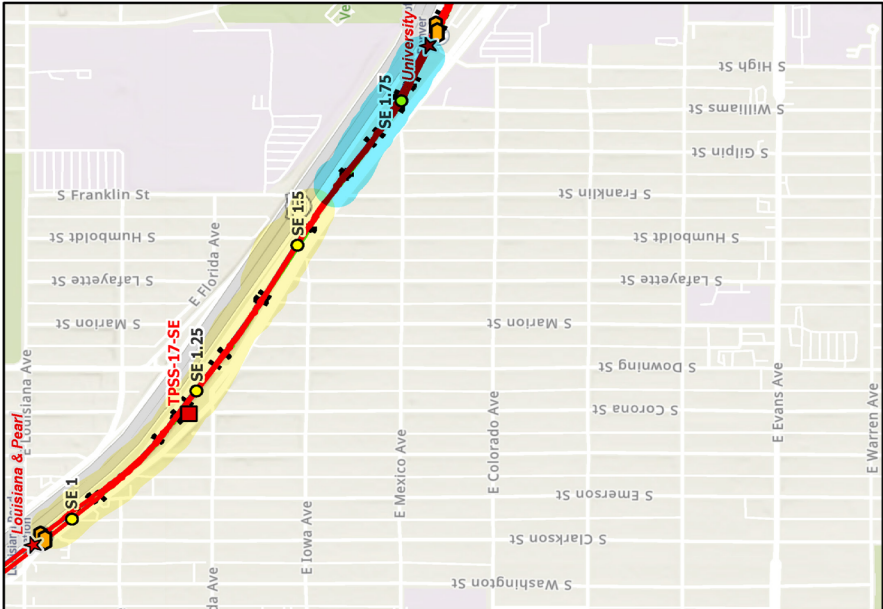
Sight distance required for MAS 990, 1210 feet

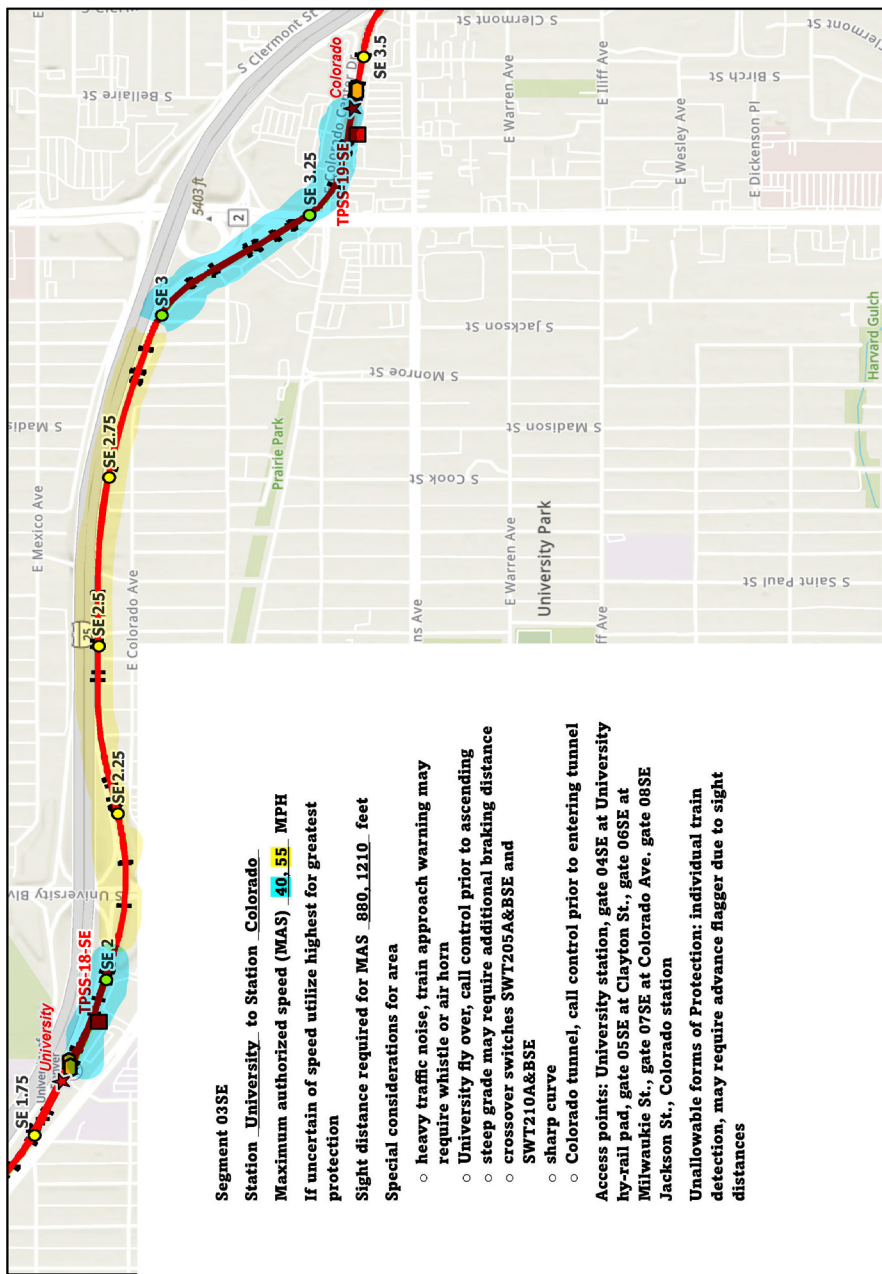
Special considerations for area

- very heavy road noise, train approach warning may require whistle or air horn
- bridge piers Emerson St.
- curve
- bridge piers Downing St.
- bridge piers Franklin St.

Access points: Louisiana & Pearl Station, gate 02SE, Buchtel Blvd. and I25 on ramp, gate 03SE Buchtel Blvd. and Marion St., University station

unallowable forms of Protection: May require advance flagger due to sight distance







Segment 04SE

Station Colorado to Station Yale

Maximum authorized speed (MAS) 35 55 MPH

If uncertain of speed utilize highest for greatest protection

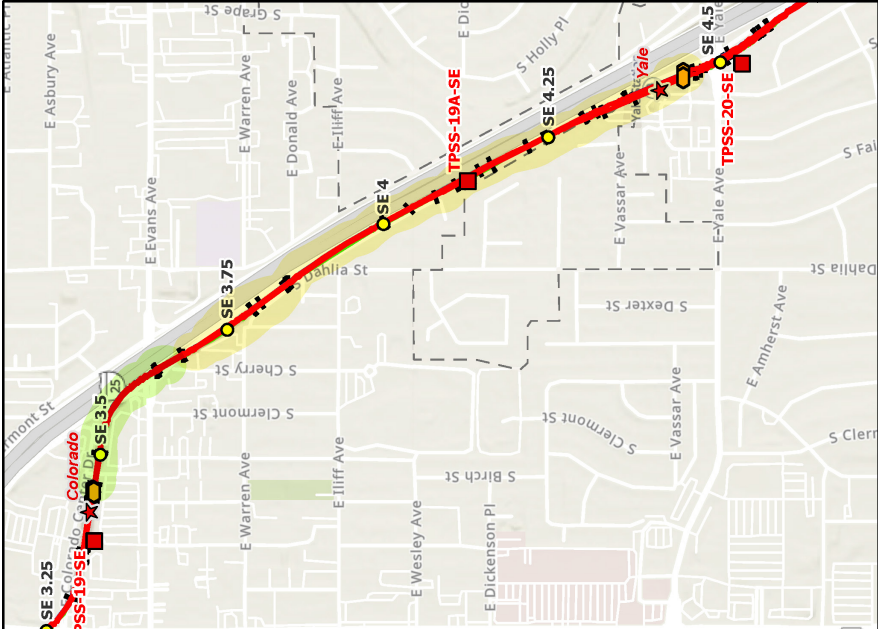
Sight distance required for MAS 770, 1210 feet

Special considerations for area

- o sharp curve
- o bridge piers 125 exit ramp, Evans Ave, 125 on ramp
- o heavy traffic noise, train approach warning may require whistle or air horn
- o crossover switches SWT220A&BSE, SWT225A&BSE

Access points: Colorado station, gate 10se Freeway Ford lot, gate 11se at Dexter St. gate 12se TPSS 19A, Yale station

Unallowable forms of Protection: None, may require advance flagger due to sight distance



-



Segment 06SE

Station Southmoor to Station TPSS22SE

Maximum authorized speed (MAS) 55, 35, 30 MPH

If uncertain of speed utilize highest for greatest protection

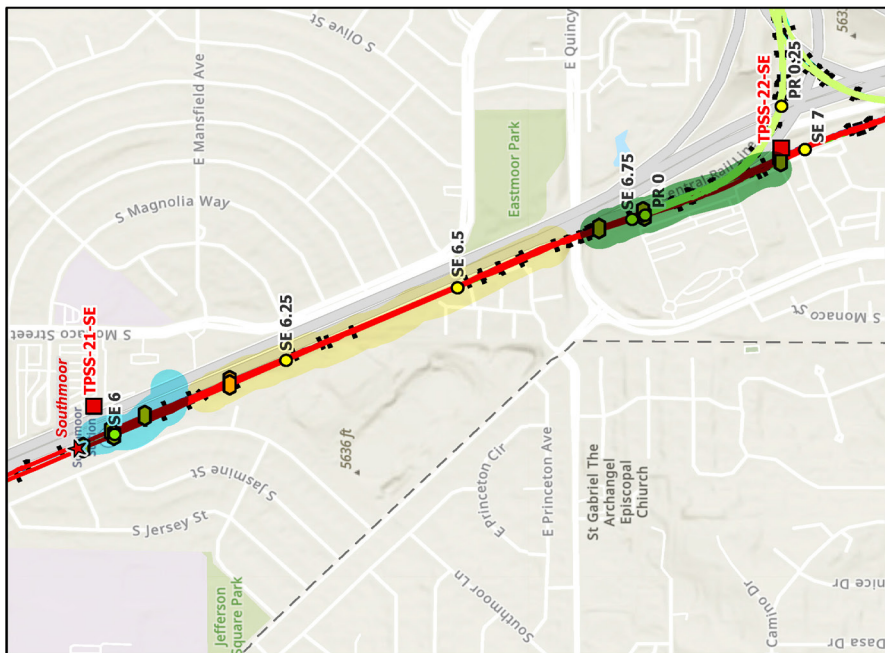
Sight distance required for MAS 1210, 770, 660 feet

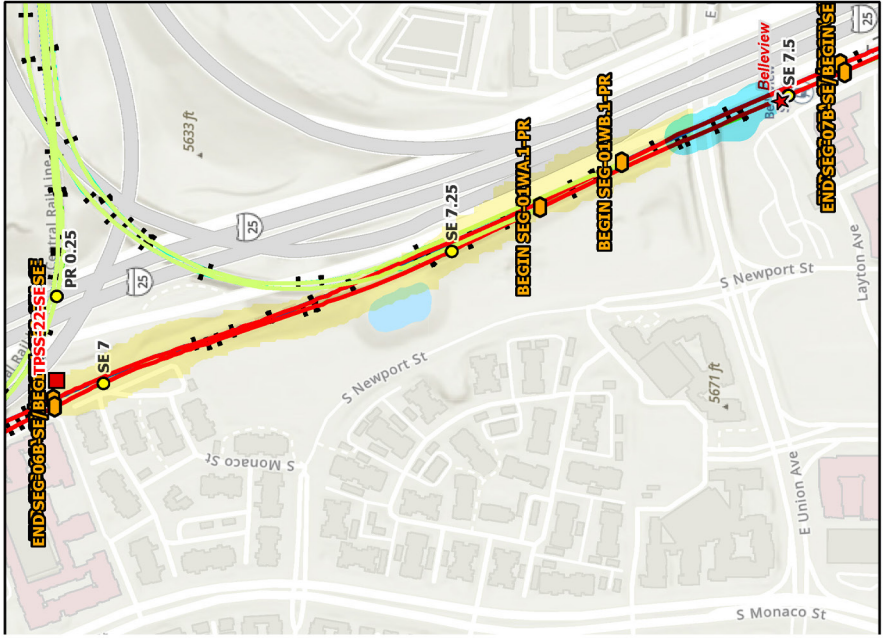
Special considerations for area

- heavy traffic noise, train approach warning may require whistle or air horn
- Southmoor pocket track and SWT235B&235CSE, SWT240ASE, SWT250A&CSE, SWT255BSE
- Bi-Directional train traffic in pocket track
- bridge piers for Quincy Ave.
- SWT270ASE
- SWT275BSE
- 225 junction
- Bridges over PR tracks

Access points: Southmoor station, gate 16se at Denver water, gate 17se at RCH1201SE, Gate at SWT275BSE, gate at TPSS22SE,

Unallowable forms of Protection: Must set red signals prior to accessing gate 17SE at RCH1201SE, no individual train detection in this area, may require advance flagger due to sight distance





Segment 07SE

Station TPSS22SE to Station Bellevue

Maximum authorized speed (MAS) 50, 35 MPH

If uncertain of speed utilize highest for greatest protection

Sight distance required for MAS 1100, 770 feet

Special considerations for area

- heavy traffic noise, train approach warning may require whistle or air horn
- 225 junction
- bridge over PR tracks
- SWT280ASE
- SWT285BSE

Access points: gate at TPSS22SE, Bellevue station

Unallowable forms of Protection: no restrictions, advance flagger may be required due to sight distance

Segment 08SE

Station Bellevue to Station Orchard

Maximum authorized speed (MAS) 55 MPH

Sight distance required for MAS 1210 feet

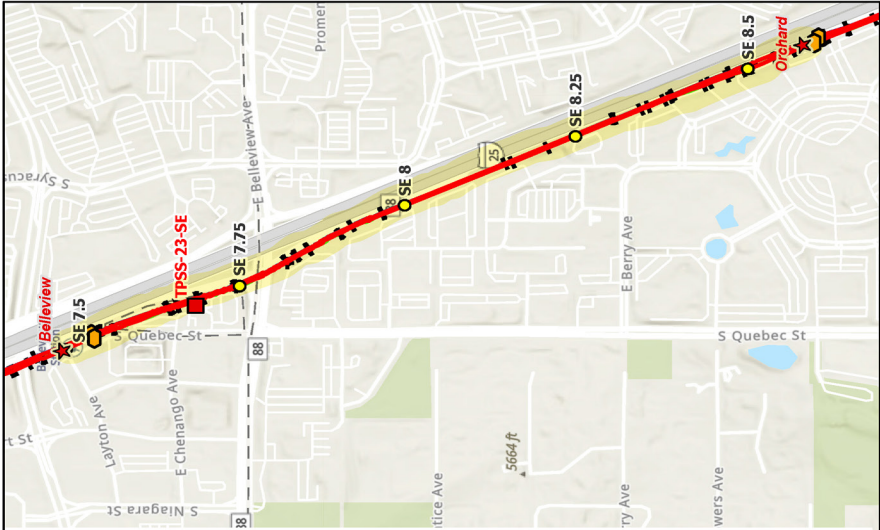
Special considerations for area

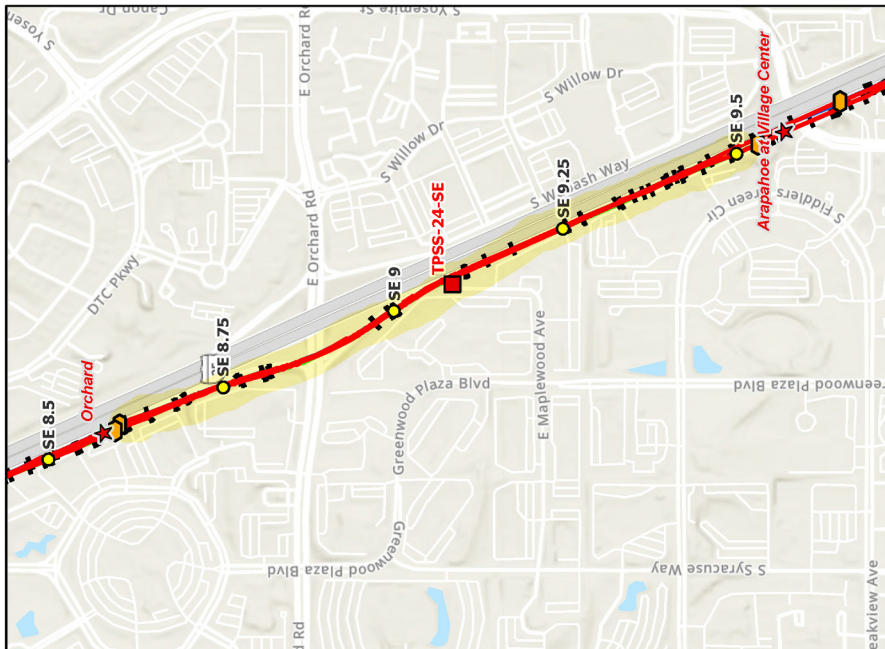
- heavy road noise, train approach warning may require whistle or air horn
- Bellevue flyover call control prior to ascending
- steep grade may require additional braking distance
- SWT295A&BSE, SWT300A&BSE

Access points: Bellevue station, gate in parking lot for

RCH132SE, gate 19SE at SWT295BSE, Orchard station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance





Segment 09SE

Station Orchard to Station Arapahoe

Maximum authorized speed (MAS) 55 MPH

Sight distance required for MAS 1210 feet

Special considerations for area

- heavy traffic noise, train approach warning may require whistle or air horn
- Hy-rail pad
- Orchard Ave flyover, call control prior to ascending
- steep grade may require additional braking distance
- SWT310A&BSE and SWT315A&BSE

Access points: Orchard station, Orchard hy-rail pad, gate 21 at TPSS24SE, gate at SWT315SE, Arapahoe station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance

Segment 10SE

Station Arapahoe to Station Dry Creek

Maximum authorized speed (MAS) 55, 45 MPH

If uncertain of speed utilize highest for greatest protection

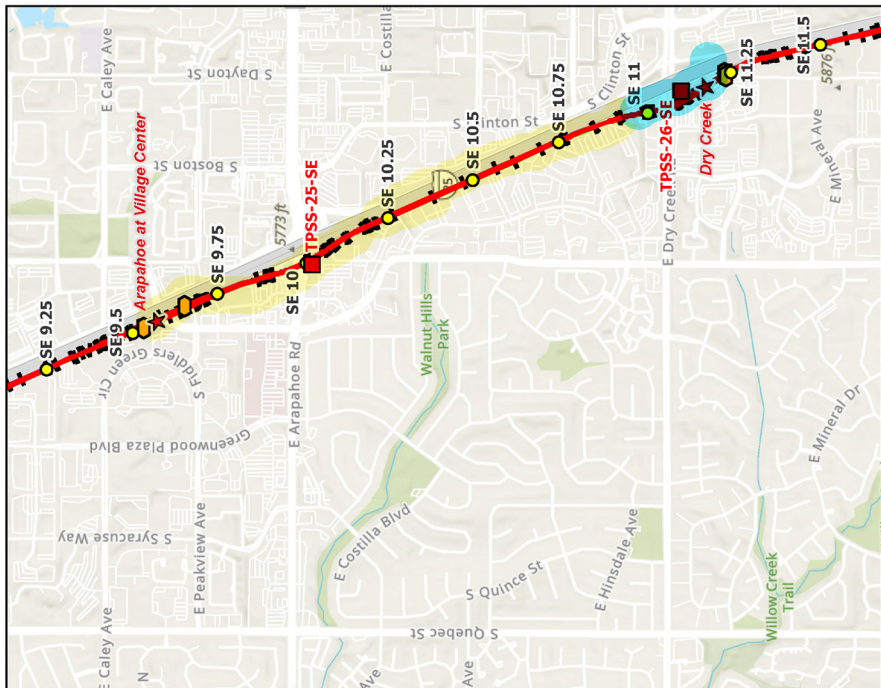
Sight distance required for MAS 1210, 990 feet

Special considerations for area

- Heavy road noise, train approach warning may require whistle or air horn
- Arapahoe Rd. flyover call control prior to ascending
- Steep grade may require additional braking distance
- Dry Creek Rd. flyover call control prior to ascending

Access points: Arapahoe station, gate at south end of Arapahoe station, gate 24Se parking lot off Yosemite Ct., gate 25Se in parking lot off Alton Ct., Dry Creek station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance





Segment 11SE

Station Dry Creek to Station County Line

Maximum authorized speed (MAS) 55, 45 MPH

If uncertain of speed utilize highest for greatest protection

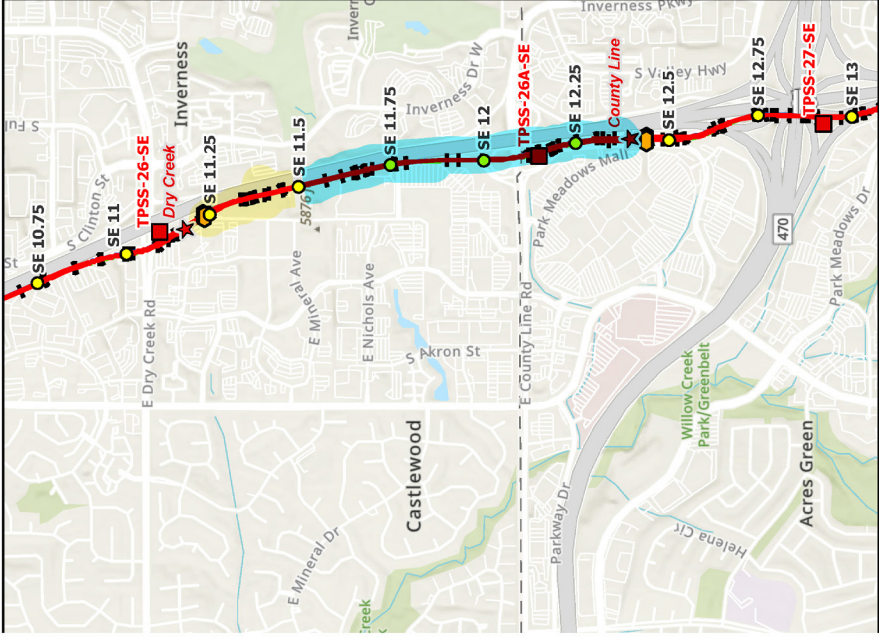
Sight distance required for MAS 1210, 990 feet

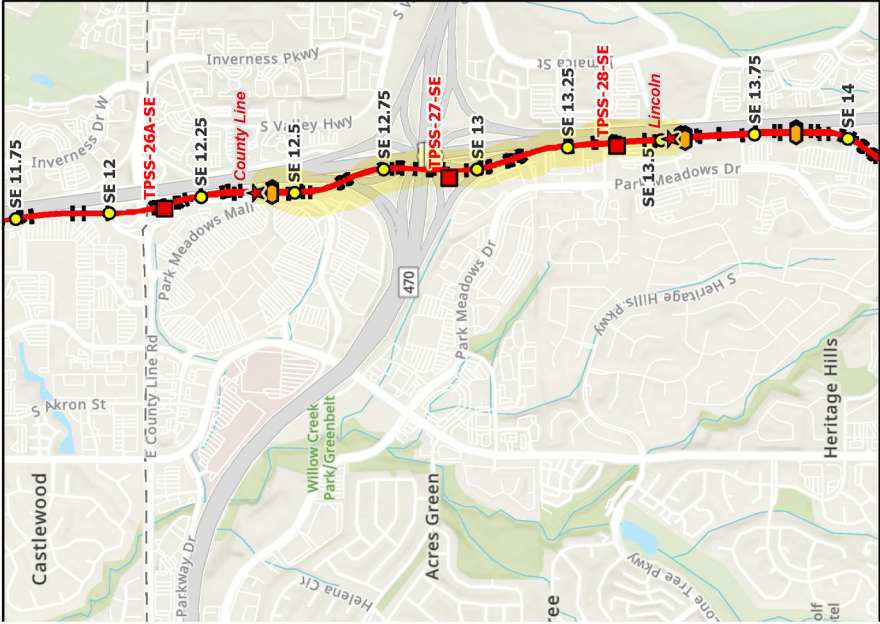
Special considerations for area

- o heavy traffic noise, train approach warning may require whistle or air horn
- o SWT330A&BSE and SWT335A&BSE
- o County Line flyover call control prior to ascending
- o steep grade may require additional braking distance

Access points: Dry Creek Station, gate in field off Dayton St. and Mineral Ave., Gate 27se in parking lot next to Ikea, gate at TPSS26ASE, gate 28se north end of County Line station, County Line station

Unallowable forms of Protection: no restrictions





Segment 12SE

Station County Line to Station Lincoln

Maximum authorized speed (MAS) 55 **MPH**

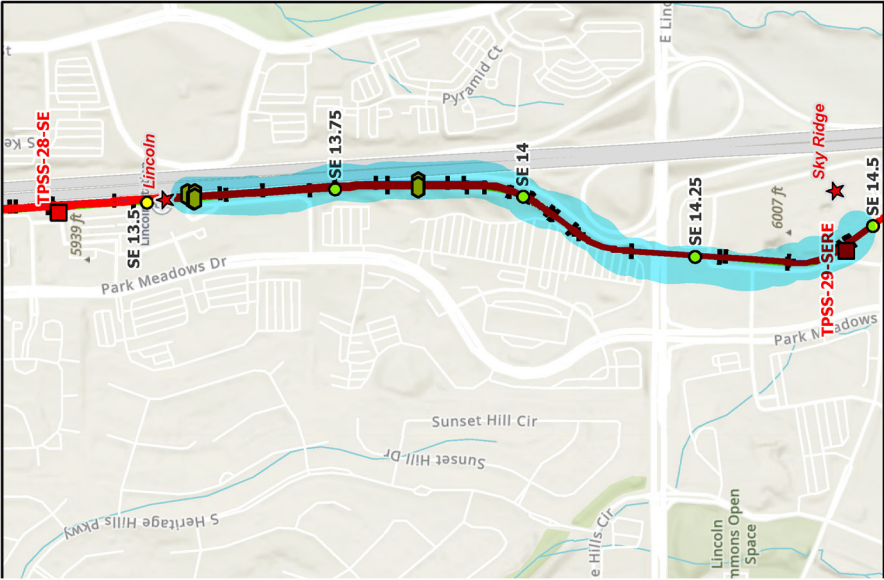
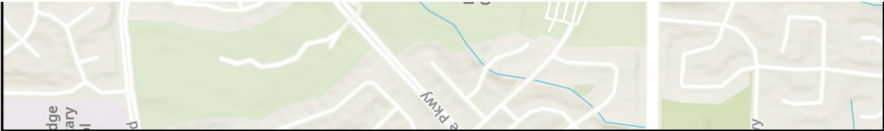
Sight distance required for MAS 1210 **feet**

Special considerations for area

- Bridges over and under C-470
- sharp curve and bridge piers limited sight distance
- steep grade may require additional braking distance
- On ramp for I-25 limited clearance

Access points: County Line station, Gate 29se off bike path, gate 30 at TPSS 28SE Lincoln Hy-rail pad, Lincoln station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance



Segment 13SE

Station Lincoln to Station Sky Ridge

Maximum authorized speed (MAS) 35 MPH

Sight distance required for MAS 770 feet

Special considerations for area

- o Lincoln pocket track Switches SWT338ASE, 339B&CSE, SWT340A&CSE, 341BSE trains operating bidirectionally on center track
- o Lincoln flyover call control prior to ascending
- o steep grade may require additional braking distance
- o Sharp curves

Access points: Lincoln station, gate 33se at Lincoln pocket track, Sky Ridge station

Unallowable forms of Protection: None

Segment 14SE

Station Sky Ridge to Station Lone Tree

Maximum authorized speed (MAS) 25 MPH

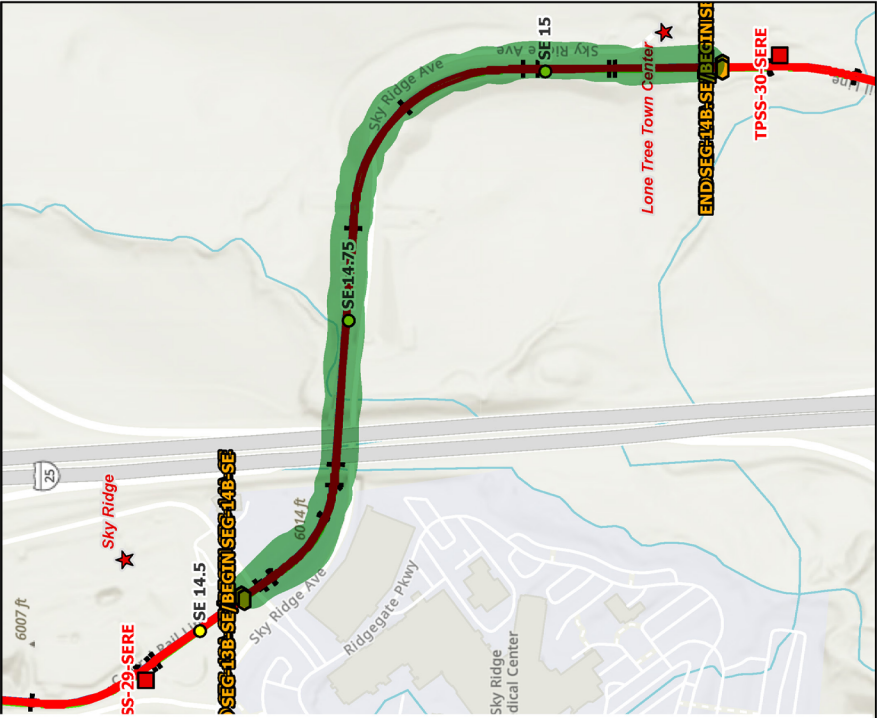
Sight distance required for MAS 550 feet

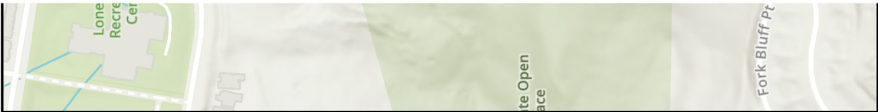
Special considerations for area

- o Train Station circle crossing watch for vehicle traffic
- o sharp curves
- o I-25 Flyover Call control prior to ascending
- o steep grade may require additional braking distance

Access points: Sky Ridge station, Train Station circle crossing, gate 35se west end of I-25 flyover, gate 36se east end of I-25 flyover, Lone tree station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance





Segment 15SE

Station Lone Tree to Station Ridge Gate

Maximum authorized speed (MAS) 25 MPH

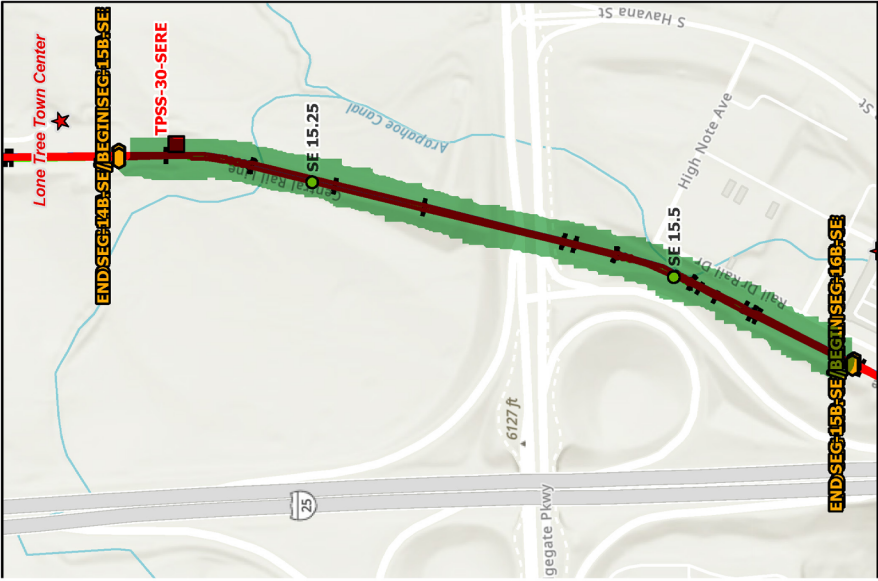
Sight distance required for MAS 550 feet

Special considerations for area

- bridge over Ridge Gate Pkwy.
- SWT343A&BSE

Access points: Lone Tree station, gate 37se, Ridge Gate station

Unallowable forms of Protection: no restrictions



Segment 16SE

Station Ridge Gate tail track

Maximum authorized speed (MAS) **15** MPH

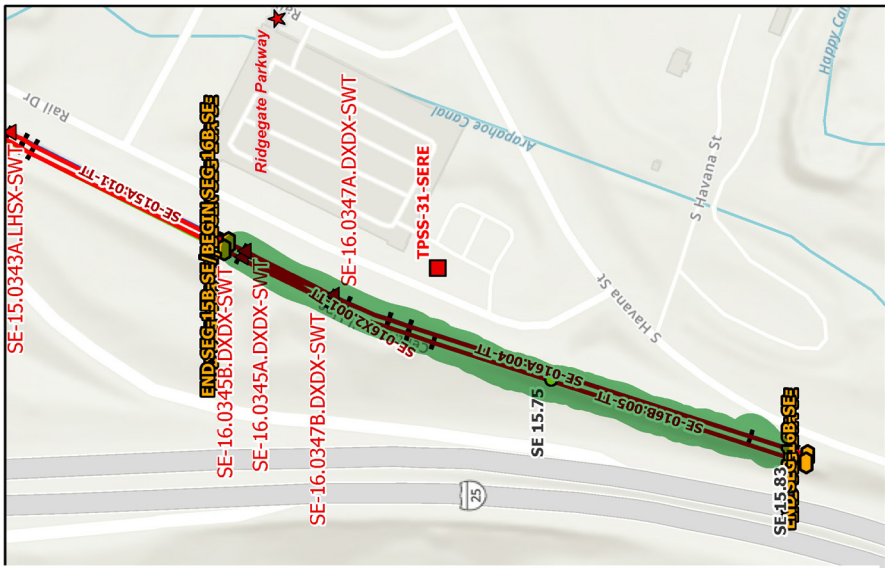
Sight distance required for MAS 330 feet

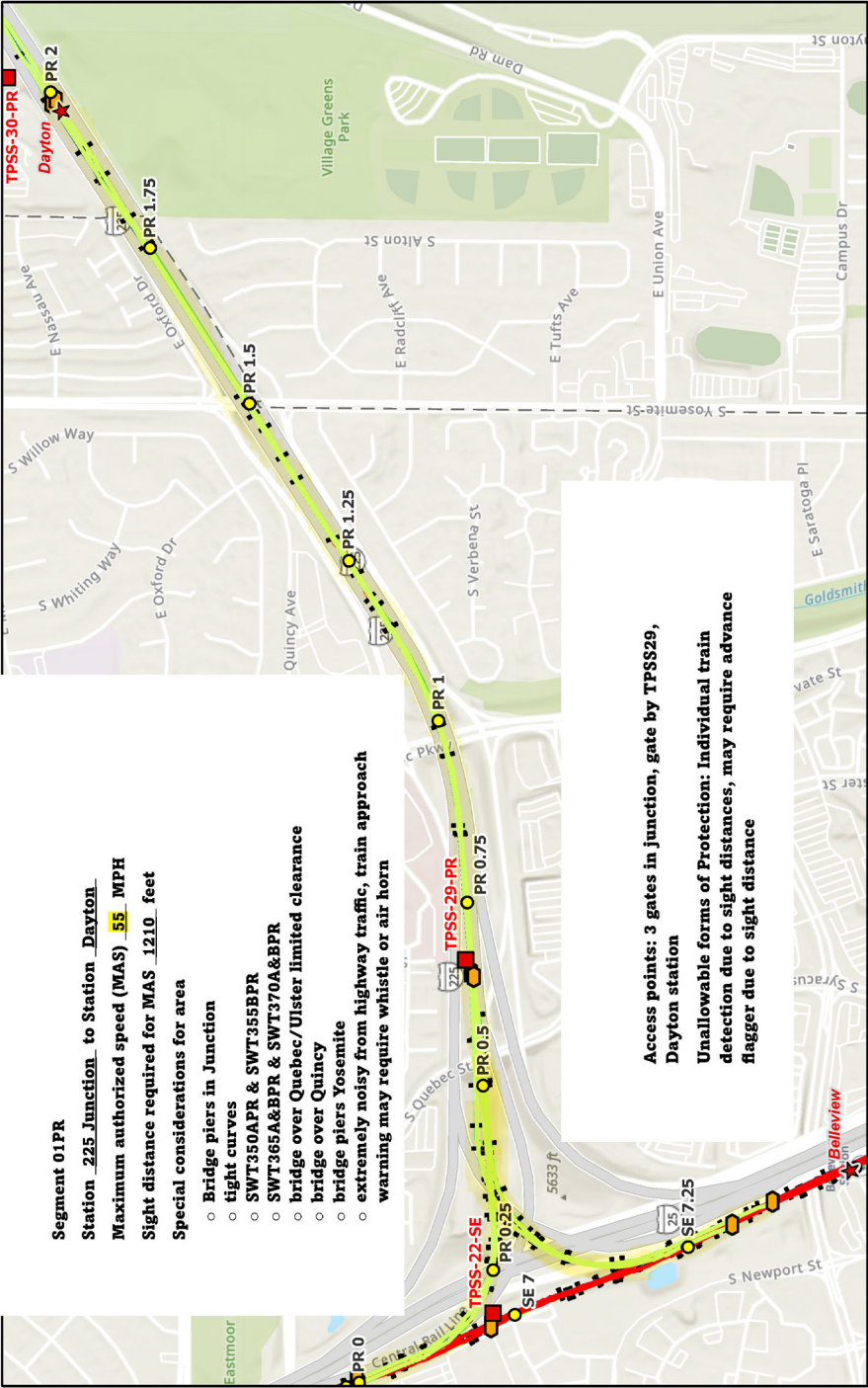
Special considerations for area

- **SWT345A&BSE, SWT347A&BSE**
- **Bi-directional traffic on both tracks**

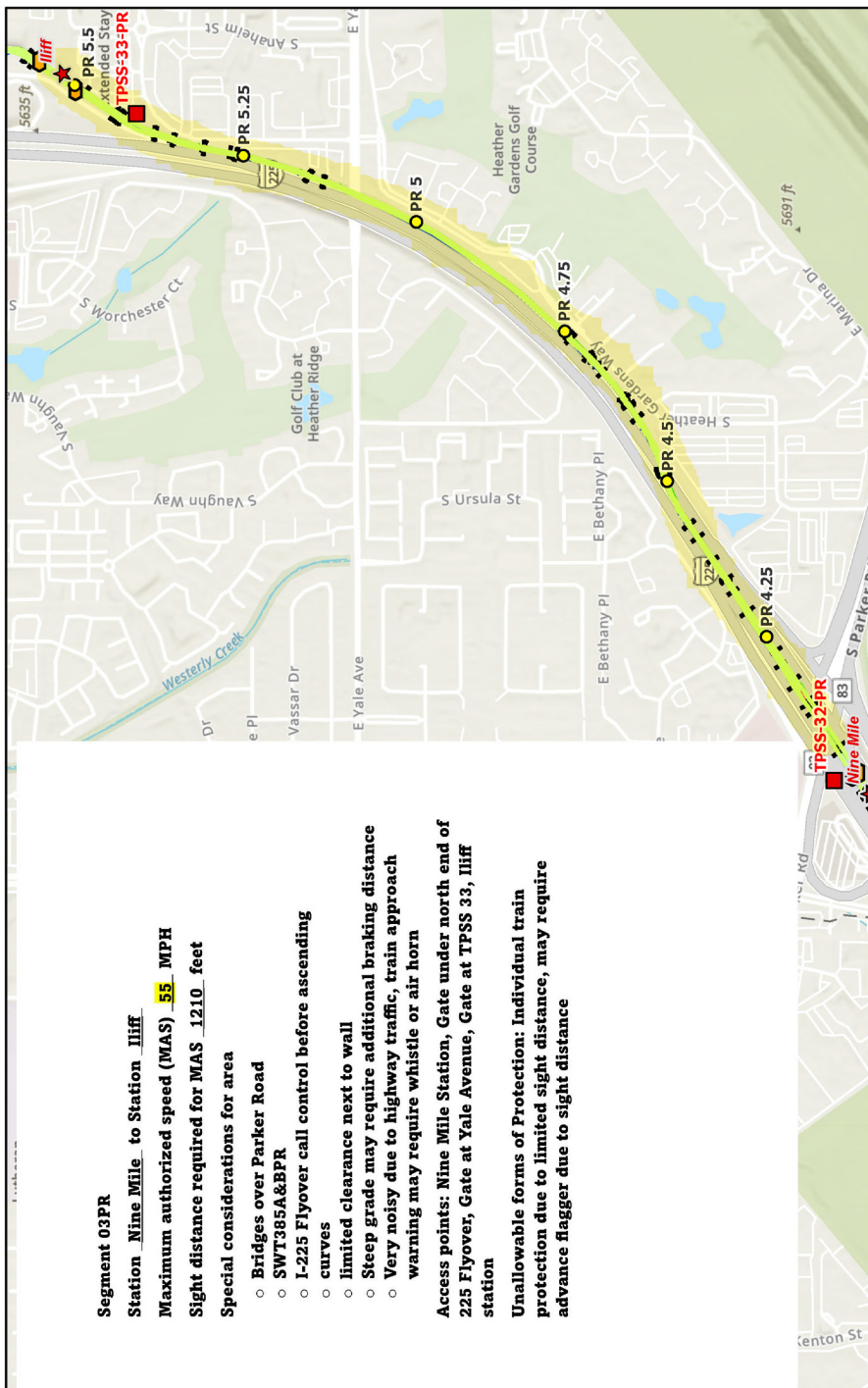
Access points: Ridge Gate station, gate in Ridge Gate tail track

Unallowable forms of Protection: no restrictions











Segment 04PR

Station Iliff to Station Florida

Maximum authorized speed (MAS) 45 MPH

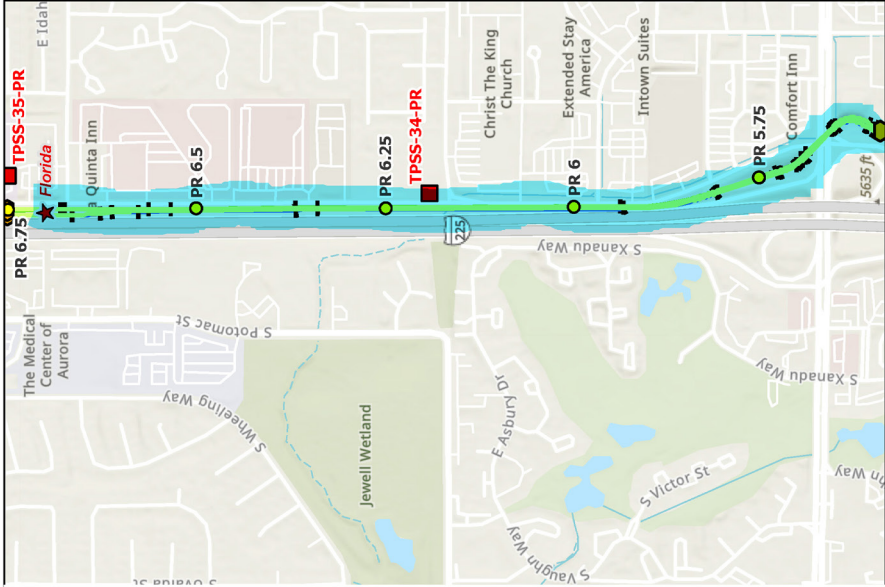
Sight distance required for MAS 990 feet

Special considerations for area

- o sharp curve
- o Flyover, Iliff Ave. call control prior to ascending
- o steep grade may require additional braking distance
- o noise from highway, train approach warning may require whistle or air horn

Access points: Iliff station, Florida station

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance





Segment 05PR

Station Florida to Station Sable and Exposition

Maximum authorized speed (MAS) 10, 30, 35, 45 MPH

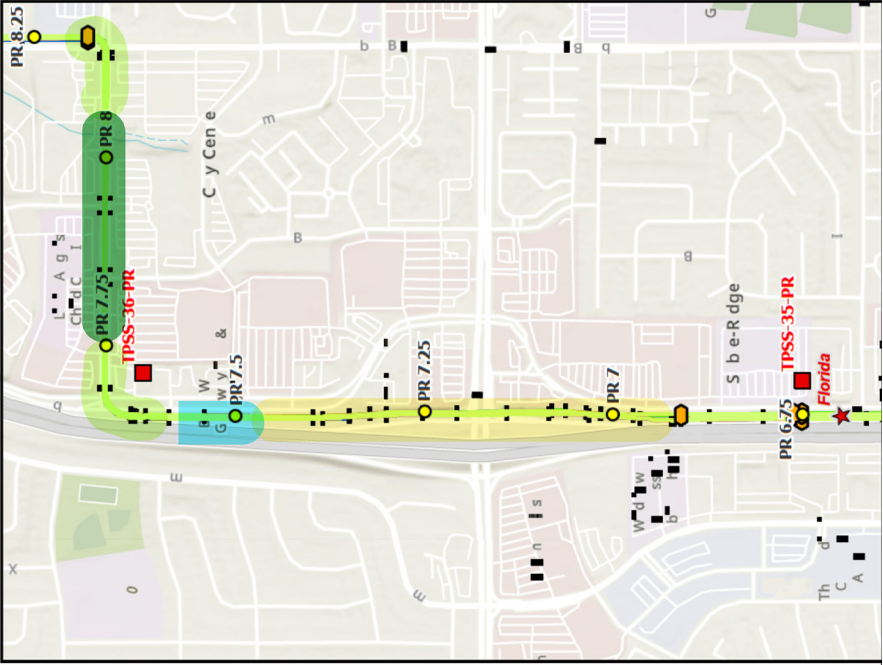
If uncertain of speed utilize highest for greatest protection

Sight distance required for MAS 330, 660, 770, 990 feet

Special considerations for area

- o Florida pocket track
- o Flyover Mississippi Ave
- o steep grade may require additional braking distance
- o sharp curves
- o In street running watch for vehicle traffic
- o 4 street crossings watch for vehicle traffic
- o Access points: Florida station, anywhere along in street running

Unallowable forms of Protection: no restrictions may require advance flagger due to sight distance



Segment 06PR
Station Sable and Exposition **to Station** 2nd and Abilene
Maximum authorized speed (MAS) 10, 15, 25, 35 **MPH**
If uncertain of speed utilize highest for greatest protection
Sight distance required for MAS 220, 330, 550, 770 **feet**

Maximum authorized speed (MAS) 10, 15, 25, 35 MPH

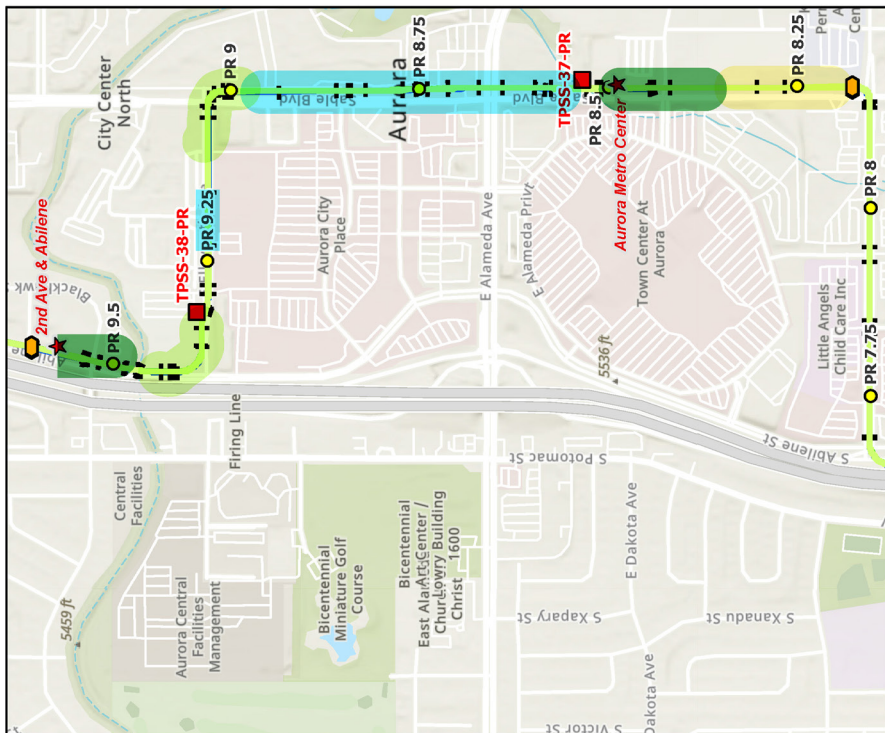
Sight distance required for MAS 220, 330, 550, 770 feet

Special considerations for area

- 5 grade crossings watch for vehicle traffic
- 2 street crossings watch for vehicle traffic
- limited clearance
- sharp curves
- SWT420A&BPR & SWT425A&BPR

Access points: any street or grade crossing

Unallowable forms of Protection: no restrictions, may require advance flagger due to sight distance



Segment 07PR

Station 2nd and Abilene to Station 13th Ave.

Maximum authorized speed (MAS) 15, 30, 35 MPH

If uncertain of speed utilize highest for greatest protection

Sight distance required for MAS 330, 660, 770 feet

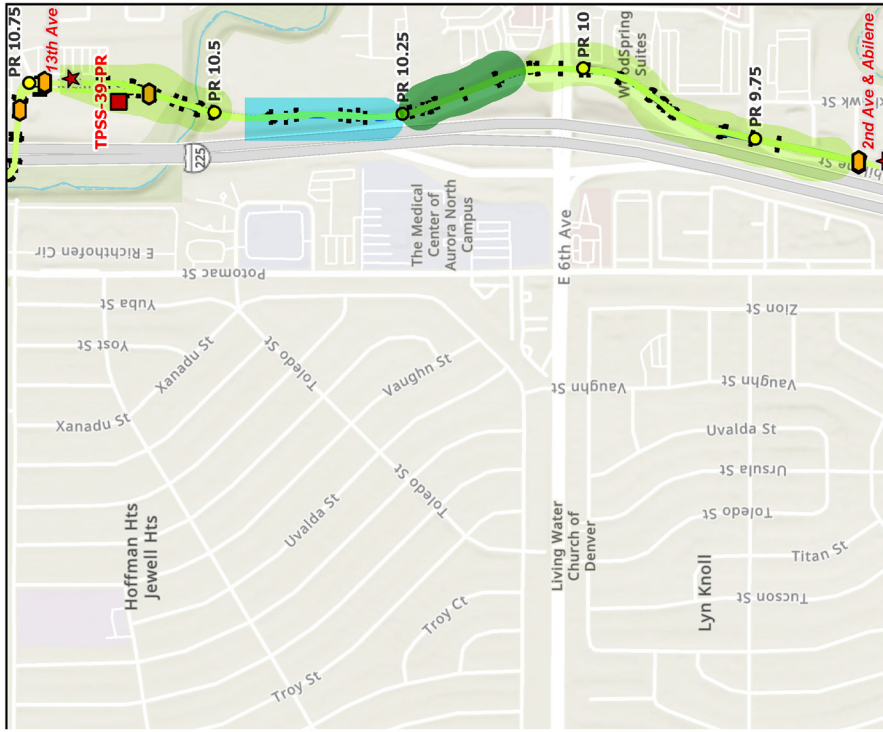
Special considerations for area

- o grade crossing 4th Ave. watch for vehicle traffic
- o Fly over 6th Ave., call control prior to ascending
- o SWT430A&BPR, SWT435CPR
- o bridge over Tollgate Creek
- o steep grade may require additional braking distance

Access points: 2nd and Abilene station, 4th Avenue

crossing, gate at 430 switches, 13th Avenue station

Unallowable forms of Protection: no restrictions may require advance flagger due to sight distance



Segment 08PR

Station 13th Avenue to Station 17th Place

Maximum authorized speed (MAS) 10, 15, 25, 45 MPH

If uncertain of speed utilize highest for greatest protection

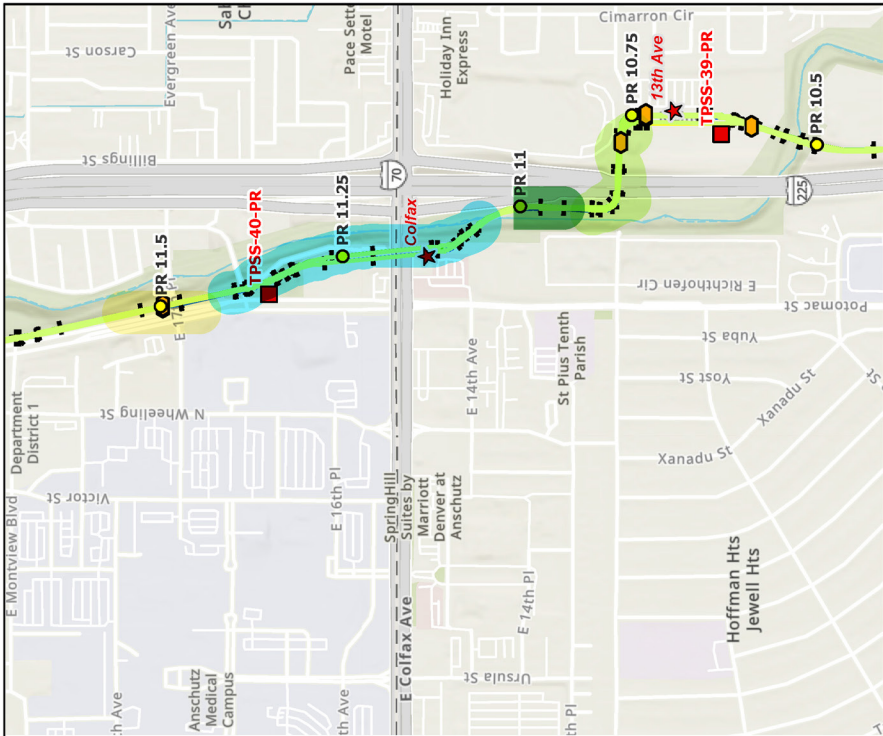
Sight distance required for MAS 220, 330, 550, 990 feet

Special considerations for area

- o Sharp curves
- o SWT445A&BPR, SWT440CPR
- o limited clearance
- o very tight curve
- o steep grade may require additional braking distances
- o bridge over Toll Gate Creek limited clearance
- o Flyover Colfax Avenue (station)
- o 17th Ave. And 17th Place grade crossings watch for vehicle traffic

Access points: 13th Ave. station, gate at 445B switch, Colfax station, 17th Ave crossing, 17th Place crossing

Unallowable forms of Protection: Individual Train Detection (limited sight distance), may require advance flagger due to sight distance



Segment 09PR

Station 17th Place to Station Fitzsimons

Maximum authorized speed (MAS) 30, 45 MPH

If uncertain of the speed utilize higher speed to ensure greatest protection

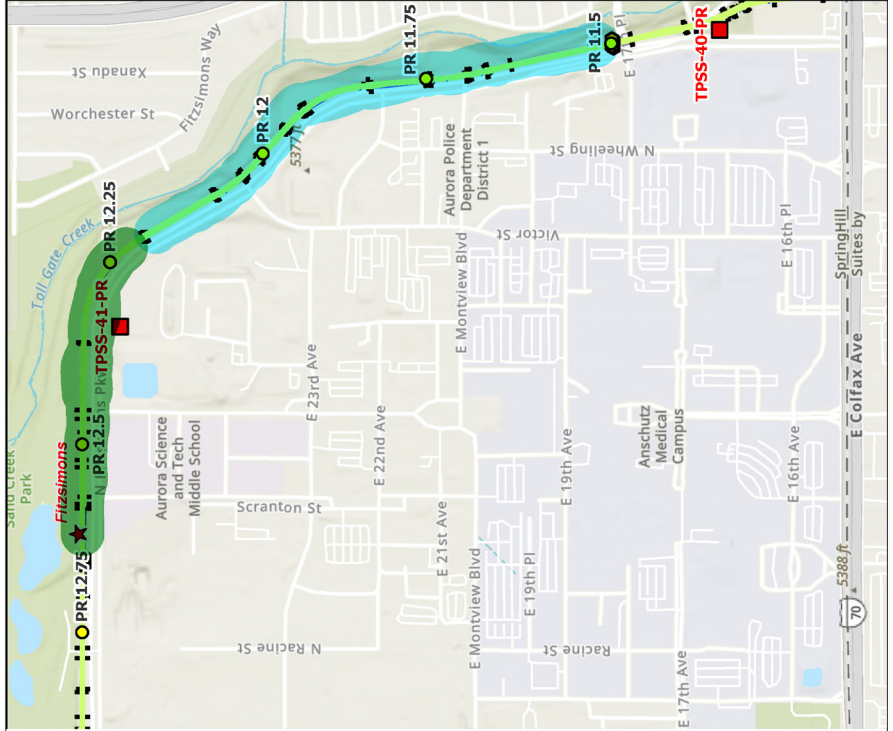
Sight distance required for MAS 660, 990 feet

Special considerations for area

- o Pedestrian grade crossing
- o 3 Utility access crossings
- o curve
- o Ursula crossing watch for vehicle traffic
- o SWT450A&BPR & SWT455A&BPR

Access points: 17th Place crossing, pedestrian crossing, utility access crossings, Ursula Crossing, Fitzsimons station

Unallowable forms of Protection: individual train detection not appropriate in areas with limited sight distances, may require advance flagger due to sight distances



Segment 10PR

Station Fitzsimons to Station 30th

Maximum authorized speed (MAS) 35 MPH

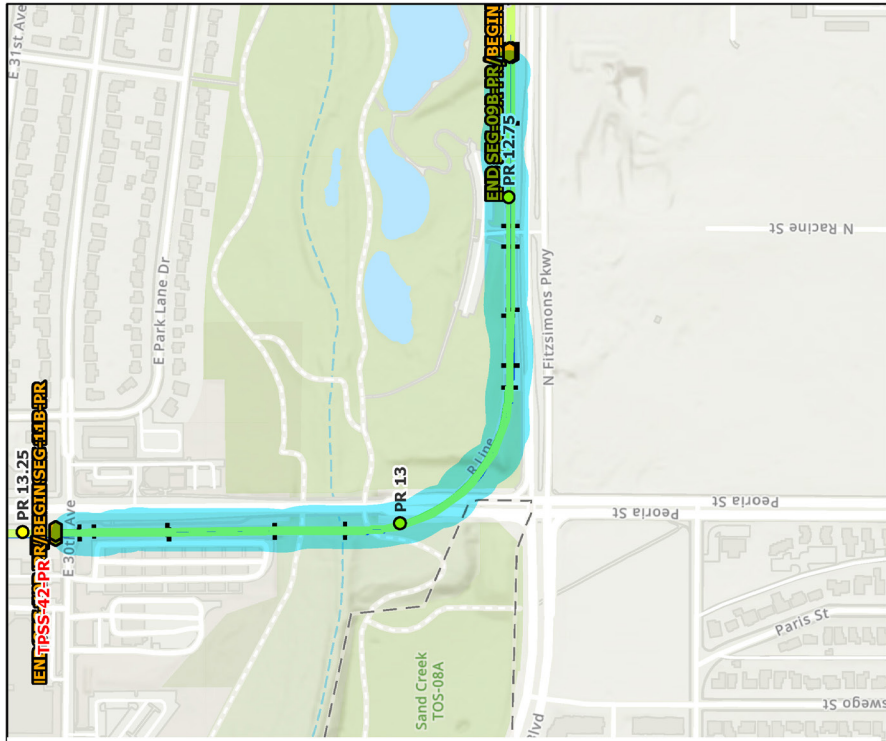
Sight distance required for MAS 770 feet

Special considerations for area

- Sand Creek grade crossing, watch for vehicle traffic
- Peoria Flyover call control prior to ascending
- tight clearance
- steep grade may require additional braking distance

Access points: Fitzsimons station, Sand Creek grade crossing, 30th Ave crossing

Unallowable forms of Protection: none, may require advance flagger due to sight distance



Segment 11PR

Station 30th Ave. to Station Peoria

Maximum authorized speed (MAS) 15.30 MPH

If uncertain of the speed utilize the higher speed to ensure greatest protection

Sight distance required for MAS 330.660 feet

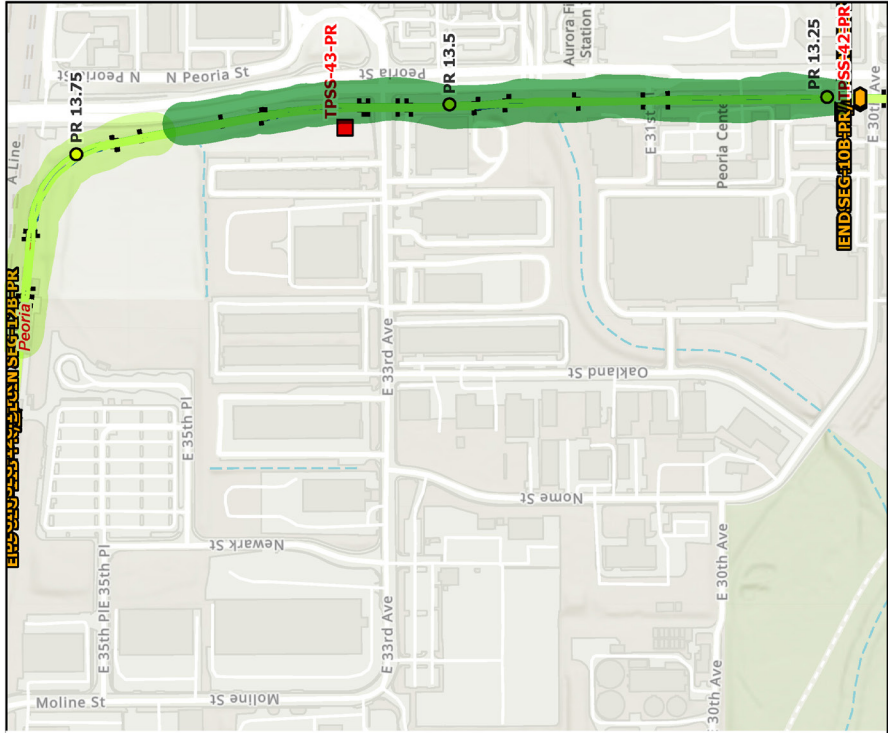
Special considerations for area

- o 31st place grade crossing watch for vehicle traffic
- o 33rd Avenue grade crossing watch for vehicle traffic
- o Sharp Curve
- o SWT460A&BPR
- o Commuter rail running adjacent separated by fencing

Access points: 30th Ave crossing, 31st place crossing, 33rd

Ave crossing, gate next to ROB building, Peoria station

Unallowable forms of Protection: none, may require advance flagger due to sight distance





APPENDIX

A1 Time Speed Distance Chart

Maximum Authorized Speed (MAS): MPH	Minimum Required Sight Distance: Feet
5	110
10	220
15	330
20	440
25	550
30	660
35	770
40	880
45	990
50	1100
55	1210

A2 Forms of Protection

The purpose of roadway worker protection is to prevent accidents and casualties caused by rail vehicles striking roadway workers. The following methods of protection described in this manual will vary depending on the type of work performed and location. More than one form of protection may be used at the discretion of the RWIC.

- a. Inaccessible Track
- b. Foul Time
- c. Flagger Protection
- d. Exclusive Track Occupancy
- e. Individual Train Detection (ITD)
- f. Track Out of Service

		FORM OF PROTECTION					
		Inaccessible Track	Foul Time	Flagger Protection	Individual Train Detection	Exclusive Track Occupancy	Track Out of Service
Steps to Apply Protection	Type of Track	Yard/ Auxiliary	Interlocking	All	All	Mainline	Mainline
	JHA/Job Briefing	YES	YES	YES	With Supervisor	YES	YES
	Call Control/ Yard for permission	Yard at Elati Control	Control	Control	Control	Control	Control
	Force Signals Red	NO	YES	NO	NO	Optional	Optional
	Set up Flags	If applying Derail in yard	NO	NO	NO	YES	Double Red Flags at each end
	Use of Shunt	NO	Optional	NO	NO	Optional	NO
	Rail Vehicles Allowed in Work Zone	NO	NO	YES	YES	YES	NO
	Can Track be Unsafe for Trains Traffic	YES	YES	NO	NO	YES	YES
	Sight distant dependant	NO	NO	YES	YES	NO	NO

A3 Job Safety Briefing and Job Hazard Analysis

The job briefing is an essential part of Roadway Worker Protection. It ensures roadway workers clearly communicate to each other details of the work plan, protection employed, hazards associated with the planned work, and method of train approach warning prior to fouling a track.

Prior to entering the alignment a job briefing must be conducted with all members of the work party by the Roadway Worker In Charge. Lone workers must conduct a job briefing with their supervisor prior to entering alignment.

Debriefing must be conducted after the work is completed. Debriefing will include near misses, lessons learned, follow up actions including reporting, and feedback on any good faith challenges raised.

An “MOW Job Briefing Form” and “MOW Job Debriefing Forms” must be filled out and signed by all members of the work party.

“MOW Job Briefing Forms” and “MOW Job Debriefing Forms” must be turned into supervision at the end of shift.

JOB HAZARD ANALYSIS (JHA)

The purpose of a Job Hazard Analysis (JHA) is to describe how to perform tasks, identify associated hazards, and determine controls to mitigate those hazards. Utilizing this JHA will allow us to analyze work activities while also identifying tools, materials and equipment needed to safely complete a task. During this process, existing and potential hazards, risks, and methods to eliminate or protect against the hazards are identified.

A4 Good faith challenge

Purpose of a good faith challenge is straightforward: To provide roadway workers with a non-punitive mechanism for raising and resolving on-track safety concerns so the work can be performed safely.

A good faith challenge is an opportunity to jointly resolve any Roadway Worker Protection concerns; it is not a confrontation with your supervisor or RTD management. A job briefing is the first opportunity to make a good faith challenge; however, a challenge can be made at any time. Challenges require prompt and fair resolution.

RTD management fully supports a roadway worker's absolute right to initiate a good faith challenge without fear of retaliation or discipline. The good faith challenge process begins when an employee raises an RWP concern.

Key Points:

1. Employees should remain clear of track until the challenge is resolved.
2. All roadway workers should know where to access RTD's good faith challenge procedures and understand the resolution process.
3. Roadway workers should periodically review the good faith challenge procedures during crew meetings/job briefings.
4. Supervisors and co-workers should actively encourage the use of the good faith challenge.
5. RTD management should periodically review their Roadway Worker Protection program to identify and remove any administrative or procedural barriers to the utilization of the good faith challenge.

Good Faith Challenge Process

Note: All good faith challenges steps will be held outside fouling distance.

- 1. Roadway worker has concern about on-track safety and discusses with Roadway Worker in Charge.
- 2. If challenge can be resolved, resume work. If challenge cannot be resolved, supervisor will be contacted.
- 3. If supervisor cannot resolve over the phone, supervisor will report to the scene and evaluate the challenge.
- 4. If onsite supervisor cannot resolve than MOW manager or his designee will be reached for resolution.
- 5. If good faith challenge has merit, deficiencies will be corrected and employees will resume work. If the good faith challenge has no merit, RWP will be explained by supervisor to Roadway worker and employees will resume work.

Remember: If you are uncertain about your safety, trust your instincts; make a good faith challenge. You may be saving your life.

A5 Revision tracking

Version	Date	Description of Change
1	July 2025	Initial version to meet 49 CFR 671 and 4 CCR 723-7



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