# K20548: I82 & I84: Umatilla - Pendleton Concrete Pavement Repair

- **Project Type:** Paving, Bridge Deck Repair
- **Presenters Names:**
  - Grant Matlock – Transportation Project Manager
  - Dan Fine – Traffic / Roadway Manager

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**Mobility Advisory Committee**
Meeting Date: 9/14/2023

# K20548: I82 & I84: Umatilla - Pendleton Concrete Pavement Repair

## Agenda

### Topics:

- Mobility Impacts
- Construction Staging
- Project Location
- Roadway Characteristics
- Project Purpose and Scope
- Issues to be addressed
- Project Schedule

**Objective:** Seeking support for Mobility Considerations Checklist Sign-off.

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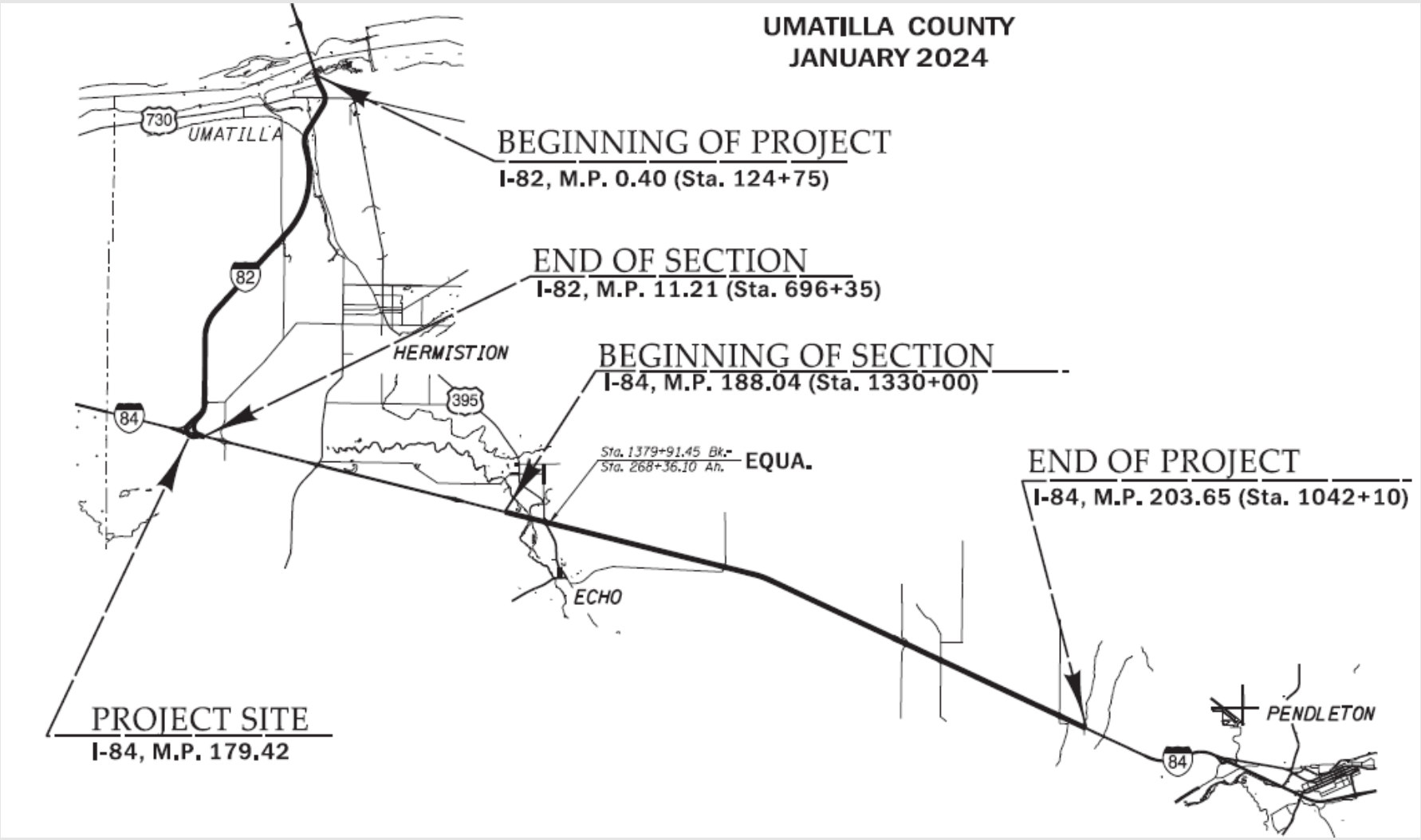
## Location Information



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## Location Details

### Roadway Characteristics

- Type of roadway & number of lanes
  - Interstate Freeway – 2 Lanes
- Grade type (flat, hills, both): Flat
- Straight, curved, or both: Straight

### Traffic Conditions

- ADT: I-82 - 24,500 / I-84 – 18,800 (2021)
- Truck Count: I-82 – 5265 (21%) / I-84 – 4562 (24%)

### Annual Over-Dimension Permits

- Annual Width allowed daytime: 14 feet
- Annual Width allowed nighttime: 12 feet

### Single Trip Permits

- Width allowed daytime without District Approval: 16 feet
- Width allowed nighttime without District Approval: 12 feet

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## Project Purpose & Scope

### Purpose/Scope:

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

### Issues to be addressed:

- **Pavement repairs:**
  - We will repair existing pavement and repave asphalt shoulders.
  - Repairs will be made on eastbound and westbound routes. Work will occur mostly in the right lanes, with some work affecting left lanes.
- **Bridge repairs:**
  - Work includes repairing bridge decks and approaches, concrete rails and bridge joints.
- **Guardrail repairs**

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## Project Schedule

- Current Phase (Project Milestone): Advance Plans Completed
- Advanced Plans Due Date: 7/14/2023
- PS&E Date: 11/6/2023
- Bid Opening Date: 1/18/2024
- Number of Construction Seasons: 2
- Construction Timeline Summary
  1. Notice To Proceed (NTP): 3/14/2024
  2. I-84 Construction: Construction Season 2024
  3. I-82 Construction: Construction Season 2025
  4. Construction Complete: 10/1/2025

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## Traffic Control Options Considered

1. **Option Summary**
   - Crossover utilization for both I82 and I84 for all stages.
     - Pros: Traffic separate from work area
     - Cons: Construction mobility restrictions, loss of access to several interchanges, multiple detours
     - Cost: Traffic Control Plans cost estimated: $1,985,000
2. **Preferred Option Summary**
   - I84: Stage I crossover utilization, 2- lane 2-way traffic. Stage II: Single lane closure, traffic separated from work by temporary concrete barrier. Stages III-VI: 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
     - Cost: Traffic Control Plans cost estimated: $1,385,000

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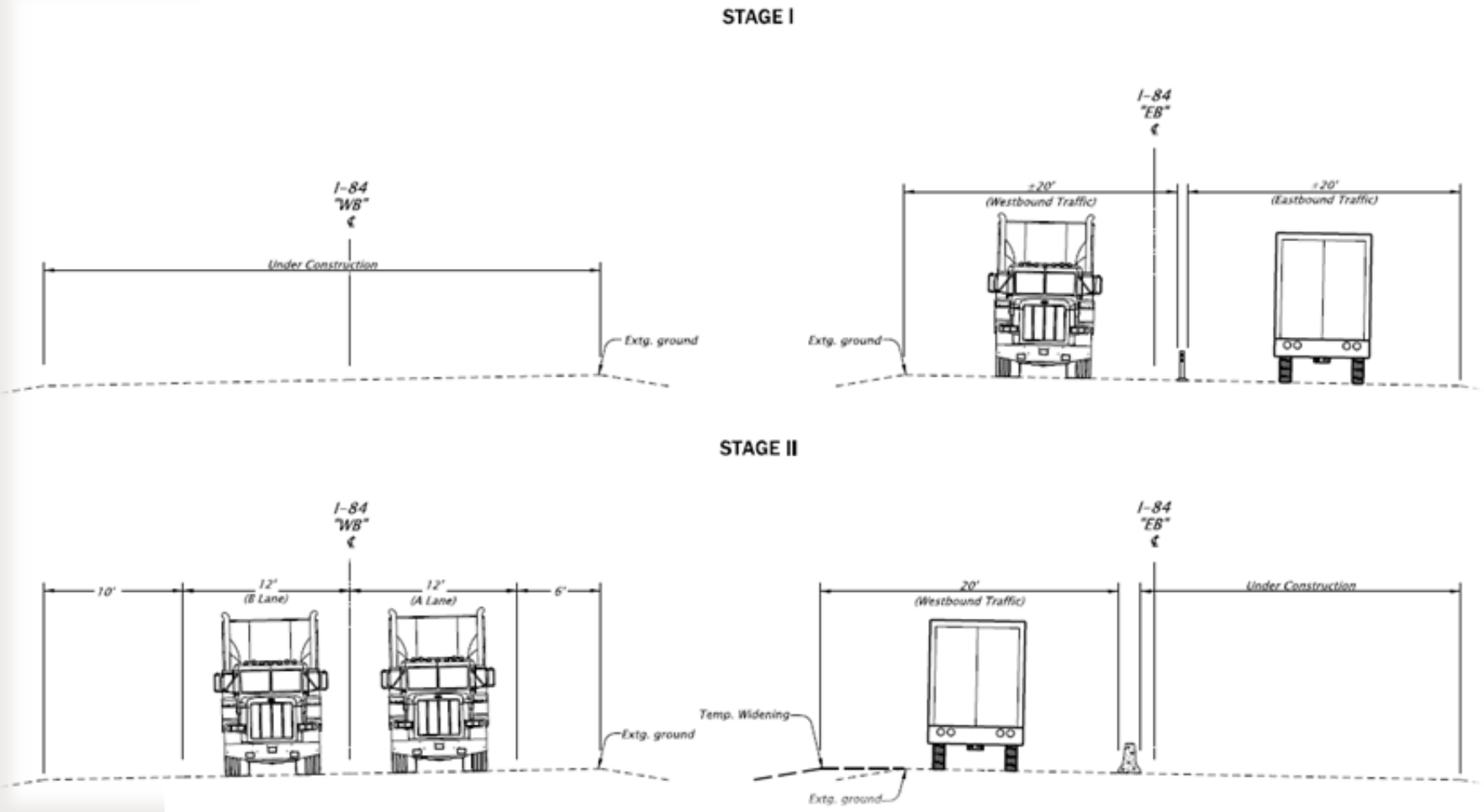
## Lane Closures – I-84

- **Stage I:** 2-lane 2-way traffic on EB lanes separated by surface mounted tubular markers.
- **Stage II:** 1-lane 1-way traffic on EB lanes separated from work area by surface temporary concrete barrier
- 20’ horizontal clearance w/ soft and hard barriers.
  - Restricted to 18’ wide loads.
  - Wider loads <u>may</u> be accommodated on a case-by-case basis with at least 2 days advanced notice during Stage II.
- Lane closures allowed anytime. Estimated duration 12 weeks per Stage.



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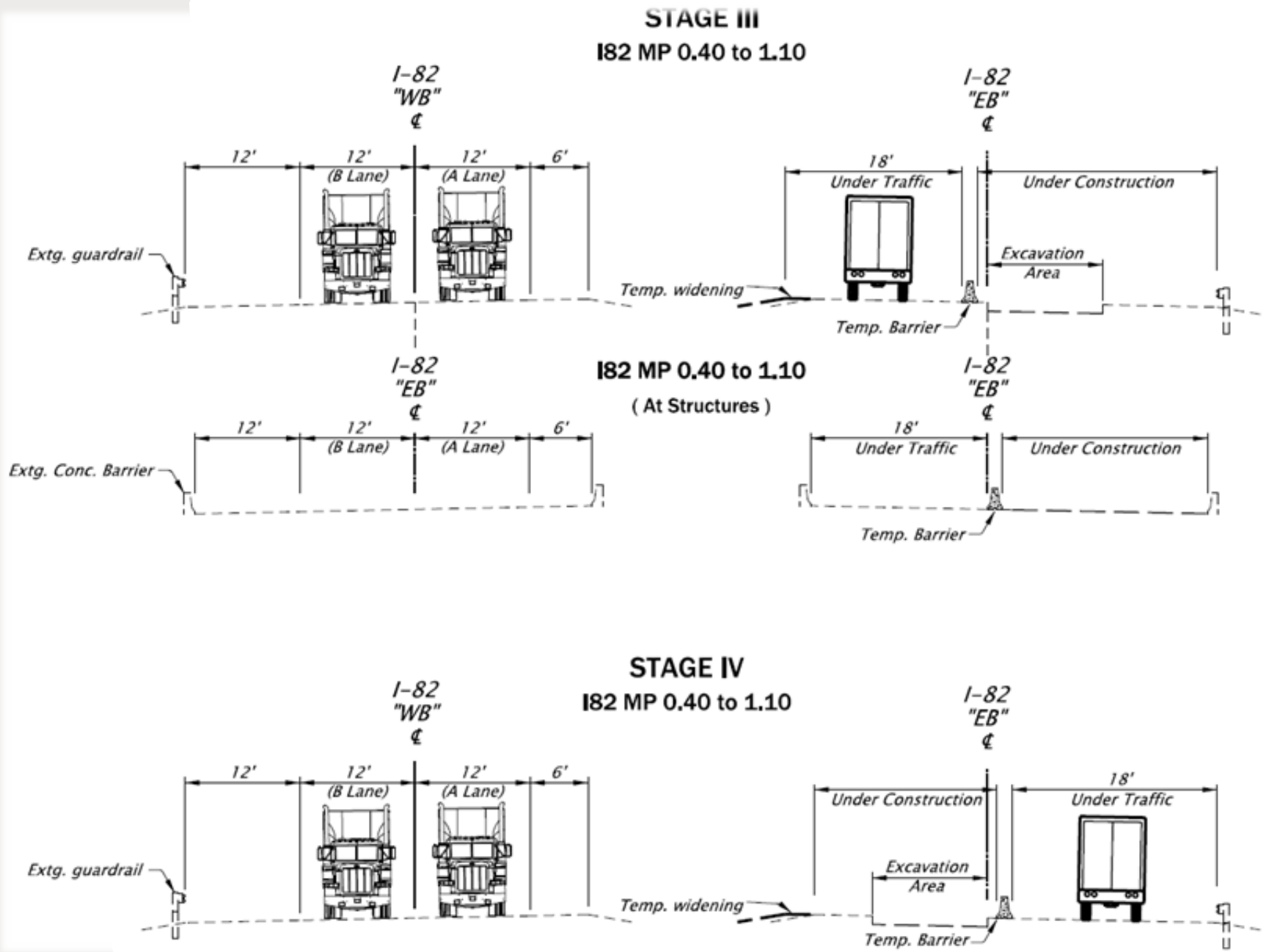
## Lane Closures – I-82

- **Stage III:** Traffic will be channelized into the A Lane separated from work area by temporary concrete barrier.
- **Stage IV:** Traffic will be channelized into the B Lane separated from work area by temporary concrete barrier
- 18' horizontal clearance with hard barriers.
  - Restricted to 16' wide loads.
- Lane closures allowed anytime. Estimated duration 9 weeks per Stage.



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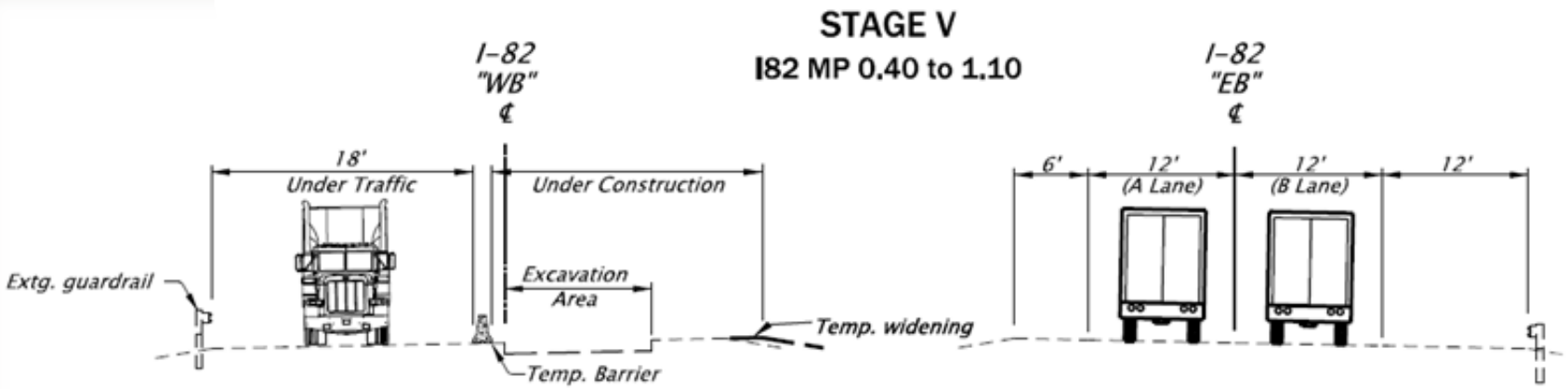
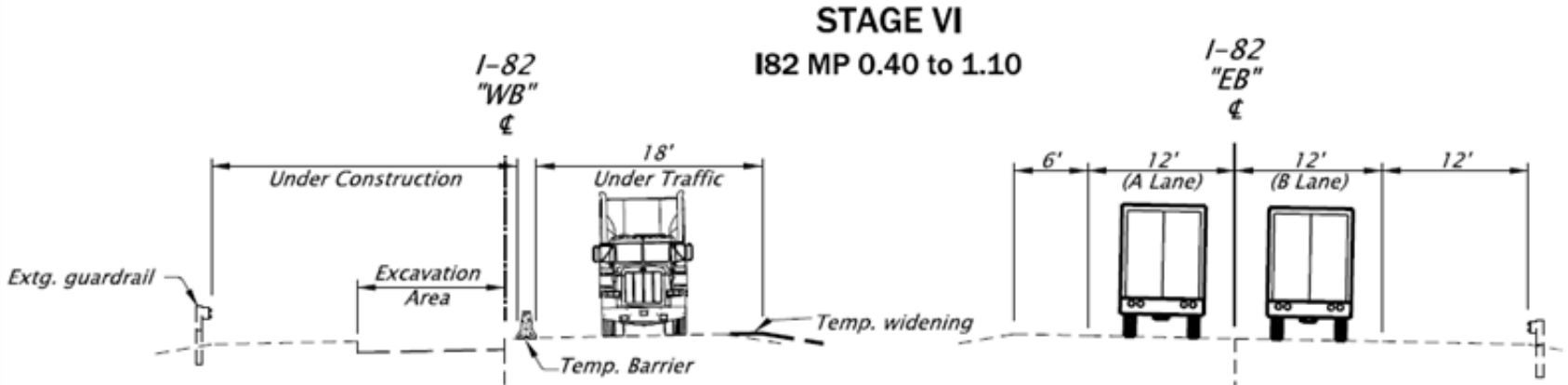
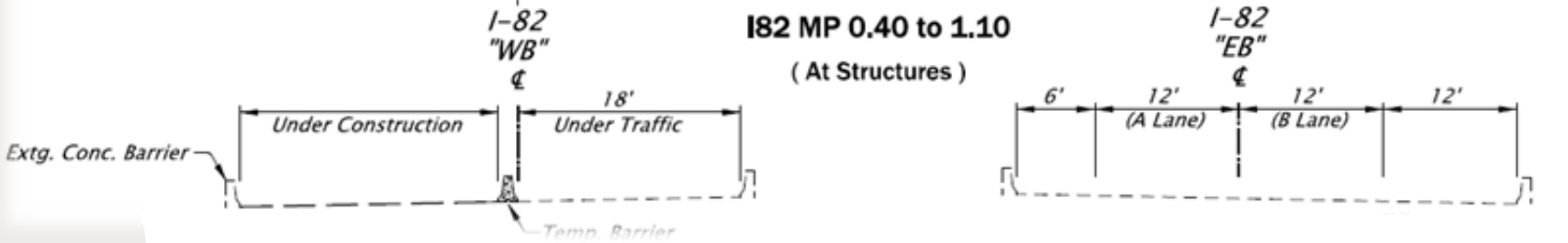
## Lane Closures – I-82

- **Stage V:** Traffic will be channelized into the B Lane separated from work area by temporary concrete barrier.
- **Stage VI:** Traffic will be channelized into the A Lane separated from work area by temporary concrete barrier.
- 18' horizontal clearance with hard barriers.
  - Restricted to 16' wide loads.
- Lane closures allowed anytime. Estimated duration 9 weeks per Stage.



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## Full Closure w/Crossover

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## Multiple Stages/Phases, Lane Closures & Full Road Closures Summary

| Stage | Phase(s) | Work Summary & Milepoint | Const. Year | Approx. Duration | Barrier Type & Width Between Barrier | Work Zone Tangent/ Curve? | Planned Restrictions and/or closures | Allowable Days/ Hours |
|---|---|---|---|---|---|---|---|---|
| Stage 1 | Phase I | Crossover construction & concrete, shoulder repairs I-84 MP 188 – MP 203 | 2024 | 12 weeks | Soft barrier; 20-feet | Tangent | Two-lane-two way traffic will provide 20 feet of width between barriers for traffic, resulting in 18 foot width load restriction. | At all times |
| Stage 2 | Phase I | Concrete and shoulder repairs I-84 MP 188 – MP 203 | 2024 | 12 weeks | Hard barrier; 20-feet | Tangent | Staging from Single Lane closures will provide 20 feet of width between barriers for traffic, resulting in 18 foot width load restriction. | At all times |
| Stage 3 | Phase I<br>Phase II<br>Phase III | Concrete repairs, bridge work, and ITS work I-82 MP 0.40 to 1.10 | 2025 | 9 weeks | Hard barrier, 18-feet | Tangent | Staging from Single Lane closures will provide 18 feet of width between barriers for traffic, resulting in 16 foot width load restriction. | At all times |

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## Multiple Stages/Phases, Lane Closures & Full Road Closures Summary

| Stage | Phase(s) | Work Summary & Milepoint | Const. Year | Approx. Duration | Barrier Type & Width Between Barrier | Work Zone Tangent/ Curve? | Planned Restrictions and/or closures | Allowable Days/ Hours |
|---|---|---|---|---|---|---|---|---|
| Stage 4 | Phase I | Concrete repairs and bridge work I-82 MP 0.40 to 1.10 | 2025 | 9 weeks | Hard barrier; 18-feet | Tangent | Staging from Single Lane closures will provide 18 feet of width between barriers for traffic, resulting in 16 foot width load restriction. | At all times |
| Stage 5 | Phase I | Concrete repairs and bridge work I-82 MP 0.40 to 1.10 | 2025 | 9 weeks | Hard barrier; 18-feet | Tangent | Staging from Single Lane closures will provide 18 feet of width between barriers for traffic, resulting in 16 foot width load restriction. | At all times |
| Stage 6 | Phase I Phase II | Concrete repairs and bridge work I-82 MP 0.40 to 1.10 | 2025 | 9 weeks | Hard barrier, 18-feet | Tangent | Staging from Single Lane closures will provide 18 feet of width between barriers for traffic, resulting in 16 foot width load restriction. | At all times |

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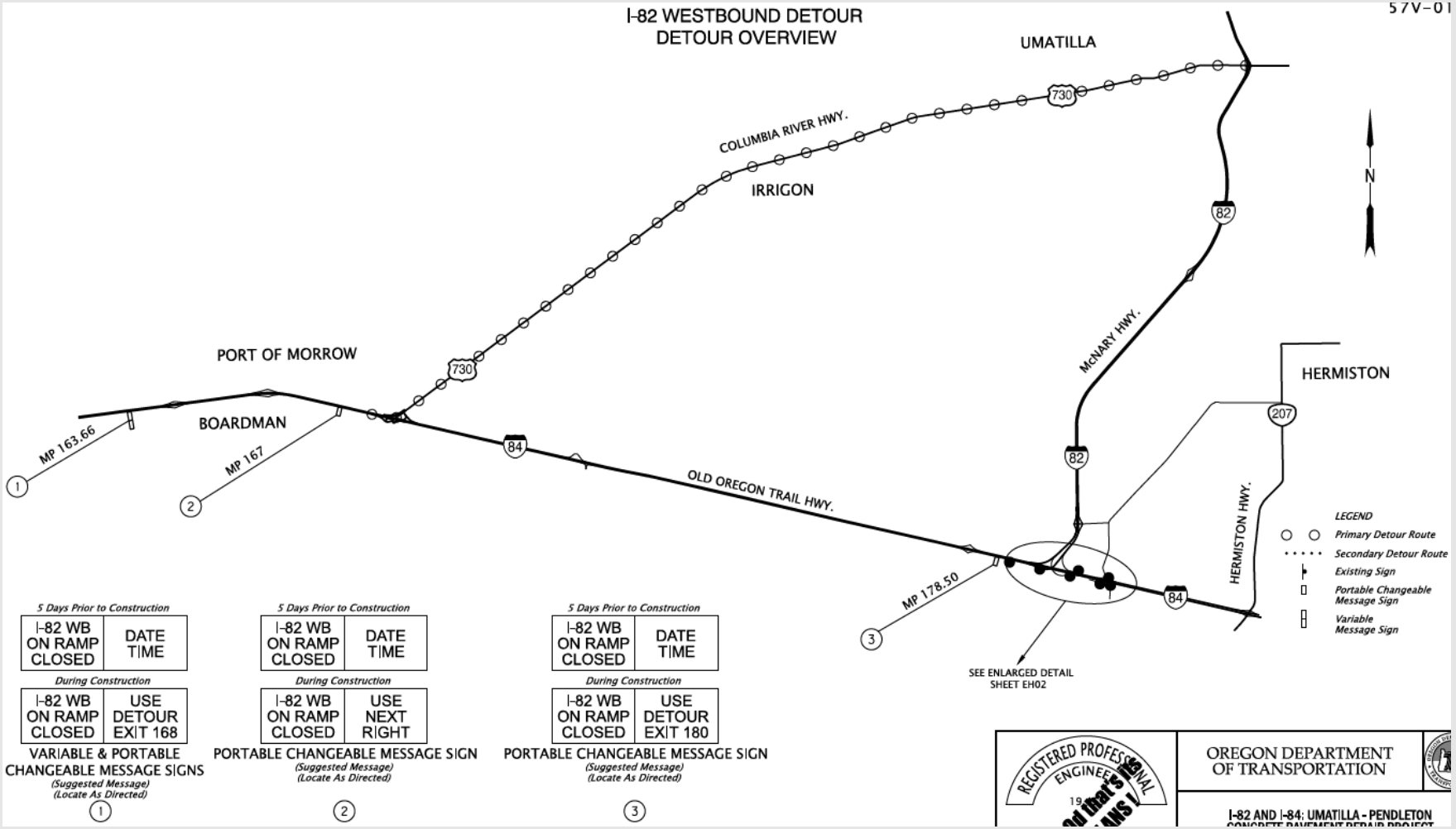
## Ramp Closure With Detour




- I-84 EB Exit 179 Off-Ramp Closure (estimated June 2024)
- Detour: traffic will take exit 168 to US730 & re-enter I-82 WB MP 1.
- Closures will occur at nighttime and traffic will be detoured as detailed above.

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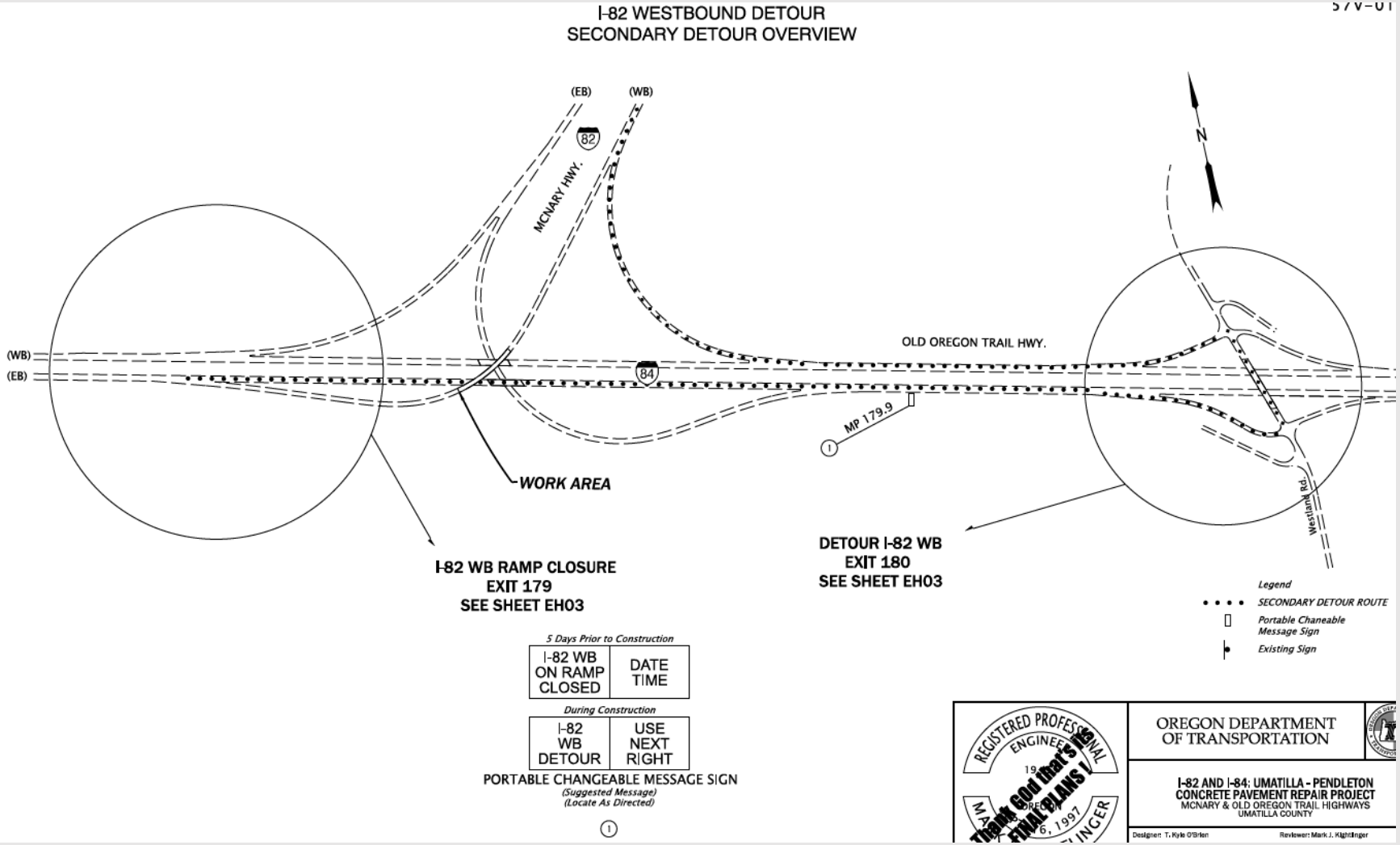
## Ramp Closure With Detour




- I-84 EB Exit 179 Off-Ramp Closure (estimated June 2024)
- Detour: traffic will take exit 180 to Hermiston Rd. & re-enter I-84 EB to take exit 179 to I-82 WB.
- Closures will occur at nighttime and traffic will be detoured as detailed above.

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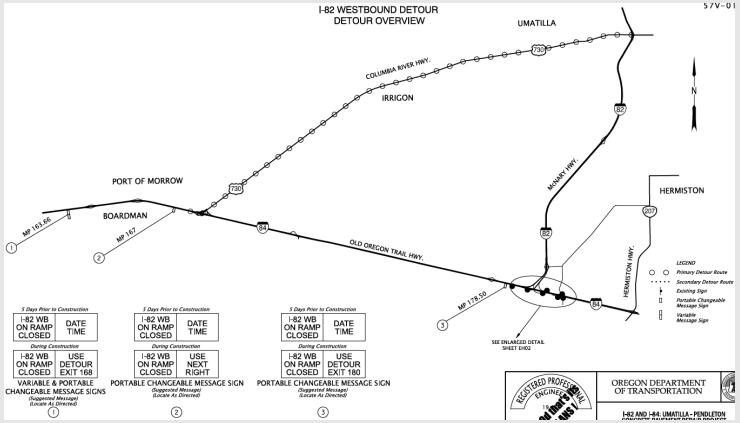
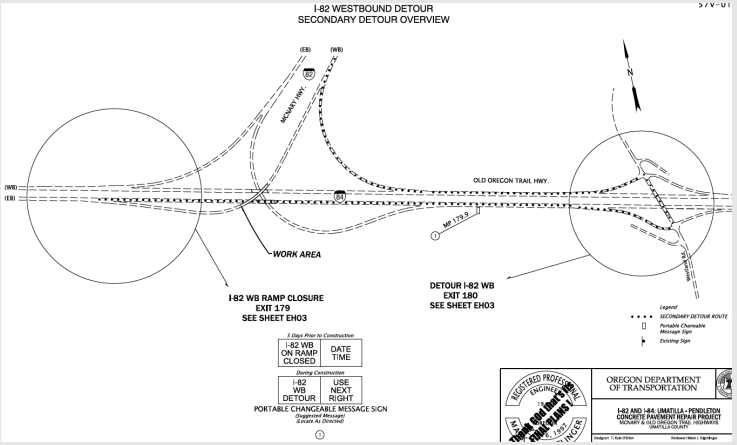
## Ramp Closure With Detour




**Ramp Closure Details:**

- Allowable closure months/days/hours per specifications:
  - March 1 – November 15 – 2, 5 Consecutive nighttime periods between ½ hour after sunset and ½ hour before sunrise
- Indicate estimated number of closures needed, and which month/year they are estimated to occur.
  - 2 Closures – Estimated Construction Season 2024

**A viable detour route for freight that is affected by the ramp closure is required:**

- Has the detour been used by freight before?
  - Yes
- Evaluate/determine if it's approved for the same type of freight and oversize loads that currently use the route that's being closed. This includes standard freight (WB67s) and oversize loads operating under an annual or single trip permit.
  - Completed
- Ensure the proposed freight/oversize detour has been checked/cleared of any width, height, weight, or length restrictions (and truck turning movements have been evaluated).
  - Completed
- Ensure it has been approved by the appropriate jurisdiction (e.g. city, county, or ODOT District Office).
  - Completed
- Ensure it will be available and free of any project related restrictions at the same time.
  - Completed

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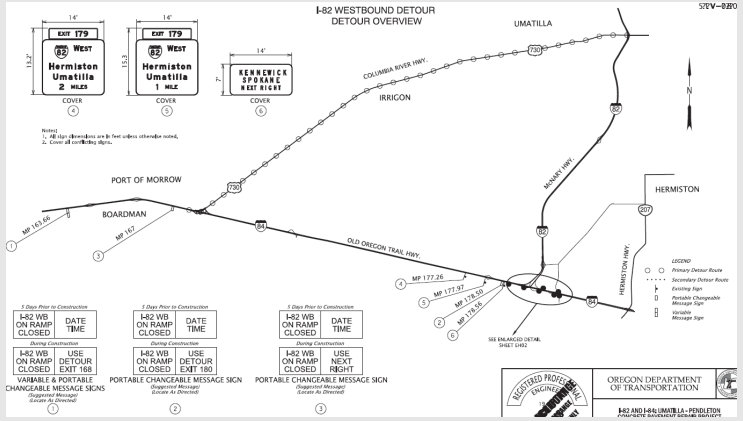
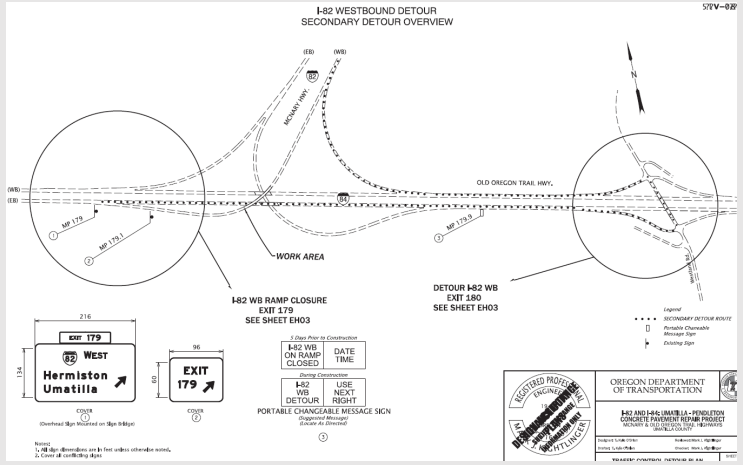
## Ramp Closure With Detour




**Additional Considerations:**

- Provide estimated delay/travel time.
  - Less than 20 minutes
- How will the detour route affect emergency services response times?
  - Minimal, there are several different access points to I82 that will remain open.
- Will vehicles transporting hazardous materials be able to use the planned detour route?
  - Yes
- Is there another detour route available if something happens to the proposed detour route?
  - Yes, there are several different access points to I82 that will remain open.

# PROJECT NAME

## Summary of Ramp Closures

| Ramp | Work Summary | Const. Year | Approx. Duration | Allowable Days/Hours | Detour |
|---|---|---|---|---|---|
| Ramp 179, EB, Off Ramp | Nighttime ramp closure on I82 "fly over" bridge (Exit 179; BR16452) | 2024 | Exact dates for these potential windows are not provided. | 2 periods of 5 consecutive day nighttime closures | • Traffic will take exit 168 to US730 & re-enter I-82 WB MP 1.<br>• Traffic will take exit 180 to Hermiston Rd. & re-enter I-84 EB to take exit 179 to I-82 WB. |

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## Estimated Concrete Paving Production

| Option | Paving Days EB | Paving Days WB | Paving Rate (Sq Yds/Day) |
|---|---|---|---|
| Single Lane Closures I-84 – 12 hr shift (DAYS) | 40 | 60 | 30 – 230 |
| Double Crossovers I-84 – 12 hr shift (DAYS) | 40<br>Construction of crossovers | 60<br>Already a crossover | 30 – 230<br>Depending on size and location of repair (100' vs. 1,000') |
| Single Crossover I-82 – 12 hr shift (DAYS) | 25 | 10 | 60 |
| Double Crossovers I-82 – 12 hr shift (DAYS) | 25<br>Varying bridge work, ITS work | 10<br>Varying bridge work, ITS work | 60 |

- I-82: Installation of a single crossover would not significantly increase paving rate, at a higher cost to the project. As well as the same reduction in Clear Width. Double Crossovers would have a higher impact to mobility, both EB and WB. ODOT has minimized mobility impacts through the current design.
- I-84: Installation of a double crossover would not increase the paving rate significantly but would add additional costs to the project.
- Double crossover could reduce the impact to time of bridge work but would increase impacts to mobility.

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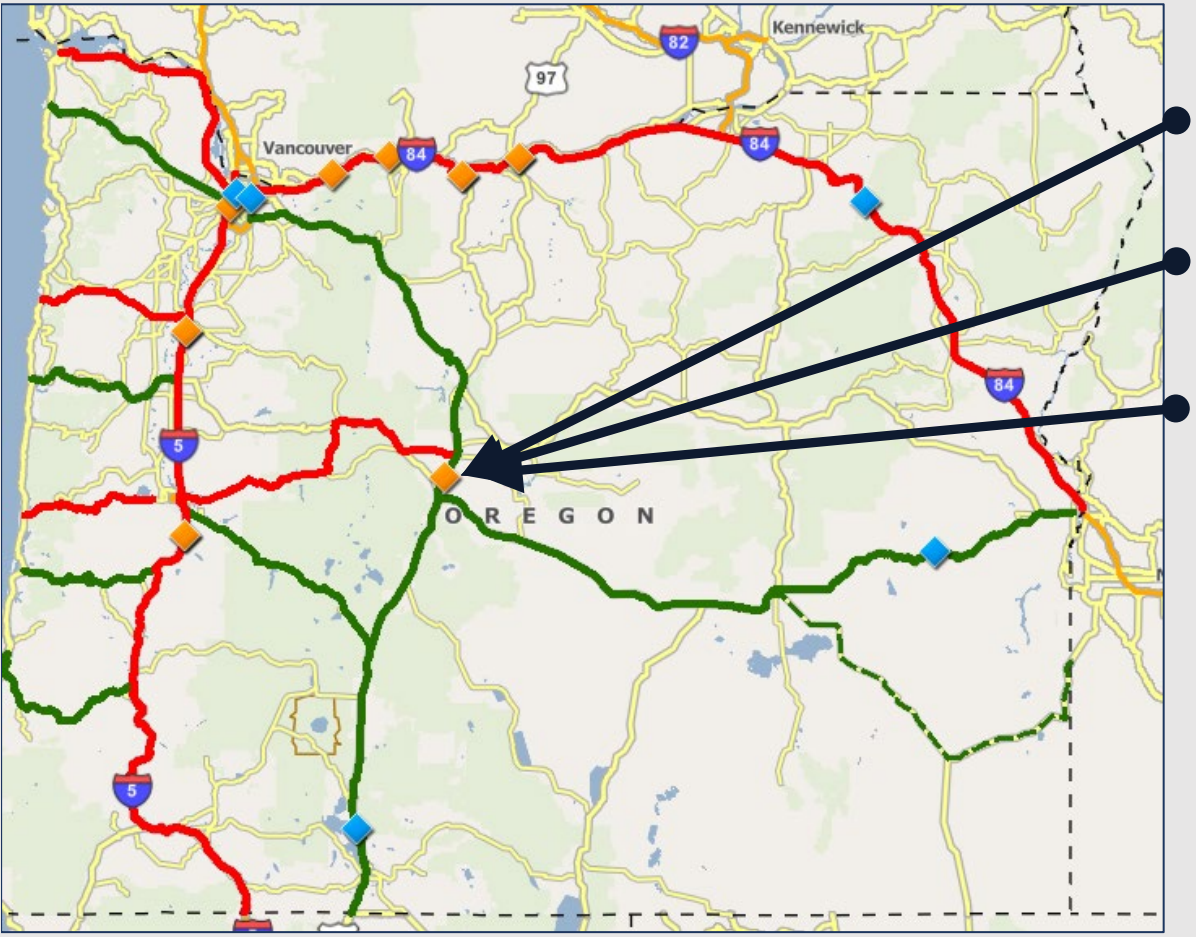
## Critical Route Pair & Oversize Load Accommodation




| Projects Taking Place at the Same Time on the Critical Route Pair |
| --- |
| **K21229: US97 and US20 Bend North Corridor:** Various height and width restrictions January 2023 thru December 2024 |
| **K21162: US97: Lower Bridge Way-NW 10th St (Terrebonne):** 14 foot to 18 foot wide load restrictions March 2024 thru September 2024 |
| **K21489: US20: 3rd St – 15th St (Greenwood, Bend):** 14 foot width restrictions November 2023 thru November 2024 |

### Summary

- R4 has a dedicated alternate route that is unencumbered utilizing US26 & George Millican Road

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## Work Zone Safety Strategies Identified

- Road closures
- Law enforcement presence
- Construction speed zone reductions
- Radar speed trailers
- Concrete Barrier – separate workers from traffic
- Truck Mounted Impact Attenuators
- Crossovers

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## Summary of All Proposed Restrictions from Presentation

| Size/Weight Restriction or Road/Ramp Closure Information | Affected Direction of Travel | Work Summary Very brief (word or phrase) to describe work | Const. Year | Approx. Restriction Duration | Allowable Closure Days/Hours | Annual Oversize Loads Restricted?(Y or N) | Can Oversize loads be accommodated? |
|---|---|---|---|---|---|---|---|
| Staging from Single Lane & two-lane-two way traffic, closures will provide 20 feet of width between barriers for traffic, resulting in 18 foot width load restriction. | I-84 MP 188 – MP 203 EB/WB | Crossover construction, concrete and shoulder repairs | 2024 | 04/24 – 10/24 | At all times | No | Between Stage I and Stage II |
| Exit 179 EB off ramp closure | I-84 MP 179 EB | Bridge work | 2024 | 04/24 – 10/24 | 2 X 5 consecutive nighttime periods ½ hour after sunset and ½ before sunrise | Yes | Yes, with detour |
| Staging from Single Lane closures will provide 18 feet of width between barriers for traffic, resulting in 16 foot width load restriction. | I-82 MP 0.40 to 1.10 EB/WB | Concrete repairs, bridge work, and ITS work | 2025 | 04/25 – 09/25 | At all times | No | No |

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## Next Steps

- Questions
- Follow-up items
- Request support for Project Mobility Considerations Checklist Sign-Off

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# THANK YOU

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