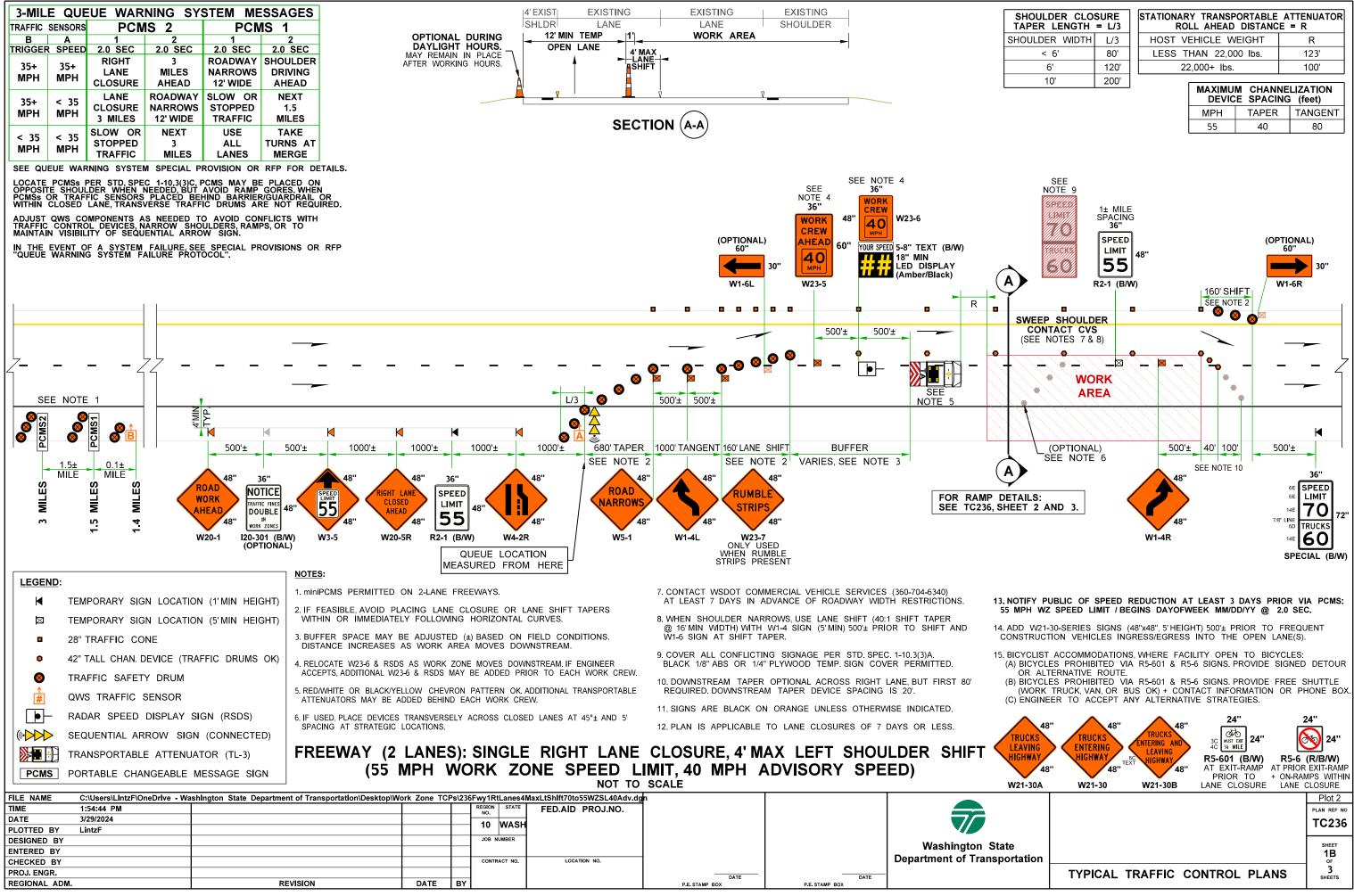
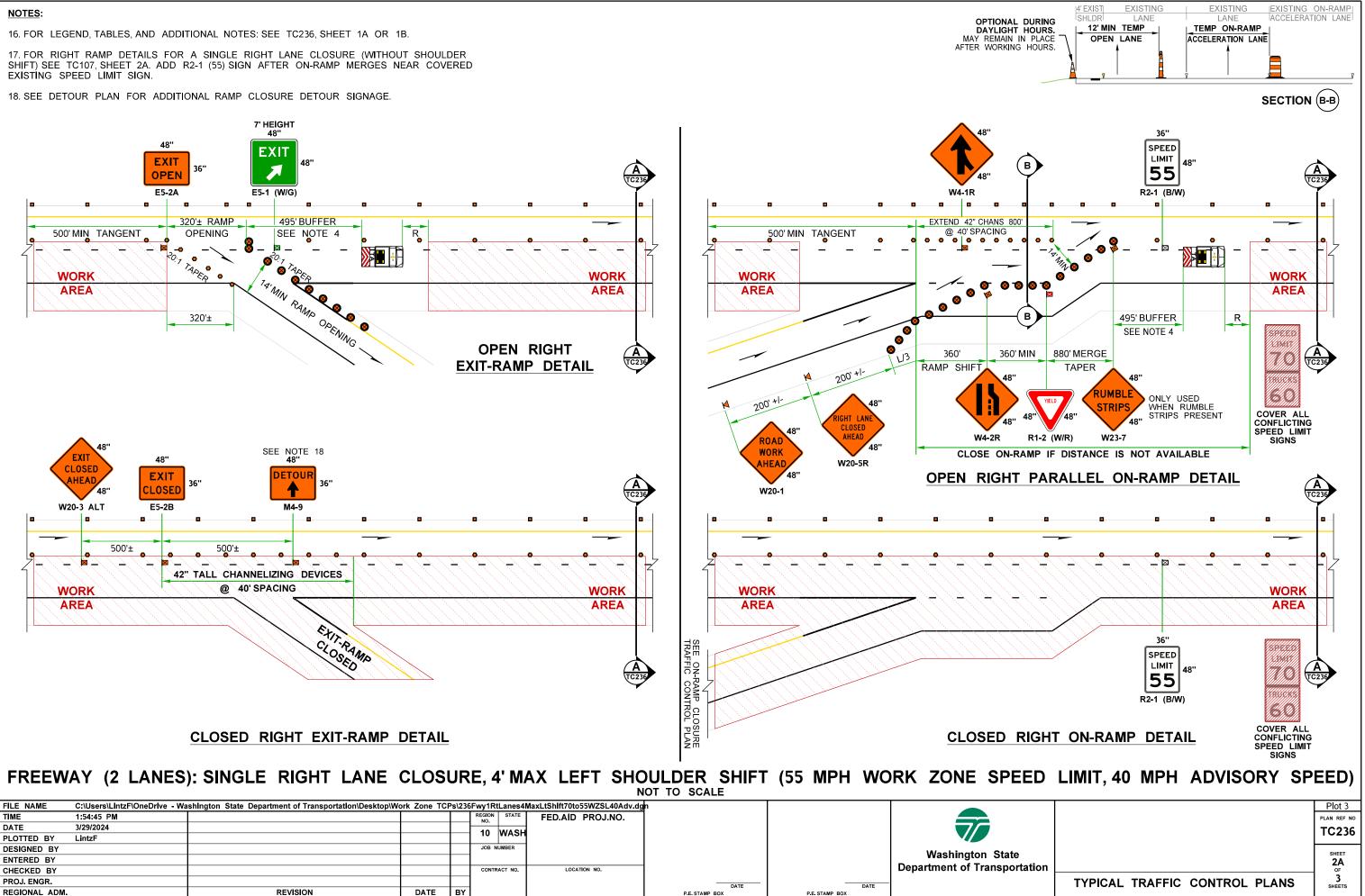


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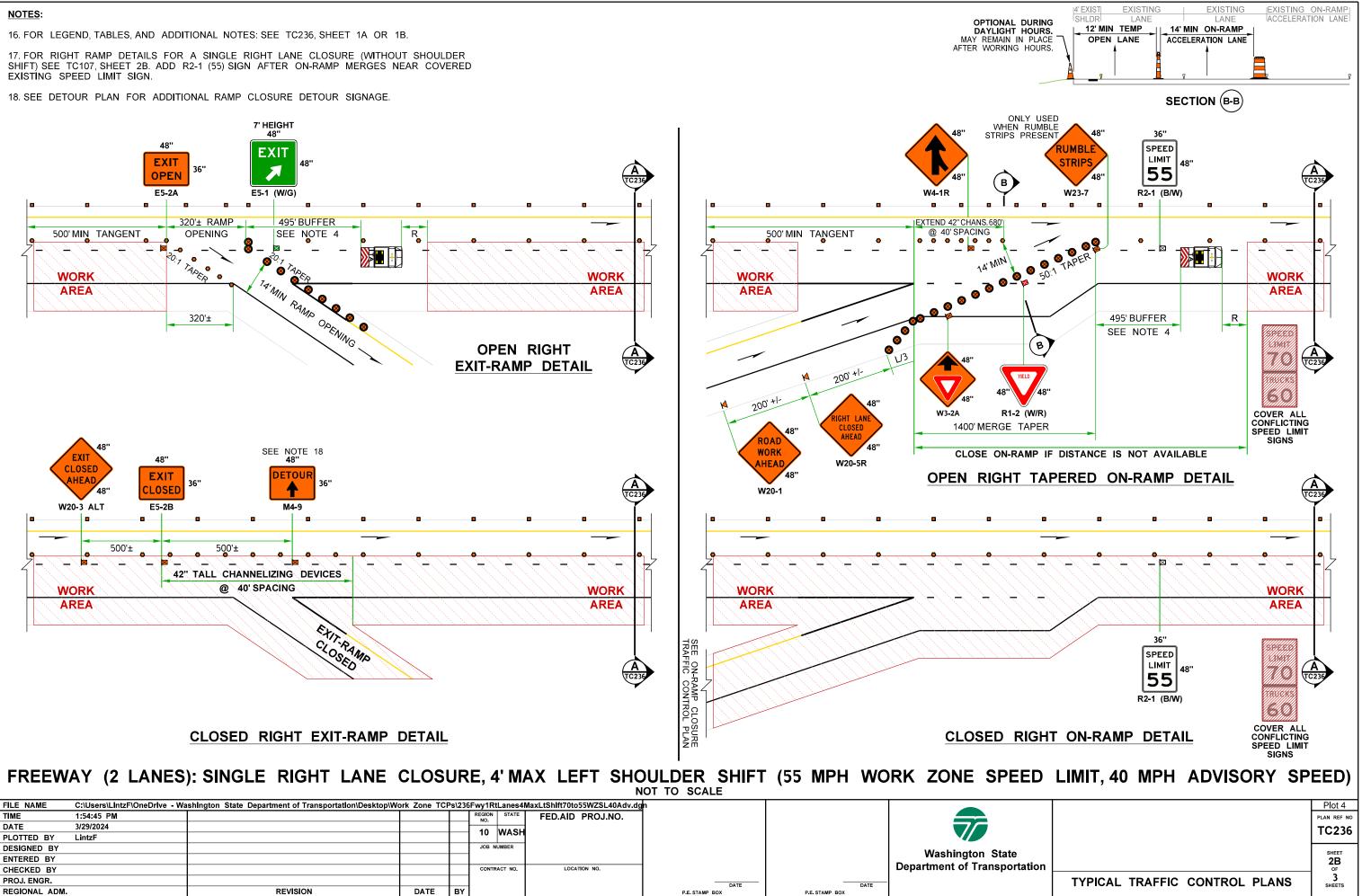
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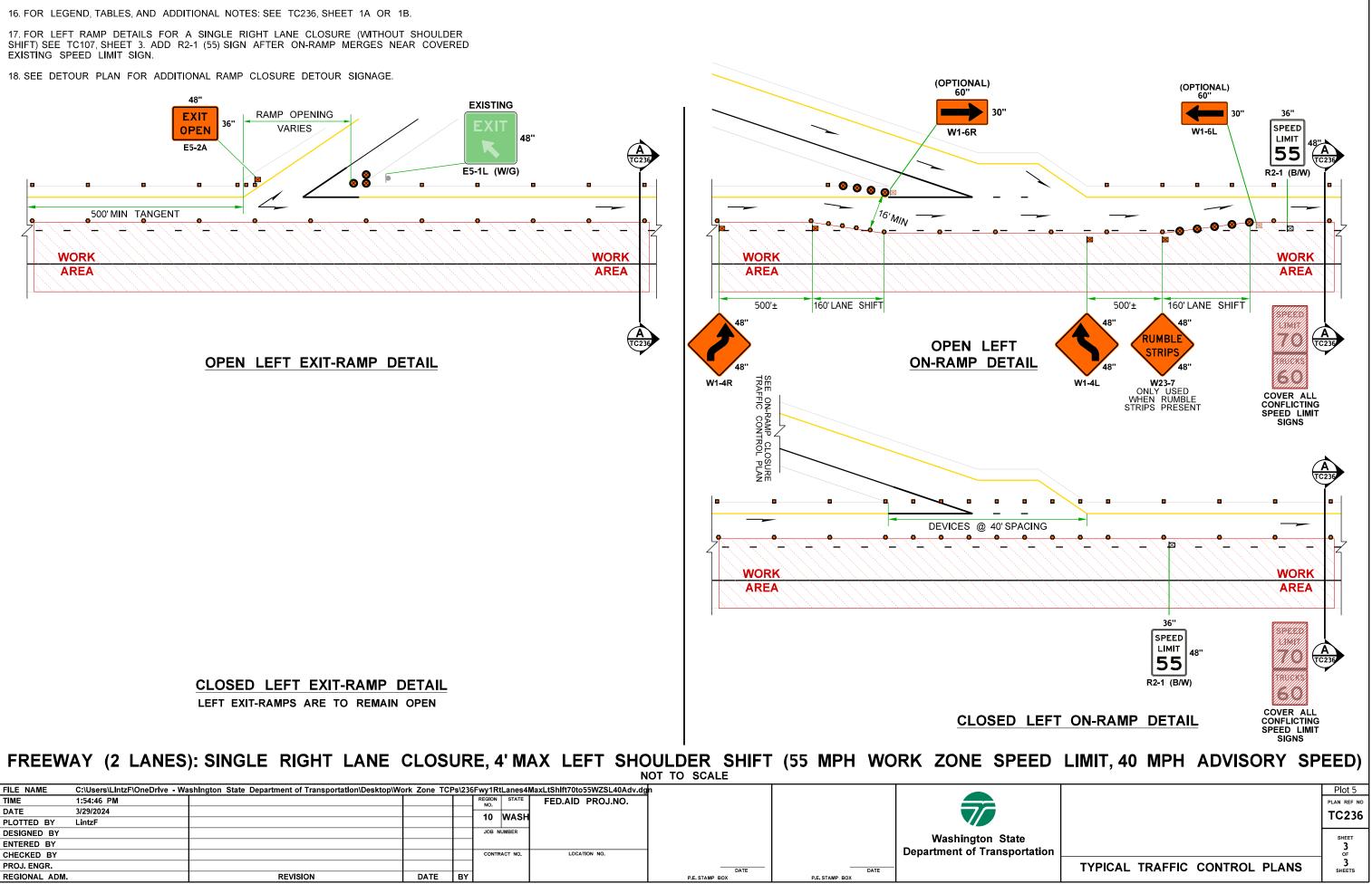
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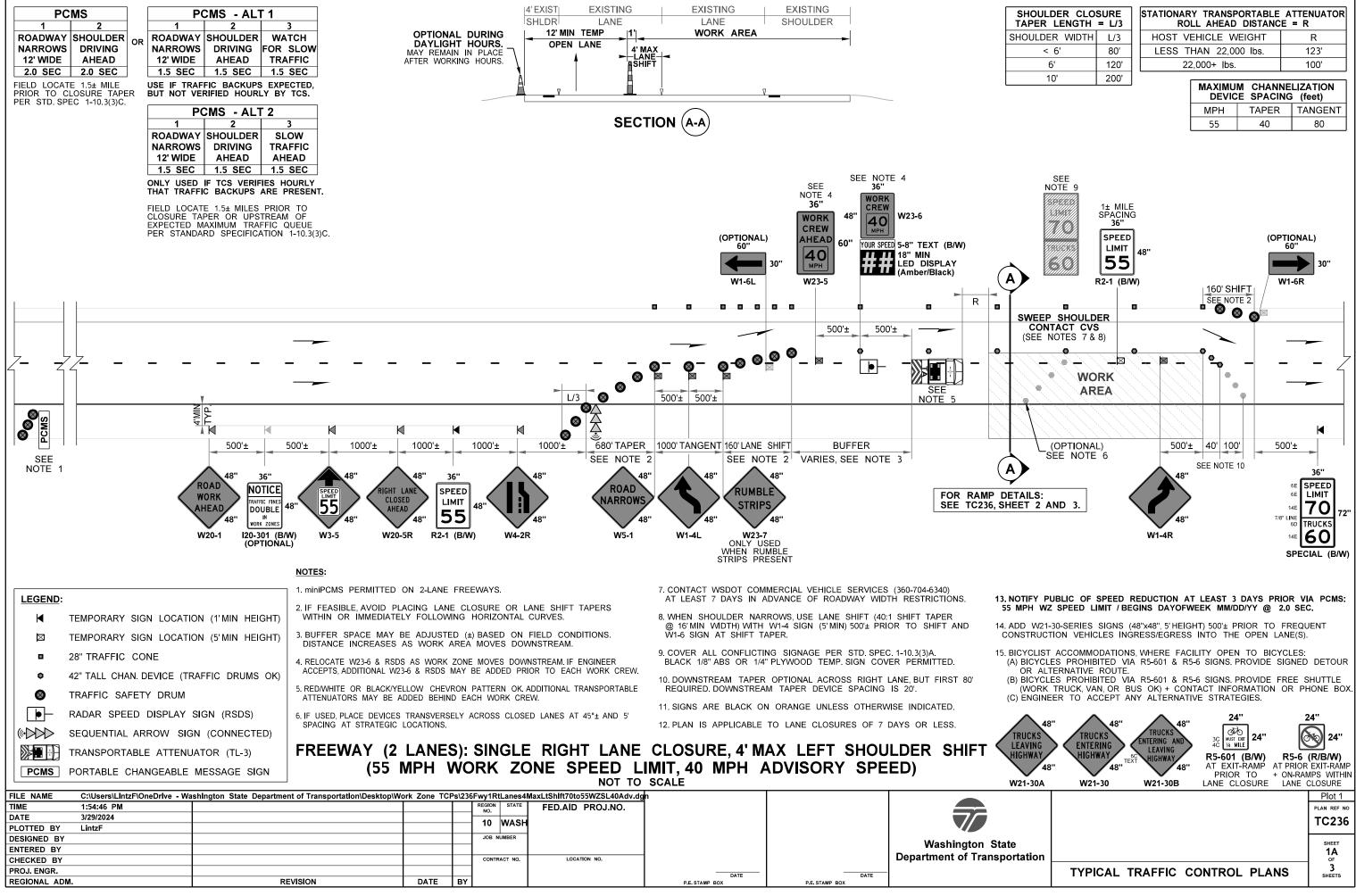
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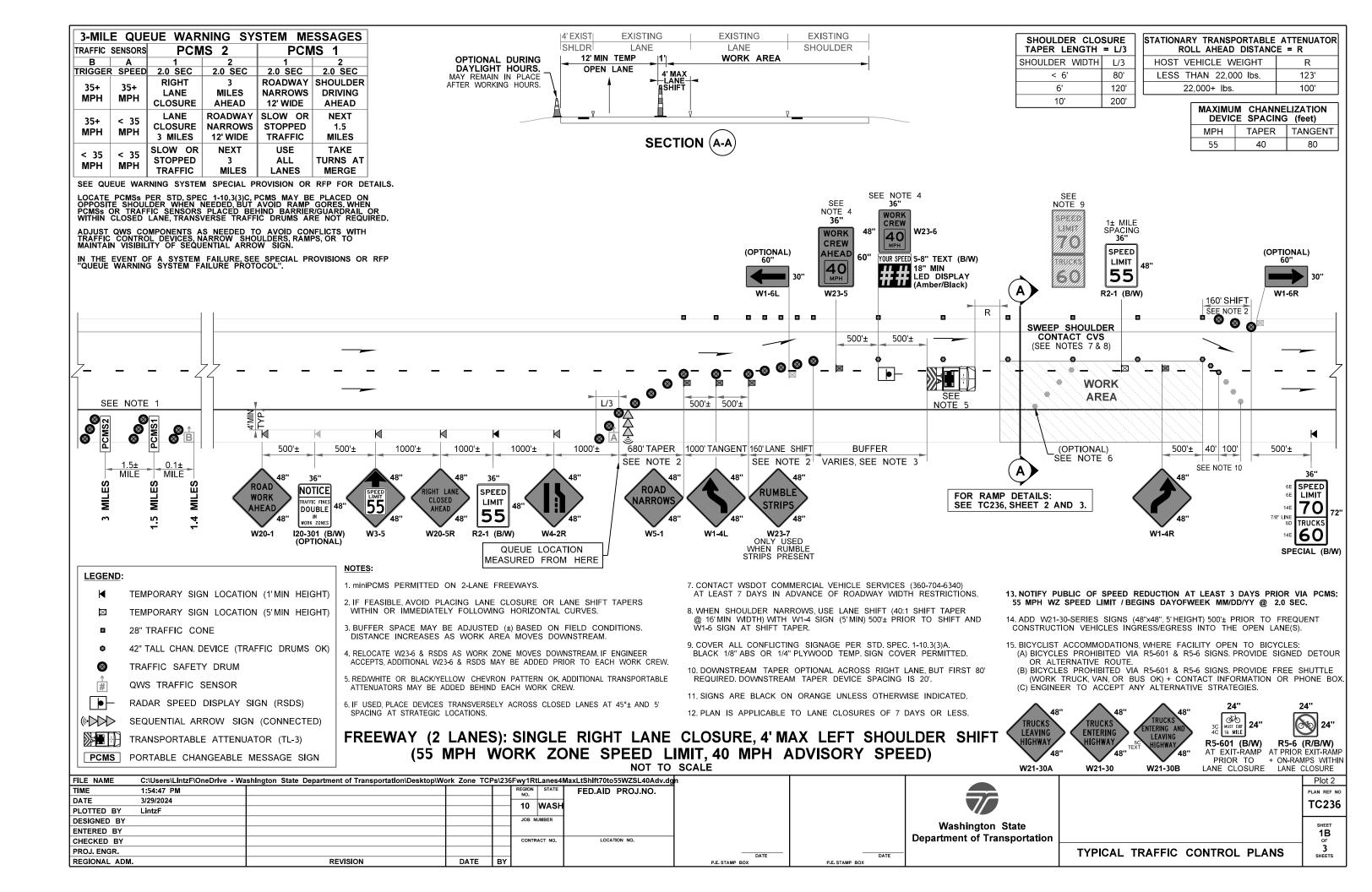
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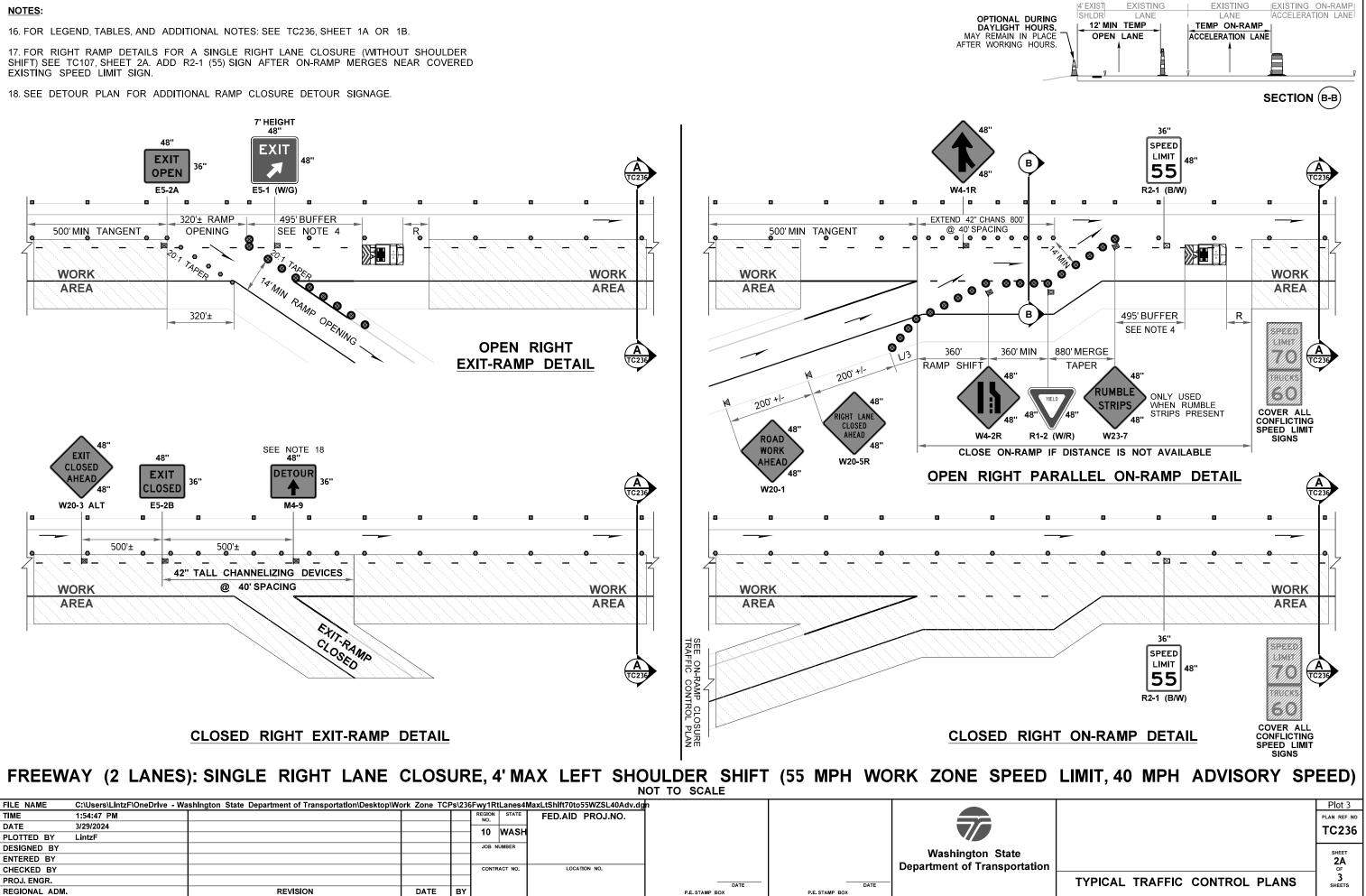
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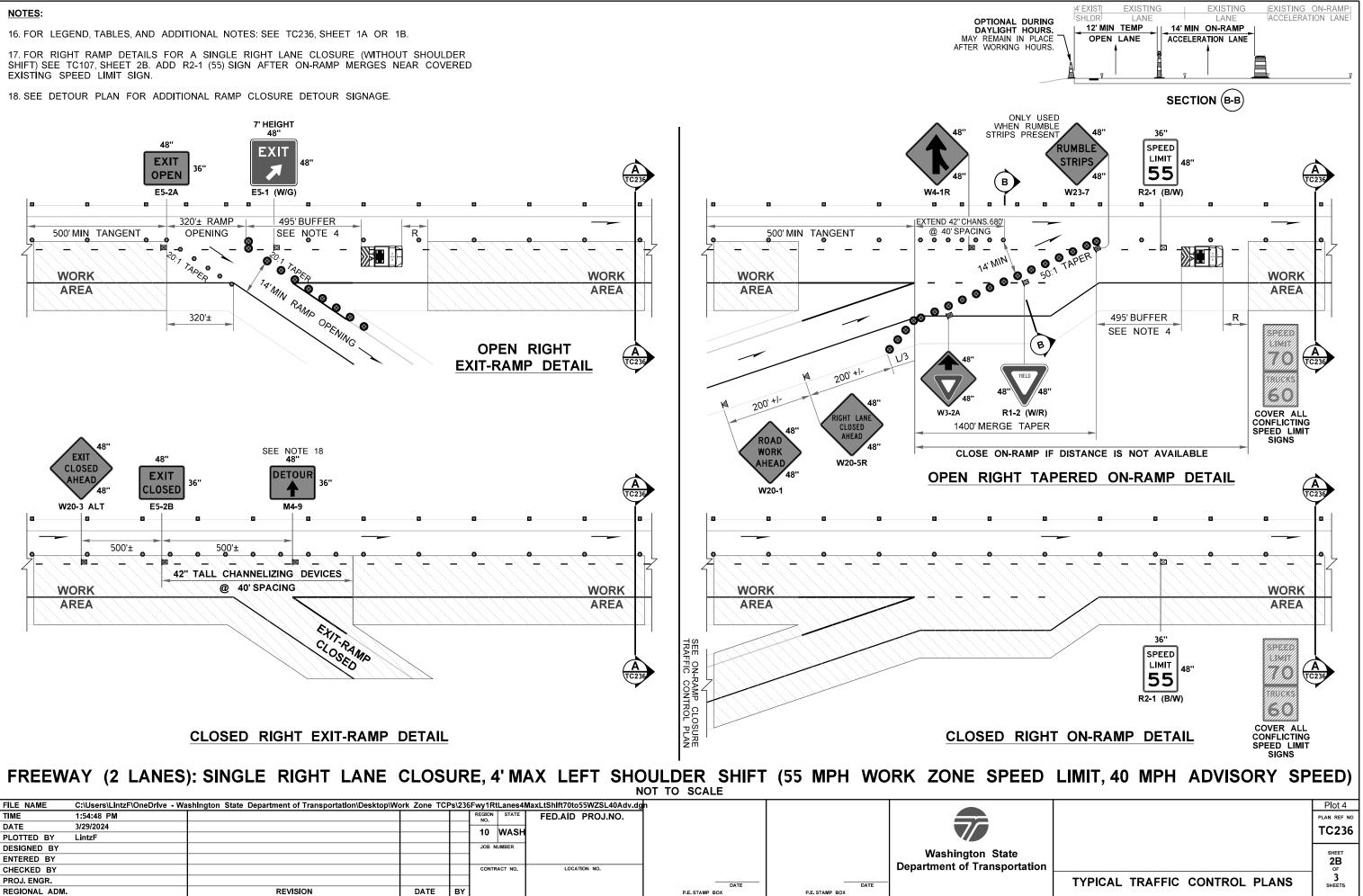
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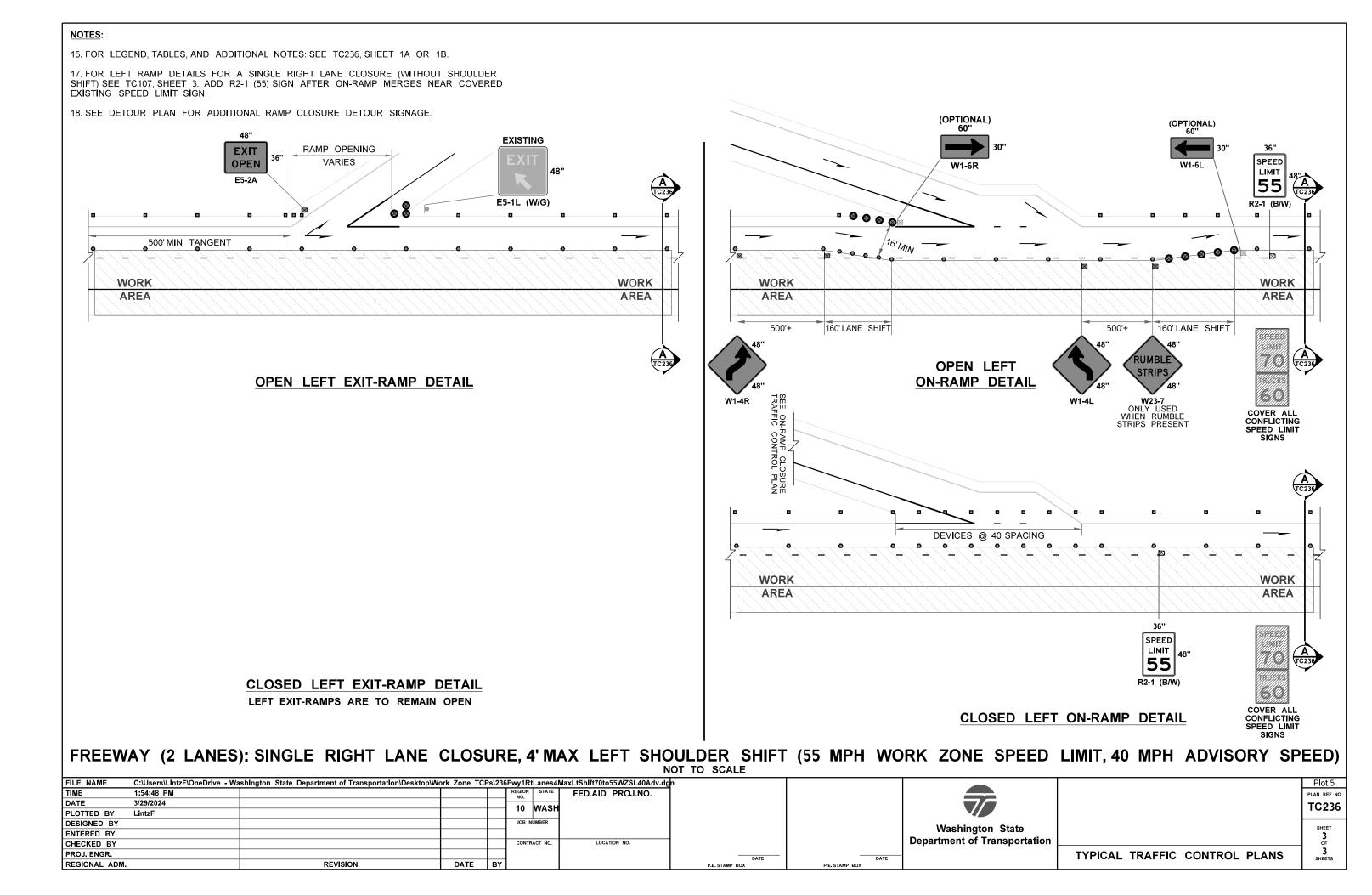




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### WORK ZONE MICROSTATION CELLS: Updated work zone cells incorporated (March 2024).

WSDOT CAE automatically updates cell libraries on WSDOT and on-site consultant staff computers (no action needed); however, external users or off-site consultants must manually install them. For additional information e-mail HOCAEHelpDesk@wsdot.wa.gov.

Division 4 in WSDOT Plans Preparation Manual, Section 400.06(29), provides updated work zone cell library policy and information for PS&Es. See https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/manuals/plans-preparation-manual

### **OTHER TYPICAL TCP VERSION EXPLANATION:**

TC238 provides 9' max shift alternative of this plan for a typical 2-lane rural freeway configuration with 10' left shoulder. This provides a much larger work area and/or allows a 16' wide open lane to be utilized if needed.

# PLOT USAGE EXPLANATION:

- Plot 1: Single open lane shifted onto left shoulder (4' max), via single right lane closure, with 55-mph work zone speed limit and 40-mph work crew advisory speed including a single PCMS in advance for queue mitigation.
- Plot 2: 3-Mile Queue Warning System version of single open lane shifted onto left shoulder (4' max), via single right lane closure, with 55-mph work zone speed limit and 40-mph work crew advisory speed.
- Plot 3: Right ramp details, including parallel on-ramp, within single open lane shifted onto left shoulder (4' max) with 55-mph work zone speed limit.
- Plot 4: Right ramp details, including tapered on-ramp, within single open lane shifted onto left shoulder (4' max) 55-mph work zone speed limit.
- Plot 5: Left ramp details within single open lane shifted onto left shoulder (4' max) with 55-mph work zone speed limit.

# **OTHER QUEUE MITIGATION PLANS: Available in Typical Traffic Control Plan Library**

(https://wsdot.wa.gov/engineering-standards/all-manuals-and-standards/plan-sheet-library/work-zone-typical-traffic-control-plans-tcp)

6-Mile Queue Warning System: Plan now separated; see TC157.

6-Mile Smart Work Zone System: See TC167.

9-Mile Smart Work Zone System: See TC177.

# **DESIGNER NOTES:**

A. Contact Region Transportation Operations to determine if a queuing mitigation system is needed; and if so, which one is appropriate.

B. Contact Region Transportation Operations to determine if Parallel (Sheet 2A) and/or Tapered (Sheet 2B) temporary left on-ramps are used.

C. This Typical TCP is not applicable when HOV-restricted or Express Toll Lane(s) are present. Contact Region Transportation Operations for additional guidance.

D. Per WSDOT Executive Order E1060 (https://wwwi.wsdot.wa.gov/publications/policies/fulltext/1060.pdf); speed limit reductions and advisory speeds must be approved for work zones. Submit speed reduction reductions & advisory speed requests for work zones through WSDOT Region Transportation Operations. See Traffic Manual Section 5-18 for additional information for documentation and notification requirements.

E. These typical traffic control plans (Typical TCPs) may be modified for project-specific, site-specific situations, and/or WSDOT Region Transportation Operations standard practices. Typical TCPs are not "Standard Plans".

F. Portable Changeable Message Signs (PCMSs) are optional per MUTCD Section 6F.60 and Section 6H and are used to supplement signage and inform motorists of unexpected situations. Thus, if no work zone congestion or queuing is expected, the two PCMS-ALT messages can be deleted but keep the PCMS since traffic is shifted into paved shoulder. Modify all "ROADWAY NARROWS 12' WIDE" PCMS message to match the actual minimum travel width (shy + lane width + shoulder) available through the work zone.

G. 48"x48" diamond-shaped work zone signs used on freeway mainlines and ramps. Per MUTCD 6H-33, gating temporary signs on both shoulders is Guidance on divided highways and Optional per MUTCD Section 6F.03 P02. Based on engineering judgement, signs on left shoulders is optional on 2-lane freeways with shoulders less than 6' because it is difficult for work crews to install/remove safely and is less critical to have signs gated than on 3-lane or more freeways. If signs are barrier-mounted separating 2-way traffic or on narrow shoulders, a special rectangular-shaped 24"x48" sign should be used. See MUTCD Table 6F-1 for additional temporary sign size information.

# **DESIGNER NOTES (continued):**

H. Freeway mainline sign spacing may be reduced down to 1000'+/- based on engineering judgement and down to 500'+/- if near interchanges. Along ramps, 200'+/- sign spacing typical but may be reduced farther.

- "EXIT" sign shall be mounted 7' minimum when located in the temporary gore.
- J. Work zone traffic control layout for this Typical TCP is based on 55 mph regulatory work zone speed limit.
- L. Maximum channelizing device spacing table for tangents is based on WAC 468-95-301 and may ALWAYS be reduced.
- M. Sequential arrow signs (arrow boards) are required at each freeway lane closure taper per MUTCD Standard Note 6 on TA-33.

N. Connected sequential arrow signs are now required on freeways in Washington on new Construction projects (existing projects can still use the conventional sequential arrow sign). Smart sequential arrow signs have communication capabilities--old arrow boards can be retrofitted--to broadcast the status of the arrow display with third-party vendors like Google Maps/Waze and Traffic Management Centers. Include the following General Special Provisions for Materials, Specification, Measurement, and Payment. https://wsdot.wa.gov/publications/fulltext/projectdev/gspspdf/egsp1.pdf \* 1-10.3(3)B(9-35.4).GR1 (Smart Sequential Arrow Sign Materials GSP) \* 1-10.3(3)B(9-35.4).OPT1.2025.GR1 (Smart Sequential Arrow Sign Specifications GSP) \* Measurement and Payment are still hourly per "SEQUENTIAL ARROW SIGN". No new bid item developed.

O. Radar speed display signs are typical practice for freeway lane closures with speed limit reductions. When used, include the following General Special Provisions for Materials, Specification, Measurement, and Payment. https://wsdot.wa.gov/publications/fulltext/projectdev/gspspdf/egsp1.pdf \* 1-10.3(3).OPT2.GR1 (Radar Speed Display Sign Specification GSP)

- \* 1-10.3(3)(9-35.8).GR1 (Radar Speed Display Sign Materials GSP)
- \* 1-10.4(2).OPT3.GR1 (Radar Speed Display Sign Measurement GSP, if not Lump Sum) "HOUR"
- \* 1-10.5(2).OPT2.GR1 (Radar Speed Display Sign Payment GSP, if not Lump Sum) "HOUR"
- P. Longitudinal buffer spaces (B) are optional per MUTCD Section 6C.06 but is desired when practical. Longitudinal buffers are the most adjustable component that may be increased/decreased to move lane closure tapers away from horizontal/vertical curves and from on-ramp merges.
- to the 4' shift to maximize work area. Actual work area limits may be modified.
- minimize traffic impacts and increase safety.
- S. A 20:1 tapered temporary exit-ramp is typical, but 15:1 is acceptable. The exit-ramp travel way width may range from 12 to 16 feet.
- catch basin & ITS boxes are traffic bearing types. This Typical TCP begins the ramp shift at the end of the marked gore for simplicity.
- the end of the marked gore to the end of the merge, see WSDOT Design Manual Exhibit 1360-16 for guidance.
- standard practice. Recommended to use route-specific detour signage for significant ramp closures.

# FREEWAY (2 LANES): SINGLE RIGHT LANE CLOSURE, 4' MAX LEFT SHOULDER SHIFT (55 MPH WORK ZONE SPEED LIMIT, 40 MPH ADVISORY SPEED)

I. When positioned behind channelizing devices, temporary signs should be mounted at 5' minimum. Per MUTCD 6H-42 Note 4 (Standard), a temporary

K. Traffic safety drums required on freeway lane closure and lane shift tapers and recommended on tangents per Design Manual 1010.07. Because of the 4' shift, this plan shows 42" tall channelizing devices on tangents to maximize the work area, but allows traffic safety drums to be used (noted in Legend). On tangents 42" tall channelizing devices, 36" traffic cones, & 28" traffic cones allowable (vertical panel channelizing devices prohibited). Edge of paved shoulder delineated with 28" cones at night--Oversized loads pass over cones without knocking them down, unlike with taller devices. Warning lights on channelizing devices being phased out in Washington. Contact Region Transportation Operations for information regarding their standard practices.

\* 1-10.3(3)(9-35.8) OPT1.2025 GR1 (Radar Speed Display Sign Specifications GSP, will be placed in 2025 Standard Specifications)

Q. The lateral buffer (transverse distance between open travel lanes and work area) is typically 2 feet on freeways; however, is reduced to 1' on this plan due

R. Per MUTCD Figure 6C-2, the downstream taper is optional. Eliminating it allows construction vehicles to accelerate out of work area into reopened lane to

T. The on-ramp shift may occur across the paved on-ramp gore at "L/2", but verify the gore's cross-slope is traversable, pavement thickness adequate, and

U. Two types of temporary on-ramp configurations, parallel and tapered. Parallel on-ramp uses a L/2 per lane ramp shift, L/2 MIN acceleration pocket that may be extended when space allows, and L ramp merge taper based on MUTCD Guidance Figure 6H-44. However, a L/2 ramp merge taper is allowable based on engineering judgment, see WSDOT Design Manual Exhibit 1360-17 for guidance. Tapered on-ramp uses a single 50:1 taper (for all speeds) from

V. Ramp detour signage is recommended by MUTCD 6C.09, but using alternative routes is acceptable. Contact Region Transportation Operations for their

INFORMATIONAL USE ONLY

Plot 6 TC236

DO NOT INCLUDE THIS SHEET IN CONTRACT PS&Es or TCP SUBMITTALS

DESIGNER GUIDANCE