

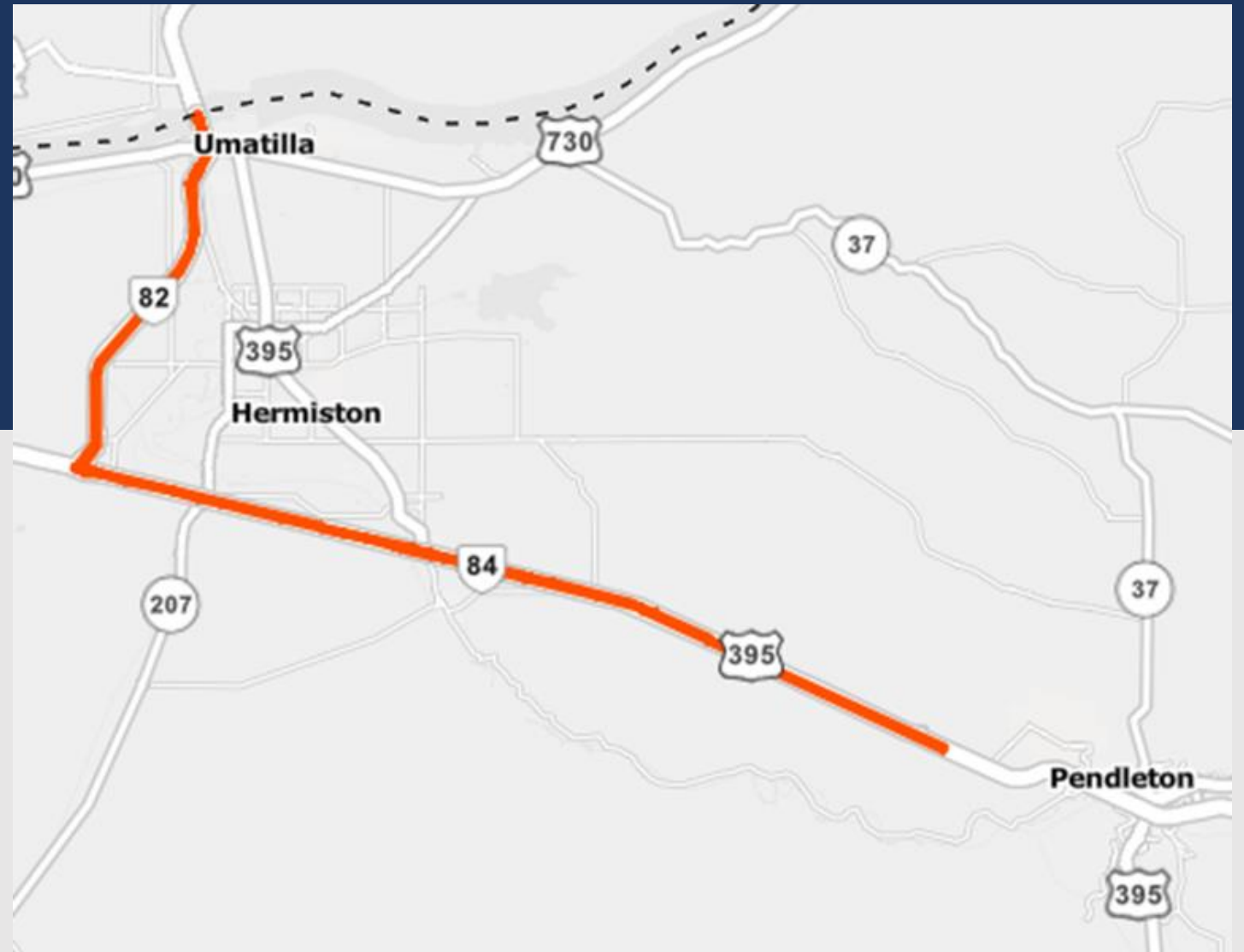
# I-82/I-84: Umatilla-Pendleton Concrete Pavement Repair

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# Location

- Region 5
- Umatilla County





# Project Purpose/Scope

- Pavement repair to extend the life of the pavement on all lanes
- Repair and repave the asphalt shoulders
- Bridge repairs on eight structures to increase safety and bring them up to current standards



# Issues to be Addressed

- **Pavement repairs:**
  - Repair existing pavement and repave asphalt shoulders
  - Repairs on eastbound and westbound routes. Work occurred mostly in the right lanes, with some work affecting left lanes
- **Bridge repairs:**
  - Work included repairing bridge decks and approaches, concrete rails and bridge joints
- **Guardrail repairs**

# Traffic Control Options Considered: Option Summary

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- Crossover utilization for both I-82 and I-84 for all stages
  - Pros: Traffic separate from work area
  - Cons: Construction mobility restrictions, loss of access to several interchanges, multiple detours
  - Traffic Control Plans cost estimated: \$1,985,000

# Traffic Control Options Considered: Preferred Option Summary

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- I-84:
  - Stage 1: Crossover utilization, 2- lane 2-way traffic
  - Stage 2: Single lane closure, traffic separated from work by temporary concrete barrier
- I-82:
  - Stages 3-4: Single lane closures, traffic separated from work by temporary concrete barrier
- Pros: Less of an impact to traffic, cost savings
- Cons: Construction mobility restrictions, closure of Exit 179 nighttime ramp closure
- Traffic Control Plans cost estimated: \$1,385,000



# Work Within I-84 Project Limits

- 8" continuously reinforced concrete ~11,500 sq yd
- 8" concrete repairs ~1,000 sq yd
- Spall repairs ~755 sq yd
- ~30 individual repair locations
- Various spall repairs to be field verified
- Guardrail upgrades
- Shoulder paving

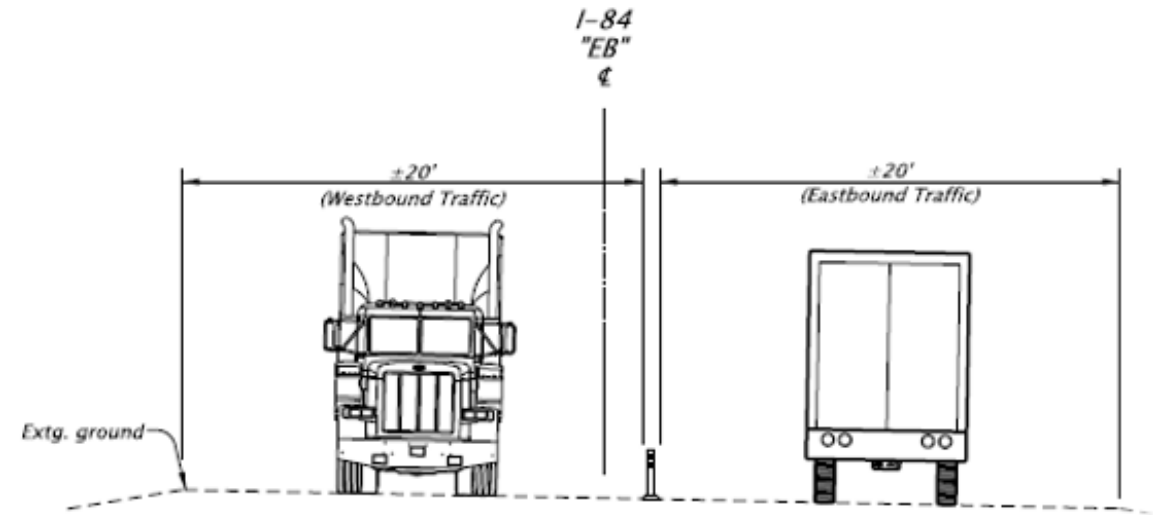
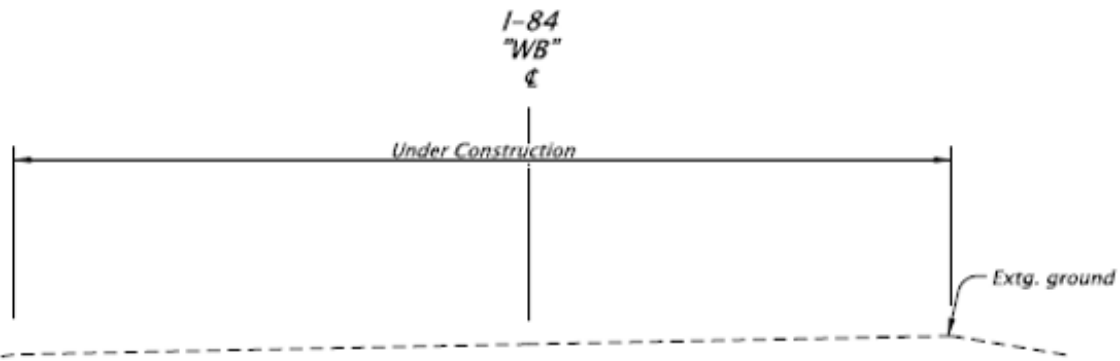
Apr 3, 2

# I-84 Stage 1: Traffic Control

- MP 197.3 crossover WB traffic to EB lane
- MP 197.3 to MP 193.8 2-lane, 2-way traffic
- MP 193.8 crossover WB traffic back to WB lanes
- Speed reduced to 50 mph during Stage 1
- 3.5 miles of WB isolated for construction
  - Shoulder paving
  - Guardrail
  - Spall repairs
  - CRCP repairs
  - CRCP sections

# I-84 Stage 1: Traffic Control

## STAGE I



# I-84 Stage 1: Traffic Control



2-way, 2-lane traffic I-84 EB



2-way, 2-lane traffic I-84 EB

# I-84 Stage 1: Traffic Control



Work zone protected by barrier at traffic switch



Traffic separated by barrier at crossover

# I-84 Stage 1: Construction



CRCP paving



Spall repairs



# I-84 Stage 1: Traffic Control Benefits

- **Safety:**
  - Workers and agency staff isolated from traffic
  - Reduced exposure to traffic by not having to set up and maintain lane closures for individual repair areas
- **Analysis:**
  - Pavement conditions easier to analyze and apply appropriate repair once traffic switched



# I-84 Stage 1: Traffic Control Benefits Cont.

- **Quality:**
  - Large areas could be prepped and poured continuously reducing number of transverse joints
  - Work could be performed during daylight hours increasing visibility for contractors and inspection staff
- **Staging/Production:**
  - Not setting up lane closures for individual repair areas
  - Allow demo work to be performed throughout closure before rebar and concrete placement
  - Allow subcontractors to perform all work within section, reducing number of mobilizations



# Cross Over Cost Benefit

- Working days under cross over: 100 days
- Daily lane closure costs: \$2,580/day
- Project savings: \$258,000



# Quality and Schedule Savings

- Ability for schedule flexibility
- Typical wide load restriction for I-84 9:00PM to 7:00 AM summertime
- Continuous work allowed 27-hour whitepaving pour for ~3500 LF which removed CJ's improved ride, and lowered project costs
- Cure time without exposure to traffic

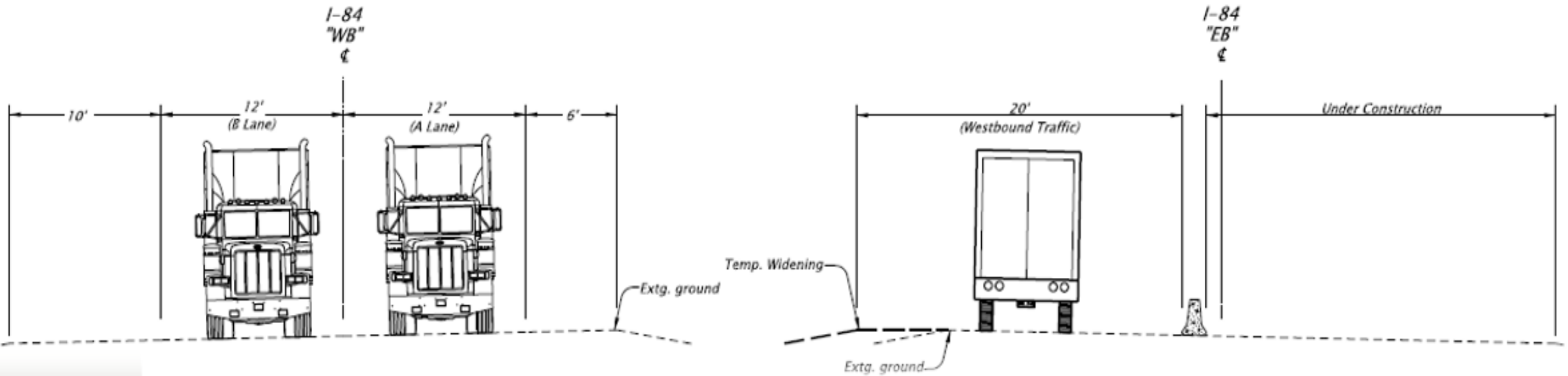


# I-84 Stage 2: Traffic Control

- Single lane closure I-84 EB
- Traffic separated from work by temporary concrete barrier
- Speed reduced to 55 mph during Stage 2
- Approx. 1 mile of EB isolated for construction
  - CRCP section

# I-84 Stage 2: Traffic Control

## STAGE II



# I-84 Stage 2: Construction



I-84 EB CRCP



I-84 EB CRCP

# I-84 Stage 2: Construction



I-84 EB CRCP



I-84 EB CRCP

# I-84 Stage 2: Traffic Control Benefits



- **Safety:**
  - Workers and agency staff protected from traffic by concrete barrier
  - Reduced exposure to traffic by not having to set up and maintain lane closures for individual repair areas
- **Quality:**
  - Large areas could be prepped and poured continuously reducing number of transverse joints
  - Work could be performed during daylight hours increasing visibility for contractors and inspection staff

# I-84 Stage 2: Traffic Control Benefits, Cont.



- Staging/Production:
  - Not setting up lane closures for individual repair areas
  - Allow demo work to be performed throughout closure before rebar and concrete placement
  - Allow subcontractors to perform all work within section, reducing number of mobilizations

# I-84 Traffic Control Outside of Stage 1 & 2



- Single lane closures I-84 EB & WB
- Contract required 19 ft clear width during daylight hours and 14 ft minimum during nighttime hours
- Traffic separated from work by temporary barrier
- Speed reduced to 55 mph
- Several repair areas outside limits of crossover



## I-84 Traffic Control Outside of Stage 1 & 2 Issues & Proposed Traffic Control

- B lane repairs had to be done at night to accommodate lane widths
- Some repairs too large to complete in a single night shift
- Contractor request lane restrictions extended through the week
- RE office worked with mobility coordinator to get special meeting with the MAC
- RE office/contractor agreed to maintain 16 ft clear width weekly, Monday through Thursday
  - 19 ft clear width Fri-Sun
  - May accommodate oversize with 48 hr notice

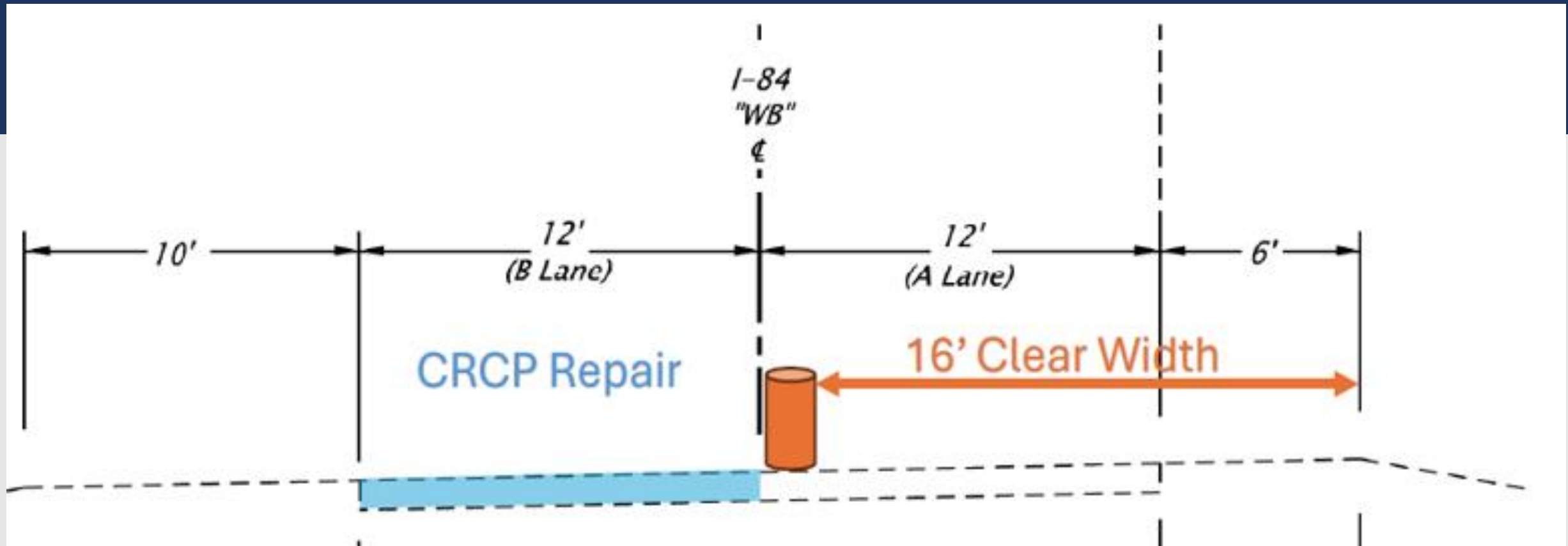


## Oversized Load Accommodation

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- Notification from ODOT
- Contractor preparation
- Traffic control needs
- District communication

# I-84: Traffic Control



# Questions?

