South Stage Road Extension Plan

# Technical Memorandum

May 30, 2024

Project# 27003.014

To: Lisa Cornutt, Oregon Department of Transportation

Karl MacNair, City of Medford

From: Marc Butorac, PE, PTOE, PMP; John McPherson, AICP (HDR), Matt Bell, Amy Griffiths, PE

RE: Task 5.1.3B: Concept Analysis

## INTRODUCTION

This memorandum documents the high-level technical and economic feasibility assessment and preliminary environmental screening of the initial alternatives developed according to the South Stage Overpass (and Underpass) and I-5/South Stage Interchange overarching solution scenarios[1]. Based on the information documented herein, the project team recommends eight alternatives to be advanced for further consideration.

## TECHNICAL FEASIBILITY

Each of the initial 16 alternatives assumed to meet the Purpose and Need was reviewed by the project team using conceptual horizontal and vertical alignments based on the design criteria established in TM #3.1.4: Structural and Constructability Methodology and Assumptions. Next, the constructability was assessed (see Attachment A for the high-level constructability assessment). Based on this review and assessment, the following alternatives were deemed not technically feasible and are proposed to be eliminated from further consideration.

- **South Stage Underpass (Option 2): Alternative O-5** - This vertical alignment was determined **not to be technically feasible**. The alternative would tunnel under I-5 and Bear Creek. The tunnel would require approximately 30 feet of wet soil clearance under the creek, resulting in an approximate 50-foot minimum depth tunnel. Given the proximity of

[1] Technical Memorandum (TM) #5.1.1 - Range of Alternatives provides greater documentation on the initial alternatives. Overarching scenarios were screened in TM #5.1.3.1 - Transportation Analysis Screening; the results of this screening indicated that only the South Stage Overpass and I-5/South Stage Interchange scenarios could meet the Purpose and Need.

Bear Creek to OR99, there is not enough road length to develop an acceptable vertical profile (i.e., the roadway grade would exceed design standards) under the creek nor is there enough to tie into the existing highway. The vertical profile would also make it challenging to connect South Stage Road to the existing Samike Drive and the San George Estates access.

- **Glenwood Road Alignment: Alternative O-8 -** The location of Glenwood Road approximately halfway south along OR99 between South Stage Road and Phoenix Road has limited utility in offloading the South Medford Interchange, introduces a break in the east-west continuity of the South Stage corridor, and creates a new intersection along OR99. These features are not consistent with the Overpass Scenario. In addition, the alternative would require right-of-way (ROW) directly from identified environmental justice (EJ) properties located immediately north and south of Glenwood Road east of OR99. Due to the marginal transportation utility of the southern alignment, proximity to the Phoenix Road Interchange, and potential EJ impacts, this alternative was deemed **not to be technically feasible** nor supported by the findings of the Overpass Scenario in TM #5.1.3.1: Transportation Analysis Screening. As such, it would not meet the Purpose and Need of this project.
- **I-5 South Stage Left-Lane Merge for NB On-Ramp: Alternative I-6** – The introduction of a left-lane merge for the northbound on-ramp at South Stage Road runs contrary to FHWA and ODOT standard practice as it introduces driver expectation issues (the majority of interchange throughout the country and all interchanges in the immediate vicinity have right-lane merge and diverge movements for ramps). Further, it introduces a short, potentially challenging, and likely unsafe weave section for vehicles entering from South Stage on the left side and then attempting to exit at the South Medford interchange on the right-side and having to weave across the two northbound travel lanes. Due to the inherent safety concerns with the weaving at this location and driver expectations, this alternative was deemed **not to be technically feasible** given other alternatives with traditional right-hand merge movements and equal or lesser potential economic and environmental impacts.

The remaining alternatives (O-1, O-2, O-3, O-4, O-6, O-7, I-1, I-2, I-3, I-4, I-5, I-7, and I-8) were all found to be technically feasible and were advanced for further consideration.

# ECONOMIC FEASIBILITY

The economic feasibility assessment was based on the magnitude of construction cost opinion range (in 2024 dollars) and the right-of-way, existing building structure, and other infrastructure impacts compared to operational effectiveness. Details of the factors used to determine economic feasibility of the technically feasible overpass and interchange alternatives are shown in Tables 1 and 2, respectively.

**Table 1 – Overpass Alternative Economic Factors**

| | | O-1 | O-2 | O-3 | O-4 | O-6 | O-7 |
|---|---|---|---|---|---|---|---|
| **Description** | Unit | South Stage Alignment | South Stage Southerly Realignment (Option 1) | South Stage Southerly Realignment (Option 2) | South Stage Underpass (Option 1) | South Stage Northerly Realignment | Lower I-5 NB Travel Lanes |
| **Total Right-of-Way Impacts** | SF | 609,400 | 611,800 | 620,500 | 611,800 | 864,700 | 609,400 |
| **Existing Structure Impacts** | each | - | - | - | - | 3 | - |
| **Initial Cost Opinion - Low** | | $109.1M | $127.9M | $138.8M | $162.0M | $233.7M | $172.8M |
| **High** | | $141.8M | $166.3M | $180.4M | $210.6M | $303.8M | $224.6M |

Color Coding: Green indicates least impact/cost by factor, orange indicates medium impacts/cost by factor, and red indicates highest impact/cost by factor.

**Table 2 – Interchange Alternative Economic Factors**

| | | I-1 | I-2 | I-3 | I-4 | I-5 | I-7 | I-8 |
|---|---|---|---|---|---|---|---|---|
| **Description** | Unit | South Stage Alignment | South Stage Southerly Realignment (Option 1) | South Stage Southerly Realignment (Option 2) | South Stage Underpass Interchange | South Stage Diverging Diamond | South Stage Single Point Urban Interchange | I-5 South Stage Partial Split-Diamond Interchange |
| **Total Right-of-Way Impacts** | SF | 1,437,300 | 1,176,300 | 1,259,600 | 1,176,300 | 871,600 | 660,600 | 2,107,700 |
| **Existing Structure Impacts** | each | - | 2 | - | 2 | - | - | - |
| **Initial Cost Opinion - Low** | | $134.6M | $139.8M | $145.1M | $172.7M | $186.6M | $248.6M | $223.6M |
| **High** | | $175.0M | $181.7M | $188.6M | $224.5M | $242.6M | $323.2M | $290.7M |

Cost Opinion Ranges are for Comparative Purposes Only

# Operational Effectiveness

TM #5.1.3.1: Transportation Analysis Screening indicated the necessary capacity needs for alternatives under the Overpass and Interchange Scenarios. The Overpass Scenario found that a 3-lane connection between OR99 and North Phoenix Road would be effective in meeting the Purpose and Need. The Interchange Scenario found that the forecasted turning movements could be effectively served by a 3-lane connection between OR99 and North Phoenix Road, traditional diamond signalized interchange terminals with right- and left-turn lanes, and the ability to expand to five lanes east of I-5. Thus, interchange forms producing more capacity are not necessary unless there was a direct cost savings to construct alternative (i.e., smaller bridge structures, less right-of-way impacts, etc.) or an obvious reduction in impacts to the natural environment. The following alternatives introduced enhanced interchange characteristics exceeding the project needs, while not demonstrating obvious benefits that would outperform other technically feasible alternatives:

- **South Stage Diverging Diamond: Alternative I-5**
- **I-5 South Stage Single Point Interchange: Alternative I-7**
- **I-5 South Stage Partial Split-Diamond Interchange: Alternative I-8**

## Magnitude of Construction Cost Opinions

The initial construction cost opinions shown in Tables 1 and 2 indicated a range of $109 million to $323 million for the technically feasible alternatives (see Attachment B for the initial alternative magnitude of cost opinion ranges). The following interchange alternatives exceed the transportation needs of the project and do not provide reduced right-of-way, existing build structure, and/or other infrastructure impacts nor demonstrate obvious benefits that would outperform other technically feasible alternatives:

- **Lower I-5 Northbound Travel Lanes: Alternative O-7**
- **South Stage Diverging Diamond: Alternative I-5**
- **I-5 South Stage Single Point Interchange: Alternative I-7**
- **I-5 South Stage Partial Split-Diamond Interchange: Alternative I-8**

## Right of Way, Existing Building Structure, and Other Infrastructure Impacts

Each alternative requires additional right-of-way and have the potential to impact existing building structures and other infrastructure. The following alternative was found to have larger impacts, while not demonstrating obvious benefits that would outperform other technically feasible alternatives:

- **South Stage Northerly Realignment: Alternative O-6**

  This alternative had the highest right-of-way impact (864,700 SF), impacted 3 existing building structures, and would require a new rail crossing west of OR99.

Based on this assessment, the following alternatives were deemed not to be economically feasible due to their relative cost opinions to alternatives with adequate capacity and lesser right-of-way, existing building structure, and other infrastructure impacts and are proposed to be eliminated.

- **South Stage Northerly Realignment: Alternative O-6**
- **Lower I-5 Northbound Travel Lanes: Alternative O-7**
- **South Stage Diverging Diamond: Alternative I-5**
- **I-5 South Stage Single Point Interchange: Alternative I-7**
- **I-5 South Stage Partial Split-Diamond Interchange: Alternative I-8**

The remaining alternatives (O-1, O-2, O-3, O-4, I-1, I-2, I-3, I-4) were found to be technically and economically feasible and advanced for further consideration.

# ENVIRONMENTAL SCREENING

The project team used the environmental resource and topographical constraints map from TM #5.1.3.2: Concept Level Environmental Screening (see Figure 1 below) and the initial single-line horizontal and vertical alignments to conduct an initial environmental screening. This screening measures:

- Potential Park Impacts
- Potential Wetland and Water Impacts
- Potential Environmental Justice Impacts
- Potential Flood Plain Impacts
- Potential Historic Resource Impacts
- Potential Community Cohesion Impacts
- Potential Number of Developed Parcels with Potential ROW Takes
- Potential Number of Undeveloped Parcels with ROW Takes
- Potential Number of Structures Requiring Removal
- Potential Total ROW Acreage Needed

Table 3 summarizes the potential impacts of technically and economically feasible alternatives and provides an initial ranking of alternatives within each category.

**Figure 1 – Environmental Resources and Topographic Constraints**

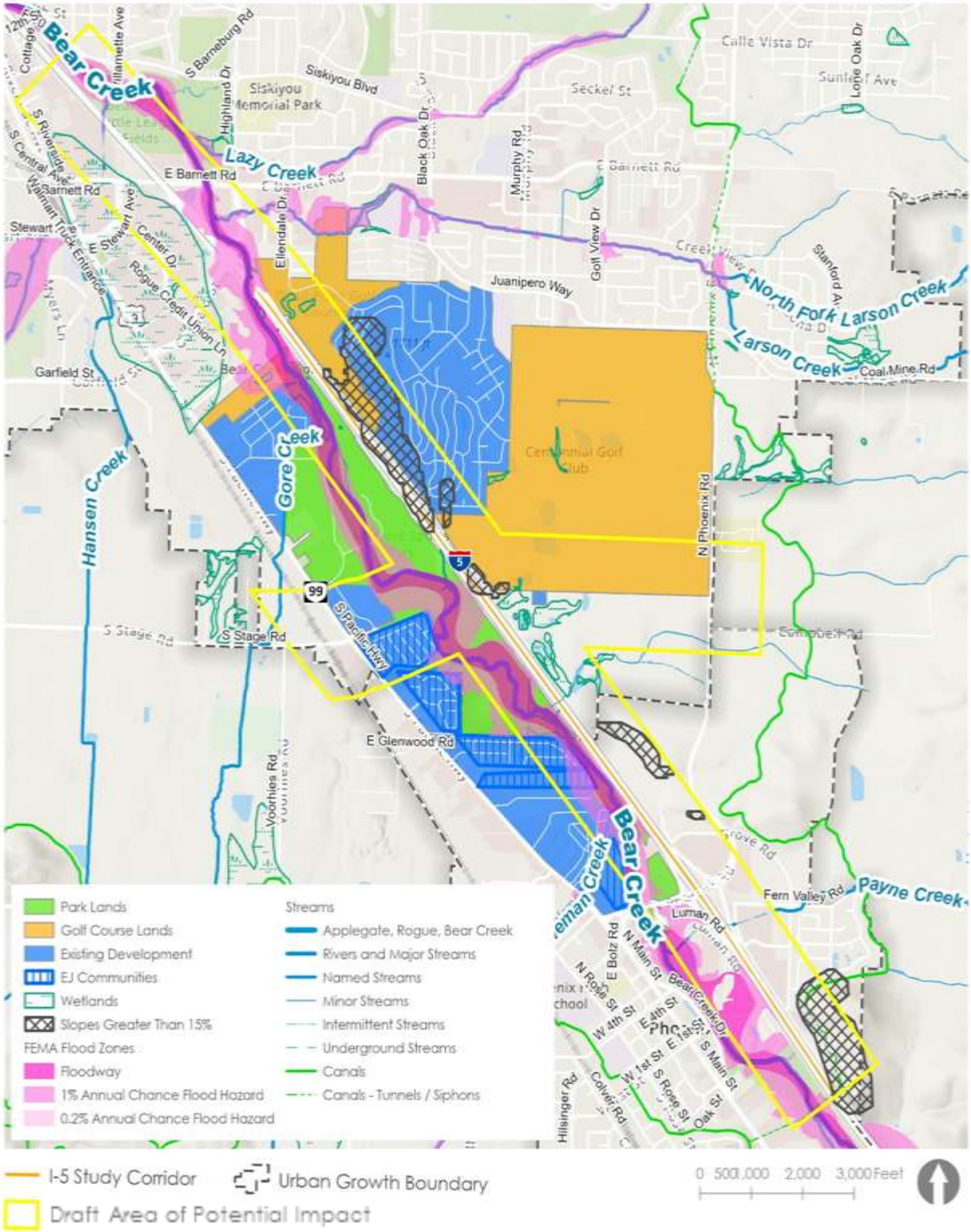


**Table 3: Potential Environmental Impacts of the Proposed Technically and Economically Feasible Alternatives**

| Measure | Alternative O-1 | Alternative O-2 | Alternative O-3 | Alternative O-4 | Alternative I-1 | Alternative I-2 | Alternative I-3 | Alternative I-4 |
|---|---|---|---|---|---|---|---|---|
| **Park**[1] | 146,000 SF | 172,400 SF | 172,400 SF | 172,400 SF | 488,000 SF | 369,200 SF | 421,200 SF | 514,400 SF |
| ***Rank*** | *1* | *2* | *2* | *2* | *5* | *3* | *4* | *6* |
| **Wetlands and Waters**[1] | 3,170 SF | 46,260 SF | 24,110 SF | 46,260 SF | 58,450 SF | 101,540 SF | 79,390 SF | 101,540 SF |
| ***Rank*** | *1* | *3* | *2* | *3* | *4* | *6* | *5* | *6* |
| **Environmental Justice** | No acquisitions. Noise and air quality effects to San George Estates | No acquisitions. Noise and air quality effects to San George Estates | No acquisitions. Noise and air quality effects to San George Estates | No acquisitions. Noise and air quality effects to San George Estates. At grade proximity to property | No acquisitions. Noise and air quality effects to San George Estates | No acquisitions. Noise and air quality effects to San George Estates | No acquisitions. Noise and air quality effects to San George Estates | No acquisitions. Noise and air quality effects to San George Estates. At grade proximity to property |
| ***Rank*** | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* |
| **Floodplains**[1] | 34,600 SF | 32,200 SF | 32,200 SF | 32,200 SF | 137,400 SF | 32,200 SF | 32,200 SF | 135,000 SF |
| ***Rank*** | *2* | *1* | *1* | *1* | *4* | *1* | *1* | *3* |
| **Historic Resources**[2] | None identified | None identified | None identified | None identified | None identified | None identified | None identified | None identified |
| ***Rank*** | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* |
| **Community Cohesion** | Does not split a neighborhood. | Does not split a neighborhood. | Does not split a neighborhood. | Does not split a neighborhood. | Does not split a neighborhood. | Does not split a neighborhood. | Does not split a neighborhood. | Does not split a neighborhood. |
| ***Rank*** | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* |
| **Number of developed parcels with potential ROW takes** | 3 developed parcels | 3 developed parcels | 3 developed parcels | 3 developed parcels | 3 developed parcels | 3 developed parcels | 3 developed parcels | 3 developed parcels |
| ***Rank*** | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* | *0 (Same)* |
| **Number of undeveloped parcels with potential ROW takes** | 6 undeveloped parcels | 5 undeveloped parcels | 5 undeveloped parcels | 5 undeveloped parcels | 8 undeveloped parcels | 7 undeveloped parcels | 7 undeveloped parcels | 7 undeveloped parcels |
| ***Rank*** | *2* | *1* | *1* | *1* | *4* | *3* | *3* | *3* |
| **Number of structures requiring removal** | - | - | - | - | - | 2 structures | - | 2 structures |
| ***Rank*** | *1* | *1* | *1* | *1* | *1* | *2* | *1* | *2* |
| **Total ROW acreage** | 609,400 SF | 611,800 SF | 620,500 SF | 611,800 SF | 1,437,300 SF | 1,176,300 SF | 1,259,600 SF | 1,176,300 SF |
| ***Rank*** | *1* | *2* | *3* | *2* | *6* | *4* | *5* | *4* |

[1] Impacts for parks, wetlands, and floodplains is based on worst case for fill. These impacts will be refined based on assumptions for columns.

[2] Detailed survey has not been completed

1 – Lowest impact; 6 = Highest impact > Colors are used to visually compare alternatives (Dark Green, Light Green, Yellow, Orange, and Red to highlight lowest to highest impact and denote similar impact levels)

Green Text > Indicated potential opportunity for less EJ noise and visual impacts due to South Stage being at-grade adjacent to the subject properties.

# ALTERNATIVES FOR FURTHER EVALUATION

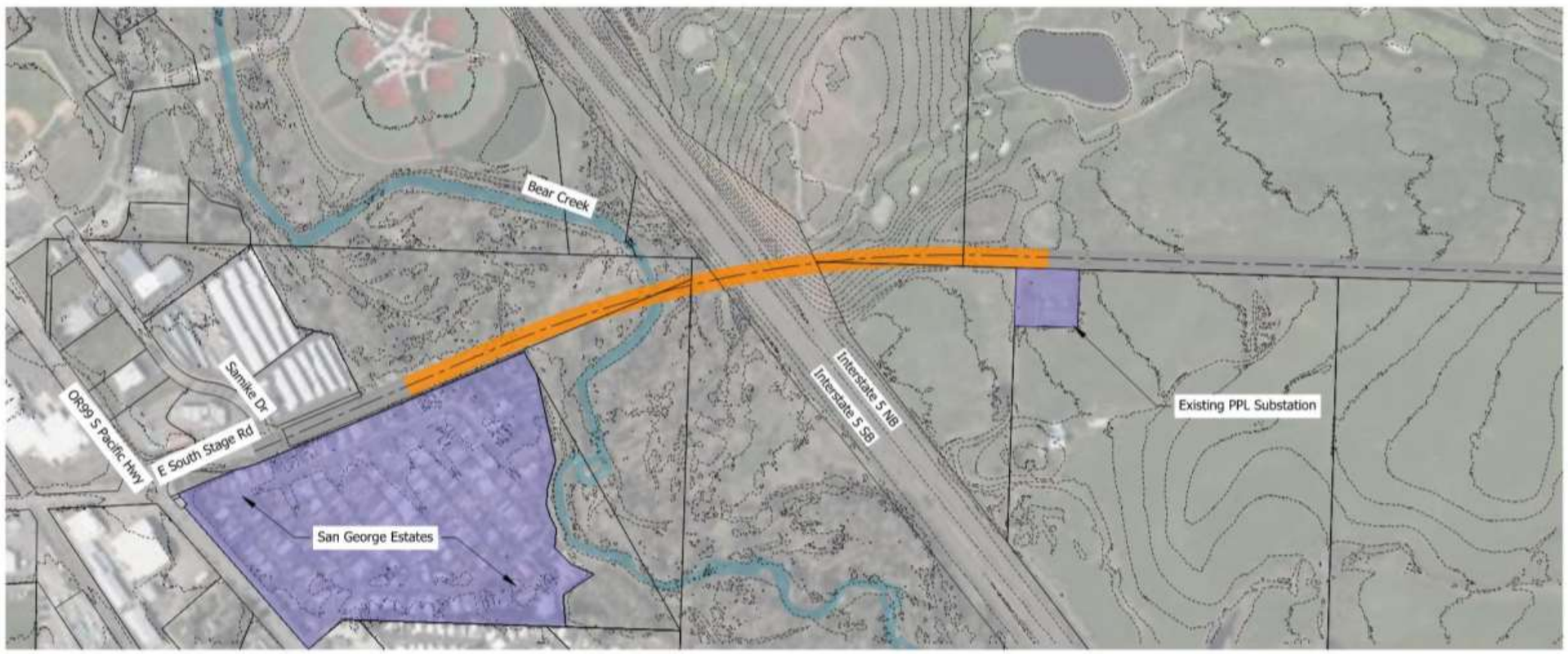
Based on screening for technical and economic feasibility and potential environmental impact factors, the project team recommends advancing the 8 remaining alternatives for further consideration and feedback from the PMT, PDT, PAC, system users, and community. During this review period, the project team suggests considering the following topics:

- **Interchange alternatives impact vs. benefit**: Given the footprint of the interchange alternatives, they have greater potential park, wetland and water, floodplain, and total ROW acreage impacts compared to the remaining Overpass and Underpass alternatives. These potential impacts and the associated interstate interchange spacing deviations on I-5 need to be weighed against the potential Purpose and Need benefits identified of the interchange versus the Overpass alternatives.
- **I-5 Overpass vs. Underpass alternative impacts and benefits:** Given the ability of the I-5 underpass alternatives (O-4 and I-4) to be potentially phased to a future interchange beyond 2045 and reduce the overall height of the South Stage Road vertical alignment in relation to nearby EJ properties, the potential reductions in noise and other environmental impacts should be examined.
- **Future interchange compatibility of Overpass alternatives:** Given the identified benefits of the interchange scenario according to the Purpose and Need performance measures and the anticipated growth in the study area beyond year 2045 by the cities of Medford and Phoenix, the compatibility of the Overpass alternatives to accommodate potential future interchange ramps should be considered.

See Attachment C for renderings of the 8 remaining alternatives.

# Overpass (Underpass) Alternatives

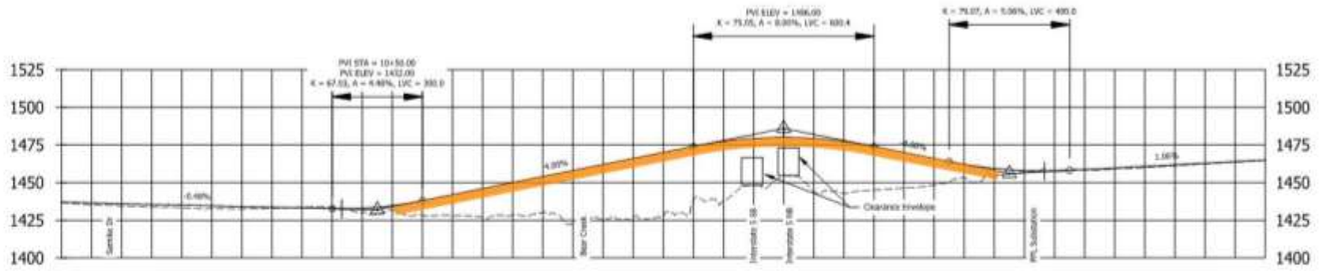
**South Stage Alignment: Alternative O-1**

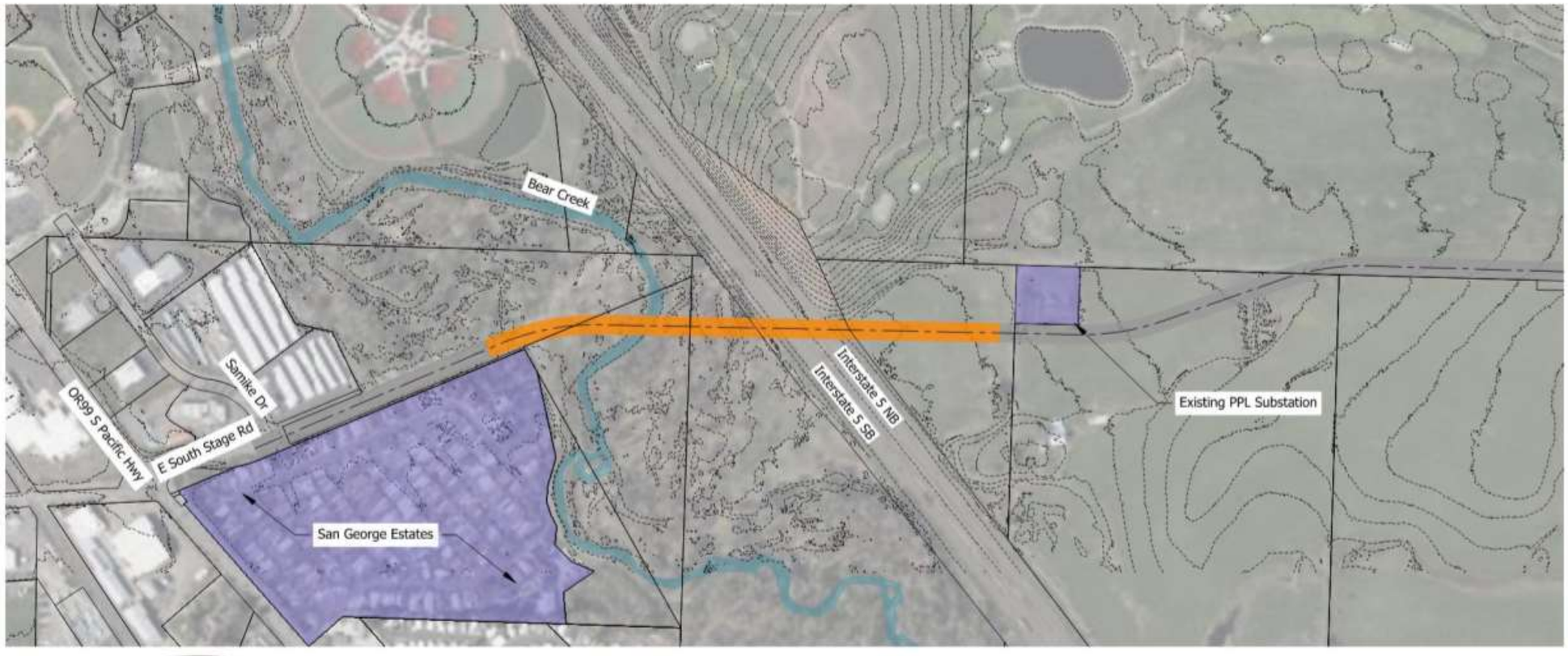




South Stage Road
Extension Plan

Figure O-1
Overpass Alternative 1

**South Stage Southerly Realignment (Option 1): Alternative O-2**

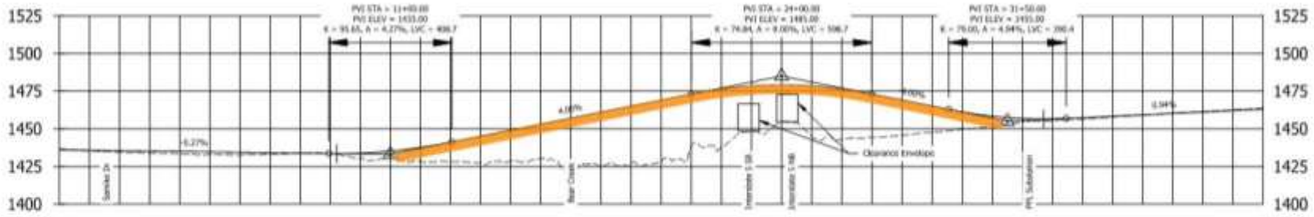


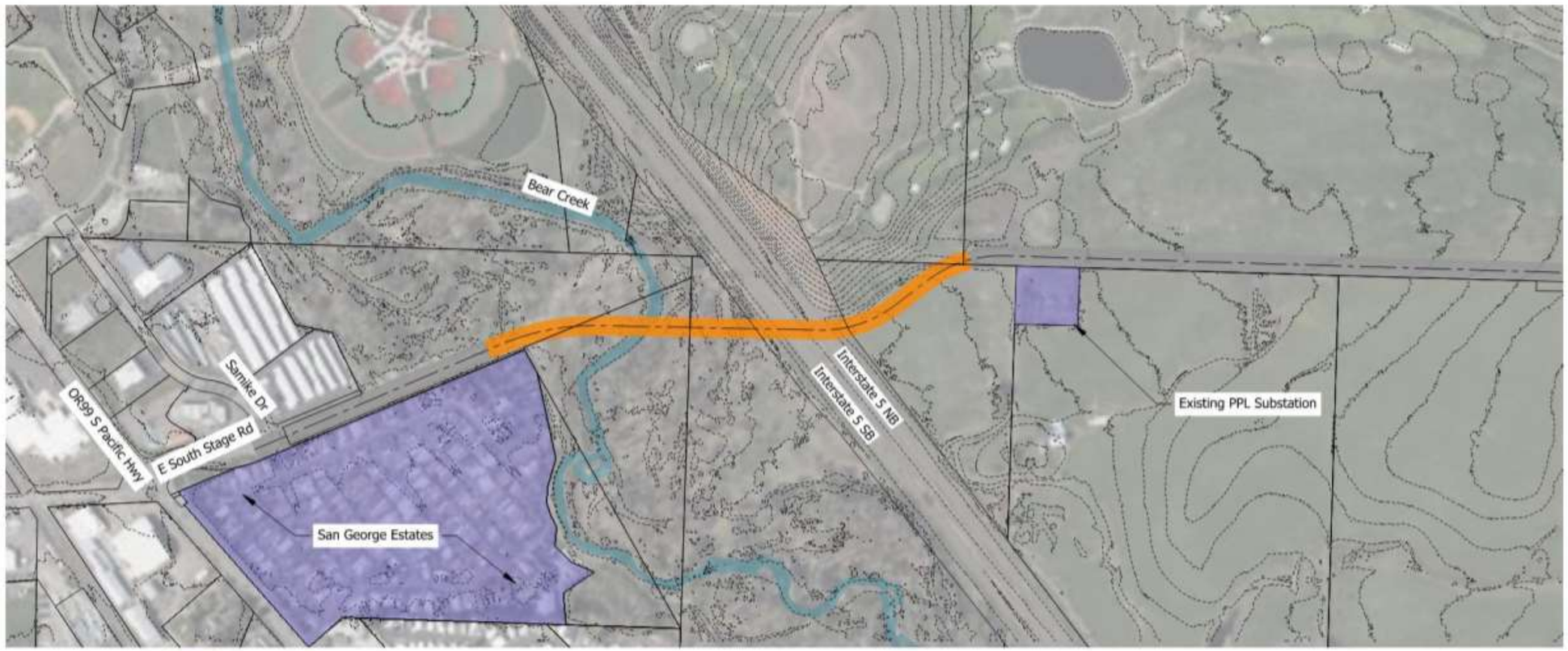




South Stage Road Extension Plan

Figure O-2
Overpass Alternative 2

**South Stage Southerly Realignment (Option 2): Alternative O-3**

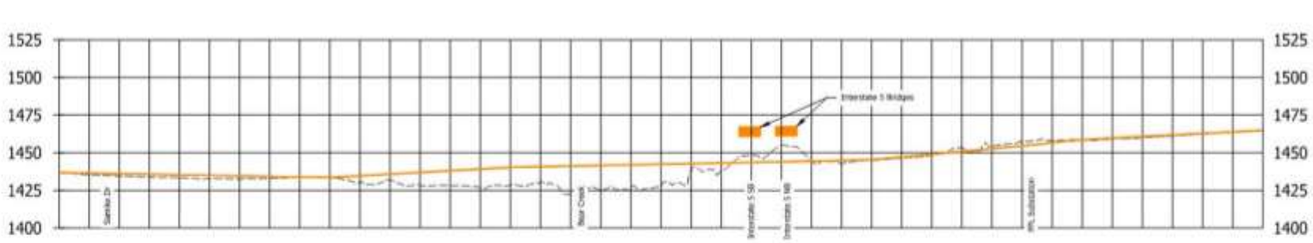


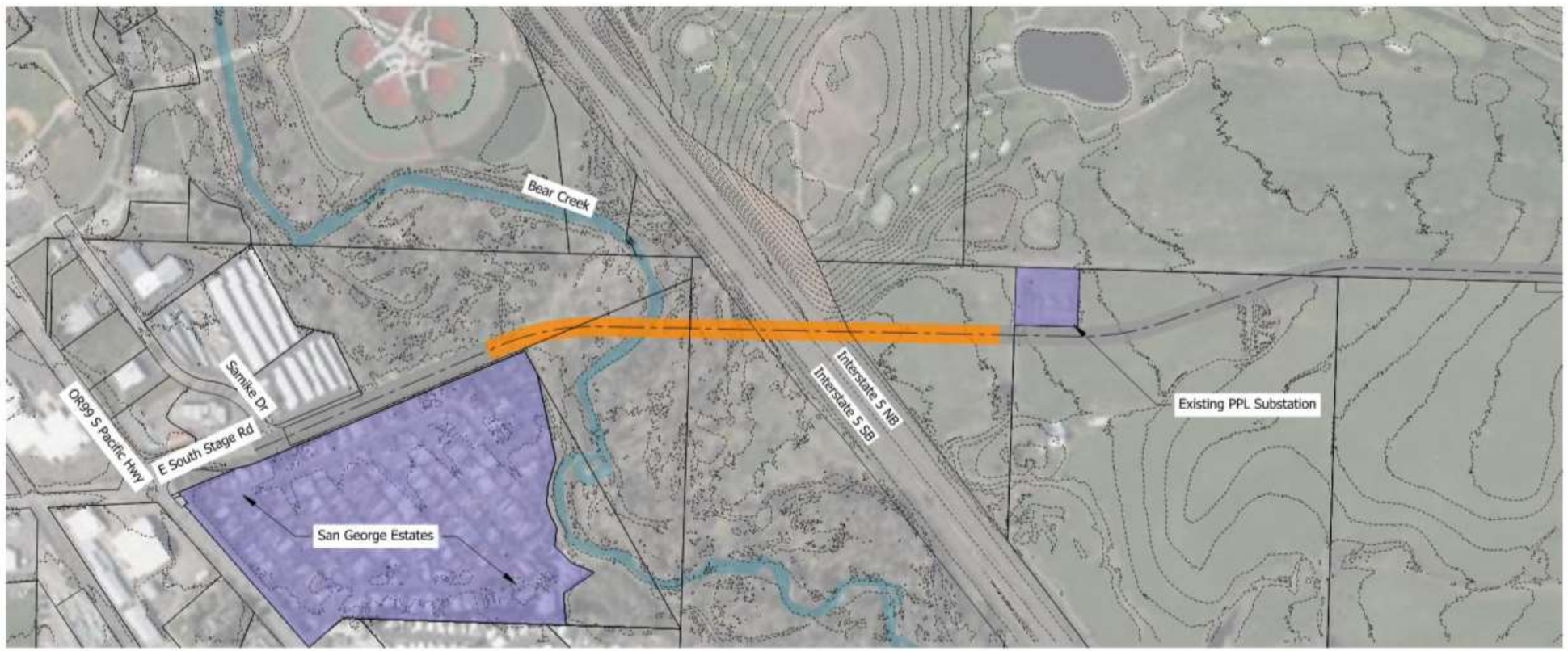




South Stage Road
Extension Plan

Figure O-3
Overpass Alternative 3

**South Stage Underpass (Option 1): Alternative O-4**



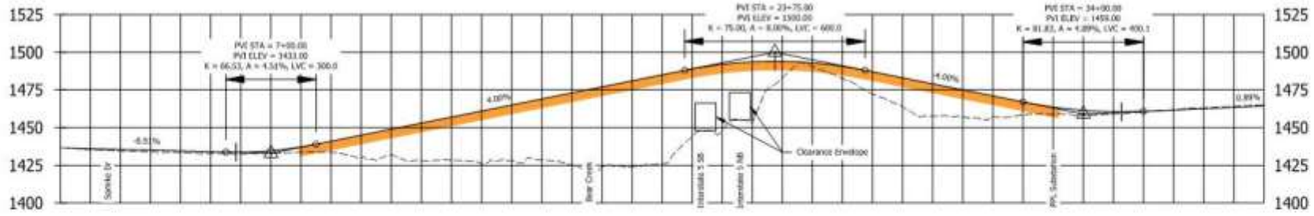



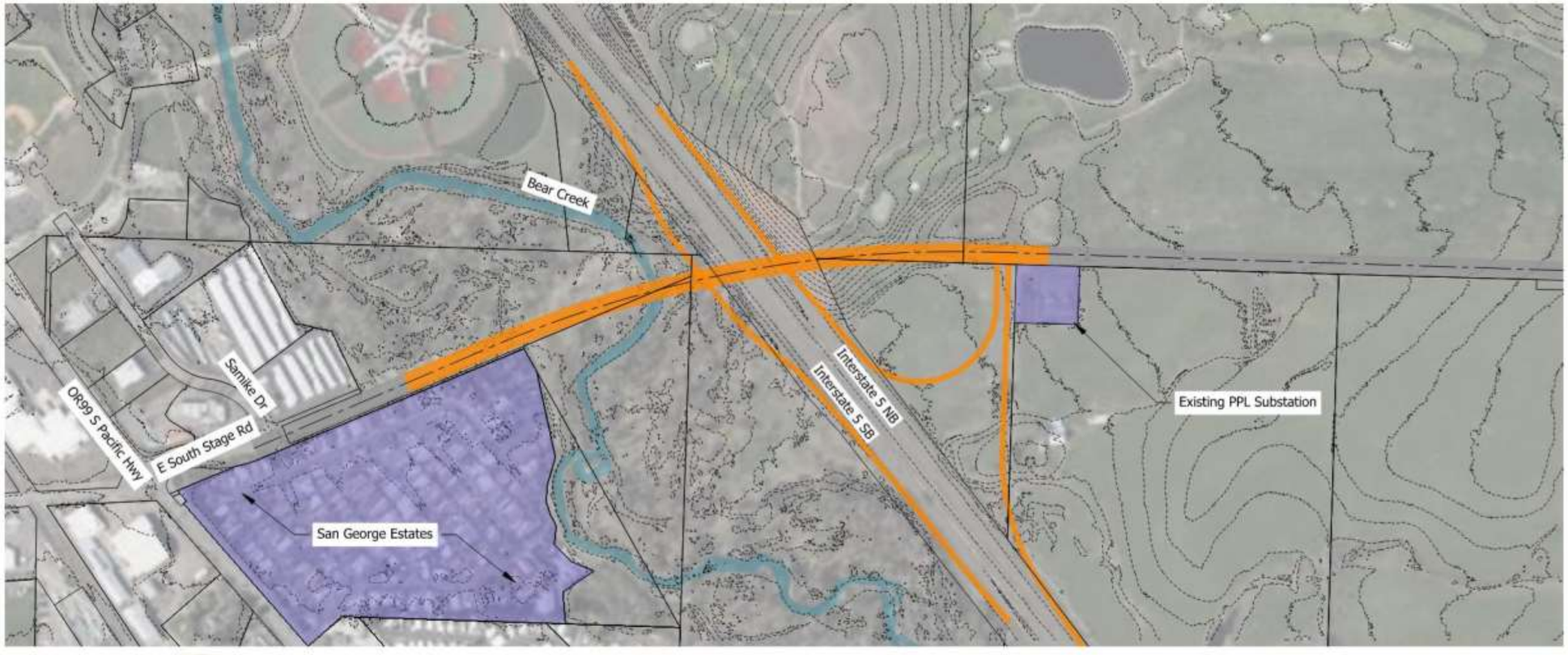

South Stage Road
Extension Plan

Figure O-4
Underpass Alternative

# Interchange Alternatives

**South Stage Alignment: Alternative I-1**




South Stage Road
Extension Plan

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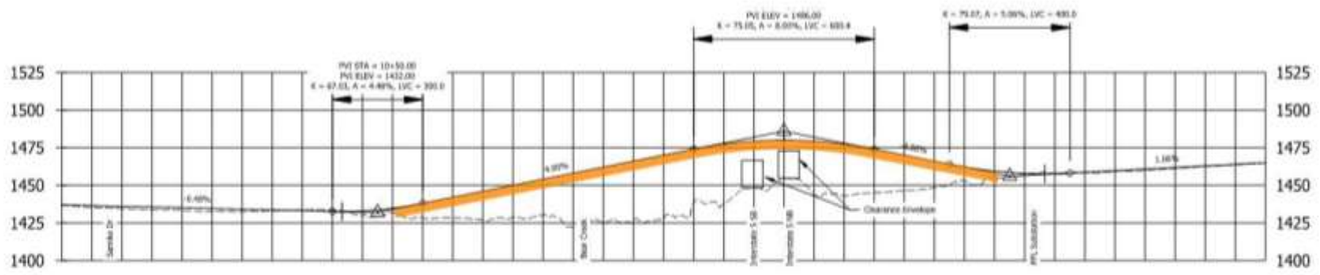
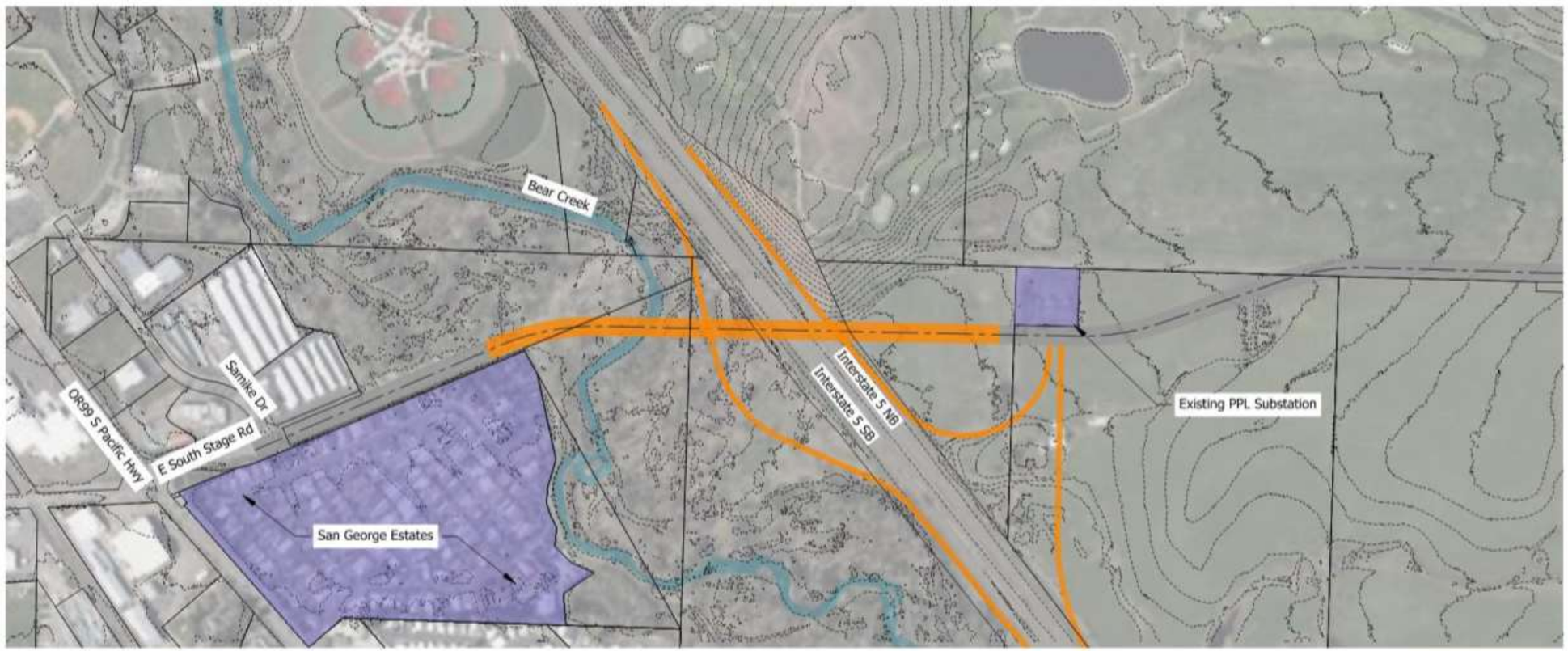
Figure I-1
Interchange Alternative 1

**South Stage Southerly Realignment (Option 1): Alternative I-2**

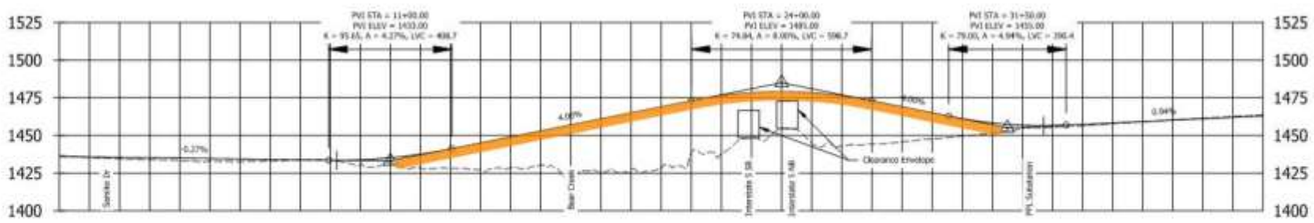


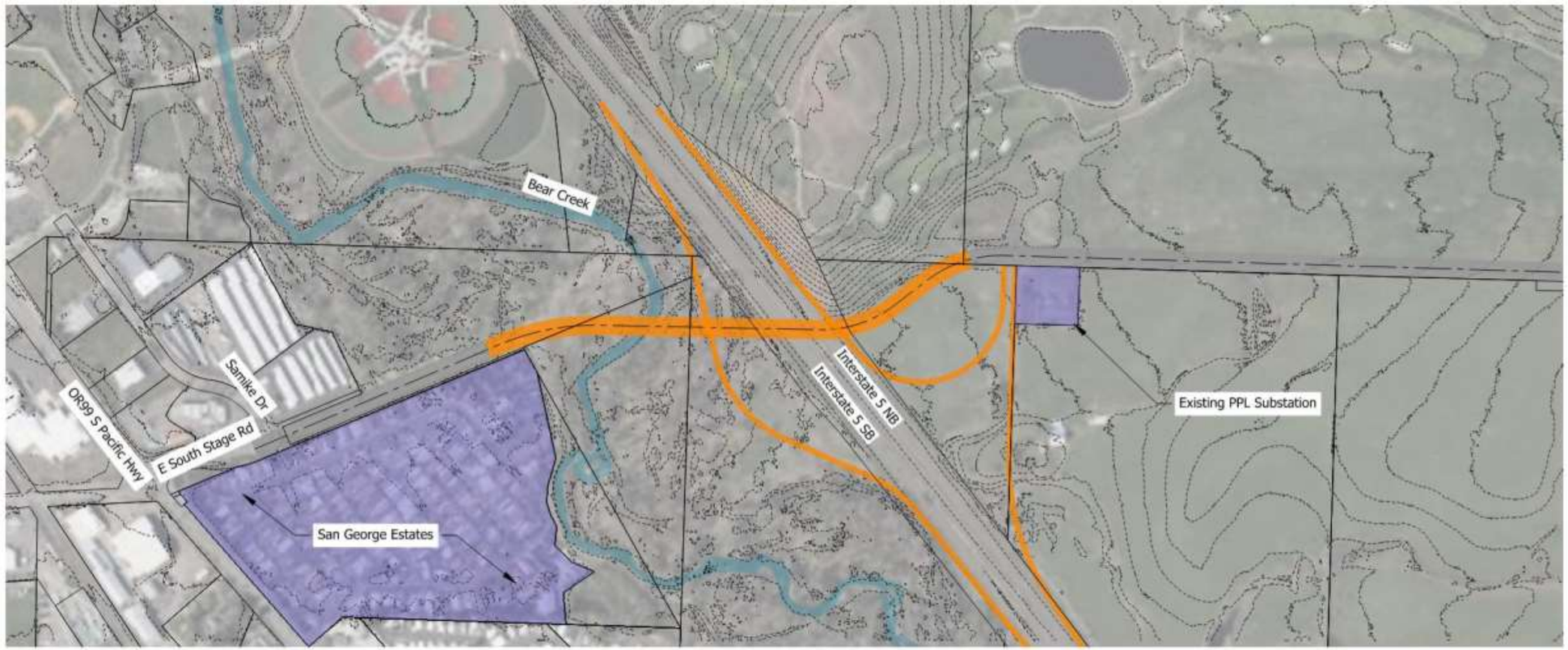




South Stage Road Extension Plan

Figure I-2
Interchange Alternative 2

**South Stage Southerly Realignment (Option 2): Alternative I-3**




South Stage Road
Extension Plan

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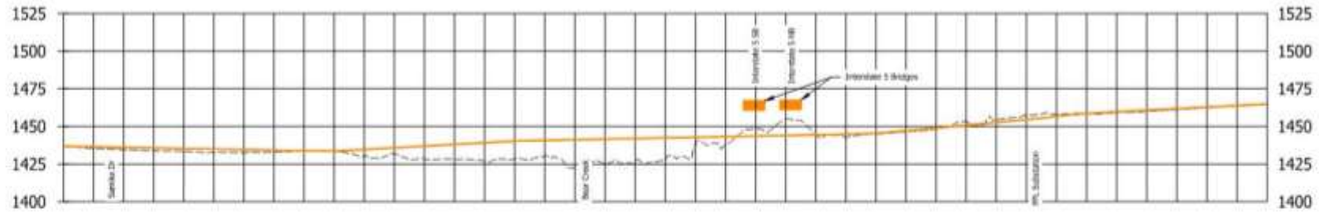
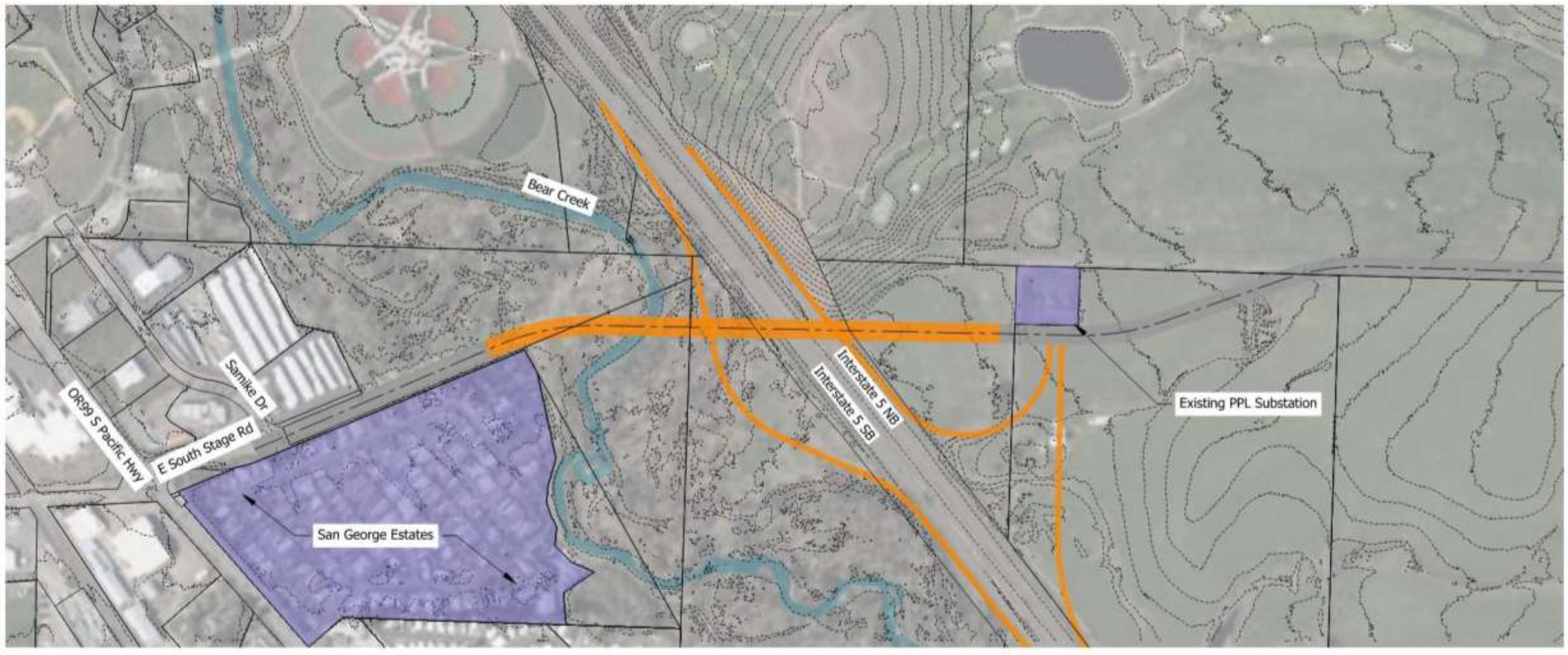
Figure I-3
Interchange Alternative 3

**South Stage Underpass Interchange: Alternative I-4**




South Stage Road Extension Plan

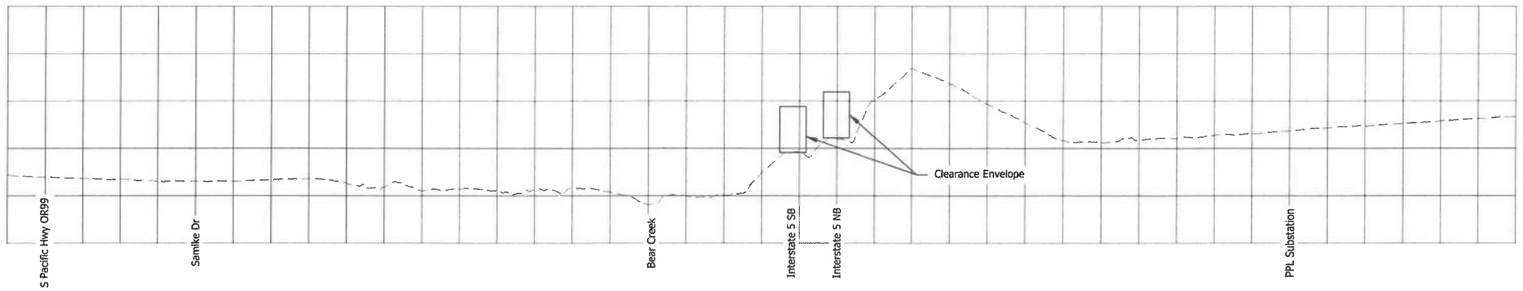
Figure I-4
Interchange Alternative 4

# NEXT STEPS

Viable solution scenarios based on the transportation analysis screening, the environmental screening, and the land use screening will be refined and evaluated further to identify a recommended alternative.

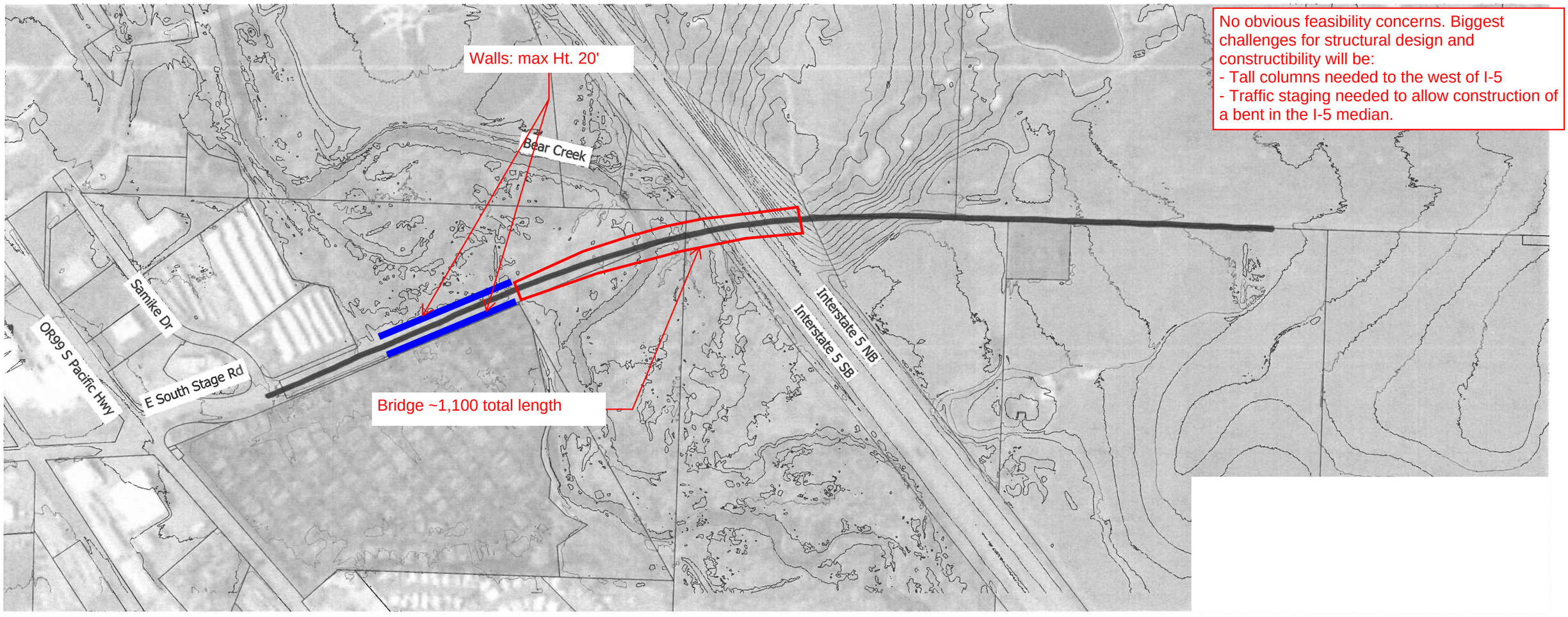
# ATTACHMENT A – HIGH LEVEL CONSTRUCTABILITY ASSESSMENT

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches




The contracted work for this project is based on desktop information and is at a planning level. Therefore, the information and analysis in this memo are preliminary, concept, planning-level information that will require additional engineering analysis and confirmation through more detailed data collection and design prior to implementation

No obvious feasibility concerns. Biggest challenges for structural design and constructibility will be:
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.




South Stage Road
Extension Plan

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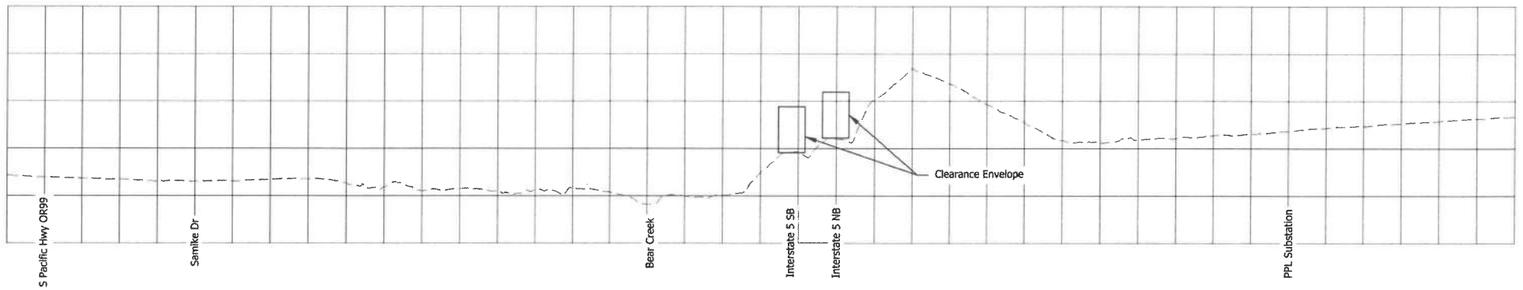
Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: ***01***
Email: _____

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches

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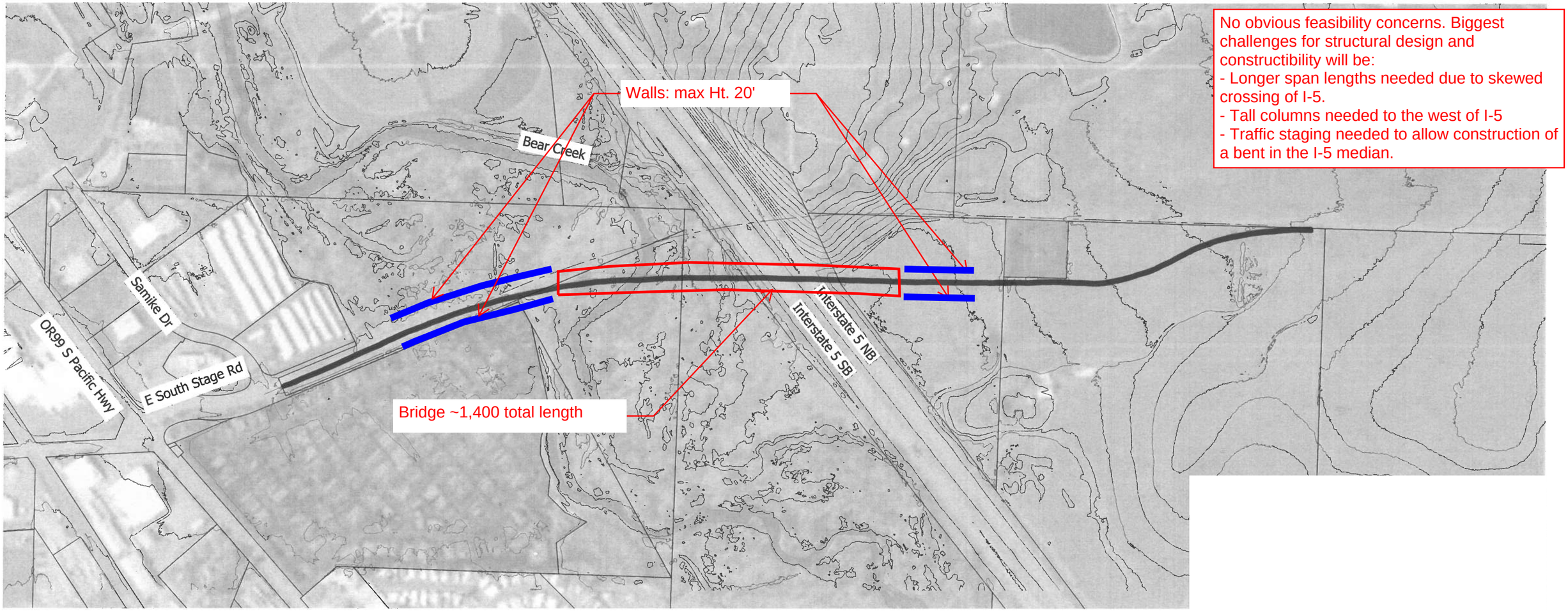


No obvious feasibility concerns. Biggest challenges for structural design and constructibility will be:
- Longer span lengths needed due to skewed crossing of I-5.
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.

South Stage Road
Extension Plan

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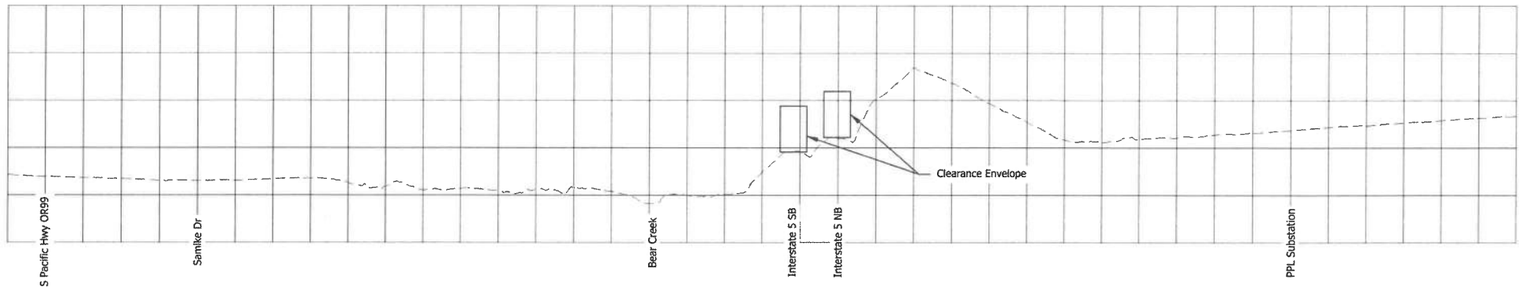
Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: 02
Email: _____

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches

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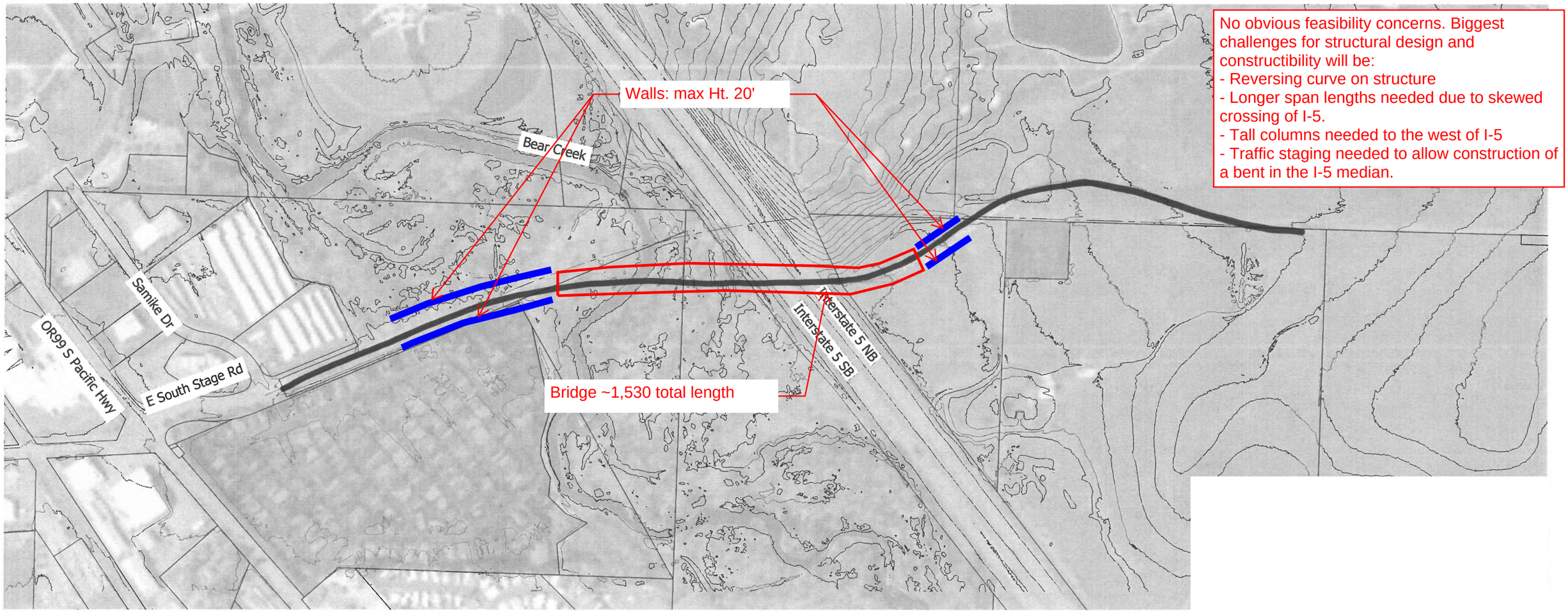


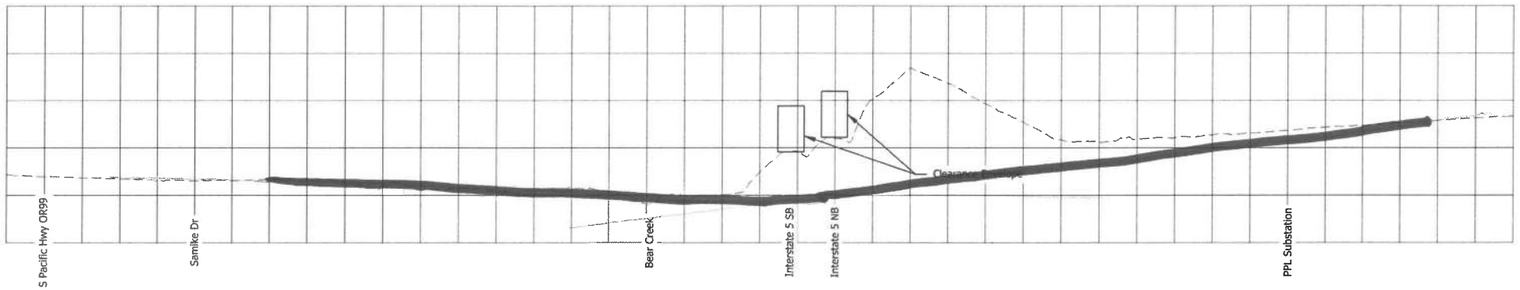

No obvious feasibility concerns. Biggest challenges for structural design and constructibility will be:
- Reversing curve on structure
- Longer span lengths needed due to skewed crossing of I-5.
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.

South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: 03
Email: _____

Alternative Development Worksheet
Potential Overpass & Interchange Sketches

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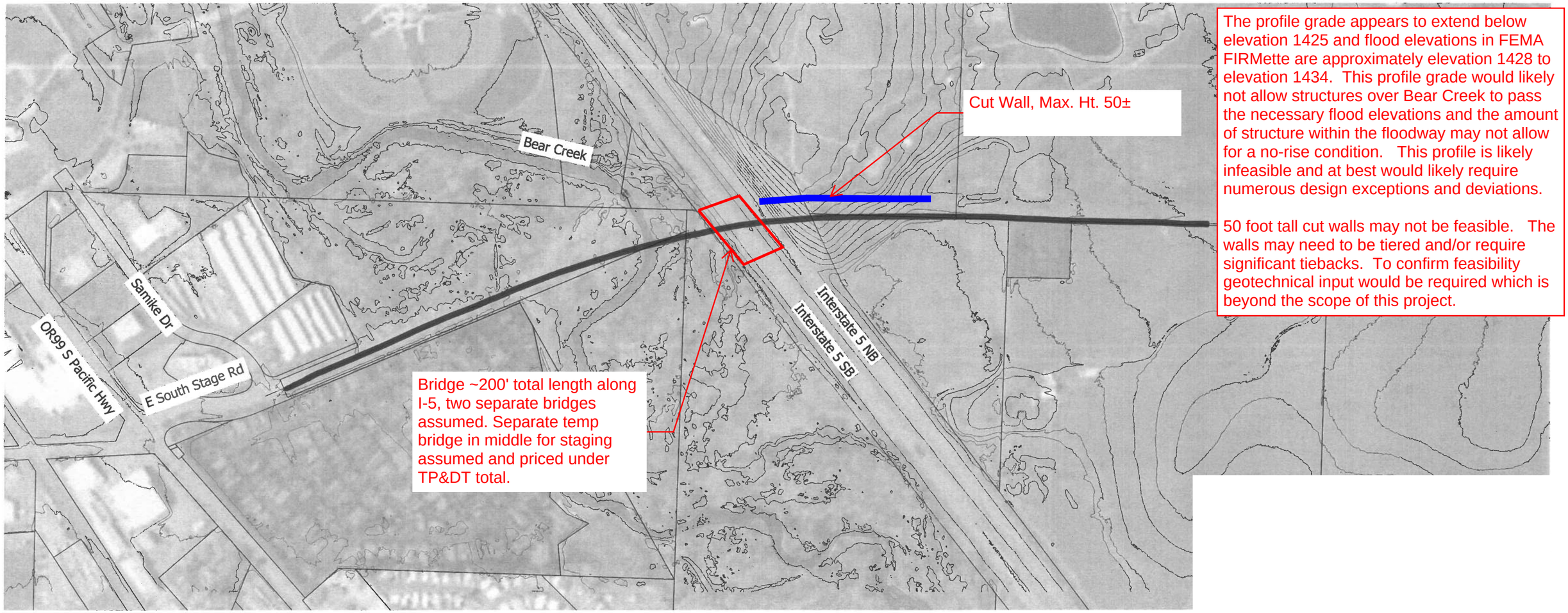



The profile grade appears to extend below elevation 1425 and flood elevations in FEMA FIRMette are approximately elevation 1428 to elevation 1434. This profile grade would likely not allow structures over Bear Creek to pass the necessary flood elevations and the amount of structure within the floodway may not allow for a no-rise condition. This profile is likely infeasible and at best would likely require numerous design exceptions and deviations.

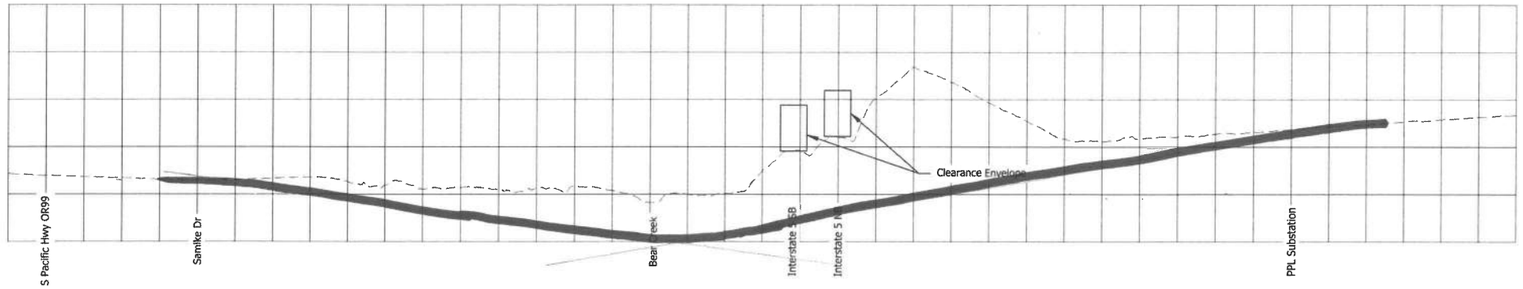
50 foot tall cut walls may not be feasible. The walls may need to be tiered and/or require significant tiebacks. To confirm feasibility geotechnical input would be required which is beyond the scope of this project.

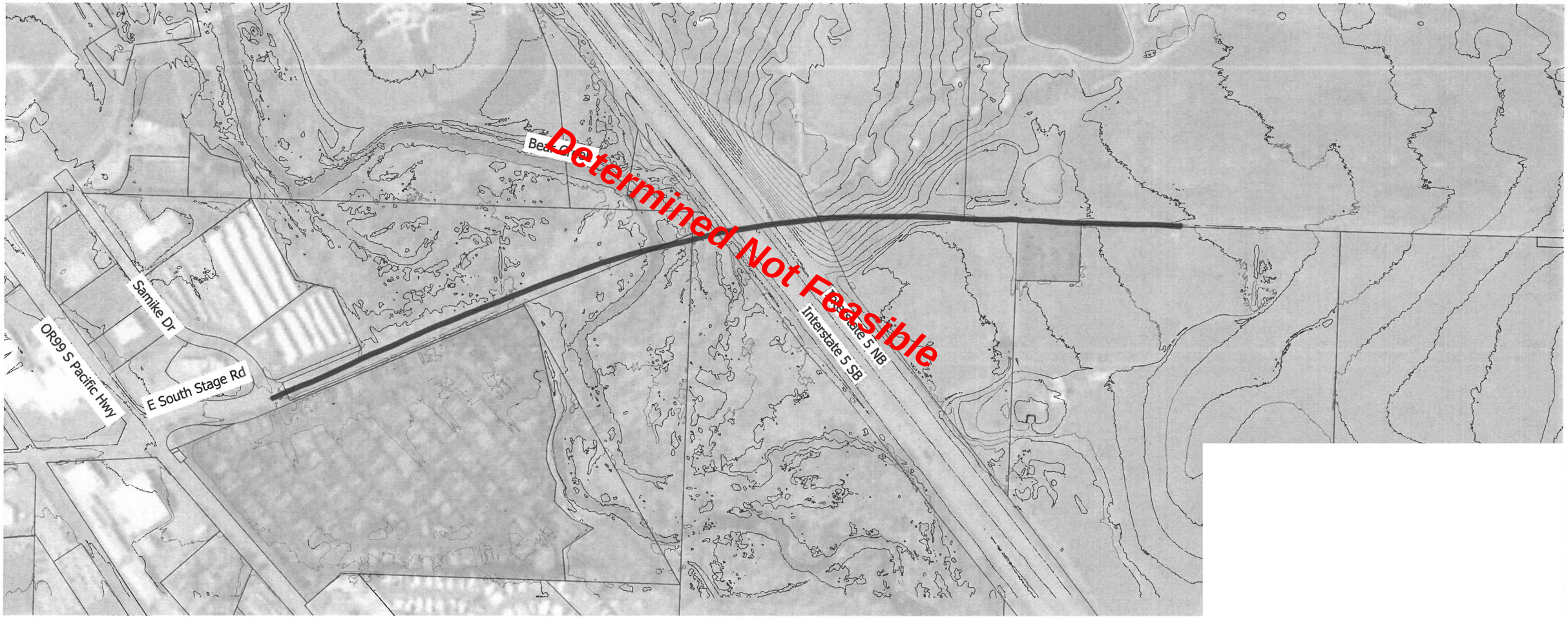
South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: 04
Email: _____

Alternative Development Worksheet
Potential Overpass & Interchange Sketches



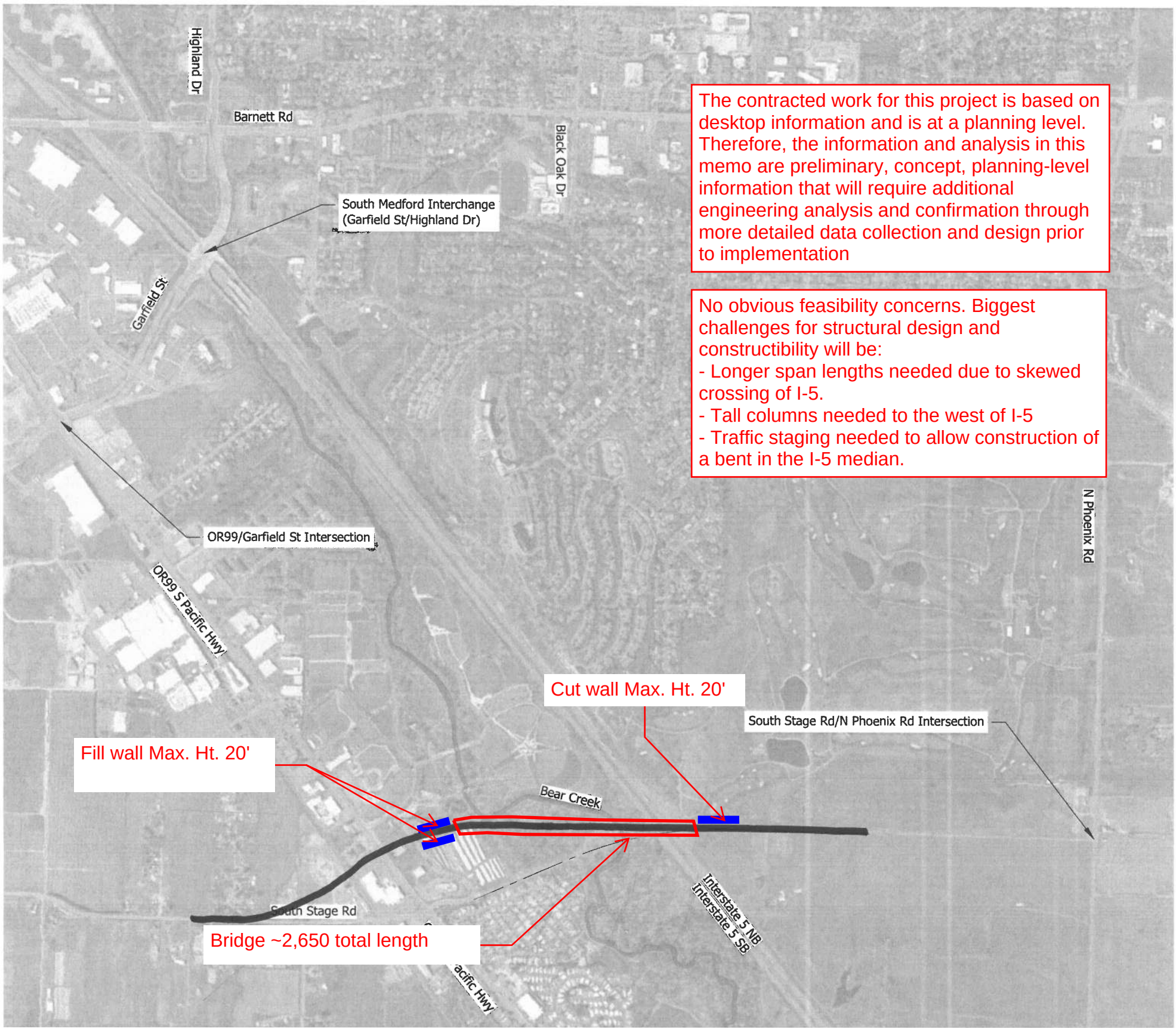




South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: 05
Email: _____

# Alternative Development Worksheet
# Potential Existing System Enhancement Sketches



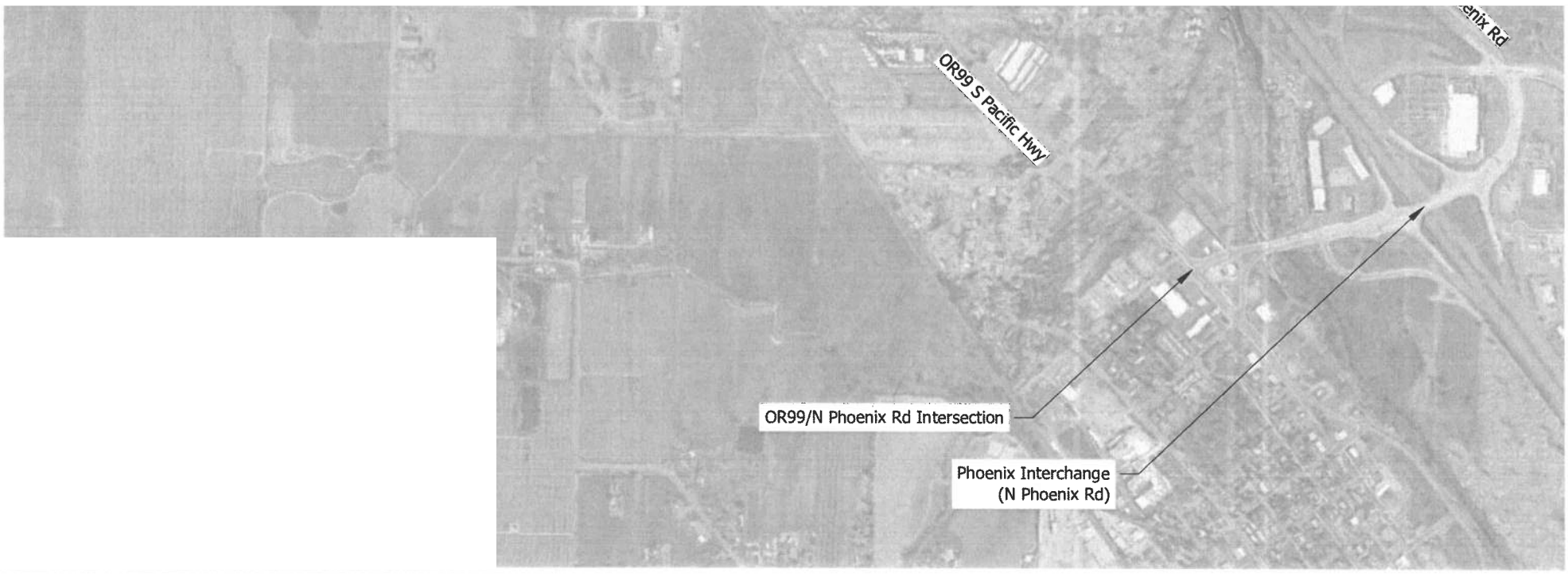

The contracted work for this project is based on desktop information and is at a planning level. Therefore, the information and analysis in this memo are preliminary, concept, planning-level information that will require additional engineering analysis and confirmation through more detailed data collection and design prior to implementation

No obvious feasibility concerns. Biggest challenges for structural design and constructibility will be:
- Longer span lengths needed due to skewed crossing of I-5.
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.

South Stage Road
Extension Plan

0 1200 2400 Feet

Date:
Name: 06
Email:

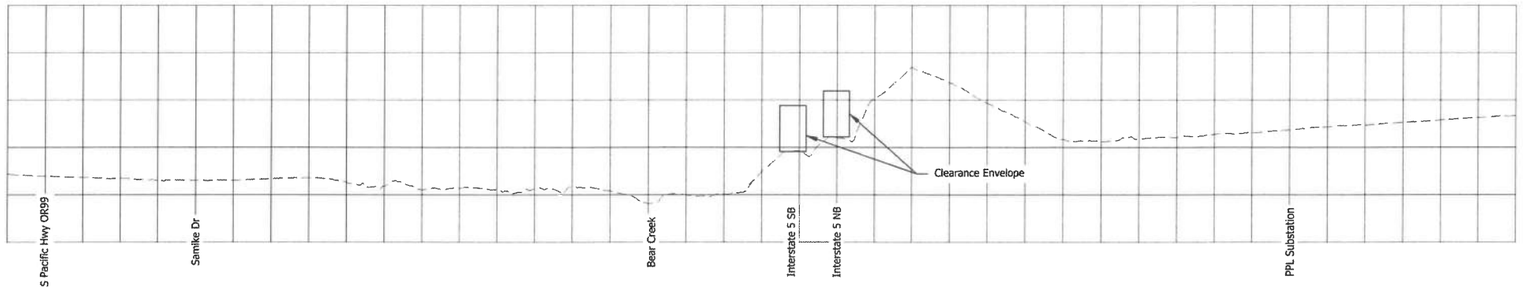



South Stage Road
Extension Plan

0 1200 2400 Feet

Date:
Name: 06
Email:

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches




The contracted work for this project is based on desktop information and is at a planning level. Therefore, the information and analysis in this memo are preliminary, concept, planning-level information that will require additional engineering analysis and confirmation through more detailed data collection and design prior to implementation

No obvious feasibility concerns. Biggest challenges for structural design and constructibility will be:
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.
- Cut wall with height of 30' on the east side of I-5

Cut wall, Max. Ht. 30'

Walls: max Ht. 20'
Reduced wall length due to lower over crossing of I5

Bear Creek

Samike Dr

OR99 S Pacific Hwy

E South Stage Rd

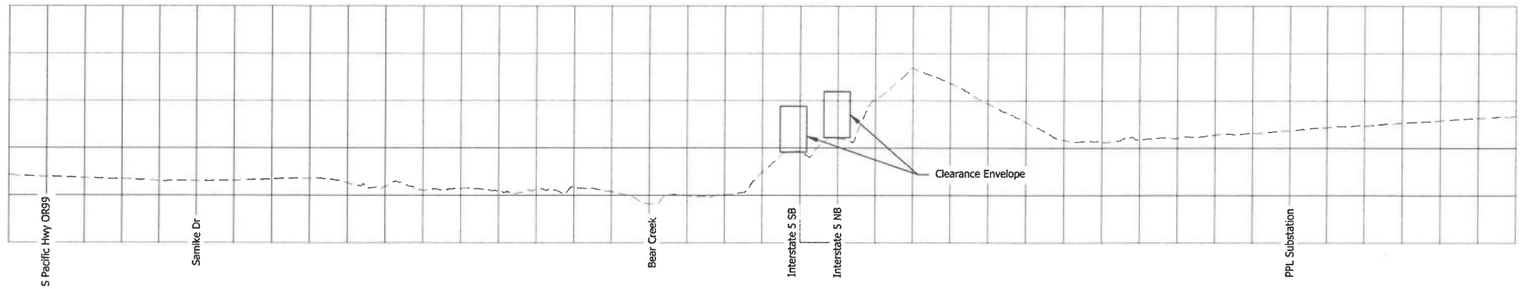
Bridge ~1,100 total length

South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: 07
Email: _____

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches

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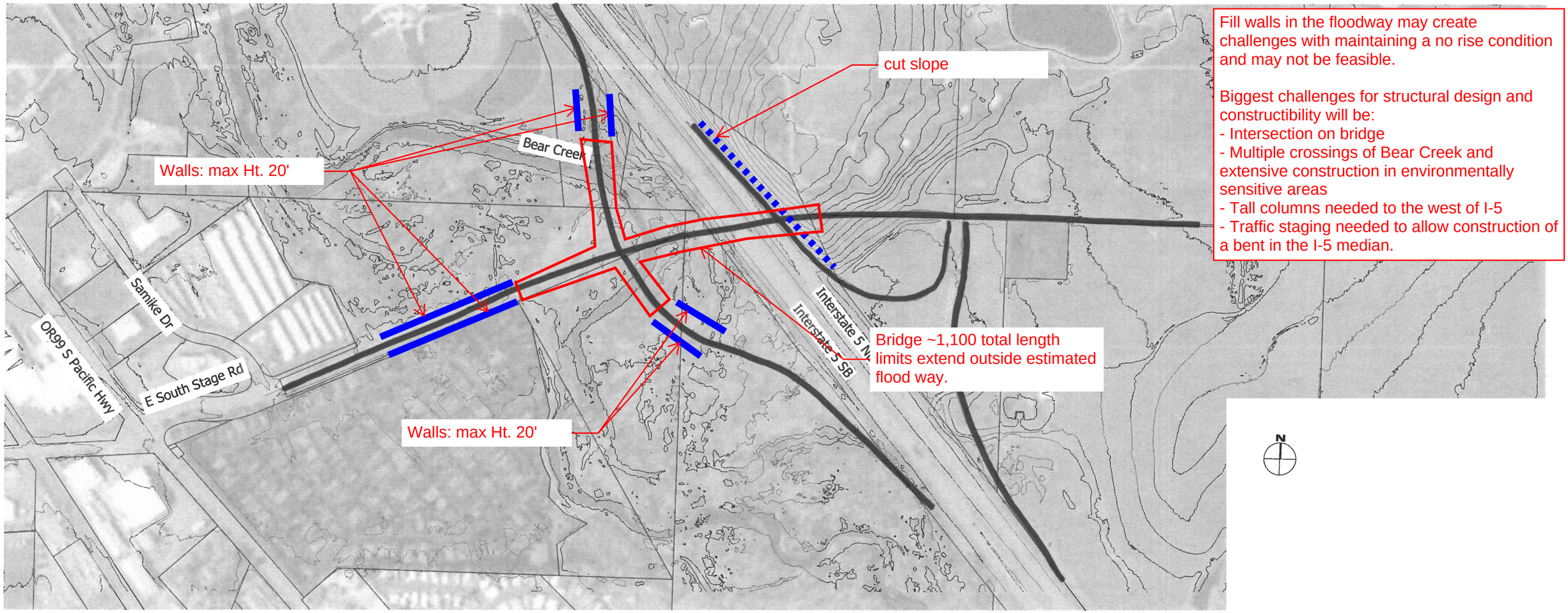



Fill walls in the floodway may create challenges with maintaining a no rise condition and may not be feasible.

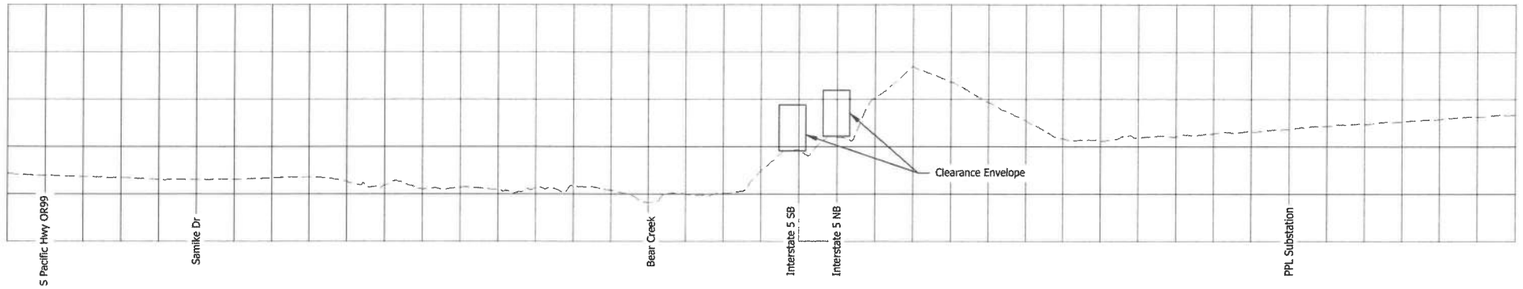
Biggest challenges for structural design and constructibility will be:
- Intersection on bridge
- Multiple crossings of Bear Creek and extensive construction in environmentally sensitive areas
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.

South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: _____
Email: _____

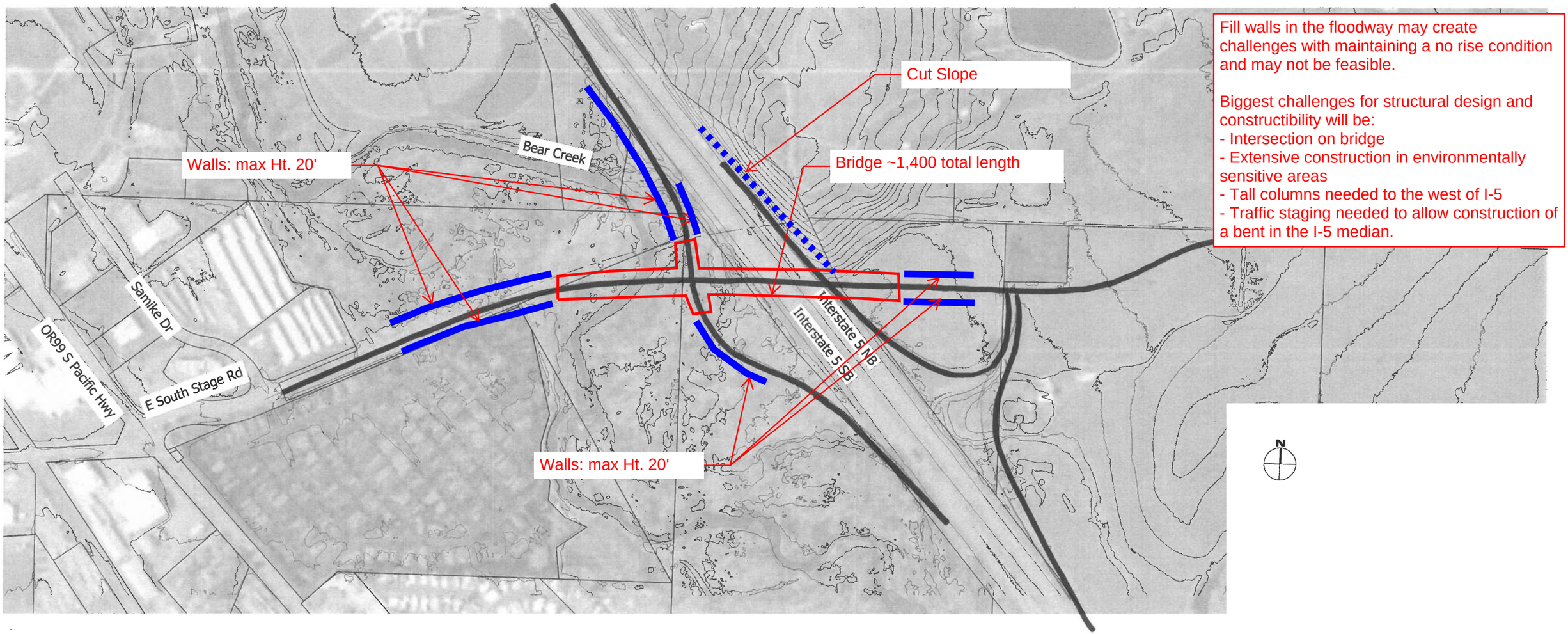
# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches




The contracted work for this project is based on desktop information and is at a planning level. Therefore, the information and analysis in this memo are preliminary, concept, planning-level information that will require additional engineering analysis and confirmation through more detailed data collection and design prior to implementation

Fill walls in the floodway may create challenges with maintaining a no rise condition and may not be feasible.

Biggest challenges for structural design and constructibility will be:
- Intersection on bridge
- Extensive construction in environmentally sensitive areas
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.

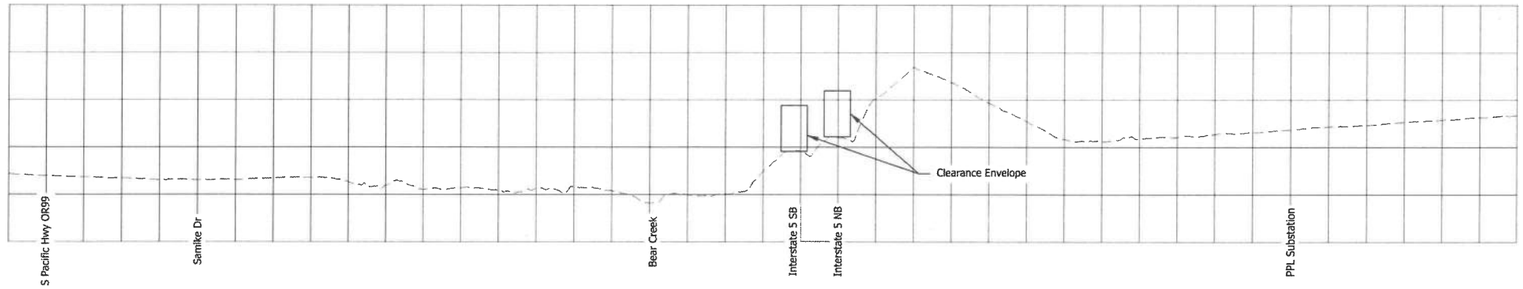



South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: 12
Email: _____

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches

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Fill walls in the floodway may create challenges with maintaining a no rise condition and may not be feasible.

Biggest challenges for structural design and constructibility will be:
- Intersection on bridge
- Extensive construction in environmentally sensitive areas
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.

Cut Slope

Walls: max Ht. 20'

Bear Creek

Walls: max Ht. 20'

Samike Dr

OR99 S Pacific Hwy

E South Stage Rd

Walls: max Ht. 20'

Interstate 5 SB

Interstate 5 NB

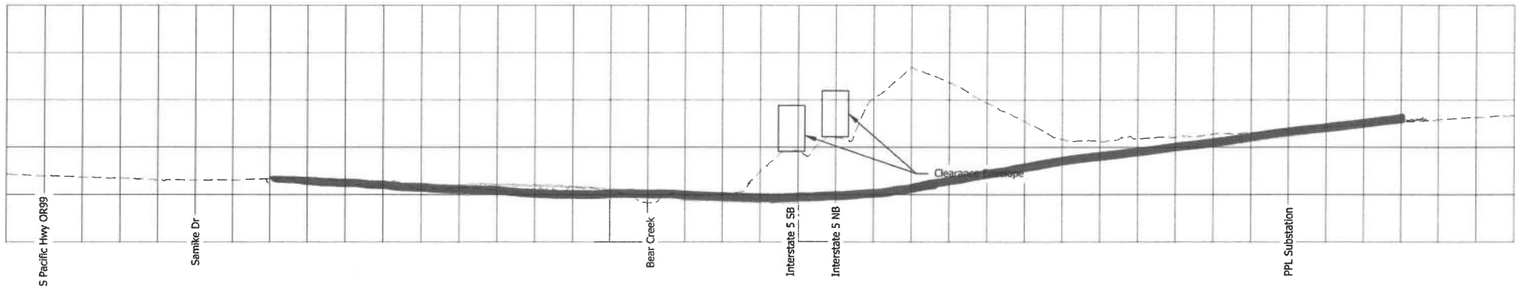
Bridge ~1,530 total length

South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: _____
Email: _____

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches

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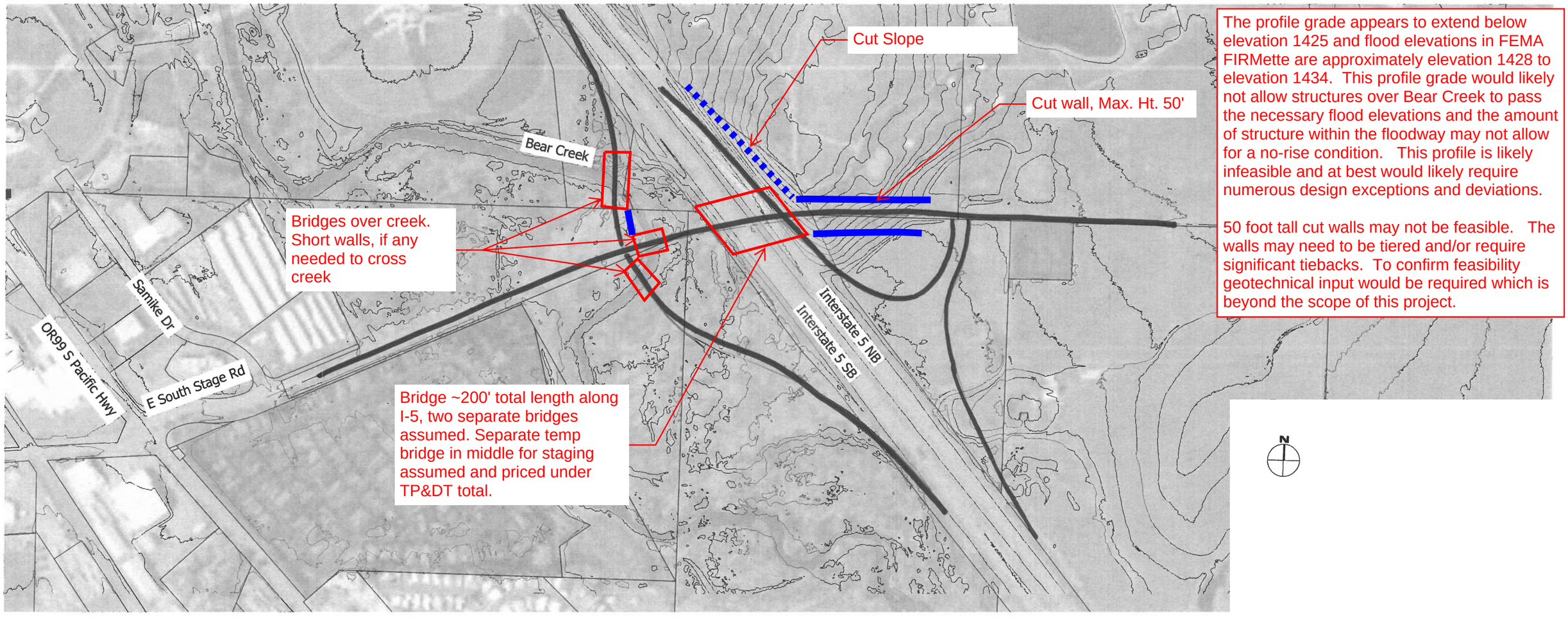



The profile grade appears to extend below elevation 1425 and flood elevations in FEMA FIRMette are approximately elevation 1428 to elevation 1434. This profile grade would likely not allow structures over Bear Creek to pass the necessary flood elevations and the amount of structure within the floodway may not allow for a no-rise condition. This profile is likely infeasible and at best would likely require numerous design exceptions and deviations.

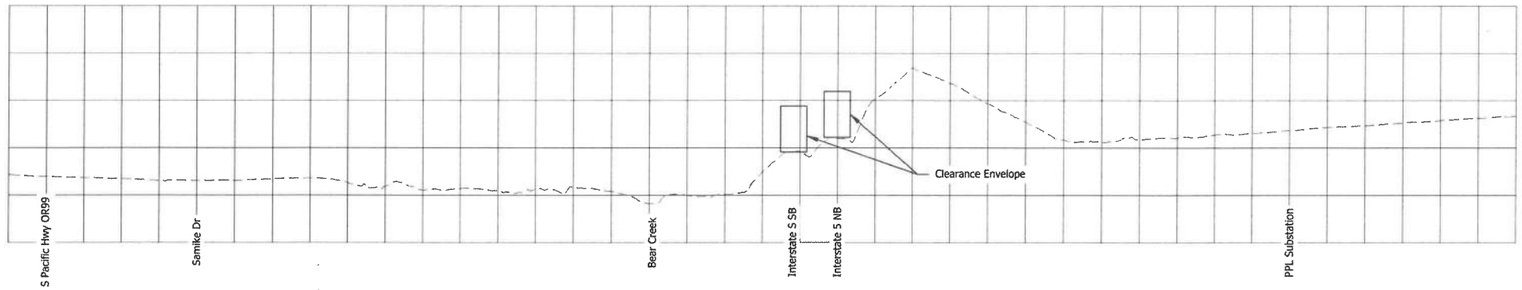
50 foot tall cut walls may not be feasible. The walls may need to be tiered and/or require significant tiebacks. To confirm feasibility geotechnical input would be required which is beyond the scope of this project.

South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: ***I4***
Email: _____

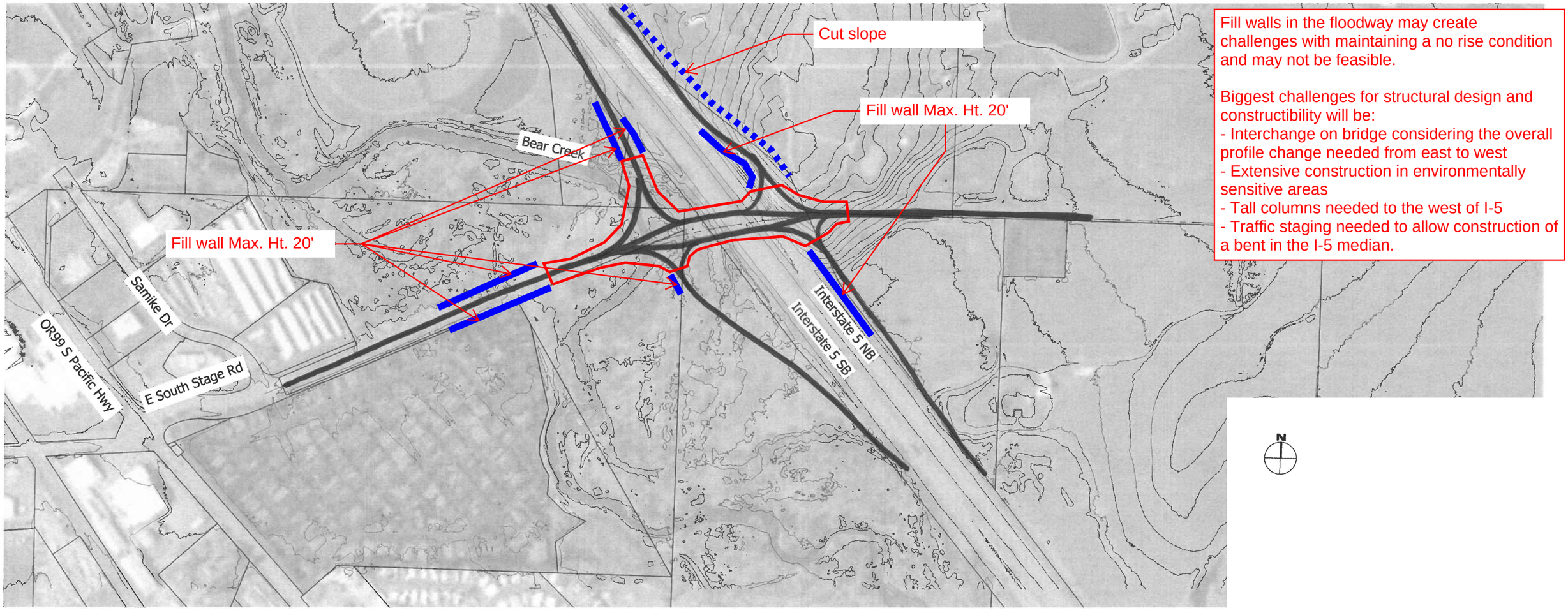
# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches




The contracted work for this project is based on desktop information and is at a planning level. Therefore, the information and analysis in this memo are preliminary, concept, planning-level information that will require additional engineering analysis and confirmation through more detailed data collection and design prior to implementation

Fill walls in the floodway may create challenges with maintaining a no rise condition and may not be feasible.

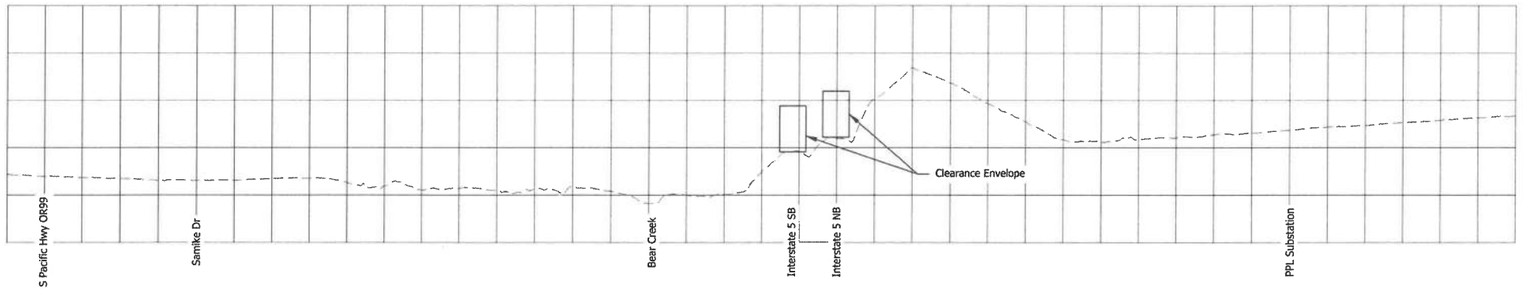
Biggest challenges for structural design and constructibility will be:
- Interchange on bridge considering the overall profile change needed from east to west
- Extensive construction in environmentally sensitive areas
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.




South Stage Road
Extension Plan

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: I5
Email: _____

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches

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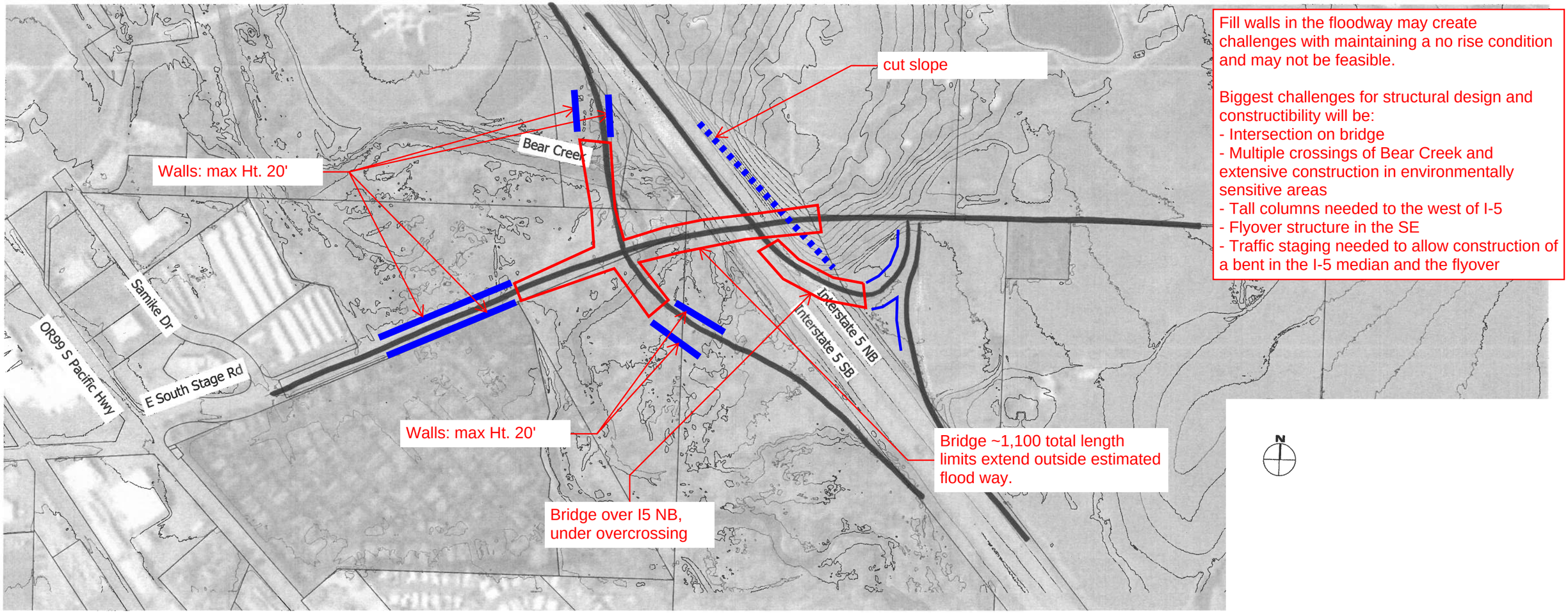
Fill walls in the floodway may create challenges with maintaining a no rise condition and may not be feasible.

Biggest challenges for structural design and constructibility will be:
- Intersection on bridge
- Multiple crossings of Bear Creek and extensive construction in environmentally sensitive areas
- Tall columns needed to the west of I-5
- Flyover structure in the SE
- Traffic staging needed to allow construction of a bent in the I-5 median and the flyover

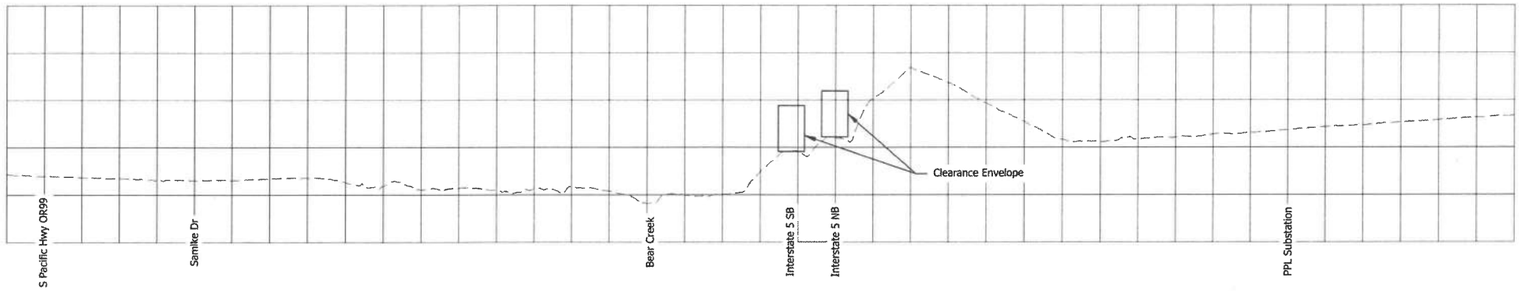



South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: I6
Email: _____

# Alternative Development Worksheet
# Potential Overpass & Interchange Sketches

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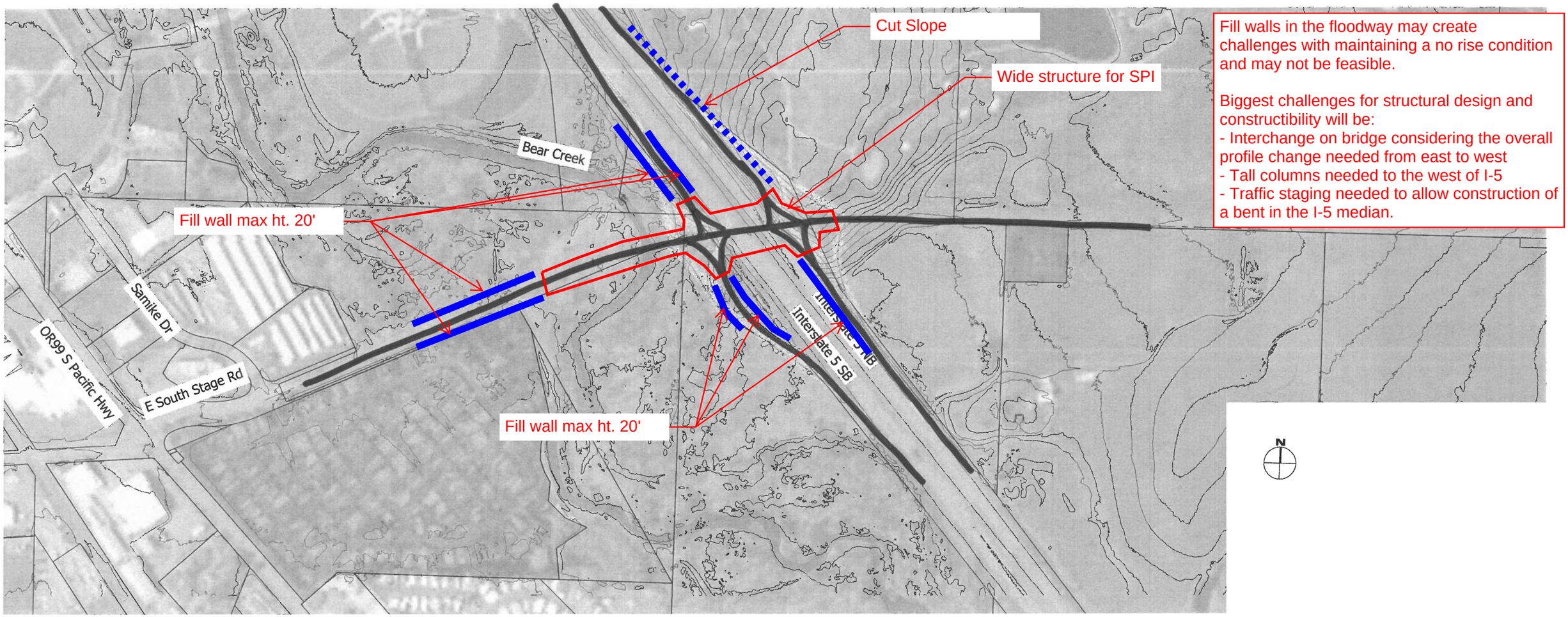



Fill walls in the floodway may create challenges with maintaining a no rise condition and may not be feasible.

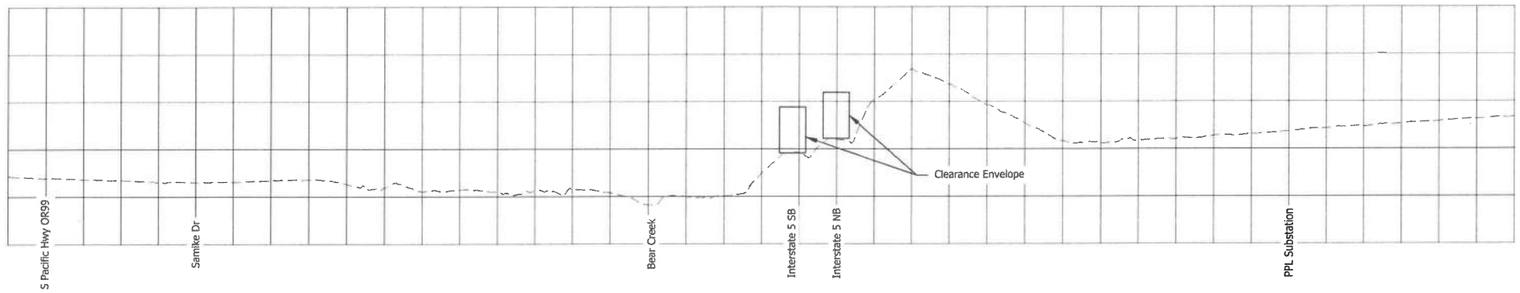
Biggest challenges for structural design and constructibility will be:
- Interchange on bridge considering the overall profile change needed from east to west
- Tall columns needed to the west of I-5
- Traffic staging needed to allow construction of a bent in the I-5 median.

South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: I7
Email: _____

# Alternative Development Worksheet
## Potential Overpass & Interchange Sketches

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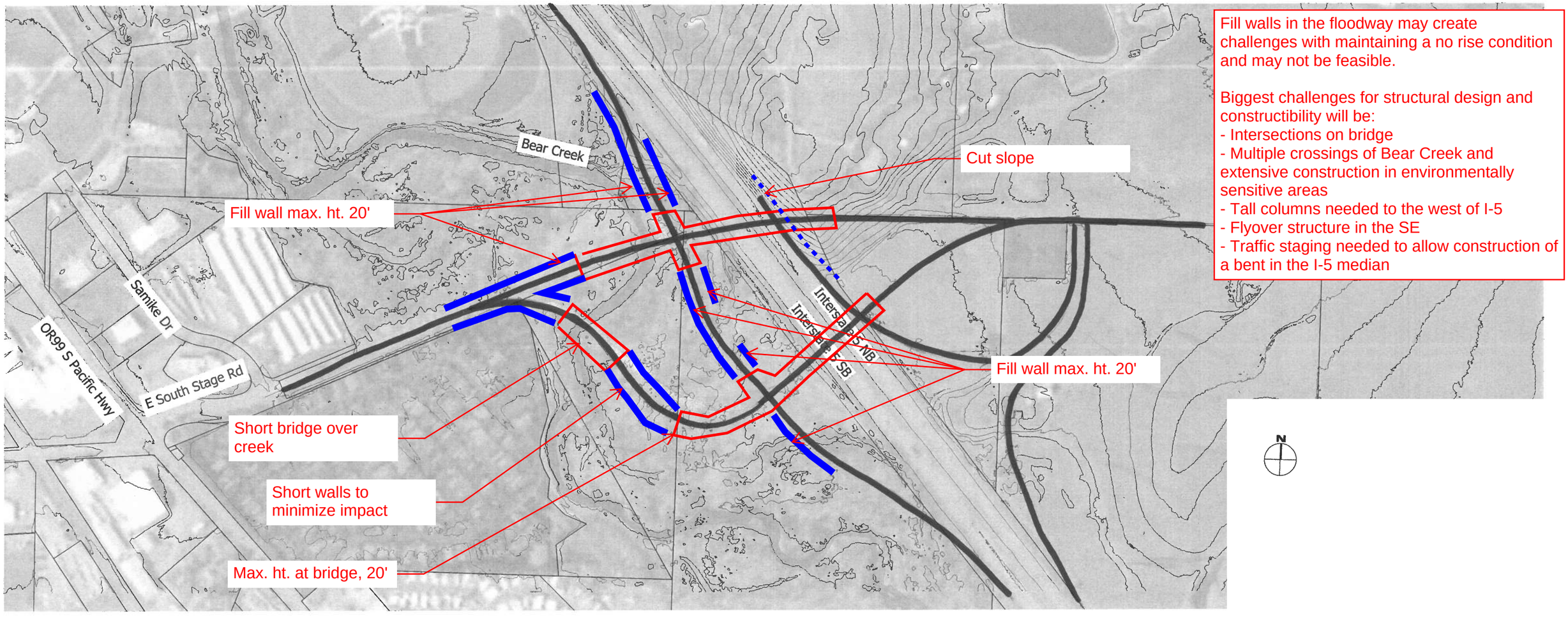


Fill walls in the floodway may create challenges with maintaining a no rise condition and may not be feasible.

Biggest challenges for structural design and constructibility will be:
- Intersections on bridge
- Multiple crossings of Bear Creek and extensive construction in environmentally sensitive areas
- Tall columns needed to the west of I-5
- Flyover structure in the SE
- Traffic staging needed to allow construction of a bent in the I-5 median

South Stage Road
Extension Plan

0 400 800 Feet

Date: _____
Overpass Alternative Option [ ]
Interchange Alternative [ ]
Name: IB
Email: _____

# ATTACHMENT B – INITIAL ALTERNATIVE MAGNITUDE OF COST OPINION RANGES

# *South Stage Road Extension Plan*

## *O-1 Overpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $5,466,000.00 | $5,466,000.00 |
| Traffic Control | LS | ALL | $4,383,000.00 | $4,383,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 12.0 | $10,000.00 | $120,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $534,000.00 | $534,000.00 |
| Clearing and Grubbing | LS | ALL | $800,000.00 | $800,000.00 |
| General Earthworks | CY | 75,300 | $40.00 | $3,012,000.00 |
| Asphalt Roadway - Full Depth | SF | 316,726 | $9.20 | $2,913,881.04 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 35,192 | $1.50 | $52,788.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 5,400 | $200.00 | $1,080,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 88,160 | $450.00 | $39,672,000.00 |
| Guardrail System, Complete | LF | 3,100 | $50.00 | $155,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,157,000.00 | $2,157,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 42,800 | $28.00 | $1,198,400.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $144,000.00 | $144,000.00 |
| Signage, Complete | LS | ALL | $108,000.00 | $108,000.00 |
| Illumination System, Complete | LS | ALL | $1,006,600.00 | $1,006,600.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| **TOTAL CONSTRUCTION COST** | | | **$** | **64,625,225** |

# *South Stage Road Extension Plan*

## *O-1 Overpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| *This Estimate has a Rating of:* | | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $16,157,000.00 | $16,157,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 16,157,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 80,784,959** |
| | | | **35% Contingency** | **$ 28,274,740** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 109,059,699** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
-

**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *O-2 Overpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $6,411,000.00 | $6,411,000.00 |
| Traffic Control | LS | ALL | $5,138,000.00 | $5,138,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 12.0 | $10,000.00 | $120,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $626,000.00 | $626,000.00 |
| Clearing and Grubbing | LS | ALL | $939,000.00 | $939,000.00 |
| General Earthworks | CY | 67,833 | $40.00 | $2,713,320.00 |
| Asphalt Roadway - Full Depth | SF | 316,726 | $9.20 | $2,913,881.04 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 35,192 | $1.50 | $52,788.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 3,660 | $200.00 | $732,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 110,480 | $450.00 | $49,716,000.00 |
| Guardrail System, Complete | LF | 2,300 | $50.00 | $115,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,068,000.00 | $2,068,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 42,800 | $28.00 | $1,198,400.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $138,000.00 | $138,000.00 |
| Signage, Complete | LS | ALL | $104,000.00 | $104,000.00 |
| Illumination System, Complete | LS | ALL | $964,800.00 | $964,800.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| **TOTAL CONSTRUCTION COST** | | | **$** | **75,772,745** |

# *South Stage Road Extension Plan*

## *O-2 Overpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $18,944,000.00 | $18,944,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 18,944,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 94,719,479** |
| | | | **35% Contingency** | **$ 33,151,820** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 127,871,299** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *O-3 Overpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $6,957,000.00 | $6,957,000.00 |
| Traffic Control | LS | ALL | $5,575,000.00 | $5,575,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 12.1 | $10,000.00 | $121,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $679,000.00 | $679,000.00 |
| Clearing and Grubbing | LS | ALL | $1,019,000.00 | $1,019,000.00 |
| General Earthworks | CY | 69,800 | $40.00 | $2,792,000.00 |
| Asphalt Roadway - Full Depth | SF | 319,982 | $9.20 | $2,943,838.08 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 35,554 | $1.50 | $53,331.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,168 | $36.70 | $483,265.60 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 79,008 | $8.40 | $663,667.20 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 4,100 | $200.00 | $820,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 121,680 | $450.00 | $54,756,000.00 |
| Guardrail System, Complete | LF | 2,400 | $50.00 | $120,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,104,000.00 | $2,104,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 43,200 | $28.00 | $1,209,600.00 |
| Permanent Landscaping | SF | 92,176 | $4.20 | $387,139.20 |
| Irrigation, Complete | SF | 92,176 | $2.50 | $230,440.00 |
| Pavement Markings, Complete | LS | ALL | $141,000.00 | $141,000.00 |
| Signage, Complete | LS | ALL | $106,000.00 | $106,000.00 |
| Illumination System, Complete | LS | ALL | $981,700.00 | $981,700.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | **TOTAL CONSTRUCTION COST** | **$ 82,218,981** |

# *South Stage Road Extension Plan*

## *O-3 Overpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| *This Estimate has a Rating of:* | | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $20,555,000.00 | $20,555,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 20,555,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 102,776,715** |
| | | | **35% Contingency** | **$ 35,971,860** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 138,748,575** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *O-4 Underpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $7,488,000.00 | $7,488,000.00 |
| Traffic Control | LS | ALL | $6,000,000.00 | $6,000,000.00 |
| Construction Staging | LS | ALL | $7,500,000.00 | $7,500,000.00 |
| Erosion Control | AC | 12.0 | $10,000.00 | $120,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $731,000.00 | $731,000.00 |
| Clearing and Grubbing | LS | ALL | $1,096,000.00 | $1,096,000.00 |
| General Earthworks | CY | 777,500 | $40.00 | $31,100,000.00 |
| Asphalt Roadway - Full Depth | SF | 316,726 | $9.20 | $2,913,881.04 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 35,192 | $1.50 | $52,788.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 1,500 | $200.00 | $300,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | 9,000 | $300.00 | $2,700,000.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 36,000 | $450.00 | $16,200,000.00 |
| Guardrail System, Complete | LF | | $50.00 | $0.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $10,584,000.00 | $10,584,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 42,800 | $28.00 | $1,198,400.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $706,000.00 | $706,000.00 |
| Signage, Complete | LS | ALL | $530,000.00 | $530,000.00 |
| Illumination System, Complete | LS | ALL | $4,939,000.00 | $4,939,000.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | **TOTAL CONSTRUCTION COST** | **$ 95,981,625** |

# *South Stage Road Extension Plan*
## *O-4 Underpass*
***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $23,996,000.00 | $23,996,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 23,996,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 119,980,359** |
| | | | **35% Contingency** | **$ 41,993,130** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 161,973,489** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *O-5 Underpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| | | | | |
| Mobilization | LS | ALL | $11,852,000.00 | $11,852,000.00 |
| Traffic Control | LS | ALL | $9,491,000.00 | $9,491,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 12.0 | $10,000.00 | $120,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $2,558,000.00 | $2,558,000.00 |
| Clearing and Grubbing | LS | ALL | $2,274,000.00 | $2,274,000.00 |
| General Earthworks | CY | 1,469,500 | $40.00 | $58,780,000.00 |
| Asphalt Roadway - Full Depth | SF | 316,726 | $9.20 | $2,913,881.04 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 35,192 | $1.50 | $52,788.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 41,040 | $200.00 | $8,208,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $200.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 24,000 | $450.00 | $10,800,000.00 |
| Guardrail System, Complete | LF | | $50.00 | $0.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $18,888,000.00 | $18,888,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 42,800 | $28.00 | $1,198,400.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $1,260,000.00 | $1,260,000.00 |
| Signage, Complete | LS | ALL | $945,000.00 | $945,000.00 |
| Illumination System, Complete | LS | ALL | $8,814,200.00 | $8,814,200.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | | |
| | | | **TOTAL CONSTRUCTION COST** | **$ 139,977,825** |

# *South Stage Road Extension Plan*

## *O-5 Underpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $34,995,000.00 | $34,995,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 34,995,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 174,975,559** |
| | | | **50% Contingency** | **$ 87,487,780** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 262,463,339** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
-

**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*
## *O-6 Overpass Northerly Realignment*
***ODOT***

***Engineer's Conceptual Estimate***

| | |
|---|---|
| *Prepared By: Eza Gaigalas* | *Date: March 2024* |
| *Reviewed By: Darren Hippenstiel, PE* | |
| *This Estimate has a Rating of:* | **3C** *(See rating scale guide below.)* |

| ITEM | UNIT | TOTAL QUANTITY | UNIT PRICE | TOTAL COST |
|---|---|---|---|---|
| Mobilization | LS | ALL | $11,720,000.00 | $11,720,000.00 |
| Traffic Control | LS | ALL | $9,389,000.00 | $9,389,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 16.7 | $10,000.00 | $167,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $2,542,000.00 | $2,542,000.00 |
| Clearing and Grubbing | LS | ALL | $1,695,000.00 | $1,695,000.00 |
| General Earthworks | CY | 92,967 | $40.00 | $3,718,680.00 |
| Asphalt Roadway - Full Depth | SF | 443,281 | $9.20 | $4,078,181.52 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 49,254 | $1.50 | $73,881.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 18,242 | $36.70 | $669,481.40 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 109,452 | $8.40 | $919,396.80 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Cut (soldier Pyle, tie back, soil nail) | SF | 2,000 | $300.00 | $600,000.00 |
| Retaining Walls, MSE | SF | 3,000 | $200.00 | $600,000.00 |
| Retaining Walls, Cast-in-Place | SF | | $160.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 211,120 | $450.00 | $95,004,000.00 |
| Guardrail System, Complete | LF | 3,100 | $50.00 | $155,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,861,000.00 | $2,861,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 59,900 | $28.00 | $1,677,200.00 |
| Permanent Landscaping | SF | 127,694 | $4.20 | $536,314.80 |
| Irrigation, Complete | SF | 127,694 | $2.50 | $319,235.00 |
| Pavement Markings, Complete | LS | ALL | $191,000.00 | $191,000.00 |
| Signage, Complete | LS | ALL | $144,000.00 | $144,000.00 |
| Illumination System, Complete | LS | ALL | $1,335,000.00 | $1,335,000.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| **TOTAL CONSTRUCTION COST** | | | **$** | **138,471,371** |

# *South Stage Road Extension Plan*
## *O-6 Overpass Northerly Realignment*
***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $34,618,000.00 | $34,618,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 34,618,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 173,092,105** |
| | | | **35% Contingency** | **$ 60,582,240** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 233,674,345** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
-

**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *O-7 Overpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| | | | | |
| Mobilization | LS | ALL | $7,976,000.00 | $7,976,000.00 |
| Traffic Control | LS | ALL | $6,399,000.00 | $6,399,000.00 |
| Construction Staging | LS | ALL | $7,999,000.00 | $7,999,000.00 |
| Erosion Control | AC | 23.0 | $10,000.00 | $230,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $1,730,000.00 | $1,730,000.00 |
| Clearing and Grubbing | LS | ALL | $1,154,000.00 | $1,154,000.00 |
| General Earthworks | CY | 265,033 | $40.00 | $10,601,320.00 |
| Asphalt Roadway - Full Depth | SF | 316,726 | $9.20 | $2,913,881.04 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 480,000 | $15.60 | $7,488,000.00 |
| Subgrade Geotextile | SY | 88,526 | $1.50 | $132,789.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 5,000 | $200.00 | $1,000,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 88,160 | $450.00 | $39,672,000.00 |
| Guardrail System, Complete | LF | 1,600 | $50.00 | $80,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $6,705,000.00 | $6,705,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 90,800 | $28.00 | $2,542,400.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $447,000.00 | $447,000.00 |
| Signage, Complete | LS | ALL | $336,000.00 | $336,000.00 |
| Illumination System, Complete | LS | ALL | $3,128,700.00 | $3,128,700.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | | |
| | | | **TOTAL CONSTRUCTION COST** | **$ 102,357,646** |

# *South Stage Road Extension Plan*

## *O-7 Overpass*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $25,590,000.00 | $25,590,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 25,590,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 127,950,380** |
| | | | **35% Contingency** | **$ 44,782,640** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 172,733,020** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
-

**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *I-1 Overpass O-1*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $6,745,000.00 | $6,745,000.00 |
| Traffic Control | LS | ALL | $5,408,000.00 | $5,408,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 15.6 | $10,000.00 | $156,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $658,000.00 | $658,000.00 |
| Clearing and Grubbing | LS | ALL | $987,000.00 | $987,000.00 |
| General Earthworks | CY | 100,075 | $40.00 | $4,003,000.00 |
| Asphalt Roadway - Full Depth | SF | 476,366 | $9.20 | $4,382,569.04 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 52,930 | $1.50 | $79,395.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 16 | $500.00 | $8,000.00 |
| Pedestrian Ramps | EA | 16 | $7,500.00 | $120,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 16 | $1,500.00 | $24,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 5,400 | $200.00 | $1,080,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 106,160 | $450.00 | $47,772,000.00 |
| Guardrail System, Complete | LF | 3,100 | $50.00 | $155,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,926,000.00 | $2,926,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 58,800 | $28.00 | $1,646,400.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $196,000.00 | $196,000.00 |
| Signage, Complete | LS | ALL | $293,000.00 | $293,000.00 |
| Illumination System, Complete | LS | ALL | $1,365,400.00 | $1,365,400.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| **TOTAL CONSTRUCTION COST** | | | **$** | **79,751,320** |

# *South Stage Road Extension Plan*

## *I-1 Overpass O-1*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| *This Estimate has a Rating of:* | | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $19,938,000.00 | $19,938,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 19,938,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 99,692,054** |
| | | | **35% Contingency** | **$ 34,892,220** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 134,584,274** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
-

**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *I-2 Overpass O-2*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $7,006,000.00 | $7,006,000.00 |
| Traffic Control | LS | ALL | $5,617,000.00 | $5,617,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 15.6 | $10,000.00 | $156,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $684,000.00 | $684,000.00 |
| Clearing and Grubbing | LS | ALL | $1,026,000.00 | $1,026,000.00 |
| General Earthworks | CY | 97,039 | $40.00 | $3,881,560.00 |
| Asphalt Roadway - Full Depth | SF | 474,984 | $9.20 | $4,369,850.96 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 52,776 | $1.50 | $79,164.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,006 | $36.70 | $477,320.20 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,036 | $8.40 | $655,502.40 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 3,660 | $200.00 | $732,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 113,660 | $450.00 | $51,147,000.00 |
| Guardrail System, Complete | LF | | $50.00 | $0.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,862,000.00 | $2,862,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 58,600 | $28.00 | $1,640,800.00 |
| Permanent Landscaping | SF | 91,042 | $4.20 | $382,376.40 |
| Irrigation, Complete | SF | 91,042 | $2.50 | $227,605.00 |
| Pavement Markings, Complete | LS | ALL | $191,000.00 | $191,000.00 |
| Signage, Complete | LS | ALL | $287,000.00 | $287,000.00 |
| Illumination System, Complete | LS | ALL | $1,335,600.00 | $1,335,600.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | **TOTAL CONSTRUCTION COST** | **$ 82,833,779** |

# *South Stage Road Extension Plan*

## *I-2 Overpass O-2*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $20,709,000.00 | $20,709,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 20,709,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 103,545,513** |
| | | | **35% Contingency** | **$ 36,240,930** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 139,786,443** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *I-3 Overpass O-3*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $7,268,000.00 | $7,268,000.00 |
| Traffic Control | LS | ALL | $5,828,000.00 | $5,828,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 15.9 | $10,000.00 | $159,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $710,000.00 | $710,000.00 |
| Clearing and Grubbing | LS | ALL | $1,064,000.00 | $1,064,000.00 |
| General Earthworks | CY | 100,256 | $40.00 | $4,010,240.00 |
| Asphalt Roadway - Full Depth | SF | 487,546 | $9.20 | $4,485,425.04 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 54,172 | $1.50 | $81,258.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 8 | $500.00 | $4,000.00 |
| Pedestrian Ramps | EA | 8 | $7,500.00 | $60,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 8 | $1,500.00 | $12,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 4,100 | $200.00 | $820,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 117,980 | $450.00 | $53,091,000.00 |
| Guardrail System, Complete | LF | 2,400 | $50.00 | $120,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,937,000.00 | $2,937,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 59,900 | $28.00 | $1,677,200.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $196,000.00 | $196,000.00 |
| Signage, Complete | LS | ALL | $294,000.00 | $294,000.00 |
| Illumination System, Complete | LS | ALL | $1,370,400.00 | $1,370,400.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | **TOTAL CONSTRUCTION COST** | **$ 85,934,079** |

# *South Stage Road Extension Plan*

## *I-3 Overpass O-3*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| *This Estimate has a Rating of:* | | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $21,484,000.00 | $21,484,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 21,484,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 107,420,813** |
| | | | **35% Contingency** | **$ 37,597,290** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 145,018,103** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *I-4 Underpass O-2*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $7,977,000.00 | $7,977,000.00 |
| Traffic Control | LS | ALL | $6,395,000.00 | $6,395,000.00 |
| Construction Staging | LS | ALL | $7,993,000.00 | $7,993,000.00 |
| Erosion Control | AC | 15.6 | $10,000.00 | $156,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $1,730,000.00 | $1,730,000.00 |
| Clearing and Grubbing | LS | ALL | $1,154,000.00 | $1,154,000.00 |
| General Earthworks | CY | 743,600 | $40.00 | $29,744,000.00 |
| Asphalt Roadway - Full Depth | SF | 473,298 | $9.20 | $4,354,343.44 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 52,589 | $1.50 | $78,883.50 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 16 | $500.00 | $8,000.00 |
| Pedestrian Ramps | EA | 16 | $7,500.00 | $120,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 16 | $1,500.00 | $24,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 1,500 | $200.00 | $300,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | 9,000 | $300.00 | $2,700,000.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 41,000 | $450.00 | $18,450,000.00 |
| Guardrail System, Complete | LF | 6,861 | $50.00 | $343,050.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $10,640,000.00 | $10,640,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 58,500 | $28.00 | $1,638,000.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $710,000.00 | $710,000.00 |
| Signage, Complete | LS | ALL | $1,064,000.00 | $1,064,000.00 |
| Illumination System, Complete | LS | ALL | $4,965,100.00 | $4,965,100.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | **TOTAL CONSTRUCTION COST** | **$ 102,290,933** |

# *South Stage Road Extension Plan*

## *I-4 Underpass O-2*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $25,573,000.00 | $25,573,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 25,573,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 127,866,667** |
| | | | **35% Contingency** | **$ 44,753,340** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 172,620,007** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *I-5 Overpass O-1*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| Mobilization | LS | ALL | $9,351,000.00 | $9,351,000.00 |
| Traffic Control | LS | ALL | $7,494,000.00 | $7,494,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 16.6 | $10,000.00 | $166,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $913,000.00 | $913,000.00 |
| Clearing and Grubbing | LS | ALL | $1,369,000.00 | $1,369,000.00 |
| General Earthworks | CY | 83,811 | $40.00 | $3,352,440.00 |
| Asphalt Roadway - Full Depth | SF | 521,026 | $9.20 | $4,793,441.04 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 57,892 | $1.50 | $86,838.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 16 | $500.00 | $8,000.00 |
| Pedestrian Ramps | EA | 16 | $7,500.00 | $120,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 16 | $1,500.00 | $24,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 3,820 | $200.00 | $764,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 163,348 | $450.00 | $73,506,600.00 |
| Guardrail System, Complete | LF | 7,793 | $50.00 | $389,650.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,856,000.00 | $2,856,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 63,200 | $28.00 | $1,769,600.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $191,000.00 | $191,000.00 |
| Signage, Complete | LS | ALL | $286,000.00 | $286,000.00 |
| Illumination System, Complete | LS | ALL | $1,332,800.00 | $1,332,800.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | **TOTAL CONSTRUCTION COST** | **$ 110,519,925** |

# *South Stage Road Extension Plan*

## *I-5 Overpass O-1*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $27,630,000.00 | $27,630,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 27,630,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 138,152,659** |
| | | | **35% Contingency** | **$ 48,353,440** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 186,506,099** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
-

**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *I-6 Overpass O-1 Left Merge*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| | | | | |
| Mobilization | LS | ALL | $8,011,000.00 | $8,011,000.00 |
| Traffic Control | LS | ALL | $6,422,000.00 | $6,422,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 15.8 | $10,000.00 | $158,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $782,000.00 | $782,000.00 |
| Clearing and Grubbing | LS | ALL | $1,173,000.00 | $1,173,000.00 |
| General Earthworks | CY | 78,546 | $40.00 | $3,141,840.00 |
| Asphalt Roadway - Full Depth | SF | 484,634 | $9.20 | $4,458,634.64 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 53,849 | $1.50 | $80,773.50 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 16 | $500.00 | $8,000.00 |
| Pedestrian Ramps | EA | 16 | $7,500.00 | $120,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 16 | $1,500.00 | $24,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 5,400 | $200.00 | $1,080,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 136,160 | $450.00 | $61,272,000.00 |
| Guardrail System, Complete | LF | 3,100 | $50.00 | $155,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,691,000.00 | $2,691,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 59,600 | $28.00 | $1,668,800.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $180,000.00 | $180,000.00 |
| Signage, Complete | LS | ALL | $270,000.00 | $270,000.00 |
| Illumination System, Complete | LS | ALL | $1,255,600.00 | $1,255,600.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | | |
| | | | **TOTAL CONSTRUCTION COST** | **$ 94,698,204** |

# *South Stage Road Extension Plan*

## *I-6 Overpass O-1 Left Merge*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $23,675,000.00 | $23,675,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 23,675,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 118,375,938** |
| | | | **35% Contingency** | **$ 41,431,580** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 159,807,518** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *I-7 Single Point*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| | | | | |
| Mobilization | LS | ALL | $12,466,000.00 | $12,466,000.00 |
| Traffic Control | LS | ALL | $9,985,000.00 | $9,985,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 15.2 | $10,000.00 | $152,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $1,217,000.00 | $1,217,000.00 |
| Clearing and Grubbing | LS | ALL | $1,825,000.00 | $1,825,000.00 |
| General Earthworks | CY | 75,900 | $40.00 | $3,036,000.00 |
| Asphalt Roadway - Full Depth | SF | 457,408 | $9.20 | $4,208,155.44 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 50,824 | $1.50 | $76,236.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 13,034 | $36.70 | $478,347.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 78,204 | $8.40 | $656,913.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 16 | $500.00 | $8,000.00 |
| Pedestrian Ramps | EA | 16 | $7,500.00 | $120,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 16 | $1,500.00 | $24,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 47,410 | $200.00 | $9,482,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 215,610 | $450.00 | $97,024,500.00 |
| Guardrail System, Complete | LF | 1,538 | $50.00 | $76,900.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $2,583,000.00 | $2,583,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 56,900 | $28.00 | $1,593,200.00 |
| Permanent Landscaping | SF | 91,238 | $4.20 | $383,199.60 |
| Irrigation, Complete | SF | 91,238 | $2.50 | $228,095.00 |
| Pavement Markings, Complete | LS | ALL | $173,000.00 | $173,000.00 |
| Signage, Complete | LS | ALL | $259,000.00 | $259,000.00 |
| Illumination System, Complete | LS | ALL | $1,205,100.00 | $1,205,100.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | | |
| | | | **TOTAL CONSTRUCTION COST** | **$ 147,260,647** |

# *South Stage Road Extension Plan*

## *I-7 Single Point*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $36,816,000.00 | $36,816,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 36,816,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 184,079,381** |
| | | | **35% Contingency** | **$ 64,427,790** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 248,507,171** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# *South Stage Road Extension Plan*

## *I-8 With Westbound Alignment*

***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| | | | | |
| Mobilization | LS | ALL | $11,211,000.00 | $11,211,000.00 |
| Traffic Control | LS | ALL | $8,982,000.00 | $8,982,000.00 |
| Construction Staging | LS | ALL | $0.00 | $0.00 |
| Erosion Control | AC | 16.5 | $10,000.00 | $165,000.00 |
| Removal of Structures and Obstructions | LS | ALL | $1,094,000.00 | $1,094,000.00 |
| Clearing and Grubbing | LS | ALL | $1,641,000.00 | $1,641,000.00 |
| General Earthworks | CY | 124,863 | $40.00 | $4,994,520.00 |
| Asphalt Roadway - Full Depth | SF | 587,033 | $9.20 | $5,400,705.44 |
| Asphalt Roadway - Grind & Inlay (2" Depth) | SF | | $3.10 | $0.00 |
| Concrete Roadway - Full Depth | SF | 0 | $15.60 | $0.00 |
| Subgrade Geotextile | SY | 65,226 | $1.50 | $97,839.00 |
| Concrete Curbs - Standard Curb | LF | 0 | $30.90 | $0.00 |
| Concrete Curbs - Standard Curb & Gutter | LF | 8,314 | $36.70 | $305,123.80 |
| Raised Concrete Island | SF | | $12.90 | $0.00 |
| Truck Apron (Concrete) | SF | | $19.30 | $0.00 |
| Concrete Cycle Track | SF | 0 | $8.40 | $0.00 |
| Separated Bicycle Facility - Asphalt | SF | 0 | $3.00 | $0.00 |
| Concrete Walks | SF | 49,884 | $8.40 | $419,025.60 |
| Separated Multi-Use Path - Concrete | SF | 0 | $8.40 | $0.00 |
| Separated Multi-Use Path - Asphalt | SF | 0 | $3.00 | $0.00 |
| Detectable Warnings | EA | 16 | $500.00 | $8,000.00 |
| Pedestrian Ramps | EA | 16 | $7,500.00 | $120,000.00 |
| Bike Ramps | EA | | $2,500.00 | $0.00 |
| Extra for Pedestrian Ramps | EA | 16 | $1,500.00 | $24,000.00 |
| Chain Link Fence | LF | | $50.00 | $0.00 |
| Residential Driveway Reconstruction | EA | 0 | $1,500.00 | $0.00 |
| Commercial Driveway Reconstruction | EA | 0 | $3,000.00 | $0.00 |
| Retaining Walls, Gravity | SF | | $55.00 | $0.00 |
| Retaining Walls, MSE | SF | 63,800 | $200.00 | $12,760,000.00 |
| Retaining Walls, Cut (Soldier pyle, tie back, soil nail) | SF | | $300.00 | $0.00 |
| Sound Walls | SF | 0 | $45.00 | $0.00 |
| Fish Friendly Box Culvert, Complete | LF | | $1,000.00 | $0.00 |
| Bridge Structure, Complete | SF | 171,408 | $450.00 | $77,133,600.00 |
| Guardrail System, Complete | LF | 6,100 | $50.00 | $305,000.00 |
| Storm Water Conveyance System, Complete | LS | ALL | $3,411,000.00 | $3,411,000.00 |
| Regional Water Quality and Hydromodification System, Complete | SF | 65,800 | $28.00 | $1,842,400.00 |
| Permanent Landscaping | SF | 58,198 | $4.20 | $244,431.60 |
| Irrigation, Complete | SF | 58,198 | $2.50 | $145,495.00 |
| Pavement Markings, Complete | LS | ALL | $228,000.00 | $228,000.00 |
| Signage, Complete | LS | ALL | $342,000.00 | $342,000.00 |
| Illumination System, Complete | LS | ALL | $1,591,700.00 | $1,591,700.00 |
| Traffic Signal Modifications, Complete | LS | ALL | | $0.00 |
| Traffic Signal System, Complete | LS | ALL | | $0.00 |
| Fiber Optic Interconnect System Complete | LS | ALL | | $0.00 |
| Utility Undergrounding, Complete | LF | 0 | $100.00 | $0.00 |
| | | | | |
| | | | **TOTAL CONSTRUCTION COST** | **$ 132,465,840** |

# *South Stage Road Extension Plan*
## *I-8 With Westbound Alignment*
***ODOT***

***Engineer's Conceptual Estimate***

| | | | | |
|---|---|---|---|---|
| *Prepared By: Eza Gaigalas* | | *Date: March 2024* | | |
| *Reviewed By: Darren Hippenstiel, PE* | | | | |
| | *This Estimate has a Rating of:* | **3C** | *(See rating scale guide below.)* | |
| **ITEM** | **UNIT** | **TOTAL QUANTITY** | **UNIT PRICE** | **TOTAL COST** |
| **ENGINEERING SUPPORT** | | | | |
| Engineering & Construction Management | LS | ALL | $33,117,000.00 | $33,117,000.00 |
| Right-of-Way Support | EA | 0 | $18,000.00 | $0.00 |
| County Staff Time | YR | | $50,000.00 | $0.00 |
| **ENGINEERING SUPPORT SUBTOTAL** | | | | **$ 33,117,000** |
| | | | **TOTAL PROJECT SUBTOTAL** | **$ 165,585,574** |
| | | | **35% Contingency** | **$ 57,954,960** |
| | | | **TOTAL ESTIMATED PROJECT COST** | **$ 223,540,534** |

**Unit Costs Note:**

The associated product and material costs are based upon the most recent available cost data. Due to the current volatility of the construction market, we cannot guarantee these costs for any duration of time.

**Assumptions:**

- The assumed roadway section is 8 inches ACP over 16 inches of compacted aggregate base.
- Due to the on-street bicycle facility the assumed storm inlet spacing is 150 feet.
- All overhead utilities will be relocated and remain above ground.
- No sound walls are required for this project.
-
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**Scope Accuracy:**

**Level 1:** Project scope well understood and well defined.

**Level 2:** Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

**Level 3:** Project scope is a "vision" with limited detail.

**Engineering Effort:**

**Level A:** Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

**Level B:** Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

**Level C:** No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 60% based on risk.

# ATTACHMENT C – RENDERINGS OF EIGHT REMAINING ALTERNATIVES

## Alternative O-1: South Stage Alignment

**Alternative O-2: South Stage Southerly Realignment (Option 1)**

**Alternative O-3: South Stage Southerly Realignment (Option 2)**

**Alterative O-4: South Stage Underpass (Option 1)**

**Alternative I-1: South Stage Alignment**

**Alternative I-2: South Stage Southerly Realignment (Option 1)**

**Alternative I-3: South Stage Southerly Realignment (Option 2)**

### Alternative I-4: South Stage Underpass Interchange