

ALTERNATIVES ANALYSIS

SH-74 over I-35 Bridge
Replacement / Interchange

McClain County
J/P 29571(04)

Prepared for:



OKLAHOMA
Transportation

Oklahoma Department
of Transportation

200 N.E. 21st Street
Oklahoma City, OK 73105

Prepared by:

TEIM Design
Oklahoma Certificate of
Authority No. 1759

3020 NW 149th Street
Oklahoma City, OK 73134
405-752-1122

March 2023



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Prepared by:

Kristi Nicole Bradley P.E. Reg. No. 30409

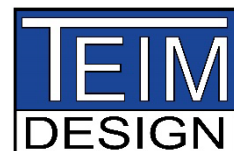




TABLE OF CONTENTS

EXECUTIVE SUMMARY..... 1

1.0 PROJECT INTRODUCTION 1

2.0 EXISTING CONDITIONS 1

 2.1 SITE DESCRIPTION 1

 2.2 I-35..... 4

 2.3 SH-74..... 4

 2.4 SH-74 BRIDGE 4

 2.5 I-35 AND SH-74 INTERCHANGE..... 5

 2.6 FRONTAGE ROADS 5

 2.7 COLLISION DATA 5

 2.8 SUMMARY OF ENVIRONMENTAL CONSTRAINTS FROM RECONNAISSANCE..... 8

 2.9 UTILITIES 9

 2.10 RIGHT-OF-WAY 9

 2.11 STAKEHOLDER INPUT 9

 2.11.1 SB Slip Ramp Relocation..... 10

 2.11.2 Tourist-Oriented Signage Near Roundabout 13

 2.11.3 Addition of Traffic Signals 13

 2.11.4 Addition of Sidewalks..... 13

3.0 PROJECT DESIGN 14

 3.1 ALTERNATIVE 1 14

 3.2 ALTERNATIVE 2 16

 3.3 ALTERNATIVE 3 19

 3.4 ALTERNATIVE 4 22

 3.5 ALTERNATIVE 5 25

4.0 OPERATIONAL ANALYSIS 28

 4.1 TRAFFIC DATA 28

 4.2 I-35 OPERATIONAL ANALYSIS 29

 4.3 INTERSECTION ANALYSIS 30

 4.3.1 Two-Way Stop..... 31

 4.3.2 All-Way Stop 33

 4.3.3 Roundabout..... 35

 4.3.4 Traffic Signal 37

 4.3.5 Traffic Control Recommendations 39

5.0 ESTIMATED ENVIRONMENTAL IMPACTS 39

6.0 UTILITY RELOCATIONS 40

7.0 RIGHT-OF-WAY ACQUISITION..... 41

8.0 CONSTRUCTION SEQUENCING..... 42



9.0	COST OPINIONS	44
10.0	SUMMARY OF PUBLIC INVOLVEMENT SUMMARY AND RESPONSES TO COMMENTS.....	46
11.0	RECOMENDATIONS	48
12.0	PROJECT SCOPE FOR DESIGN PLANS	50

LIST OF TABLES

TABLE ES1:	COMPARISON MATRIX ALTERNATIVES	ES3
TABLE 2-1:	EXISTING UTILITIES.....	9
TABLE 4-1:	2021 I-35 OPERATIONAL ANALYSIS RESULTS	29
TABLE 4-2:	2050 I-35 OPERATIONAL ANALYSIS RESULTS	30
TABLE 4-3:	2021 INTERSECTION OPERATIONAL ANALYSIS RESULTS	31
TABLE 4-4:	2050 TWO-WAY STOP INTERSECTION OPERATIONAL ANALYSIS RESULTS.....	32
TABLE 4-5:	2050 ALL-WAY STOP INTERSECTION OPERATIONAL ANALYSIS RESULTS	34
TABLE 4-6:	2050 ROUNDABOUT INTERSECTION OPERATIONAL ANALYSIS RESULTS	36
TABLE 4-7:	2050 SIGNALIZED INTERSECTION OPERATIONAL ANALYSIS RESULTS	38
TABLE 9-1:	TOTAL COST OPINIONS	46
TABLE 10-1:	AGENCY COMMENT AND RESPONSE SUMMARY.....	48
TABLE 10-2:	PUBLIC COMMENT SUMMARY BY CATEGORY.....	48
TABLE 11-1:	OVERALL COMPARISON I-35/SH-74 ALTERNATIVES 1-5	50

LIST OF FIGURES

FIGURE ES1:	SELECTED ALTERNATIVE.....	ES4
FIGURE 2-1:	PROJECT LOCATION.....	2
FIGURE 2-2:	ADJACENT INTERCHANGES.....	3
FIGURE 2-3:	COLLISION DATA	7
FIGURE 2-4:	PROPOSED SOUTHBOUND SLIP RAMP RELOCATION – TAPER RAMP.....	11
FIGURE 2-5:	PROPOSED SOUTHBOUND SLIP RAMP RELOCATION – ROUNDABOUT	12
FIGURE 3-1:	ALTERNATIVE 1.....	15
FIGURE 3-2-A:	ALTERNATIVE 2A.....	17
FIGURE 3-2-B:	ALTERNATIVE 2B.....	18
FIGURE 3-3-A:	ALTERNATIVE 3A.....	20
FIGURE 3-3-B:	ALTERNATIVE 3B.....	21
FIGURE 3-4-A:	ALTERNATIVE 4A.....	23
FIGURE 3-4-B:	ALTERNATIVE 4B.....	24
FIGURE 3-5-A:	ALTERNATIVE 5A.....	26
FIGURE 3-5-B:	ALTERNATIVE 5B.....	27



LIST OF APPENDICES

- APPENDIX A: RECONNAISSANCE REPORT
- APPENDIX B: BRIDGE INSPECTION REPORTS
- APPENDIX C: CITY OF GOLDSBY DOCUMENTS
- APPENDIX D: ALTERNATIVE 1 0° SKEW CONCEPTUAL PLANS
- APPENDIX E: ALTERNATIVE 2 20° SKEW CONCEPTUAL PLANS
- APPENDIX F: ALTERNATIVE 3 45° SKEW CONCEPTUAL PLANS
- APPENDIX G: ALTERNATIVE 4: 40° SKEW CONCEPTUAL PLANS
- APPENDIX H: ALTERNATIVE 5: 53° SKEW CONCEPTUAL PLANS
- APPENDIX I: BRIDGE OPTIONS STUDY & BRIDGE CONCEPTUAL PLANS
- APPENDIX J: DESIGN CRITERIA
- APPENDIX K: DESIGN TRAFFIC DATA BY TEC
- APPENDIX L: HIGHWAY CAPACITY SOFTWARE PRINTOUTS BY TEIM
- APPENDIX M: SYNCHRO PRINTOUTS FROM TEC
- APPENDIX N: DESIGN TRAFFIC DATA LAYOUT MAP
- APPENDIX O: UTILITY RELOCATION COSTS
- APPENDIX P: RIGHT-OF-WAY COSTS
- APPENDIX Q: CONSTRUCTION COST OPINIONS
- APPENDIX R: PUBLIC INVOLVEMENT SUMMARY



EXECUTIVE SUMMARY

The Oklahoma Department of Transportation (ODOT) contracted with TEIM Design (TEIM) to provide an alternatives analysis with conceptual plans for the SH-74 bridge replacement project over I-35, located 2.76 miles south of Cleveland County, in McClain County, Oklahoma. Proposed improvements consist of replacement of the existing SH-74 bridge over I-35 to accommodate an ultimate 6 lanes on I-35. SH-74 shall be two 12-foot lanes with full-width paved shoulders.

I-35 is classified as an Interstate with flat terrain. The project limits contain two intersections where local roads and I-35 ramps meet. The first such intersection, where West Frontage Road, SH-74, and the I-35 southbound ramps intersect, is all way stop controlled. The second such intersection, where SH-74, the I-35 northbound ramps, and Airport Road intersect, is controlled by a roundabout. In the past ten years, 185 collisions have been recorded along the project limits. The existing typical section for I-35 is a divided open section with a 32' grassed median with cable barrier. The existing pavement consists of four 12'-wide lanes, 10'-wide outside shoulders and 4'-wide inside shoulders constructed of full depth asphalt pavement. The posted speed limit is 70 mph, and the horizontal alignment is straight with no curves. The vertical alignment contains a single substandard curve, occurring at the beginning of the project limits.

SH-74 is a Major Collector with flat/rolling terrain. The typical section consists of an undivided open section constructed of asphalt pavement. There is one 11-12' lane in each direction with an 11'-wide turn lane at the south end of the interchange and an additional southbound lane south of the frontage road connection. Shoulder width varies from 5-8' wide south of the bridge and 0-4' north of the bridge. The posted speed limit is 45 mph in the northbound lanes and 40 mph in the southbound lanes. The horizontal alignment contains two curves requiring reverse crown at these locations. The existing vertical alignment meets 50-mph criteria throughout with a 40-mph vertical curve near the roundabout.

The primary objective of this project is to replace the structurally deficient SH-74 bridge over I-35 and to make room for future construction of additional lanes on I-35 in a manner that will minimize the right-of-way, utility, environmental, and economic impacts. Secondary objectives include possible elimination of the southbound (SB) I-35 slip ramp for increased safety and to avoid redundancy, as well as improving all horizontal and vertical alignments in the interchange to current design standards. To meet the primary objective, five alternatives with varying skews of the SH-74 bridge over I-35 have been developed, all of which will remove the I-35 SB slip ramp and include either signalized or roundabout intersections at the I-35 ramps. An option was developed to relocate the existing slip ramp further north near Burr Oak Road and reconfigure it as a roundabout option if desired. All of the alternatives considered a signalized intersection at the SH-74/SB I-35 ramps intersection. Alternatives 3A, 4A, and 5A feature signalized intersections at both the SH-74/SB I-35 ramps intersection and the SH-74/northbound (NB) I-35 ramps intersection. Alternatives 3B, 4B, and 5B include a roundabout intersection at the SH-74/SB I-35 ramps intersection and leave the existing roundabout in place at the SH-74/NB I-35 ramps intersection.



All alternatives contain two 12'-wide lanes in the SB direction of SH-74, one 12'-wide lane in the NB direction, and 8'-wide outside shoulders. All ramps will be 15'-wide lanes with 2'-wide inside and 8'-wide outside shoulders. Additional alternative descriptions can be summarized as follows:

Alternative 1 - 0° Skew: Features include replacement of the I-35 SB exit slip ramp with a new I-35 SB exit ramp configuration which intersects at a signalized intersection with SH-74/I-35 SB exit ramp/West Interstate Drive, a horizontal curve on the bridge, and a new T- intersection at SH-74/Airport Road.

Alternative 2 - 20° Skew: Features include elimination of the horizontal curve on the bridge from Alternative 1 while still containing a tangent curve and a new T-intersection at SH-74/Airport Road.

Alternative 3 - 45° Skew: Features include a continuous SH-74 alignment with signalized intersections at the ramps for Alternative 3A and roundabout intersections for Alternative 3B. This alternative includes a new configuration for West Frontage Road. Alternative 3 will have the greatest right-of-way impacts on commercial properties.

Alternative 4 - 40° Skew: Features include a continuous SH-74 alignment, signalized intersections at the ramps for Alternative 4A, roundabout intersections at the ramps for Alternative 4B, minor improvements to West Frontage Road, and a new configuration for Airport Road. Alternative 4 will have the greatest right-of-way impacts to the airport (Alternative 4B includes minor realignment of Airport Road and consequently has fewer right-of-way impacts than Alternative 4A).

Alternative 5 - 53° Skew: Features include a continuous SH-74 alignment, signalized intersections at the ramps for Alternative 5A, roundabout intersections at the ramps for Alternative 5B, and minor improvements to West Frontage Road. There will be minor changes to Airport Road in Alternative 5A and no changes to Airport Road in Alternative 5B.

Lastly, an option was developed to relocate the existing I-35 SB slip ramp further north near Burr Oak Road as either a tapered ramp or a roundabout, as discussed in Section 2.11.1.

These alternatives were presented at a Virtual Open House held from October 10 – 31, 2022, which is summarized in Section 10. After the Virtual Open House, ODOT requested that in the design phase the Center Road and SH-74 intersection be studied for a traffic signal warrant and turning movement analysis and improvements be made to this intersection via signing/signals and striping.

Recommendations

ODOT selected Alternative 5B, the 53° skew bridge with roundabouts at both intersections, as the Preferred Alternative, based on the engineering design study and the public involvement process, as seen in **Figure ES1**. Alternative 5B improves safety, accommodates large volumes of traffic, requires the least amount of right of way, and was the least expensive option. Alternatives 1 & 2 have higher overall construction costs. Alternative 4 skews towards the airport

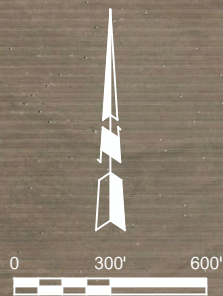
property and would have right-of-way issues for relocating utilities. Alternative 3 was eliminated due to a higher overall cost compared to Alternative 5. Alternative 5B was ultimately chosen over 5A due to the lower costs to construct a roundabout compared to a signalized intersection and the reduced chances of severe crashes.

Table ES1 provides a comparison of the five Alternatives and their associated features.

TABLE ES1: ALTERNATIVES COMPARISON MATRIX					
OPTION	ALTERNATIVE 1 0° Skew	ALTERNATIVE 2 20° Skew	ALTERNATIVE 3 45° Skew	ALTERNATIVE 4 40° Skew	ALTERNATIVE 5 53° Skew
GEOMETRIC DESIGN					
A	New I-35 SB ramps configuration and intersection with SH-74; new SH-74/W. Frontage Road intersection; new SH-74/Airport Road T-intersection 	New SH-74/Airport Road T-intersection; signalized SH-74/I-35 SB ramps/W. Frontage Road intersection; existing roundabout remains 	Major improvements to W. Frontage Road; Signalized intersection @ SH-74/I-35 SB ramps/W. Frontage Road intersection and at existing roundabout 	Minor improvements to W. Frontage Rd.; major change to Airport Rd.; Signalized intersection @ SH-74/I-35 SB ramps/W. Frontage Rd. intersection and at existing roundabout 	Minor improvements to W. Frontage Road; Signalized intersection @ existing roundabout
B	N/A	Roundabouts 	Roundabouts 	Roundabouts 	Roundabouts
INTERSECTION CAPACITY					
A					
B	N/A				
ENVIRONMENTAL IMPACT					
A	1.10 acres UST, 290' stream 	0.28 acres UST, 241' stream 	1.73 acres UST, 0' stream 	0.28 acres UST, 57' stream 	0.28 acres UST, 27' stream
B	N/A	0.24 acres UST, 240' stream 	1.73 acres UST, 0' stream 	0.28 acres, UST, 56' stream 	0.28 acres UST, 26' stream
UTILITY RELOCATION					
A	6 utilities, 13 owners \$1,060,000 	6 utilities, 12 owners \$837,100 	6 utilities, 13 owners \$1,584,000 	6 utilities, 13 owners \$1,597,900 	6 utilities, 13 owners \$1,320,700
B	N/A	6 utilities, 12 owners \$773,700 	6 utilities, 11 owners \$1,043,900 	6 utilities, 13 owners \$,1423,600 	6 utilities, 11 owners \$839,900
RIGHT-OF-WAY ACQUISITION					
A	12 properties, 5.63 acres 	8 properties, 5.61 acres 	14 properties, 9.96 acres, 2.53 acres from airport 	12 properties, 10.33 acres, 4.35 acres from airport 	12 properties, 8.51 acres, 2.53 acres from airport
B	N/A	9 properties, 5.53 acres 	12 properties, 7.06 acres 	10 properties, 7.55 acres, 2.00 acres from airport 	9 properties, 5.57 acres
TOTAL COST OPINION					
A	\$24,306,260 	\$23,728,660 	\$20,240,440 	\$19,109,320 	\$19,043,500
B	N/A	\$23,504,440 	\$16,752,080 	\$17,022,600 	\$15,651,100



FIGURE ES1: SELECTED ALTERNATIVE



LEGEND

- PROPOSED ROADWAY
- PROPOSED SLIP RAMP
- PROPOSED BRIDGE
- PROPOSED WIDENING BY OTHERS



ALTERNATIVE 5B - 53° SKEW
OVERVIEW MAP

1.0 PROJECT INTRODUCTION

The Oklahoma Department of Transportation (ODOT) contracted with TEIM Design (TEIM) to provide an alternatives analysis with conceptual plans for the SH-74 bridge replacement project over I-35, located 2.76 miles south of Cleveland County, in McClain County, Oklahoma. Proposed improvements shall consist of replacement of the existing SH-74 bridge over I-35 to accommodate an ultimate 6 lanes on I-35. SH-74 shall be two 12-foot lanes with full width paved shoulders. The purpose of this analysis is to determine an interchange configuration that will accommodate 2050 traffic volumes in a safe and efficient manner. Five primary interchange alternatives are presented in this analysis.

2.0 EXISTING CONDITIONS

Existing conditions data was assembled from ODOT Surveys, ODOT construction plans, the ODOT website, the ODOT *Reconnaissance Report – Replacement of SH-74 Bridge Over I-35 J/P 29571(04)*, on-site inspection, atlases, and Google Earth. Existing conditions are described in the following sections. The as-built plans are located in the ODOT *Reconnaissance Report – Replacement of SH-74 Bridge Over I-35 J/P 29571(04)* located in **Appendix A**.

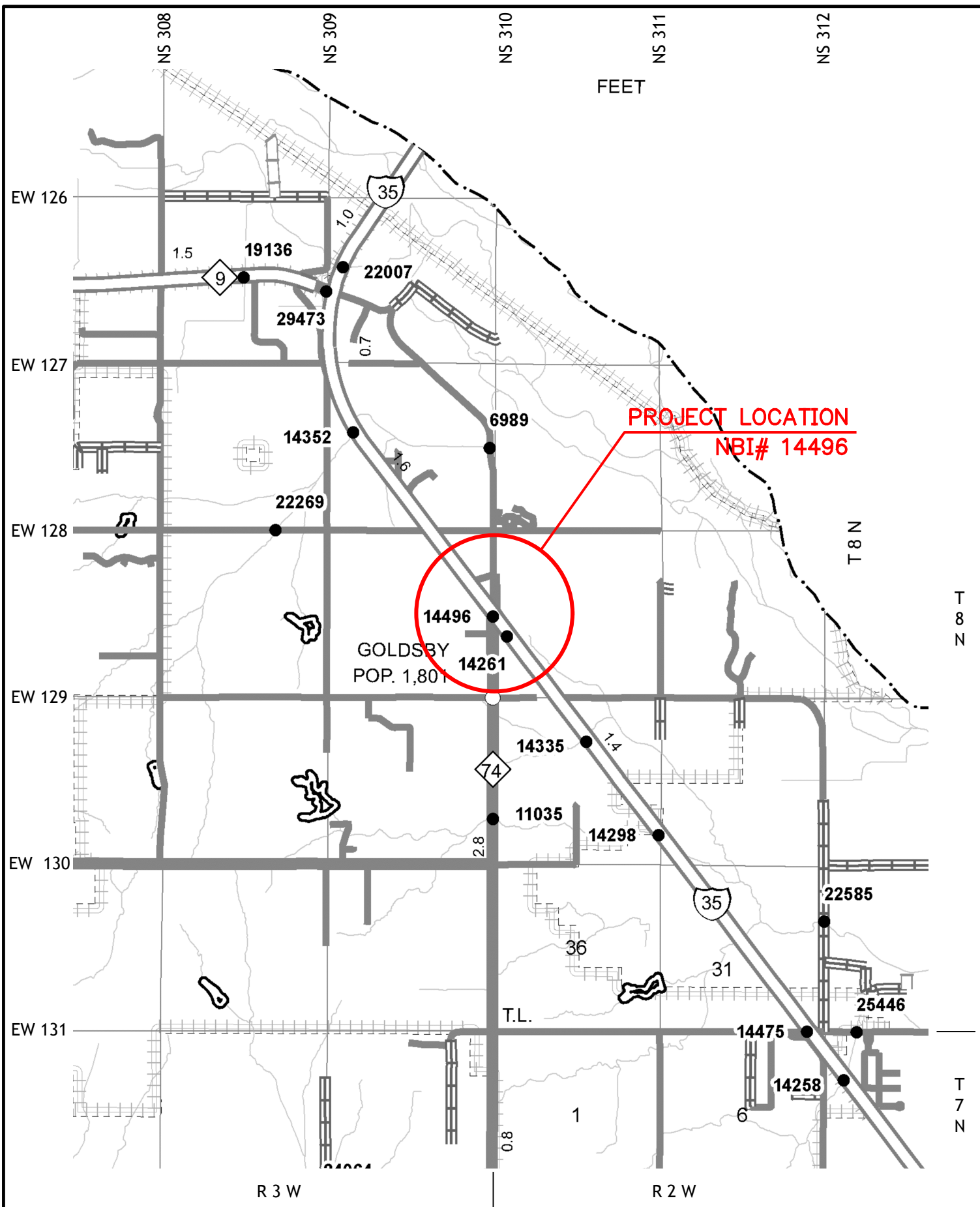
2.1 SITE DESCRIPTION

The existing I-35 interchange at SH-74 is located in Goldsby, Oklahoma in McClain County. Goldsby, according to the comprehensive plan published in 2016, is primarily a commuter town, i.e., residents work in surrounding larger cities. Therefore, this interchange is mostly used as access to I-35 for work commutes or short trips to surrounding major cities. The project location is shown in **Figure 2-1**. In addition to Goldsby, OK (population 2,694), the other nearby communities include Norman, OK (population 128,026), located approximately 5 miles north along I-35; Purcell, OK (population 6,651), located approximately 11 miles south along I-35; and Blanchard, OK (population 8,879), located approximately 10 miles west of the I-35 and SH-74 interchange.

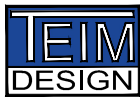
Adjacent interchanges on I-35 are shown in **Figure 2-2** and are located approximately 2.15 miles north at SH-9W and approximately 3.12 miles south at Ladd Road. The area type is flat rural. The David Jay Perry Airport is located just east of the interchange. The project study area lies within the jurisdiction of a Metropolitan Planning Organization, i.e., the Association of Central Oklahoma Governments (ACOG).



FIGURE 2-1: PROJECT LOCATION



ALTERNATIVES
ANALYSIS



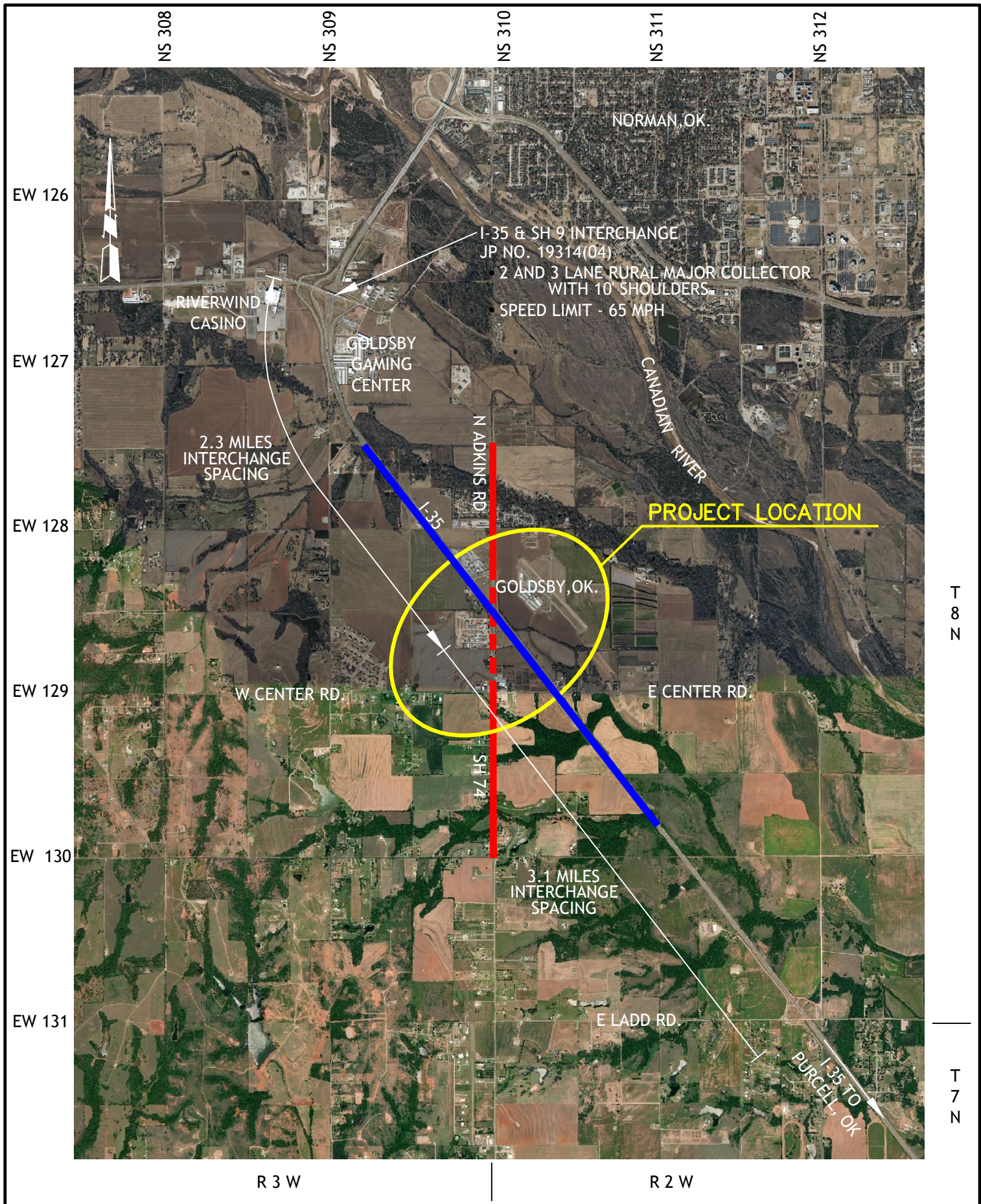
I-35/SH 74 INTERCHANGE
MCCLAIN COUNTY
J/P 29571(04)

PROJECT LOCATION

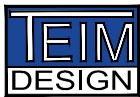
EXHIBIT 1



FIGURE 2-2: ADJACENT INTERCHANGES



ALTERNATIVES
ANALYSIS

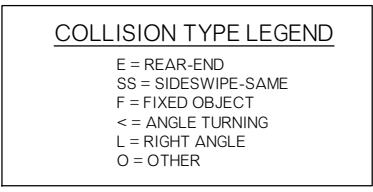
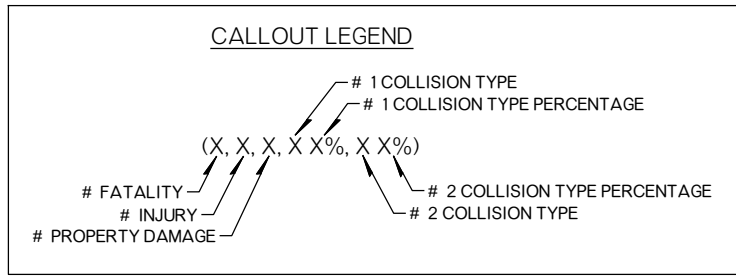


I-35/SH 74 INTERCHANGE
MCCLAIN COUNTY
J/P 29571(04)

ADJACENT INTERCHANGES

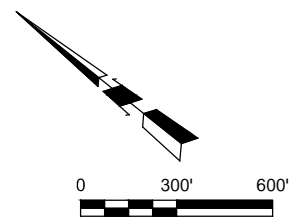
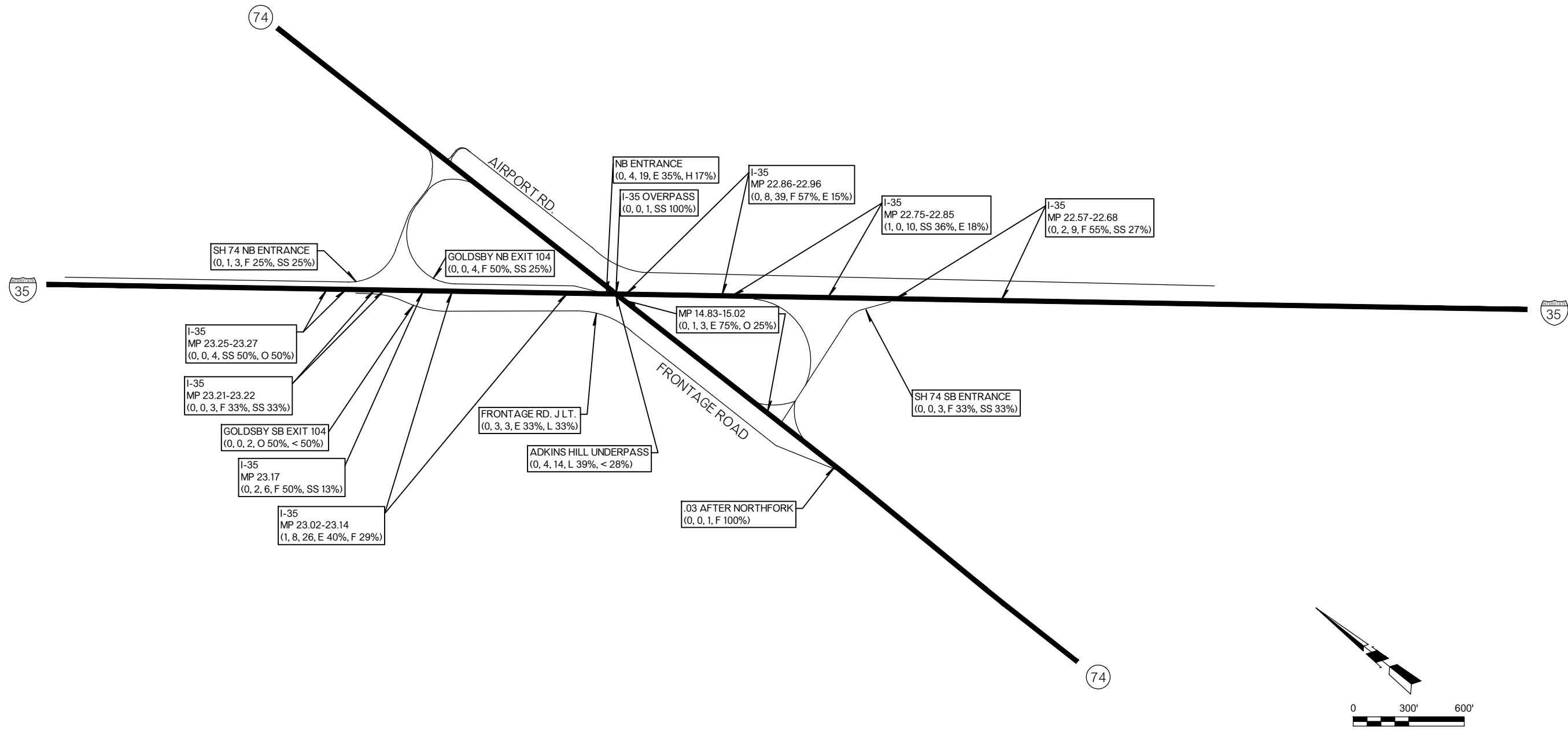


FIGURE 2-3: COLLISION DATA



NOTE:

THE CONFIGURATION AT THE NORTH INTERSECTION OF AIRPORT ROAD AND THE NB I-35 ENTRANCE AND EXIT RAMP HAS CHANGED TO A ROUNDABOUT. DUE TO THE RECENCY OF THE ROUNDABOUT OPENING, A REPRESENTATIVE DURATION OF DATA FROM THE CURRENT CONFIGURATION COULD NOT BE PULLED FOR THIS REPORT.



THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

COLLISION DATA

Sheet No. _____

2.2 I-35

I-35 is a four-lane rural interstate with a 32'-wide grassed median with a cable barrier. Driving lanes are 12' wide and shoulders are 4' wide inside and 10' wide outside. ODOT completed J/P 23283(04) in 2020, which consisted of a 2" mill and overlay on top of the existing asphalt pavement. The pavement is in fair condition. The posted speed limit on I-35 is 70 mph, which will be utilized as the design speed. The horizontal alignment contains no curves. The vertical alignment meets current design criteria for 70 mph. The 2050 Average Annual Daily Traffic (AADT) is 76,780, with a truck traffic percentage (T(AADT)) of 20%.

2.3 SH-74

SH-74 is a two-lane rural major collector. Driving lanes are 12' wide and shoulders are 0 to 4' wide north of the bridge. ODOT completed J/P 23283(04) in 2020, which consisted of widening and overlaying SH-74. The typical section south of the bridge and north of Center Road was widened to two 11'-wide driving lanes, an 11'-wide turning lane, and variable width paved shoulders. Past the I-35 northbound (NB) ramps and West Frontage Road intersection, the typical section changes to two 11'-wide driving lanes in the SB direction and one 11'-wide driving lane in the NB direction. The pavement type is asphalt and in good condition. The posted speed limit on SH-74 is 45 mph in the northbound lanes, which will be utilized as the design speed, and 40 mph in the southbound lanes. The horizontal alignment contains two curves throughout the project limits with radii of 5729.58' with a normal crown, located at the Center Road intersection and 500' south of the I-35 southbound (SB) ramps intersection, respectively. A maximum superelevation rate of 6% at 45 mph requires a reverse crown at these locations. The existing vertical curves meet a stopping sight distance criteria for 50 mph with a 40-mph vertical curve near roundabout approach. There is guardrail protecting the bridge. The 2050 AADT is 13,270 with a truck percentage T(AADT) of 15%.

2.4 SH-74 BRIDGE

The existing SH-74 Bridge spans over I-35. Features of the bridge include:

- NBI 14496
- 4-Span (50', 2-83' Cont., 50') x 30.84' Wide Steel I-Beam
- Skewed 53 Degrees
- 28' Clear Roadway Width
- Sufficiency Rating is 49.1
- Health Index is Structurally Deficient
- Minimum Vertical Clearance over I-35 is 16.08'

The Bridge Inspection Report is located in **Appendix B**.

2.5 I-35 AND SH-74 INTERCHANGE

The existing interchange is a folded diamond interchange with ramps located in the northeast and southwest quadrants. The ramps contain a single 15'-wide driving lane with 2'-wide inside and 10'-wide outside shoulders. The pavement type is newly reconstructed 8" asphalt over an 8" aggregate base type A. The pavement is in good condition.

Ramp A, the I-35 NB entrance ramp, is a 1,160' parallel entrance ramp. The ramp has three horizontal curves with a radius of 267' near the gore, 267' blending with Ramp B, and 167' at the roundabout. The existing vertical curves meet stopping sight distance criteria for 60 mph near the gore and 55 mph near SH-74. The maximum ramp grade is 1.28%.

Ramp B, the I-35 NB exit ramp, is a 540' parallel exit ramp. The ramp contains two horizontal curves. The existing curve radii are 167' near the roundabout and 267' near the gore. The existing vertical curves meets stopping sight distance criteria for 60 mph. The maximum ramp grade is 1.09%.

Ramp C, the I-35 SB entrance ramp, is an 800' parallel entrance ramp and contains two horizontal curves. The existing curve radii are 3,200' near Ramp D and 280' near the gore. The existing vertical curves meets stopping sight distance criteria for 50 mph.

Ramp D, the I-35 SB exit ramp, is a 700' parallel exit ramp and contains one horizontal curve. The existing curve radius is 280' near the gore. The existing vertical curves meet stopping sight distance criteria for 35 mph.

There is an existing SB slip ramp located approximately 800' north of the SH-74/I-35 bridge. Discussion of proposed relocation of this ramp is included in Section 2.11.1.

The project limits contain two intersections where local roads and I-35 ramps meet. The first such intersection, where West Frontage Road (which receives the SB I-35 exit "slip" ramp), SH-74, and the I-35 SB entrance ramps intersect is all-way stop controlled. The second such intersection, where SH-74, the I-35 entrance and exit ramps, and Airport Road intersect, is controlled by a roundabout. In the past ten years, 185 collisions have been recorded along the project limits.

2.6 FRONTAGE ROADS

There are two frontage roads along the I-35 and SH-74 Interchange, i.e., Airport Road and West Frontage Road. Airport Road is located in the northeast quadrant wrapping around the David Jay Perry Airport north of I-35 and east of SH-74. West Frontage Road is located west of SH-74.

2.7 COLLISION DATA

A collision analysis was performed with data collected from January 2010 through December 2020 and is included in **Appendix A**. This collision data was pulled before the newly reconstructed



roundabout was open to traffic in 2021, therefore all figures and statistics are from the previous two way intersection and ramp configuration.

The I-35 and SH-74 interchange yielded a total of 185 collisions within the project limits. Of these collisions, there have been two fatalities, 33 collisions resulting in a reportable injury, and 150 collisions resulting in property damage. The two largest causes of collisions were 31.4% from fixed object collisions and 23.2% from rear end collisions. Fixed object barrier cable collisions constituted 15% of all 185 collisions, with 47 out of 185 or 25% of all 185 collisions occurring on I-35 between 0-0.10 miles slightly north of the bridge underpass. See **Figure 2-3** for a graphical display of the collisions within the project limits.

The collisions related to fixed objects were due to vehicles leaving the roadway and cars following too closely. Improving the merging/diverging distances are countermeasures to improve this safety concern. Another statistic worth noting is that the highest reason for collisions (i.e., 40.6%) was caused by “no improper action”, i.e., not caused by an unsafe/unlawful action and may indicate significant driver confusion is occurring with the current interchange conditions. The second highest reason for collision (i.e., 16.5%) was from “unsafe speed”.

2.8 SUMMARY OF ENVIRONMENTAL CONSTRAINTS FROM RECONNAISSANCE

Reconnaissance was performed for the I-35/SH-74 project area, and the findings were documented in a Reconnaissance Report which is located in **Appendix A**. The highlights of those findings can be summarized as follows:

- **Land Use/Ownership:** The City of Goldsby Veterans Memorial and adjacent public park located on the southern end of the study area are classified as both 4(f) and 6(f) properties. The David Jay Perry Airport is located just outside and east of the study area. A compressed natural gas (CNG) fueling station is located within the northwest section of the study area. No other special properties were noted.
- **Trade Fixtures:** There are a total of 16 trade fixtures located within the study area, all of which can be relocated back onto remaining property using the existing permit(s).
- **Cultural Resources:** There are no historically significant properties or structures within the study area.
- **Hazardous Waste/LUST sites:** A total of 4 potential hazardous waste or storage tank sites were identified within the study area. A total of 23 groundwater wells were identified in 10 locations within the study area. One (1) oil/gas well was identified within 1/8th mile of the study area.
- **Threatened and Endangered Species/Habitat:** Federally-listed endangered, threatened, or candidate species located in McClain County include the Whooping Crane, Piping Plover, Red Knot, Arkansas River Shiner, Peppered Chub, and Monarch Butterfly. The reconnaissance report, dated December 2021, reports the American Burying Beetle (ABB) as well; however, the United States Fish and Wildlife Service have updated their list of endangered, threatened, and candidate species for McClain County since December 2021 to remove the ABB and include the Peppered Chub for McClain County. The project area lies within a federally-listed aquatic dependent species watershed (Canadian River watershed) for the Arkansas River Shiner.
- **Streams and Wetlands:** National Wetlands Inventory mapping indicates no potential wetlands located within the study area, and the site visit confirmed the absence of wetlands. Two (2) streams cross through the study area. There are no protected or sensitive waters identified within the study area. A Federal Emergency Management Agency (FEMA) Zone A floodplain associated with an unnamed tributary to the Canadian River is located within the southeast section of the study area.

2.9 UTILITIES

Utility information was assembled in the Reconnaissance Report and also in the survey for the project. **Table 2-1** identifies the utilities located within the study bounds as well as the associated owners.

TABLE 2-1: EXISTING UTILITIES

Company	Utility
AT&T	Communication Lines
Cox Communications	Fiber Optic
Lumen	Fiber Optic
McLeod USA Telecommunications Services	Fiber Optic
ODOT Fiber Optics	Fiber Optic
Trace Fiber Networks	Fiber Optic
Windstream	Fiber Optic
Level 3 Communications	Fiber Optic
Cap-Rock Communications	Fiber Optic
Oklahoma Electric Cooperative	Distribution
DCP Midstream	Gas
ONG	Natural Gas
Goldsby Water Authority	Potable Water

2.10 RIGHT-OF-WAY

Property identification was completed in the Reconnaissance Report. There is a mixture of commercial, residential, and city-owned property located within the reconnaissance area. The City of Goldsby Veterans Memorial and adjacent public park are located on the southern end of the study area and are classified as both 4(f) and 6(f) properties. The David Jay Perry Airport is located east of the interchange.

2.11 STAKEHOLDER INPUT

In early discussions with ODOT when the alternatives were first being developed, ODOT noted several items for TEIM's consideration. These included:

- Building a new bridge would be preferable to retrofitting the existing bridge.
- The existing I-35 SB slip exit ramp seems to be performing adequately and, therefore, is not required to be removed for any alternative.
- Proposed I-35 SB entrance and exit ramps should utilize as much of the existing pavement as possible.

- All alternatives should be analyzed utilizing stop control (two-way and all-way), signalized, and roundabout intersections at the I-35 NB and SB ramps. The existing roundabout does not need to be removed unless it makes sense geometrically to do so.
- TEIM Design should coordinate with Town of Goldsby to determine future development plans, what airport access is necessary, and to receive any other project input.

Per ODOT instruction, TEIM met with the Town of Goldsby officials on April 25, 2022, at the Town Hall. The meeting minutes can be found in **Appendix C**. The Mayor and other Goldsby officials provided information regarding proposed commercial and residential development, the plans of which can also be found in **Appendix C**. They informed that according to platted neighborhoods, there will be as many as 1800 new homes under construction or soon to be constructed in the vicinity of this interchange. Commercial development is planned for the near future on the west side of the airport property. All of this proposed development should be considered in the traffic projections. In addition, Town of Goldsby officials had a few desired improvements for the interchange which would need to be discussed with ODOT District 3 for possible inclusion in the scope. These desired improvements included:

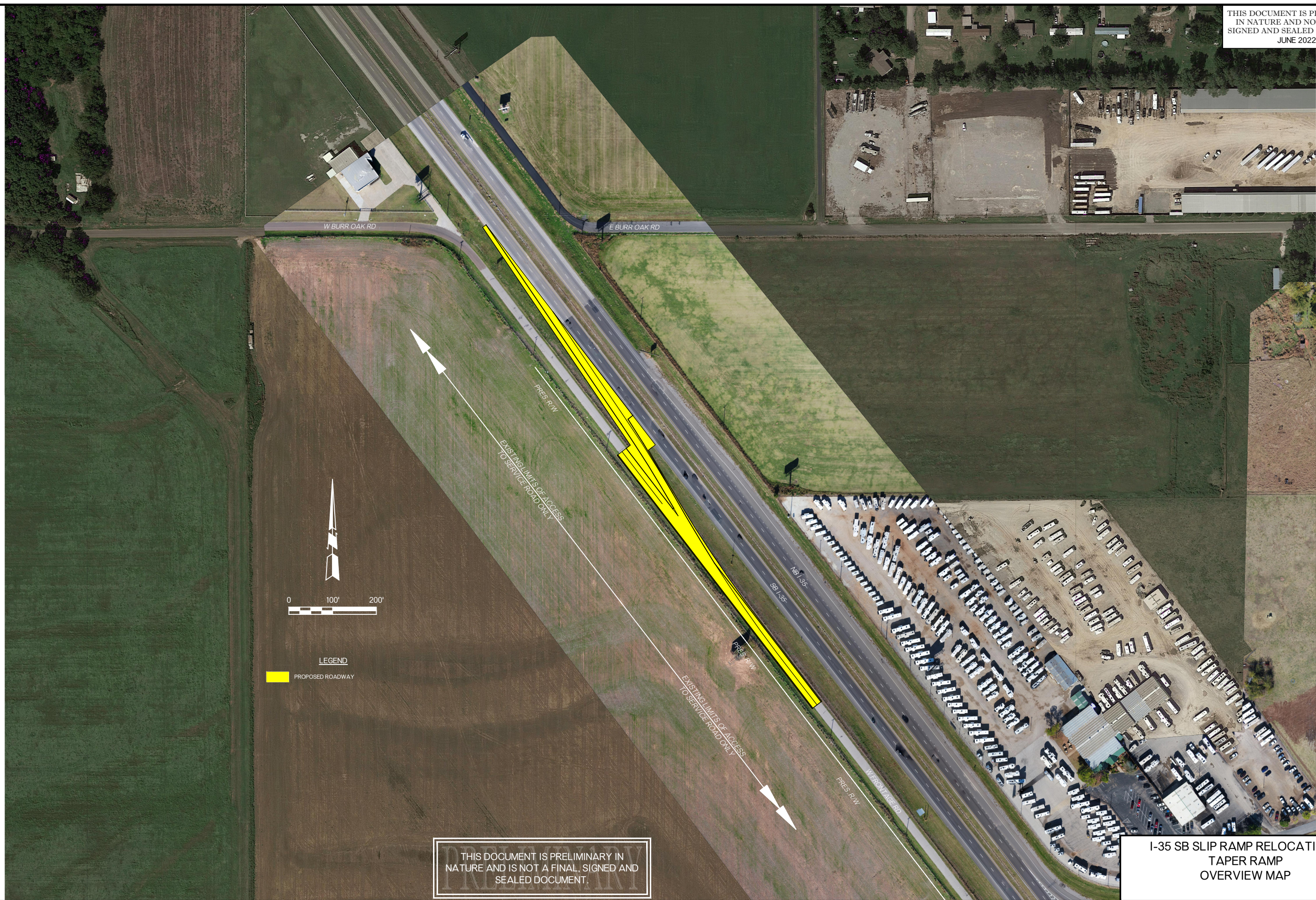
- Relocation of existing I-35 SB slip exit ramp further north to the vicinity of Burr Oak Road.
- Addition of Tourist Oriented Destination Signage (TODS) for the I-35 NB exit ramp near the roundabout.
- Addition of traffic signals at SH-74/SB I-35 entrance and exit ramps intersection as well as at SH-74/Center Road intersection.
- Addition of Americans with Disabilities Act (ADA) compliant sidewalks along SH-74 throughout the project.

2.11.1 SB Slip Ramp Relocation

The Town of Goldsby officials requested relocation of the existing I-35 SB slip exit ramp further north would provide better access to a large parcel of property south of Burr Oak Road. The recommended location for this change would have the ramp gore at I-35 approximately 400' to 600' south of Burr Oak Road as depicted in **Figures 2-4 and 2-5**. Construction cost of this relocation would be approximately \$519,200 for the tapered ramp option or \$1,071,400 for the roundabout option. These cost opinions include estimated quantities for earthwork, surfacing, and removal of existing slip ramp. On February 13, 2023, ODOT instructed TEIM to include the relocate slip ramp in the final plans.



FIGURE 2-4: PROPOSED SOUTHBOUND SLIP RAMP RELOCATION – TAPER RAMP



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I-35 SB SLIP RAMP RELOCATION -
TAPER RAMP
OVERVIEW MAP



FIGURE 2-5: PROPOSED SOUTHBOUND SLIP RAMP RELOCATION – ROUNDABOUT



LEGEND
PROPOSED ROADWAY

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I-35 SB SLIP RAMP RELOCATION -
ROUNDABOUT
OVERVIEW MAP

2.11.2 Tourist-Oriented Signage Near Roundabout

Tourist-Oriented Destination Signage (TODS) is useful to direct motorists exiting the interstate to local gas, food, lodging, or other businesses. The Town of Goldsby officials expressed interest in having a TODS sign or other commercial signage near the existing roundabout to provide guidance to travelers as to which roundabout exit to take in order to access various businesses. Addition of this type of signage can be discussed with ODOT for possible inclusion in the final design of the interchange.

2.11.3 Addition of Traffic Signals

The Town of Goldsby officials requested traffic signals be considered at the intersection of SH-74/I-35 SB entrance and exit ramps and at SH-74/Center Road. Dependent upon which alternative is selected, either a roundabout or a traffic signal may be included at the SH-74/I-35 SB ramps intersection. Improvement of the exiting SH-74/Center Road Intersection is outside the original project scope but after the Virtual Open House, ODOT requested the intersection be studied in the design phase for a traffic signal warrant and turning movement analysis and improvements be made to this intersection via signing/signals and striping.

2.11.4 Addition of Sidewalks

Town of Goldsby requested the incorporation of ADA compliant sidewalks along SH-74 from Center Road extending north to Airport Road. Since SH-74 is an open section highway with shoulders, the sidewalk should be 6' wide and located as far from the highway shoulder as possible. The sidewalk would be located between the ditch backslope and the right-of-way line. The east side of the alignment would be the proposed location for Alternatives 1, 2, 3, & 5 with the west side being preferred for Alternative 4. The estimated cost to add this sidewalk option to each of the alternatives, including 6' bridge widening, would be:

Alternative 1	\$24,200.00 (sidewalk) + \$312,700 (bridge widening) = \$336,900
Alternative 2A	\$22,900.00 (sidewalk) + \$329,600 (bridge widening) = \$525,500
Alternative 2B	\$23,500.00 (sidewalk) + \$329,600 (bridge widening) = \$353,100
Alternative 3A	\$36,200.00 (sidewalk) + \$629,800 (bridge widening) = \$666,000
Alternative 3B	\$36,100.00 (sidewalk) + \$629,800 (bridge widening) = \$665,900
Alternative 4A	\$38,000.00 (sidewalk) + \$546,000 (bridge widening) = \$584,000
Alternative 4B	\$37,900.00 (sidewalk) + \$546,000 (bridge widening) = \$583,900
Alternative 5A	\$35,300.00 (sidewalk) + \$719,100 (bridge widening) = \$754,400
Alternative 5B	\$34,800.00 (sidewalk) + \$719,100 (bridge widening) = \$753,900

Addition of sidewalks is outside the original project scope. Therefore, this would need to be discussed further between the Town of Goldsby and ODOT District 3 during the development of final plans to see if the scope could be expanded to include sidewalks.

3.0 PROJECT DESIGN

Proposed improvements shall consist of replacement of the existing SH-74 bridge over I-35 to accommodate an ultimate 6 lanes on I-35. SH-74 shall be two 12'-wide lanes with 8' paved shoulders. The purpose of this analysis is to determine an interchange configuration that accommodates future traffic while minimizing the environmental, utility, right-of-way, and economic impacts.

Five interchange alternatives and two bridge types for each interchange are presented in this analysis. In addition, there are roundabout intersection options for four of the main interchange designs. Conceptual plans for each interchange alternative are located in **Appendices D-H**. The conceptual bridge designs are located in **Appendix I**. For all interchange alternatives, the proposed bridge width supports two 12'-wide lanes and two 8'-wide shoulders. For all interchange alternatives, the P.C. Beam design is displayed in the conceptual plans. A P.C. Beam bridge and a Steel I-Beam or Plate Girder bridge have been evaluated for each interchange alternative, and the P.C. Beam design is displayed in the conceptual plans. Conceptual Cost Opinions have also been developed.

All elements of design are in accordance with ODOT guidelines, *AASHTO, A Policy on Geometric Design of Highways and Streets, 2018*, and *AASHTO, Roadside Design Guide, 2011*. On ODOT's Rural Functional Classification Map for McClain County, SH-74 is classified as a major collector. Airport and West Frontage Roads are classified as minor arterials. Chapter 12 of the ODOT Roadway Design Manual includes tables with geometric design criteria for the different roadway classifications. The Design Criteria for this project are located in **Appendix J**.

Alternatives 2-5 feature a new configuration at the intersection of SH-74/I-35 SB ramps/West Frontage Road. Alternatives 1 and 2 feature a new T-intersection at SH-74/Airport Road, while Alternative 1 will have a new SH-74/I-35 SB ramps intersection. Traffic data was analyzed to determine what stop conditions would work optimally at these intersections including two-way stop, all-way stop, signalized, and a roundabout. The results are discussed further in Section 4. After the Virtual Open House, ODOT requested that in the design phase the Center Road and SH-74 intersection be studied for a traffic signal warrant and turning movement analysis and improvements be made to this intersection via signing/signals and striping.

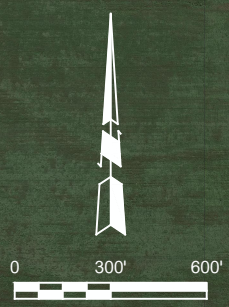
3.1 ALTERNATIVE 1

Alternative 1 features a 0° skew for the SH-74 bridge over I-35, with no right-of-way impacts to the David Jay Perry Airport. SH-74 intersects Airport Road at a T-intersection within the bridge extents. In addition, the I-35 SB entrance and exit ramps are reconfigured to traditional diamond ramps. The existing 4-way intersection for the I-35 SB entrance and exit ramps is reduced to a T-intersection. An overview map of this alternative is shown in **Figure 3-1**.



FIGURE 3-1: ALTERNATIVE 1

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**ALTERNATIVE 1 - 0° SKEW
OVERVIEW MAP**

SH-74 would consist of two 12'-wide lanes and 8'-wide shoulder in the SB direction and one 12'-wide lane and 8'-wide shoulder in the NB direction with an open section. This design would be constructed on the same alignment as existing SH-74 with the exception that two horizontal curves would be minorly lengthened such that no superelevation would be required. The existing SB I-35 slip ramp, exit, and entrance ramps would be removed and replaced with all new alignments. West Frontage Road would be made to operate without carrying I-35 traffic and would have its own intersection. Two horizontal and vertical curves would be corrected to meet design speeds. Airport Road would be two 12'-wide lanes and 8'-wide outside shoulders with a 32'-tall retaining wall on both sides for roughly 1500' of the alignment to accommodate the extreme vertical change associated with the new SH-74 bridge alignment.

Alternative 1 includes the new intersection of SH-74/I-35 SB ramps as well as the SH-74/West Frontage Road intersection. Traffic data was analyzed to determine what stop conditions would work optimally at these intersections, including a two-way stop and all-way stop, and is discussed further in Section 4.

The bridge over I-35 for this alternative consists of a 172' long, two-span bridge with vertical abutments.

3.2 ALTERNATIVE 2

Alternative 2 features a 20° skew for the SH-74 bridge over I-35, with the intersection at the Airport Road frontage road occurring within the bridge extents. This design reconfigures Ramps A and B exactly as in Alternative 1 to appropriate horizontal and vertical geometry prior to connecting to the existing roundabout. The existing SB I-35 ramp alignments would be minorly adjusted to correct horizontal and vertical curves to tie into the new SH-74 profile and horizontal geometry, and the I-35 SB slip ramp would be eliminated. A layout map of Alternative 2A can be found in **Figure 3-2-A**, and a layout map of Alternative 2B containing the roundabout design can be found in **Figure 3-2-B**. The existing roundabout at the north ramps is left intact for both 2A & 2B alternatives.

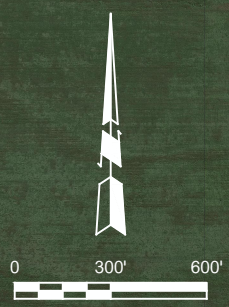
SH-74 would consist of two 12'-wide lanes and an 8'-wide shoulder in the SB direction and one 12'-wide lane and 8'-wide shoulder in the NB direction with an open section. This design would be constructed on the same alignment as existing SH-74 with the exception that two horizontal curves would be minorly lengthened such that no superelevation would be required. West Frontage Road would be made to operate without carrying I-35 traffic and would be only minorly updated to adjust for horizontal and vertical matches to SH-74. Airport Road would be two 12'-wide lanes and 8'-wide outside shoulders with a 32'-tall retaining wall on both sides for roughly 1500' of the alignment to accommodate the extreme vertical change associated with the new SH-74 bridge alignment.

The bridge over I-35 for this alternative consists of a 195' long, 2-span bridge with vertical abutments.



FIGURE 3-2-A: ALTERNATIVE 2A

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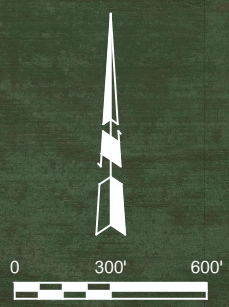


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**ALTERNATIVE 2A - 20° SKEW
OVERVIEW MAP**



FIGURE 3-2-B: ALTERNATIVE 2B



- LEGEND**
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**ALTERNATIVE 2B - 20° SKEW
OVERVIEW MAP**

Due to the skew of the new SH-74 bridge, SH-74 would be realigned to intersect with Airport Road before proceeding to the existing NB I-35 entrance and exit ramp roundabout. There are currently plans to develop the northeast quadrant of this interchange fully up to the Airport Road right-of-way.

3.3 ALTERNATIVE 3

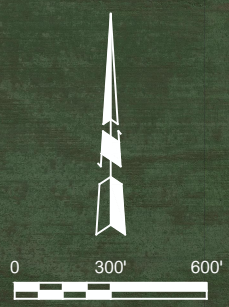
Alternative 3 features a 45° skew for the SH-74 bridge over I-35, eventually connecting back to the existing SH-74 alignment before reaching the existing roundabout at the I-35 NB ramps. This design reconfigures the I-35 NB entrance and exit ramps exactly as in Alternative 1 to appropriate horizontal and vertical geometry prior to connecting to the existing roundabout. The existing I-35 SB entrance and exit alignments would be minorly adjusted to correct horizontal and vertical curves to tie into the new SH-74 profile and horizontal geometry, and the I-35 SB slip exit ramp would be eliminated. West Frontage Road would have a new alignment horizontally and vertically to fit within the smallest right-of-way footprint possible. Alternative 3A reconstructs the existing roundabout north of the bridge to a signalized intersection which would be interconnected to the signalized intersection south of the bridge. A layout map of Alternative 3A can be found in **Figure 3-3-A**, and a layout map of Alternative 3B containing the roundabout design can be found in **Figure 3-3-B**.

SH-74 would consist of two 12'-wide lanes and 8'-wide shoulder in the SB direction and one 12'-wide lane and 8'-wide shoulder in the NB direction with an open section. The beginning would be constructed on the same alignment as existing SH-74 with the exception that two horizontal curves would be minorly lengthened such that no superelevation would be required. SH-74 would then cross I-35 at a 30° skew before curving back to the existing SH-74 alignment. West Frontage Road would be made to operate without carrying I-35 traffic and would undergo a major update to adjust for horizontal and vertical matches to SH-74 while minimizing the right-of-way footprint as much as possible by utilizing a 28'-tall retaining wall stretching almost 700'. The typical would be two 12'-wide lanes and 2'-wide outside shoulders. Airport Road would be realigned towards the airport in Alternative 3A but remains untouched in Alternative 3B.

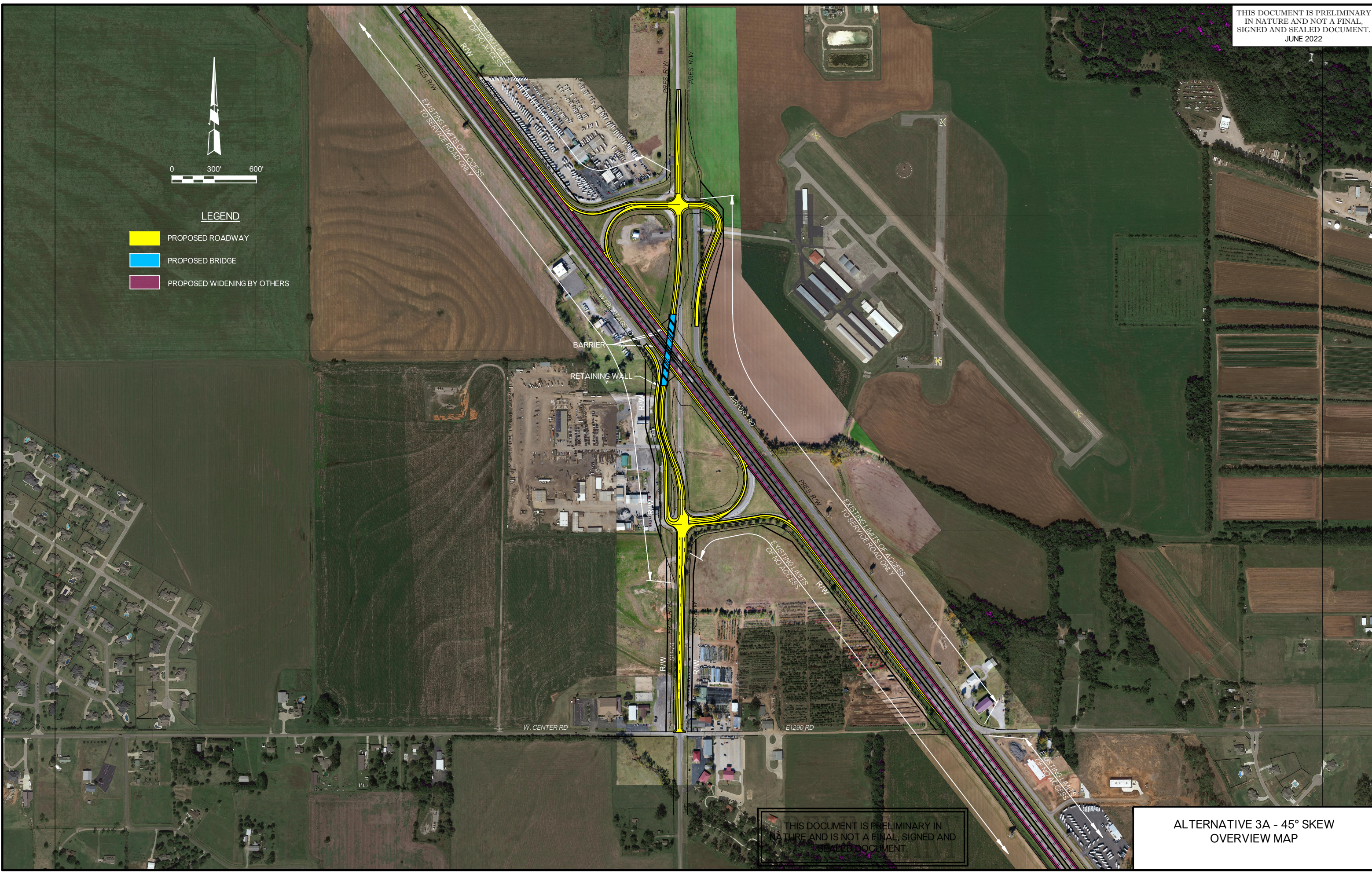
The bridge over I-35 for this alternative consists of a 404' long, 4-span bridge with conventional abutments.



FIGURE 3-3-A: ALTERNATIVE 3A



- LEGEND**
- PROPOSED ROADWAY
 - PROPOSED BRIDGE
 - PROPOSED WIDENING BY OTHERS

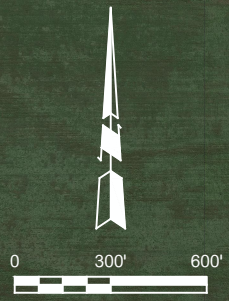


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**ALTERNATIVE 3A - 45° SKEW
OVERVIEW MAP**



FIGURE 3-3-B: ALTERNATIVE 3B



- LEGEND**
- PROPOSED ROADWAY
 - PROPOSED BRIDGE
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**ALTERNATIVE 3B - 45° SKEW
OVERVIEW MAP**

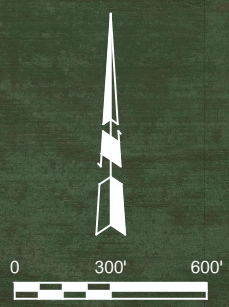
3.4 ALTERNATIVE 4

Alternative 4 features a 40° skew for the SH-74 bridge over I-35, eventually connecting back to the existing roundabout at the I-35 NB ramps. The design reconfigures I-35 NB entrance and exit ramps exactly as in Alternative 1 to appropriate horizontal and vertical geometry prior to connecting to the existing roundabout. The existing I-35 SB entrance and exit ramp alignments would be minorly adjusted to correct horizontal and vertical curves to tie into the new SH-74 profile and horizontal geometry, and the I-35 SB slip exit ramp would be eliminated. Airport Road would have a new alignment horizontally and vertically to fit within the smallest right-of-way footprint possible. Alternative 4A reconstructs the existing roundabout north of the bridge to a signalized intersection which would be interconnected to the signalized intersection south of the bridge. A layout map of Alternative 4A can be found in **Figure 3-4-A**, and a layout map of Alternative 4B containing the roundabout design can be found in **Figure 3-4-B**.

SH-74 would consist of two 12'-wide lanes and 8'-wide shoulder in the SB direction and one 12'-wide lane and 8'-wide shoulder in the NB direction with an open section. The beginning would be constructed on the same alignment as existing SH-74 with the exception that two horizontal curves would be minorly lengthened such that no superelevation would be required. SH-74 would then cross I-35 at a 40° skew before curving back to connect to a new signalized intersection (Alternative 4A) or to the existing roundabout (Alternative 4B) at the I-35 NB entrance and exit ramps. Airport Road would undergo a realignment at the north end to adjust for horizontal and vertical matches to SH-74 while minimizing the right-of-way footprint as much as possible by utilizing a 32'-tall retaining wall stretching almost 770'. Airport Road and West Frontage Road would consist of two 12'-wide lanes and 2'-wide outside shoulders. West Frontage Road would be made to operate without carrying I-35 traffic and would be only minorly updated to adjust for horizontal and vertical matches to SH-74.



FIGURE 3-4-A: ALTERNATIVE 4A



- LEGEND**
- PROPOSED ROADWAY
 - PROPOSED BRIDGE
 - PROPOSED WIDENING BY OTHERS

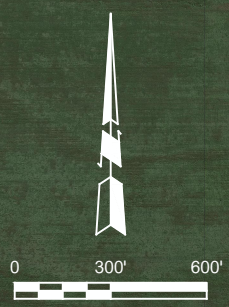


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**ALTERNATIVE 4A - 40° SKEW
OVERVIEW MAP**



FIGURE 3-4-B: ALTERNATIVE 4B



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 - PROPOSED WIDENING BY OTHERS



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**ALTERNATIVE 4B - 40° SKEW
OVERVIEW MAP**

3.5 ALTERNATIVE 5

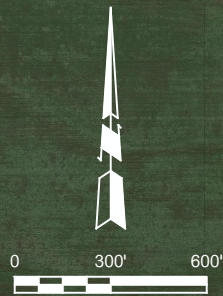
Alternative 5 features a 53° skew for the SH-74 bridge over I-35, eventually connecting back to the existing SH-74 alignment before reaching the existing roundabout at the I-35 NB ramps. The design reconfigures I-35 NB entrance and exit ramps exactly as in Alternative 1 to appropriate horizontal and vertical geometry prior to connecting to the existing roundabout. The existing I-35 SB I-35 entrance and exit ramp alignments would be minorly adjusted to correct horizontal and vertical curves to tie into the new SH-74 profile and horizontal geometry, and the I-35 SB slip exit ramp would be eliminated. Airport Road would be relocated east near the north signalized intersection (Alternative 5A) but would not be touched in the roundabout alternative (Alternative 5B). West Frontage Road would be minorly affected. Alternative 5A reconstructs the existing roundabout north of the bridge to a signalized intersection which would be interconnected to the signalized intersection south of the bridge. A layout map of this alternative can be found in **Figure 3-5-A**, and a layout map of Alternative 5B containing the roundabout design can be found in **Figure 3-5-B**.

SH-74 would consist of two 12'-wide lanes and an 8'-wide shoulder in the SB direction and one 12'-wide lane and 8'-wide shoulder in the NB direction with an open section with a 27'-tall retaining wall stretching 460'. The beginning would be constructed on the same alignment as existing SH-74 with the exception of two horizontal curves being minorly upsized to allow for no superelevation to be required. SH-74 would then offset 45' from the existing SH-74 alignment and cross I-35 at a 53° skew before curving back to the existing SH-74 alignment. The existing I-35 SB slip exit ramp would be removed. West Frontage Road would be made to operate without carrying I-35 traffic and would be only minorly updated to adjust for horizontal and vertical matches to SH-74. The typical would be two 12'-wide lanes and 2'-wide outside shoulders.

The bridge over I-35 for this alignment consists of a 454' long, 4-span bridge with conventional abutments.



FIGURE 3-5-A: ALTERNATIVE 5A



- LEGEND**
- PROPOSED ROADWAY
 - PROPOSED BRIDGE
 - PROPOSED WIDENING BY OTHERS

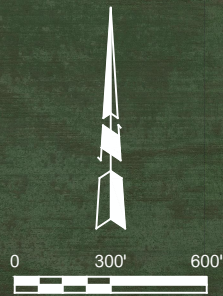


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ALTERNATIVE 5A - 53° SKEW
OVERVIEW MAP



FIGURE 3-5-B: ALTERNATIVE 5B



- LEGEND**
- PROPOSED ROADWAY
 - PROPOSED BRIDGE
 - PROPOSED WIDENING BY OTHERS



ALTERNATIVE 5B - 53° SKEW
OVERVIEW MAP

4.0 OPERATIONAL ANALYSIS

4.1 TRAFFIC DATA

TEIM contracted Traffic Engineering Consultants, Inc. (TEC) to analyze the interchange of I-35 and SH-74 and the two intersections where the frontage roads meet. The existing traffic volume data was collected in October 2021 and TEC developed the 2021 and 2050 design traffic data. TEIM conducted an operation analysis for each of the existing intersection configurations under 2021 and 2050 traffic conditions. The existing and design traffic data utilized in this report were provided by Traffic Engineering Consultants (TEC), see **Appendix K** for the Design Traffic Data. Regarding the Design Traffic Data, in the preliminary design phase the design alternatives reflected traffic without the consideration of the slip ramp in case that option was not selected. After the Virtual Open House, the slip ramp was determined to be incorporated in the final design, so TEC developed new exhibits for all the alternatives to demonstrate the traffic with the slip ramp present. **Appendix K** contains exhibits that show the traffic with and without the slip ramp traffic included.

On I-35, the current annual average daily traffic (AADT) volume for the design year 2021 is 48,600 vehicles per day (vpd) and the projected AADT for the design year 2050 is 76,780. The design hour (K) is 10%, and the directional distribution (D) is 56%. The percentage of truck traffic is 17% for design hourly volume, 20% for average daily traffic, and 14% for trucks with 3 or more axles.

On SH-74, the current annual average daily traffic (AADT) volume for the design year 2021 is 8,400 vehicles per day (vpd) and the projected AADT for the design year 2050 is 13,270. The design hour (K) is 10%, and the directional distribution (D) is 65%. The percentage of truck traffic is 9% for design hourly volume, 15% for average daily traffic, and 3% for trucks with 3 or more axles.

I-35 was analyzed under the existing configuration. The operational analysis reports a level of service (LOS) of D or better in the design year 2021 and LOS of D or better in 2050.

The SH-74 and I-35 NB roundabout was analyzed under the existing configuration. The operational analysis reports a LOS of A in the design year 2021 and in 2050.

The I-35 SB and SH-74 all-way stop controlled intersection was analyzed under the existing configuration. The operational analysis reports a LOS of C or better in the design year 2021 and a LOS of F or better in 2050.

The operational analysis for the I-35 interchange at SH-74 was conducted in accordance with the 2016 Transportation Research Board Highway Capacity Manual (HCM) and Highway Capacity Software (HCS7). See **Appendix L** for the HCS printouts and **Appendix M** for the Synchro files. The Synchro files will show reports for the signalized intersections both with an without the slip ramp traffic incorporated after the Virtual Open House.



All elements of design were in accordance with ODOT guidelines, *AASHTO A Policy on Geometric Design of Highways and Streets, 2018* and *AASHTO Roadside Design Guide, 2011*.

After the Virtual Open House, ODOT requested that, in the design phase, the Center Road and SH-74 intersection be studied for traffic signal warrants and turning movement analysis and improvements be made to this intersection via signing/signals and striping.

4.2 I-35 OPERATIONAL ANALYSIS

An operational analysis along I-35 near the SH-74 interchange was conducted to evaluate the basic, weaving, merge, and diverge segments on the freeway. The operational analysis defines the Level of Service (LOS) on the basis of density. The I-35 operational analysis for NB and SB traffic at the AM and PM peaks are displayed in **Tables 4.1 and 4.2**.

Table 4.1: 2021 I-35 Operational Analysis Results

Segment (Type)	LOS – 2021 AM Peak, Existing Configuration	LOS – 2021 PM Peak, Existing Configuration
I-35 Northbound		
Study Limit to SH-74 Exit (<i>Basic</i>)	C	B
SH-74 Exit Ramp (<i>Diverge</i>)	C	B
Between SH-74 Ramps (<i>Basic</i>)	C	B
SH-74 Entrance Ramp (<i>Merge</i>)	C	B
SH-74 Entrance to Study Limit (<i>Basic</i>)	D	C
I-35 Southbound		
Study Limit to SH-74 Exit (<i>Basic</i>)	A	C
Slip Ramp (<i>Diverge</i>)	B	D
SH-74 Underpass (<i>Basic</i>)	A	C
SH-74 Exit Ramp (<i>Diverge</i>)	A	C
Between SH-74 Ramps (<i>Basic</i>)	A	C
SH-74 Entrance Ramp (<i>Merge</i>)	A	C
SH-74 Entrance to Study Limit (<i>Basic</i>)	A	C

Table 4.2: 2050 I-35 Operational Analysis Results

I-35 Northbound				
Segment (Type)	LOS - 2050 AM Peak		LOS - 2050 PM Peak	
	Existing Configuration	Alternatives 1-5	Existing Configuration	Alternatives 1-5
Study Limit to SH-74 Exit (<i>Basic</i>)	C	C	B	B
SH-74 Exit Ramp (<i>Diverge</i>)	C	C	B	B
Between SH-74 Ramps (<i>Basic</i>)	C	C	B	B
SH-74 Entrance Ramp (<i>Merge</i>)	C	C	B	B
SH-74 Entrance to Study Limit (<i>Basic</i>)	D	D	C	C
I-35 Southbound				
Segment (Type)	LOS - 2050 AM / PM Peaks			
	Existing Configuration	Alternative 1	Alternatives 2-5	
Study Limit to SH-74 Exit (<i>Basic</i>)	A / D	A / D	A / D	
Slip Ramp (<i>Diverge</i>)	B / D	B / D	B / D	
SH-74 Underpass (<i>Basic</i>)	A / C	A / C	A / C	
SH-74 Exit Ramp (<i>Diverge</i>)	A / C	A / B	A / B	
Between SH-74 Ramps (<i>Basic</i>)	A / C	A / C	A / C	
SH-74 Entrance Ramp (<i>Merge</i>)	A / C	A / B	A / B	
SH-74 Entrance to Study Limit (<i>Basic</i>)	A / C	A / C	A / C	

Current conditions (2021) on I-35 are LOS D or higher. In 2050, I-35 becomes LOS D or higher utilizing the existing geometry in the AM and LOS D or higher in the PM. The proposed alternatives all improve I-35 to LOS C or higher in the AM and LOS D or higher in the PM.

4.3 INTERSECTION ANALYSIS

The SH-74 interchange was analyzed with several traffic controlling methods: two-way stop, all-way stop, and roundabouts. The results can be used to determine the optimized traffic control method for each interchange configuration. Each traffic control method defines the LOS on the basis of delay. See **Appendix N** for a layout map of the LOS by intersection and alternative as



well as a copy of the LOS tables found in this report. **Table 4.3** shows the present-day intersection delays.

Table 4.3: 2021 Intersection Operational Analysis Results

Intersection Delay, Existing Geometry						
Intersection	2021 AM Peak			2021 PM Peak		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Entrance/Exit Ramps and SH-74	7	A	1.3	6	A	1.0
I-35 SB Entrance/Exit Ramps, SH-74, and West Frontage Road	16	C	3.9	18	B	5.3
Total Delay (veh-hr)			5			6

4.3.1 Two-Way Stop

A two-way stop-controlled intersection allows the major street, SH-74, to move uncontrolled, while the minor street or off-ramps are controlled by a stop sign. The LOS is determined by the delay (seconds per vehicle) for each minor street movement as well as major street left turns. The SH-74 two-way stop operational analysis included SH-74/I-35 NB ramps, SH-74/Airport Road (Alternatives 1 & 2 only), SH-74/I-35 SB ramps (Alternative 1 only), SH-74/I-35 SB ramps/West Frontage Road (Alternatives 2-5 only), and SH-74/West Frontage Road (Alternative 1 only) intersections at the AM and PM peaks. The results are displayed in **Table 4.4**.

TABLE 4.4: 2050 TWO-WAY STOP INTERSECTION DELAY OPERATIONAL ANALYSIS RESULTS

Intersection Delay, Two-Way Stop																		
2050 AM Peak																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
SH-74/I-35 NB Entrance and Exit Ramps	1089	F	310.0	133	F	35.8	154	F	41.8	1089	F	310.1	1089	F	310.1	1089	F	310.1
SH-74/Airport Road		Does not exist		1915	F	513.3	1915	F	513.3		Does not exist			Does not exist		Does not exist		Does not exist
SH-74/I-35 SB Entrance and Exit Ramps		Does not exist		25	C	8.5		Does not exist			Does not exist			Does not exist		Does not exist		Does not exist
SH-74/I-35 SB Entrance and Exit Ramps/ West Frontage Road	89	F	33.7		Does not exist		297	F	112.7	297	F	112.7	297	F	112.7	297	F	112.7
SH-74/West Frontage Road		Does not exist		16	C	5.7		Does not exist			Does not exist			Does not exist		Does not exist		Does not exist
Total Delay (veh-hr)			343.8			563.4			667.8			422.7			422.7			422.7
2050 PM Peak																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
SH-74/I-35 NB Entrance and Exit Ramps	144	F	37.2	36	E	8.4	36	E	8.4	144	F	37.2	144	F	37.2	144	F	37.2
SH-74/Airport Road		Does not exist		740	F	178.9	740	F	178.9		Does not exist			Does not exist		Does not exist		Does not exist
SH-74/I-35 SB Entrance and Exit Ramps		Does not exist		34	D	14.7		Does not exist			Does not exist			Does not exist		Does not exist		Does not exist
SH-74/I-35 SB Entrance and Exit Ramps/ West Frontage Road	176	F	81.7		Does not exist		419	F	194.3	419	F	194.3	419	F	194.3	419	F	194.3
SH-74/West Frontage Road		Does not exist		71	F	28.5		Does not exist			Does not exist			Does not exist		Does not exist		Does not exist
Total Delay (veh-hr)			118.9			230.6			318.6			231.5			231.5			231.5

The two-way stop condition for Alternatives 2-5 results in longer delay than existing conditions due to the removal of the dedicated eastbound right turn lane at the SH-74/West Frontage Road intersection, which results in all eastbound approach traffic to be in a single lane. The LOS remains at F in the AM and PM peak hours. Including a dedicated right turn lane in the design would improve the delay from 112 sec/veh to 100 sec/veh in the proposed alternatives, but the LOS for this intersection would remain at F during the AM peak hour.

Under Alternative 1 conditions the SH-74/West Frontage Road intersection is divided into two separate intersections. The delay and LOS improve from an F to a D or higher in the AM peak hour as a result. Alternatives 1 & 2 also create a new intersection at Airport Road where SH-74 is the major street with a LOS C in the AM and F in the PM.

4.3.2 All-Way Stop

An all-way stop controlled intersection requires every vehicle to stop at the intersection before proceeding. The LOS is determined by the delay (seconds per vehicle) for each approach. The SH-74 all-way stop operational analysis included the SH-74/I-35 NB ramps, SH-74/Airport Road (Alternatives 1 & 2 only), SH-74/I-35 SB ramps (Alternative 1 only), SH-74/I-35 SB ramps/West Frontage Road (Alternatives 2-5 only), and SH-74/West Frontage Road (Alternative 1 only) at the AM and PM peaks. The results are displayed in **Table 4.5**.

In comparison to two-way stops, Alternatives 1 & 2 did show worse LOS at the SH-74/I-35 SB entrance and exit ramps intersection and the SH-74/Airport Road intersections, with LOS F or better in the AM & PM hours. Alternative 1 saw an improvement at the SH-74/West Frontage intersection in delay times, though the LOS remained the same for the AM hour and improved from an F to a C in the PM hour.

While the LOS does not improve from an F for Alternatives 3-5 at the SH-74/I-35 SB entrance and exit ramps/West Frontage intersection, the delay does improve significantly from the two-way stop delays.

TABLE 4.5 2050 ALL-WAY STOP INTERSECTION DELAY OPERATIONAL ANALYSIS RESULTS

Intersection Delay, All-Way Stop																
2050 AM Peak																
Intersection	Existing		Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5					
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	
SH-74/I-35 NB Entrance and Exit Ramps	89	F	25.4	78	F	21.1	78	F	21.1	89	F	25.4	89	F	25.4	
SH-74/Airport Road		Does not exist		82	F	22.0	92	F	24.6		Does not exist			Does not exist		
SH-74/I-35 SB Entrance and Exit Ramps		Does not exist		91	F	31.0		Does not exist			Does not exist			Does not exist		
SH-74/I-35 SB Entrance and Exit Ramps/ West Frontage Road	113	F	42.7		Does not exist		129	F	48.7		Does not exist		129	F	48.7	
SH-74/West Frontage Road		Does not exist		16	C	53		Does not exist			Does not exist			Does not exist		
Total Delay (veh-hr)			68.1			79.3			94.4			74.1			74.1	
2050 PM Peak																
Intersection	Existing		Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5					
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	
SH-74/I-35 NB Entrance and Exit Ramps	30	D	7.7	26	D	6.1	26	D	6.1	30	D	7.7	30	D	7.7	
SH-74/Airport Road		Does not exist		33	D	8.0	33	D	8.1		Does not exist			Does not exist		
SH-74/I-35 SB Entrance and Exit Ramps		Does not exist		105	F	45.5		Does not exist			Does not exist			Does not exist		
SH-74/I-35 SB Entrance and Exit Ramps/ West Frontage Road	236	F	109.6		Does not exist		305	F	141.5	156	F	72.2	305	F	141.5	
SH-74/West Frontage Road		Does not exist		20	C	7.8		Does not exist			Does not exist			Does not exist		
Total Delay (veh-hr)			117.3			61.3			155.7			79.9			149.2	

4.3.3 Roundabout

The use of roundabouts can improve intersection safety by eliminating or altering conflict types, reducing collision severity, and causing drivers to reduce speeds. Roundabouts have fewer vehicle conflict points in comparison to conventional intersections. The potential for high severity conflicts, such as right-angle, left turn, and head-on collisions, is greatly reduced with roundabout use.

Alternatives 2-5 include a single-lane roundabout option designed in compliance to the FHWA 2010 Rural Single Lane Roundabout design standards utilizing Vehicle Tracking & TORUS software. The inscribed circle (outer diameter of the roundabout) is 130' and complies with a WB-50 design vehicle for these alternatives.

The LOS is determined by the delay (seconds per vehicle) for each approach. The roundabouts LOS analysis for the SH-74/I-35 NB ramps intersection and the SH-74/I-35 SB ramps/West Frontage Road intersection at the AM and PM peaks are displayed in **Table 4.6**.

For both the AM and PM peak hour, delay times at the SH-74/I-35 NB ramps intersection and the SH-74/I-35 SB ramps/West Frontage Road intersection were improved by the introduction of a roundabout, with the AM peak hour LOS improving from F to C compared to an all-way stop controlled intersection.

The existing roundabout north of the bridge appears to be operating at a very high LOS B in the AM peak hour and A in the PM peak hour.

A second left turn lane for the westbound to southbound traffic will not be warranted based on the provided Design Traffic Data found in **Appendix K**. After the Virtual Open House was conducted, ODOT selected the slip ramp to remain part of this interchange but moved farther north closer to Burr Oak Road, which distributes the traffic better on the local road instead of the interstate ramp. The ability for the vehicles to flow from the eastbound leg to a 2-lane southbound alignment also increases the flow for the traffic to exit the roundabout and not tie up the other directions with their heavy volumes.

TABLE 4.6: 2050 ROUNDABOUT INTERSECTION DELAY OPERATIONAL ANALYSIS RESULTS

Intersection Delay, Roundabout														
2050 AM Peak														
Intersection	Existing		Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5			
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS
SH-74/I-35 NB Entrance and Exit Ramps	13	B	3.7	13	B	3.5	13	B	3.7	13	B	3.7	13	B
SH-74/I-35 SB Entrance and Exit Ramps/ West Frontage Road	15	C	5.7	Does not exist	C	5.7	15	C	5.7	15	C	5.7	15	C
Total Delay (veh-hr)			9.4			9.2			9.4			9.4		
2050 PM Peak														
Intersection	Existing		Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5			
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS
SH-74/I-35 NB Entrance and Exit Ramps	9	A	2.3	9	A	2.1	9	A	2.3	9	A	2.3	9	A
SH-74/I-35 SB Entrance and Exit Ramps/ West Frontage Road	27	D	12.6	Does not exist	D	12.6	27	D	12.6	27	D	12.6	27	D
Total Delay (veh-hr)			14.9			14.8			14.9			14.9		

4.3.4 Traffic Signal

Various intersections were analyzed under traffic signal control across all alternatives. The capacity analyses were conducted using *Synchro 11*, which is a software package for modeling and optimizing traffic signal timings at signalized intersections and analyzing unsignalized intersections in accordance with the methodology of the latest edition of the *Highway Capacity Manual*. The average control delay for signalized intersections is estimated for each lane group and aggregated for each approach and for the overall intersections. The LOS for this type of traffic control is directly related to the control delay value. The criteria for stop controlled or unsignalized intersections have different threshold values than do those for signalized intersections. A higher level of control delay has been determined to be acceptable at a signalized intersection for the same LOS. In most situations, the *Highway Capacity Manual* considers an overall intersection LOS D or better and a critical approach (approach with the lowest level of service) LOS E or better to be acceptable.

The results of the analyses, as can be seen in **Table 4.7**, show that all intersections analyzed under signal control are anticipated to operate at a LOS D or better during the AM peak hour and LOS F or better during the PM peak hour. As a result, the total delay across the entire project was greatly reduced under traffic signal control when compared to other methods of control analyzed.

TABLE 4.7: 2050 SIGNALIZED INTERSECTION DELAY OPERATIONAL ANALYSIS RESULTS

Intersection Delay, Signalized																			
2050 AM Peak																			
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5			
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	
SH-74/I-35 NB Entrance and Exit Ramps	Not analyzed			Not analyzed			Not analyzed			12	B	3.5	12	B	3.5	12	B	3.5	
SH-74/Alport Road	Not analyzed			11	B	2.8	11	B	2.9										
SH-74/I-35 SB Entrance and Exit Ramps	Not analyzed			9	A	3.1													
SH-74/I-35 SB Entrance and Exit Ramps/ West Frontage Road	Not analyzed						32	C	12.0	40	D	15.3	40	D	15.3	40	D	15.3	
SH-74/West Frontage Road	Not analyzed			Not analyzed															
Total Delay (veh-hr)			0.0			5.9			14.9			18.8			18.8			18.8	
2050 PM Peak																			
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5			
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	
SH-74/I-35 NB Entrance and Exit Ramps	Not analyzed			Not analyzed			Not analyzed			14	B	3.6	14	B	3.6	14	B	3.6	
SH-74/Alport Road	Not analyzed			12	B	2.9	17	B	4.2										
SH-74/I-35 SB Entrance and Exit Ramps	Not analyzed			10	A	4.2													
SH-74/I-35 SB Entrance and Exit Ramps/ West Frontage Road	Not analyzed						99	F	45.8	104	F	48.0	104	F	48.0	104	F	48.0	
SH-74/West Frontage Road	Not analyzed			Not analyzed															
Total Delay (veh-hr)			0.0			7.1			50.0			51.6			51.6			51.6	

4.3.5 Traffic Control Recommendations

The existing newly constructed roundabout at the SH-74/I-35 NB ramps intersection is performing well and should remain in place.

After the Virtual Open House was conducted, ODOT instructed that the existing slip ramp be relocated farther north closer to Burr Oak Road. The relocated slip ramp and connecting West Frontage Road should be signed the same as the existing slip ramp/frontage road intersecting point. On West Frontage Road, where the slip ramp connects, yield signs or stop signs and stop bars should be installed on both the northbound and southbound lanes of the frontage road. Frontage Road traffic must stop or yield to the slip ramp to prevent ramp traffic from backing up onto I-35. The appropriate “DO NOT ENTER” and “WRONG WAY” signs should be installed on the slip ramp. Using the provided Design Traffic Data found in **Appendix K**, utilizing the existing slip ramp traffic data causes the selected roundabout design (Alternative 5B) to operate at a LOS C in the AM and D in the PM. The queue lengths are short on the westbound leg and will not back up past the gore; however, queue lengths may increase up to 450’ on the eastbound leg. This is not an issue on a local road as it will not back into the interstate. Further, the deceleration lane length of 800’ on SB I-35 is sufficient based on the queue length and the Design Traffic data that was provided. Drivers in the area may choose to skip the slip ramp in favor of the SB exit ramp which will affect the traffic counts in the area. If it is assumed a 50/50 split of exiting traffic between the slip ramp and exit ramp, the roundabout at West Frontage Road/SB ramps/SH-74 intersection will still perform at a LOS B in the AM & C in the PM, a test report can be found in **Appendix L**.

5.0 ESTIMATED ENVIRONMENTAL IMPACTS

A preliminary estimate of potential impacts on environmental resources is offered herein, based upon review of publicly available information available at the time of this report. Better estimates of the environmental impacts will be generated during the National Environmental Policy Act (NEPA) process to follow.

Five (5) design alternatives have been reviewed for comparative environmental impact, as discussed in the following text.

Cultural Resources: None of the alternatives are anticipated to have impacts to cultural resources.

Hazardous Waste/AST/UST Sites: All alternatives may require right-of-way from an oil field service company and an existing gas station that have underground fuel storage tanks and groundwater monitoring wells, as well as from a former gas station that had reported a leaking underground fuel storage tank. Alternatives 3A and 3B are anticipated to require more right-of-way from the existing gas station than the other alternatives and thus are more likely to impact groundwater monitoring wells and/or encounter soils impacted by petroleum releases.



Floodplain: All alternatives cross a Zone A floodplain associated with an unnamed tributary to the Canadian River.

Wetlands and Streams: None of the alternatives are anticipated to have impacts to wetlands. Based upon a review of topographic mapping, the estimated stream impacts of each alternative are:

- Alternative 1: 290 feet
- Alternative 2A: 241 feet
- Alternative 2B: 240 feet
- Alternative 3A: 0 feet
- Alternative 3B: 0 feet
- Alternative 4A: 57 feet
- Alternative 4B: 56 feet
- Alternative 5A: 27 feet
- Alternative 5B: 26 feet

Species: The United States Fish & Wildlife Service (USFWS) lists two endangered species, three threatened species, and one candidate species for McClain County. Preliminary review suggests that no suitable habitat for any endangered or threatened species was observed within the project area for any of the alternatives. However, habitat for the candidate species (Monarch Butterfly) may be present. The project area lies within a federally listed aquatic dependent species watershed (*Canadian River watershed*).

Sections 4(f) & 6(f): None of the alternatives are anticipated to impact the City of Goldsby Section 4(f) & 6(f) property.

Commercial Relocation: Alternatives 3A and 3B will most likely result in the relocation of a compress natural gas (CNG) fueling station.

Airport: Alternatives 3A and 5A are anticipated to require approximately 2.53 acres of right-of-way from the David Jay Perry Airport. Alternatives 4A and 4B are anticipated to require approximately 4.35 and 2.00 acres of right-of-way from this airport. Airport property acquisition and release of airport property must be performed in accordance with Federal Aviation Administration protocols.

6.0 UTILITY RELOCATIONS

Utility relocation cost opinions are preliminary. Actual utility relocations and costs will be determined when plans are at least 50% complete and utility conferences with utility companies have been conducted. The following is a list of the utilities that may be impacted for each alternative:

- AT&T Communication Lines
- Cox Communication Fiber Optic Line

- Lumen Fiber Optic Line
- McLeod USA Telecommunications Services Fiber Optic Line
- ODOT Fiber Optics Fiber Optic Line
- Trace Fiber Networks Fiber Optic Line
- Windstream Fiber Optic Line
- Cap-Rock Communications Fiber Optic Line
- Level 3 Communications Fiber Optic Line
- Oklahoma Electric Cooperative Distribution Lines and Utility Poles
- OG&E Underground Power and Utility Poles
- DCP Midstream Gas Line
- ONG Natural Gas Line
- Goldsby Water Authority Potable Water Line

The proposed alignments in each alternative contain similar utility crossings that will necessitate the relocation, lowering, or extension of one or more utilities. Utilities along SH-74 south of I-35, along I-35 north of the I-35 NB entrance ramp, and along I-35 south of the I-35 SB entrance ramp are similar between all alternatives. Alternative 1 requires additional utility relocation along West Frontage Road, proposed I-35 SB exit ramp, and Airport Road. Alternative 2 requires additional utility relocation along Airport Road. Alternative 3 requires additional utility relocation along West Frontage Road and along SH-74 to the existing roundabout intersection north of the bridge. Alternative 4 requires additional utility relocation along Airport Road. Alternative 5 requires additional utility relocation along SH-74 to the existing roundabout intersection north of the bridge.

In areas where utilities were placed within the existing right-of-way, the cost of relocation is funded by the utility owner, except for the Town of Goldsby potable water lines. Those lines will need to be relocated at ODOT's expense, per Statute 69 O.S. § 1403(F). Estimated utility relocation costs, including utility service provider costs for each alternative, can be found in **Appendix O**.

7.0 RIGHT-OF-WAY ACQUISITION

Proposed right-of-way has been estimated for each alternative and is shown on the plan and profile sheets in Appendices A-E. The right-of-way acquisitions incorporate the roadway, toe of slopes, and adequate space for utility relocation. Estimated right-of-way costs, including mapping, acquisition, and appraisals, are located in **Appendix P**.

Alternative 1 - 0° Skew: A preliminary estimate of 5.63 acres of right-of-way will be required from commercial properties. No residential relocations will result.

Alternatives 2A & B - 20° Skew: A preliminary estimate of 5.61 acres of right-of-way will be required from commercial properties for Alternative 2A, and 5.53 acres for Alternative 2B. No residential relocations will result.



Alternatives 3A & B - 45° Skew: A preliminary estimate of 9.96 acres of right-of-way will be required from commercial properties for Alternative 3A, and 7.06 acres for Alternative 3B. Additionally, Alternative 3A will require 2.53 acres of right-of-way from the David Jay Perry Airport. No residential relocations will result. Alternatives 3A and 3B are anticipated to impact a compressed natural gas (CNG) fueling station.

Alternatives 4A & B - 40° Skew: A preliminary estimate of 10.33 acres of right-of-way will be required from commercial properties for Alternative 4A, and 7.55 acres for Alternative 4B. Additionally, Alternatives 4A and 4B will require 4.35 and 2 acres of right-of-way from the David Jay Perry Airport, respectively. Airport property acquisition and release of airport property must be performed in accordance with Federal Aviation Administration protocols. No residential relocations will result.

Alternatives 5A & B - 53° Skew: A preliminary estimate of 8.51 acres of right-of-way will be required from commercial properties for Alternative 5A, and 5.57 acres from Alternative 5B. Additionally, Alternative 5A will require 2.53 acres of right-of-way from the David Jay Perry Airport. No residential relocations will result.

All the alternatives' plan sheets indicate impacts to Libby's Café at the northeast corner of SH-74 and Center Road. However, there is no need to impact this building. The depicted toe of slopes and utility offsets are the result of a first run of the 3D model. After an alternative is selected, a more detailed design will display different design options which will avoid impacting the building.

8.0 CONSTRUCTION SEQUENCING

Alternative 1 - 0° Skew: The vertical alignment for SH-74 is relatively close to the existing grade in areas where the proposed roadway overlaps existing pavement. In the areas where the vertical alignment deviates from the existing grade, there appears to be sufficient distance between the horizontal alignment and the existing pavement to fit a temporary construction slope that will allow construction phasing to accommodate existing traffic. The vertical alignment for Airport Road, which connects the proposed grade of SH-74 to the existing grade of SH-74, diverges from the existing grade and necessitates the use of a temporary detour or short-term roadway closure of Airport Road. Note that the construction of the bridge will require utilization of the Rolling Roadblock Method or construction of a temporary crossover along I-35. The vertical alignment for West Frontage Road is relatively close to the existing grade, but the width of the roadway will require existing traffic to be restricted to one lane during construction. Since proposed construction includes a relatively short extent of this roadway, it is feasible to schedule such construction operations during off-peak hours. The vertical alignments for Ramps A and B are relatively close to the existing grade; therefore, it is possible to construct both ramps under existing traffic. Conversely, the vertical alignments for Ramps C and D deviate from the existing grade to connect to the proposed grade of SH-74. This will require a temporary detour or short-term roadway closure of the existing SB ramps at the time that the portion of proposed Ramp C which crosses the existing ramps is built.



Alternative 2 - 20° Skew: Construction is relatively similar to Alternative 1 with the exception of Ramps C and D. The vertical alignments for Ramps C and D are relatively close to the existing grade; therefore, it is possible to construct all ramps under existing traffic.

Alternative 3 - 45° Skew: Due to the proposed SH-74 horizontal alignment impacting West Frontage Road, West Frontage Road will need to be reconstructed first. The vertical alignment for West Frontage Road is relatively close to the existing grade, but the width of the roadway will require existing traffic to be restricted to one lane during construction in areas where the proposed roadway overlaps existing pavement. Since this includes a relatively short extent, it is feasible to schedule such construction operations during off-peak hours. Next, the rest of SH-74 can be constructed. The vertical alignment for SH-74 is relatively close to the existing grade in many areas where the proposed roadway overlaps existing pavement. The segment of SH-74 adjacent to West Frontage Road utilizes retaining walls. Note that the construction of the bridge will require utilization of the Rolling Roadblock Method or construction of a temporary crossover along I-35. The vertical alignments for Ramps A, B, C, and D are relatively close to the existing grade; therefore, it is possible to construct all ramps under existing traffic.

Alternative 4 - 40° Skew: Construction is relatively similar to Alternative 3 with the exception of Airport Road in place of West Frontage Road receiving impact by the SH-74 horizontal alignment. The vertical alignment for Airport Road is relatively close to the existing grade and can be phased for construction under existing traffic. The vertical alignment for SH-74 is relatively close to the existing grade in many areas where the proposed roadway overlaps existing pavement. However, in areas where the vertical alignment deviates from the existing grade north of West Frontage Road intersection, there appears to be insufficient distance between the horizontal alignment and the existing pavement to fit a temporary construction slope. This means that a temporary detour will be needed in order to accommodate existing traffic. Further, the portion of SH-74 adjacent to Airport Road utilizes retaining walls. Note that the construction of the bridge will require utilization of the Rolling Roadblock Method or construction of a temporary crossover along I-35. The vertical alignment for West Frontage Road is relatively close to the existing grade, but the width of the roadway will require existing traffic to be restricted to one lane during construction. Since proposed construction includes a relatively short extent of this roadway, it is feasible to schedule such construction operations during off-peak hours. The vertical alignments for Ramps A, B, C, and D are relatively close to the existing grade; therefore, it is possible to construct all ramps under existing traffic.

Alternative 5 - 53° Skew: The vertical alignment for SH-74 is relatively close to the existing grade in areas where the proposed roadway overlaps existing pavement. Further, in areas where the vertical alignment deviates from the existing grade, there appears to be sufficient distance between the horizontal alignment and the existing pavement to fit a temporary construction slope that will allow construction phasing to accommodate existing traffic with minor temporary widening near the existing roundabout. Note that the construction of the bridge will require utilization of the Rolling Roadblock Method or construction of a temporary crossover along I-35. The vertical alignment for West Frontage Road is relatively close to the existing grade, but the width of the roadway will require existing traffic to be restricted to one lane during construction. Since



proposed construction includes a relatively short extent of this roadway, it is feasible to schedule such construction operations during off-peak hours. The vertical alignments for Ramps A, B, C, and D are relatively close to the existing grade; therefore, it is possible to construct all ramps under existing traffic.

Roundabout Alternatives: The inclusion of a roundabout at the SB ramp intersection has minimal to no impact on the vertical alignments for all the alternatives. The construction operations with a roundabout are nearly identical to those without roundabouts. The only impact of significance that the inclusion of a roundabout has is the reduction in width of SH-74 near the intersection. This results in an increased amount of temporary widening needed to maintain existing traffic during construction phasing.

9.0 COST OPINIONS

Preliminary construction cost opinions have been developed for each alternative, as shown in **Table 9-1**. Additional construction cost information is located in **Appendix Q**.



TABLE 9-1: TOTAL COST OPINIONS

PROJECT COMPONENT	PRELIMINARY COMPARATIVE COST OPINION SH-74 AT I-35 BRIDGE REPLACEMENT / INTERCHANGE									
	ALTERNATIVE 1: 6.5° SKEW		ALTERNATIVE 2: 20° SKEW		ALTERNATIVE 3: 45° SKEW		ALTERNATIVE 4: 40° SKEW		ALTERNATIVE 5: 53° SKEW	
	OPTION A (SIGNALIZED)	OPTION B (ROUNDAABOUT)	OPTION A (SIGNALIZED)	OPTION B (ROUNDAABOUT)	OPTION A (SIGNALIZED)	OPTION B (ROUNDAABOUT)	OPTION A (SIGNALIZED)	OPTION B (ROUNDAABOUT)	OPTION A (SIGNALIZED)	OPTION B (ROUNDAABOUT)
ROADWAY CONST.	\$12,295,000	\$11,143,000	\$8,633,000	\$6,609,000	\$7,803,000	\$6,749,000	\$7,361,000	\$5,373,000	\$5,000,000	\$5,000,000
BRIDGE CONST.*	\$4,800,000	\$5,600,000	\$4,400,000	\$4,400,000	\$4,100,000	\$4,100,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000
TRAFFIC CONST.	\$770,000	\$770,000	\$1,120,000	\$770,000	\$1,120,000	\$770,000	\$1,120,000	\$770,000	\$1,120,000	\$770,000
MISC. CONST.	\$597,800	\$546,800	\$435,200	\$360,400	\$408,100	\$366,000	\$390,500	\$11,000	\$11,000	\$11,000
20% CONTINGENCY	\$3,690,560	\$3,637,360	\$2,554,040	\$2,427,880	\$2,686,220	\$2,397,800	\$2,774,300	\$2,290,800	\$2,290,800	\$2,290,800
CONST. TOTALS	\$22,143,360	\$21,824,160	\$17,322,240	\$14,567,280	\$16,117,320	\$14,382,800	\$16,645,800	\$13,744,800	\$13,744,800	\$13,744,800
RIGHT-OF-WAY	\$1,087,100	\$1,051,600	\$1,134,800	\$1,125,100	\$1,378,300	\$1,201,200	\$1,061,200	\$1,050,600	\$1,050,600	\$1,050,600
UTILITY RELOCATIONS	\$1,075,800	\$852,900	\$1,599,800	\$1,059,700	\$1,613,700	\$1,439,400	\$1,336,500	\$855,700	\$855,700	\$855,700
TOTAL COST	\$24,306,260	\$23,728,660	\$20,240,440	\$16,752,080	\$19,109,320	\$17,022,600	\$19,043,500	\$15,651,100	\$15,651,100	\$15,651,100

*Bridge construction accounts for p.c. beam bridge, consult Appendix F for steel I-beam or steel plate girder options.

10.0 SUMMARY OF PUBLIC INVOLVEMENT SUMMARY AND RESPONSES TO COMMENTS

The purpose of the Virtual Open House was to present information about the proposed alternatives to the public and obtain input. The virtual open house website was made available for the public's review and input for three weeks (October 10–31, 2022), and comments were requested by October 31, 2022. In addition to the virtual open house website, an online survey was created and made available for the public to provide input on specific design features of the alternatives utilizing the MetroQuest platform. The virtual open house website was viewed 1,642 times with five (5) website commentors and the MetroQuest survey was viewed 200 times with 90 of those visitors providing input. The virtual open house included a few explanatory videos with text which provided detailed information on the alternatives under consideration:

- Alternative 1: 0° Bridge Skew
- Alternative 2A: 20° Bridge Skew, signalized south intersection
- Alternative 2B: 20° Bridge Skew, roundabout intersections
- Alternative 3A: 45° Bridge Skew, signalized intersections
- Alternative 3B: 45° Bridge Skew, roundabout intersections
- Alternative 4A: 40° Bridge Skew, signalized intersections
- Alternative 4B: 40° Bridge Skew, roundabout intersections
- Alternative 5A: 53° Bridge Skew, signalized intersections
- Alternative 5B: 53° Bridge Skew, roundabout intersections

Representatives from ODOT and TEIM were available for discussion during the comment period. After the comment period closed on October 31, 2022, comments were received from three (3) agencies, the Town of Goldsby, and twenty-five (25) members of the public. Agency comments and ODOT responses are summarized in **Table 10-1**.

Most of the public comments expressed concern over roundabouts. In addition to expressing support for an alternative, several other miscellaneous questions or comments were expressed. These comments were categorized into six (6) broad comment categories and are summarized in **Table 10-2**. Note that the total number of comments is greater than the comments received, as several people made multiple comments.



TABLE 10-1: AGENCY COMMENT AND RESPONSE SUMMARY

Agency	Comment
Oklahoma Department of Environmental Quality (ODEQ)	<ul style="list-style-type: none"> Noted that construction projects disturbing greater than 1 acre require storm water permitting
Oklahoma Corporation Commission (OCC)	<ul style="list-style-type: none"> Stated that the solicitation letter was forwarded to the Duncan District 3 Office No further comment was received from the District 3 office.
Oklahoma Tourism and Recreation Department	<ul style="list-style-type: none"> Noted little impact to the LWCF park on the SE corner of E. Center Road and SH-74. Suggests the state highway be moved west to allow Goldsby to develop a cohesive, pedestrian friendly town center.

TABLE 10-2: PUBLIC COMMENT SUMMARY BY CATEGORY

Comment Category	Total Comments in Category
Comments concerning roundabouts	25
Support for/opposition to specific options	9
Concerns about existing or future traffic congestion	7
Requests to minimize disturbance	7
Comments about Goldsby development	2
Concerns about existing/worsening congestion at SH-74/Center Road	2

The full *Public Involvement Summary* report is located in **Appendix R**.



11.0 RECOMENDATIONS

An overall comparison of each alternative has been developed, based upon the geometric design, intersection capacity, environmental impacts, utility relocations, right-of-way acquisitions, and total cost opinions. It is noted that colors used in **Table 10-1** are for aid in visual comparison only; i.e., green, yellow, and red indicate which alternative is better, neutral, and worse, respectively, for each parameter of comparison. The color scheme has relevance only to the comparison of Alternatives 1-5 and is not meant to imply any parameter is “ideal”, as compared to other projects or situations.

When making these alignment comparisons, it becomes quickly evident that Alternatives 1 & 2 fall short of the others in many categories. While these alignments result in the shortest overall bridge length over I-35, the overall geometric design and intersection capacity suffer with these two alternatives, primarily because of the additional T-intersection added at the east end of the bridge. These two alignments also have a higher overall construction cost.

The remaining three, Alternatives 3, 4, & 5, provide similar alignment characteristics and advantages. Skew angle for these alternatives crossing I-35 vary from 40° to 53°. All of these alternatives provide “straight through” connectivity on SH-74; that is, there are no turns or stops between the ramp intersection north of the bridge and the ramp intersection south of the bridge. The main difference is that Alternative 4 curves east towards the airport property while the other two alternatives curve west away from the airport.

Based on the comments mentioned in Section 10 and the completed final design study, ODOT has selected Alternative 5B: 53° Bridge Skew, roundabout intersections. Alternatives 1 & 2 have higher overall construction costs. Alternative 4 skews towards the airport property and would have right-of-way issues for relocating utilities. Alternative 3 was eliminated due to a higher overall cost compared to Alternative 5. Alternative 5B was ultimately chosen over 5A due the reduced chances of severe crashes and due to lower costs to install a roundabout as compared to traffic lights.



TABLE 11-1 OVERALL COMPARISON I-35/SH-74 ALTERNATIVES 1-5

Project Component	Alternative 1 6.5° Skew	Alternative 2A 20° Skew	Alternative 2B 20° Skew	Alternative 3A 45° Skew	Alternative 3B 45° Skew	Alternative 4A 40° Skew	Alternative 4B 40° Skew	Alternative 5A 53° Skew	Alternative 5B 53° Skew
Geometric Design	●	●	●	●	●	●	●	●	●
Intersection Control	Two-Way/All-Way Stops, Existing Roundabout	1 Signal, Existing Roundabout	2 Roundabouts	2 Signals	2 Roundabouts	2 Signals	2 Roundabouts	2 Signals	2 Roundabouts
Clear Zone	20' – 22'	20' – 22'	20' – 22'	20' – 22'	20' – 22'	20' – 22'	20' – 22'	20' – 22'	20' – 22'
Horizontal Alignment	45 mph	45 mph	45 mph	45 mph	45 mph	45 mph	45 mph	45 mph	45 mph
Vertical Alignment	45 mph	45 mph	45 mph	45 mph	45 mph	45 mph	45 mph	45 mph	45 mph
Intersection Capacity	●	●	●	●	●	●	●	●	●
2050 Two-Way Stop Intersection Total Delay	AM Peak 563.4 veh/hr PM Peak 230.6 veh/hr	AM Peak 667.8 veh/hr PM Peak 381.6 veh/hr	N/A	AM Peak 422.7 veh/hr PM Peak 231.5 veh/hr	N/A	AM Peak 422.7 veh/hr PM Peak 231.5 veh/hr	N/A	AM Peak 422.7 veh/hr PM Peak 231.5 veh/hr	N/A
2050 All-Way Stop Intersection Total Delay	AM Peak 79.3 veh/hr PM Peak 61.3 veh/hr	AM Peak 94.4 veh/hr PM Peak 155.7 veh/hr	N/A	AM Peak 74.1 veh/hr PM Peak 79.9 veh/hr	N/A	AM Peak 74.1 veh/hr PM Peak 149.2 veh/hr	N/A	AM Peak 74.1 veh/hr PM Peak 149.2 veh/hr	N/A
2050 Roundabout Total Delay	N/A	N/A	AM Peak 9.2 veh/hr PM Peak 2.1 veh/hr	N/A	AM Peak 9.4 veh/hr PM Peak 14.8 veh/hr	N/A	AM Peak 9.4 veh/hr PM Peak 14.9 veh/hr	N/A	AM Peak 9.4 veh/hr PM Peak 14.9 veh/hr
2050 Signalized Intersection Total Delay	AM Peak 5.9 veh/hr PM Peak 7.1 veh/hr	AM Peak 14.9 veh/hr PM Peak 50.0 veh/hr	N/A	AM Peak 18.8 veh/hr PM Peak 51.6 veh/hr	N/A	AM Peak 18.8 veh/hr PM Peak 51.6 veh/hr	N/A	AM Peak 18.8 veh/hr PM Peak 51.6 veh/hr	N/A
Environmental Impact	●	●	●	●	●	●	●	●	●
Potential ROW w/ AST/UST Impacts	Approx. 1.1 acres	Approx. 0.28 acres	Approx. 0.24 acres	Approx. 1.73 acres	Approx. 1.73 acres	Approx. 0.28 acres	Approx. 0.28 acres	Approx. 0.28 acres	Approx. 0.28 acres
Stream Impacts	Approx. 290 feet	Approx. 241 feet	Approx. 240 feet	None	None	Approx. 57 feet	Approx. 56 feet	Approx. 27 feet	Approx. 26 feet
Utility Relocation	●	●	●	●	●	●	●	●	●
Types of parallel utilities impacted	6	6	6	6	6	6	6	6	6
Number utility Owners	13	12	12	13	11	13	13	13	11
Cost	\$1,075,800	\$852,900	\$789,500	\$1,599,800	\$1,059,700	\$1,613,700	\$1,439,400	\$1,336,500	\$855,700
Right-of-Way Acquisition	●	●	●	●	●	●	●	●	●
Property Acquisitions	12	8	9	14	12	12	10	12	9
Total Acres	5.63	5.61	5.53	9.96	7.06	10.33	7.55	8.51	5.57
Airport R/W Acres	0	0	0	2.53	0	4.35	2	2.53	0
Total Cost Opinion	●	●	●	●	●	●	●	●	●
Total Cost	\$24,306,260	\$23,728,660	\$23,504,440	\$20,240,440	\$16,752,080	\$19,109,320	\$17,022,600	\$19,043,500	\$15,651,100



12.0 PROJECT SCOPE FOR DESIGN PLANS

The existing SH-74 bridge over I-35 will be replaced to accommodate an ultimate 6-lane configuration on I-35 utilizing a 53° skew with a 4-span bridge consisting of either steel or P.C. beam materials with conventional abutments. SH-74 will be constructed on the same alignment in the beginning as existing SH-74 with the exception of two horizontal curves being minorly lengthened such that no superelevation will be required. SH-74 would then offset 45' from the existing SH-74 alignment and cross I-35 at a 53° skew before curving back to the existing SH-74 alignment. SH-74 would consist of two 12'-wide lanes and 8'-wide shoulder in the SB direction and one 12'-wide lane and 8'-wide shoulder in the NB direction. SH-74 will be an open section with a 27'-tall retaining wall stretching approximately 460' on the west side of SH-74.

The existing roundabout will remain in place with SH-74 connecting before the roundabout. The existing I-35 SB slip exit ramp will be relocated to the north near Burr Oak Road. The NB entrance and exit ramps will be horizontally and vertically reconfigured to tie to the new I-35 lanes and connect back to the existing roundabout as quickly as possible. The existing I-35 SB entrance and exit ramp alignments would be minorly adjusted to correct horizontal and vertical curves to tie into the new SH-74 profile and horizontal geometry.

Airport Road will remain untouched and West Frontage Road will be minorly affected with the slip ramp removal and tying in vertically and horizontally to the new roundabout. The typical would be two 12'-wide lanes and 2'-wide outside shoulders. The Center Road and SH-74 intersection will have a signal warrant analysis and turning movement analysis conducted to determine the necessary modifications to this intersection and be restriped as necessary.



APPENDIX A
RECONNAISSANCE REPORT
***SEE SEPARATE ATTACHMENT**



APPENDIX B

BRIDGE INSPECTION REPORTS

Oklahoma Dept. of Transportation - Bridge Inspection Report

NBI No.: 14261	Structure No.: 4405 2279EXF	Local ID: -1	Suff. Rating: 77.90	FO																														
Bridge Description: IDENTIFICATION 2-10 ft. X 3 ft. X 29 ft. RDY R.C.BOX SK.60 DEG. W/ APRONS		INSPECTION <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Type</th> <th>Insp. Req.</th> <th>Insp. Done</th> <th>Freq.</th> <th>Insp. Date</th> <th>Next Insp.</th> </tr> </thead> <tbody> <tr> <td>NBI:</td> <td></td> <td>1</td> <td>24 months</td> <td>9/7/2021</td> <td>09/07/2023</td> </tr> <tr> <td>FC:</td> <td>N</td> <td>0</td> <td></td> <td>NA</td> <td>NA</td> </tr> <tr> <td>UW:</td> <td>N</td> <td>0</td> <td></td> <td>NA</td> <td>NA</td> </tr> <tr> <td>OS:</td> <td>N</td> <td>0</td> <td></td> <td>NA</td> <td>NA</td> </tr> </tbody> </table>			Type	Insp. Req.	Insp. Done	Freq.	Insp. Date	Next Insp.	NBI:		1	24 months	9/7/2021	09/07/2023	FC:	N	0		NA	NA	UW:	N	0		NA	NA	OS:	N	0		NA	NA
Type	Insp. Req.	Insp. Done	Freq.	Insp. Date	Next Insp.																													
NBI:		1	24 months	9/7/2021	09/07/2023																													
FC:	N	0		NA	NA																													
UW:	N	0		NA	NA																													
OS:	N	0		NA	NA																													
1. State: Oklahoma 2. Division: Division 3 3. County: MCCLAIN 4. City: GOLDSBY Admin Area: Unknown 5a. On/Under: Route On Structure 5b. Kind of Hwy: U.S. Hwy 5c. Lvl of Srvc: Service Road 5d. Route No.: 00035 5e. Dir. Sufx: N/A (NBI)		7. Facility Carried: I-35 FRONTAGE RD. 6. Feat. Intersect: CREEK 9. Location: 2.8 MI S CLEV. C/L 11. Mile Post: 36.669 mi 13. LRS Inv. / Sub Rte: 4400005FX / 00 16. Latitude: 35° 09' 05.06" 17. Longitude: 097° 28' 28.72" 98. Border Brdg: Unknown (P) % Responsible: 0.00 99. Border Brdg #: Unknown																																
STRUCTURE TYPE AND MATERIALS 43a/b. Main Span: Concrete / Culvert 44a/b. Appr. Span: Unknown / Unknown (P) 45. # of Main Spans: 2 46. # of Appr. Spans: 0 107. Deck Type: N/A (NBI) 108a. Wearing Surface: N/A (no deck (NBI)) 108b. Membrane: Unknown 108c. Deck protection: Unknown		CLASSIFICATION 12. Base Hwy Net.: On Base Network 20. Toll Facility: On free road 21. Custodian: State 22. Owner: State 26. Function Class: 06 Rural Minor Arteri 37. Historical Sig.: Not eligible for NRHP 100. Def. Hwy: Not a STRAHNET hwy																																
AGE AND SERVICE 19. Detour Length: 3.1 mi 27. Year Built: 1959 28a/b. Lanes on/und: 2 / 0 29. ADT: 500 30. Year of ADT: 2019 42a/b. Type of Svc on/und: Highway / Waterway		CONDITION 58. Deck: N/A (NBI) 62. Culvert: 6 Deterioration 59. Sup.: N N/A (NBI) 61. Chan./Chan. Prot.: 5 Bank Prot Eroded 60. Sub: N N/A (NBI) Flowline Notes CULVERT																																
GEOMETRIC DATA 10. Vert. Clearance: 99.99 ft 32. Appr Rwy Width: 20.00 ft 33. Median: No median 34. Skew: 30.00° 35. Struct. Flared: No flare 47. Horizontal Clr: 20.00 ft 48. Length Max Span: 9.84 ft 49. Struct. Length: 25.92 ft		LOAD RATING AND POSTING 31. Design Load: MS 18 (HS 20) 41. Post. Status: A Open, no restriction 70. Posting: 5 At/Above Legal Loads 63. Op / 65. Inv. Rating Meth.: 2 AS Allowable Stress / 2 AS Allowable Stress 64. Operating Rating (tons): <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><th>H</th><th>HS</th><th>3-3</th><th>EV3</th><th>SHV</th></tr> <tr><td>32.96</td><td>49.05</td><td>0.00</td><td>0.00</td><td>0.00</td></tr> <tr><td>19.95</td><td>36.05</td><td>-1.00</td><td>-1.00</td><td></td></tr> </table> 66. Inventory Rating (tons):			H	HS	3-3	EV3	SHV	32.96	49.05	0.00	0.00	0.00	19.95	36.05	-1.00	-1.00																
H	HS	3-3	EV3	SHV																														
32.96	49.05	0.00	0.00	0.00																														
19.95	36.05	-1.00	-1.00																															
200c. Temperature: 91 200d. Weather: Clear 201. Struc.Stl. ASTM Desig.: -1 / -1 202. Waterprf. Membrane: -1 Date Installed: 01/01/1901 203. Type Exp. Device: - 204. Type of Railing: N/A 205. Material Quantity: -1.00 208a. Type of Abutment: b. Type of Found.: 209. Type of Pier/Found.: - /		APPRaisal 36a. Brdg Rail: 0 Substandard 36b. Transition: 0 Substandard 36c. Appr. Rail: 0 Substandard 36d. Appr. Rail Ends: 0 Substandard 67. Str Evaluation: 6 Equal Min Criteri																																
210. Foundation Elev.: <table border="1" style="display: inline-table; margin-right: 10px;"> <tr><td>-1.00</td><td>-1.00</td></tr> <tr><td>-1.00</td><td>-1.00</td></tr> </table> 211. Wear. Surf. Prot. Sys: None Date Installed: 01/01/1901 211c. Silane Reapplied 211d. Date: 213. Utilities Attached:		-1.00	-1.00	-1.00	-1.00	PROPOSED IMPROVEMENTS 94. Bridge Cost: \$230,000 95. Roadway Cost: \$379,500 96. Total Cost: \$644,000 97. Yr. of Cost Est.: 2015 75. Type of Work: 31 Repl-Load Capacity 76. Lngth of Improvement: 25.9 ft 114. Future ADT: 800 115. Yr. of Future ADT: 2039																												
-1.00	-1.00																																	
-1.00	-1.00																																	
OKLAHOMA ITEMS 214a. Posted Weight Limit: NR b. Posted Speed Limit: 55 c. Narrow/1way Brdg Sign: No d. Vertical Clr. Sign: No Adv. Warning Sign: No e. Navigation Lights?: NA Working/Not Working: NA 215. Overpass: INTERSTATE 218. Functionally Obsolete: FO 220. Bridge Redecked: - 221. Substr. Cond. (U/W): 222. Fill Over RCB: FG 223. Appr. Slab/Rwy Cond.: 2 225. Paint Type/Ovrct: N/A 226. Date Painted: 227. Paint Color: -1 233. Deck Forming: 238. School Bus Rte.: Current & Desired route 240. Appr. Rwy Type.: Asphalt/Bituminous 243. Grdr Spacing/No.: /		NAVIGATION DATA 38. Nav. Control: Permit Not Required 39. Vert. Clearance: 0.0 ft 40. Horiz. Clearance: 0.0 ft 111. Pier Protect.: Unknown (NBI) 116. Lift Bridge Vert. Clr.: 0.0 ft 244. Span Lengths: 245. Girder Depth: 246a. Type of Overlay: NA b. Overlay Thickness: c. Overlay Date: 01/01/1901 d. Ovlv Depth Changed >1": - 247. Protective Systems: 248. # Field Splices w/ Corrosion: 249. Scour Crit. POA Exists?: - 250. Headwall: 27.00 258. Plans w/Found.in ODOT File: - 259. Scour Eval. in ODOT File: - 263. Interchange at Intersection: No 264. Interstate Milepoint:																																

Oklahoma Dept. of Transportation - Bridge Inspection Report

NBI No.: 14261	Structure No.: 4405 2279EXF	Local ID: -1	Suff. Rating: 77.90	FO
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Inspection Date: 9/7/21 Adam Hill

Invoice No.: McClainCo2021 Inspected With: Erik Cox



BRIDGE NOTES:

HISTORY STR IS ON FRONTAGE RD JUST S. OF GOLDSBY EXIT.

INSPECTION NOTES: 9/7/21

BOX WAS EXTENDED @ THE E. END & NEW RAIL TO BOTH SIDES BOLTED TO TOP OF CULVERT, 2021.

ELEMENT CONDITION STATE DATA

Elem. / Env	Description	Unit	Total Qty	% 1	Qty. 1	% 2	Qty. 2	% 3	Qty. 3	% 4	Qty. 4
241 / 4	Re Conc Culvert	ft	71.60	76%	54.60	24%	17.00	0%	0.00	0%	0.00
MINOR CRACKS IN HEADWALL.											
330 / 1	Metal Bridge Railing	ft	20.00	100%	20.00	0%	0.00	0%	0.00	0%	0.00
919 / 1	St.(Rail) Prot. Coat	(SF)	88.00	100%	88.00	0%	0.00	0%	0.00	0%	0.00
870 / 1	Concrete Wingwall	(EA)	4.00	100%	4.00	0%	0.00	0%	0.00	0%	0.00

Oklahoma Dept. of Transportation - Bridge Inspection Report

NBI No.: 14335	Structure No.: 4405 2129 X	Local ID: -1	Suff. Rating: 66.00	FO																		
Bridge Description: 3-10ft.X 10ft.X 108ft. RDY R.C.BOX SK. 45 DEG. WITH PARAPETS		INSPECTION																				
IDENTIFICATION		INSPECTION																				
1. State: Oklahoma 2. Division: Division 3 3. County: MCCLAIN 4. City: GOLDSBY Admin Area: Unknown 5a. On/Under: Route On Structure 5b. Kind of Hwy: Interstate Hwy 5c. Lvl of Srvc: Mainline 5d. Route No.: 00035 5e. Dir. Sufx: N/A (NBI)		7. Facility Carried : I-35 6. Feat. Intersect: CREEK 9. Location: 4.4 MI S CLEV. C/L 11. Mile Post: 34.256 mi 13. LRS Inv. / Sub Rte: 4400005HX / 00 16. Latitude: 35° 08' 02.47" 17. Longitude: 097° 27' 31.82" 98. Border Brdg: Unknown (P) % Responsible: 0.00 99. Border Brdg #: Unknown																				
STRUCTURE TYPE AND MATERIALS		CONDITION																				
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AGE AND SERVICE		LOAD RATING AND POSTING																				
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	H	HS	3-3	EV3	SHV																	
64. Operating Rating (tons):	64.61	99.97	99.99	0.00	0.00																	
66. Inventory Rating (tons):	38.76	68.40	99.98	-1.00																		
GEOMETRIC DATA		APPRAISAL																				
10. Vert. Clearance: 99.99 ft 32. Appr Rwy Width: 38.00 ft 33. Median: Closed Med w/Barrier 34. Skew: 45.00° 35. Struct. Flared: No flare 47. Horizontal Clr: 99.90 ft 48. Length Max Span: 9.84 ft 49. Struct. Length: 47.90 ft 50a. Curb/Sdwk Width L: 0.00 ft 50b. Curb/Sdwk Width R: 0.00 ft 51. Width Curb to Curb: 38.00 ft 52. Width Out to Out: 38.00 ft Deck Area: 5,263.55 sq. ft 53. Min. Vert. Cl. Ovr Brg: 99.99 ft 54a. Min. Vt. Undclr. Ref.: N Feature not hwy c 54b. Min. Vert. Undclr.: 0.00 ft 55a. Min. Lat. Undclr. Ref.: N Feature not hwy 55. Min. Lat. Underclr. R: 0.00 ft 56. Min. Lat. Underclr. L: 0.00 ft		68. Deck Geom.: 2 Intolerable - Replace 69. Vert./Horiz. Undclr: Not applicable (NB) 71. Waterway Adeq: 6 Equal Minimum 72. Appr. Alignment: 8 Equal Desirable Crit 67. Str Evaluation: 6 Equal Min Criteria 113. Scour Critical: 7 Countermeasures																				
OKLAHOMA ITEMS		PROPOSED IMPROVEMENTS																				
200c. Temperature: 93 200d. Weather: Ptly Cloudy 201. Struc. Stl. ASTM Desig.: -1 / -1 202. Waterprf. Membrane: -1 Date Installed: 01/01/1901 203. Type Exp. Device: - 204. Type of Railing: SFP-1 205. Material Quantity: -1.00 208a. Type of Abutment: b. Type of Found.: 209. Type of Pier/Found.: - / 210. Foundation Elev.: <table border="1" style="width: 100%; text-align: center;"> <tr> <td>-1.00</td> <td>-1.00</td> <td>-1.00</td> </tr> <tr> <td>-1.00</td> <td>-1.00</td> <td>-1.00</td> </tr> </table> 211. Wear. Surf. Prot. Sys: None Date Installed: 01/01/1901 211c. Silane Reapplied 211d. Date: 213. Utilities Attached:		-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	94. Bridge Cost: \$244,111 75. Type of Work: 33 Widen w/o Deck Rel 95. Roadway Cost: \$402,783 76. Lngth of Improvement: 47.9 ft 96. Total Cost: \$683,511 114. Future ADT: 58,080 97. Yr. of Cost Est.: 2015 115. Yr. of Future ADT: 2039														
-1.00	-1.00	-1.00																				
-1.00	-1.00	-1.00																				
OKLAHOMA ITEMS		NAVIGATION DATA																				
214a. Posted Weight Limit: NR b. Posted Speed Limit: NR c. Narrow/1way Brdg Sign: No d. Vertical Clr. Sign: No Adv. Warning Sign: No e. Navigation Lights?: NA Working/Not Working: NA 215. Overpass: INTERSTATE 218. Functionally Obsolete: FO 220. Bridge Redecked: - 221. Substr. Cond. (U/W): 222. Fill Over RCB: 3 223. Appr. Slab/Rwy Cond.: 2 225. Paint Type/Ovrct: N/A 226. Date Painted: 227. Paint Color: -1 233. Deck Forming: 238. School Bus Rte.: Current & Desired route 240. Appr. Rwy Type.: Asphalt/Bituminous 243. Grdr Spacing/No.: /		38. Nav. Control: Permit Not Required 39. Vert. Clearance: 0.0 ft 111. Pier Protect.: Unknown (NBI) 40. Horiz. Clearance: 0.0 ft 116. Lift Bridge Vert. Clr.: 0.0 ft 244. Span Lengths: 245. Girder Depth: 246a. Type of Overlay: NA b. Overlay Thickness: c. Overlay Date: 01/01/1901 d. Ovlv Depth Changed >1": - 247. Protective Systems: 248. # Field Splices w/ Corrosion: 249. Scour Crit. POA Exists?: - 250. Headwall: 106.00 258. Plans w/Found. in ODOT File: - 259. Scour Eval. in ODOT File: - 263. Interchange at Intersection: No 264. Interstate Milepoint: 102.97																				

Oklahoma Dept. of Transportation - Bridge Inspection Report

NBI No.: 14335	Structure No.: 4405 2129 X	Local ID: -1	Suff. Rating: 66.00	FO
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Inspection Date: 9/7/21 Adam Hill

Invoice No.: McClainCo2021 Inspected With: Erik Cox

BRIDGE NOTES:

HISTORY FENCE ACROSS W. END BBLs.

INSPECTION NOTES: 9/7/21

PX #61.

ELEMENT CONDITION STATE DATA

Elem. / Env	Description	Unit	Total Qty	% 1	Qty. 1	% 2	Qty. 2	% 3	Qty. 3	% 4	Qty. 4
241 / 4	Re Conc Culvert	ft	465.90	94%	437.90	6%	28.00	0%	0.00	0%	0.00
-1											
331 / 4	Re Conc Bridge Railing	ft	95.10	97%	92.10	0%	0.00	3%	3.00	0%	0.00
SMALL MINOR SPALLS W/ EXP REBAR.											
870 / 4	Concrete Wingwall	(EA)	4.00	100%	4.00	0%	0.00	0%	0.00	0%	0.00
965 / 4	Debris SF	(EA)	1.00	0%	0.00	0%	0.00	100%	1.00	0%	0.00
PX- LARGE 30 ft. WIDE X 6 ft. TALL DRIFT HUNG @ THE WEST END.											

Oklahoma Dept. of Transportation - Bridge Inspection Report

NBI No.: 14496	Structure No.: 4405 2297 X	Local ID: -1	Suff. Rating: 49.10	SD
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<p>Bridge Description: IDENTIFICATION</p> <div style="border: 1px solid black; padding: 2px;">50ft.(2-83ft. CONT.)50ft. I-BM. SPANS SK. 37 DEG. 11ft.48ft. WITH 2-18ft. SC</div> <p>1. State: Oklahoma 2. Division: Division 3 3. County: MCCLAIN 4. City: GOLDSBY Admin Area: Unknown 5a. On/Under: Route On Structure 5b. Kind of Hwy: State Hwy 5c. Lvl of Svc: Mainline 5d. Route No.: 00074 5e. Dir. Sufx: N/A (NBI)</p> <p>7. Facility Carried : S.H. 74 6. Feat. Intersect: I-35 UNDER 9. Location: 2.7 MI S CLEV. C/L 11. Mile Post: 24.183 mi 13. LRS Inv. / Sub Rte: -1 / -1 16. Latitude: 35° 09' 11.01" 17. Longitude: 097° 28' 36.74" 98. Border Brdg: Unknown (P) % Responsible: 0.00 99. Border Brdg #: Unknown</p>	<p style="text-align: center;">INSPECTION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Type</th> <th>Insp. Req.</th> <th>Insp. Done</th> <th>Freq.</th> <th>Insp. Date</th> <th>Next Insp.</th> </tr> </thead> <tbody> <tr> <td>NBI:</td> <td></td> <td>1</td> <td>24 months</td> <td>8/18/2021</td> <td>08/18/2023</td> </tr> <tr> <td>FC:</td> <td>N</td> <td>0</td> <td></td> <td>NA</td> <td>NA</td> </tr> <tr> <td>UW:</td> <td>N</td> <td>0</td> <td></td> <td>NA</td> <td>NA</td> </tr> <tr> <td>OS:</td> <td>N</td> <td>0</td> <td></td> <td>NA</td> <td>NA</td> </tr> </tbody> </table> <p style="text-align: center;">CLASSIFICATION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>12. Base Hwy Net.: Not on Base Network</td> <td>101. Parallel Str.: No bridge exists</td> </tr> <tr> <td>20. Toll Facility: On free road</td> <td>102. Traffic Dir.: 2-way traffic</td> </tr> <tr> <td>21. Custodian: State</td> <td>103. Temp. Str.: Not Applicable (P)</td> </tr> <tr> <td>22. Owner: State</td> <td>104. Hwy System: Not on NHS</td> </tr> <tr> <td>26. Function Class: 07 Rural Mjr Collecto</td> <td>105. Fed Land Hwy: N/A (NBI)</td> </tr> <tr> <td>37. Historical Sig.: Not eligible for NRHP</td> <td>110. Defense Hwy: Not a STRAHNET hwy</td> </tr> <tr> <td>100. Def. Hwy: Not a STRAHNET hwy</td> <td>112. NBIS Length: Long Enough</td> </tr> </table>	Type	Insp. Req.	Insp. Done	Freq.	Insp. Date	Next Insp.	NBI:		1	24 months	8/18/2021	08/18/2023	FC:	N	0		NA	NA	UW:	N	0		NA	NA	OS:	N	0		NA	NA	12. Base Hwy Net.: Not on Base Network	101. Parallel Str.: No bridge exists	20. Toll Facility: On free road	102. Traffic Dir.: 2-way traffic	21. Custodian: State	103. Temp. Str.: Not Applicable (P)	22. Owner: State	104. Hwy System: Not on NHS	26. Function Class: 07 Rural Mjr Collecto	105. Fed Land Hwy: N/A (NBI)	37. Historical Sig.: Not eligible for NRHP	110. Defense Hwy: Not a STRAHNET hwy	100. Def. Hwy: Not a STRAHNET hwy	112. NBIS Length: Long Enough
Type	Insp. Req.	Insp. Done	Freq.	Insp. Date	Next Insp.																																								
NBI:		1	24 months	8/18/2021	08/18/2023																																								
FC:	N	0		NA	NA																																								
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100. Def. Hwy: Not a STRAHNET hwy	112. NBIS Length: Long Enough																																												

<p style="text-align: center;">STRUCTURE TYPE AND MATERIALS</p> <p>43a/b. Main Span: Steel Cont. / Stringer/Girder 44a/b. Appr. Span: Steel / Stringer/Girder 45. # of Main Spans: 4 46. # of Appr. Spans: 0 107. Deck Type: Concrete-Cast-in-Place 108a. Wearing Surface: Bituminous 108b. Membrane: Unknown 108c. Deck protection: Unknown</p>	<p style="text-align: center;">CONDITION</p> <p>58. Deck: 4 Poor 62. Culvert: N/A (NBI) Flowline Notes I-35 UNDER</p> <p>59. Sup.: 5 Fair 61. Chan./Chan. Prot.: N/A (NBI) 60. Sub: 6 Satisfactory</p>
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<p style="text-align: center;">AGE AND SERVICE</p> <p>19. Detour Length: 29.0 mi 27. Year Built: 1959 28a/b. Lanes on/und: 2 / 4 29. ADT: 5,400 30. Year of ADT: 2019 42a/b. Type of Svc on/und: Highway / Highway</p> <p>106. Year Reconst.: -1 109. Truck ADT: 15%</p>	<p style="text-align: center;">LOAD RATING AND POSTING</p> <p>31. Design Load: M 18 (H 20) 41. Post. Status: A Open, no restriction 70. Posting: 5 At/Above Legal Loads 63. Op / 65. Inv. Rating Meth.: 1 LF Load Factor / 1 LF Load Factor</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>H</th> <th>HS</th> <th>3-3</th> <th>EV3</th> <th>SHV</th> </tr> </thead> <tbody> <tr> <td>64. Operating Rating (tons):</td> <td>40.00</td> <td>52.00</td> <td>74.00</td> <td>45.00</td> <td>49.00</td> </tr> <tr> <td>66. Inventory Rating (tons):</td> <td>24.00</td> <td>31.00</td> <td>45.00</td> <td>27.00</td> <td></td> </tr> </tbody> </table> <p>63. Date Rated: 11/05/2020</p>		H	HS	3-3	EV3	SHV	64. Operating Rating (tons):	40.00	52.00	74.00	45.00	49.00	66. Inventory Rating (tons):	24.00	31.00	45.00	27.00	
	H	HS	3-3	EV3	SHV														
64. Operating Rating (tons):	40.00	52.00	74.00	45.00	49.00														
66. Inventory Rating (tons):	24.00	31.00	45.00	27.00															

<p style="text-align: center;">GEOMETRIC DATA</p> <p>10. Vert. Clearance: 99.99 ft 32. Appr Rwy Width: 28.00 ft 33. Median: No median 34. Skew: 53.00° 35. Struct. Flared: No flare 47. Horizontal Clr: 27.89 ft 48. Length Max Span: 83.01 ft 49. Struct. Length: 271.98 ft</p> <p>50a. Curb/Sdwk Width L: 1.64 ft 50b. Curb/Sdwk Width R: 1.64 ft 51. Width Curb to Curb: 27.89 ft 52. Width Out to Out: 30.84 ft Deck Area: 8,385.09 sq. ft 53. Min. Vert. Cl. Ovr Brg: 99.99 ft 54a. Min. Vt. Undclr. Ref.: H Hwy beneath stru 54b. Min. Vert. Undclr.: 16.08 ft 55a. Min. Lat. Undclr. Ref.: H Hwy beneath str 55. Min. Lat. Underclr. R: 9.84 ft 56. Min. Lat. Underclr. L: 13.78 ft</p>	<p style="text-align: center;">APPRAISAL</p> <p>36a. Brdg Rail: 1 Meets Standards 36b. Transition: 0 Substandard 36c. Appr. Rail: 1 Meets Standards 36d. Appr. Rail Ends: 1 Meets Standard 67. Str Evaluation: 5 Above Min Toler</p> <p>68. Deck Geom.: 4 Tolerable 69. Vert./Horiz. Undclr: 4 Tolerable 71. Waterway Adeq: N Not applicable 72. Appr. Alignment: 7 Above Min Criteria 113. Scour Critical: N Not Over Waterway</p>
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<p style="text-align: center;">OKLAHOMA ITEMS</p> <p>200c. Temperature: 78 200d. Weather: Cloudy 201. Struc. Stl. ASTM Desig.: -1 / 18 202. Waterprf. Membrane: PETROTAC Date Installed: 01/01/1901 203. Type Exp. Device: Other 204. Type of Railing: SFP-1 205. Material Quantity: 1,282.00 208a. Type of Abutment: Skeleton b. Type of Found.: Bears on Natural Found. 209. Type of Pier/Found.: 3 / No Concrete Piling 210. Foundation Elev.: -1.00 -1.00 -1.00 -1.00 -1.00 211. Wear. Surf. Prot. Sys: None Date Installed: 01/01/1901 211c. Silane Reapplied 211d. Date: 213. Utilities Attached:</p>	<p style="text-align: center;">PROPOSED IMPROVEMENTS</p> <p>94. Bridge Cost: \$1,451,545 95. Roadway Cost: \$2,395,049 96. Total Cost: \$4,064,326 97. Yr. of Cost Est.: 2015</p> <p>75. Type of Work: 31 Repl-Load Capacity 76. Lngth of Improvement: 345.1 ft 114. Future ADT: 8,640 115. Yr. of Future ADT: 2039</p> <p style="text-align: center;">NAVIGATION DATA</p> <p>38. Nav. Control: NA-no waterway 39. Vert. Clearance: 0.0 ft 40. Horiz. Clearance: 0.0 ft 111. Pier Protect.: Unknown (NBI) 116. Lift Bridge Vert. Clr.: 0.0 ft</p>
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<p>214a. Posted Weight Limit: NR b. Posted Speed Limit: NR c. Narrow/1way Brdg Sign: No d. Vertical Clr. Sign: Yes Adv. Warning Sign: No e. Navigation Lights?: NA Working/Not Working: NA</p> <p>215. Overpass: INTERSTATE 218. Functionally Obsolete: - 220. Bridge Redecked: - 221. Substr. Cond. (U/W): 222. Fill Over RCB: 223. Appr. Slab/Rwy Cond.: 6 225. Paint Type/Ovrct: Inorganic Zinc 2Coat Sys N/A 226. Date Painted: 1959 227. Paint Color: Brown 233. Deck Forming: 238. School Bus Rte.: Current & Desired route 240. Appr. Rwy Type.: Asphalt/Bituminous 243. Grdr Spacing/No.: /</p>	<p>244. Span Lengths: 245. Girder Depth: 246a. Type of Overlay: AC Overlay b. Overlay Thickness: 1.50 c. Overlay Date: 01/01/2005 d. Ovlv Depth Changed >1": N 247. Protective Systems: Membrane 248. # Field Splices w/ Corrosion: 5 249. Scour Crit. POA Exists?: - 250. Headwall: 258. Plans w/Found.in ODOT File: - 259. Scour Eval. in ODOT File: - 263. Interchange at Intersection: Full 264. Interstate Milepoint: 104.65</p>
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Oklahoma Dept. of Transportation - Bridge Inspection Report

NBI No.: 14496	Structure No.: 4405 2297 X	Local ID: -1	Suff. Rating: 49.10	SD
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Inspection Date: 8/18/21 Adam Hill
 Invoice No.: McClainCo2021 Inspected With: Erik Cox



BRIDGE NOTES:

INSPECTION NOTES: 8/18/21

#214 MINOR VEH DAMAGE TO O/P APPR FLEX. STR. IS NOW SD DUE TO THE INSP. OF THE SOFFIT. 2025 IS THE PROJECTED REPLACEMENT AS OF 2021.

ELEMENT CONDITION STATE DATA

Elem. / Env	Description	Unit	Total Qty	% 1	Qty. 1	% 2	Qty. 2	% 3	Qty. 3	% 4	Qty. 4
12 / 4	Re Concrete Deck	sq.ft	8,385.10	0%	0.00	64%	5,384.10	36%	3,001.00	0%	0.00
SEE NOTES FOR ELEMENTS # 510 & 659.											
510 / 4	Wearing Surfaces	sq.ft	8,385.10	56%	4,716.10	44%	3,669.00	0%	0.00	0%	0.00
107 / 4	Steel Opn Girder/Beam	ft	1,030.00	0%	0.00	93%	956.00	7%	74.00	0%	0.00
LARGE AREAS OF MINOR (LESS THAN 10%) SEC LOSS TO BOTTOM FLANGES. NOTE N. BM OVER S BD. HAS BEEN REPAIRED AFTER VEHICLE DAMAGE. SPAN # 3, BM. # 5 HAS A BOLTED PLATE SECTION 8 in. TALL X 4 ft. LONG.											
515 / 4	Steel Protective Coating	sq.ft	5,850.00	0%	0.00	0%	0.00	0%	0.00	100%	5,850.00
PAINT HAS FAILED.											
205 / 4	Re Conc Column	each	9.00	89%	8.00	11%	1.00	0%	0.00	0%	0.00
-1											
215 / 4	Re Conc Abutment	ft	101.70	84%	85.30	16%	16.40	0%	0.00	0%	0.00
ONE MINOR SPALL W/ EXP REBAR TO ABUT FACE.											
234 / 4	Re Conc Pier Cap	ft	154.20	100%	154.20	0%	0.00	0%	0.00	0%	0.00
SEE NOTE FOR SMART FLAG # 971.											
301 / 4	Pourable Joint Seal	ft	187.00	0%	0.00	0%	0.00	0%	0.00	100%	187.00
PX- SEALANT HAS FAILED & NOSING FAILURES.											
310 / 4	Elastomeric Bearing	each	35.00	29%	10.00	71%	25.00	0%	0.00	0%	0.00
FX- BEARINGS HAVE SOME DEFORMATION, THEY ARE PUSHING OUT IN FRONT & BACK UP TO 1/4 in. THIS IS @ PIER # 3. SPAN # 4. SPAN # 1. PIER # 1 BEARINGS THE SAME.											
321 / 4	Re Conc Approach Slab	sq.ft	2.00	100%	2.00	0%	0.00	0%	0.00	0%	0.00
SLABS HAVE APPR 3 in. LEVELUP.											
331 / 4	Re Conc Bridge Railing	ft	544.60	92%	502.00	2%	13.10	5%	29.50	0%	0.00
FX- MINOR SPALLS W/ EXP REBAR. RUST STAIN @ CURBLINE. RAIL OVER PIER # 2 IS PUSHING TO THE NORTH 2 1/2 in. VERTICAL OPEN & CLOSED CRACKS EXIST 0.1in..											
859 / 4	Soffit	(EA)	1.00	0%	0.00	0%	0.00	100%	1.00	0%	0.00
PX- NUMEROUS RANDOM SPALLS TO HAUNCHES @ TOP FLANGES^ CRACKING^ W/ LEACHING TO SOFFIT - WORST IS @ JOINTS. I DONT SEE ANY LOOSE CONCRETE AT THIS TIME^ CONDITION SHOULD BE CLOSELY MONITORED. BEAM HAUNCHES & CONC. ABOVE DIAPs ARE SPALLED AND/OR DELAMINATED OVER N & S. BD. LANES - BRIDGE CREW PLACED SIGN PANELS OVER DRIVING LANES TO CATCH ANY FALLING CONCRETE/DEBRIS. THE FACIA HAS SOME SUSPECT AREAS.											
865 / 4	St.Open Gird End(5Ft)	(LF)	298.60	0%	0.00	100%	298.60	0%	0.00	0%	0.00
PX- BEAM ENDS OVER CENTER PIER @ CONST. JOINTS HAVE RUST.											
870 / 4	Concrete Wingwall	(EA)	4.00	100%	4.00	0%	0.00	0%	0.00	0%	0.00
909 / 4	Pourable Fix Jt.Seal	(LF)	141.00	0%	0.00	100%	141.00	0%	0.00	0%	0.00
957 / 4	Pack Rust Smart Flag	(EA)	1.00	0%	0.00	100%	1.00	0%	0.00	0%	0.00
CONT BEAM SPLICES. BM. # 1 OVER PIER.											
962 / 4	Super.Traffic Impact	(EA)	1.00	100%	1.00	0%	0.00	0%	0.00	0%	0.00
SEE NOTE FOR # 107.											
963 / 4	Steel Section Loss SF	(EA)	1.00	0%	0.00	100%	1.00	0%	0.00	0%	0.00
PX- CONT. BM. SPLICE CONNECTION @ SPAN # 3, BM. # 5 HAS UP TO 25% SEC. LOSS TO TOP FLANGES.											
971 / 4	FRP Repair SF	(LF)	21.00	100%	21.00	0%	0.00	0%	0.00	0%	0.00
FIBER WRAP REPAIRS DONE TO PIERCAPS # 2 & 3.											

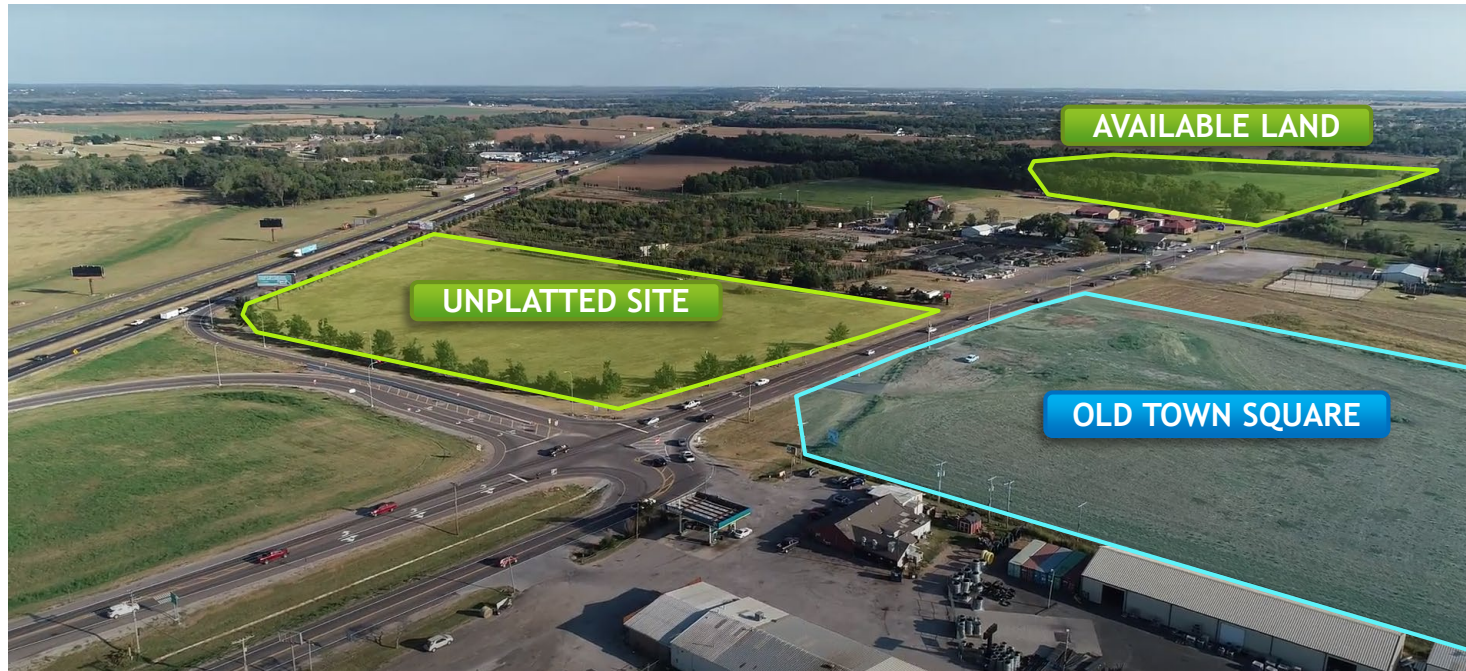


APPENDIX C

CITY OF GOLDSBY DOCUMENTS

Site Criteria

I-35 Exit 104 & State Highway 74



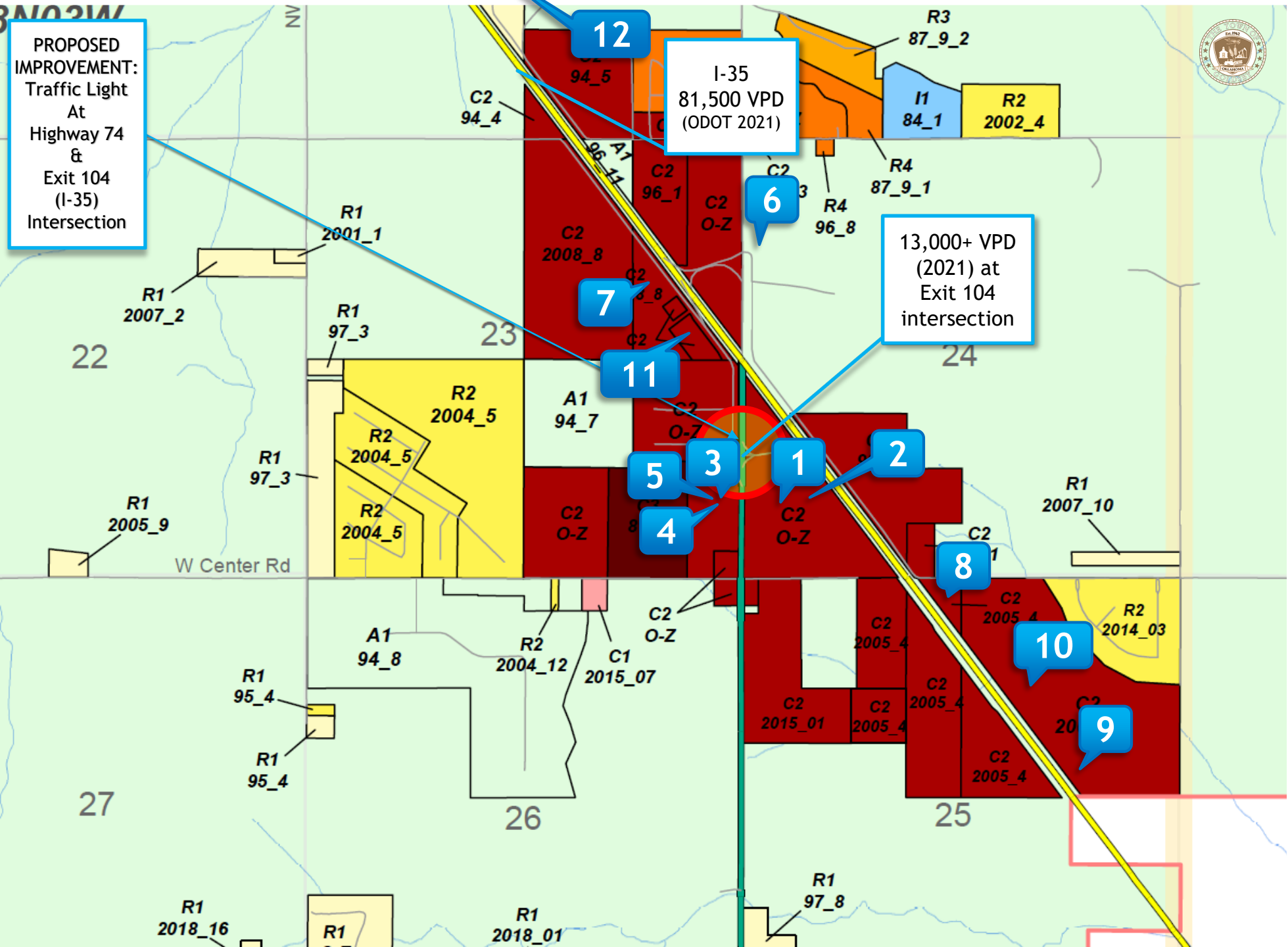


TOWN OF GOLDSBY ANTICIPATED COMMERCIAL GROWTH

PROPOSED IMPROVEMENT:
Traffic Light
At
Highway 74
&
Exit 104
(I-35)
Intersection

I-35
81,500 VPD
(ODOT 2021)

13,000+ VPD
(2021) at
Exit 104
intersection



NUMBER	BUSINESS	STATUS
1	LA QUINTA HOTEL	PROSPECTING
2	TRAVEL STOP	PROSPECTING
3	MULTI-USE PUD SHOPPING CENTER	BUILDING
4	BANK	COMMITTED
5	NORMAN REGIONAL HEALTHCARE FACILITY	COMMITTED
6	SONIC	COMMITTED
7	BATTISON HONDA DEALERSHIP	COMMITTED
8	BOBCAT DEALERSHIP	BUILDING
9	MULTI-SPORTS COMPLEX	COMMITTED
10	WADE'S RV	COMPLETE
11	Extreme Outdoors Equipment	COMPLETE
12	GREAT PLAINS KUBOTA	COMPLETE



TOWN OF GOLDSBY ANTICIPATED COMMERCIAL GROWTH

NUMBER	BUSINESS	STATUS
1	LA QUINTA HOTEL	PROSPECTING
2	TRAVEL STOP	PROSPECTING
3	MULTI-USE PUD SHOPPING CENTER	BUILDING
4	BANK	COMMITTED
5	NORMAN REGIONAL HEALTHCARE FACILITY	COMMITTED
6	SONIC	COMMITTED
7	BATTISON HONDA DEALERSHIP	COMMITTED
8	BOBCAT DEALERSHIP	BUILDING
9	MULTI-SPORTS COMPLEX	COMMITTED
10	WADE'S RV	COMPLETE
11	Extreme Outdoors Equipment	COMPLETE
12	GREAT PLAINS KUBOTA	COMPLETE



PROPOSED IMPROVEMENT:
Traffic Light
At
Highway 74
&
Exit 104
(I-35)
Intersection

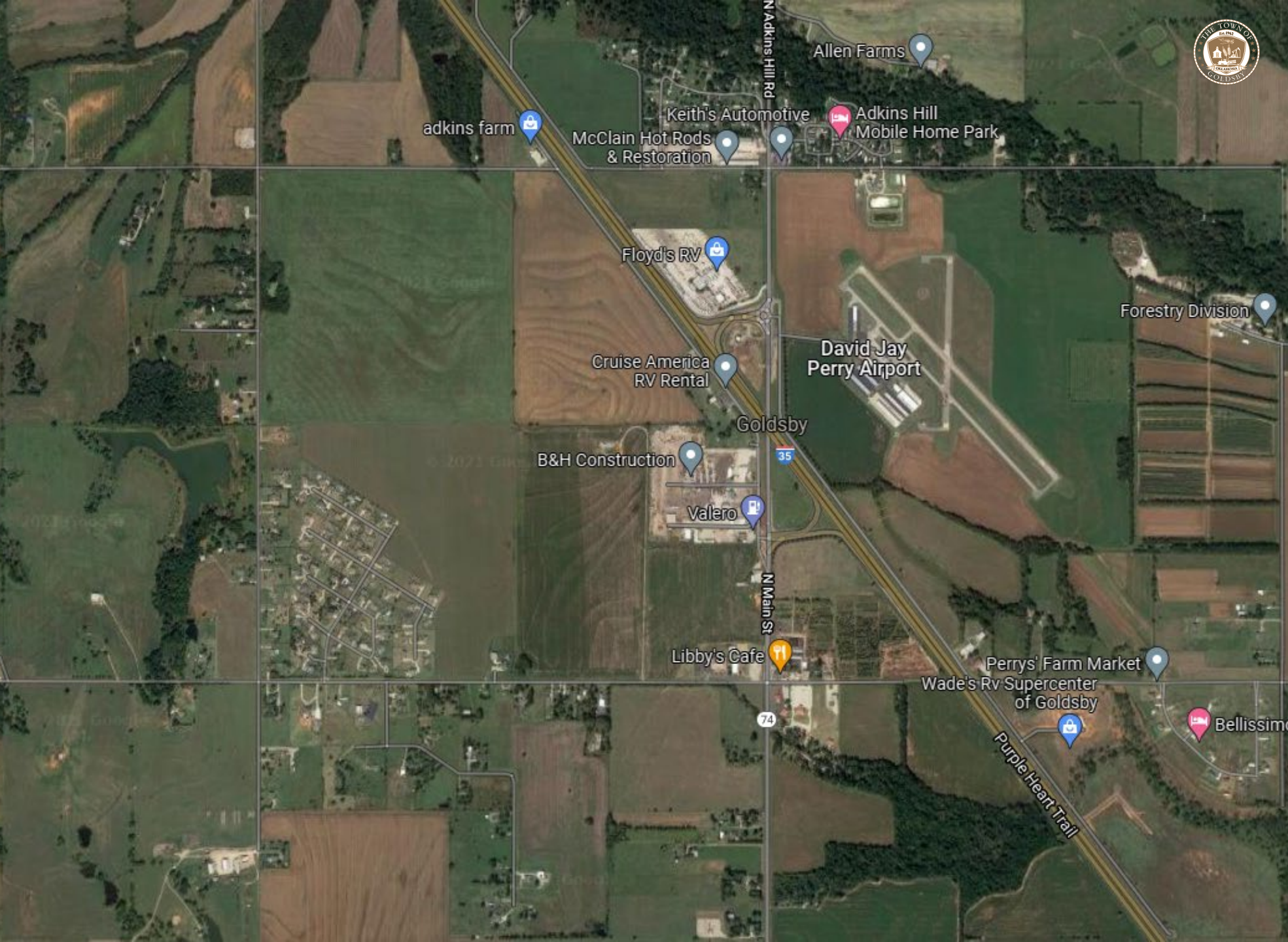
I-35
81,500 VPD
(ODOT 2021)

13,000+ VPD
(2021) at
Exit 104
intersection



TOWN OF GOLDSBY ANTICIPATED COMMERCIAL GROWTH

NUMBER	BUSINESS	STATUS
1	LA QUINTA HOTEL	PROSPECTING
2	TRAVEL STOP	PROSPECTING
3	MULTI-USE PUD SHOPPING CENTER	BUILDING
4	BANK	COMMITTED
5	NORMAN REGIONAL HEALTHCARE FACILITY	COMMITTED
6	SONIC	COMMITTED
7	BATTISON HONDA DEALERSHIP	COMMITTED
8	BOBCAT DEALERSHIP	BUILDING
9	MULTI-SPORTS COMPLEX	COMMITTED
10	WADE'S RV	COMPLETE
11	Extreme Outdoors Equipment	COMPLETE
12	GREAT PLAINS KUBOTA	COMPLETE



Misc. Commercial
Office Buildings

144
Homes

16
Homes











1,500 -1,800
Structures &
Homes

25
Homes

125
Homes

40
Homes

80
Homes

Zoning			
	A1		PUD
	C1		R1
	C2		R2
	C3		R3
	I1		R4

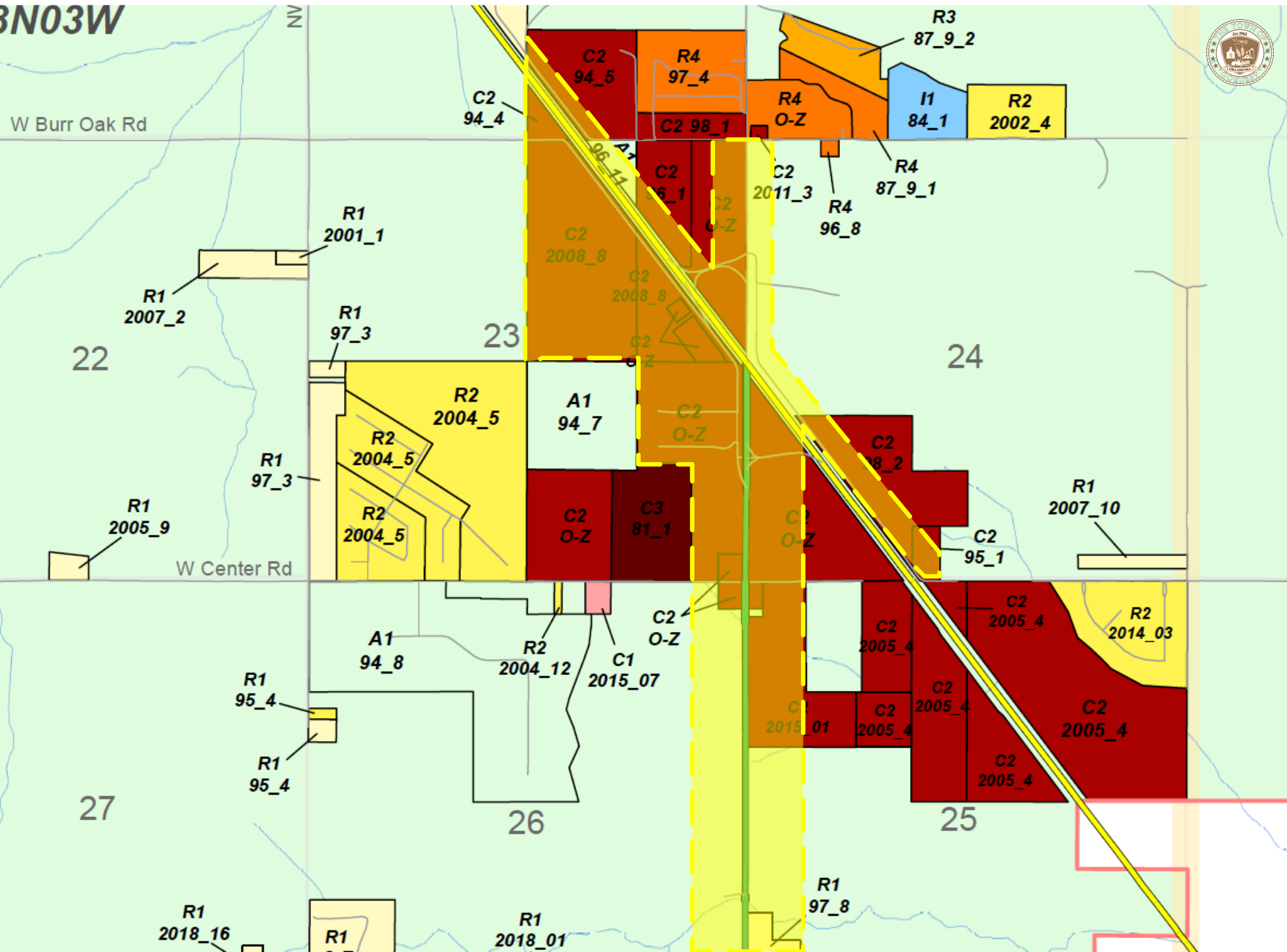


TOWN OF GOLDSBY
ANTICIPATED RESIDENTIAL
DEVELOPMENTS
Rev. 2.15.22

Summary:

- I. Goldsby Population has increased by 47% since the 2010 census.
- II. 1,900-2,200 Expected Homes connecting to the roadway have been proposed to properties within and abutting to the Town of Goldsby.
 - I. Development plans for proposed homes are attached below.
 - II. Average of 2.58 persons per household in the State of Oklahoma. (*US Census Bureau- Oklahoma 2019 Data*)
- III. Projected Population Growth: 4,811.7
- III. Summary of Proposed Traffic Projects:
- IV. Traffic Light at HWY-74 & Exit 104 (Goldsby Exit from I-35). Currently a 4-way stop.
- V. Widening of major collector Santa Fe (24th St.) from State Highway 9 (SH-9) south to intersection of Center Line Rd.

Town of Goldsby Main Street Program



TOWN OF GOLDSBY
PROPOSED MAIN STREET OVERLAY DIST.

PROPOSED AREA
DESIGNATION OF MAIN
STREET OVERLAY
DISTRICT.

REVISED 2.15.22

The primary objective of the Goldsby Main Street Project is to require higher standards to protect and enhance the unique characteristics of our community while promoting economic growth.



February 1, 2022

Adam Vossen
Town of Goldsby, Oklahoma
100 East Center Road
Goldsby, OK 73093

Re: Main Street Corridor – Conceptual Visioning and Plan View Rendering

Dear Mr. Vossen:

Kimley-Horn and Associates, Inc. (“Kimley-Horn”) is pleased to submit this letter agreement (the “Agreement”) to The Town of Goldsby (“Client”) for providing planning and conceptual engineering services for the Main Street corridor.

Project Understanding

As part of this contract, Kimley-Horn will perform engineering services for the Main Street corridor from the roundabout north of I-35 to south of Center Road as shown in the project extents map below. The engineering services include preparation of conceptual cross sections of potential corridor improvements, coordination, and conceptual plan view rendering of the preferred alternative.



Scope of Services

Kimley-Horn will provide the services specifically set forth below.

Task 1: Initial Data Collection and Cross Section

1.1 Field Audit

Kimley-Horn will perform a field audit of the corridor to collect pictures of the existing corridor, existing pavement condition, context, and existing roadway/sidewalk widths.

1.2 Cross Sections and Improvement Concept

Kimley-Horn will prepare up to three (3) conceptual cross sections to represent typical options/alternatives for the corridor and for specific/unique blocks. The cross sections will be prepared in collaboration with the Client.

The cross sections will include:

- Typical building setbacks
- On-street parking (if desired)
- Corridor typical design elements
- Roadway cross section
- Typical amenity/wayfinding examples
- Landscaping
- Gateways
- Dimensioning

Kimley-Horn will address up to one (1) round of comments on the proposed cross section.

1.3 Meetings

Kimley-Horn will prepare for and attend up to one (1) meeting with the Client and Client selected stakeholders as part of Task 1.1 – 1.2, to discuss the following:

- Project status
- Potential cross section options
- General context and future desired amenities
- Constraints

Task 2: Plan View Rendering Concept

This task assumes conceptual level plan view renderings for the Main St. corridor.

2.1 Plan View Rendering Concept

Kimley-Horn will prepare a conceptual design rendering in plan view of the Main Street corridor from the roundabout north of I-35 to south of Center Road

The following elements are anticipated to be included:

- Sidewalk and roadway improvements
- Intersection Hardscape Treatments
- On street parking (if desired)
- Typical amenity zone improvements and typical photo examples of products
- Pavement markings
- Hardscape/landscape elements/patterns

The proposed design will utilize feedback related to landscape/hardscape, corridor vision, and desired cross section, as defined in Task 1. The design will be performed using georeferenced aerials and Nearmap images. One Main Street corridor concept will be prepared for the study area.

Kimley-Horn will submit an electronic PDF version of the concept to the Client for review. Kimley-Horn will incorporate one (1) round of comments from the Client. Additional rounds of comments will be considered additional service.

Task 3: Cost Estimate & Phasing Plan

This task assumes conceptual level plan view renderings for the Main St. corridor.

3.1 Cost Estimate

Kimley-Horn will prepare a planning level cost estimate for the proposed improvements. The cost estimate will include an estimated construction cost range with applicable contingencies and cost escalation projections.

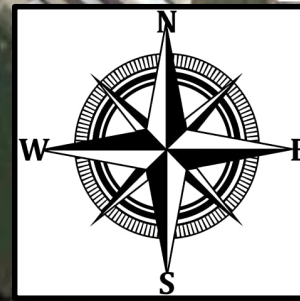
3.2 Phasing Plan

Based on the overall cost estimate, Kimley-Horn will prepare a phasing plan based on potential funding opportunities and anticipated development. The cost estimate will include a breakdown based on the potential phases.

Infrastructure & Utilities

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect. The text is centered on the left side of the image.

TOWN OF GOLDSBY
 UTILITIES & SERVICE AVAILABLE
 Rev. 10.8.21



CATEGORY:	PROVIDER:	TYPE:
ELECTRIC	Oklahoma Electric Cooperative (OEC)	3-Phase Primary Service Lines. 2 MW Capacity. Can provide more if needed.
WATER	Town of Goldsby Water Authority Trust	4" Water Main (Current) 8" Water Main (Proposed)
SEWER	Town of Goldsby Water Authority Trust	8" Gravity Feed Lines.
NATURAL GAS	ONG	4" Plastic Line @ 60 PSI. Maximum operating capacity.
INTERNET	Oklahoma Electric Cooperative (OEC)	Fiber Optics Line.

Legend

500 ft

Water Lines
 Diameter

- 2
- 2.5
- 3
- 4
- 6
- 8
- 12
- 16

Water Line, reference points

Fire Hydrants

Goldsby water authority Meters

Water Meters

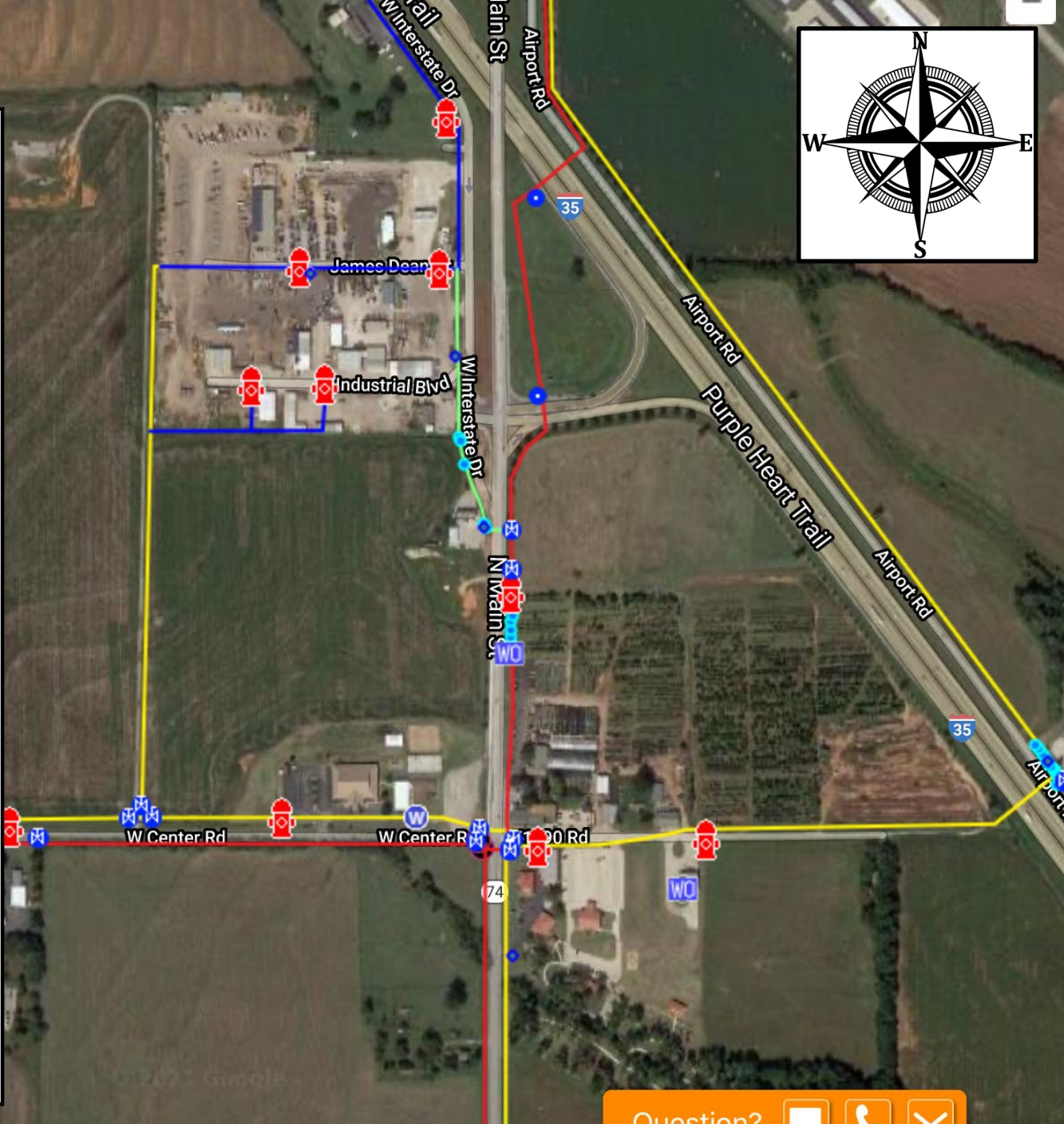
Blow Offs

valves

Work Orders
 Status

- Planned
- Started
- Completed
- Approved

WATER-Casing



Question?

Misc. Commercial
Office Buildings

144
Homes

1,500 -1,800
Structures &
Homes

16
Homes











12"

25
Homes

125
Homes

40
Homes

80
Homes

Zoning			
	A1		PUD
	C1		R1
	C2		R2
	C3		R3
	I1		R4



TOWN OF GOLDSBY

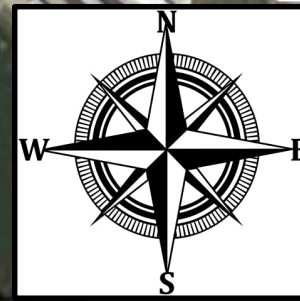
Main Street Water Project

Rev. 2.15.22

Summary:

- I. Current water infrastructure in the Main Street Area cannot sustain required PSI & service for recent commercial developments.
 - I. Also note; enough water pressure in the area to operate required fire protection systems for new facilities.
- II. A 12" water main is needed to be extended from SW 24th / Santa Fe Ave.
 - I. 12" PVC, ASTM D2241, Cl. 200
 - I. Linear Foot: 9,670
 - II. 14" HDPE, DR 11 (Directional Drill)
 - I. Linear Foot: 700

TOWN OF GOLDSBY
 UTILITIES & SERVICE AVAILABLE
 Rev. 10.8.21



CATEGORY:	PROVIDER:	TYPE:
ELECTRIC	Oklahoma Electric Cooperative (OEC)	3-Phase Primary Service Lines. 2 MW Capacity. Can provide more if needed.
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SEWER	Town of Goldsby Water Authority Trust	8" Gravity Feed Lines.
NATURAL GAS	ONG	4" Plastic Line @ 60 PSI. Maximum operating capacity.
INTERNET	Oklahoma Electric Cooperative (OEC)	Fiber Optics Line.

Legend

500 ft

Water Lines

Diameter

- 2
- 2.5
- 3
- 4
- 6
- 8
- 12
- 16

Water Line, reference points

Fire Hydrants

Goldsby water authority Meters

Water Meters

Blow Offs

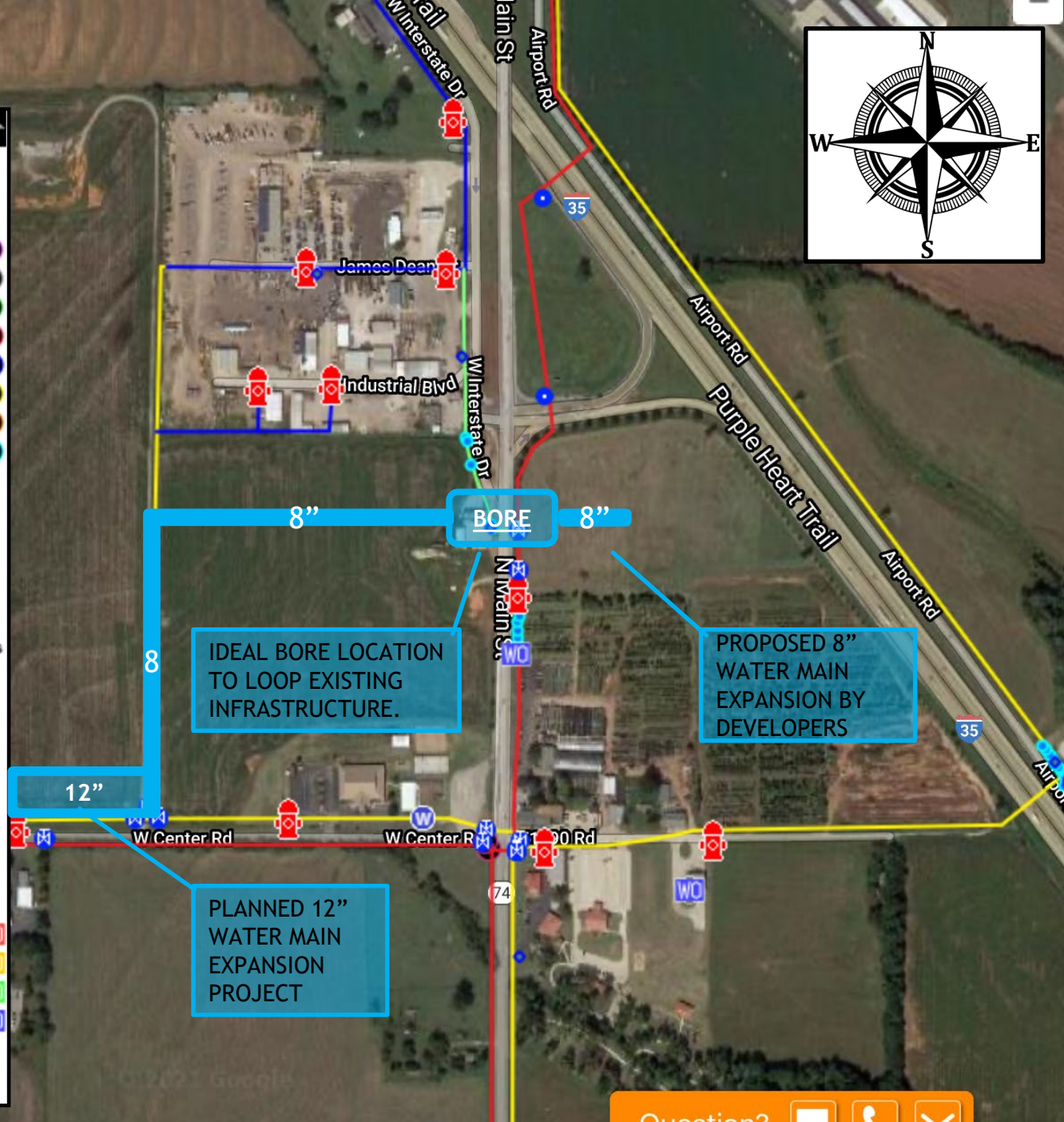
valves

Work Orders

Status

- Planned
- Started
- Completed
- Approved

WATER-Casing



IDEAL BORE LOCATION TO LOOP EXISTING INFRASTRUCTURE.

PROPOSED 8" WATER MAIN EXPANSION BY DEVELOPERS

PLANNED 12" WATER MAIN EXPANSION PROJECT

Question?

ENGINEER'S ESTIMATE

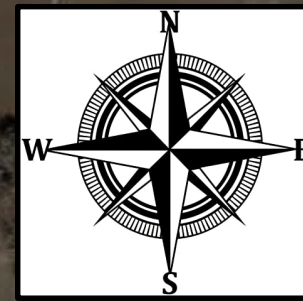
GOLDSBY, OKLAHOMA

CENTER ROAD WATER LINE EXT.

28-Jan-22

ITEM NO.	ITEM	UNIT	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT
1	12" PVC, ASTM D2241, Cl. 200	L.F.	9,670	\$ 50.00	\$ 483,500.00
2	14" HDPE, DR 11 (Directional Drill)	L.F.	700	\$ 175.00	\$ 122,500.00
3	Bore & 20" Steel Casing	L.F.	275	\$ 230.00	\$ 63,250.00
4	14" x 12" Fused M.J. Adaptor	EA.	2	\$ 1,000.00	\$ 2,000.00
5	12" M.J. 22.5 Deg Bend	EA.	2	\$ 1,000.00	\$ 2,000.00
6	12" M.J. 45 Deg Bend	EA.	1	\$ 1,000.00	\$ 1,000.00
7	12" M.J. 90 Deg Bend	EA.	3	\$ 1,000.00	\$ 3,000.00
8	Fire Hydrant Assembly	EA.	4	\$ 4,000.00	\$ 16,000.00
9	12" x 8" M.J. Reducer	EA.	1	\$ 1,000.00	\$ 1,000.00
10	12" M.J. Tee	EA.	3	\$ 1,500.00	\$ 4,500.00
11	2" Combination Air Valve Complete	EA.	2	\$ 3,000.00	\$ 6,000.00
12	8" S.S. Tapping Sleeve & Valve	EA.	1	\$ 4,000.00	\$ 4,000.00
13	8" S.S. Tapping Sleeve & Valve	EA.	1	\$ 6,000.00	\$ 6,000.00
14	Blue Fiberglass Marker	EA.	5	\$ 100.00	\$ 500.00
15	Valve Marker	EA.	5	\$ 100.00	\$ 500.00
16	Reconnect Ex. Meter	EA.	3	\$ 500.00	\$ 1,500.00
17	Relocate Ex. Fire Hydrant Assembly	EA.	2	\$ 2,500.00	\$ 5,000.00
18	Pressure Testing	L.S.	1	\$ 10,000.00	\$ 10,000.00
19	Disinfection & Bac-T Testing	L.S.	1	\$ 10,000.00	\$ 10,000.00
20	Erosion and Sediment Control	L.S.	1	\$ 10,000.00	\$ 10,000.00
21	Construction Traffic Control	L.S.	1	\$ 10,000.00	\$ 10,000.00
CONSTRUCTION TOTAL					\$ 762,250.00
Engineering					\$64,600.00
Inspection					\$ 22,900.00
Surveying					\$ 32,000.00
Contingency					\$ 76,200.00
TOTAL ESTIMATE					\$ 957,950.00

TOWN OF GOLDSBY
 UTILITIES & SERVICE AVAILABLE
 Rev. 10.8.21



JAMES DEAN DR.

INDUSTRIAL BLVD.

I-35

GOLDSBY BAPTIST CHURCH

MAIN ST

ANTICIPATED 8" GRAVITY FEED LINES. PLATS RECEIVED.

PROPOSED 8" GRAVITY FEED LINES. NO PLAT SUBMITTED.

QUANTITIES THIS SHEET

PHASE I

1. 4,298 L.F. 8" PVC SEWER, ASTM D 3034
2. 3,801 L.F. 4" PVC FORCE MAIN, ASTM D2241 CL 200
3. 13 EA. MANHOLE COMPLETE (0'-6" DEEP)

LEGEND

- PHASE I ———
- FORCE MAIN ———
- EXISTING - - - - -

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SEWER	Town of Goldsby Water Authority Trust	8" Gravity Feed Lines.
NATURAL GAS	ONG	4" Plastic Line @ 60 PSI. Maximum operating capacity.
INTERNET	Oklahoma Electric Cooperative (OEC)	Fiber Optics Line.

Total Construction Estimate \$3,241,201.00

2. Non-Construction Cost

Engineering	\$234,600.00
Inspection	\$ 121,700.00
ODEQ Fee	\$ 4,750.00
Construction Testing	\$ 15,000.00
Facility Acquisition	\$ 100,000.00
Contingency	<u>\$ 324,105.00</u>
Total Non-Construction Estimate	\$800,155.00

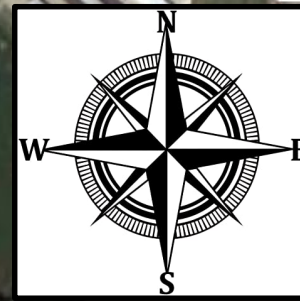
c. Total Estimated Project Cost **\$4,041,356.00**

G. Advantages/Disadvantages

1. The advantage of this alternative is the overall cost. It will be less expensive to purchase the mobile home lagoon system and upgrade the existing facility to provide the treatment capacity projected. Another advantage is that with minor modifications, the facility could except sewage generated from the commercial area quicker than constructing a new facility. A third advantage is that the treatment facility would be in close proximity to the well field. Staff already make routine inspections and sampling visits to the area. Adding lagoon inspections and recordkeeping would not be a significant burden.

The main disadvantage of this alternative is that the facility is currently in use. All construction will have to maintain current design capacity at a minimum.

TOWN OF GOLDSBY
 UTILITIES & SERVICE AVAILABLE
 Rev. 10.8.21



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Legend

500 ft

Water Lines
 Diameter

- 2
- 2.5
- 3
- 4
- 6
- 8
- 12
- 16

Water Line, reference points

Fire Hydrants

Goldsby water authority Meters

Water Meters

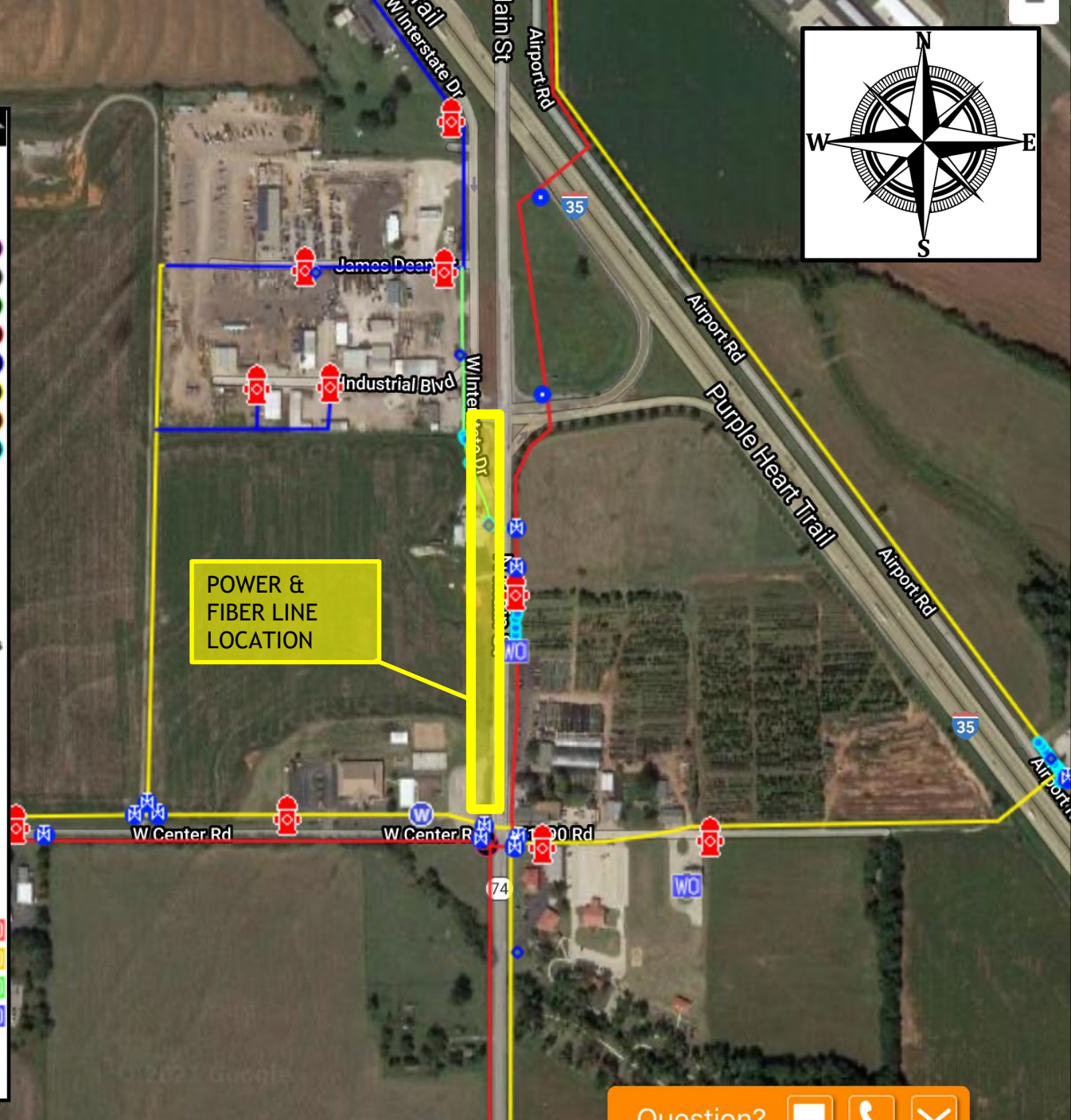
Blow Offs

valves

Work Orders
 Status

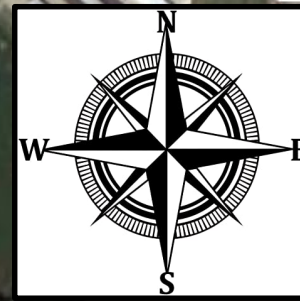
- Planned
- Started
- Completed
- Approved

WATER-Casing



Question?

TOWN OF GOLDSBY
 UTILITIES & SERVICE AVAILABLE
 Rev. 10.8.21



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Legend

500 ft

Water Lines

Diameter

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Water Line, reference points

Fire Hydrants

Goldsby water authority Meters

Water Meters

Blow Offs

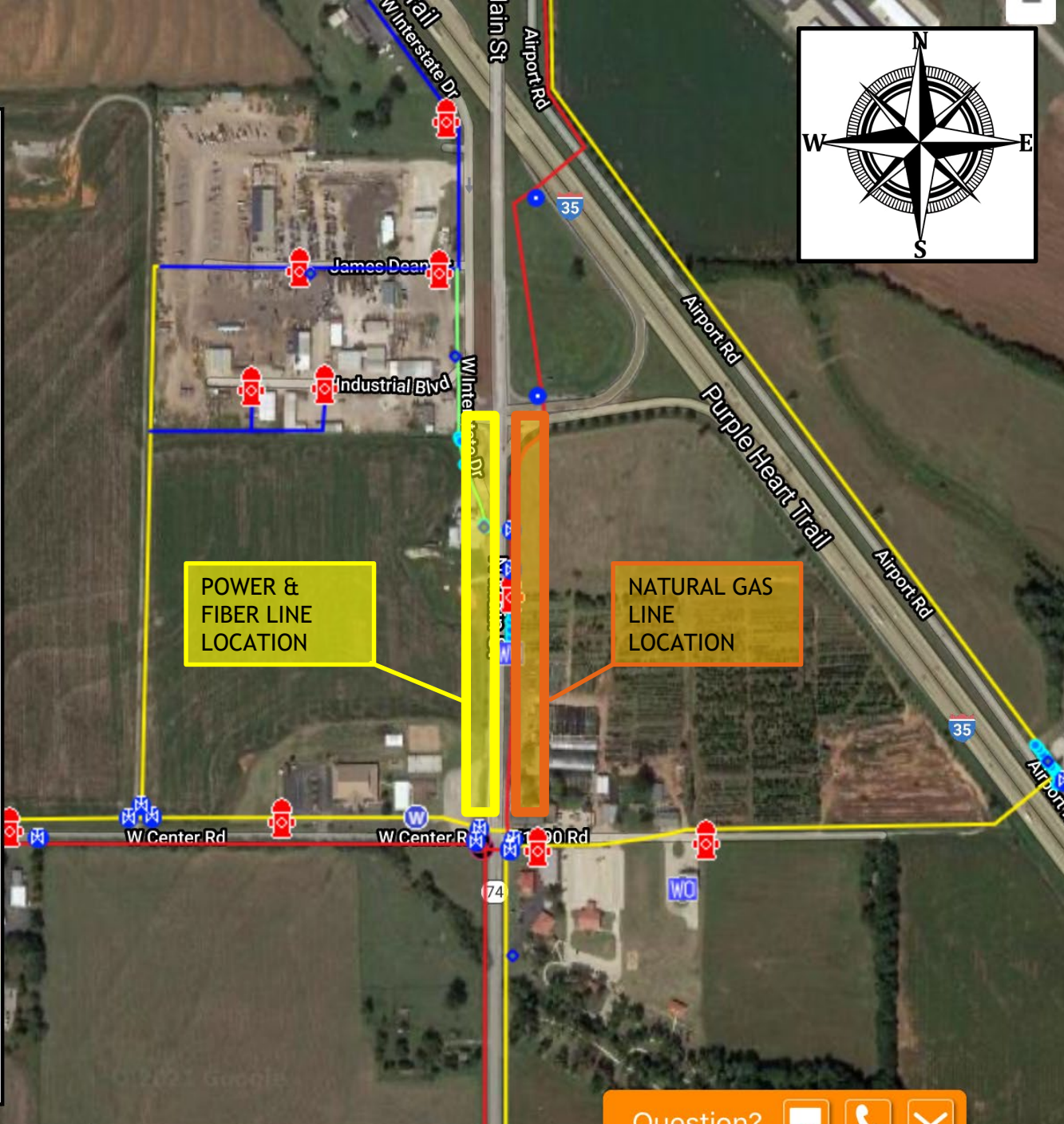
valves

Work Orders

Status

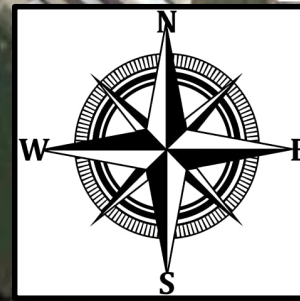
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WATER-Casing



Question?

TOWN OF GOLDSBY
 UTILITIES & SERVICE AVAILABLE
 Rev. 10.8.21



Legend

500 ft

Water Lines
 Diameter

- 2
- 2.5
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Water Line, reference points

Fire Hydrants

Goldsby water authority Meters

Water Meters

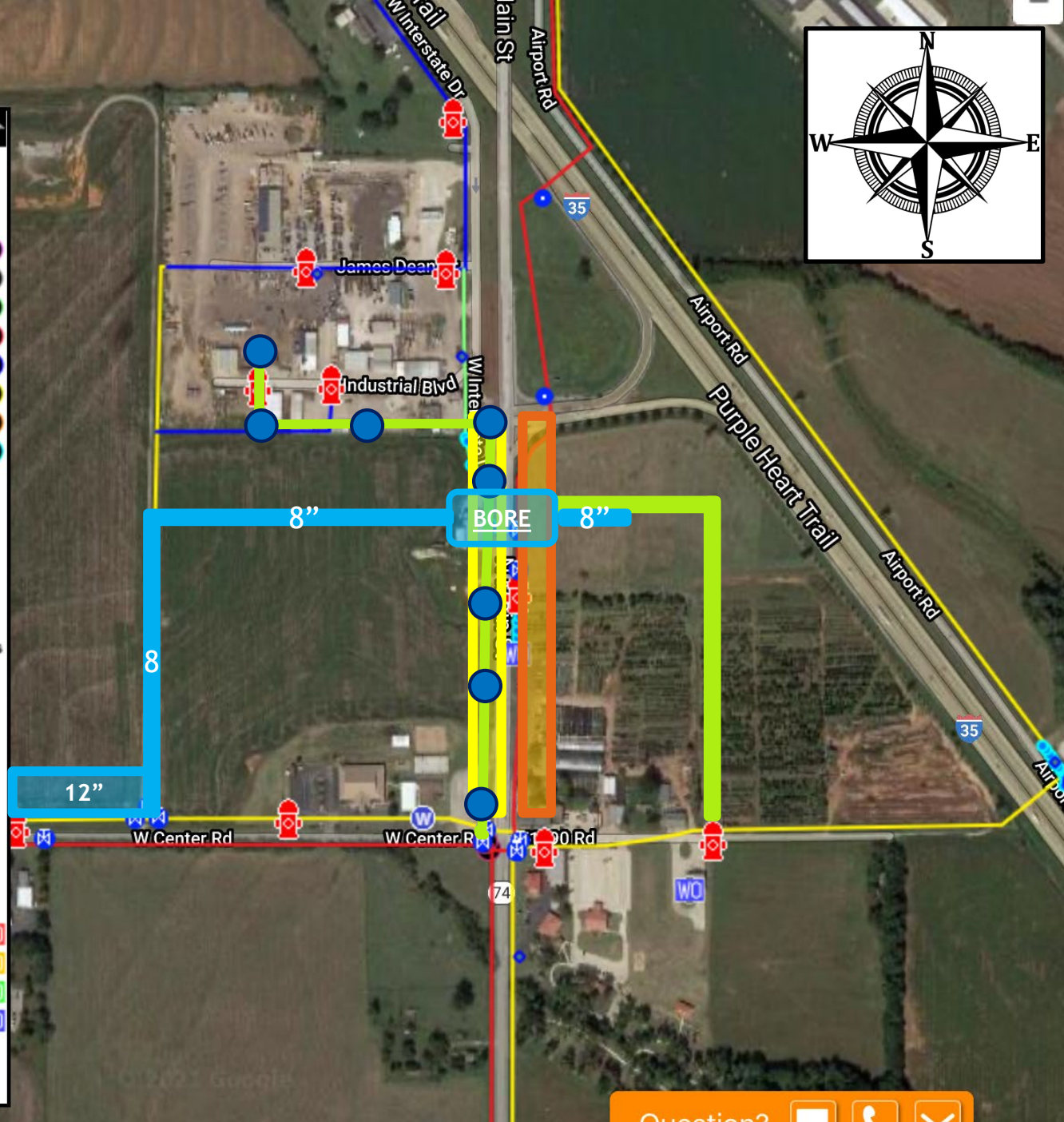
Blow Offs

valves

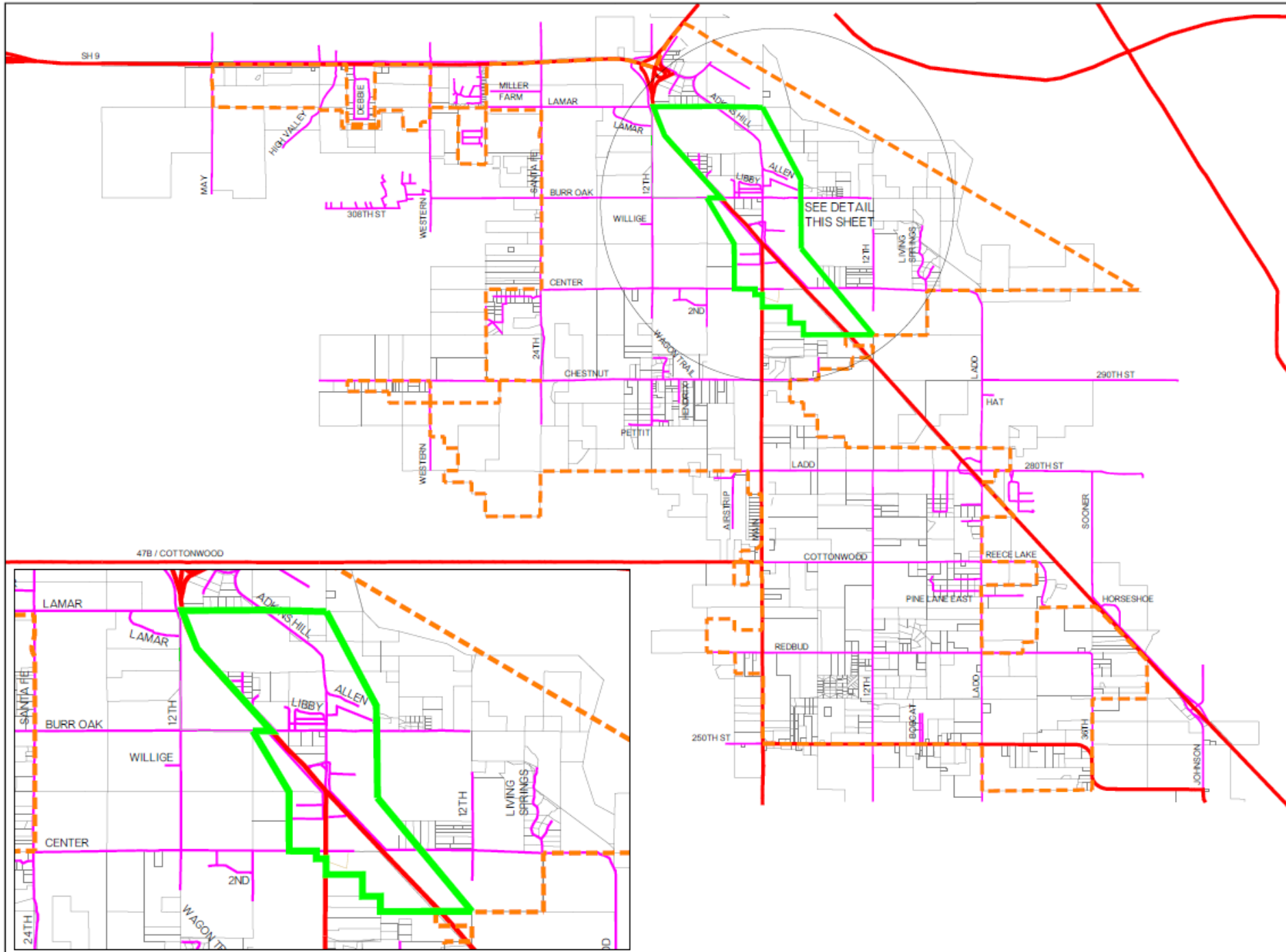
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WATER-Casing



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NATURAL GAS	ONG	4" Plastic Line @ 60 PSI. Maximum operating capacity.
INTERNET	Oklahoma Electric Cooperative (OEC)	Fiber Optics Line.



LEGEND

-  GOLDSBY
-  SEWER SERVICE

NO	REVISION	DATE

GLENN SULLIVAN & ASSOCIATES, INC.
 PROFESSIONAL ENGINEERS/CONSULTANTS
 133 N. Mercedes Drive
 P.O. Box 720368 - Norman, OK 73070
 Phone 405-321-7232
 office@glsa.com
 CEF 1581, Expiration Date 06/30/2022

TOWN OF GOLDSBY

SEWER SERVICE AREA

DATE:	10/12/2020
DESIGNED BY:	KS
CHECKED BY:	GII
APPROVED BY:	KS
DRAWN BY:	SL

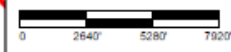


FIGURE 2

FINAL PLAT OF OLD TOWN SQUARE

A SUBDIVISION OF PART OF THE SE/4 SEC 23, 8N-3W
TOWN OF GOLDSBY, McCLAIN COUNTY, OKLAHOMA

OWNERS CERTIFICATE AND DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT OLD TOWN SQUARE, LLC DOES HEREBY CERTIFY THAT THEY ARE THE OWNERS OF AND HAVE FULL POWER, AUTHORITY AND CONTROL TO CONVEY AND INTEREST IN AND TO THE LAND SHOWN ON THE ANNEXED PLAT, AND THAT THEY HAVE CAUSED THE SAME TO BE SURVEYED AND PLATTED, AND THAT THEY HEREBY DEDICATE ALL THE STREETS AND EASEMENTS SHOWN HEREON TO THE PUBLIC FOR THE PURPOSES OF STREETS AND UTILITIES, FOR THEIR SUCCESSORS, ASSIGNEES, SUCCESSORS AND ASSIGNEES, AND HAVE CAUSED THE SAME TO BE RELEASED FROM ALL ENCUMBRANCES SO THAT THE TITLE IS CLEAR.

IN WITNESS WHEREOF, THE UNDERSIGNED HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED THIS _____ DAY OF _____ 20____.

SCOTT ADRIAN
MANAGING PARTNER

STATE OF OKLAHOMA) SS

COUNTY OF McCLAIN)

BEFORE ME THE UNDERSIGNED NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS _____ DAY OF _____, PERSONALLY APPEARED SCOTT ADRIAN, MANAGING PARTNER TO OLD TOWN SQUARE, LLC, AND PERSONALLY APPEARED _____, POWERS INSTRUMENT NO. _____ OF SAID COMPANY, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME AS HIS FREE AND VOLUNTARY ACT AND DEED, FOR THE USES AND PURPOSES HEREIN SET FORTH.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC: _____

LAND SURVEYOR'S CERTIFICATE

I, ANTHONY B. COLE, DO HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL LAND SURVEYOR, AND THAT THE ANNEXED PLAT REPRESENTS A SURVEY MADE UNDER MY DIRECTION AND THAT THE MONUMENTS SHOWN HEREON ACTUALLY EXIST AND THEIR POSITIONS ARE CORRECTLY SHOWN.

Anthony B. Cole
ANTHONY B. COLE, R.P.L.S. 1445

STATE OF OKLAHOMA) SS

COUNTY OF McCLAIN)

BEFORE ME THE UNDERSIGNED NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, PERSONALLY APPEARED _____, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME AS HIS FREE AND VOLUNTARY ACT AND DEED, GIVEN UNDER MY HAND AND SEAL THIS _____ DAY OF _____, 20____.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC: _____

BONDED ABSTRACTOR'S CERTIFICATE

THE UNDERSIGNED, A DULY QUALIFIED AND LAWFULLY BONDED ABSTRACTOR OF TITLES, IN AND FOR McCLAIN COUNTY, STATE OF OKLAHOMA, HEREBY CERTIFIES THAT THE RECORDS OF SAID COUNTY SHOW THAT THE TITLE TO THE LAND ON THE ANNEXED PLAT IS HELD IN ADRIAN AND ADRIAN, AND FIRM PLANNING.

ON THIS _____ DAY OF _____, 20____, THERE WERE NO ACTIONS PENDING OR JUDGMENTS OF ANY NATURE IN ANY COURT OF OR FILE WITH THE CLERK OF ANY COURT IN SAID COUNTY AND STATE AGAINST SAID LAND OR THE OWNERS THEREOF, AND THAT THE TAXES ARE PAID FOR THE YEAR _____, AND PRIOR YEARS, THAT THERE ARE NO OUTSTANDING TAX SALES (CERTIFICATES AGAINST SAID LAND, AND NO TAX DEBTS) ARE ISSUED TO ANY ONE PERSON, THAT THERE ARE NO LIENS, MORTGAGES, OR OTHER ENCUMBRANCES OF ANY KIND AGAINST THE LAND INCLUDED IN THE ANNEXED PLAT, EXCEPT MORTGAGES, LIENS, WATER RIGHTS AND EASEMENTS OF RECORD PREVIOUSLY RECORDED, EXCEPT OR GRANTED.

IN WITNESS WHEREOF, SAID BONDED ABSTRACTOR HAS CAUSED THIS INSTRUMENT TO BE EXECUTED THIS _____ DAY OF _____, 20____.

WE: _____

STATE OF OKLAHOMA) SS

COUNTY OF McCLAIN)

BEFORE ME THE UNDERSIGNED NOTARY PUBLIC IN AND FOR SAID COUNTY AND STATE, ON THIS _____ DAY OF _____, PERSONALLY APPEARED _____, TO ME KNOWN TO BE THE IDENTICAL PERSONS WHO SIGNED AS THE VP, OF _____, AN OKLAHOMA CORPORATION, AND DULY ACKNOWLEDGED TO ME THAT HE/HE/SHE EXECUTED THE SAME AS THE FREE AND VOLUNTARY ACT AND DEED OF SAID CORPORATION.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC: _____

CITY PLANNING COMMISSION APPROVAL

_____, CHAIRMAN OF THE CITY PLANNING COMMISSION FOR THE TOWN OF GOLDSBY, STATE OF OKLAHOMA, HEREBY CERTIFY THAT THE SAID COMMISSION DULY APPROVED THE ANNEXED PLAT ON THE _____ DAY OF _____, 20____.

DEPARTMENT: _____

ACCEPTANCE OF DEDICATION OF CITY COUNCIL

WE IT HEREBY BECOMES THE COUNCIL OF THE TOWN OF GOLDSBY, OKLAHOMA, THAT THE DEDICATIONS SHOWN ON THE ANNEXED PLAT ARE ACCEPTED, ADOPTED BY THE COUNCIL OF THE TOWN OF GOLDSBY, OKLAHOMA, THIS _____ DAY OF _____, 20____.

CITY CLERK: _____

CERTIFICATE OF CITY CLERK

HEREBY CERTIFY THAT I HAVE EXAMINED THE RECORDS OF SAID TOWN AND FIND THAT ALL REQUIRED PAYMENTS OR INSTALLMENTS UPON SPECIAL ASSESSMENTS HAVE BEEN MADE IN FULL, AND THAT THERE IS NO SPECIAL ASSESSMENT PROCEEDING NOW PENDING AGAINST THE LAND SHOWN ON THE ANNEXED PLAT ON THE _____ DAY OF _____, 20____.

CITY CLERK: _____

COUNTY TREASURER'S CERTIFICATE

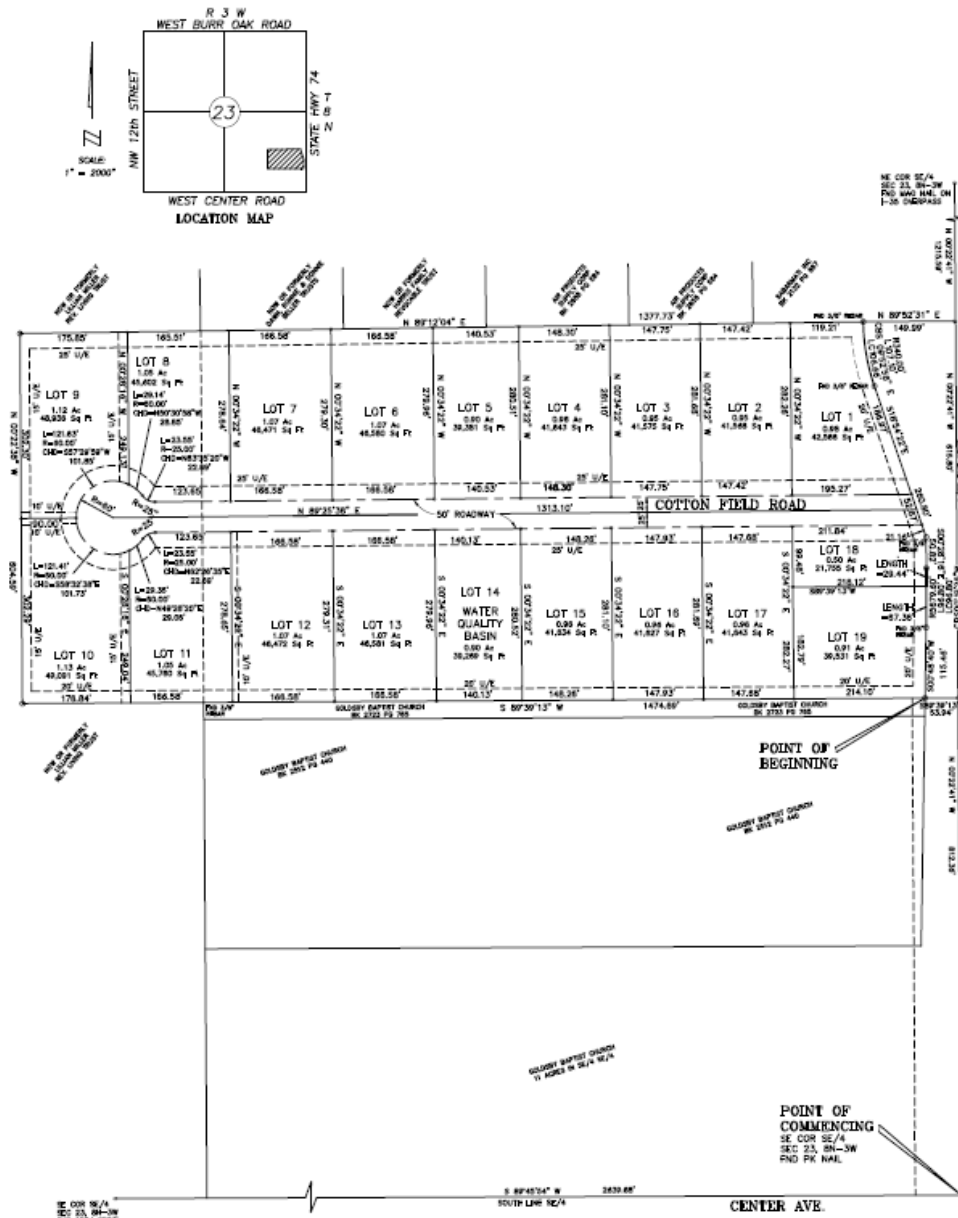
I, _____, COUNTY TREASURER OF McCLAIN COUNTY, STATE OF OKLAHOMA, THAT THE TAX RECORDS OF SAID COUNTY SHOW ALL TAXES ARE PAID FOR THE _____ AND PRIOR YEARS ON THE LAND SHOWN ON THE ANNEXED PLAT, THAT THE REQUIRED STATUTORY SECURITY HAS BEEN OBTAINED IN THE OFFICE OF THE COUNTY TREASURER, GUARANTEEING PAYMENT OF THE CURRENT YEARS TAXES.

IN WITNESS WHEREOF, SAID COUNTY TREASURER HAS CAUSED THIS INSTRUMENT TO BE EXECUTED AT THE CITY OF PORCELAIN, OKLAHOMA THIS _____ DAY OF _____, 20____.

COUNTY TREASURER: _____

LEGAL DESCRIPTION

A tract of land situated in part of the Southeast Quarter (SE/4) of Section 23, Township 8 North, Range 3 West of the 14th, McClain County, Oklahoma, said tract being more particularly described as follows:
Basis of bearing for this description is the Oklahoma State Plane Coordinate System, NAD 83, South Zone with the East line of said SE/4 having a bearing of N 00°22'41" W and monumented by a P.K. nail found at the Northeast and Southeast corners of said SE/4;
COMMENCING at the Southeast corner of said SE/4;
THENCE N 00°22'41" W along the East line of said SE/4 a distance of 812.36 feet;
THENCE S 89°39'13" W a distance of 53.84 feet to the POINT OF BEGINNING, said point of beginning being on the West right of way line of State Highway No. 74;
THENCE continuing S 89°39'13" W a distance of 1474.69 feet;
THENCE N 00°22'38" W a distance of 604.59 feet;
THENCE N 89°12'04" E a distance of 1377.73 feet to said West right of way line and the beginning of a non-tangent curve to the left;
THENCE 107.10 feet along said West right of way line and along the arc of said non-tangent curve to the left, having a radius of 340.00 feet, the long chord of which bears S 09°52'56" E, 106.66 feet;
THENCE S 18°54'22" E along said West right of way line a distance of 260.80 feet;
THENCE S 00°26'16" E along said West right of way line a distance of 50.82 feet to the beginning of a curve to the right;
THENCE 96.80 feet along said West right of way line and along the arc of said curve to the right, having a radius of 5079.00 feet, the long chord of which bears S 00°19'26" W, 96.80 feet;
THENCE S 00°48'40" W along said West right of way line a distance of 115.48 feet to the POINT OF BEGINNING, containing 20.24 acres of land, more or less.



NOTE: UNLESS NOTED OTHERWISE, ALL CORNERS ARE A 3/8" REBAR WITH GREEN CAP STAMPED "CA 6117"

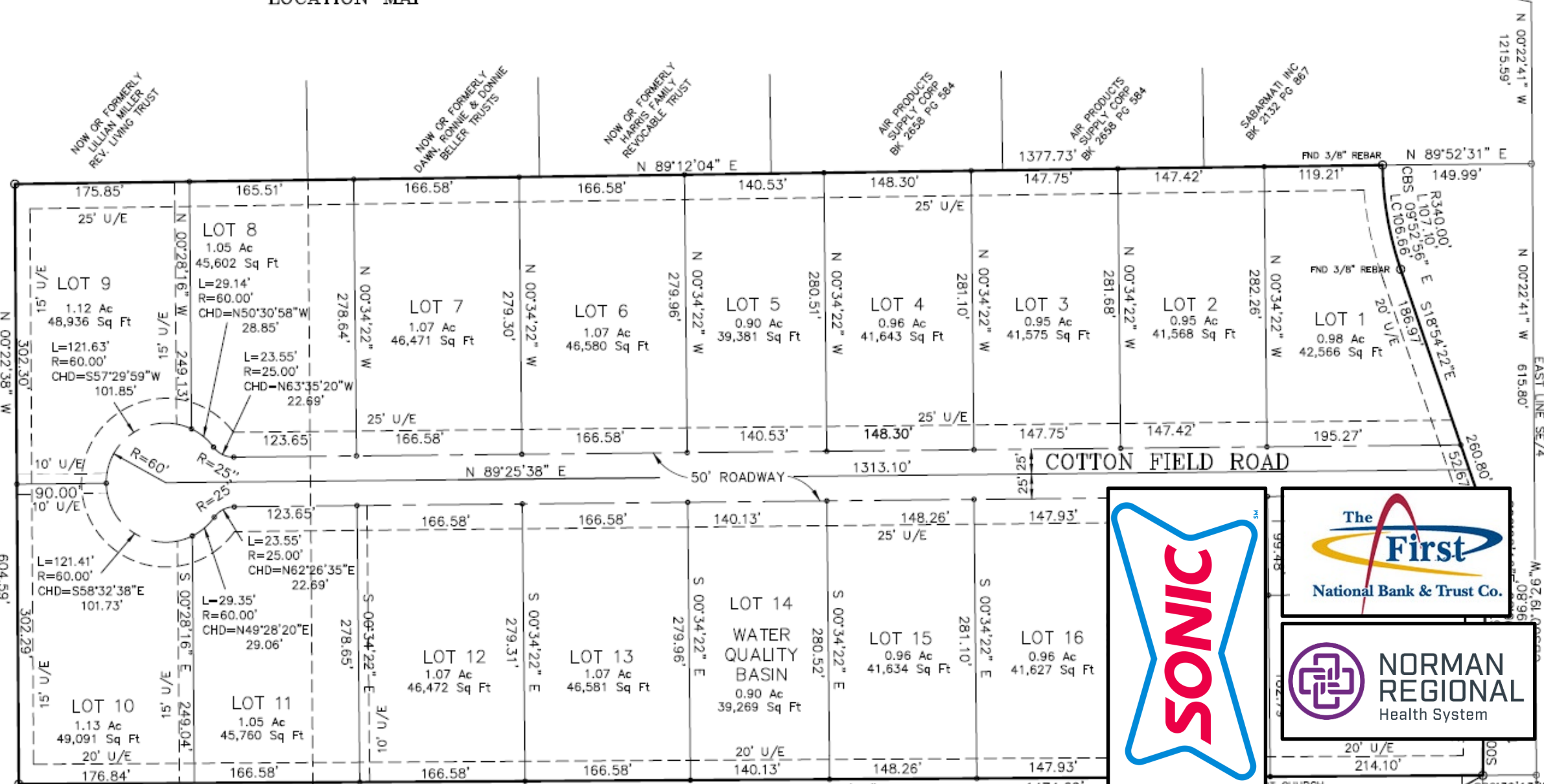
OLD TOWN SQUARE	
Drawn By: BAS	Approved By:
Checked By: ABC	Date: 06/15/2023
Project No: 4-11-468	Scale: 1" = 100'
FINAL PLAT OF OLD TOWN SQUARE A SUBDIVISION OF PART OF THE SE/4 SEC. 23, 8N-3W TOWN OF GOLDSBY, McCLAIN COUNTY, OKLAHOMA	
PINNACLE CONSULTING MANAGEMENT GROUP, INC 4516 N.W. 56TH STREET, Ste 100 OKLAHOMA CITY, OK 73122 PH (405) 879-0600 Fax (405) 604-4627 CA 6117 Expires 6-30-23	
SHEET 1 OF 1 SHEETS	

LOCATION MAP

I-35 ON/OFF

HWY 74 - MAIN STREET

EAST LINE SE 1/4



BM TOP NUT
FIRE HYD.
N=660957.56
E=2124949.04
EL=1176.87'

POINT OF
BEGINNING

NOW OR FORMERLY
LILLIAN MILLER
REV. LIVING TRUST

NOW OR FORMERLY
DAWN, RONNIE & DONNIE
BELLER TRUSTS

NOW OR FORMERLY
HARRIS FAMILY
REVOCABLE TRUST

AIR PRODUCTS
SUPPLY CORP
BK 2658 PG 584

AIR PRODUCTS
SUPPLY CORP
BK 2658 PG 584

SABARMATI INC
BK 2152 PG 867

NOW OR FORMERLY
LILLIAN MILLER
REV. LIVING TRUST

GOLDSBY BAPTIST CHURCH
BK 2512 PG 440

GOLDSBY BAPTIST CHURCH
BK 2723 PG 765

GOLDSBY BAPTIST CHURCH
BK 2723 PG 765







SIGNAGE

TENANT

TENANT

Tenant



retail

SPRINGFIELD

THE WAY

THE WAY



Endcap Retail

Tenant

TENANT

TENANT

STORAGE

Rendering of First National Bank





**TOWN OF GOLDSBY
AIRPORT COMMERCIALIZATION
PROJECT**

Summary:

Exterior districting highlighted in red is anticipated to be split from the airport parcel for commercial development.

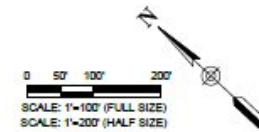
Rendering shows hangar expansion & new construction elements.

SUMMARY OF PROPOSED HANGAR SPACES

T-HANGARS	72
50' X 50'	39
60' X 60'	13
60' X 80'	5
100' X 100'	2

NON AERONAUTICAL DEVELOPMENT AREA

N. OF AIRPORT ENTRANCE	4.0 AC
S. OF AIRPORT ENTRANCE	7.51 AC
TOTAL	11.51 AC



CEC CORPORATION
4331 N. MERIDIAN BLVD
OKLAHOMA CITY, OK 73114
P. 405.751.4282
WWW.COMMERCIALCEC.COM
STATE OF OKLAHOMA DEPARTMENT OF AEROSPACE
CIVIL TO AIRPORTS DIVISION

FUTURE HANGAR LAYOUT - OPTION A





TOWN OF GOLDSBY, OK

Town of Goldsby Board of Trustees

Re: Minutes from SH-74 at I-35 Development Along Corridor SH 74 bridge replacement / interchange McClain County J/P 29571(04)

April 26th, 2022

Mr. Brown,

We would like to include you in our communications regarding the Town of Goldsby, ODOT and relative ODOT engineering firms to local projects. On April 25th, a meeting was held for the reference project at 2:00 p.m. at the Goldsby Townhall, in Goldsby OK.

In attendance were the following:

Glenn Berglan, Mayor gberglan@yahoo.com 405-202-3522

Ronny Nelson ronnynelson@townofgoldsbys.com 405-570-8399

Adam Vossen adam@townofgoldsbys.com 405-750-2091

Joe Davis TEIM Design jdavis@teimdesign.com 405-752-1122

Cassie Pinta TEIM Design cpinta@teimdesign.com 405-752-1122

The meeting was to discuss the development along the I-35 corridor. The discussion was general in nature with no interchange configuration specifics. Goldsby reviewed commercial development in the corridor along with residential development that will access SH-74. Proposed land development, both commercial and residential, have been sent to TEIM Design to incorporate in traffic projections. 1,800 homes are to be added nearby. Goldsby requested specific improvements and TEIM Design informed them to contact ODOT District Three Engineer, Ron Brown. A few of the desired improvements include: • Slip ramp relocated to near Burr Oak Road • Traffic lights at the SH-74/SB Ramps and SH-74/Center Road • Intermodal transportation including ADA compliant sidewalks • Commercial signage in/near the existing roundabout • Slower speed limit through Main Street Sincerely,

Thank you for your continued communication with our community in this matter,

Sincerely,

Glenn Berglan, Mayor

Town of Goldsby
100 E. Center Rd.
Goldsby, OK 73093

100 E. Center Rd., Goldsby, OK 73093

Office: 405-288-6675 | www.TownofGoldsby.com



APPENDIX D

ALTERNATIVE 1: 0° SKEW CONCEPTUAL PLANS

FOR SURVEY CONTROL DATA, SEE
SURVEY DATA SHEETS

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT NO. J2-9571(004)
GRADE, DRAIN, BRIDGE & SURFACE PLANS
I-35 & SH 74 INTERCHANGE

McCLAIN COUNTY

CONTROL SECTION NO. 74-44-38

STATE JOB NO. 29571(04)

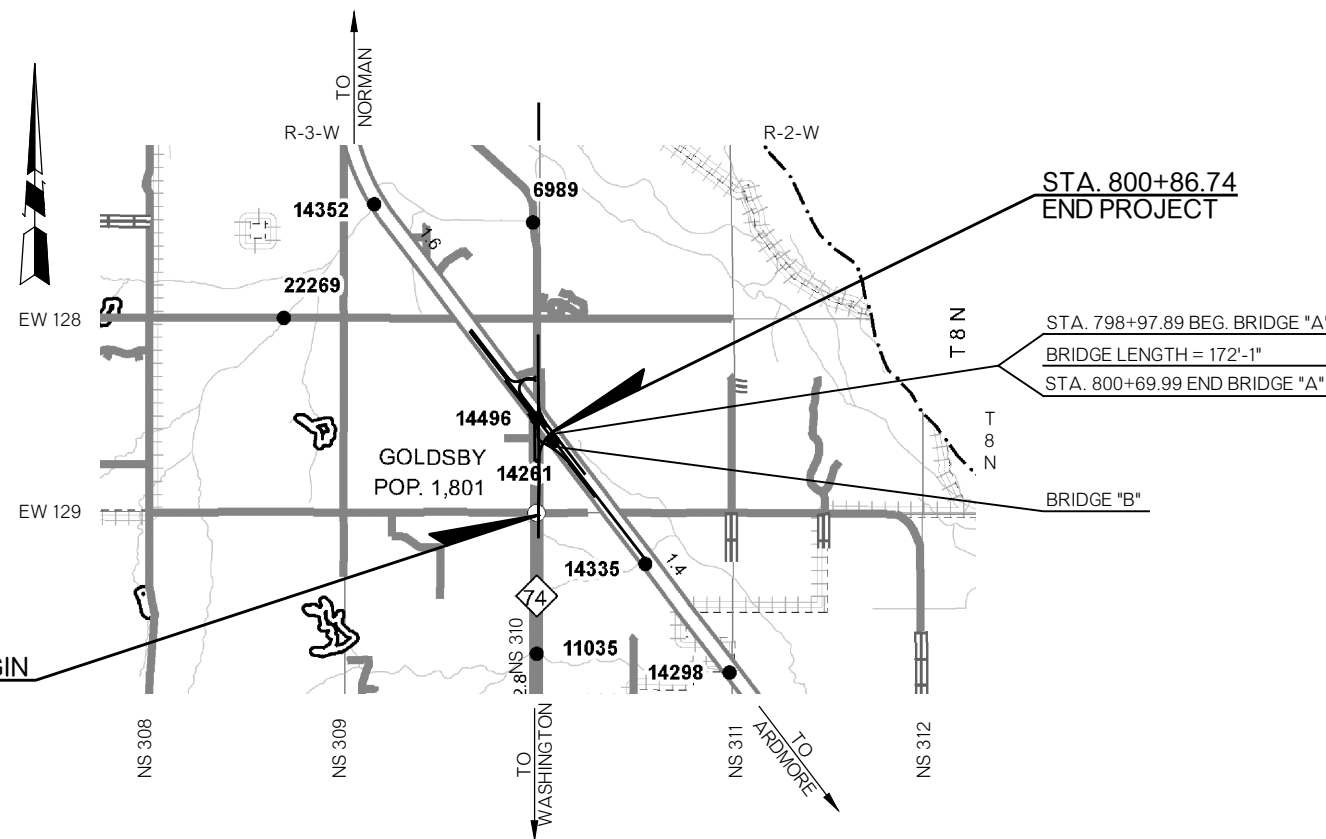
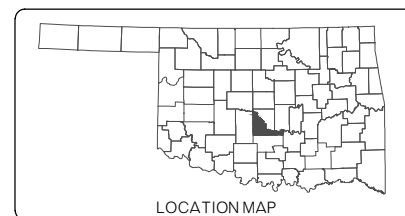
BRIDGE "A" LOCATION NO. 4405-2297X; EXIST. NBI NO. 14496
BRIDGE "B" LOCATION NO. 4405-2279EXF; EXIST. NBI NO. 14261

SH 74	
ADT 2021	= 8,400
ADT 2050	= 13,270
DHV (2-WAY)	= 1,327
K (DHV/ADT)	= 10%
D	= 65%
T (% DHV)	= 9%
T (% ADT)	= 15%
T3 (% ADT)	= 3%
V	= 45 MPH
20YR FLEX. ESALS	= 3.8 M

SCALES	
PLAN	1" = 50'
PROFILE HOR.	1" = 50'
VER.	1" = 5'
LAYOUT MAP	1" = 2,640'

CONVENTIONAL SYMBOLS

- PROPOSED ROAD
- RAILROADS
- RANGE & TOWNSHIP SECTION LINES
- QUARTER SECTION LINES
- FENCES
- GROUND LINE
- EXISTING ROADS
- BASE LINE
- GRADE LINES
- TELEPHONE & TELEGRAPH
- POWER LINES
- BUILDINGS
- OIL WELLS
- DRAINAGE STRUCTURES - IN PLACE
- DRAINAGE STRUCTURES - NEW
- RIGHT-OF-WAY LINES - EXISTING
- RIGHT-OF-WAY LINES - NEW
- CONTROLLED ACCESS
- RIGHT-OF-WAY FENCE



PROJECT LENGTH BASED ON SH 74 CRL STATIONING.

NOTE:

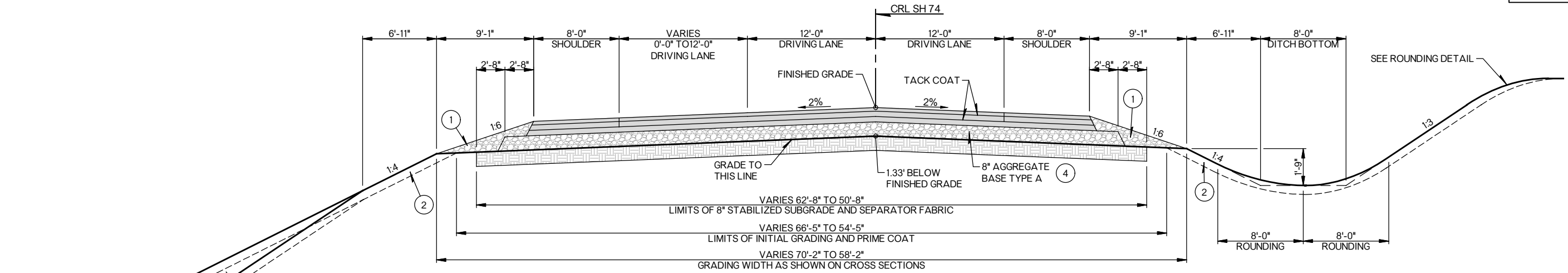
ROADWAY LENGTH	2,229.29 FT.	0.422 MI.
BRIDGE LENGTH	172.10 FT.	0.032 MI.
PROJECT LENGTH		0.454 MI.

EQUATIONS: NONE
EXCEPTION: NONE



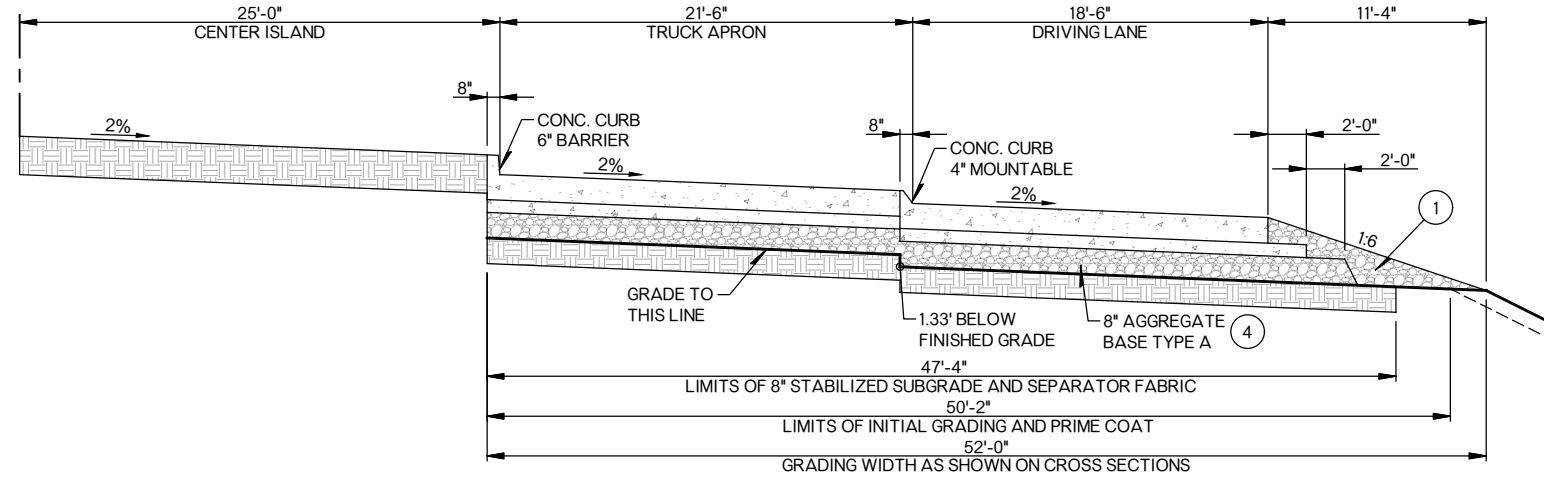
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NATURE AND IS NOT A FINAL, SIGNED AND
SEALED DOCUMENT.

OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
DATE APPROVED _____	DATE APPROVED _____
BY _____	BY _____
CHIEF ENGINEER	DIVISION ADMINISTRATOR
SWO 4892(1)	F.A. PROJECT NO. J2-9571(004)
COUNTY McClain COUNTY	HIGHWAY SH 74 SHEET NO. 0001



TYPICAL SECTION NO. 1
SH 74

PAVEMENT STRUCTURE	PAVEMENT REQUIREMENTS	
	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

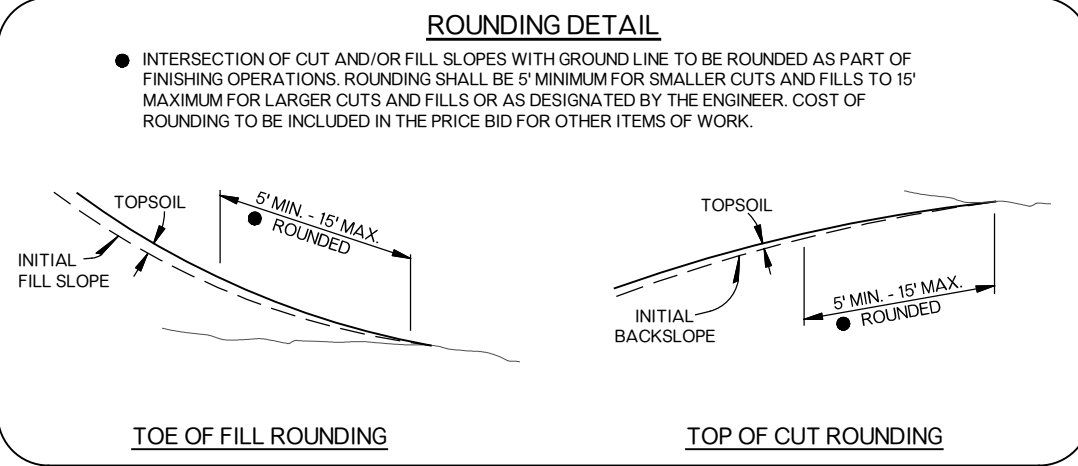


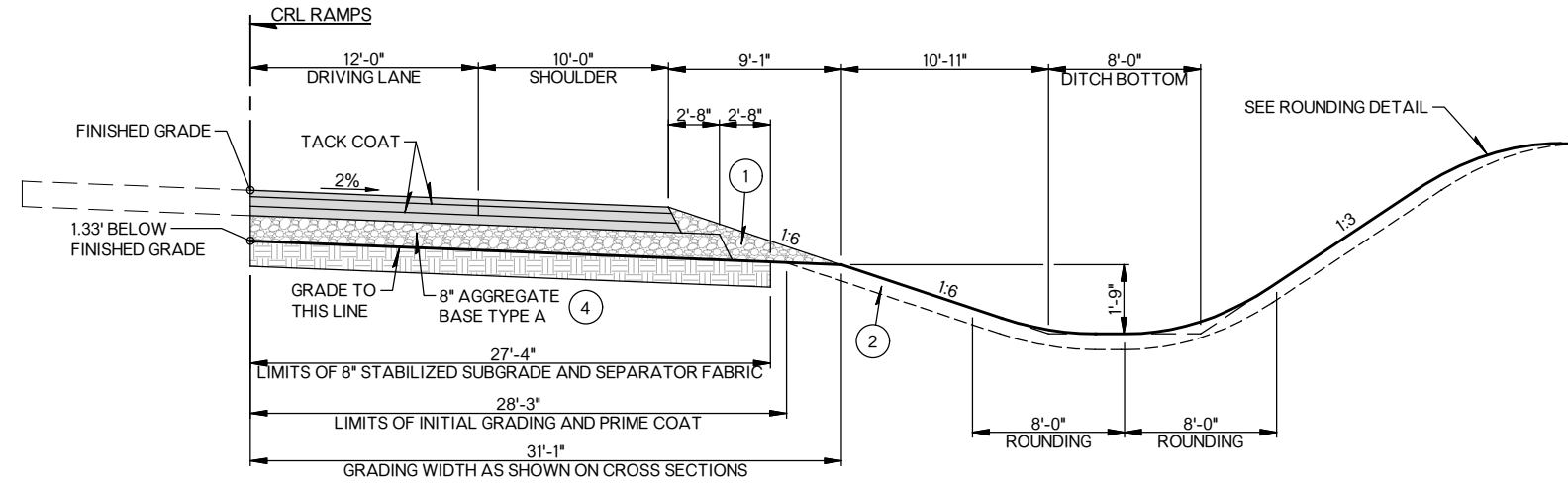
TYPICAL SECTION NO. 2
SH 74 ROUNDABOUT

PAVEMENT STRUCTURE	PAVEMENT REQUIREMENTS	
	TRUCK APRON	DRIVING LANES
SURFACE COURSE	8" CONT. REINF. P.C.C. PAVEMENT	8" CONT. REINF. P.C.C. PAVEMENT
BASE COURSE	4" CEMENTITIOUS TREATED BASE	4" CEMENTITIOUS TREATED BASE

- 1 BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURE IN TBSC TYPE E.
- 2 TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATIONS SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

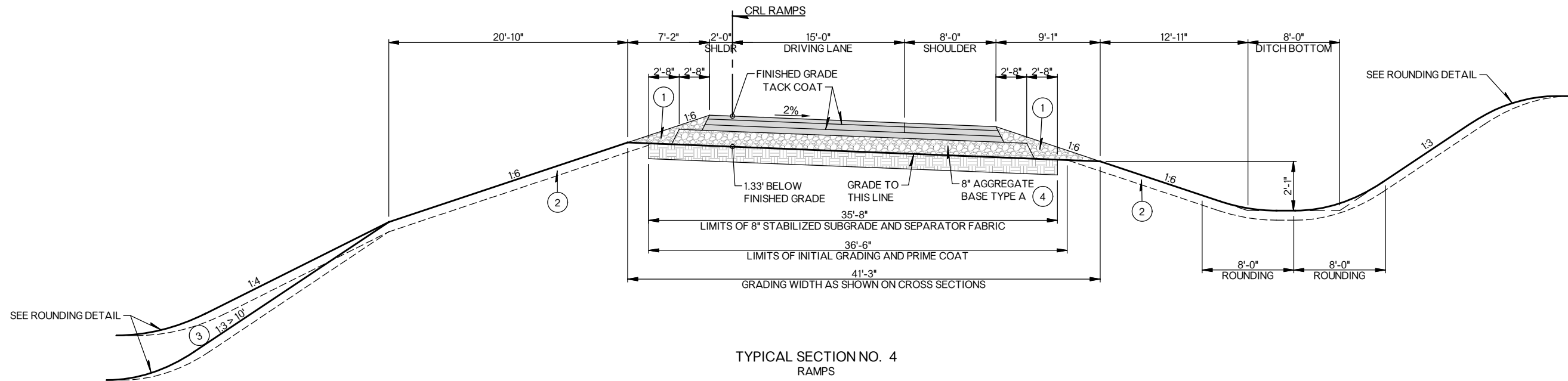
THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.
- 3 DISTANCE MEASURED VERTICALLY FROM EDGE OF FINISHED GRADE SHOULDER.
- 4 PRIME COAT ON TOP OF AGGREGATE BASE.





TYPICAL SECTION NO. 3
RAMPS

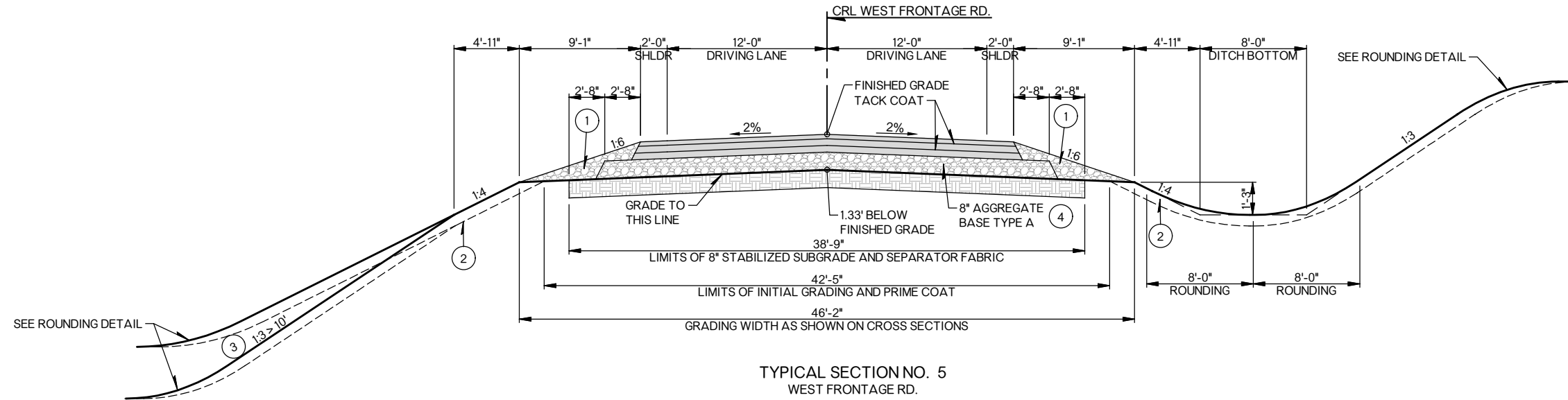
PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



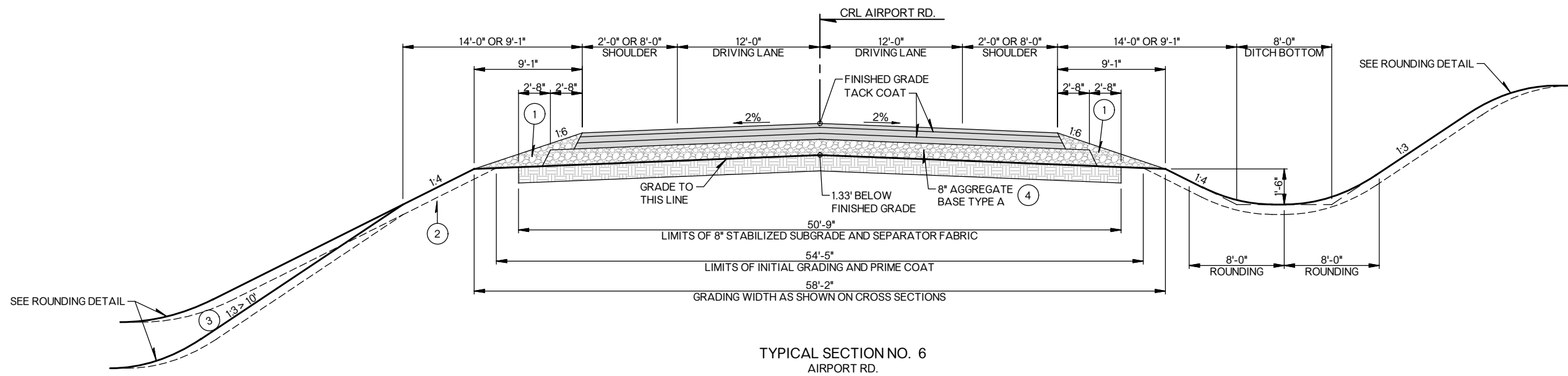
TYPICAL SECTION NO. 4
RAMPS

PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

TYPICAL SECTION



PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

TYPICAL SECTION

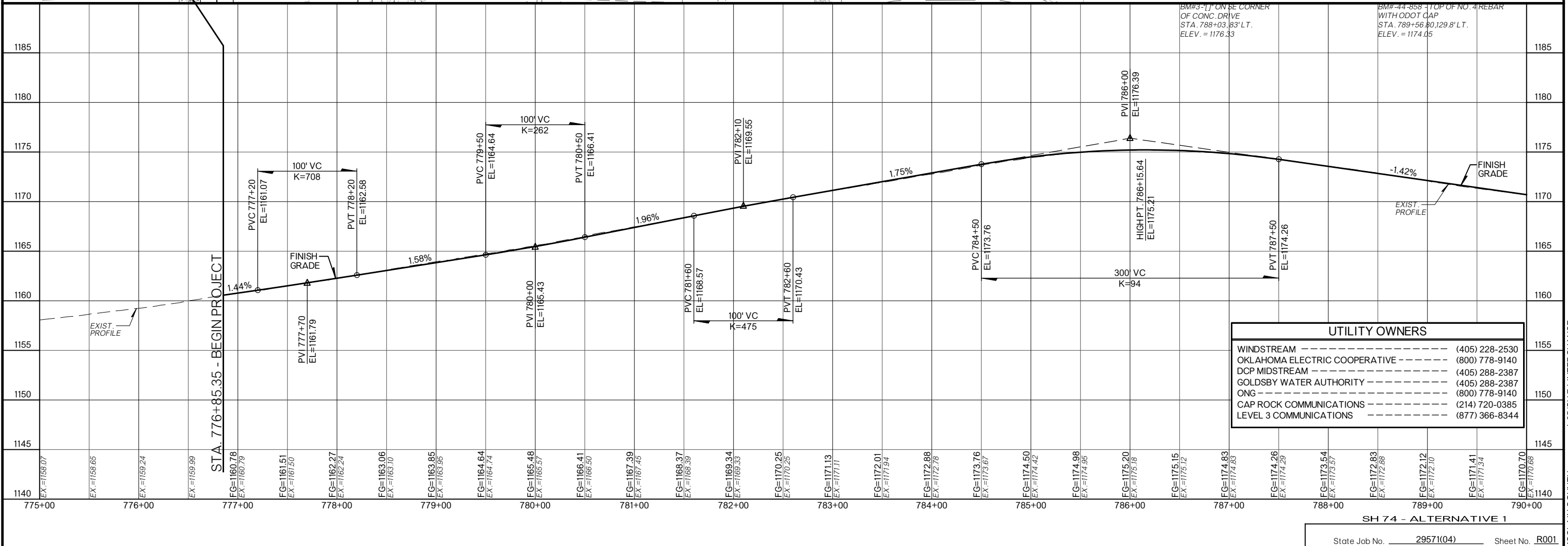
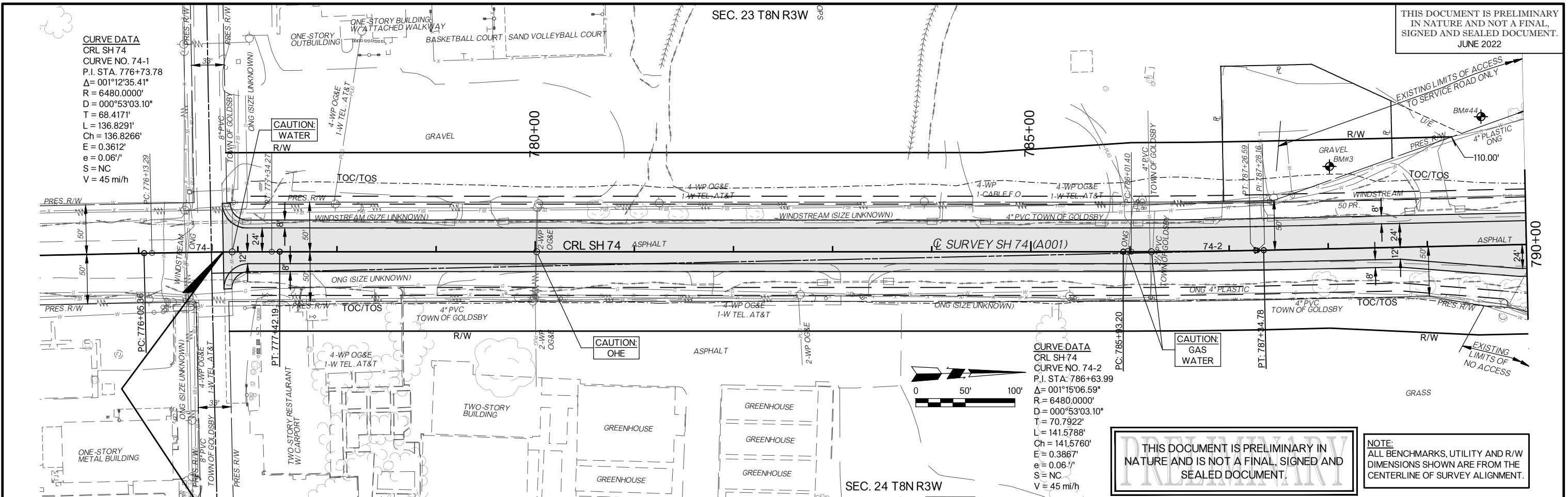
THIS DOCUMENT IS PRELIMINARY IN NATURE AND NOT A FINAL, SIGNED AND SEALED DOCUMENT. JUNE 2022

CURVE DATA
 CRL SH 74
 CURVE NO. 74-1
 P.I. STA. 776+73.78
 $\Delta = 001^{\circ}12'35.41''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 68.4171'$
 $L = 136.8291'$
 $Ch = 136.8266'$
 $e = 0.3612''$
 $s = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$

CURVE DATA
 CRL SH 74
 CURVE NO. 74-2
 P.I. STA. 786+63.99
 $\Delta = 001^{\circ}15'06.59''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 70.7922'$
 $L = 141.5788'$
 $Ch = 141.5760'$
 $e = 0.3867''$
 $s = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$

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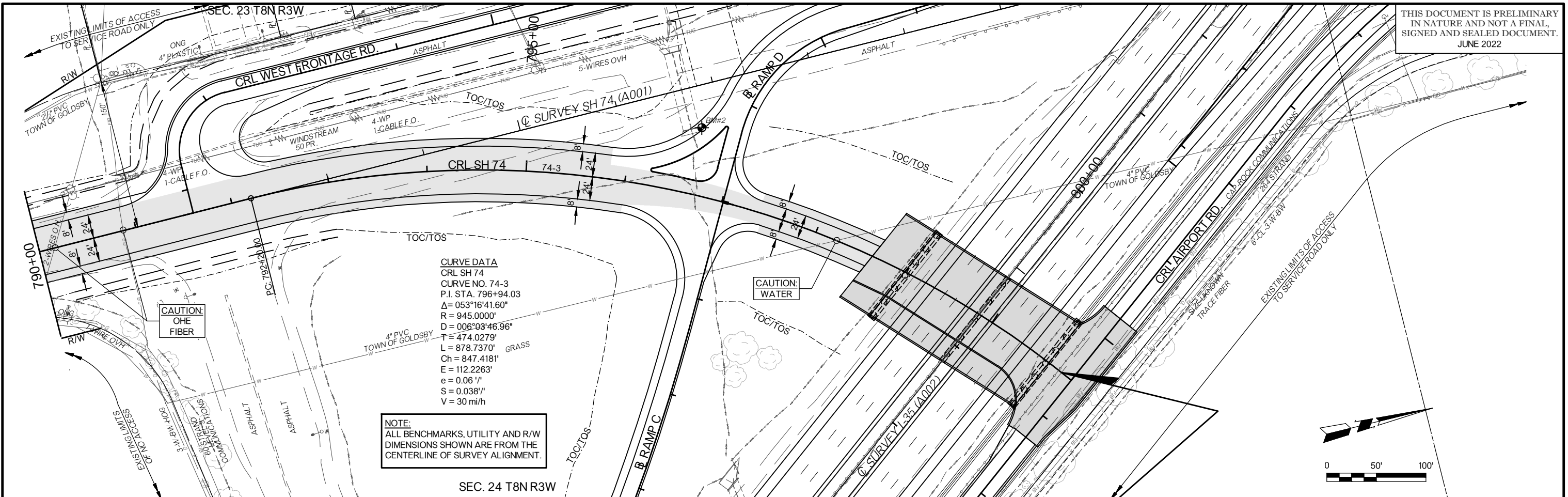
NOTE:
 ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.



UTILITY OWNERS	
WINDSTREAM	(405) 228-2530
OKLAHOMA ELECTRIC COOPERATIVE	(800) 778-9140
DCP MIDSTREAM	(405) 288-2387
GOLDSBY WATER AUTHORITY	(405) 288-2387
ONG	(800) 778-9140
CAP ROCK COMMUNICATIONS	(214) 720-0385
LEVEL 3 COMMUNICATIONS	(877) 366-8344

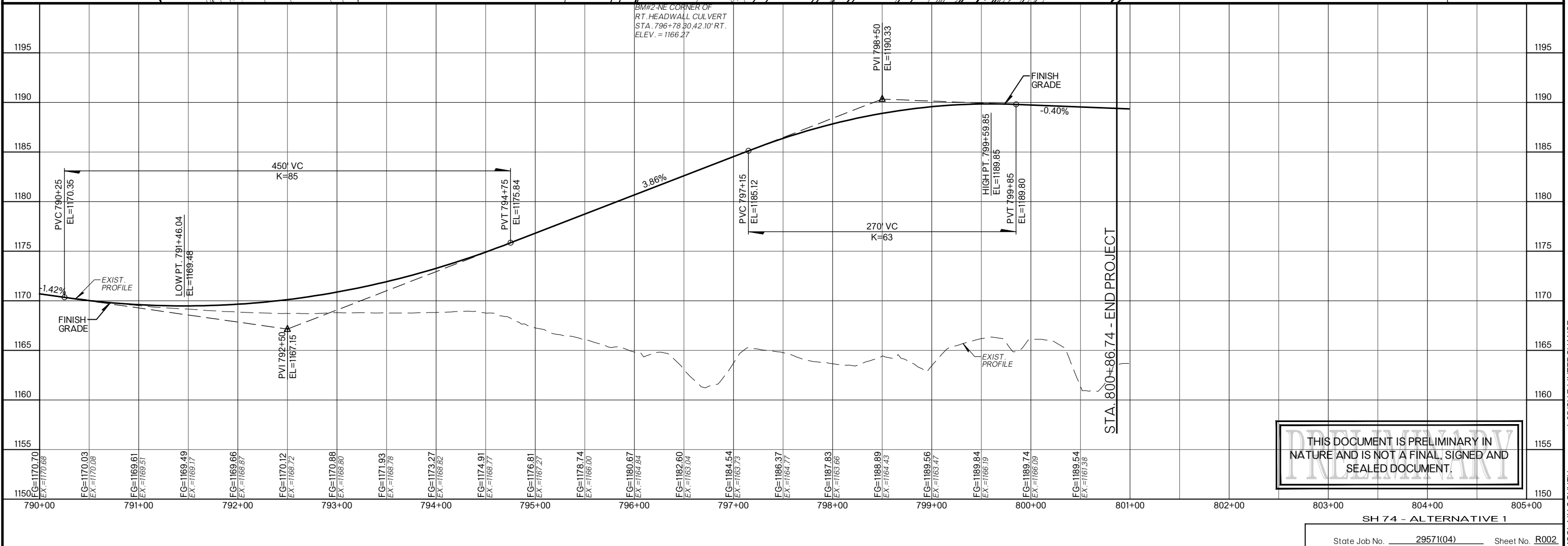
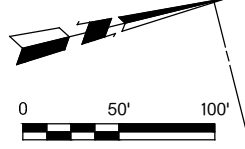
MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

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CURVE DATA
 CRL SH 74
 CURVE NO. 74-3
 P.I. STA. 796+94.03
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 $R = 945.0000'$
 $D = 006^\circ 08' 46.96''$
 $T = 474.0279'$
 $L = 878.7370'$
 $Ch = 847.4181'$
 $E = 112.2263'$
 $e = 0.067''$
 $S = 0.0387''$
 $V = 30 \text{ mi/h}$

NOTE:
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SH 74 - ALTERNATIVE 1

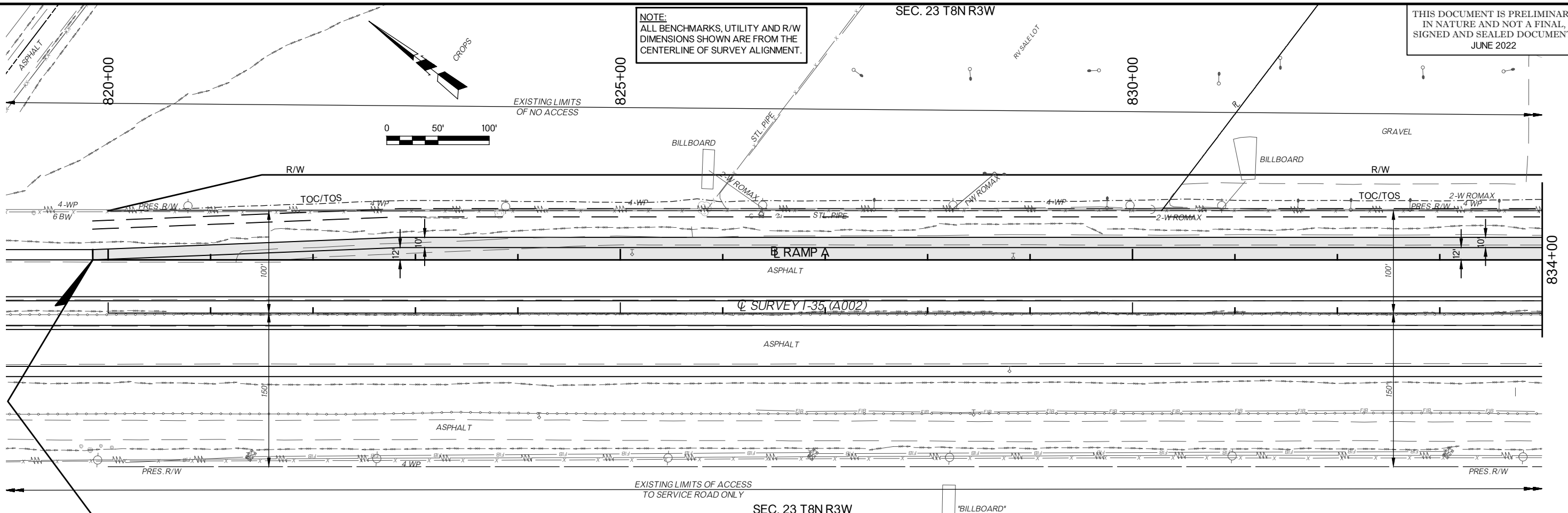
State Job No. 29571(04) Sheet No. R002

MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

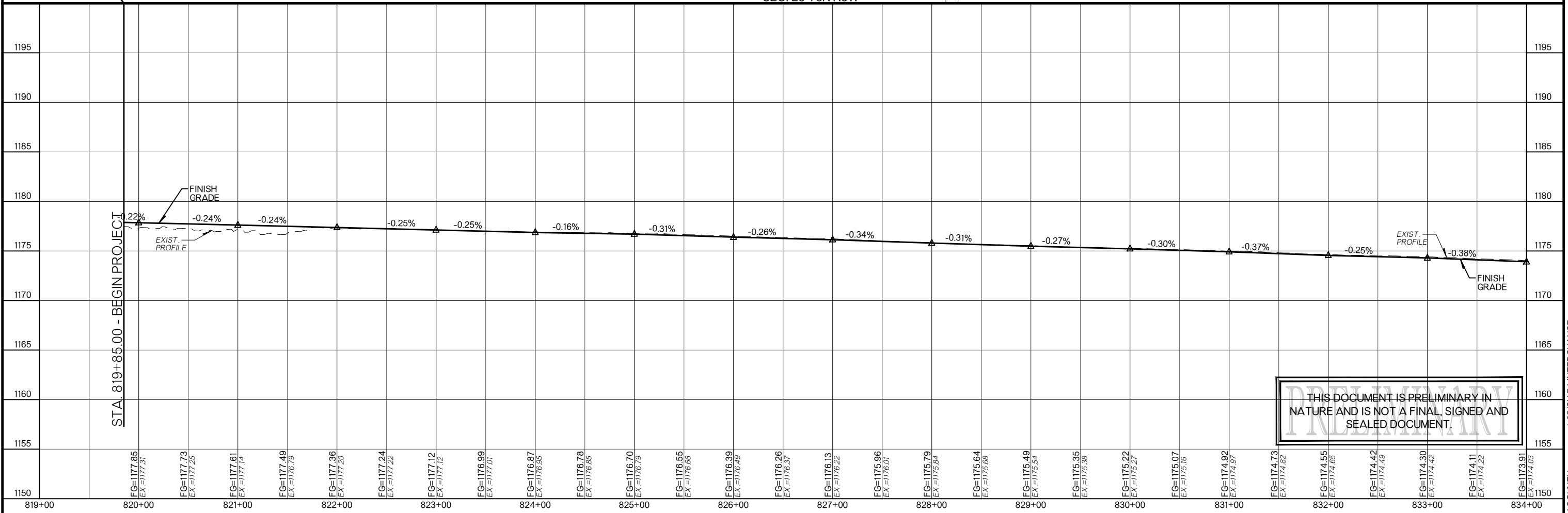
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SEC. 23 T8N R3W



SEC. 23 T8N R3W



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STA. 819+85.00 - BEGIN PROJECT

RAMP A - ALTERNATIVE 1

State Job No. 29571(04) Sheet No. R003

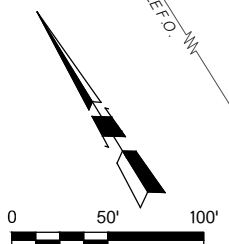
MCCLENNAN COUNTY I-36/SH 74 INTERCHANGE

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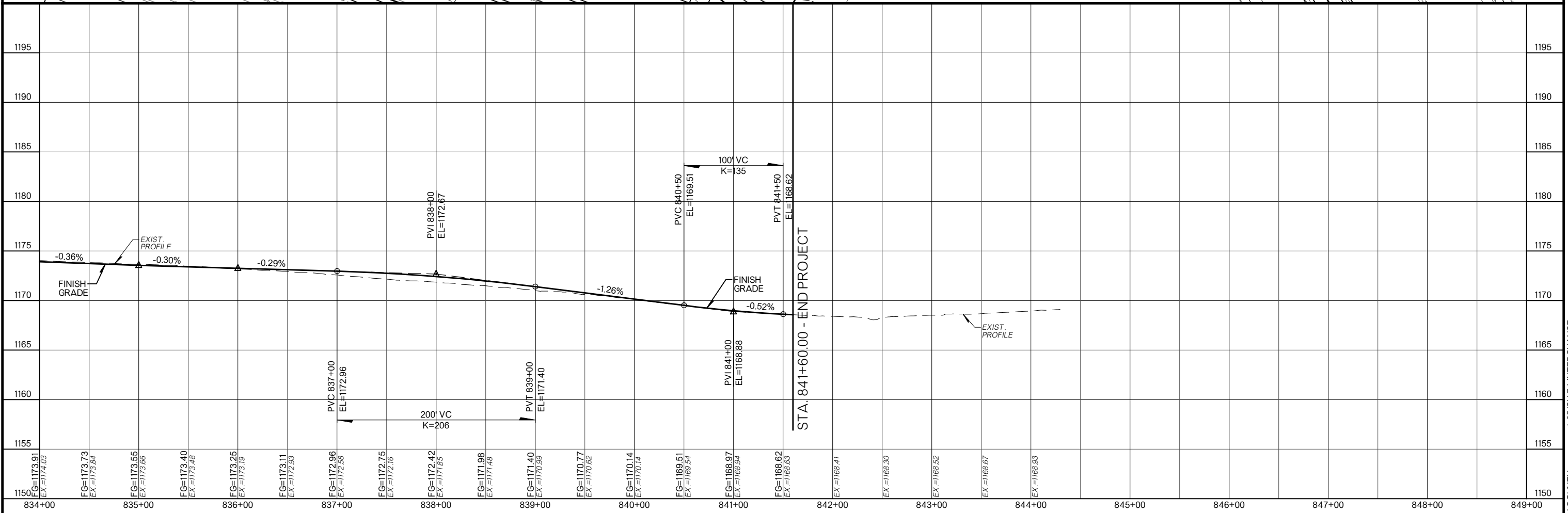
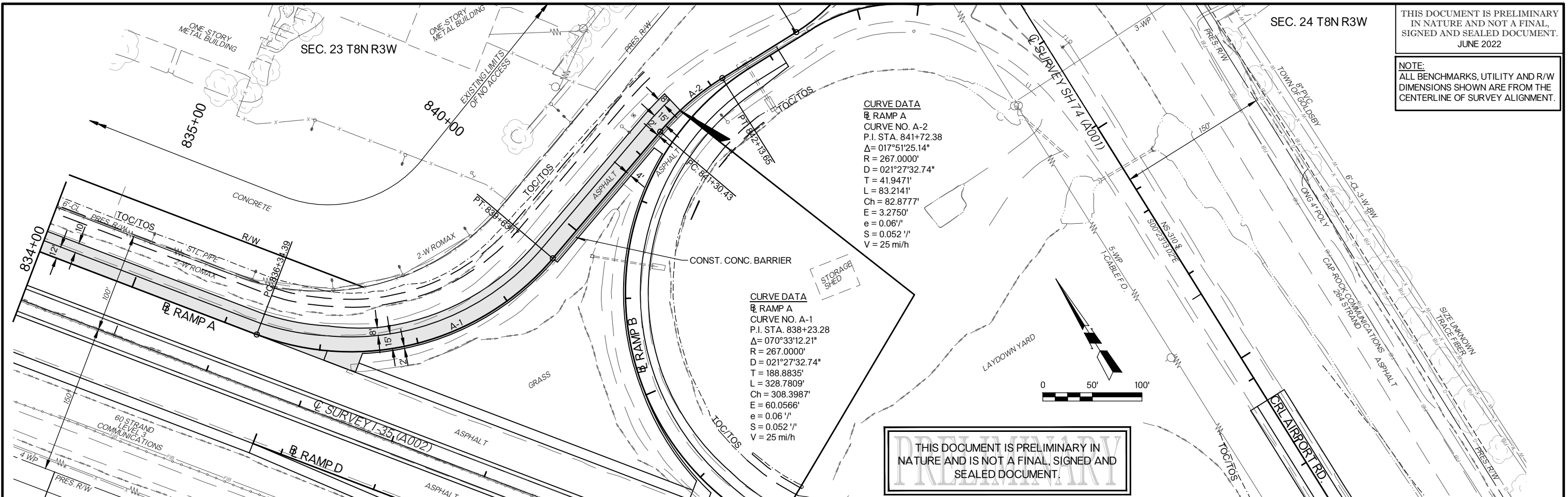
NOTE: ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.

CURVE DATA
 RAMP A
 CURVE NO. A-2
 P.I. STA. 841+72.38
 $\Delta = 017^{\circ}51'25.14''$
 R = 267.0000'
 D = 021^{\circ}27'32.74"
 T = 41.9471'
 L = 83.2141'
 Ch = 82.8777'
 E = 3.2750'
 e = 0.061'
 S = 0.0521'
 V = 25 mi/h

CURVE DATA
 RAMP A
 CURVE NO. A-1
 P.I. STA. 838+23.28
 $\Delta = 070^{\circ}33'12.21''$
 R = 267.0000'
 D = 021^{\circ}27'32.74"
 T = 188.8835'
 L = 328.7809'
 Ch = 308.3987'
 E = 60.0566'
 e = 0.061'
 S = 0.0521'
 V = 25 mi/h

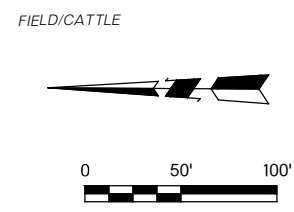


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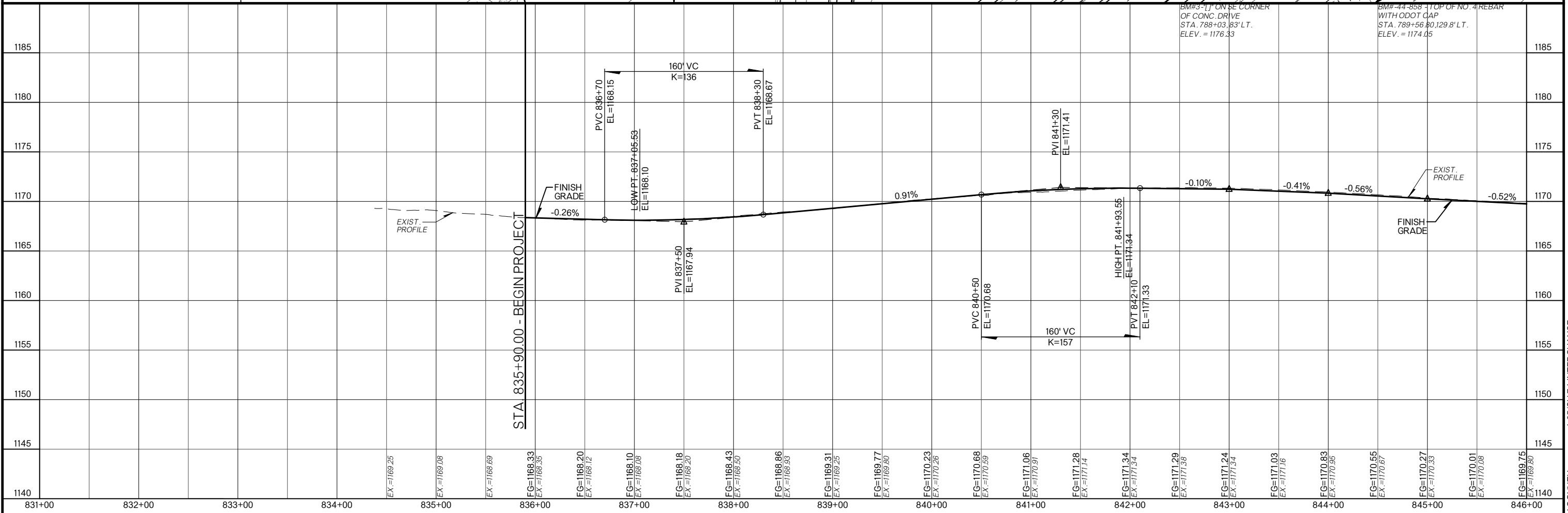
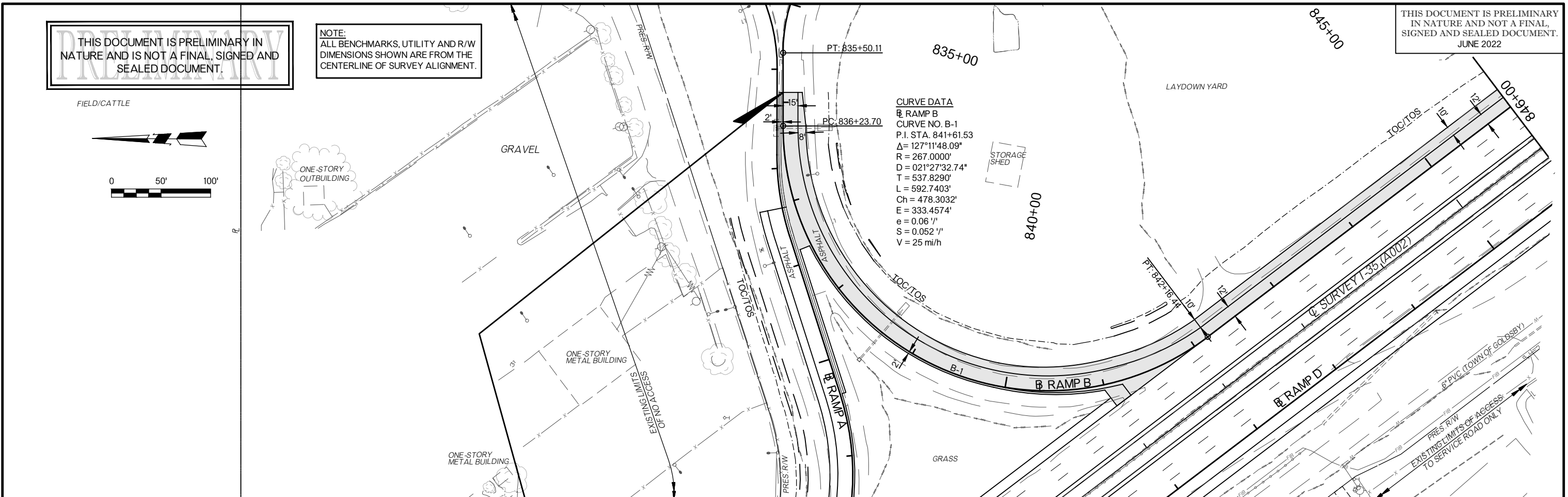


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NOTE: ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.



CURVE DATA
 RAMP B
 CURVE NO. B-1
 P.I. STA. 841+61.53
 $\Delta = 127^\circ 11' 48.09''$
 $R = 267.0000'$
 $D = 021^\circ 27' 32.74''$
 $T = 537.8290'$
 $L = 592.7403'$
 $Ch = 478.3032'$
 $E = 333.4574'$
 $e = 0.06''$
 $S = 0.052''$
 $V = 25 \text{ mi/h}$

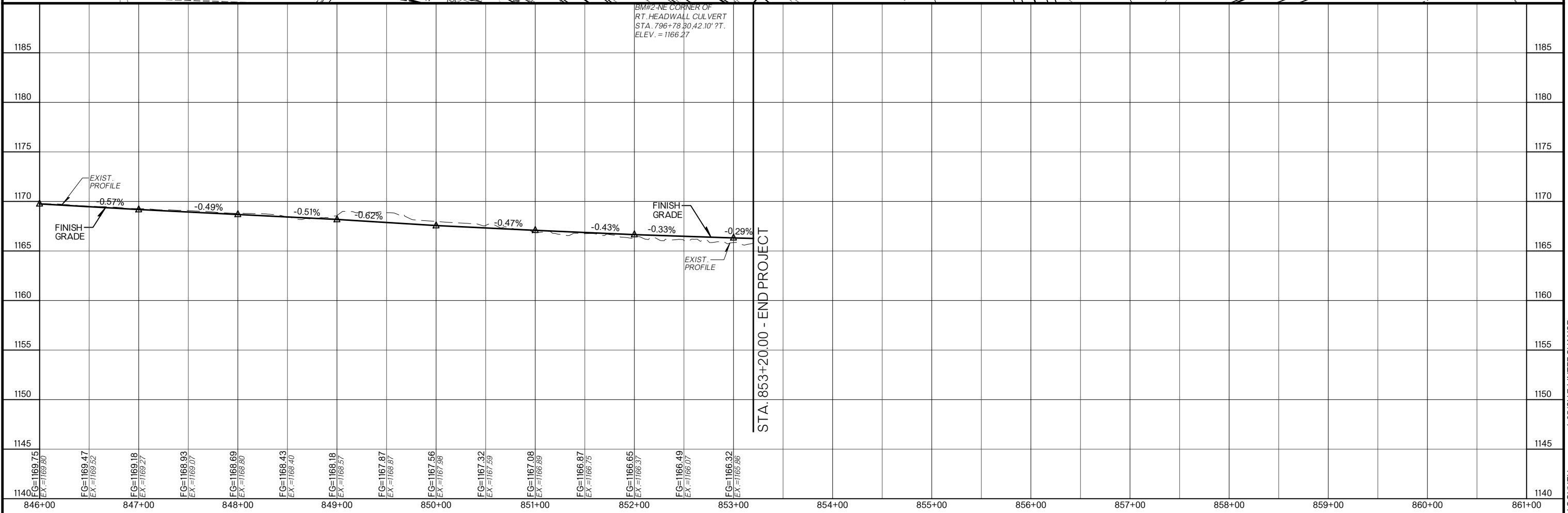
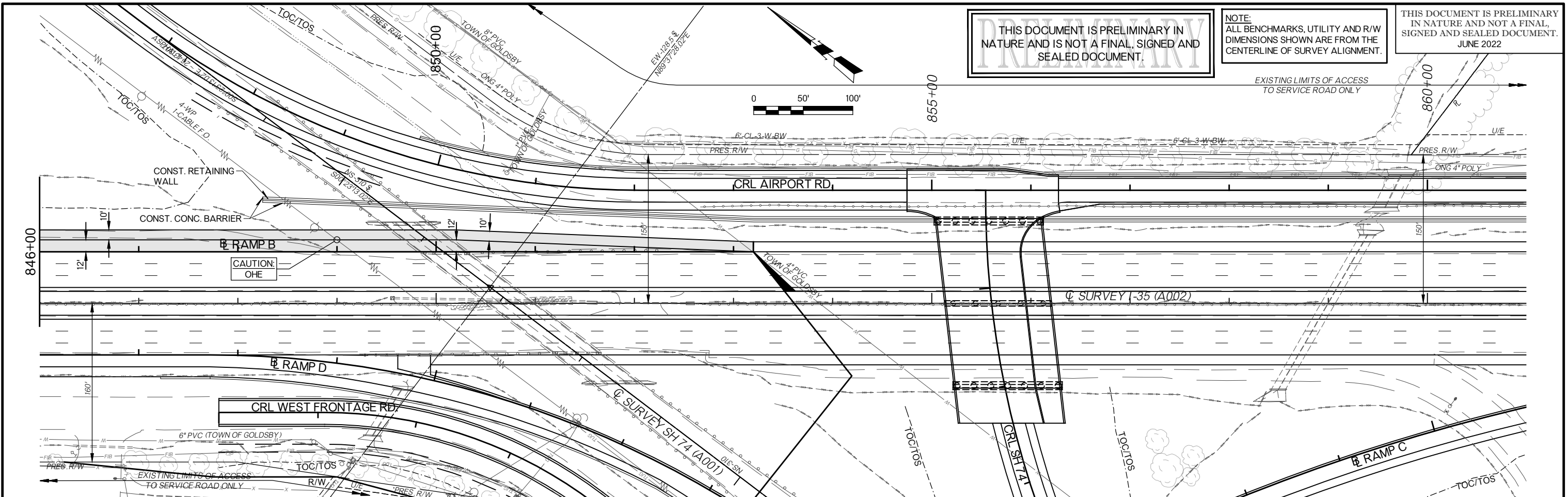
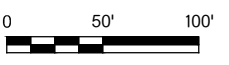


MCCLELLAN COUNTY I-36/SH74 INTERCHANGE

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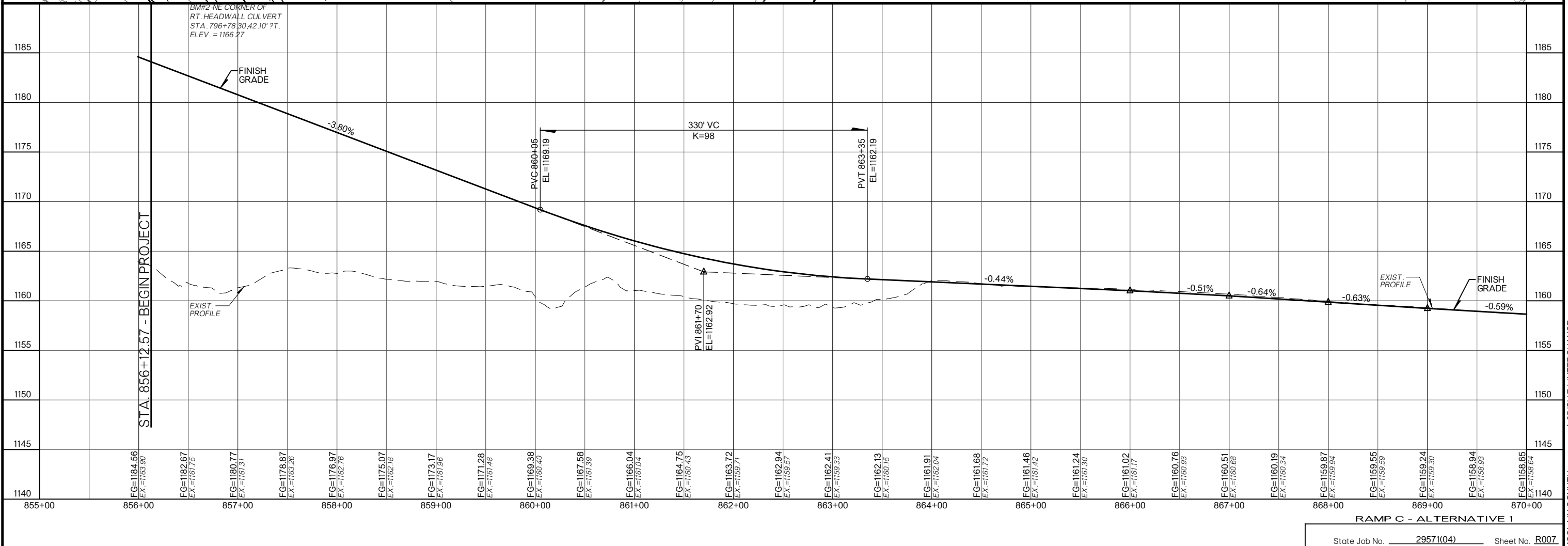
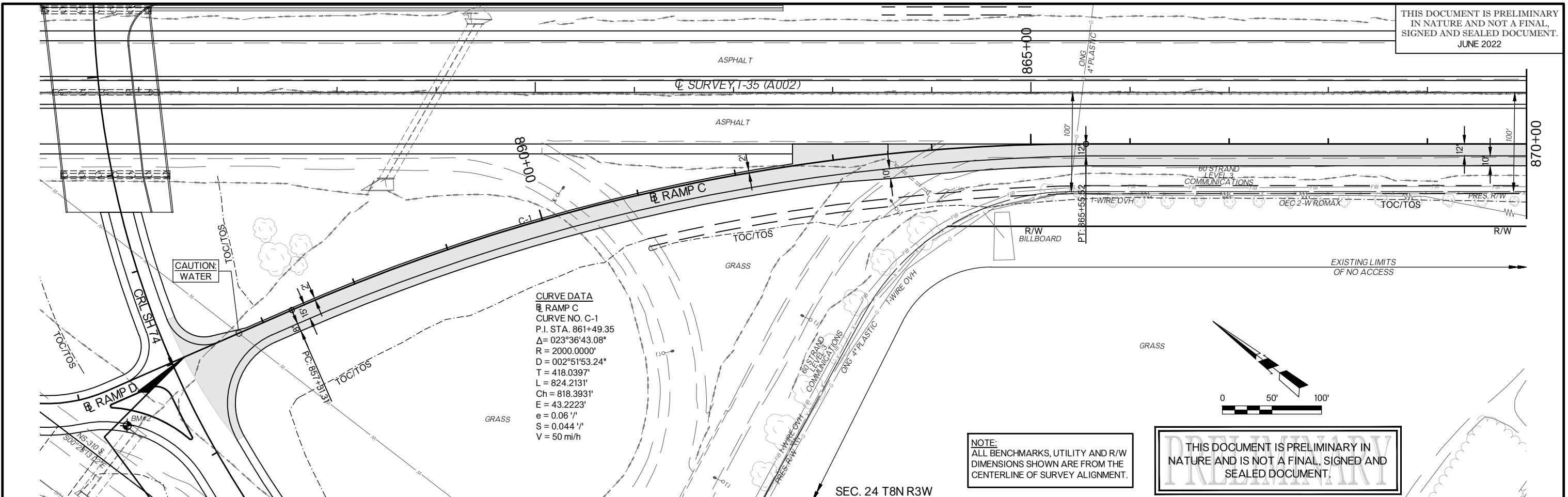
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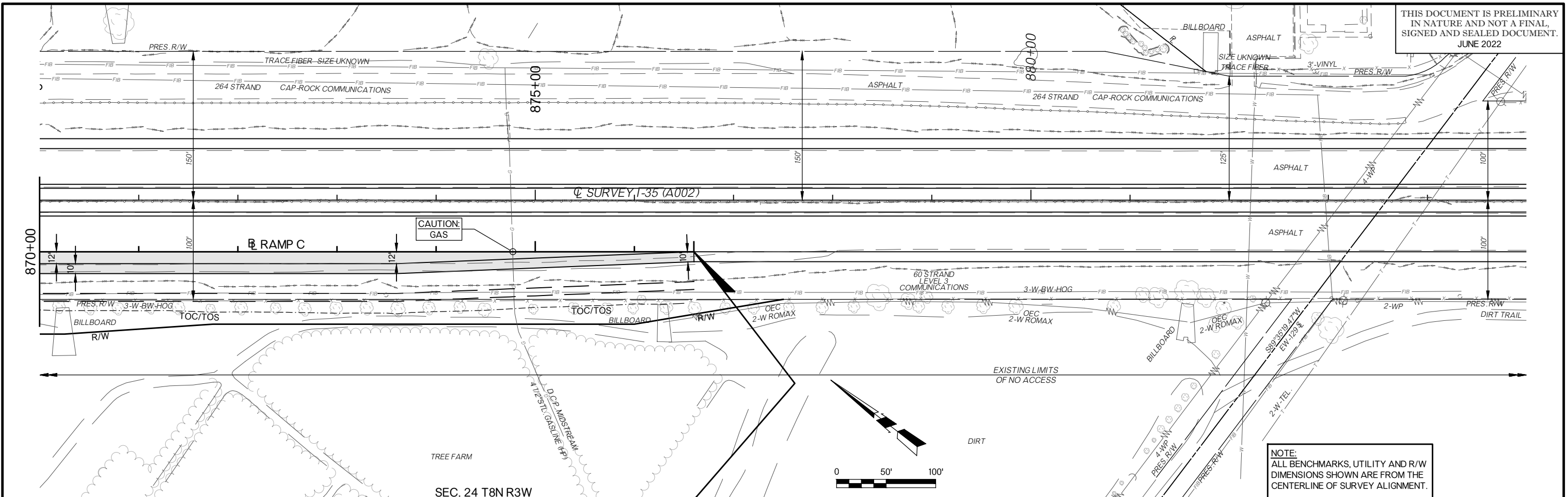
BM#2-NE CORNER OF RT. HEADWALL CULVERT STA. 796+78.80, 42.10' ?T. ELEV. = 1166.27

STA. 853+20.00 - END PROJECT

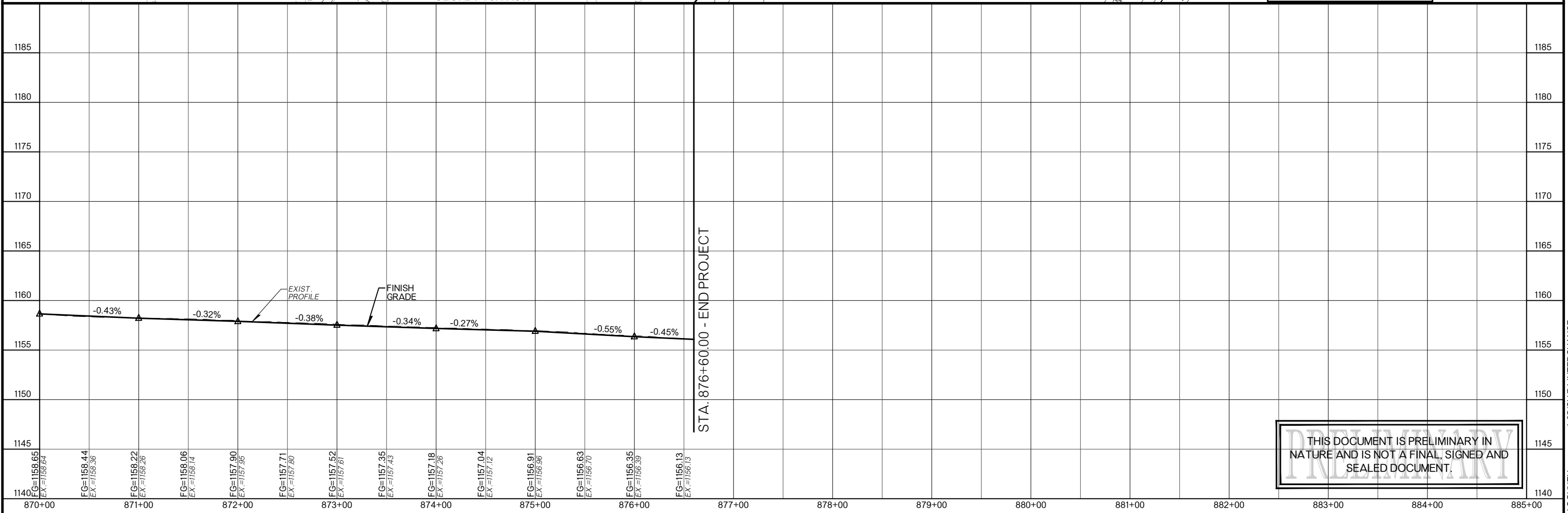
MCCLENNAN COUNTY I-35/SH 74 INTERCHANGE



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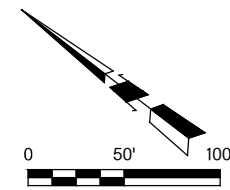
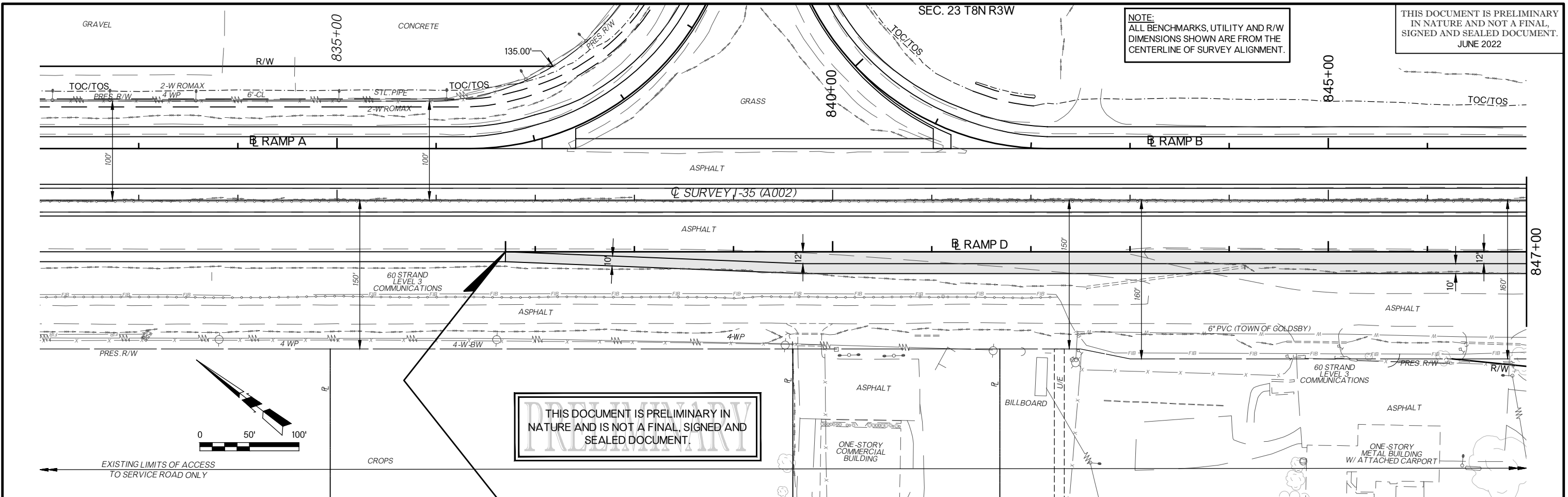
RAMP C - ALTERNATIVE 1

State Job No. 29571(04) Sheet No. R008

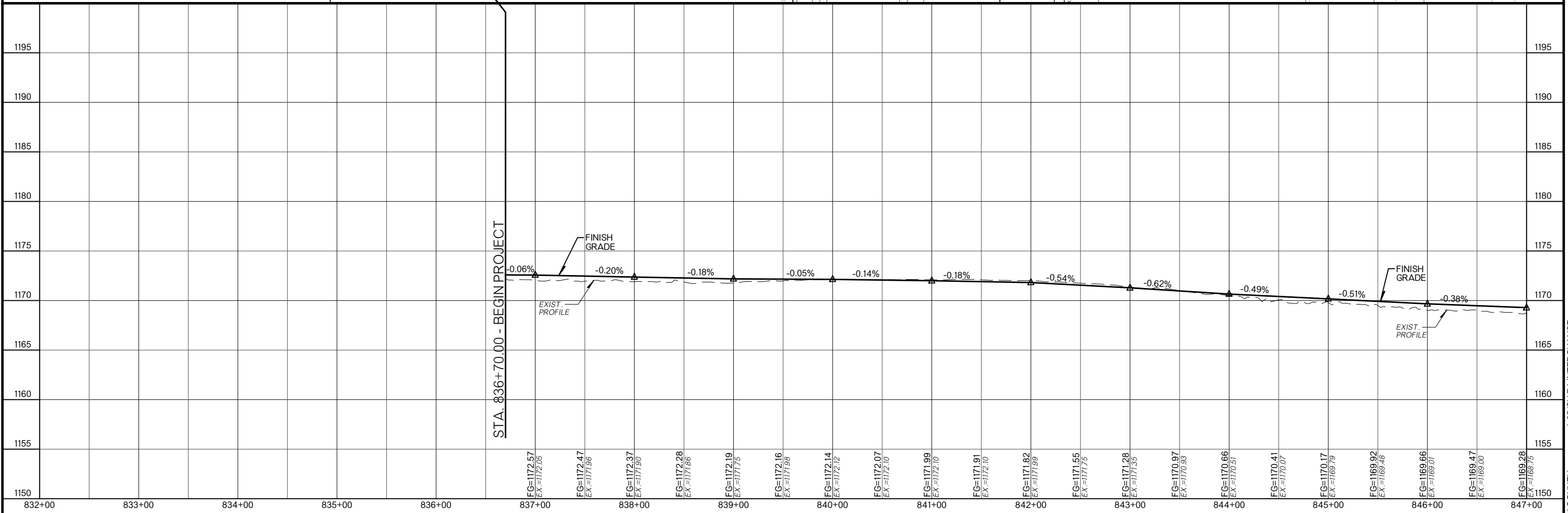
MOCLAIN COUNTY I-36/SH 74 INTERCHANGE

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JUNE 2022

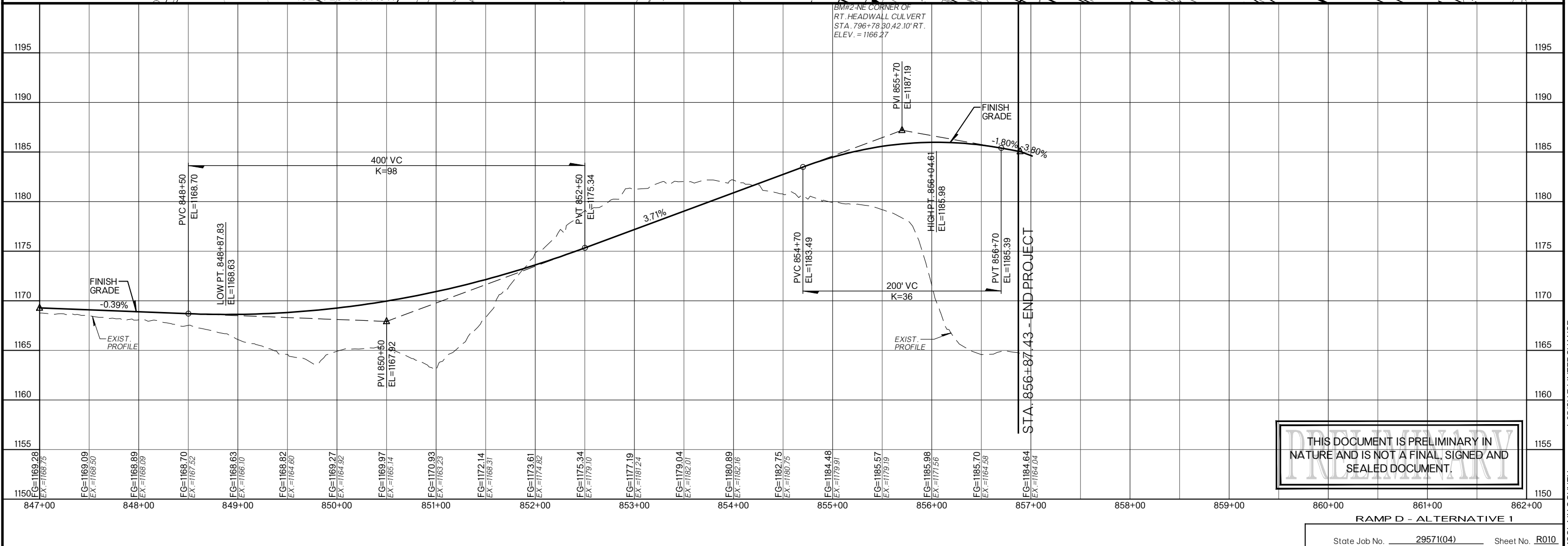
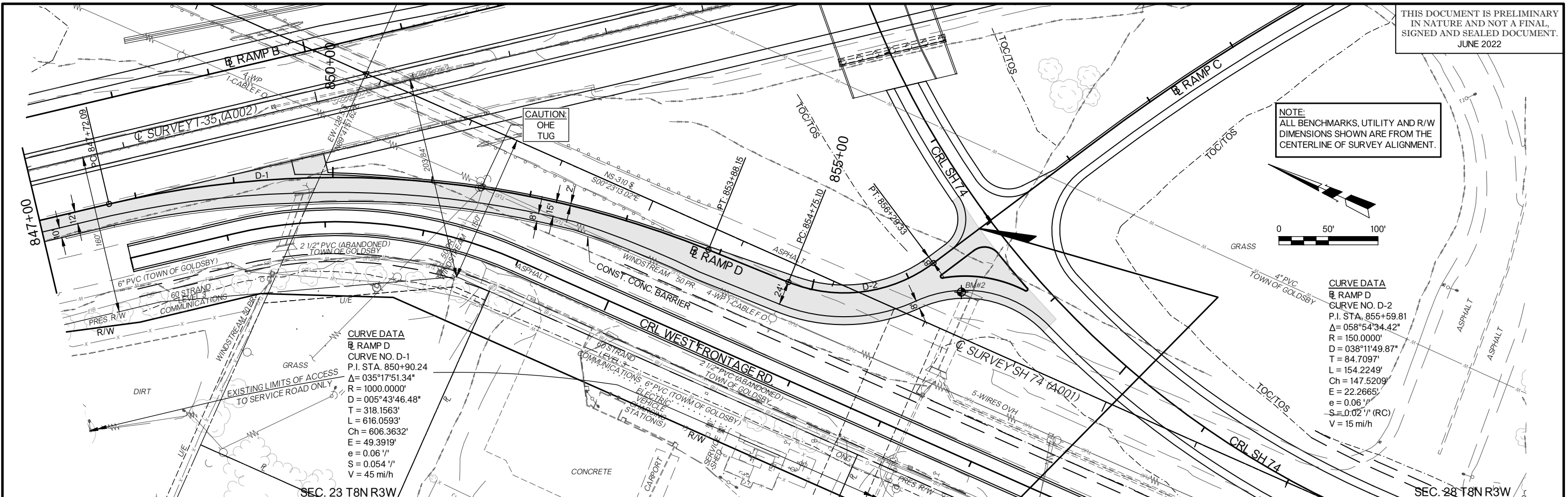


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STA. 836+70.00 - BEGIN PROJECT

RAMP D - ALTERNATIVE 1



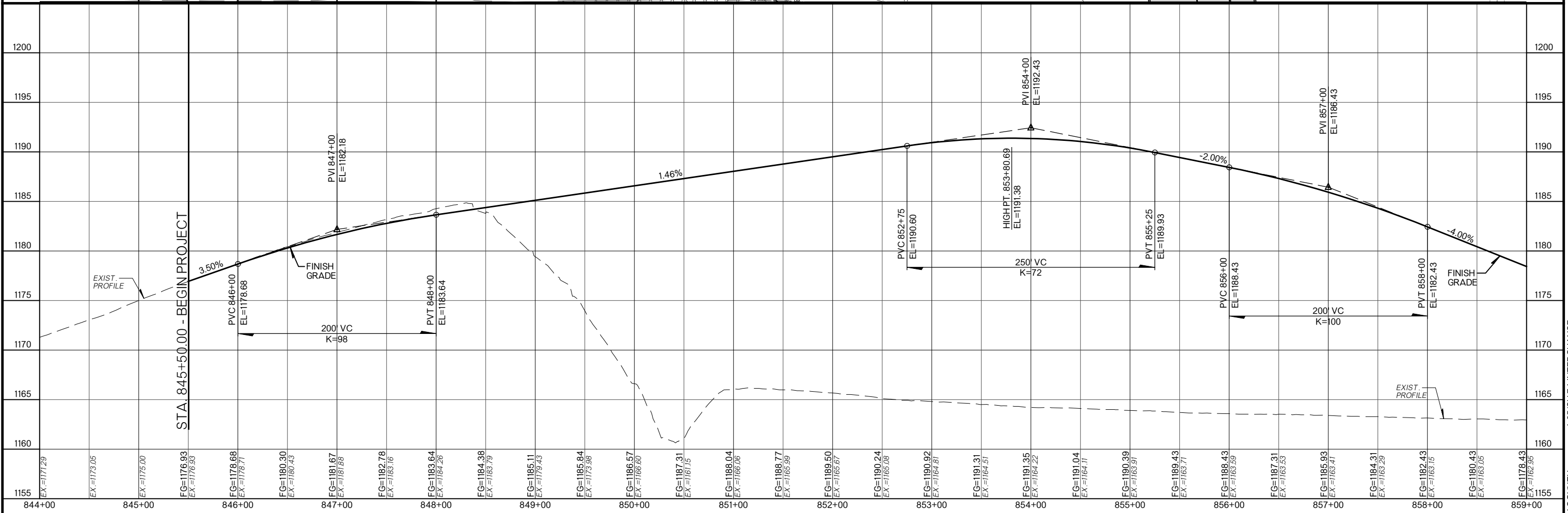
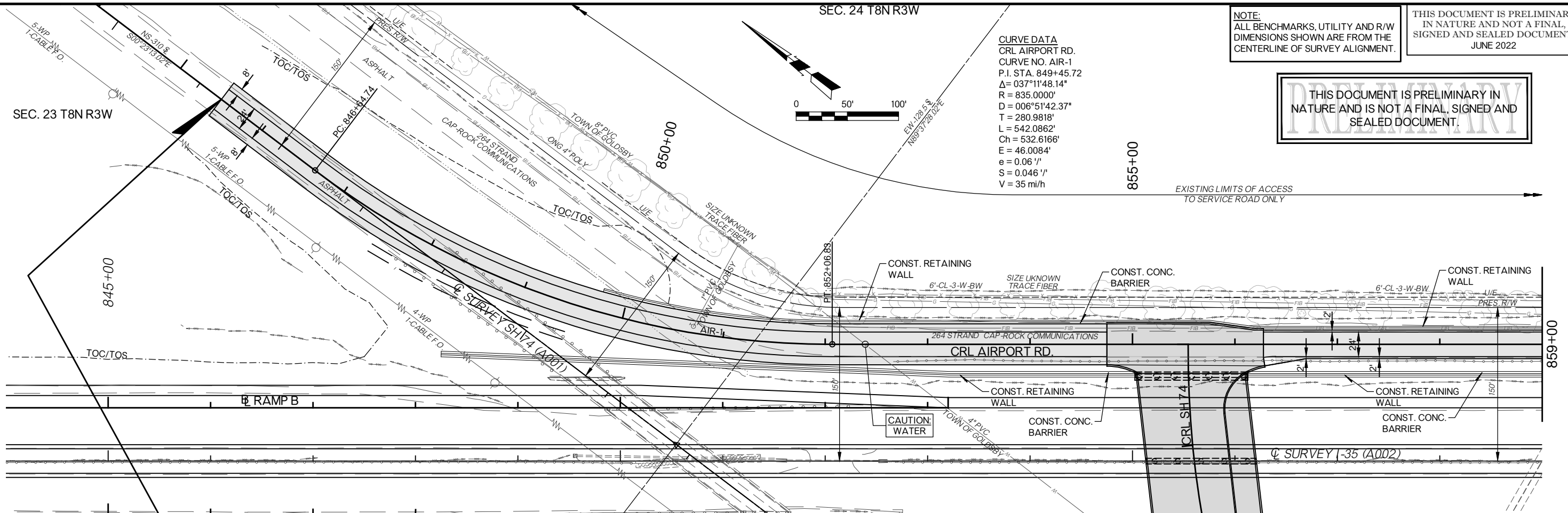
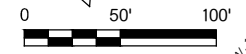
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MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

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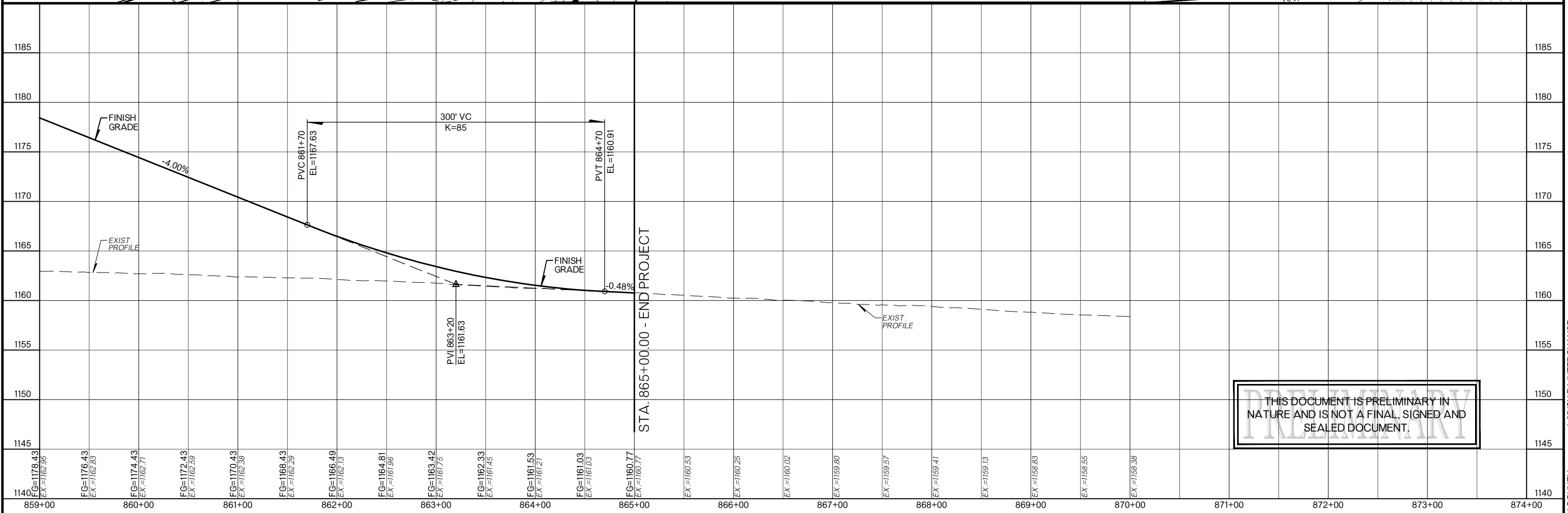
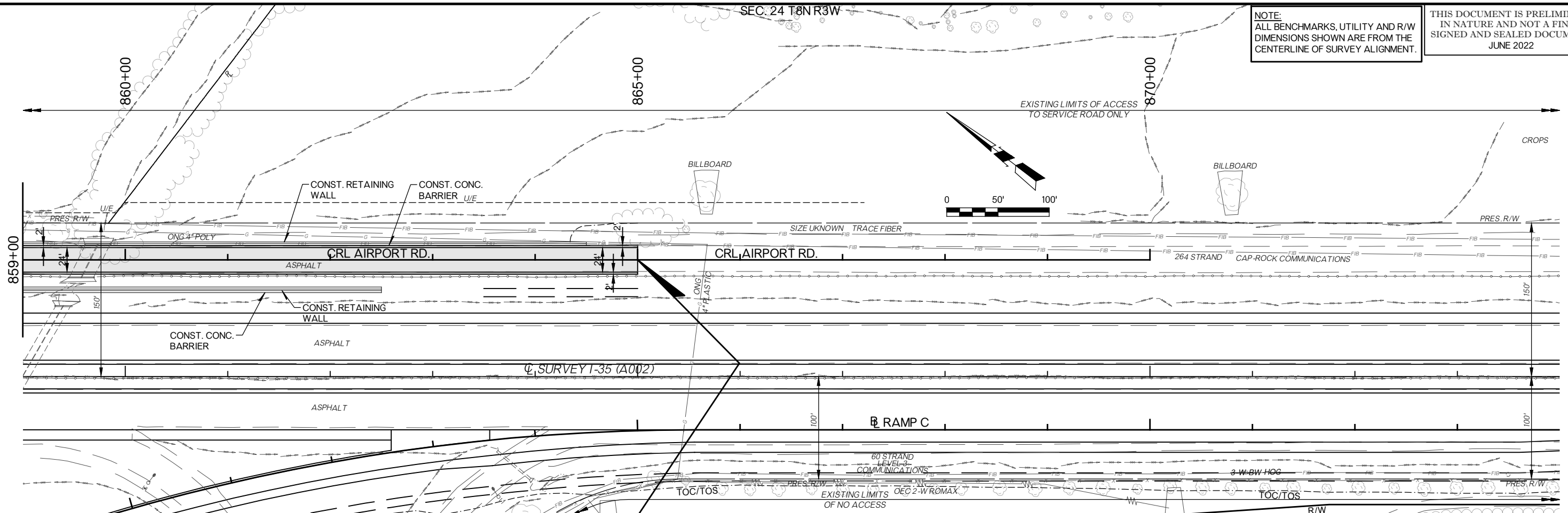
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CURVE DATA
CRL AIRPORT RD.
CURVE NO. AIR-1
P.I. STA. 849+45.72
 $\Delta = 037^{\circ}11'48.14''$
R = 835.0000'
D = 006^{\circ}51'42.37''
T = 280.9818'
L = 542.0862'
Ch = 532.6166'
E = 46.0084'
e = 0.06 ' / '
S = 0.046 ' / '
V = 35 mi/h



NOTE:
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JUNE 2022



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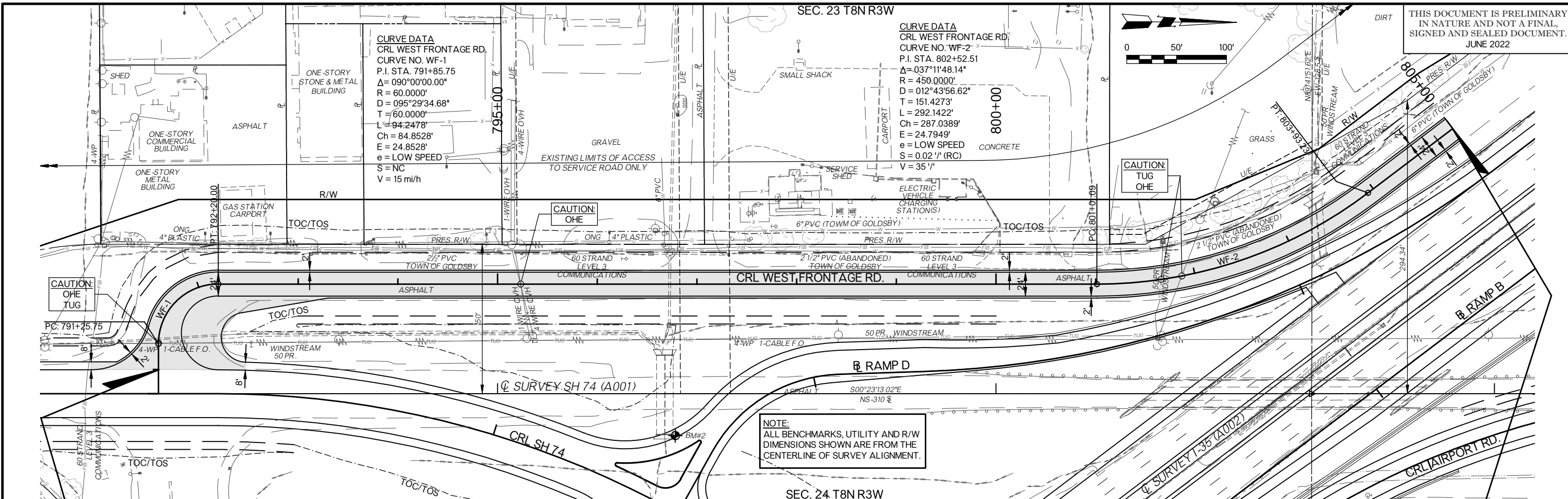
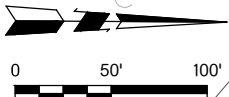
SEC. 23 T8N R3W

SEC. 24 T8N R3W

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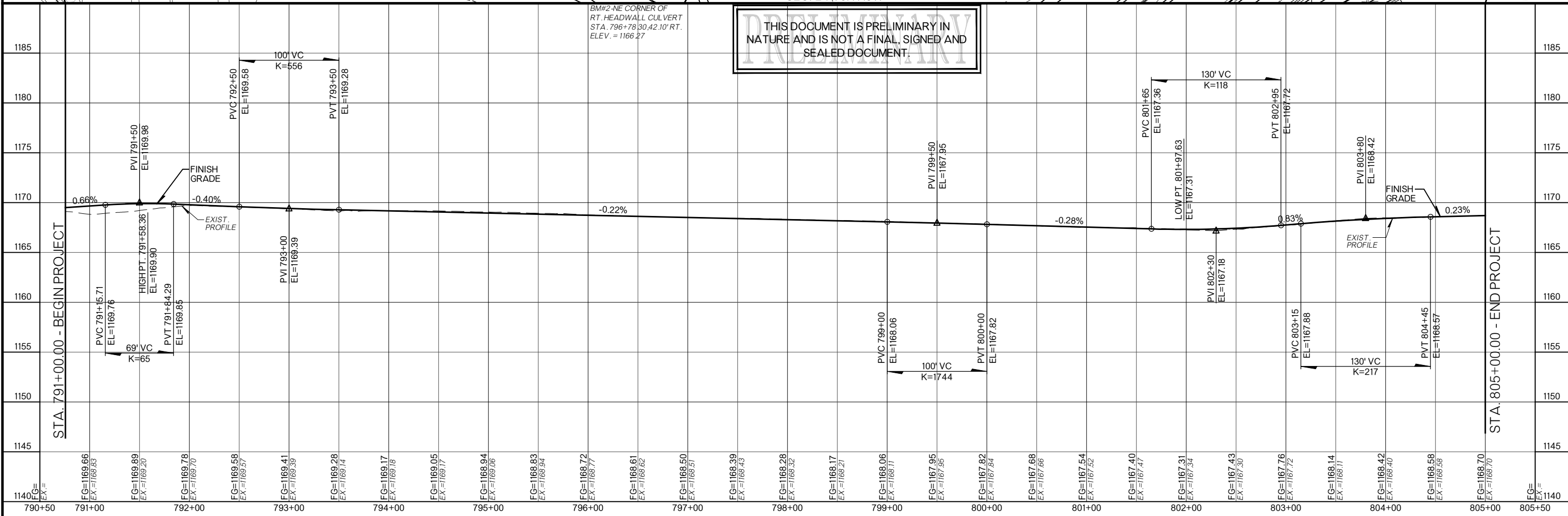
CURVE DATA
 CRL WEST FRONTAGE RD.
 CURVE NO. WF-2
 P.I. STA. 802+52.51
 $\Delta = 037^{\circ}11'48.14"$
 $R = 456.0000'$
 $D = 012^{\circ}43'56.62"$
 $T = 151.4273'$
 $L = 292.1422'$
 $Ch = 287.0389'$
 $E = 24.7949'$
 $e = \text{LOW SPEED}$
 $S = 0.02' / (RC)$
 $V = 35' / 1'$

CURVE DATA
 CRL WEST FRONTAGE RD.
 CURVE NO. WF-1
 P.I. STA. 791+85.75
 $\Delta = 090^{\circ}00'00.00"$
 $R = 60.0000'$
 $D = 095^{\circ}29'34.68"$
 $T = 60.0000'$
 $L = 94.2478'$
 $Ch = 84.8528'$
 $E = 24.8528'$
 $e = \text{LOW SPEED}$
 $S = \text{NC}$
 $V = 15 \text{ mi/h}$



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STA. 791+00.00 - BEGIN PROJECT

STA. 805+00.00 - END PROJECT

W. FRONTAGE RD. - ALTERNATIVE 1

State Job No. 29571(04) Sheet No. R013

MOCLAIN COUNTY I-35/SH 74 INTERCHANGE



APPENDIX E

ALTERNATIVE 2: 20° SKEW CONCEPTUAL PLANS

FOR SURVEY CONTROL DATA, SEE
SURVEY DATA SHEETS

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT NO. J2-9571(004)
GRADE, DRAIN, BRIDGE & SURFACE PLANS
I-35 & SH 74 INTERCHANGE

McCLAIN COUNTY

CONTROL SECTION NO. 74-44-38

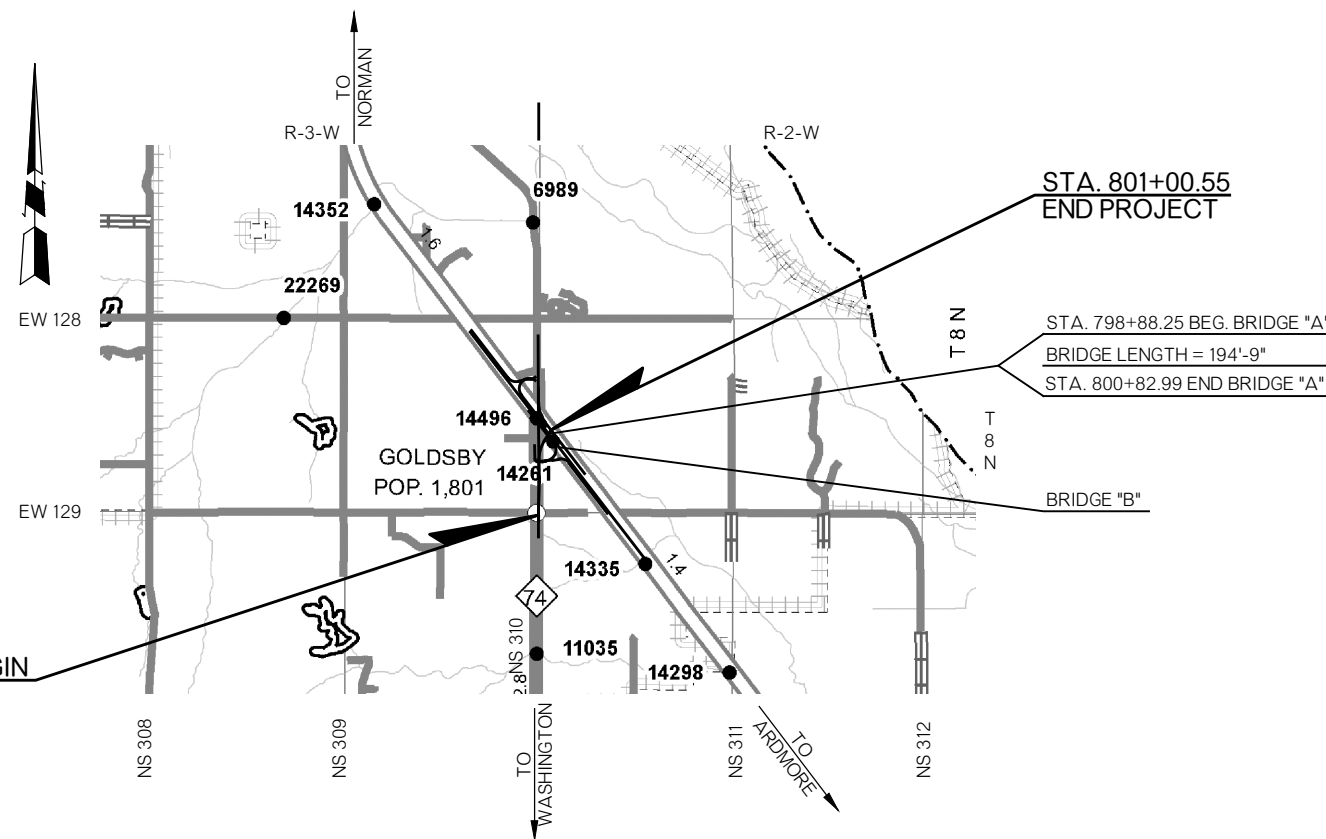
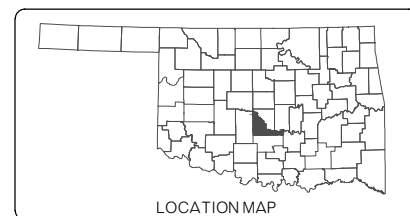
STATE JOB NO. 29571(04)

BRIDGE "A" LOCATION NO. 4405-2297X; EXIST. NBI NO. 14496
BRIDGE "B" LOCATION NO. 4405-2279EXF; EXIST. NBI NO. 14261

SH 74	
ADT 2021	= 8,400
ADT 2050	= 13,270
DHV (2-WAY)	= 1,327
K (DHV/ADT)	= 10%
D	= 65%
T (% DHV)	= 9%
T (% ADT)	= 15%
T3 (% ADT)	= 3%
V	= 45 MPH
20YR FLEX. ESALS	= 3.8 M

SCALES	
PLAN	1" = 50'
PROFILE HOR.	1" = 50'
VER.	1" = 5'
LAYOUT MAP	1" = 2,640'

CONVENTIONAL SYMBOLS	
	PROPOSED ROAD
	RAILROADS
	RANGE & TOWNSHIP SECTION LINES
	QUARTER SECTION LINES
	FENCES
	GROUND LINE
	EXISTING ROADS
	BASE LINE
	GRADE LINES
	TELEPHONE & TELEGRAPH
	POWER LINES
	BUILDINGS
	OIL WELLS
	DRAINAGE STRUCTURES - IN PLACE
	DRAINAGE STRUCTURES - NEW
	RIGHT-OF-WAY LINES - EXISTING
	RIGHT-OF-WAY LINES - NEW
	CONTROLLED ACCESS
	RIGHT-OF-WAY FENCE



STA. 776+85.35 BEGIN PROJECT

STA. 801+00.55 END PROJECT

STA. 798+88.25 BEG. BRIDGE "A"
BRIDGE LENGTH = 194'-9"
STA. 800+82.99 END BRIDGE "A"

BRIDGE "B"

PROJECT LENGTH BASED ON SH 74 CRL STATIONING.

NOTE:

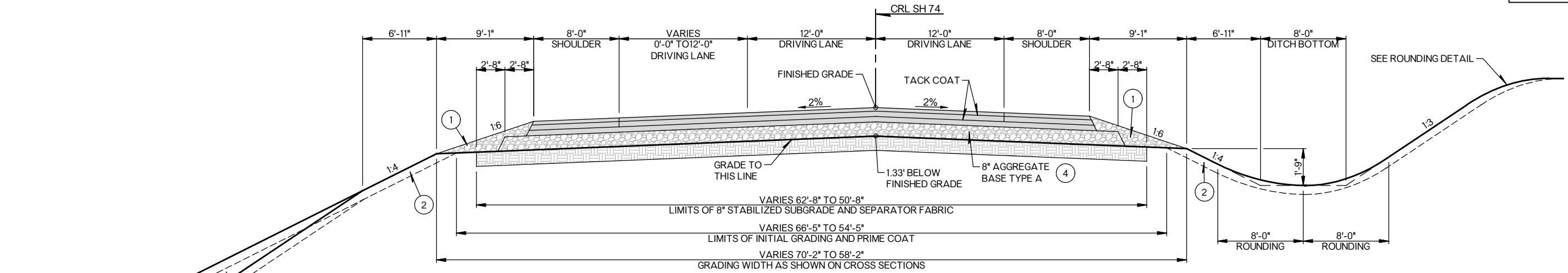
ROADWAY LENGTH	2,220.46 FT.	0.420 MI.
BRIDGE LENGTH	194.74 FT.	0.036 MI.
PROJECT LENGTH		0.456 MI.

EQUATIONS: NONE
EXCEPTION: NONE



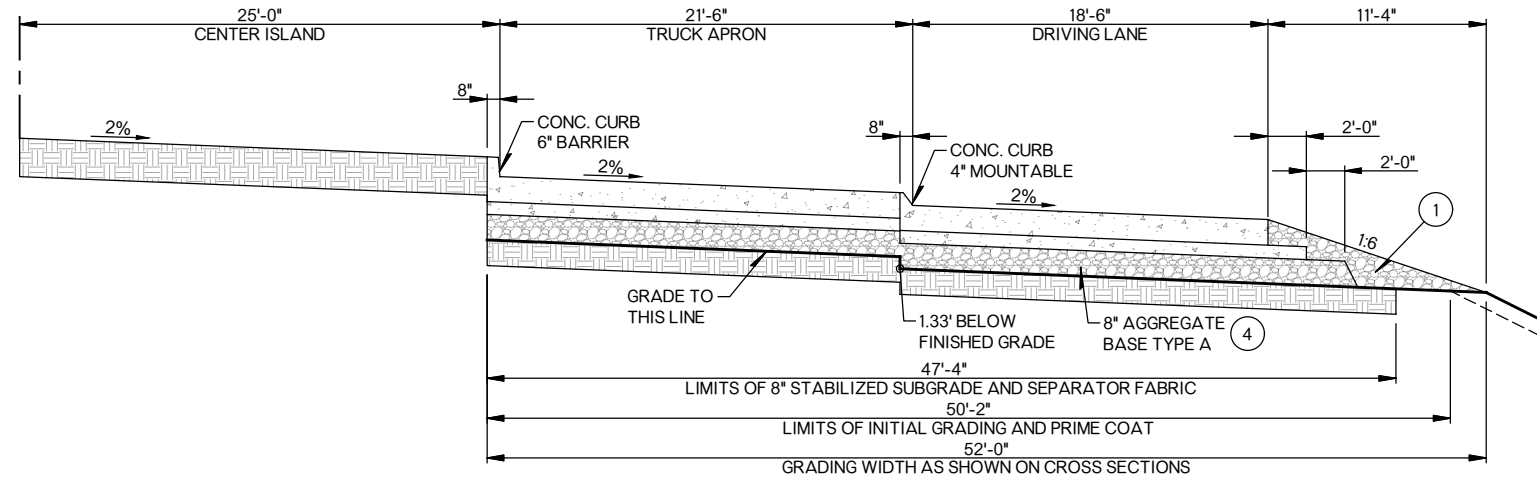
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OKLAHOMA DEPARTMENT OF TRANSPORTATION		DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
DATE APPROVED		DATE APPROVED	
BY		BY	
	CHIEF ENGINEER		DIVISION ADMINISTRATOR
SWO	4892(1)	F.A. PROJECT NO.	J2-9571(004)
COUNTY	McCLAIN COUNTY	HIGHWAY	SH 74
		SHEET NO.	0001



TYPICAL SECTION NO. 1
SH 74

PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



TYPICAL SECTION NO. 2
SH 74 ROUNDABOUT

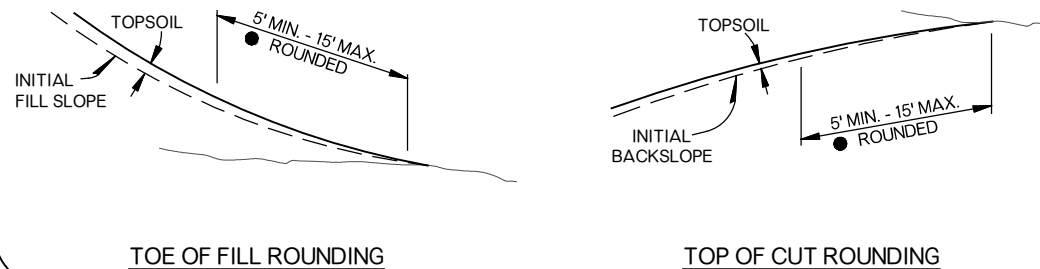
PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	TRUCK APRON	DRIVING LANES
SURFACE COURSE	8" CONT. REINF. P.C.C. PAVEMENT	8" CONT. REINF. P.C.C. PAVEMENT
BASE COURSE	4" CEMENTITIOUS TREATED BASE	4" CEMENTITIOUS TREATED BASE

- 1 BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURE IN TBSC TYPE E.
- 2 TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATIONS SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

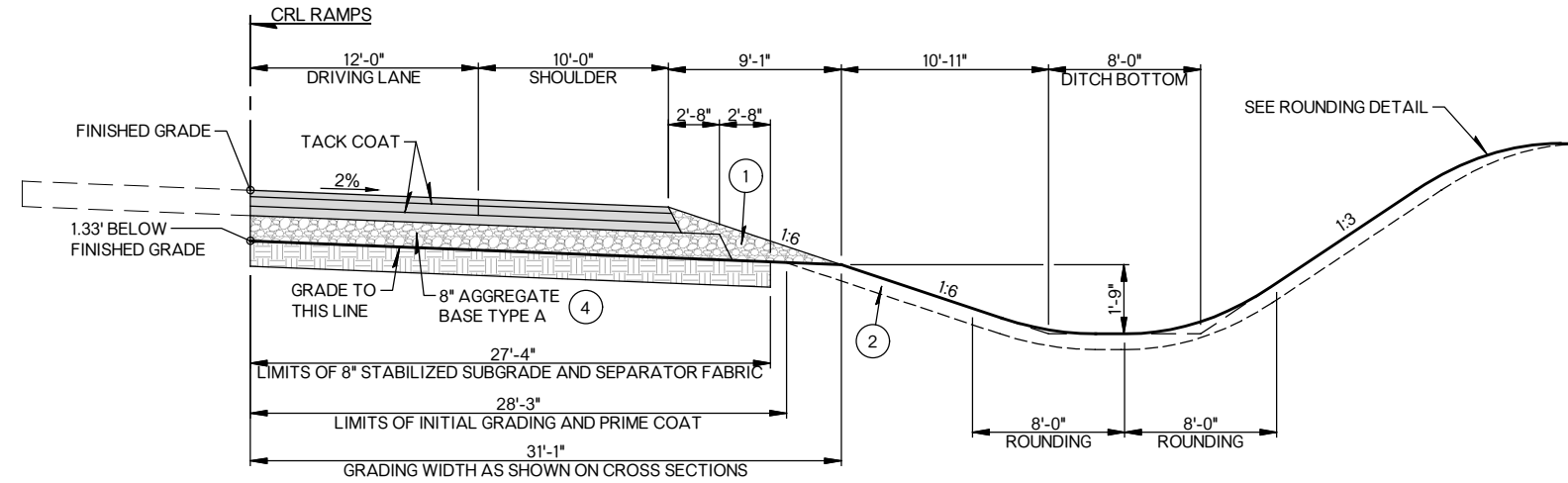
THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.
- 3 DISTANCE MEASURED VERTICALLY FROM EDGE OF FINISHED GRADE SHOULDER.
- 4 PRIME COAT ON TOP OF AGGREGATE BASE.

ROUNDING DETAIL

- INTERSECTION OF CUT AND/OR FILL SLOPES WITH GROUND LINE TO BE ROUNDED AS PART OF FINISHING OPERATIONS. ROUNDED SHALL BE 5' MINIMUM FOR SMALLER CUTS AND FILLS TO 15' MAXIMUM FOR LARGER CUTS AND FILLS OR AS DESIGNATED BY THE ENGINEER. COST OF ROUNDED TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.

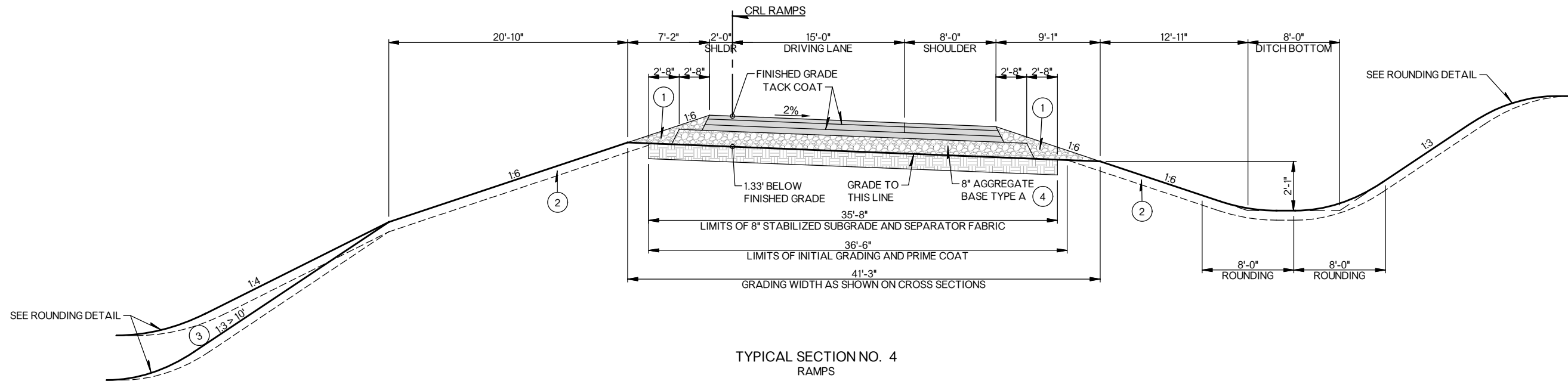


TYPICAL SECTION



TYPICAL SECTION NO. 3
RAMPS

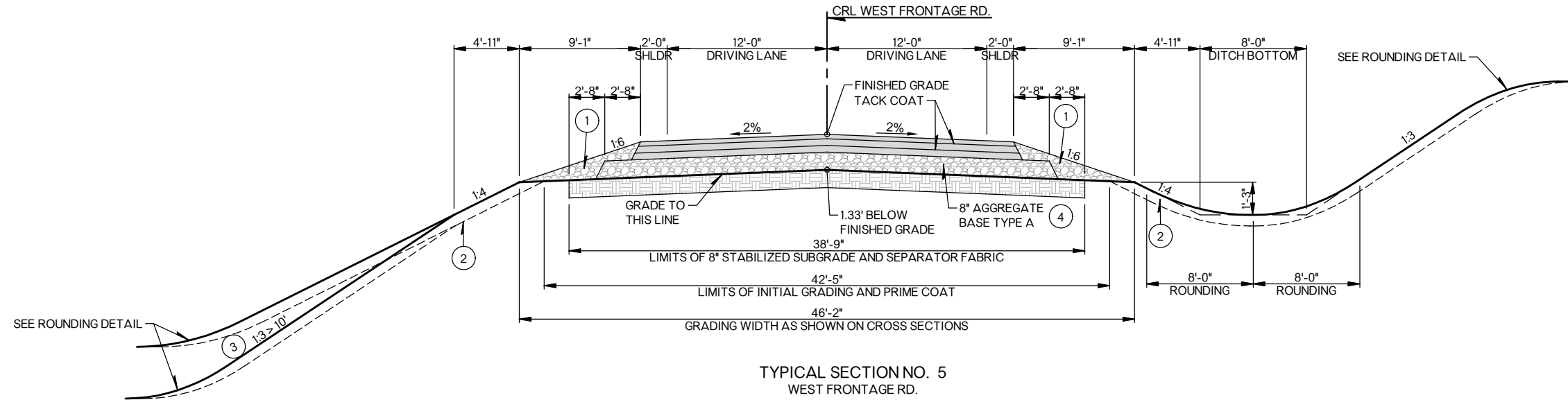
PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



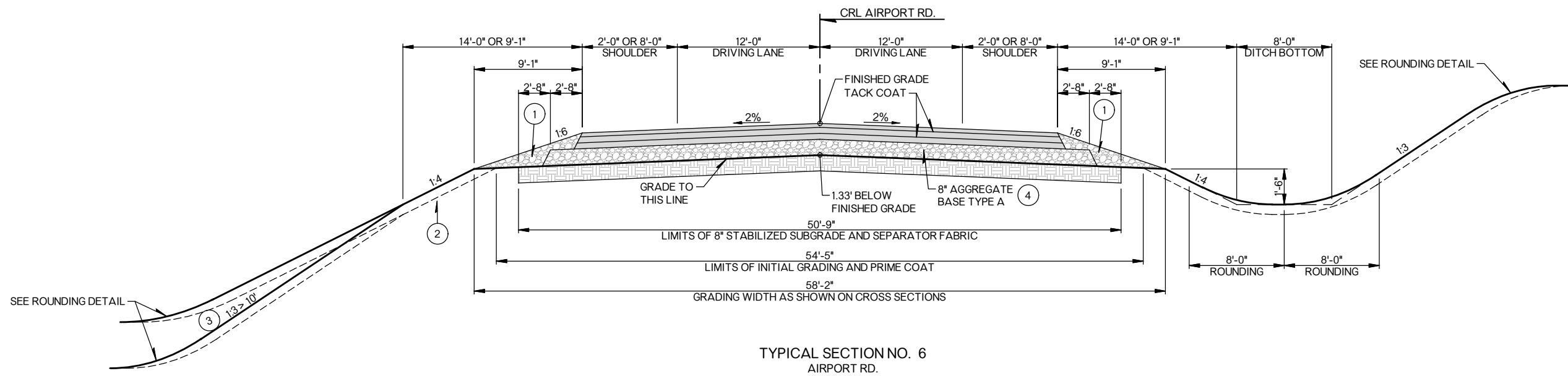
TYPICAL SECTION NO. 4
RAMPS

PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

TYPICAL SECTION



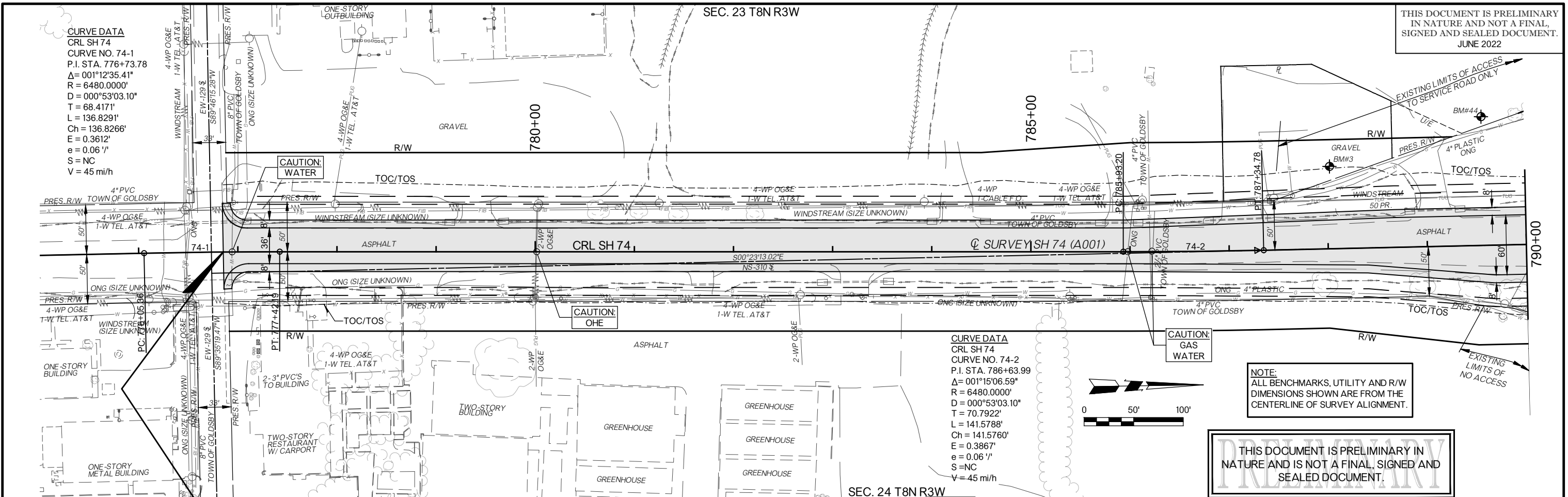
PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

TYPICAL SECTION

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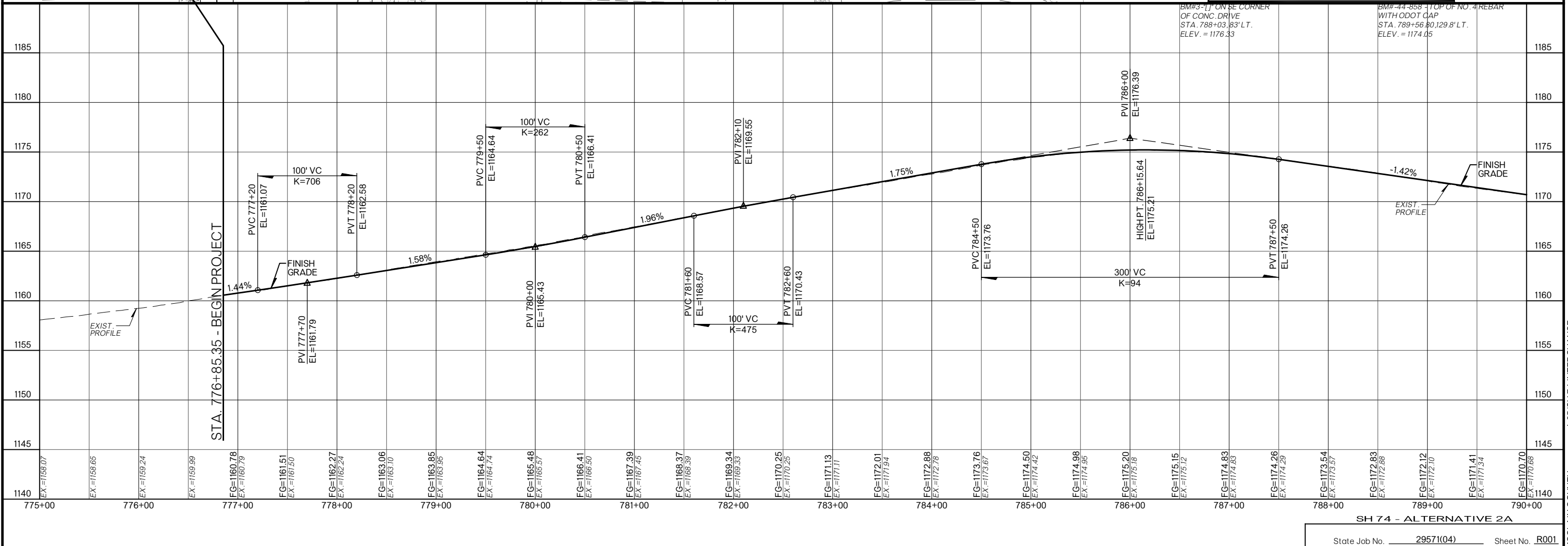
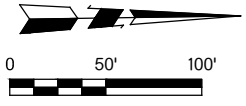


CURVE DATA
 CRL SH 74
 CURVE NO. 74-1
 P.I. STA. 776+73.78
 $\Delta = 001^{\circ}12'35.41''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 68.4171'$
 $L = 136.8291'$
 $Ch = 136.8266'$
 $E = 0.3612'$
 $e = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$

CURVE DATA
 CRL SH 74
 CURVE NO. 74-2
 P.I. STA. 786+63.99
 $\Delta = 001^{\circ}15'06.59''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 70.7922'$
 $L = 141.5788'$
 $Ch = 141.5760'$
 $E = 0.3867'$
 $e = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$

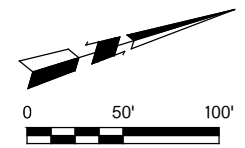
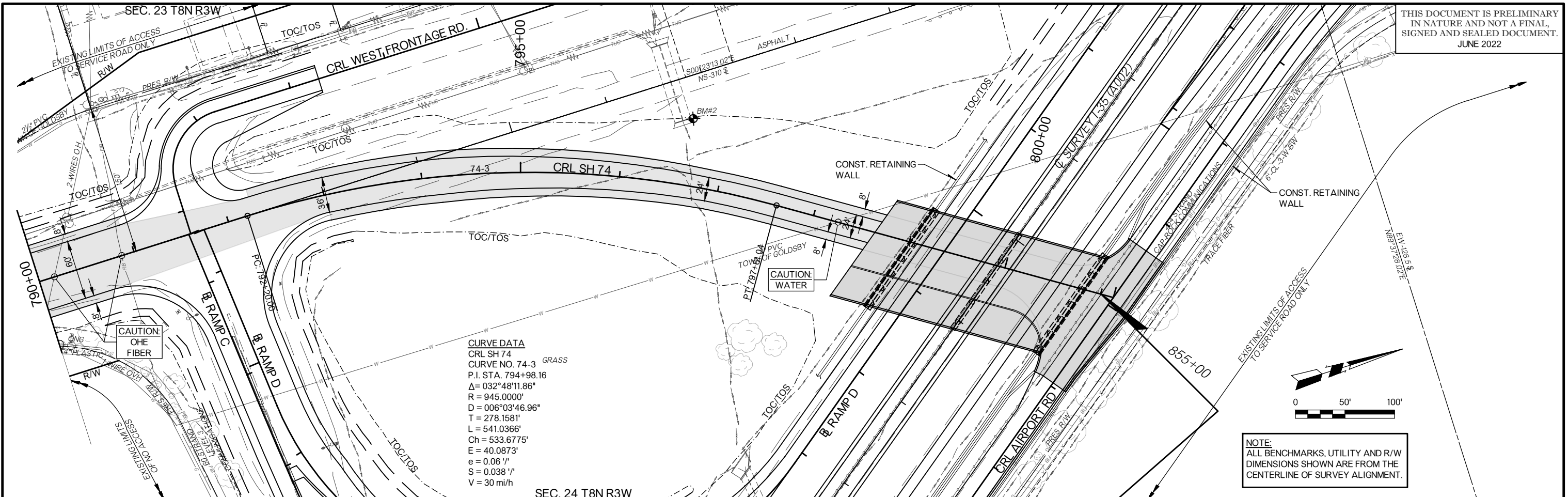
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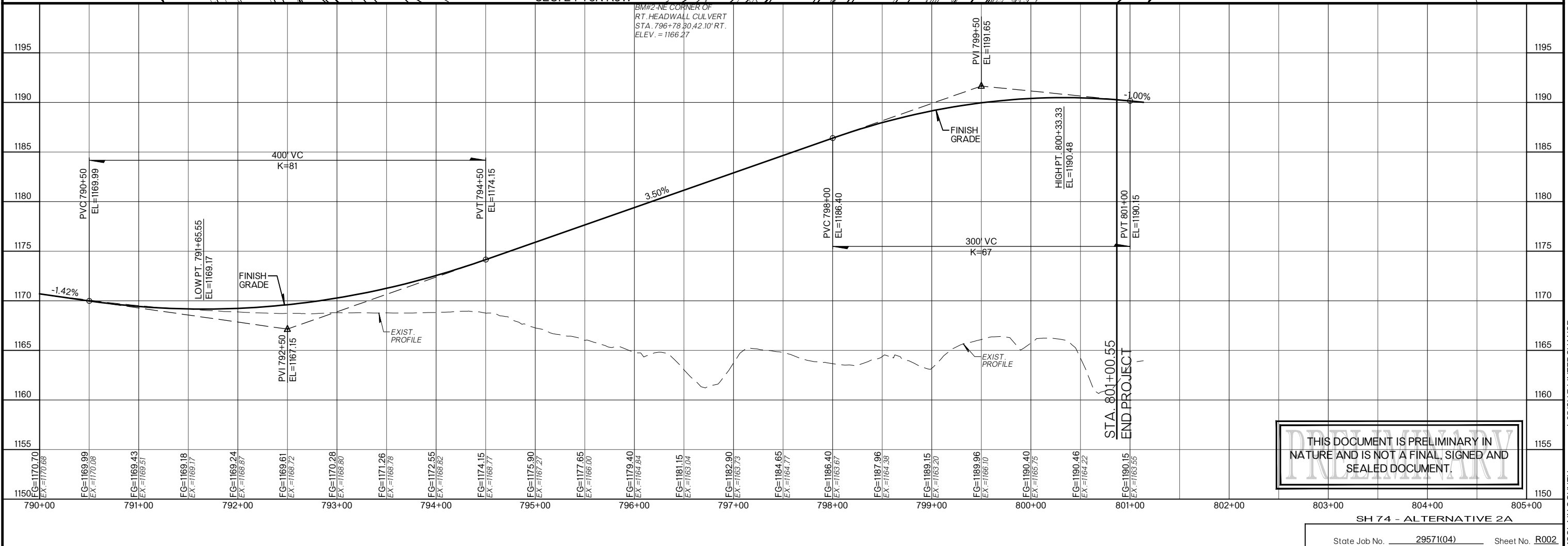


SH 74 - ALTERNATIVE 2A

MCCLENN COUNTY I-36/SH74 INTERCHANGE



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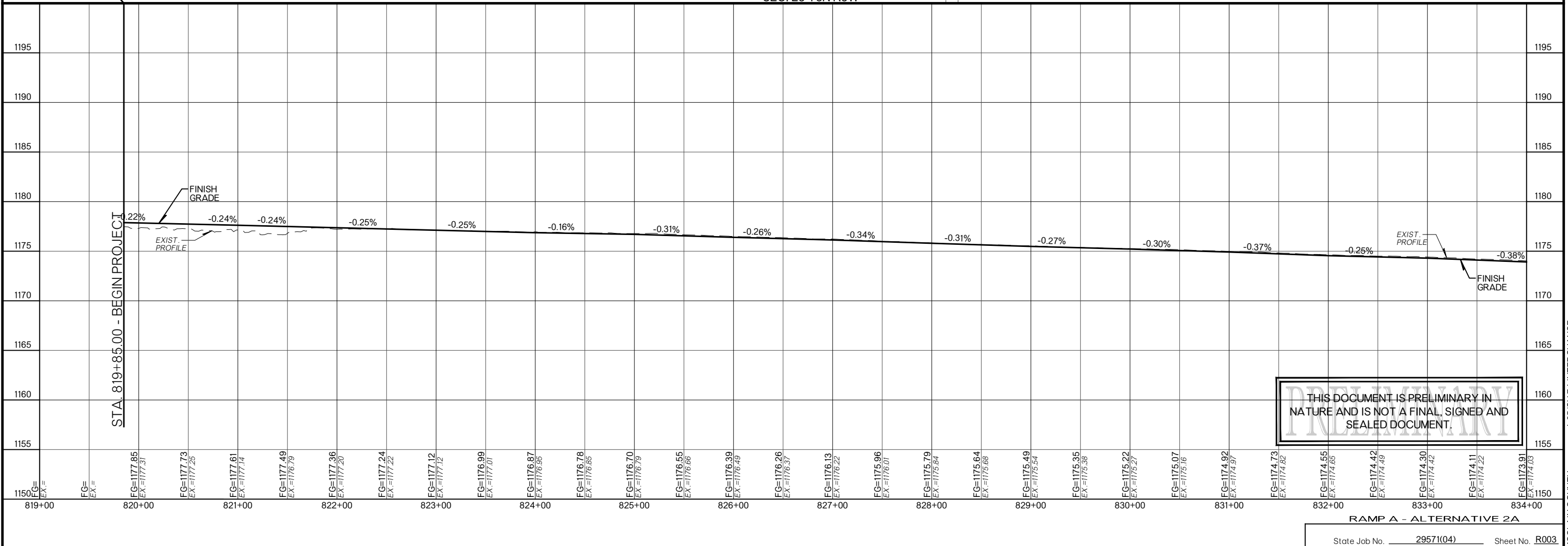
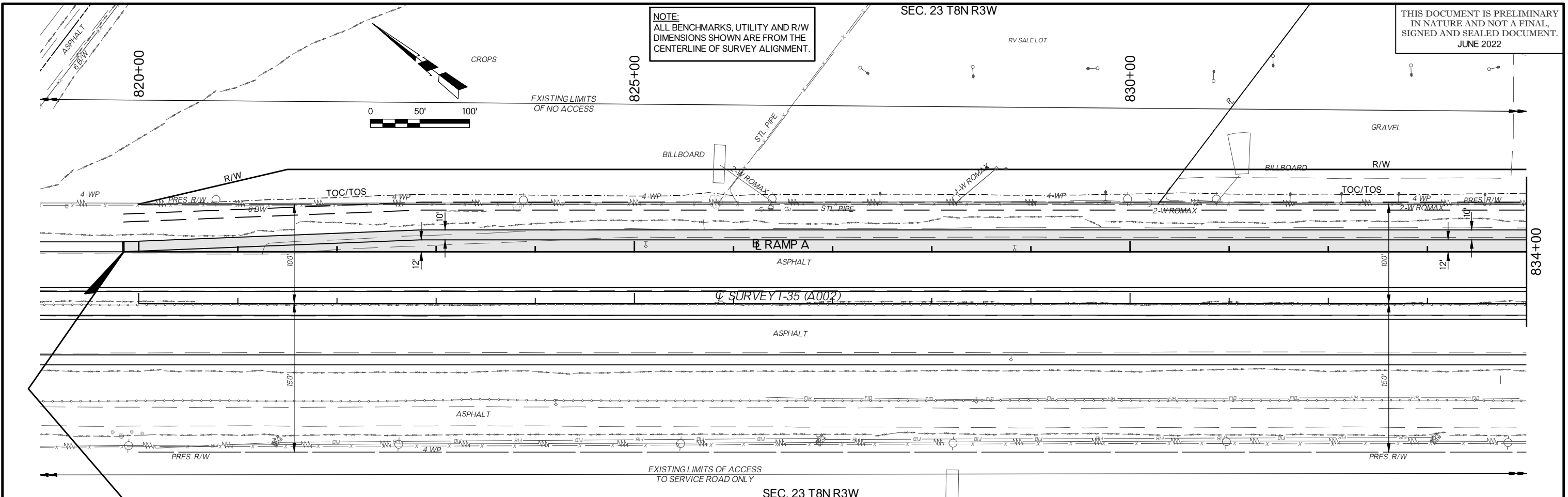


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SEC. 23 T8N R3W

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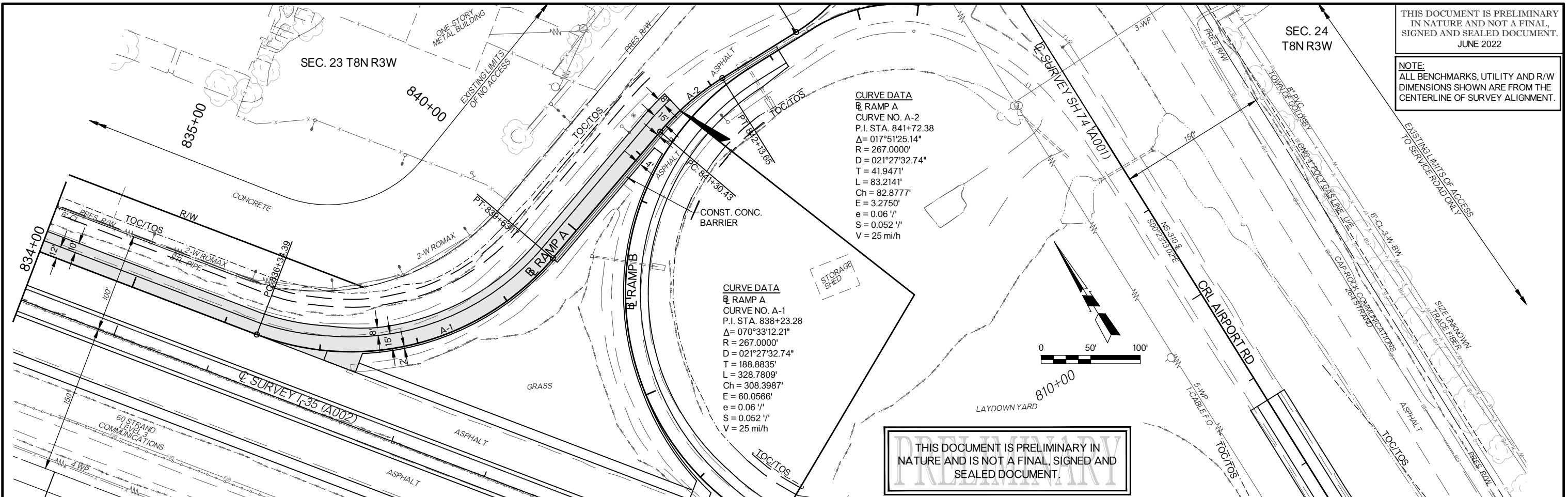


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MOCLAIN COUNTY I-36/SH 74 INTERCHANGE

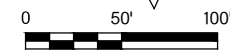
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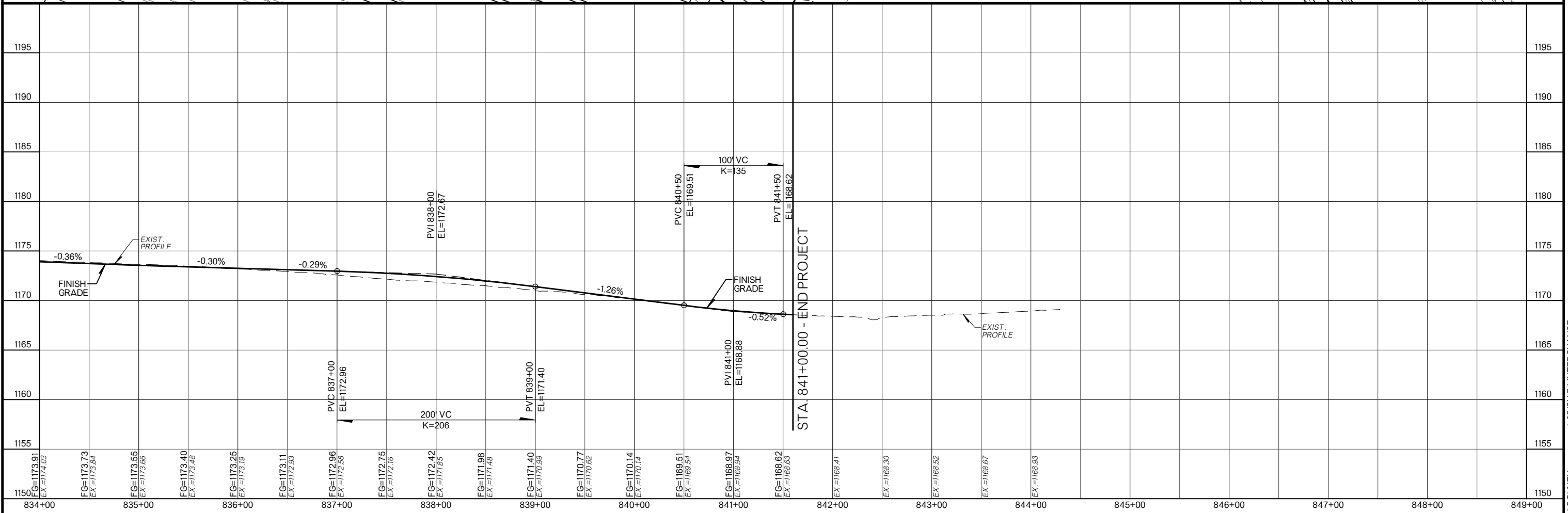


CURVE DATA
 RAMP A
 CURVE NO. A-2
 P.I. STA. 841+72.38
 $\Delta = 017^{\circ}51'25.14''$
 $R = 267.0000'$
 $D = 021^{\circ}27'32.74''$
 $T = 41.9471'$
 $L = 83.2141'$
 $Ch = 82.8777'$
 $E = 3.2750'$
 $e = 0.06''$
 $S = 0.052''$
 $V = 25 \text{ mi/h}$

CURVE DATA
 RAMP A
 CURVE NO. A-1
 P.I. STA. 838+23.28
 $\Delta = 070^{\circ}33'12.21''$
 $R = 267.0000'$
 $D = 021^{\circ}27'32.74''$
 $T = 188.8835'$
 $L = 328.7809'$
 $Ch = 308.3987'$
 $E = 60.0566'$
 $e = 0.06''$
 $S = 0.052''$
 $V = 25 \text{ mi/h}$



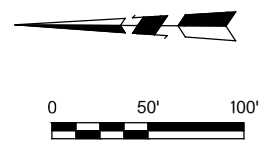
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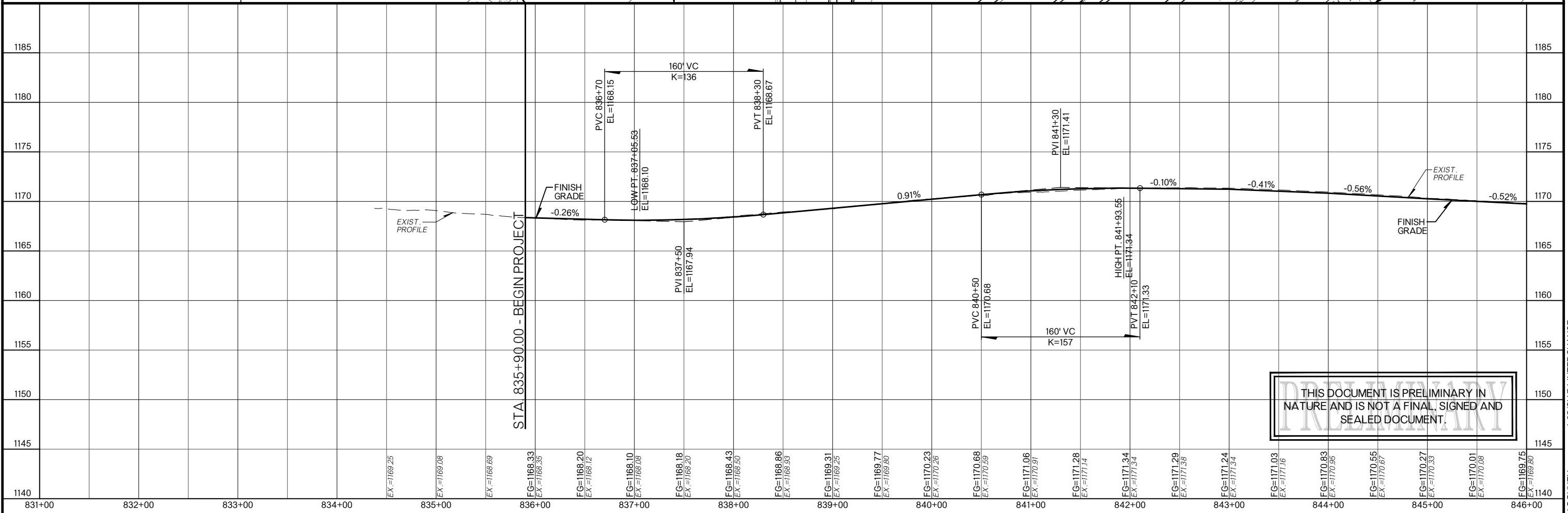
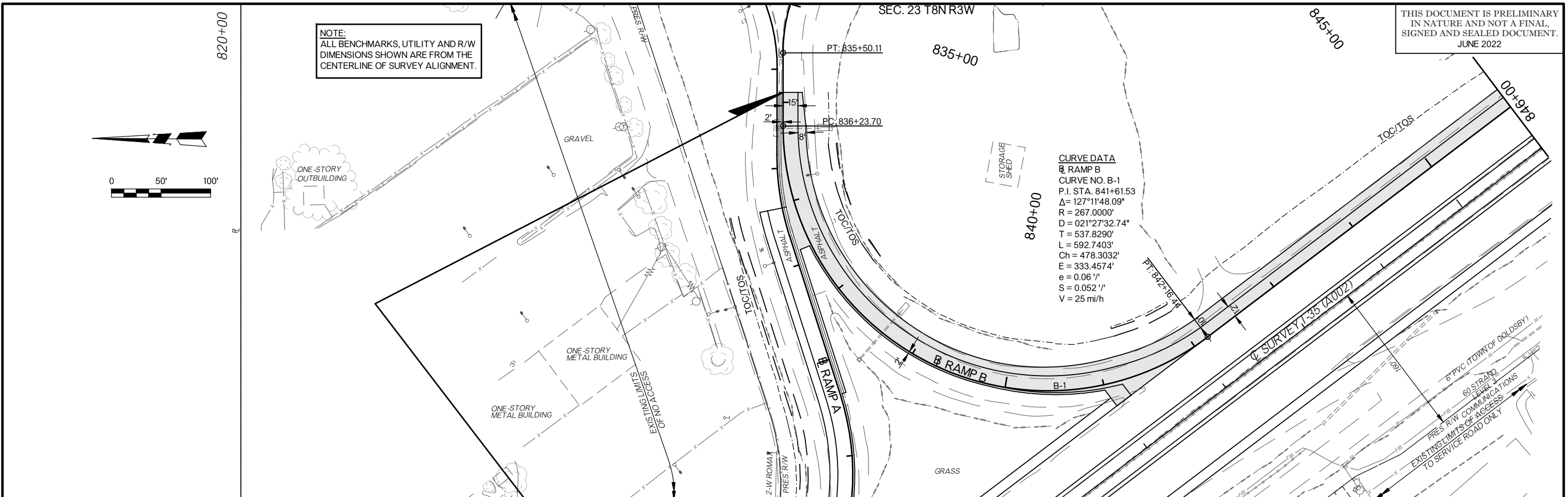
MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

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NOTE:
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CURVE DATA
 RAMP B
 CURVE NO. B-1
 P.I. STA. 841+61.53
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 $R = 267.0000'$
 $D = 021^{\circ}27'32.74''$
 $T = 537.8290'$
 $L = 592.7403'$
 $Ch = 478.3032'$
 $E = 333.4574'$
 $e = 0.06'$
 $S = 0.052'$
 $V = 25$ mi/h



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RAMP B - ALTERNATIVE 2A

State Job No. 29571(04) Sheet No. R005

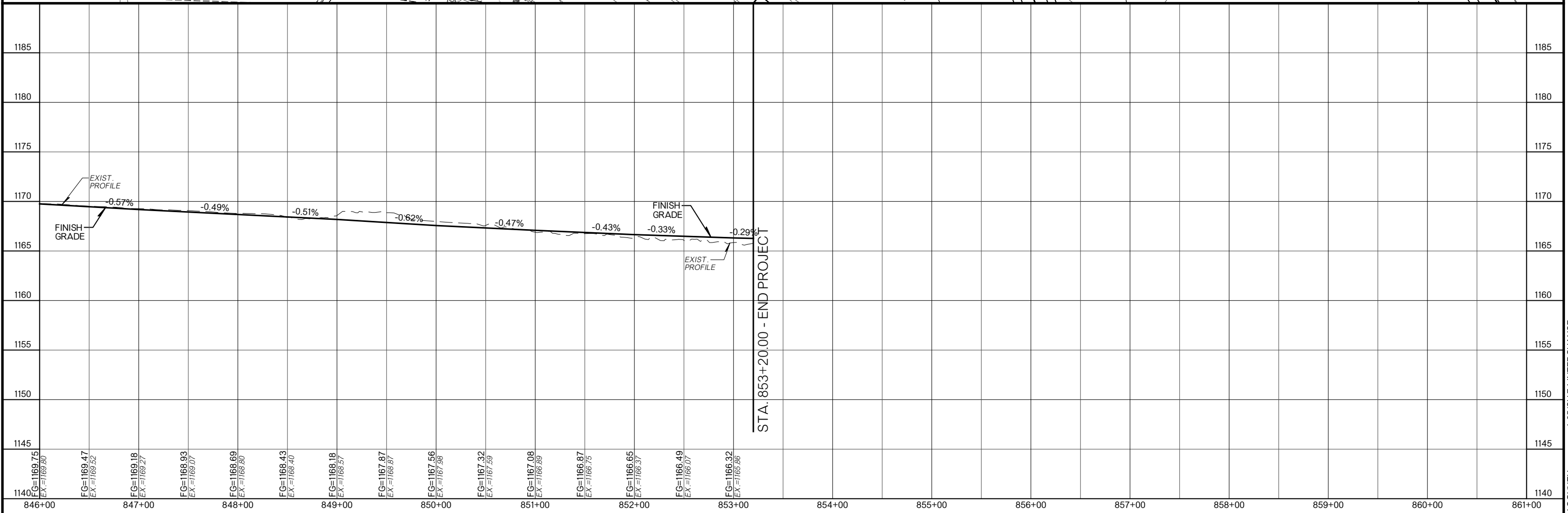
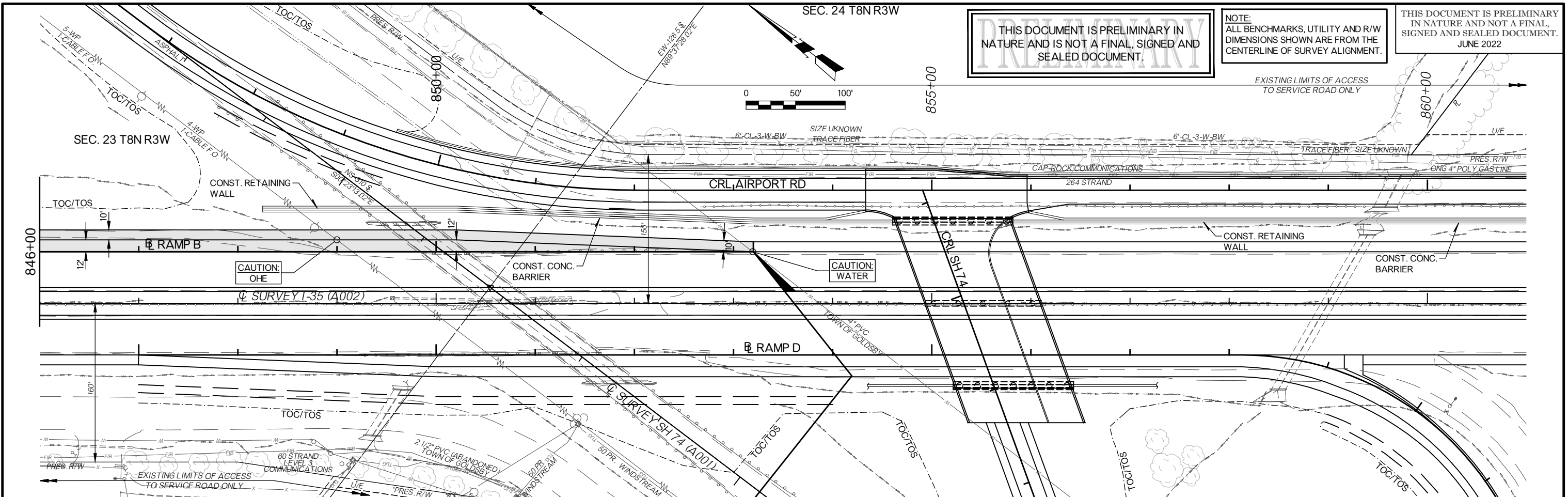
MOCLAIN COUNTY I-36/SH74 INTERCHANGE

SEC. 24 T8N R3W

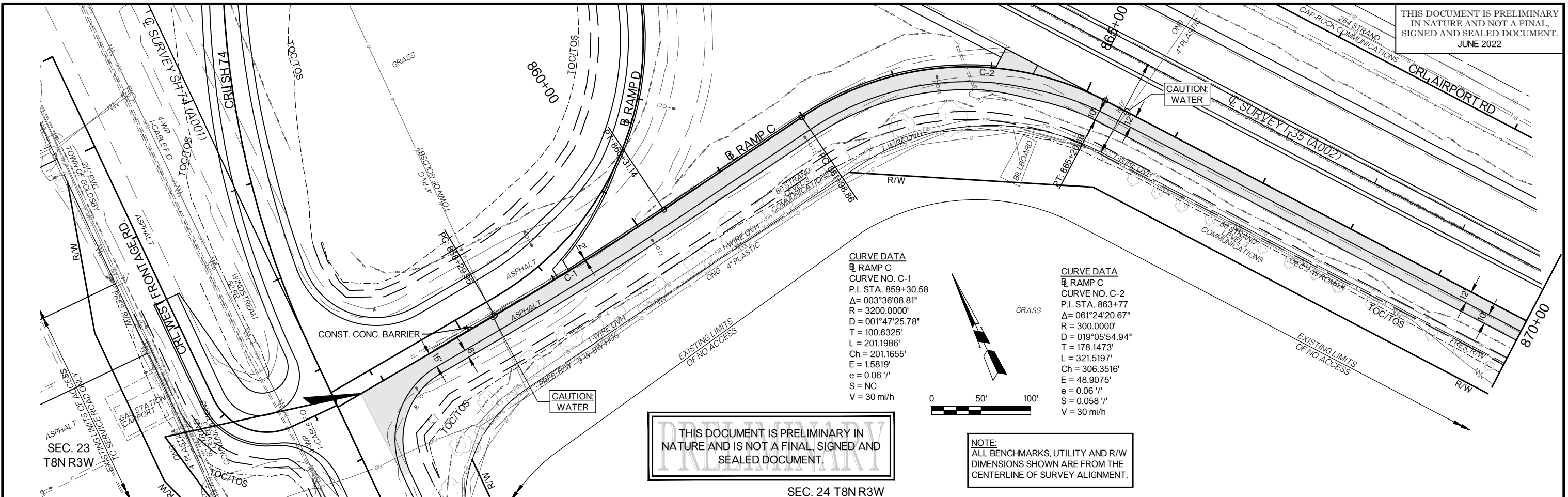
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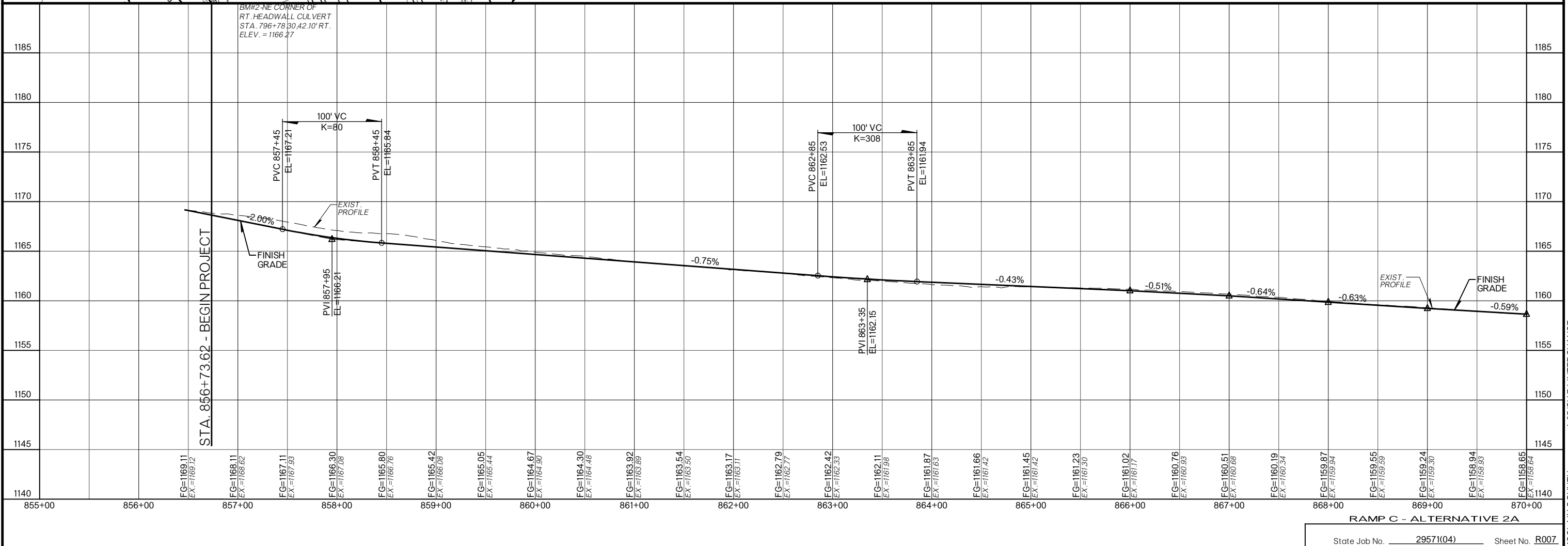
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MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

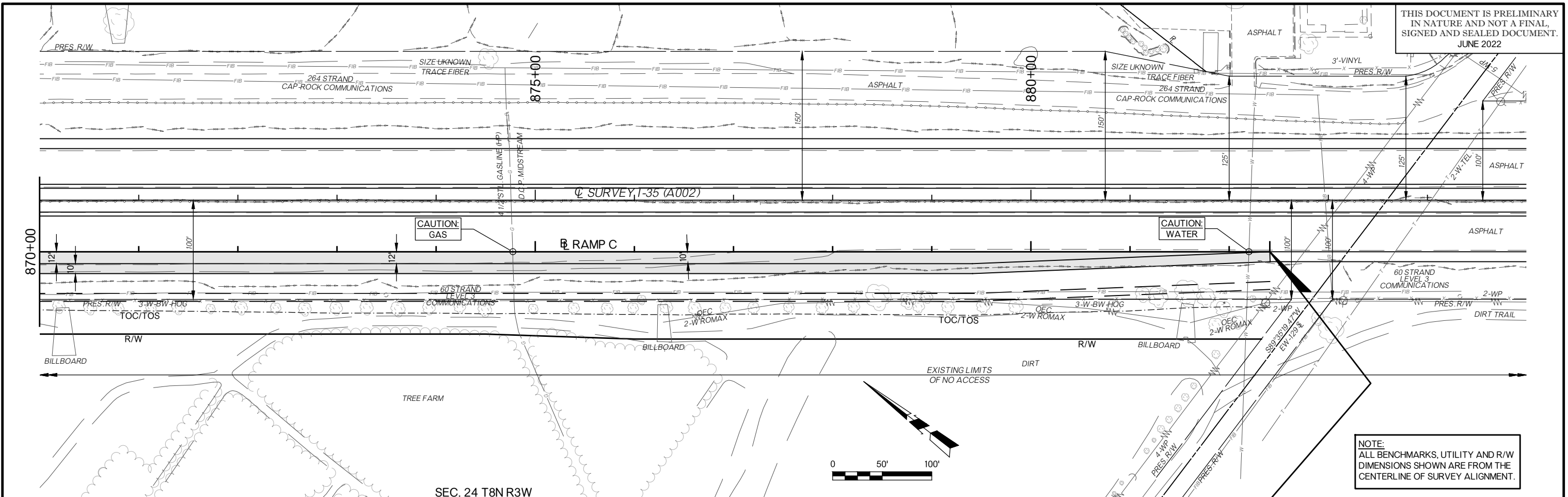


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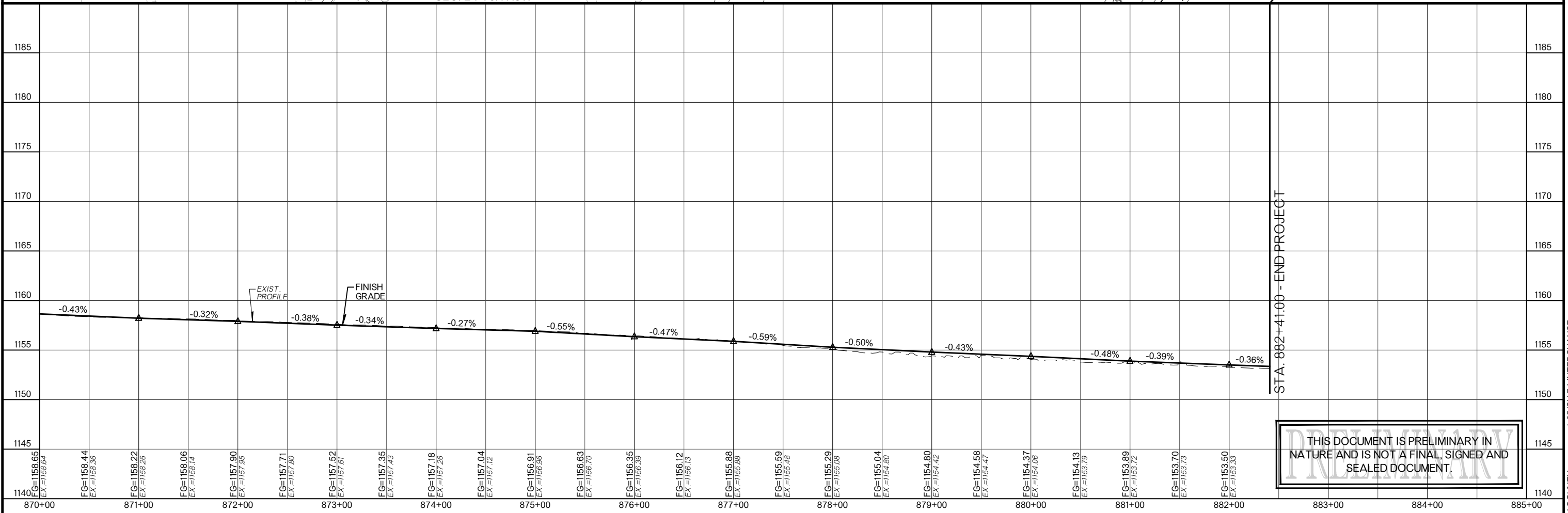


MCCLELLAN COUNTY I-36/SH74 INTERCHANGE

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SEC. 24 T8N R3W



1140	FG=1158.65 EX=1158.64	FG=1158.44 EX=1158.36	FG=1158.22 EX=1158.26	FG=1158.06 EX=1158.14	FG=1157.90 EX=1157.95	FG=1157.71 EX=1157.80	FG=1157.52 EX=1157.61	FG=1157.35 EX=1157.43	FG=1157.18 EX=1157.26	FG=1157.04 EX=1157.12	FG=1156.91 EX=1156.96	FG=1156.63 EX=1156.70	FG=1156.35 EX=1156.39	FG=1156.12 EX=1156.13	FG=1155.88 EX=1155.88	FG=1155.59 EX=1155.48	FG=1155.29 EX=1155.08	FG=1155.04 EX=1154.80	FG=1154.80 EX=1154.42	FG=1154.58 EX=1154.47	FG=1154.37 EX=1154.06	FG=1154.13 EX=1153.79	FG=1153.89 EX=1153.72	FG=1153.70 EX=1153.73	FG=1153.50 EX=1153.33	1140
870+00	871+00	872+00	873+00	874+00	875+00	876+00	877+00	878+00	879+00	880+00	881+00	882+00	883+00	884+00	885+00	1145										

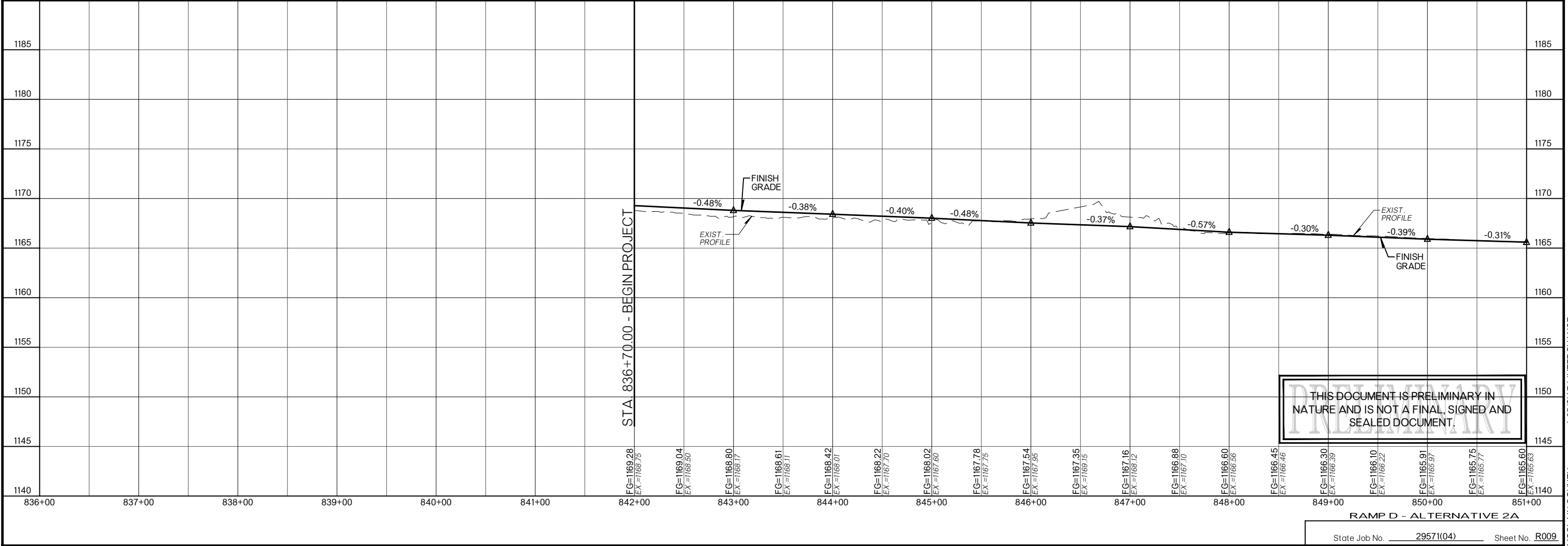
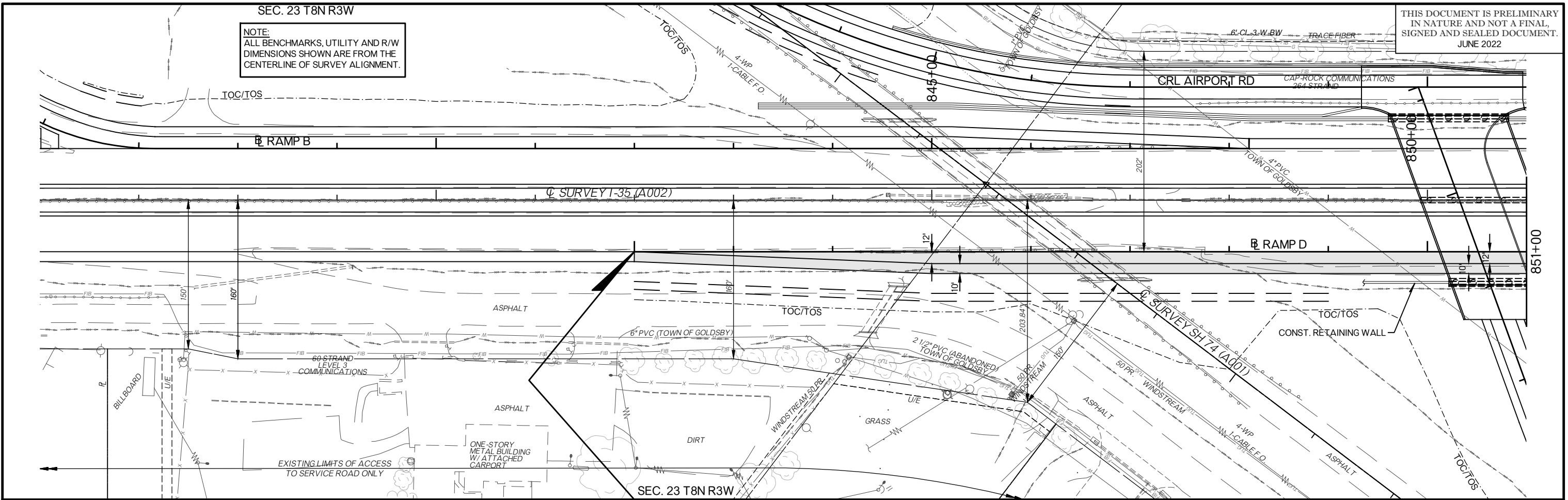
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MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

SEC. 23 T8N R3W

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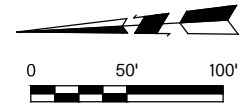
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RAMP D - ALTERNATIVE 2A

MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

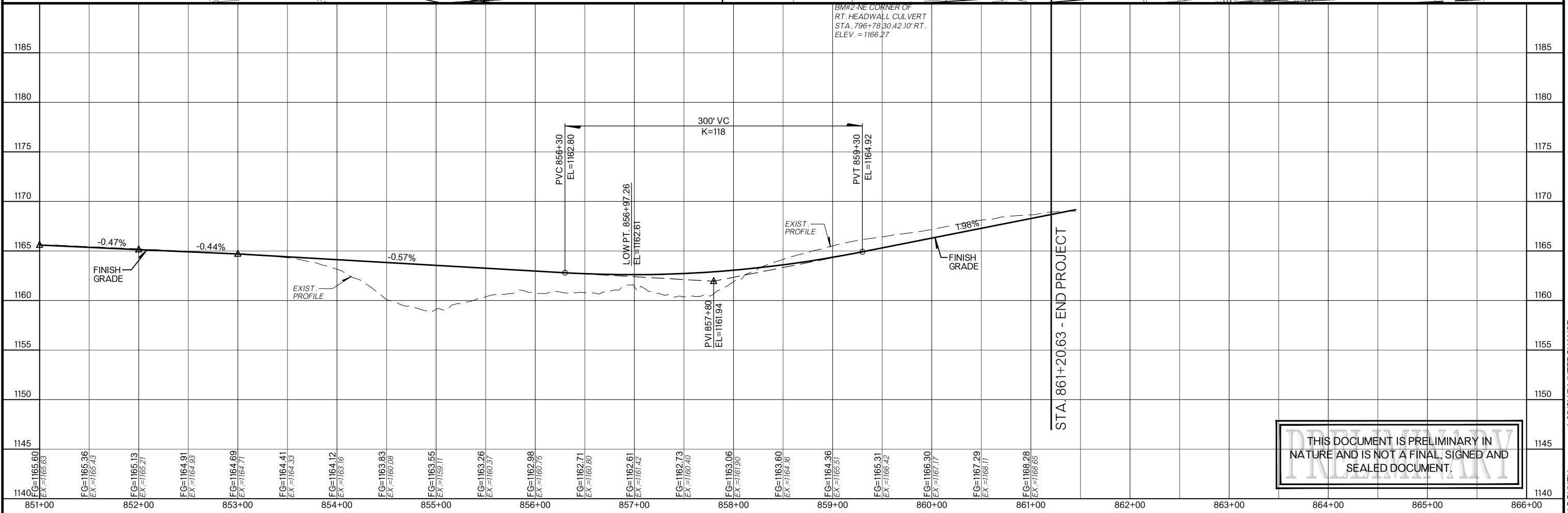
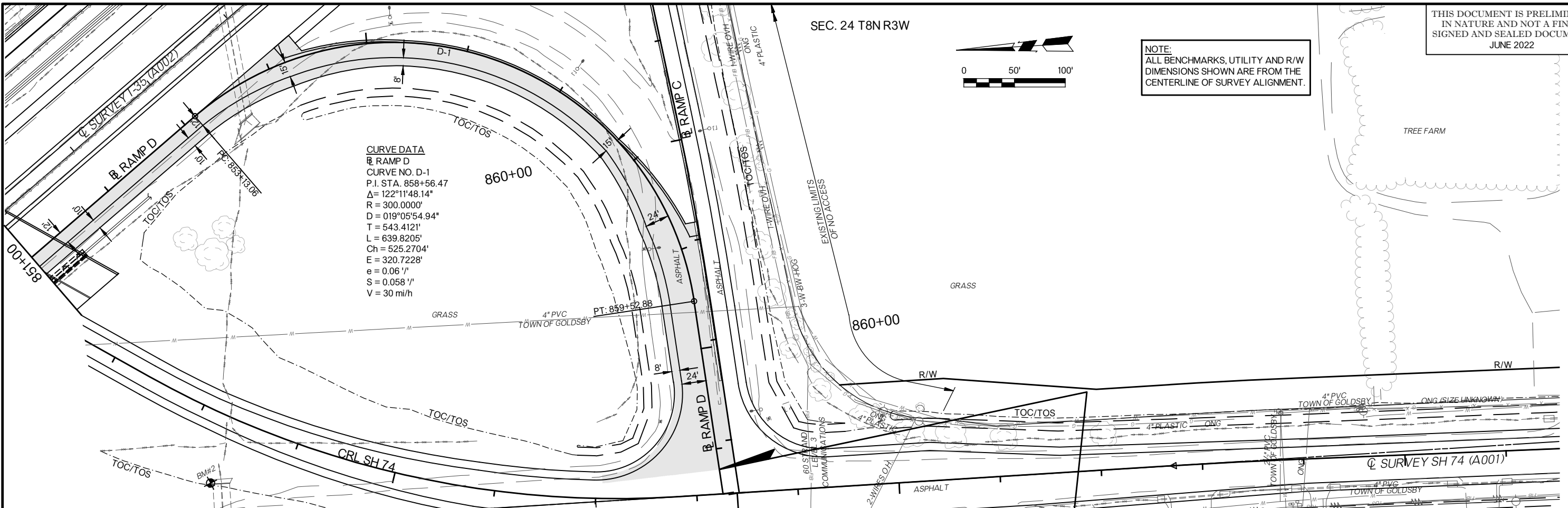
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SEC. 24 T8N R3W



NOTE:
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CURVE DATA
 B RAMP D
 CURVE NO. D-1
 P.I. STA. 858+56.47
 $\Delta = 122^\circ 11' 48.14''$
 $R = 300.0000'$
 $D = 019^\circ 05' 54.94''$
 $T = 543.4121'$
 $L = 639.8205'$
 $Ch = 525.2704'$
 $E = 320.7228'$
 $e = 0.06'$
 $S = 0.058'$
 $V = 30 \text{ mi/h}$



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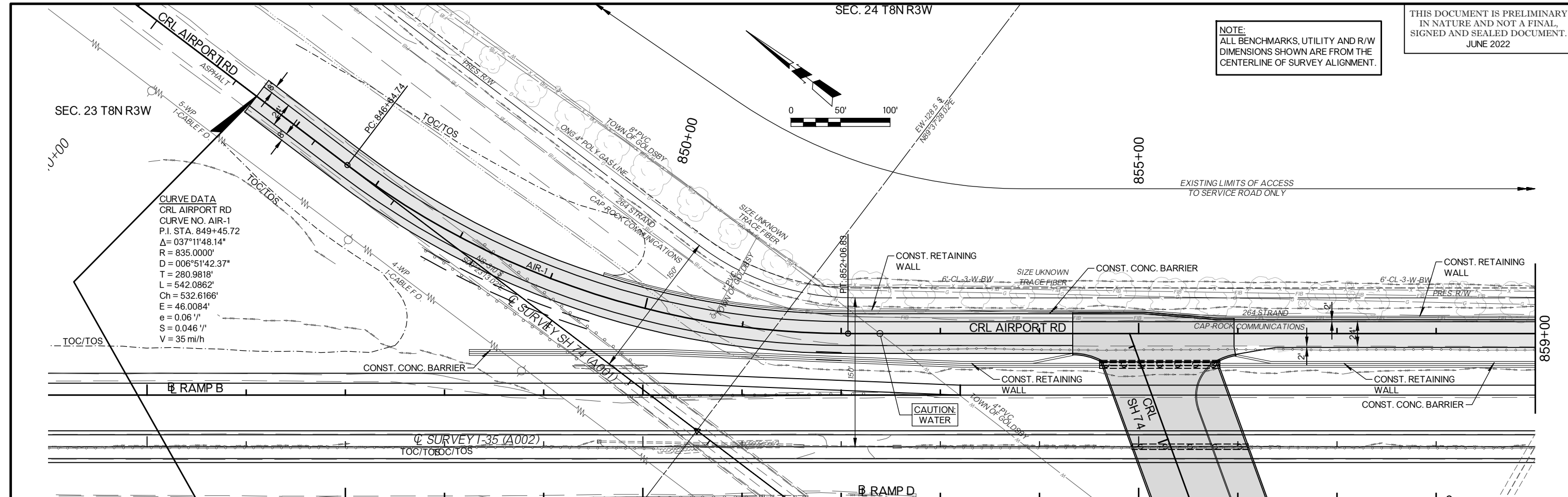
RAMP D - ALTERNATIVE 2A

State Job No. 29571(04) Sheet No. R010

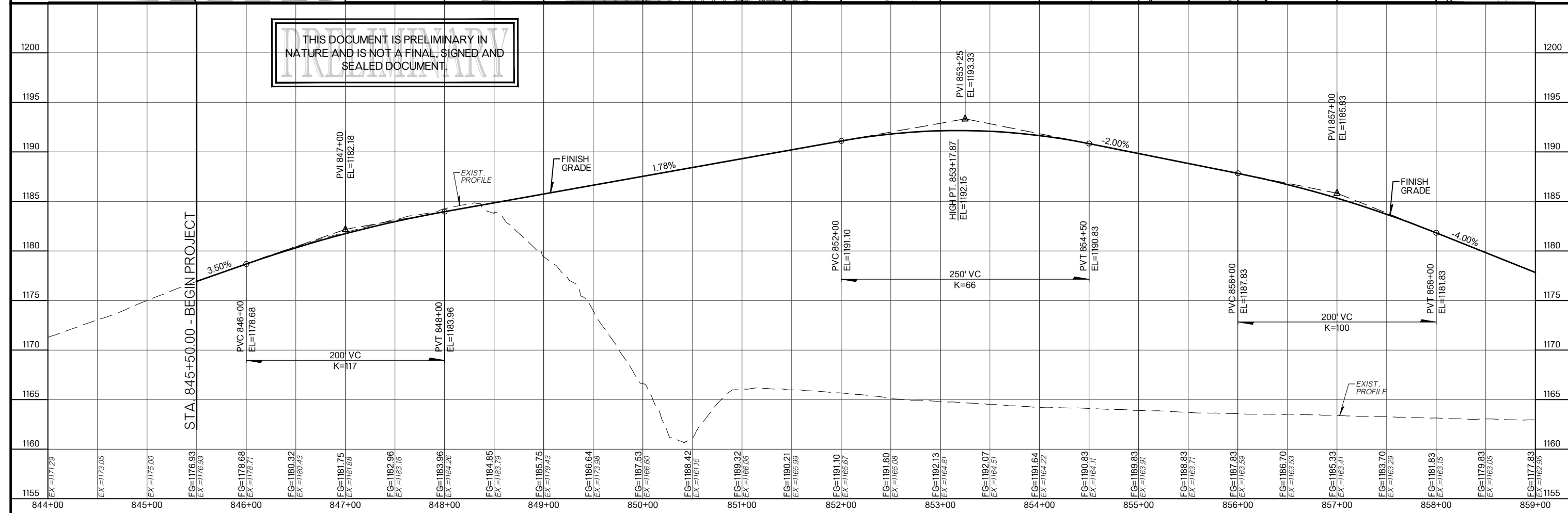
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NOTE:
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CURVE DATA
 CRL AIRPORT RD
 CURVE NO. AIR-1
 P.I. STA. 849+45.72
 $\Delta = 037^{\circ}11'48.14''$
 $R = 835.0000'$
 $D = 006^{\circ}51'42.37''$
 $T = 280.9818'$
 $L = 542.0862'$
 $Ch = 532.6166'$
 $E = 46.0084'$
 $e = 0.06''$
 $S = 0.046''$
 $V = 35 \text{ mi/h}$

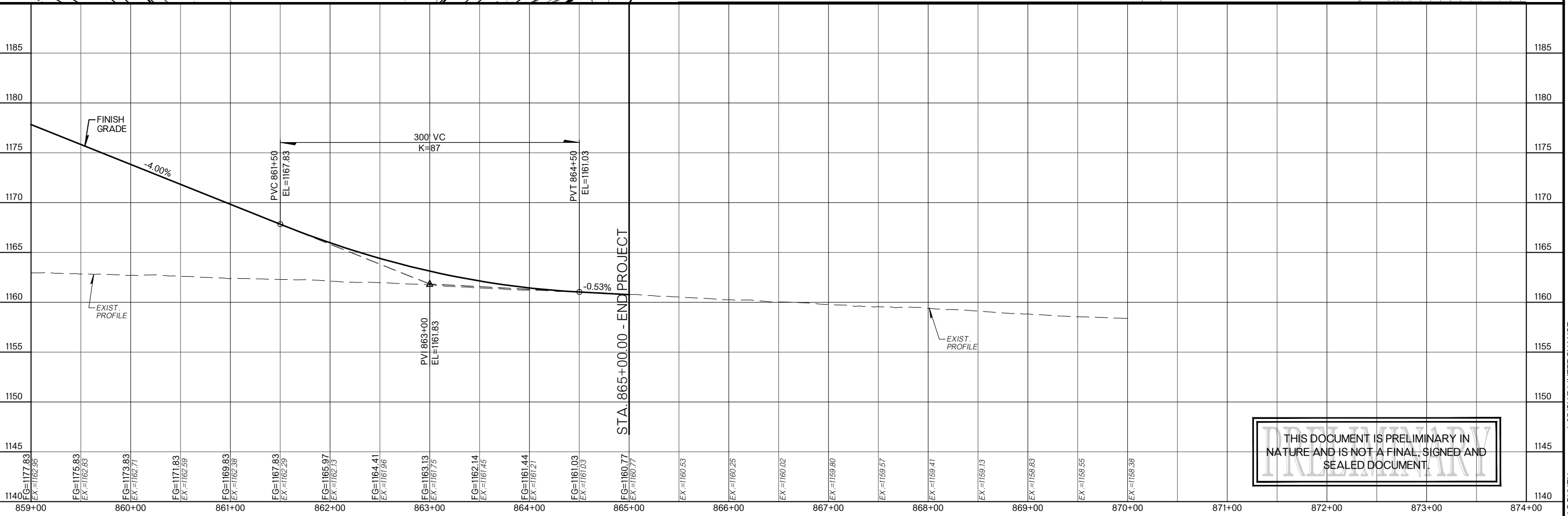
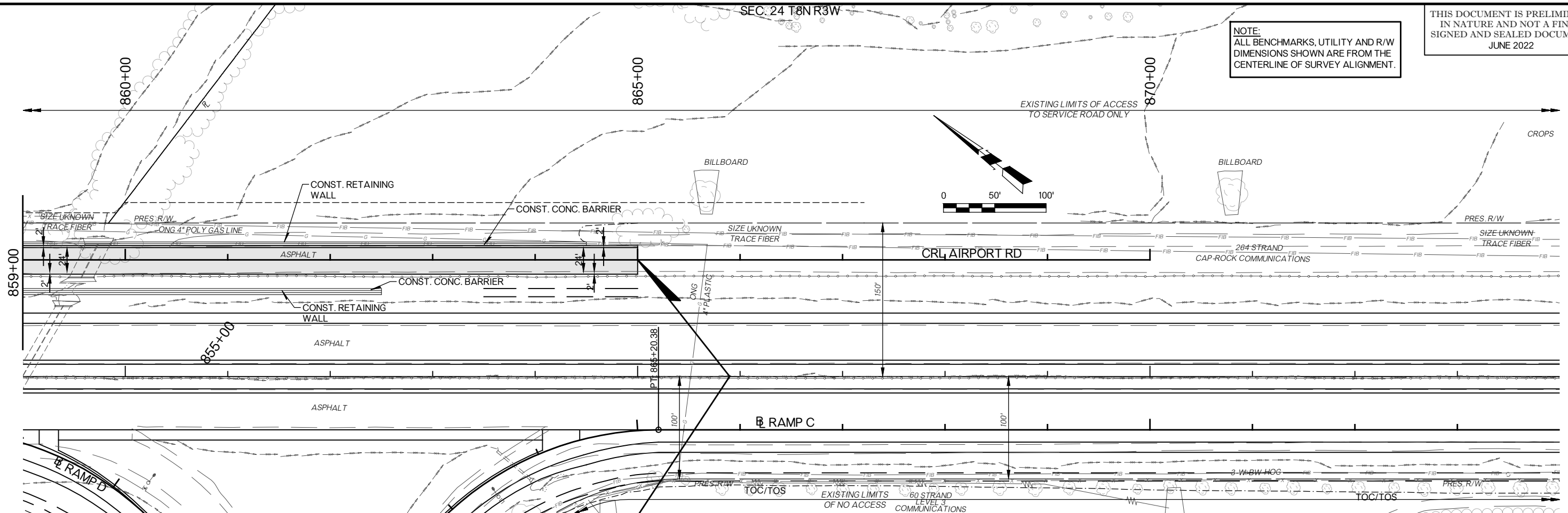


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MCCLELLAN COUNTY I-36/SH74 INTERCHANGE

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JUNE 2022



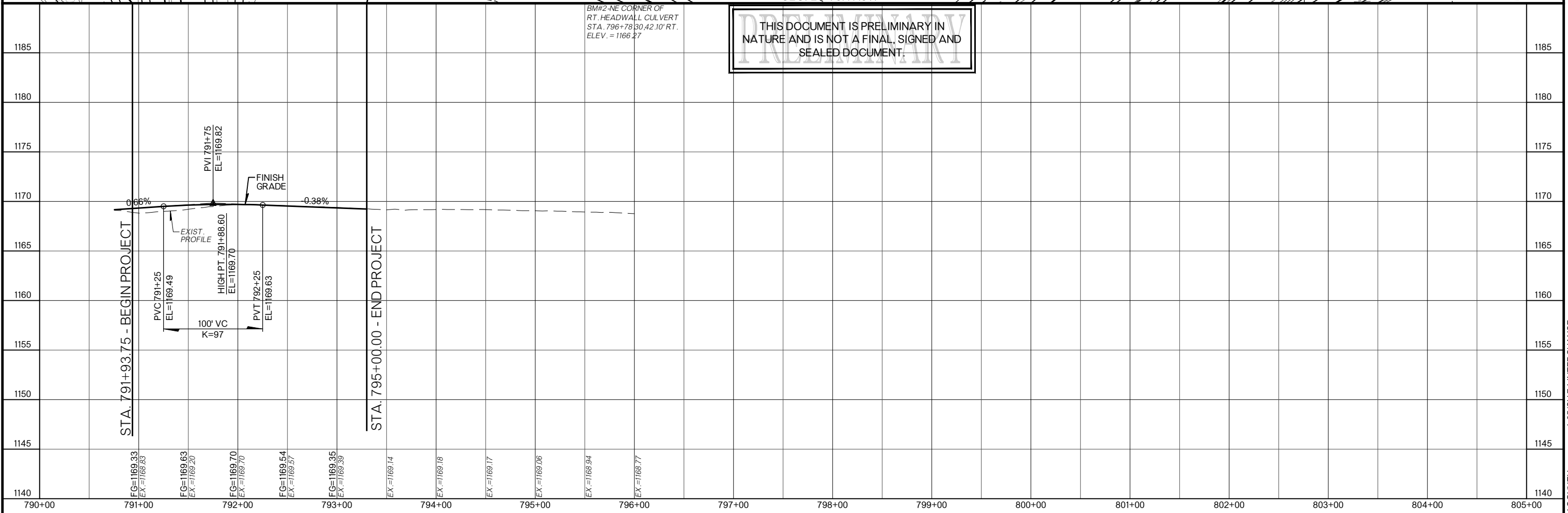
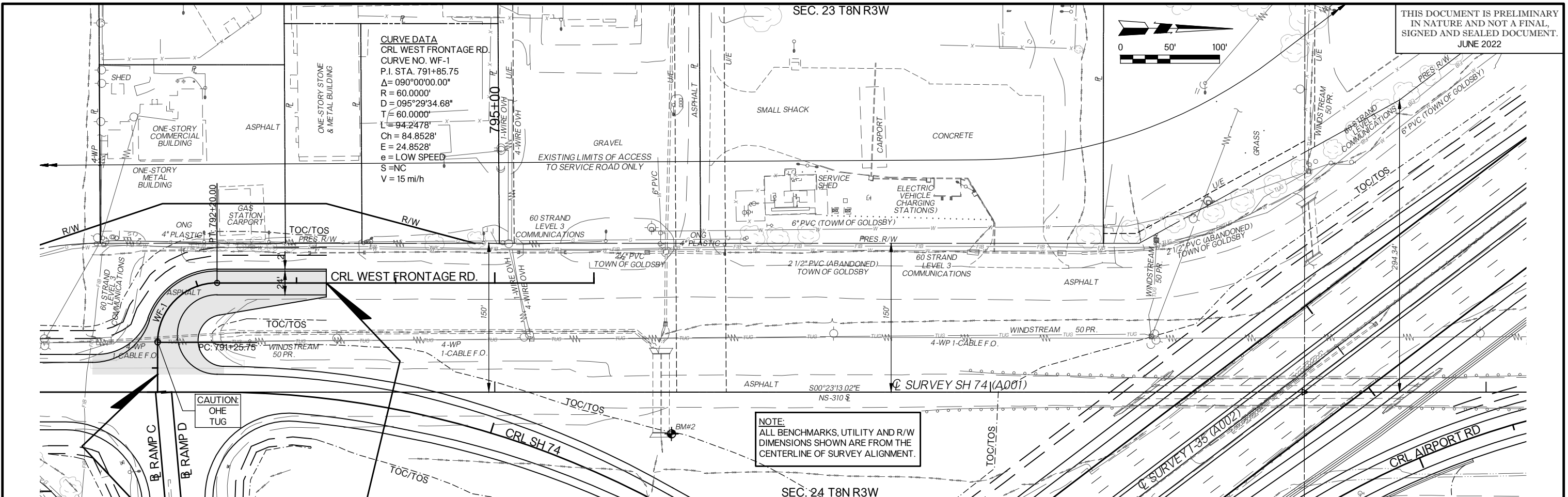
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CURVE DATA
 CRL WEST FRONTAGE RD.
 CURVE NO. WF-1
 P.I. STA. 791+85.75
 $\Delta = 090^{\circ}00'00.00''$
 $R = 60.0000'$
 $D = 095^{\circ}29'34.68''$
 $T = 60.0000'$
 $L = 94.2478'$
 $Ch = 84.8528'$
 $E = 24.8528'$
 $e = \text{LOW SPEED}$
 $S = \text{NC}$
 $V = 15 \text{ mi/h}$

NOTE:
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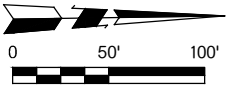
MCCLELLIN COUNTY I-36/SH74 INTERCHANGE

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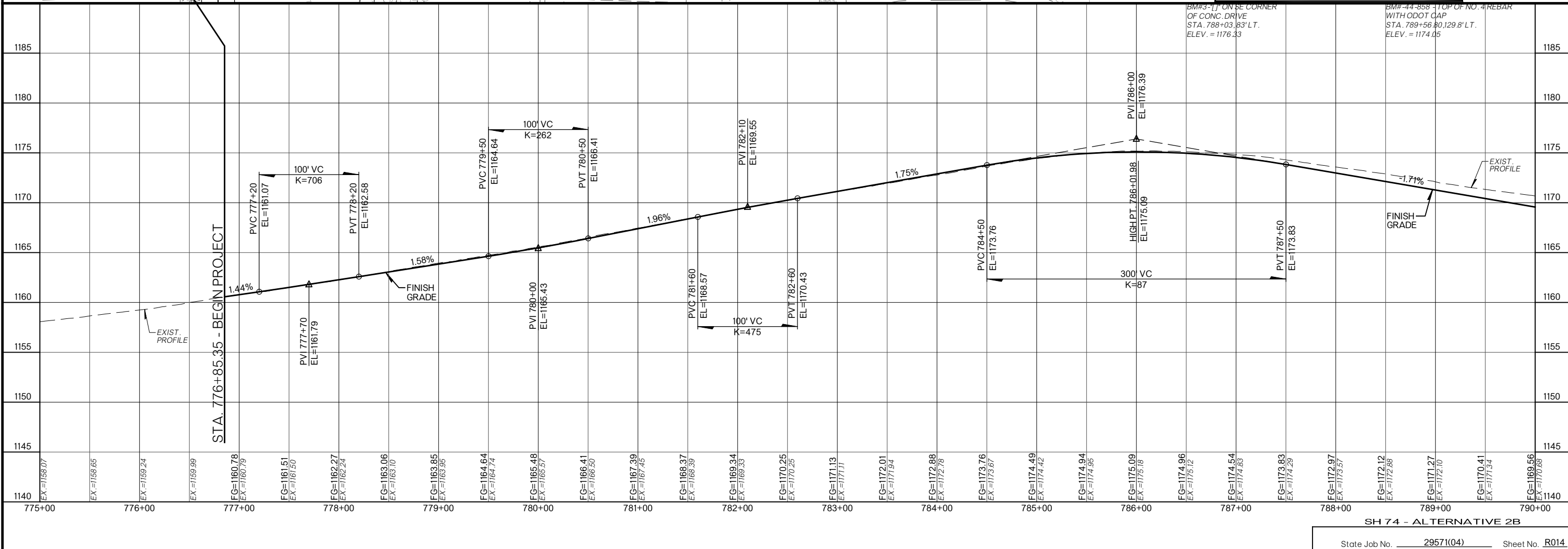
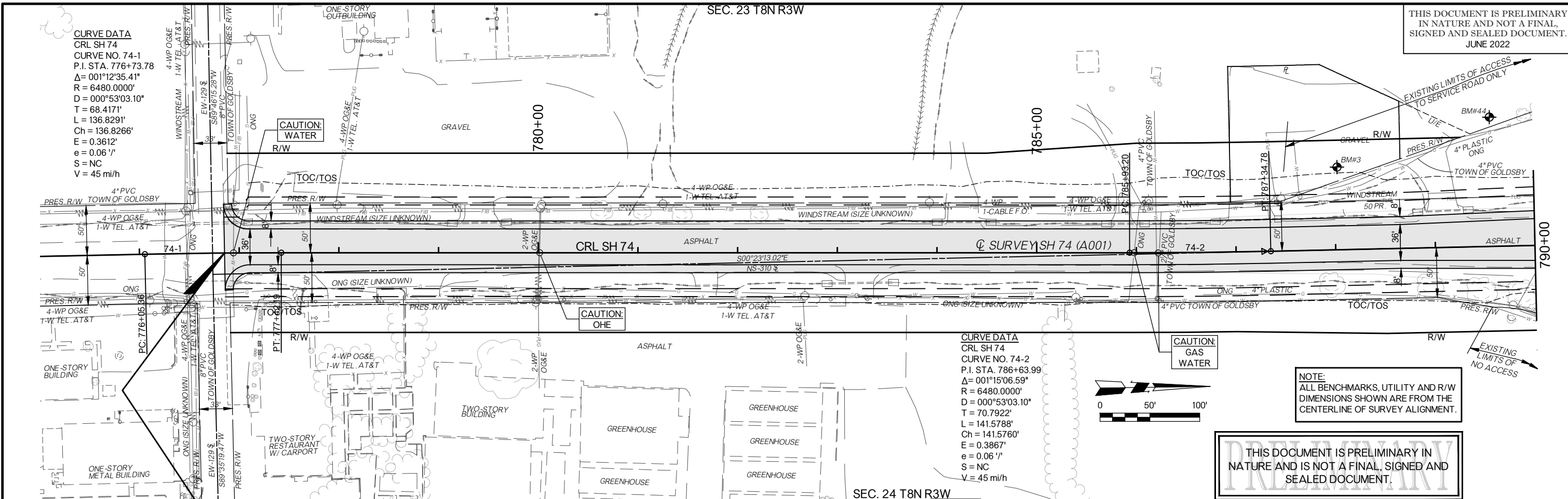
CURVE DATA
 CRL SH 74
 CURVE NO. 74-1
 P.I. STA. 776+73.78
 $\Delta = 001^{\circ}12'35.41''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 68.4171'$
 $L = 136.8291'$
 $Ch = 136.8266'$
 $E = 0.3612'$
 $e = 0.06''$
 $S = NC$
 $V = 45 \text{ mi/h}$

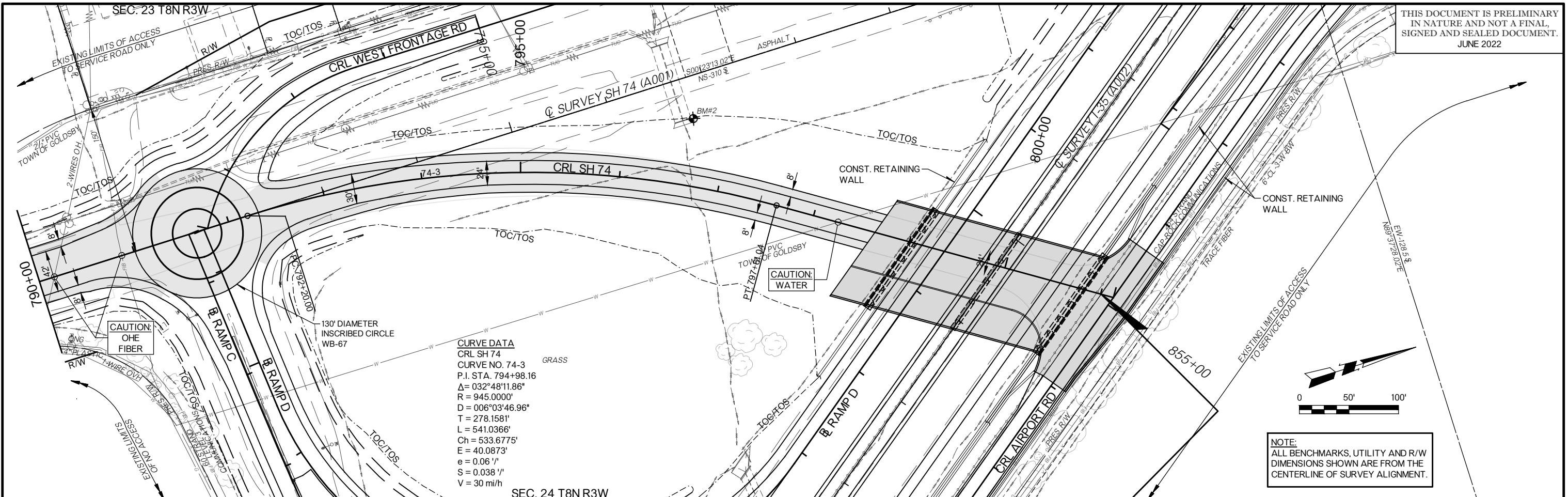
CURVE DATA
 CRL SH 74
 CURVE NO. 74-2
 P.I. STA. 786+63.99
 $\Delta = 001^{\circ}15'06.59''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 70.7922'$
 $L = 141.5788'$
 $Ch = 141.5760'$
 $E = 0.3867'$
 $e = 0.06''$
 $S = NC$
 $V = 45 \text{ mi/h}$

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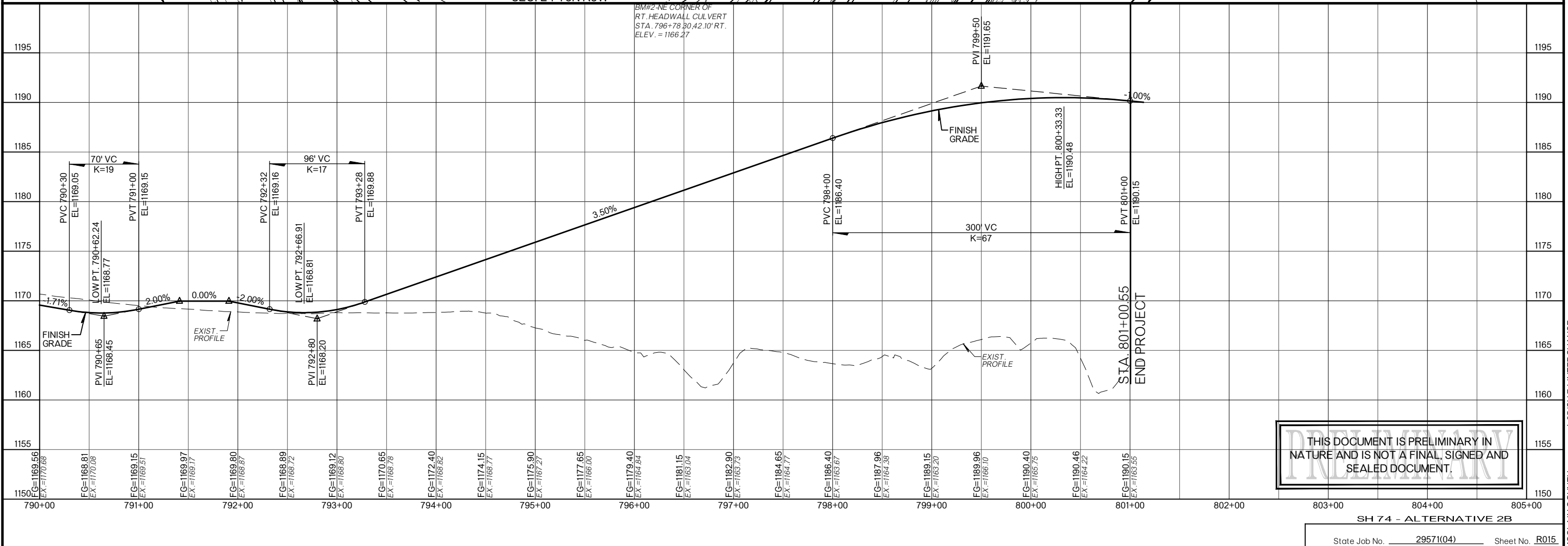
NOTE:
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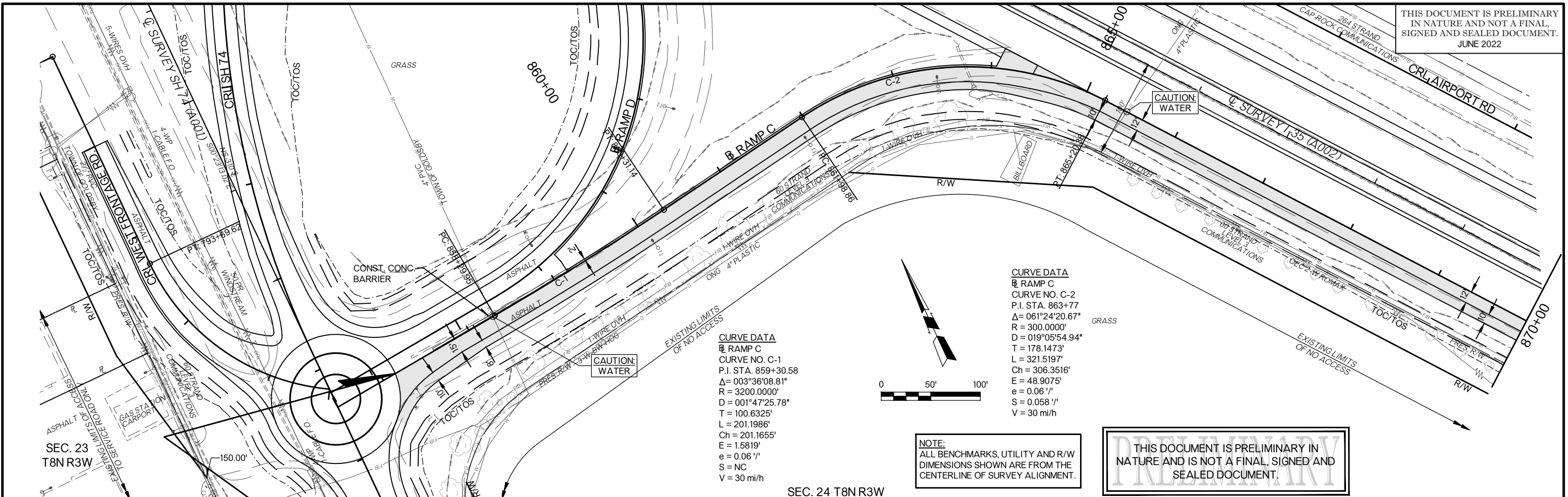


CURVE DATA
 CRL SH 74
 CURVE NO. 74-3
 P.I. STA. 794+98.16
 $\Delta = 032^\circ 48' 11.86''$
 $R = 945.0000'$
 $D = 006^\circ 03' 46.96''$
 $T = 278.1581'$
 $L = 541.0366'$
 $Ch = 533.6775'$
 $E = 40.0873'$
 $e = 0.06''$
 $S = 0.038''$
 $V = 30 \text{ mi/h}$

NOTE:
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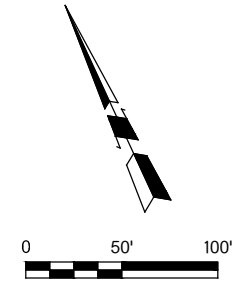


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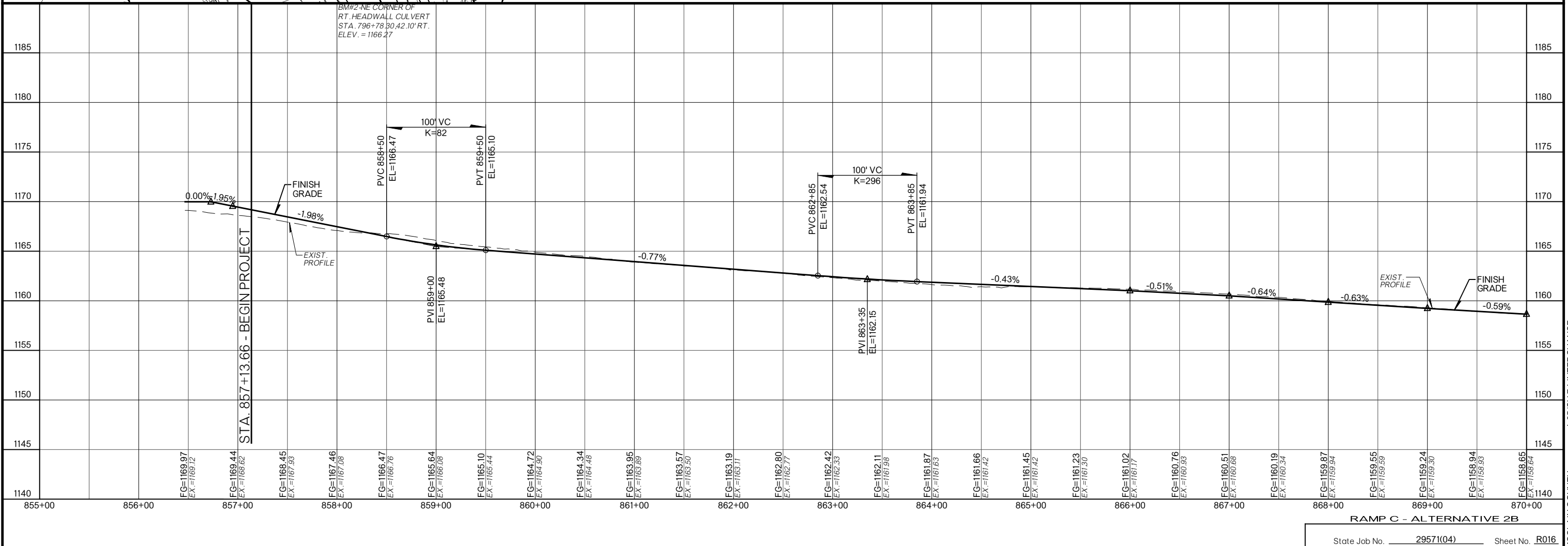
CURVE DATA
 RAMP C
 CURVE NO. C-1
 P.I. STA. 859+30.58
 $\Delta = 003^{\circ}36'08.81''$
 $R = 3200.0000'$
 $D = 001^{\circ}47'25.78''$
 $T = 100.6325'$
 $L = 201.1986'$
 $Ch = 201.1655'$
 $E = 1.5819'$
 $e = 0.06''$
 $S = NC$
 $V = 30$ mi/h

CURVE DATA
 RAMP C
 CURVE NO. C-2
 P.I. STA. 863+77
 $\Delta = 061^{\circ}24'20.67''$
 $R = 300.0000'$
 $D = 019^{\circ}05'54.94''$
 $T = 178.1473'$
 $L = 321.5197'$
 $Ch = 306.3516'$
 $E = 48.9075'$
 $e = 0.06''$
 $S = 0.058''$
 $V = 30$ mi/h



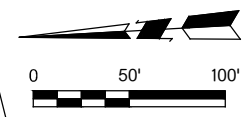
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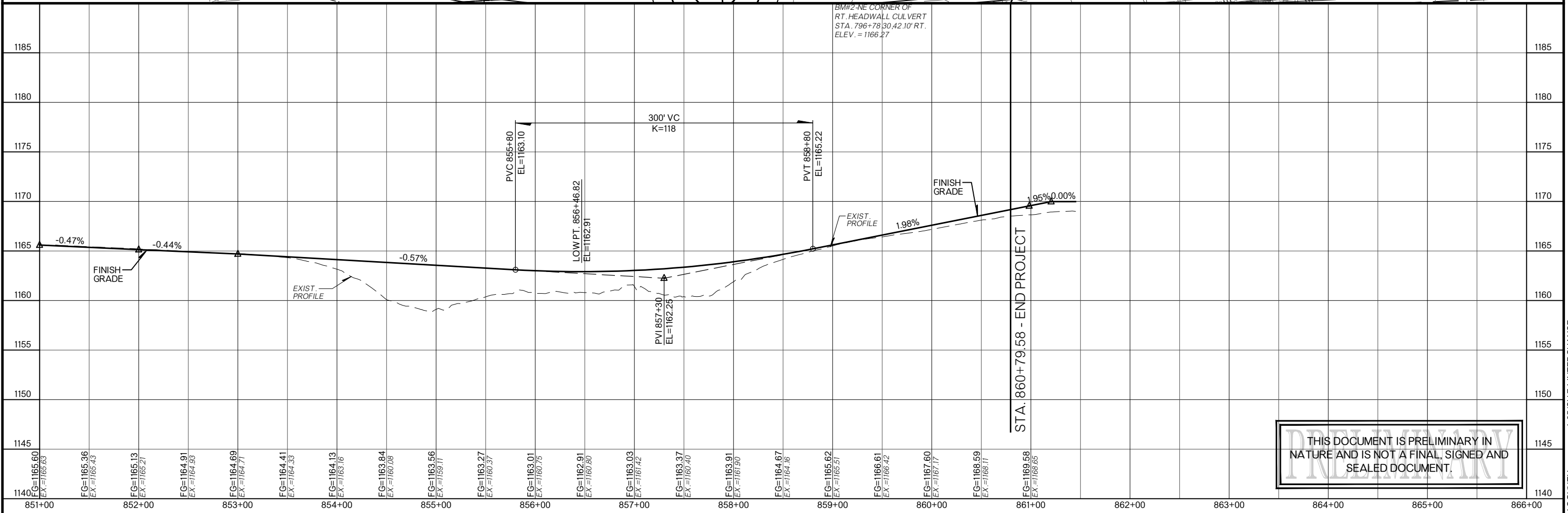
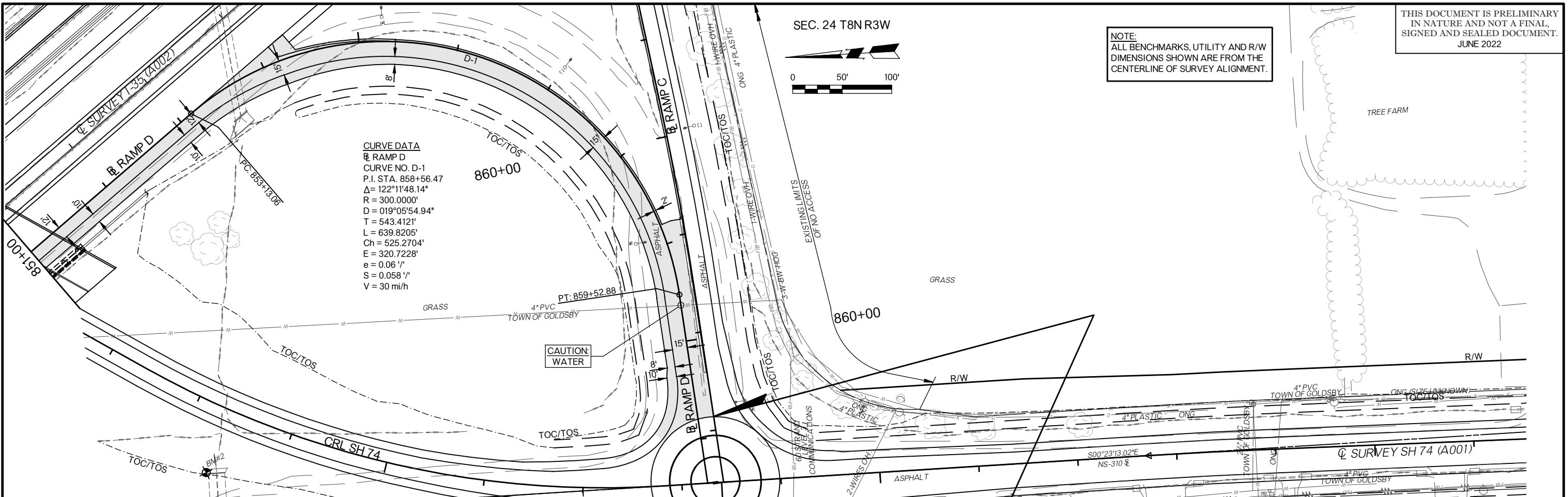
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SEC. 24 T8N R3W



NOTE:
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CURVE DATA
 RAMP D
 CURVE NO. D-1
 P.I. STA. 858+56.47
 $\Delta = 122^\circ 11' 48.14''$
 $R = 300.0000'$
 $D = 019^\circ 05' 54.94''$
 $T = 543.4121'$
 $L = 639.8205'$
 $Ch = 525.2704'$
 $e = 0.061'$
 $S = 0.0581'$
 $V = 30 \text{ mi/h}$



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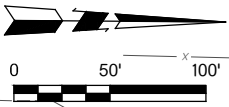
RAMP D - ALTERNATIVE 2B

State Job No. 29571(04) Sheet No. R017

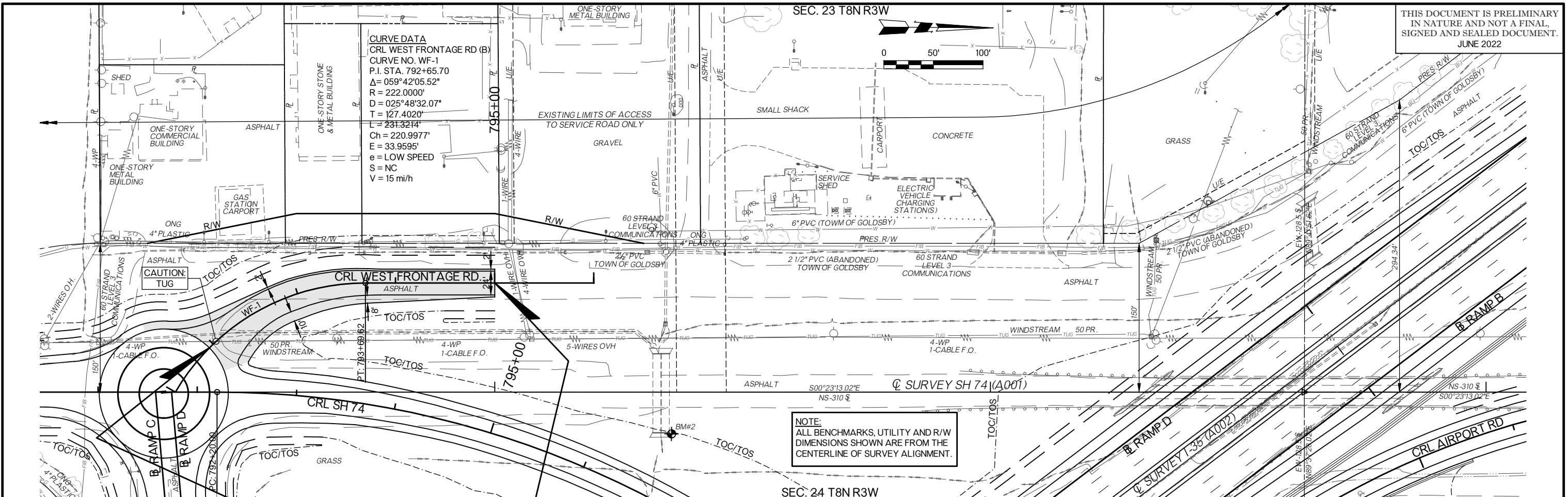
MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

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SEC. 23 T8N R3W



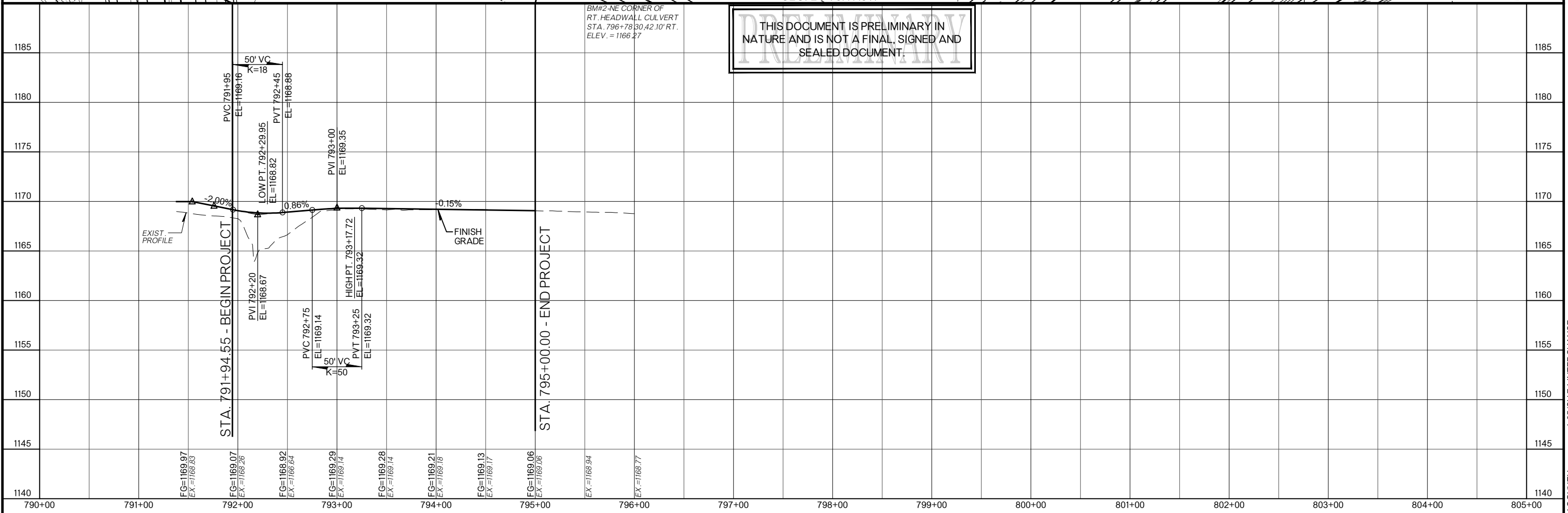
CURVE DATA
 CRL WEST FRONTAGE RD (B)
 CURVE NO. WF-1
 P.I. STA. 792+65.70
 $\Delta = 059^\circ 42' 05.52''$
 $R = 222.0000'$
 $D = 025^\circ 48' 32.07''$
 $T = 127.4020'$
 $L = 231.3214'$
 $Ch = 220.9977'$
 $E = 33.9595'$
 $e = \text{LOW SPEED}$
 $S = \text{NC}$
 $V = 15 \text{ mi/h}$



SEC. 24 T8N R3W

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BM#2 - NE CORNER OF RT. HEADWALL CULVERT
 STA. 796+78.30, 42.10' RT.
 ELEV. = 1166.27

W. FRONTAGE RD. - ALTERNATIVE 2B

State Job No. 29571(04) Sheet No. R018

MOCLAIN COUNTY I-35/SH 74 INTERCHANGE



APPENDIX F

ALTERNATIVE 3: 45° SKEW CONCEPTUAL PLANS

FOR SURVEY CONTROL DATA, SEE
SURVEY DATA SHEETS

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT NO. J2-9571(004)
GRADE, DRAIN, BRIDGE & SURFACE PLANS
I-35 & SH 74 INTERCHANGE

McCLAIN COUNTY

CONTROL SECTION NO. 74-44-38

STATE JOB NO. 29571(04)

BRIDGE "A" LOCATION NO. 4405-2297X; EXIST. NBI NO. 14496
BRIDGE "B" LOCATION NO. 4405-2279EXF; EXIST. NBI NO. 14261

SH 74

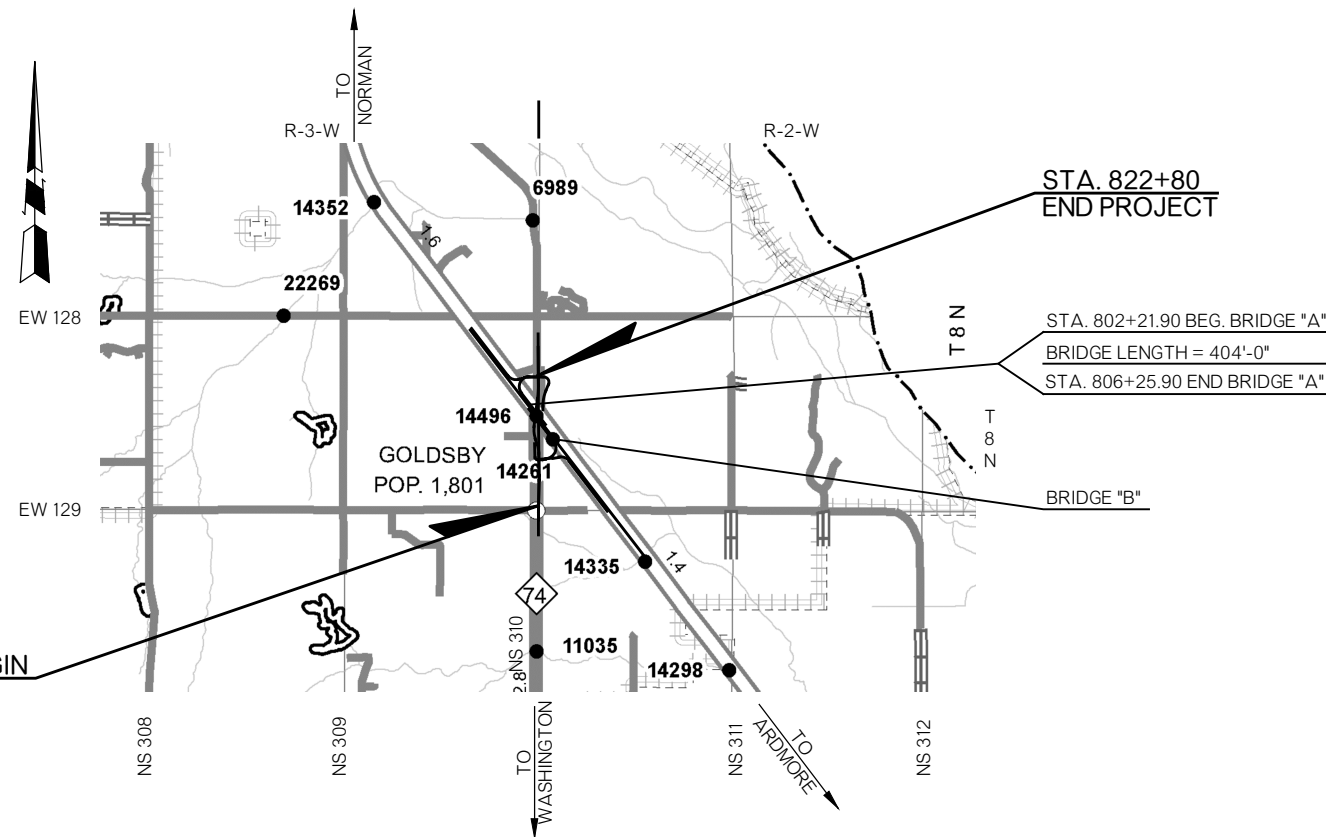
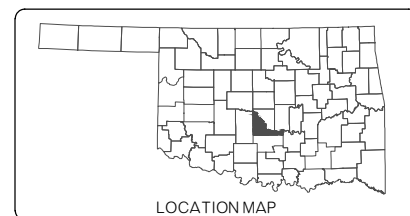
ADT 2021	=	8,400
ADT 2050	=	13,270
DHV (2-WAY)	=	1,327
K (DHV/ADT)	=	10%
D	=	65%
T (% DHV)	=	9%
T (% ADT)	=	15%
T3 (% ADT)	=	3%
V	=	45 MPH
20YR FLEX. ESALS	=	3.8 M

SCALES

PLAN	1" =	50'
PROFILE HOR.	1" =	50'
VER.	1" =	5'
LAYOUT MAP	1" =	2,640'

CONVENTIONAL SYMBOLS

	PROPOSED ROAD
	RAILROADS
	RANGE & TOWNSHIP SECTION LINES
	QUARTER SECTION LINES
	FENCES
	GROUND LINE
	EXISTING ROADS
	BASE LINE
	GRADE LINES
	TELEPHONE & TELEGRAPH
	POWER LINES
	BUILDINGS
	OIL WELLS
	DRAINAGE STRUCTURES - IN PLACE
	DRAINAGE STRUCTURES - NEW
	RIGHT-OF-WAY LINES - EXISTING
	RIGHT-OF-WAY LINES - NEW
	CONTROLLED ACCESS
	RIGHT-OF-WAY FENCE



PROJECT LENGTH BASED ON SH 74 CRL STATIONING.

NOTE:

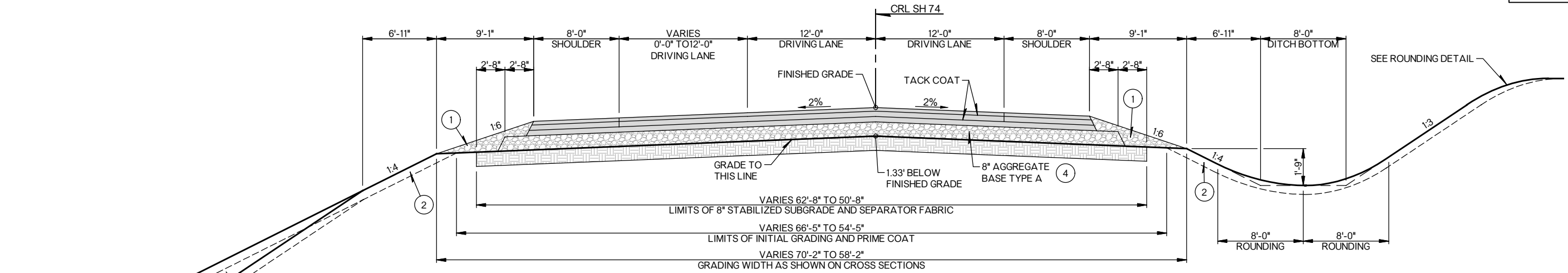
ROADWAY LENGTH	4,190.65 FT.	0.793 MI.
BRIDGE LENGTH	404.00 FT.	0.076 MI.
PROJECT LENGTH		0.869 MI.

EQUATIONS: NONE
EXCEPTION: NONE

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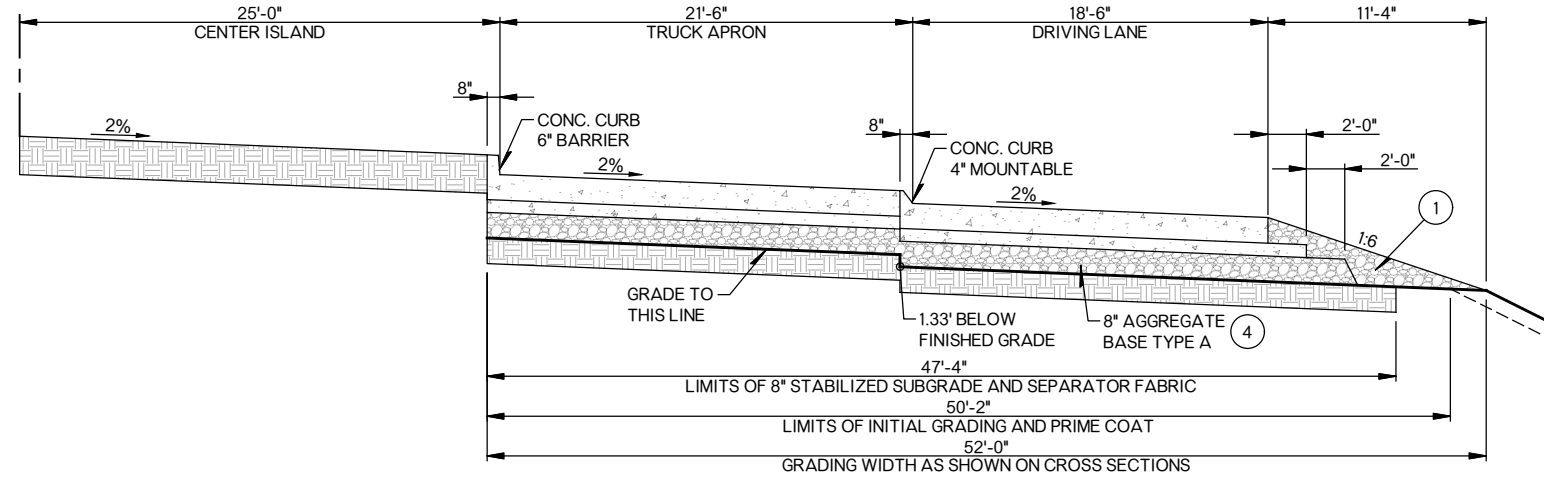


OKLAHOMA DEPARTMENT OF TRANSPORTATION		DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
DATE APPROVED		DATE APPROVED	
BY		BY	
CHIEF ENGINEER		DIVISION ADMINISTRATOR	
SWO 4892(1)	F.A. PROJECT NO. J2-9571(004)		
COUNTY McClain COUNTY	HIGHWAY SH 74	SHEET NO. 0001	



TYPICAL SECTION NO. 1
SH 74

PAVEMENT STRUCTURE	PAVEMENT REQUIREMENTS	
	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

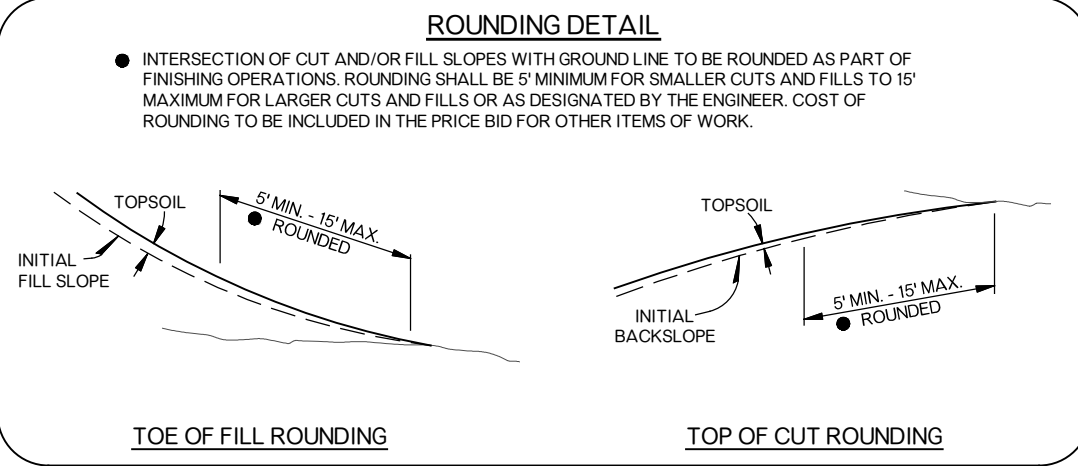


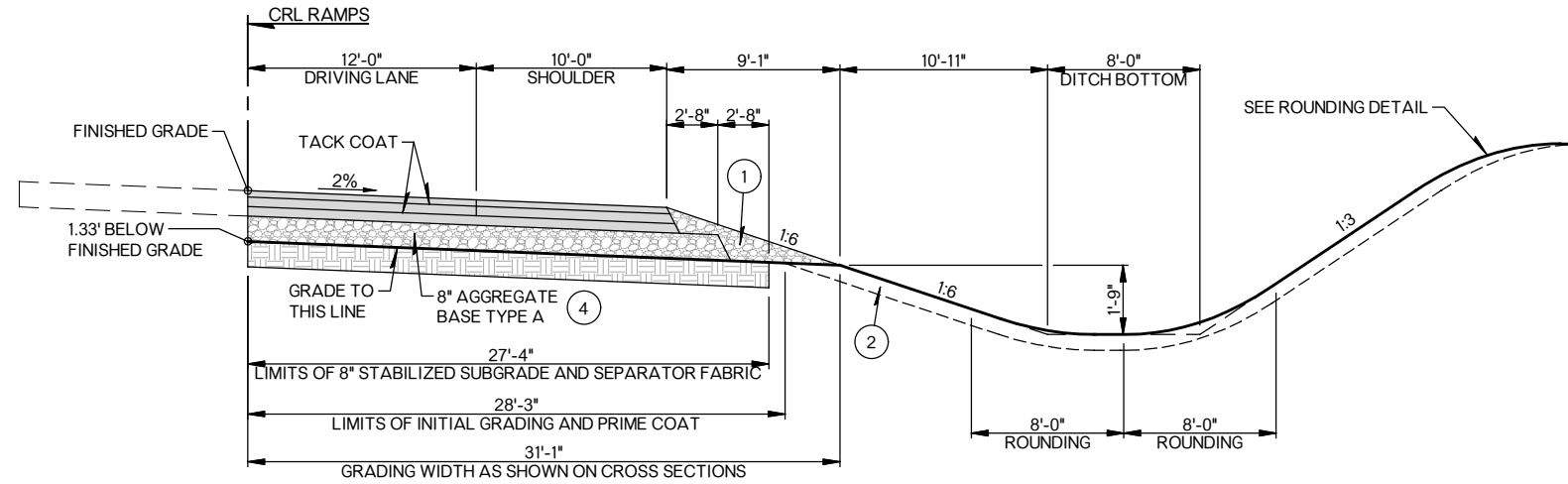
TYPICAL SECTION NO. 2
SH 74 ROUNDABOUT

PAVEMENT STRUCTURE	PAVEMENT REQUIREMENTS	
	TRUCK APRON	DRIVING LANES
SURFACE COURSE	8" CONT. REINF. P.C.C. PAVEMENT	8" CONT. REINF. P.C.C. PAVEMENT
BASE COURSE	4" CEMENTITIOUS TREATED BASE	4" CEMENTITIOUS TREATED BASE

- 1 BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN TBSC TYPE E.
- 2 TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATIONS SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

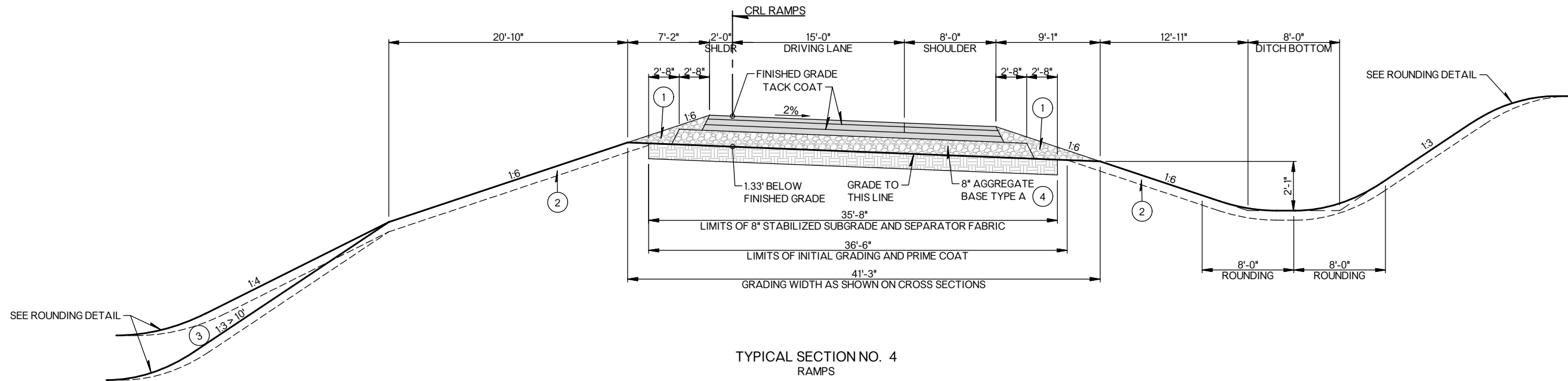
THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.
- 3 DISTANCE MEASURED VERTICALLY FROM EDGE OF FINISHED GRADE SHOULDER.
- 4 PRIME COAT ON TOP OF AGGREGATE BASE.





TYPICAL SECTION NO. 3
RAMPS

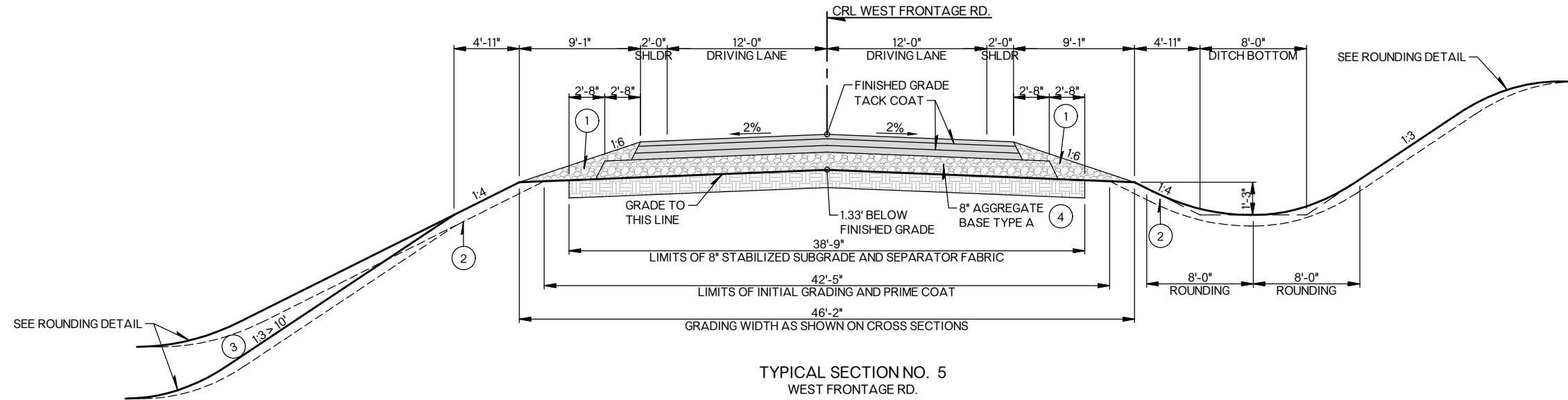
PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



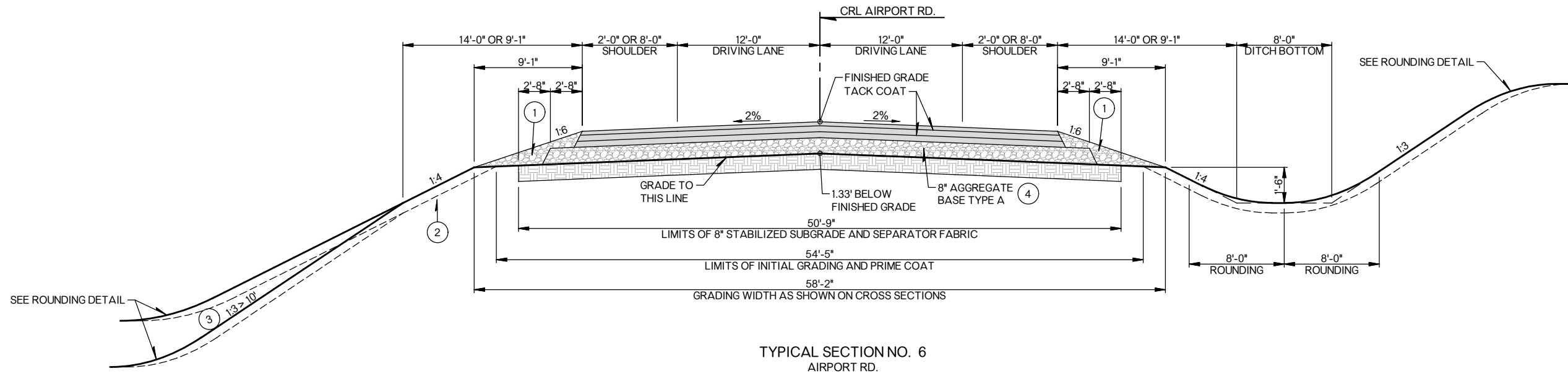
TYPICAL SECTION NO. 4
RAMPS

PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

TYPICAL SECTION



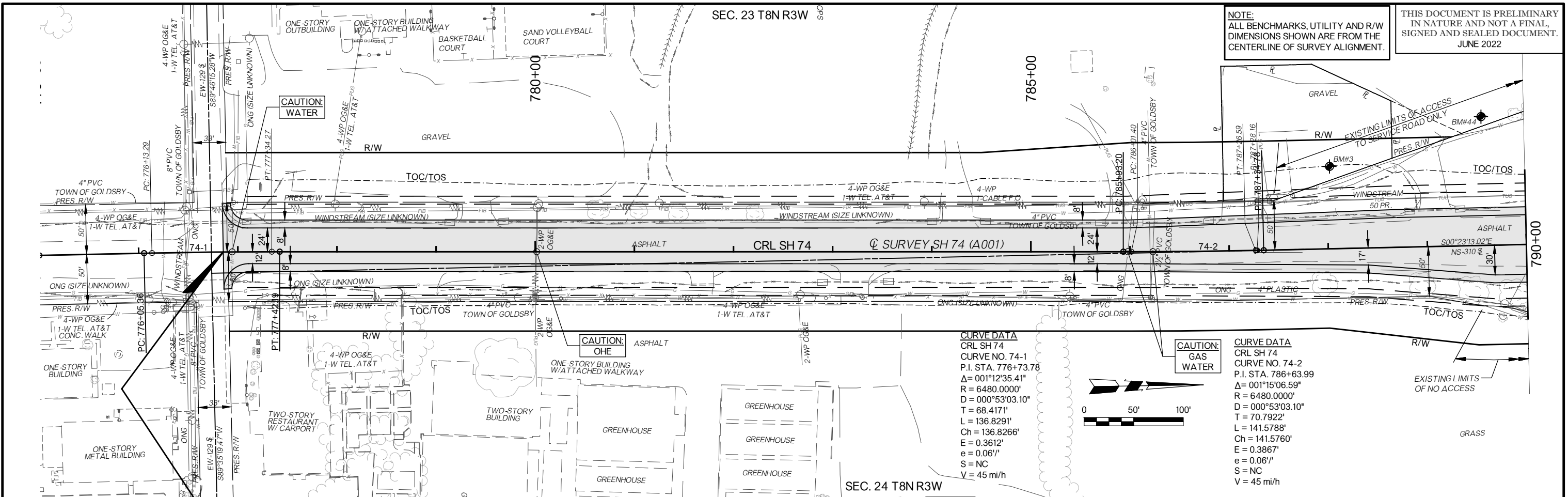
PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

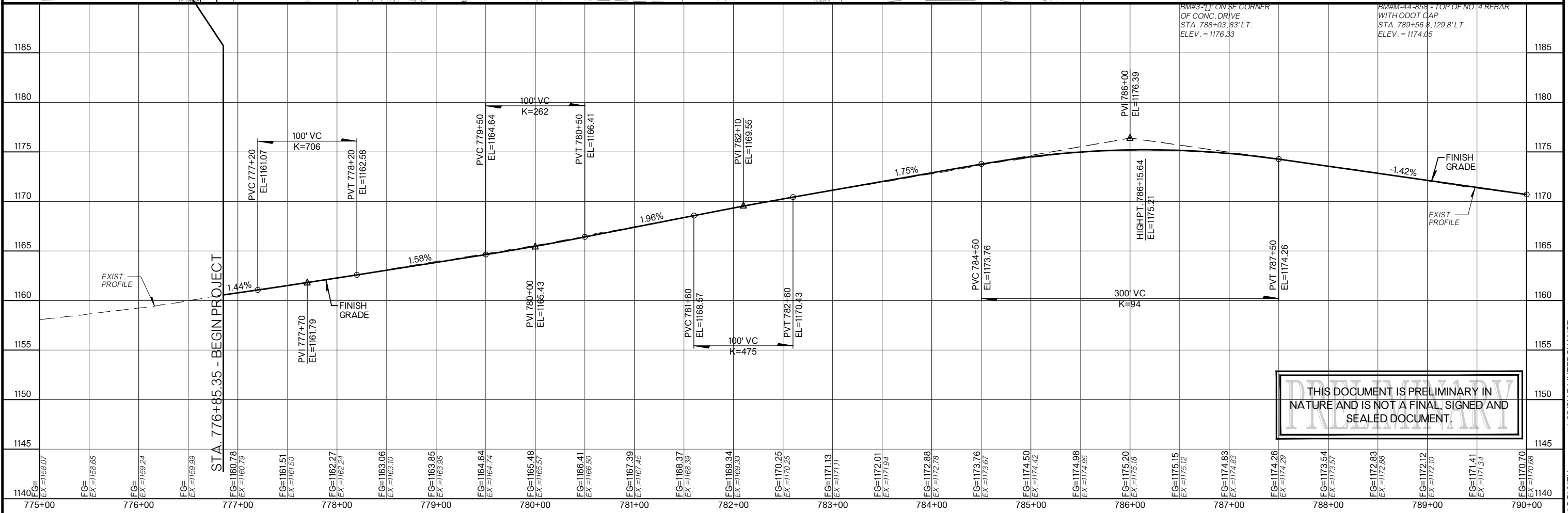
TYPICAL SECTION

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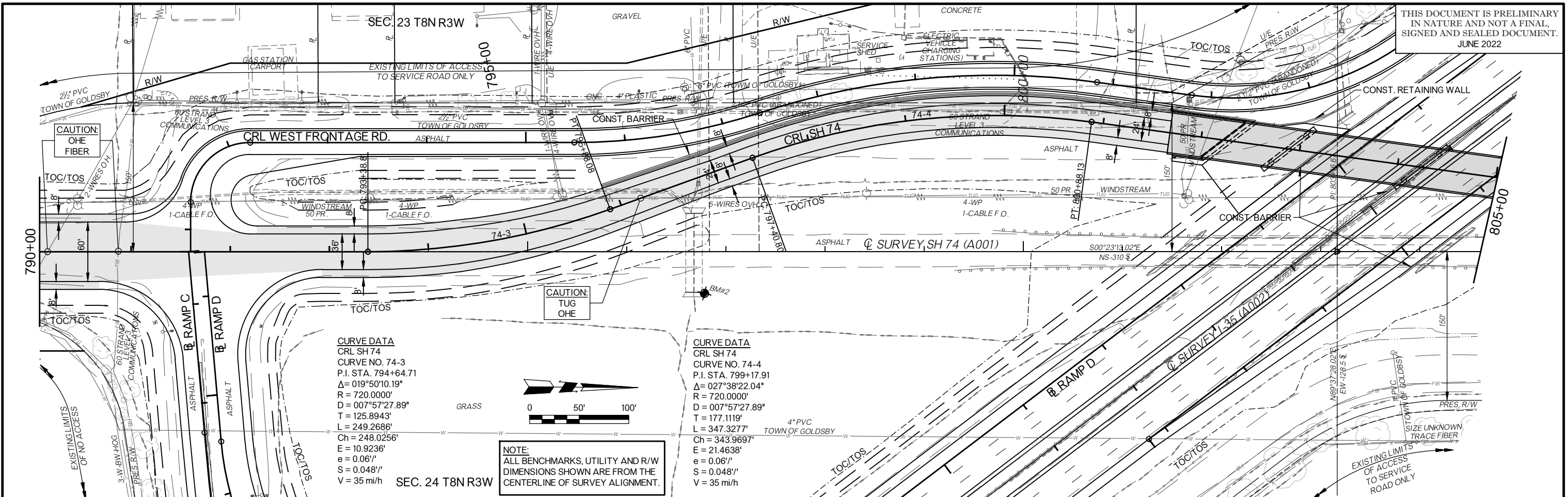


CURVE DATA
 CRL SH 74
 CURVE NO. 74-1
 P.I. STA. 776+73.78
 $\Delta = 001^{\circ}12'35.41''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 68.4171'$
 $L = 136.8291'$
 $Ch = 136.8266'$
 $E = 0.3612'$
 $e = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$

CURVE DATA
 CRL SH 74
 CURVE NO. 74-2
 P.I. STA. 786+63.99
 $\Delta = 001^{\circ}15'06.59''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 70.7922'$
 $L = 141.5788'$
 $Ch = 141.5760'$
 $E = 0.3867'$
 $e = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$



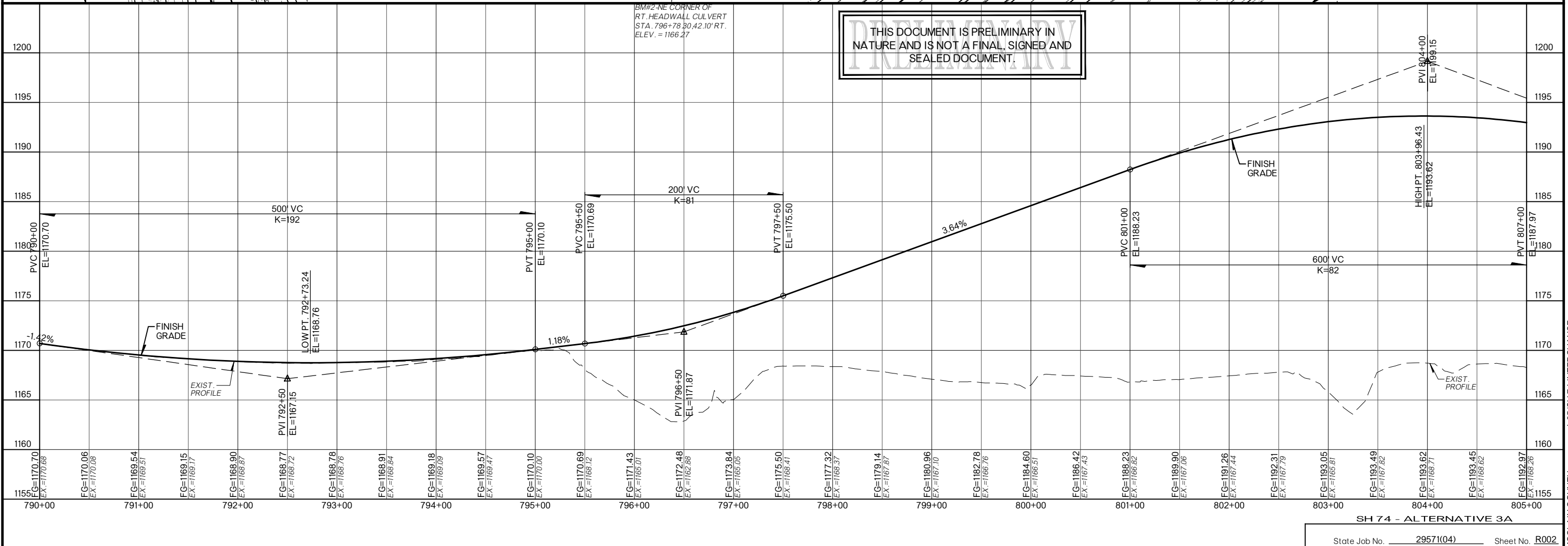
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CURVE DATA
 CRL SH 74
 CURVE NO. 74-3
 P.I. STA. 794+64.71
 $\Delta = 019^\circ 50' 10.19''$
 $R = 720.0000'$
 $D = 007^\circ 57' 27.89''$
 $T = 125.8943'$
 $L = 249.2686'$
 $Ch = 248.0256'$
 $E = 10.9236'$
 $e = 0.06''$
 $S = 0.048''$
 $V = 35 \text{ mi/h}$

CURVE DATA
 CRL SH 74
 CURVE NO. 74-4
 P.I. STA. 799+17.91
 $\Delta = 027^\circ 38' 22.04''$
 $R = 720.0000'$
 $D = 007^\circ 57' 27.89''$
 $T = 177.1119'$
 $L = 347.3277'$
 $Ch = 343.9697'$
 $E = 21.4638'$
 $e = 0.06''$
 $S = 0.048''$
 $V = 35 \text{ mi/h}$

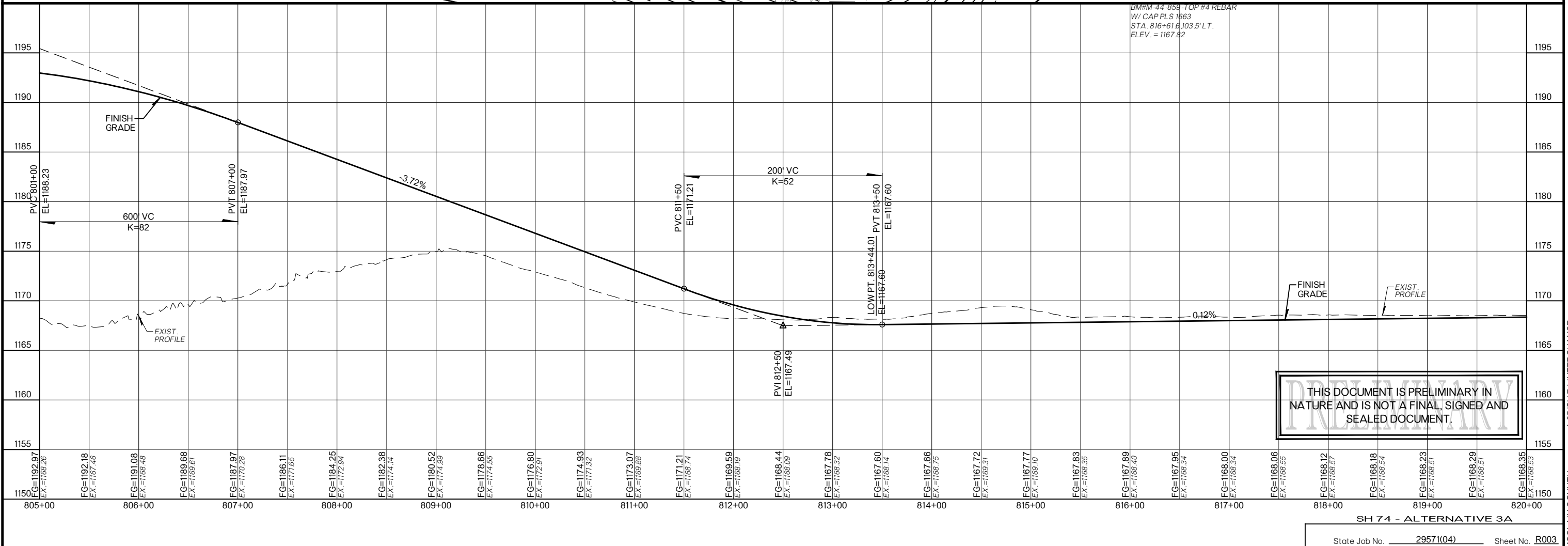
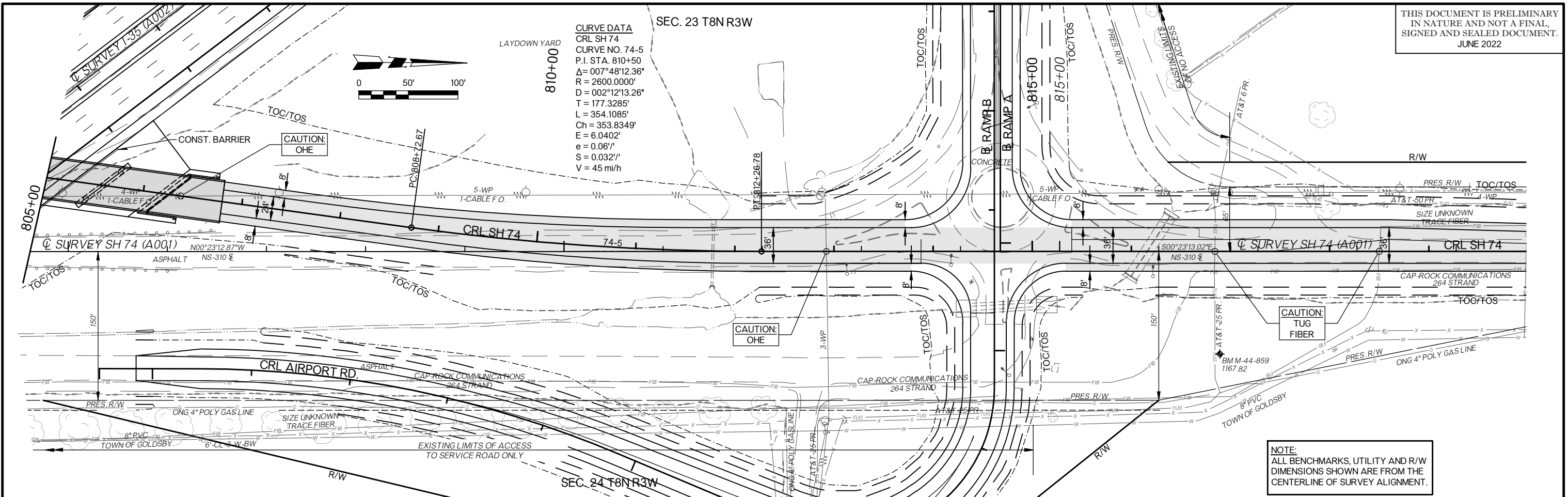
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790+00	791+00	792+00	793+00	794+00	795+00	796+00	797+00	798+00	799+00	800+00	801+00	802+00	803+00	804+00	805+00	806+00	807+00	808+00	809+00	810+00	811+00	812+00	813+00	814+00	815+00	816+00	817+00	818+00	819+00	820+00	

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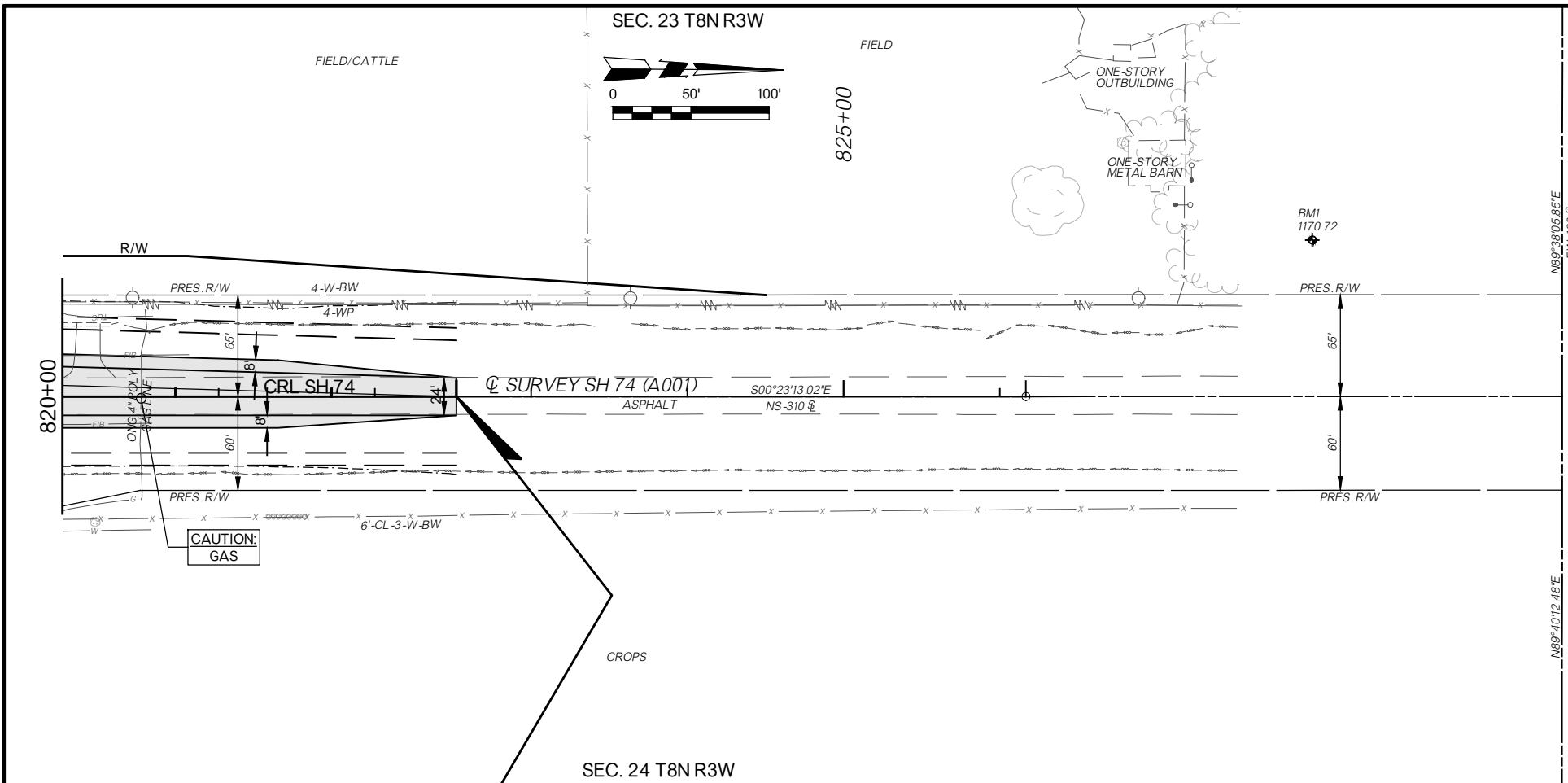
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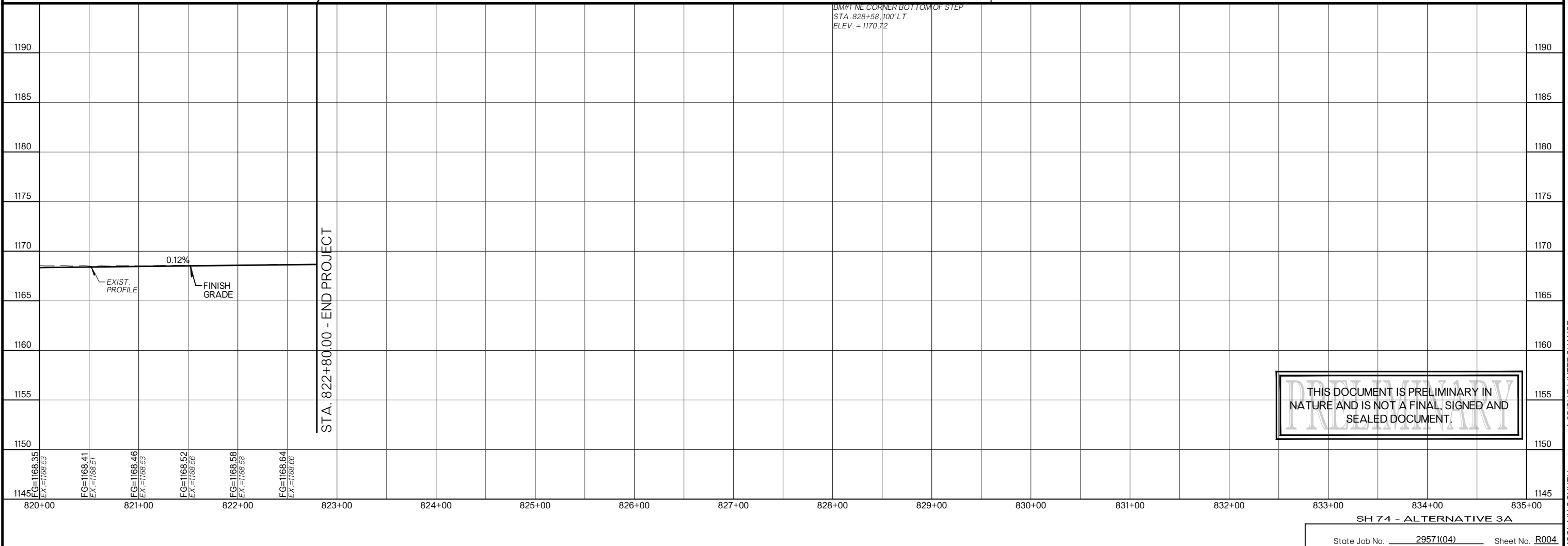
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MCCLELLAN COUNTY I-36/SH74 INTERCHANGE

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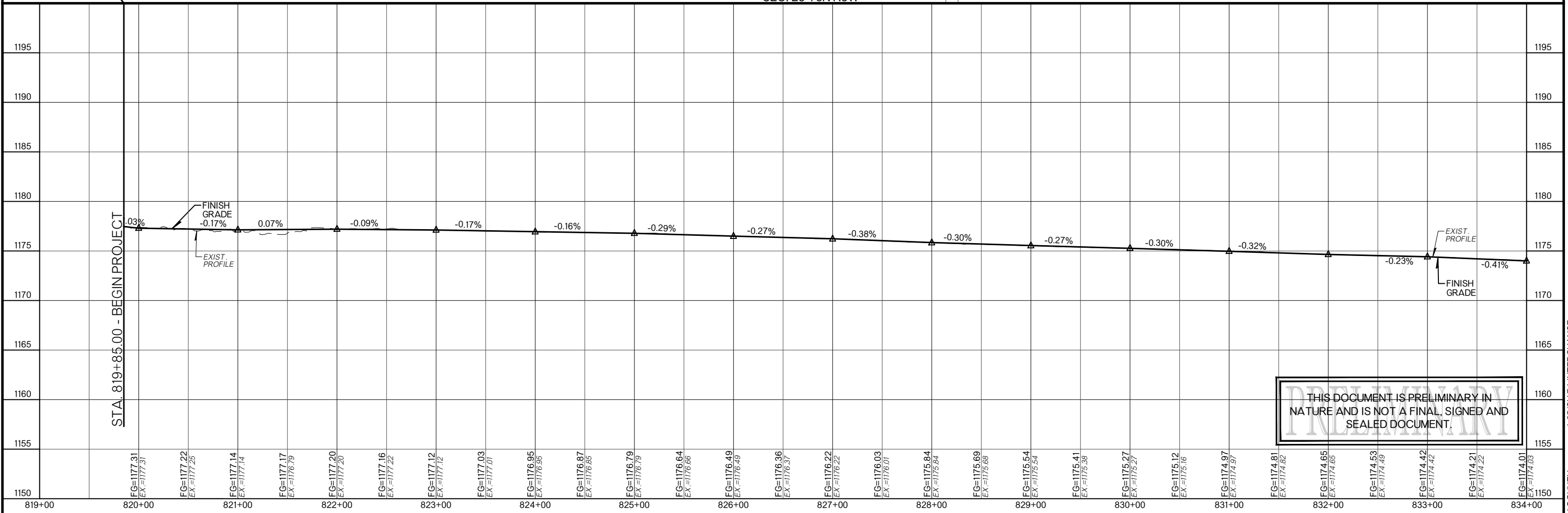
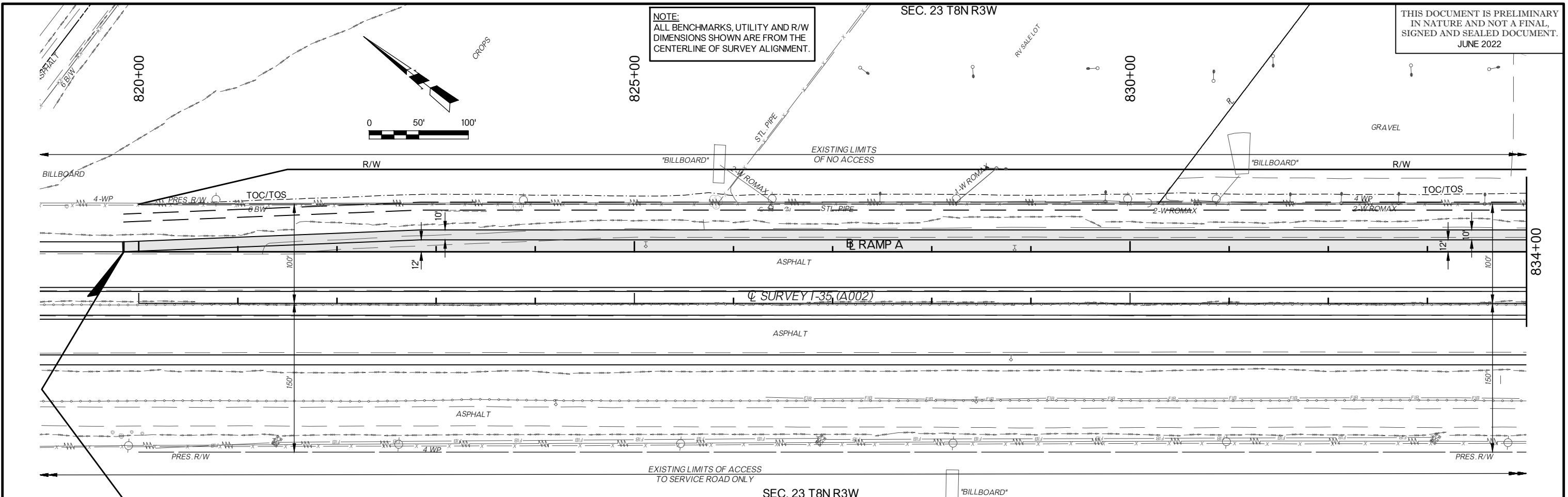
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MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

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SEC. 23 T8N R3W

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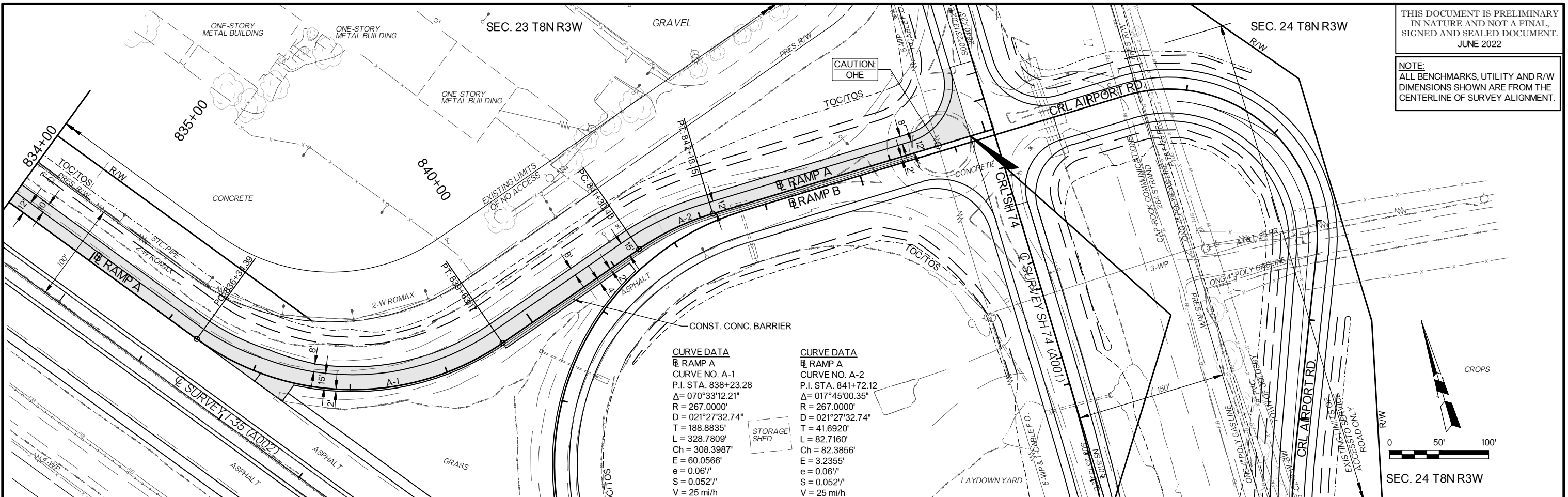


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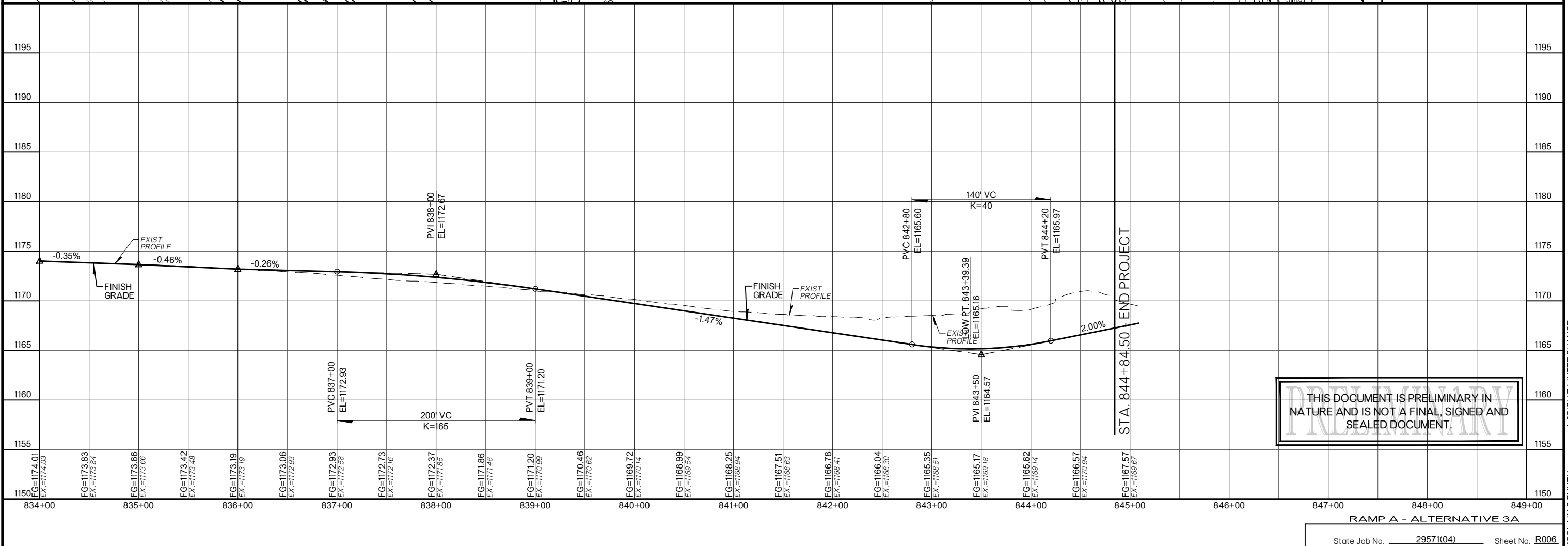
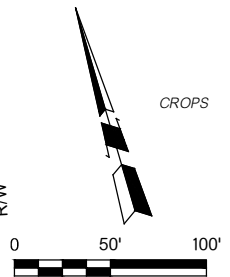
MOCLAIN COUNTY I-36/SH 74 INTERCHANGE

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CURVE DATA		CURVE DATA	
RAMP A		RAMP A	
CURVE NO. A-1		CURVE NO. A-2	
P.I. STA. 838+23.28	$\Delta = 070^{\circ}33'12.21''$	P.I. STA. 841+72.12	$\Delta = 017^{\circ}45'00.35''$
R = 267.0000'	D = $021^{\circ}27'32.74''$	R = 267.0000'	D = $021^{\circ}27'32.74''$
T = 188.8835'	L = 328.7809'	T = 41.6920'	L = 82.7160'
Ch = 308.3987'	E = 60.0566'	Ch = 82.3856'	E = 3.2355'
e = 0.06''	S = 0.052''	e = 0.06''	S = 0.052''
V = 25 mi/h		V = 25 mi/h	

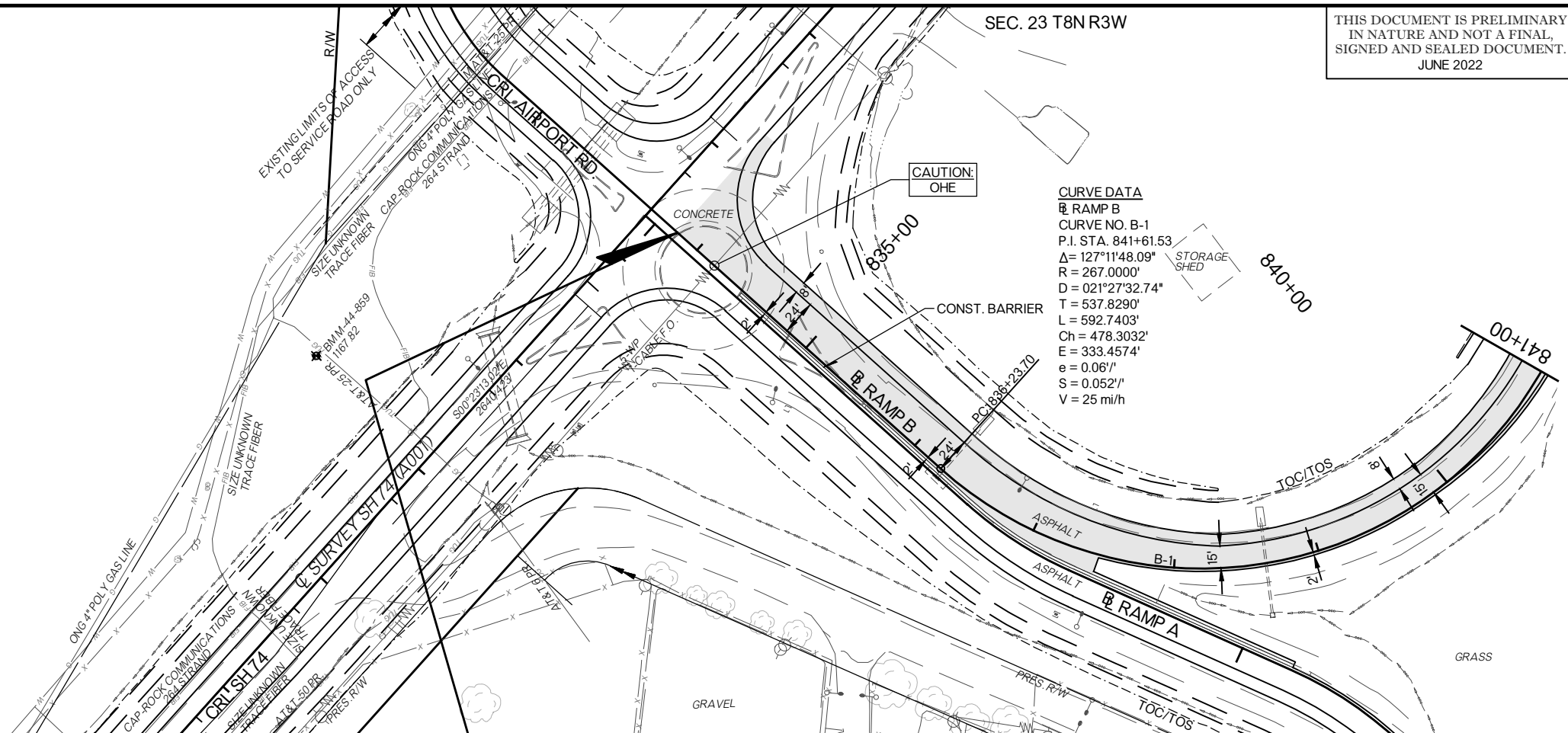


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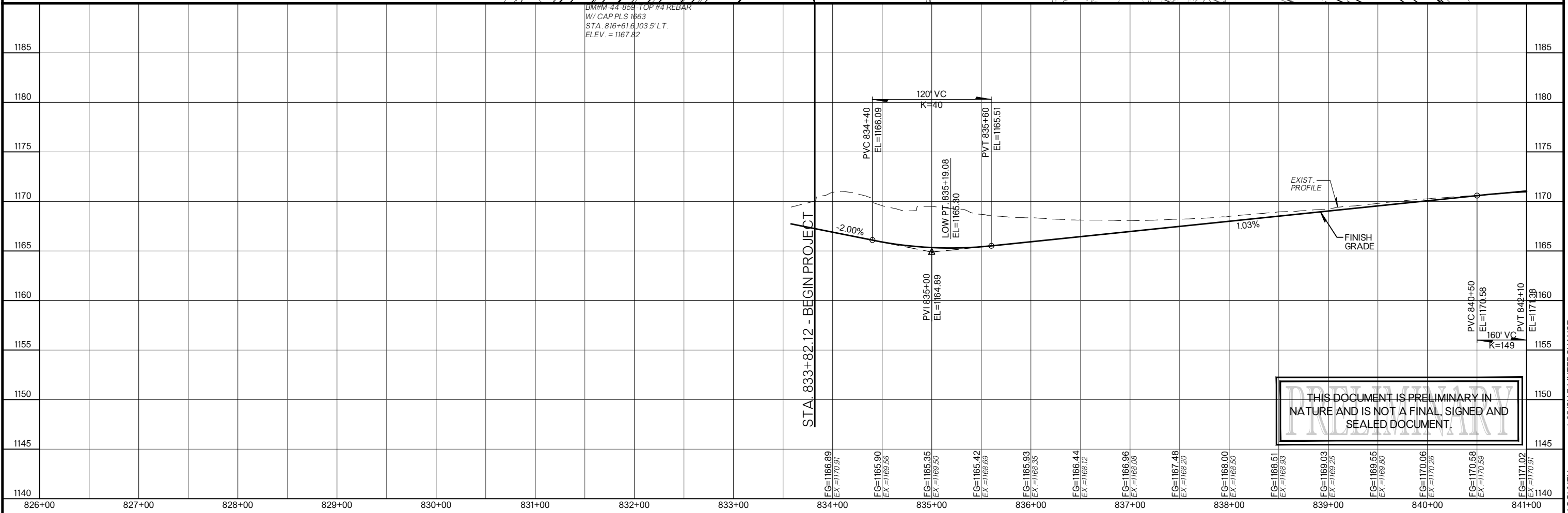
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JUNE 2022

SEC. 23 T8N R3W



CURVE DATA
 RAMP B
 CURVE NO. B-1
 P.I. STA. 841+61.53
 $\Delta = 127^\circ 11' 48.09''$
 $R = 267.0000'$
 $D = 021^\circ 27' 32.74''$
 $T = 537.8290'$
 $L = 592.7403'$
 $Ch = 478.3032'$
 $E = 333.4574'$
 $e = 0.061'$
 $S = 0.0521'$
 $V = 25 \text{ mi/h}$

BM#M-44-859-TOP #4 REBAR
 W/ CAP PLS 1663
 STA. 816+61.6103.5' LT.
 ELEV. = 1167.82



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RAMP B - ALTERNATIVE 3A

State Job No. 29571(04) Sheet No. R007

MOCLAIN COUNTY I-36/SH74 INTERCHANGE

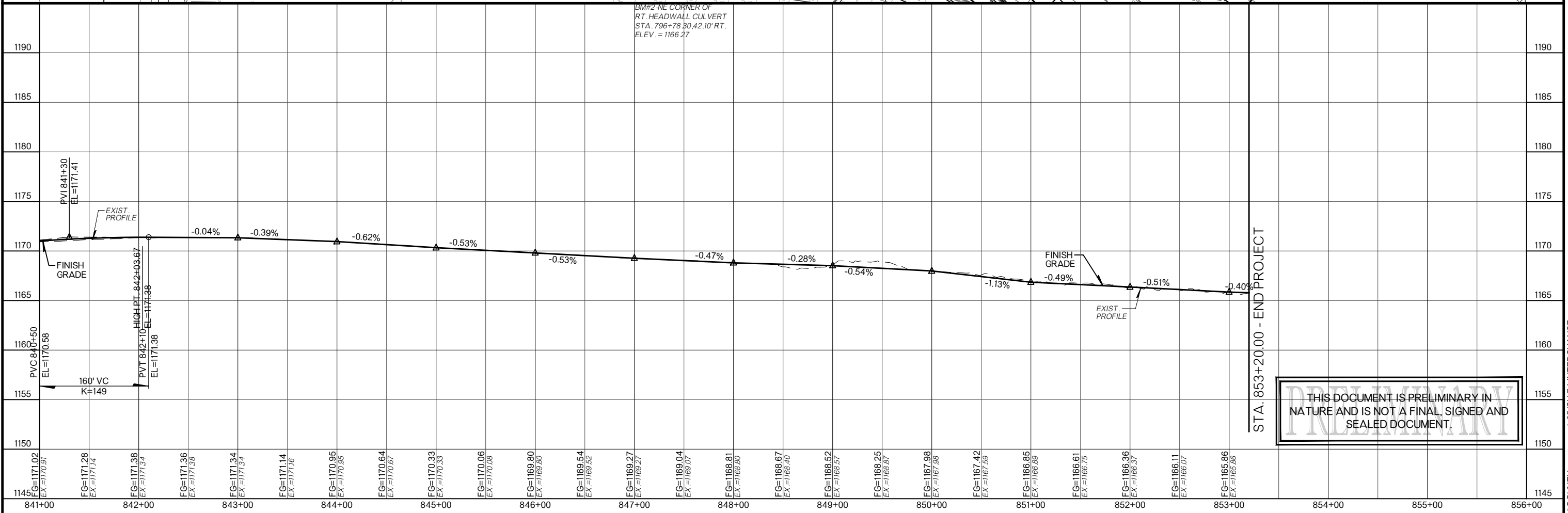
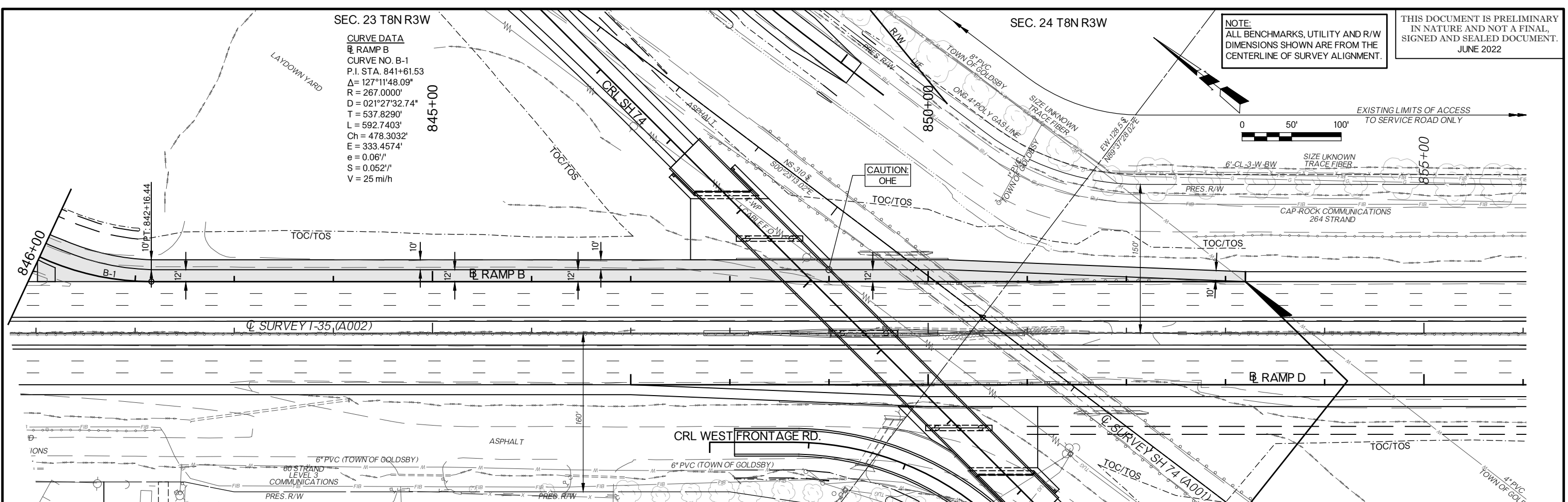
SEC. 23 T8N R3W

SEC. 24 T8N R3W

CURVE DATA
 RAMP B
 CURVE NO. B-1
 P.I. STA. 841+61.53
 $\Delta = 127^\circ 11' 48.09''$
 $R = 267.0000'$
 $D = 021^\circ 27' 32.74''$
 $T = 537.8290'$
 $L = 592.7403'$
 $Ch = 478.3032'$
 $E = 333.4574'$
 $e = 0.061'$
 $S = 0.0521'$
 $V = 25 \text{ mi/h}$

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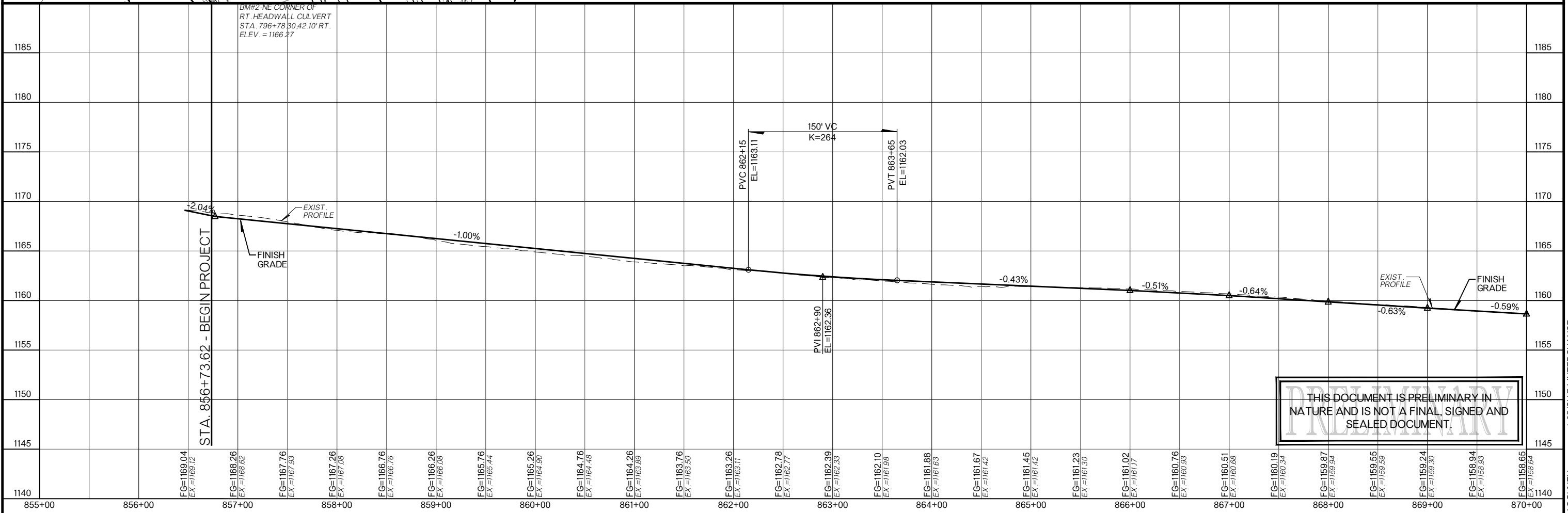
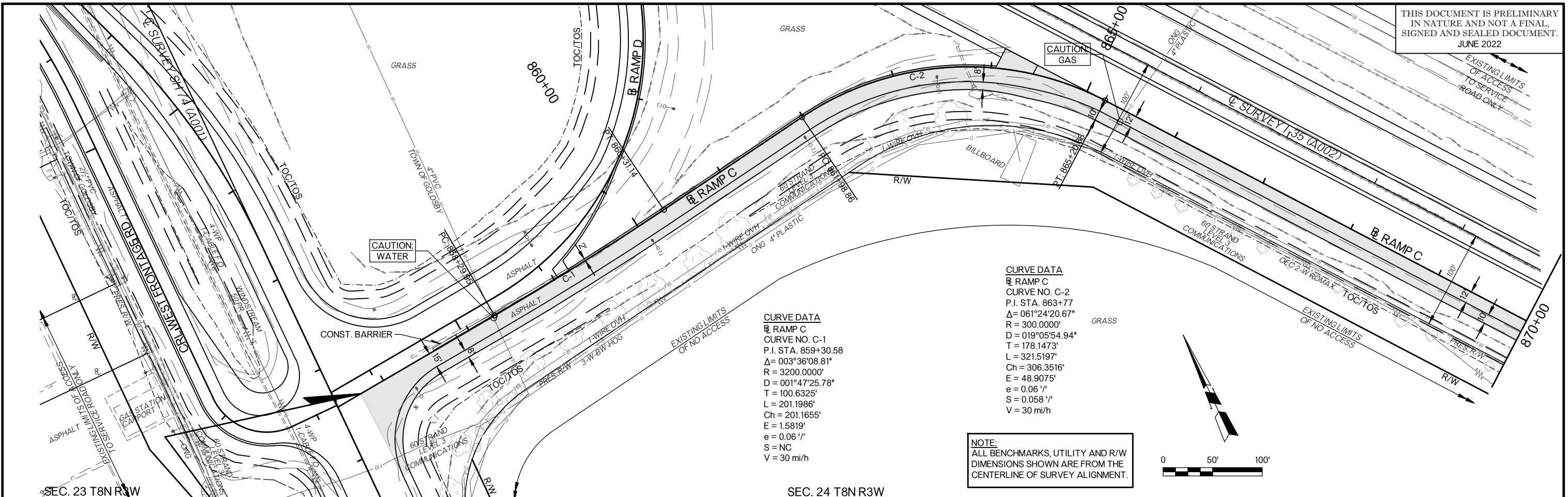


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RAMP B - ALTERNATIVE 3A

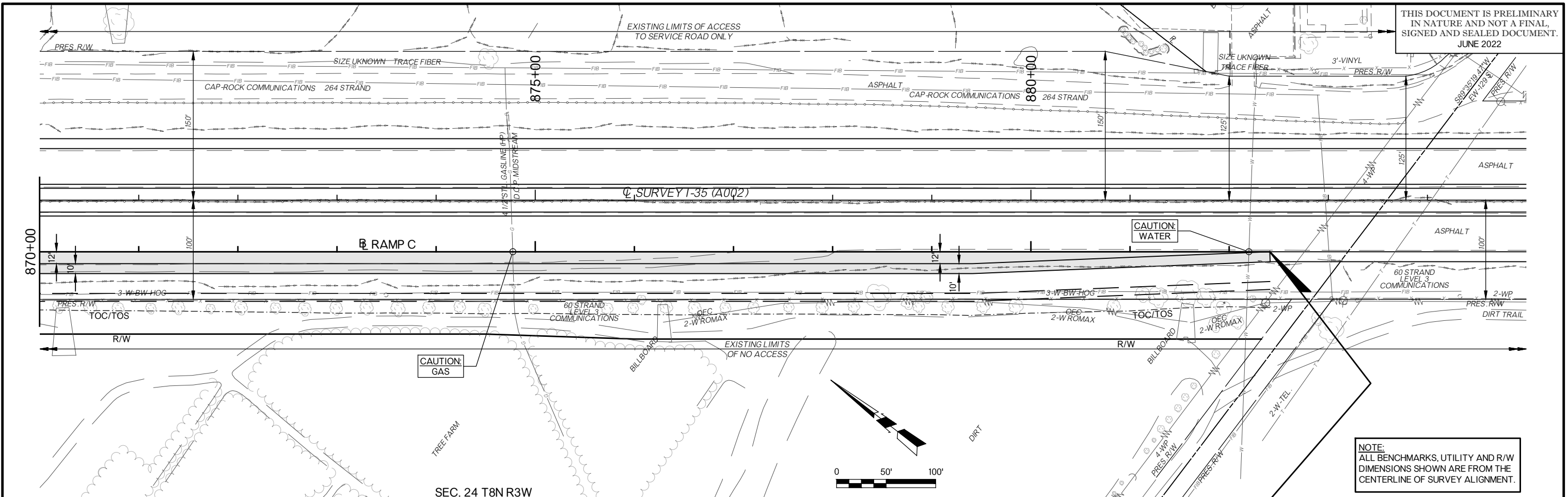
State Job No. 29571(04) Sheet No. R008

MOCLAIN COUNTY I-36/SH 74 INTERCHANGE

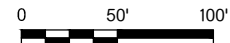


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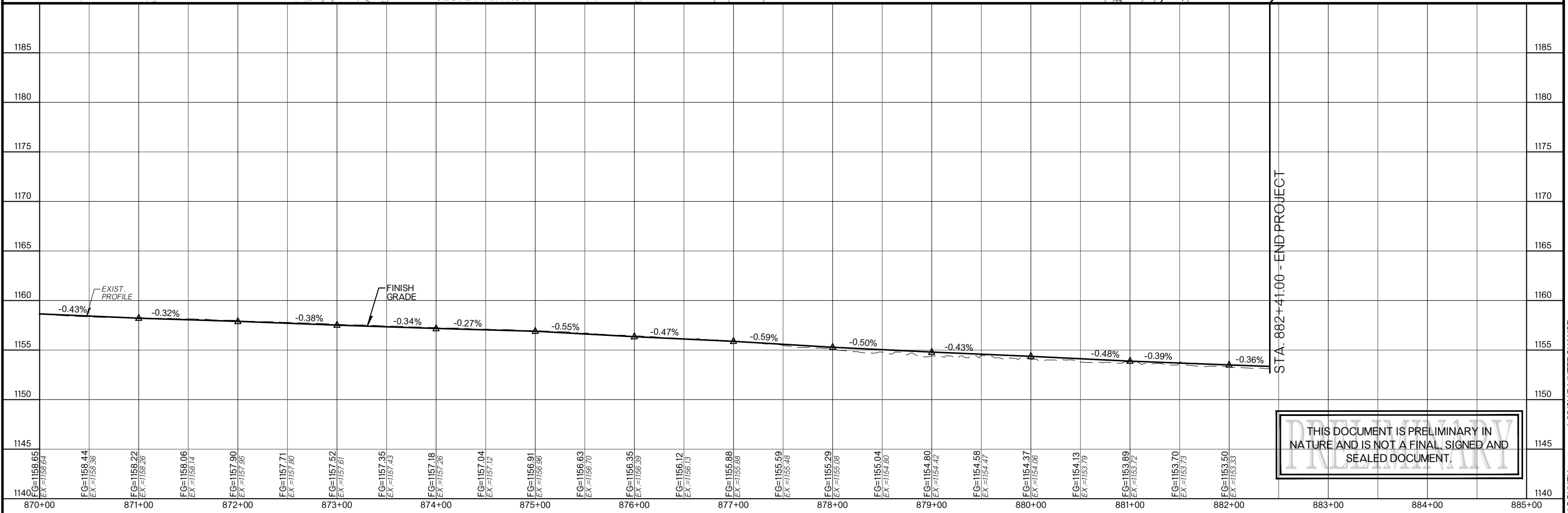
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SEC. 24 T8N R3W



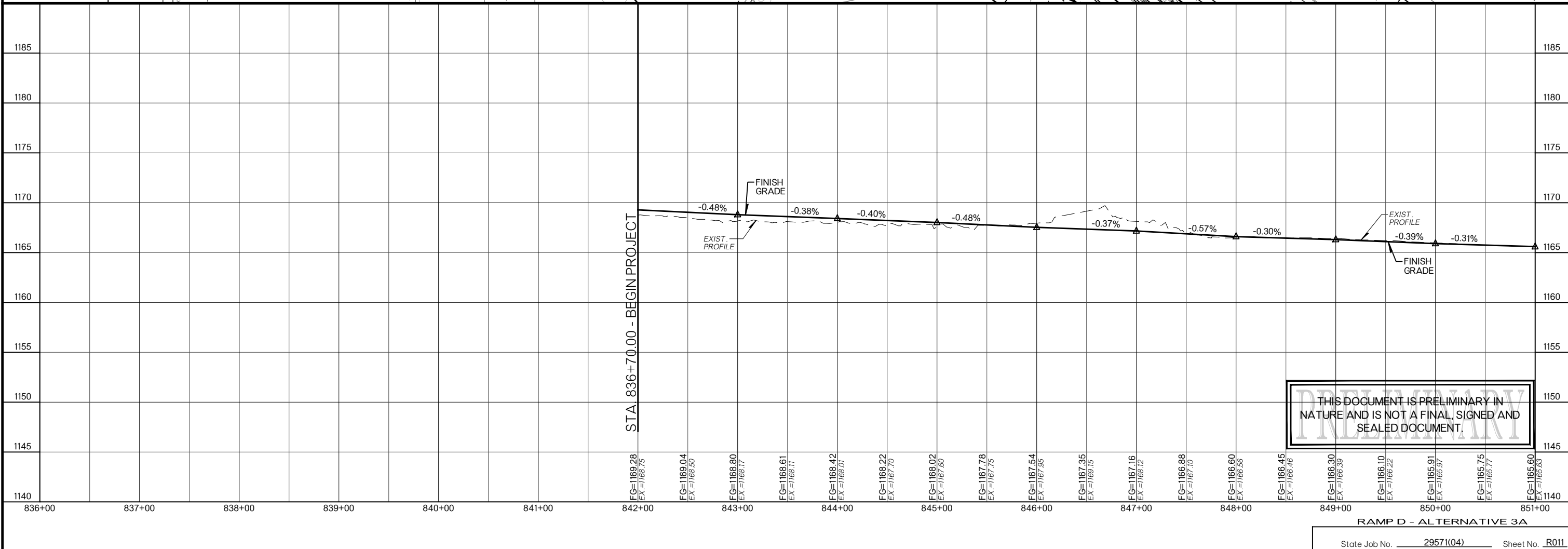
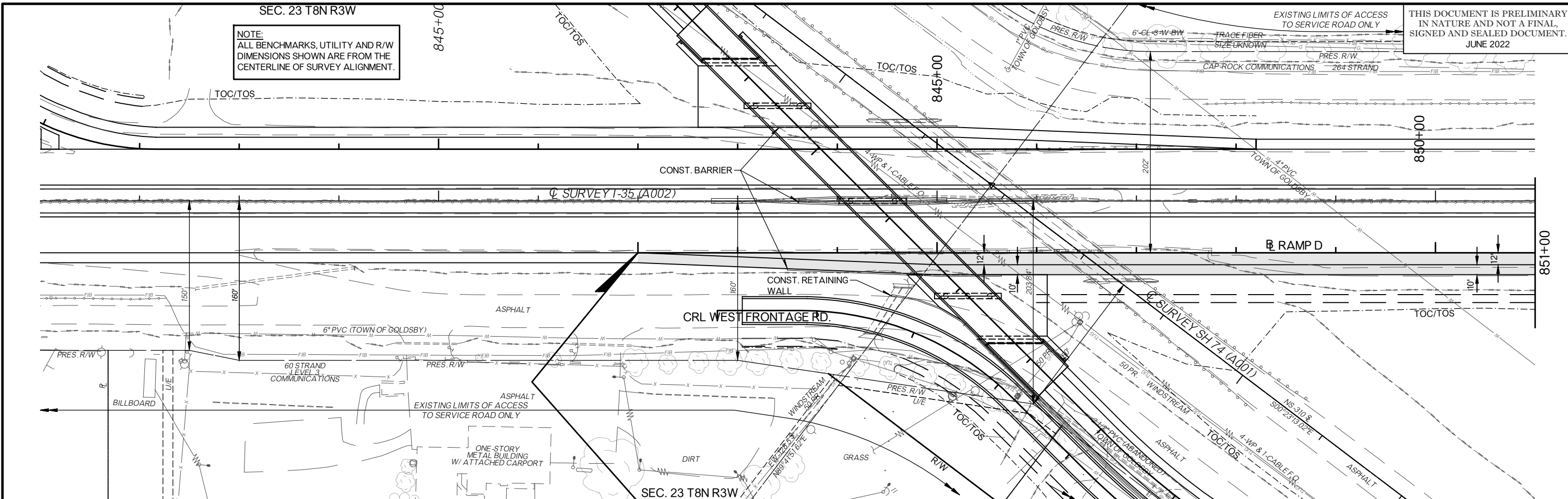
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MCCLELLAN COUNTY I-36/SH74 INTERCHANGE

SEC. 23 T8N R3W

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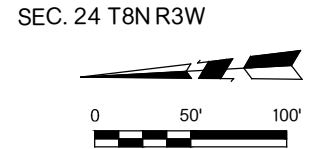
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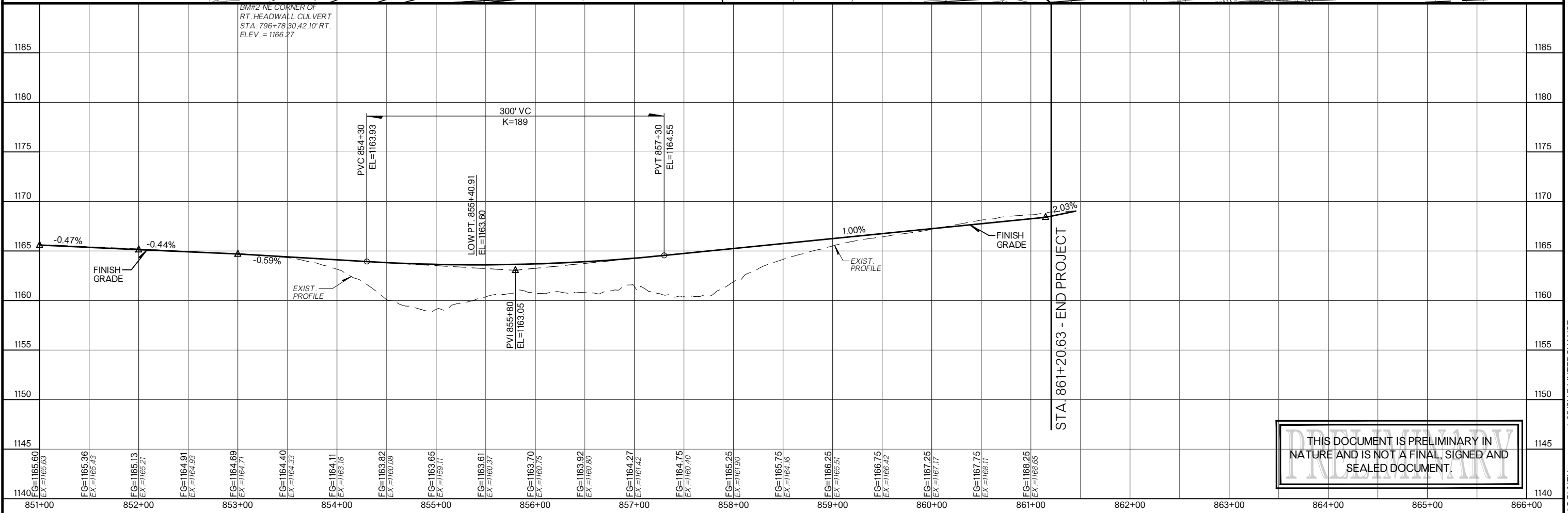
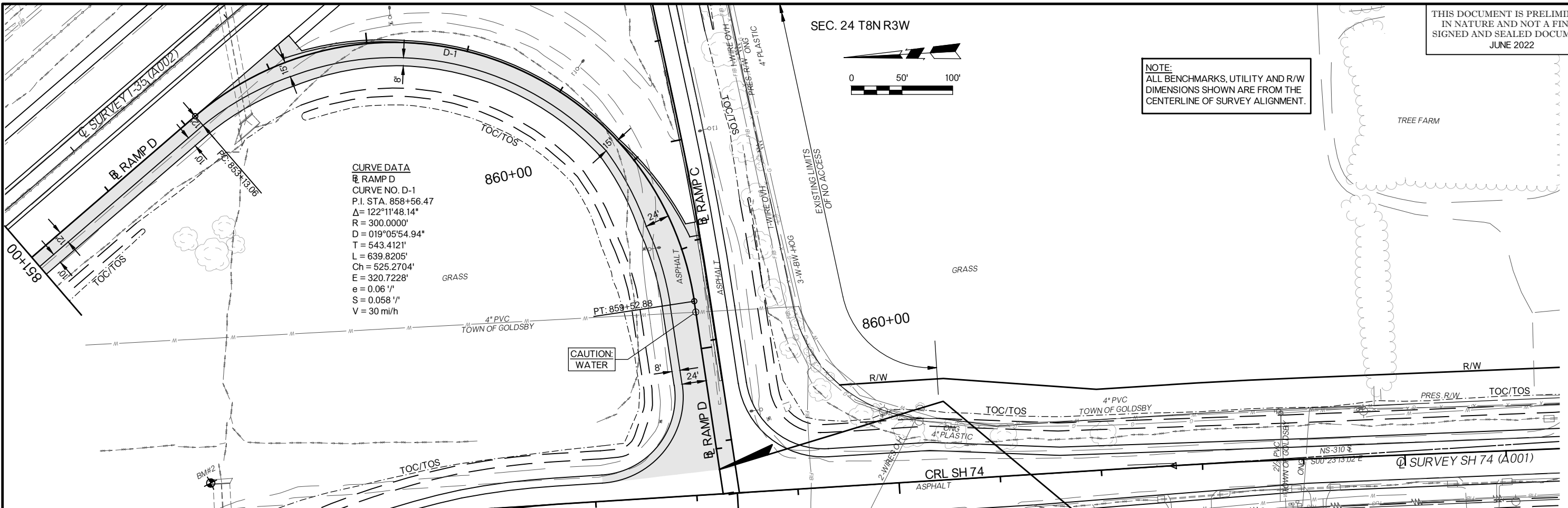
MOCLAIN COUNTY I-35/SH 74 INTERCHANGE

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CURVE DATA
 RAMP D
 CURVE NO. D-1
 P.I. STA. 858+56.47
 $\Delta = 122^{\circ}11'48.14"$
 $R = 300.0000'$
 $D = 019^{\circ}05'54.94"$
 $T = 543.4121'$
 $L = 639.8205'$
 $Ch = 525.2704'$
 $E = 320.7228'$
 $e = 0.061'$
 $S = 0.0581'$
 $V = 30 \text{ mi/h}$

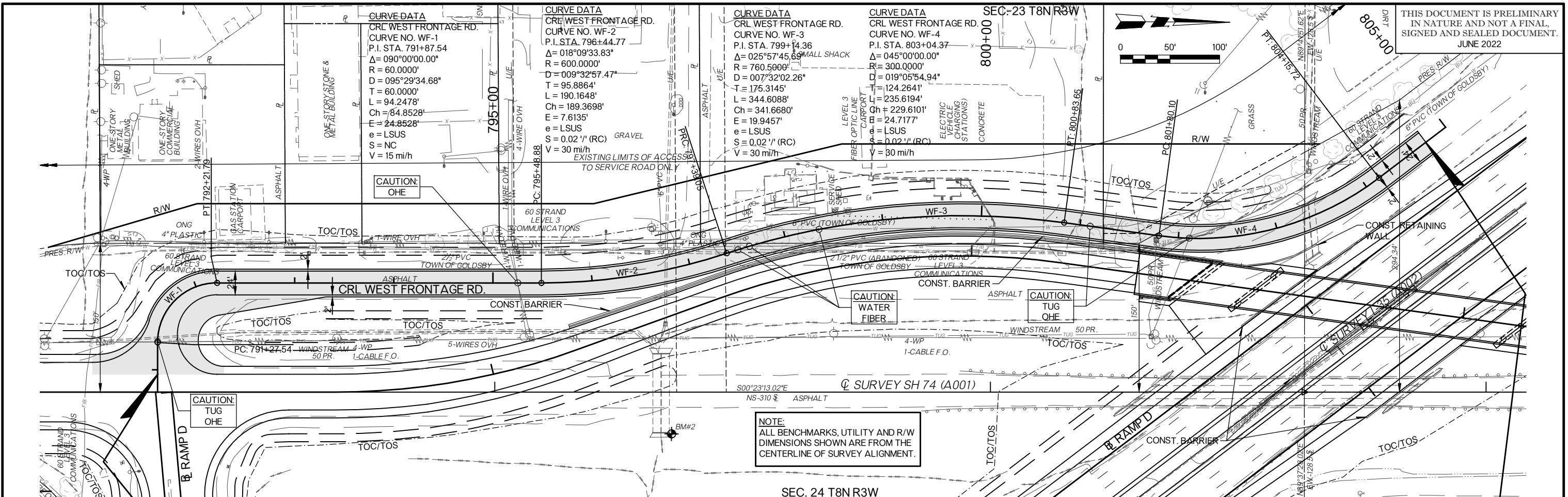
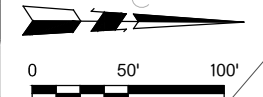


851+00	852+00	853+00	854+00	855+00	856+00	857+00	858+00	859+00	860+00	861+00	862+00	863+00	864+00	865+00	866+00					
FG=1165.60 EX=1165.63	FG=1165.96 EX=1165.43	FG=1165.13 EX=1165.21	FG=1164.91 EX=1164.93	FG=1164.69 EX=1164.71	FG=1164.40 EX=1164.33	FG=1164.11 EX=1163.76	FG=1163.82 EX=1160.08	FG=1163.65 EX=1159.11	FG=1163.61 EX=1160.37	FG=1163.70 EX=1160.75	FG=1163.92 EX=1160.80	FG=1164.27 EX=1161.42	FG=1164.75 EX=1160.40	FG=1165.25 EX=1161.90	FG=1165.75 EX=1164.16	FG=1166.25 EX=1165.51	FG=1166.75 EX=1166.42	FG=1167.25 EX=1167.17	FG=1167.75 EX=1168.11	FG=1168.25 EX=1168.65

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MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

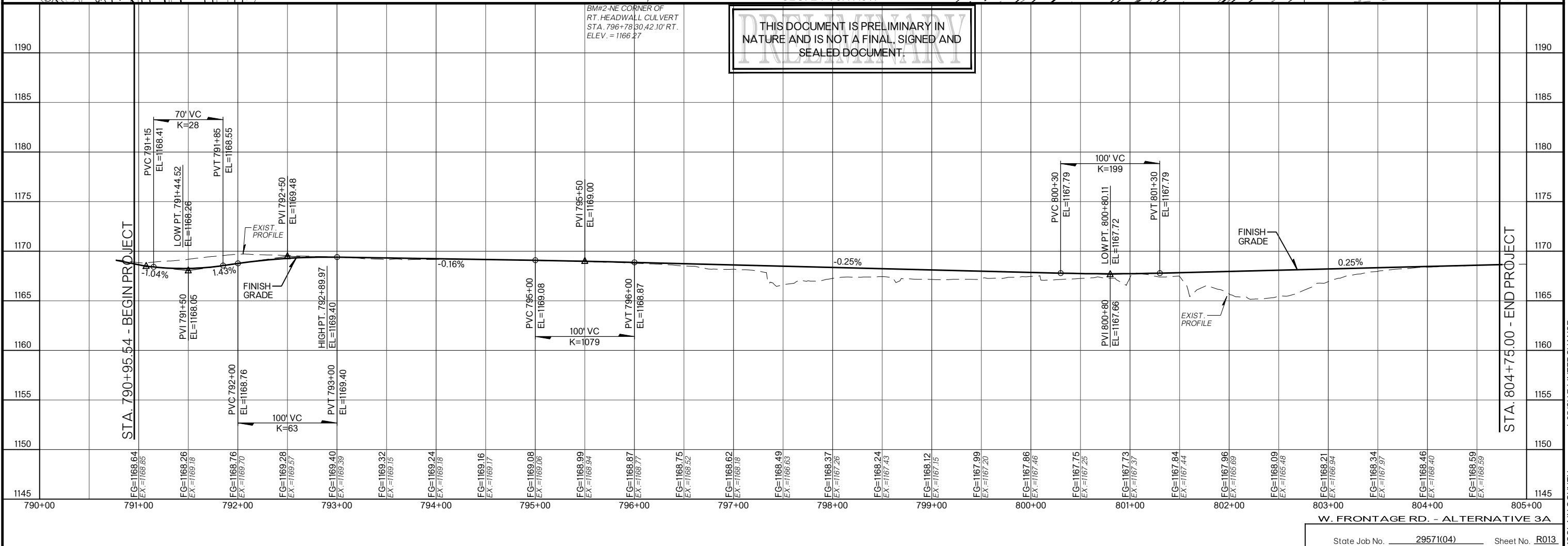
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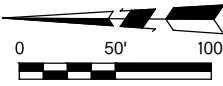
SEC. 24 T8N R3W

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STA. 790+95.54 - BEGIN PROJECT

STA. 804+75.00 - END PROJECT



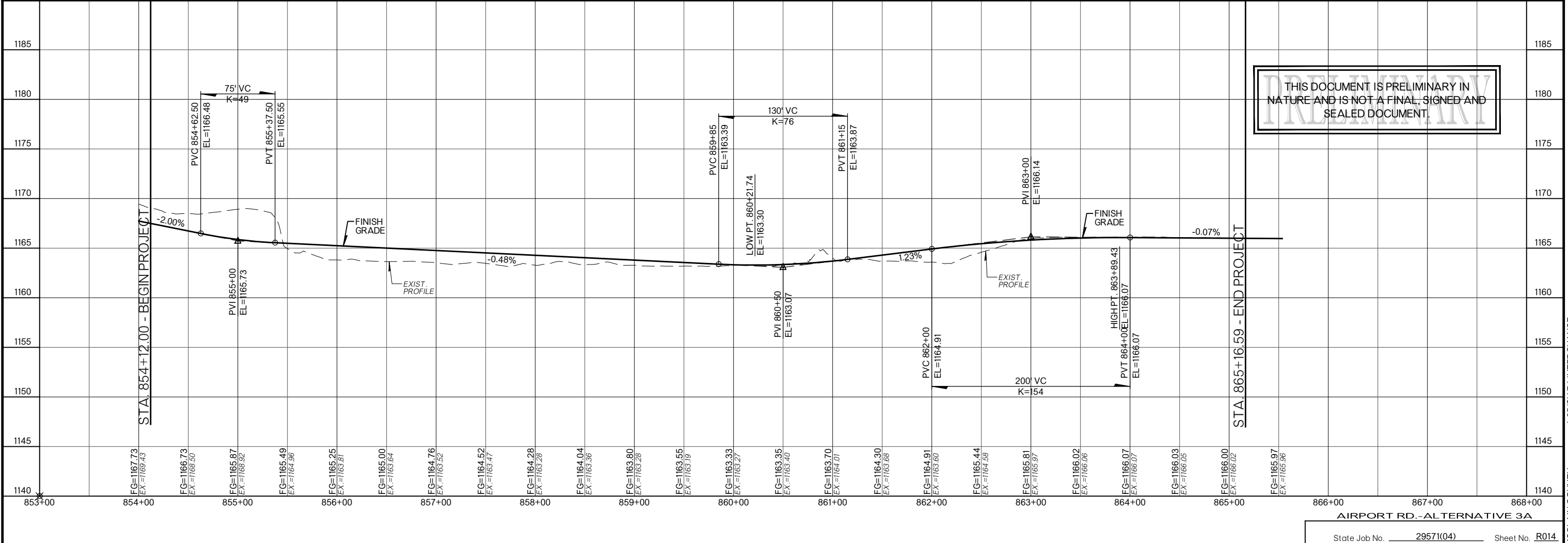
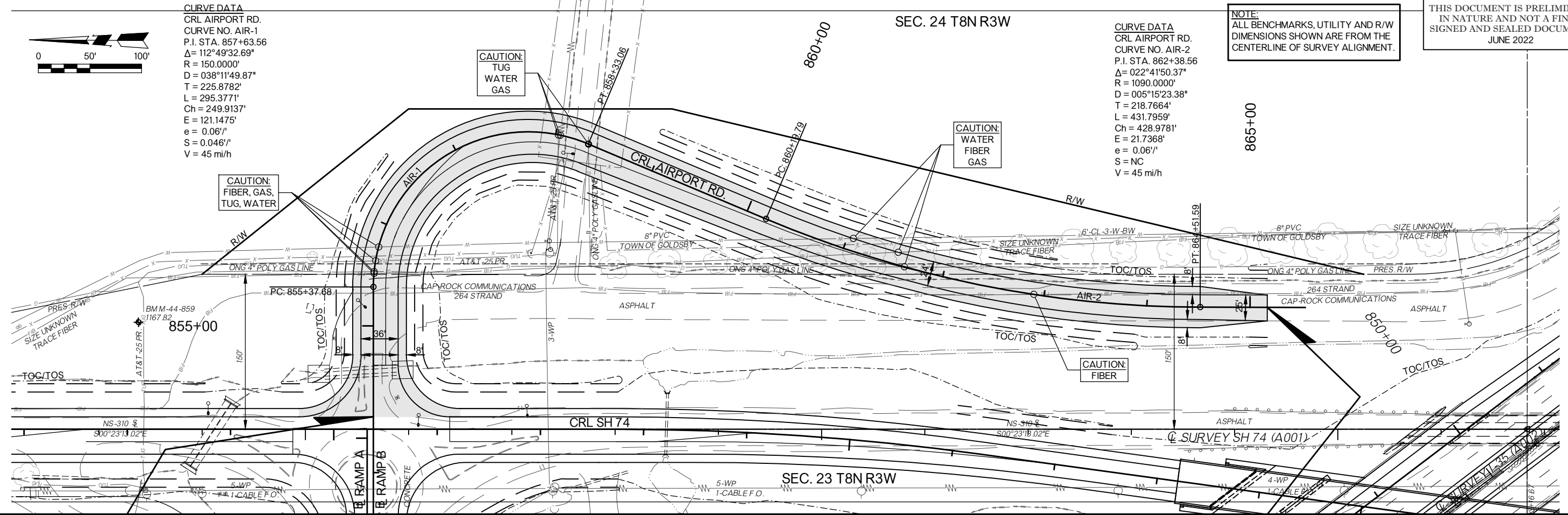
CURVE DATA
 CRL AIRPORT RD.
 CURVE NO. AIR-1
 P.I. STA. 857+63.56
 $\Delta = 112^\circ 49' 32.69''$
 $R = 150.0000'$
 $D = 038^\circ 11' 49.87''$
 $T = 225.8782'$
 $L = 295.3771'$
 $Ch = 249.9137'$
 $E = 121.1475'$
 $e = 0.061'$
 $S = 0.0461'$
 $V = 45 \text{ mi/h}$

SEC. 24 T8N R3W

CURVE DATA
 CRL AIRPORT RD.
 CURVE NO. AIR-2
 P.I. STA. 862+38.56
 $\Delta = 022^\circ 41' 50.37''$
 $R = 1090.0000'$
 $D = 005^\circ 15' 23.38''$
 $T = 218.7664'$
 $L = 431.7959'$
 $Ch = 428.9781'$
 $E = 21.7368'$
 $e = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$

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AIRPORT RD. - ALTERNATIVE 3A

State Job No. 29571(04) Sheet No. R014

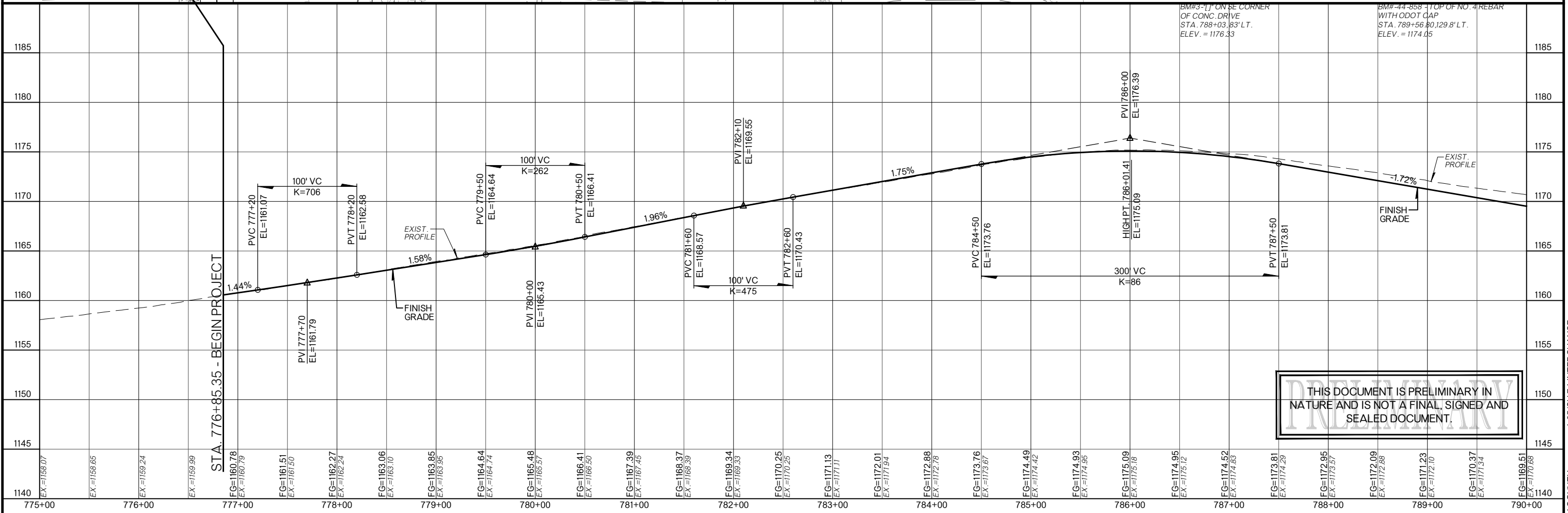
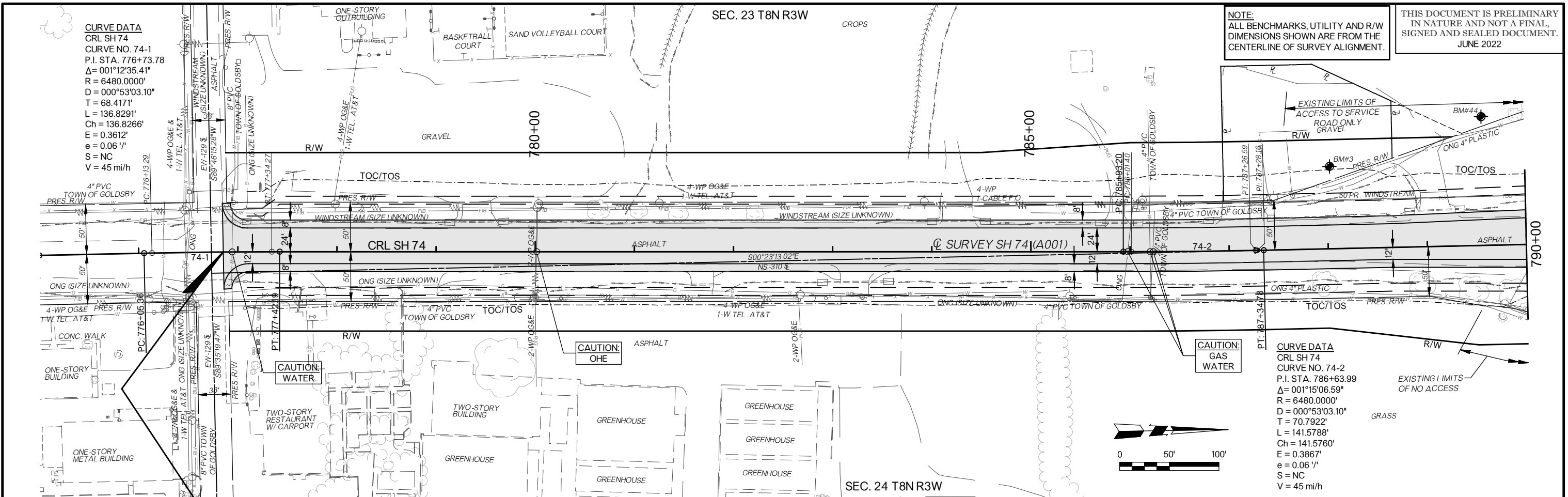
MCCLENN COUNTY I-36/SH 74 INTERCHANGE

CURVE DATA
 CRL SH 74
 CURVE NO. 74-1
 P.I. STA. 776+73.78
 $\Delta = 001^{\circ}12'35.41''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 68.4171'$
 $L = 136.8291'$
 $Ch = 136.8266'$
 $E = 0.3612'$
 $e = 0.06''$
 $S = NC$
 $V = 45 \text{ mi/h}$

CURVE DATA
 CRL SH 74
 CURVE NO. 74-2
 P.I. STA. 786+63.99
 $\Delta = 001^{\circ}15'06.59''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 70.7922'$
 $L = 141.5788'$
 $Ch = 141.5760'$
 $E = 0.3867'$
 $e = 0.06''$
 $S = NC$
 $V = 45 \text{ mi/h}$

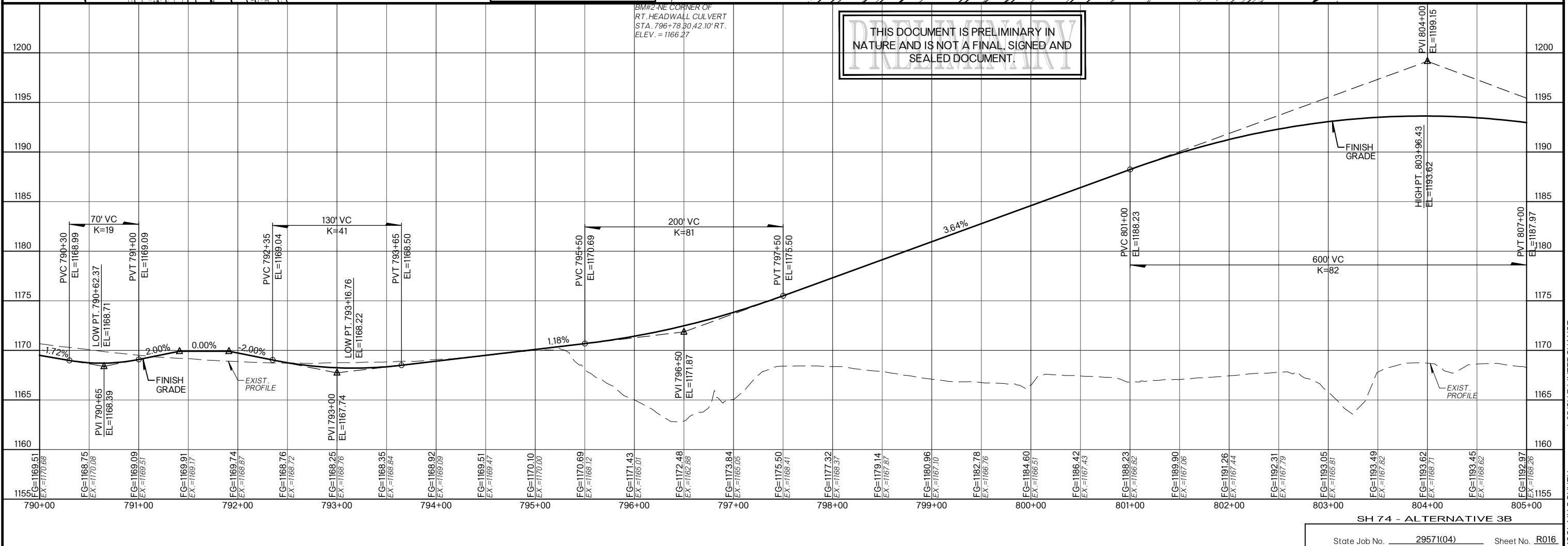
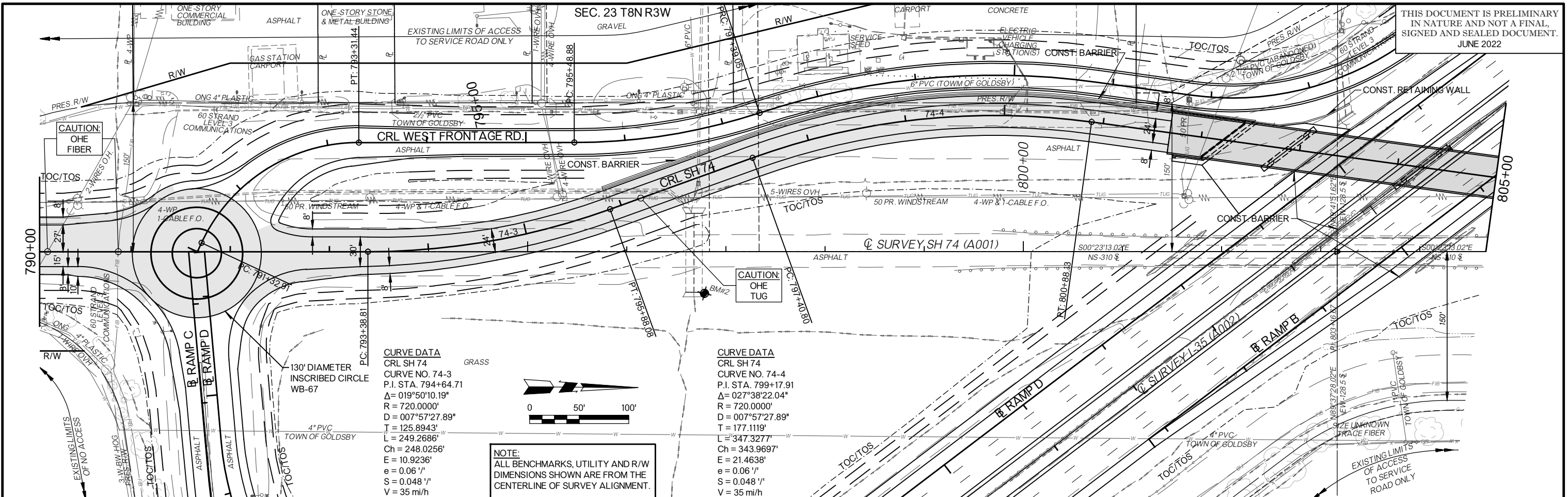
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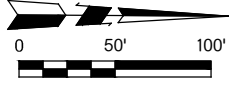


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MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

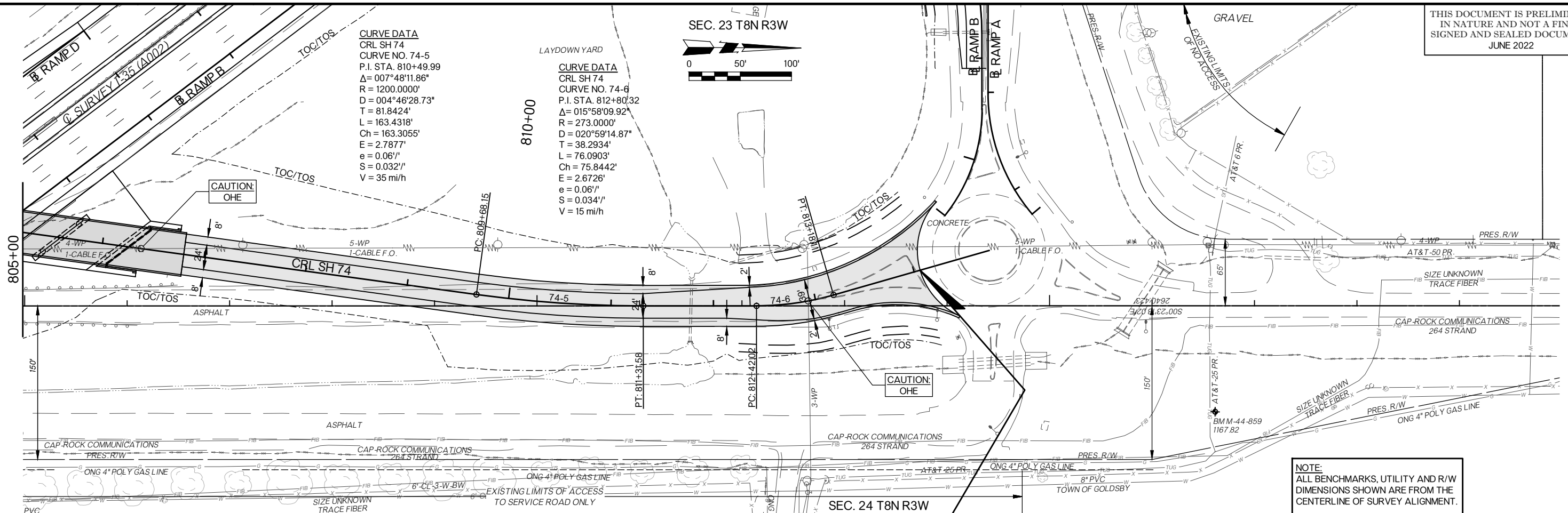
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SEC. 23 T8N R3W

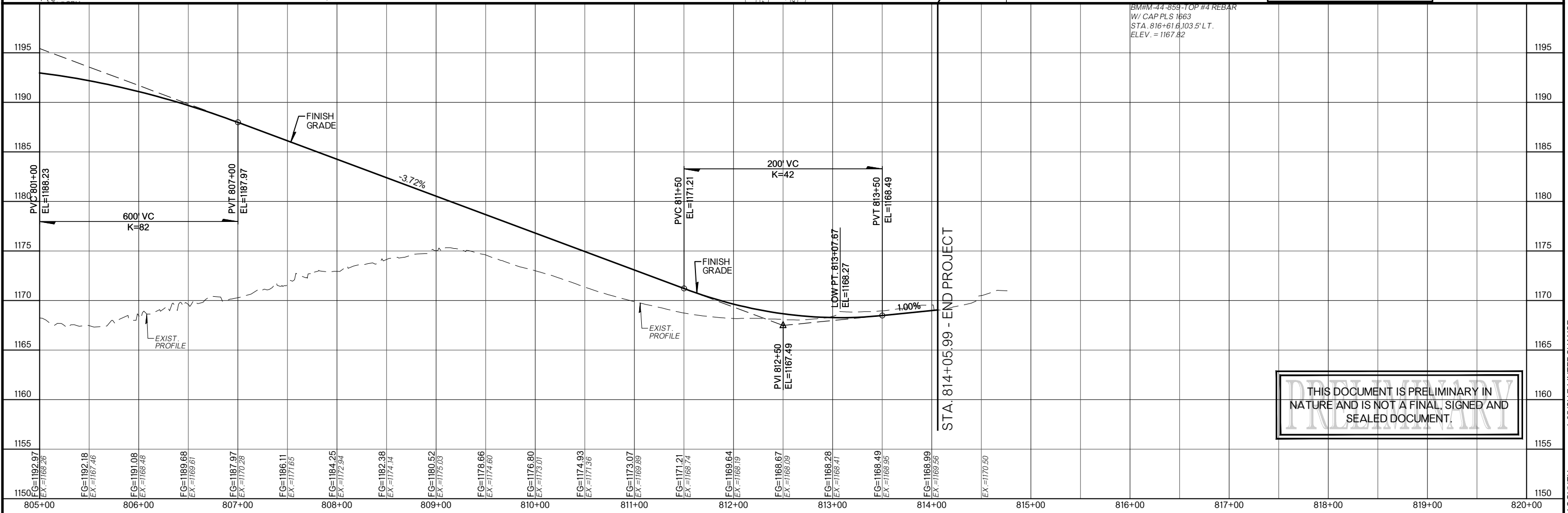


CURVE DATA
 CRL SH 74
 CURVE NO. 74-5
 P.I. STA. 810+49.99
 $\Delta = 007^\circ 48' 11.86''$
 $R = 1200.0000'$
 $D = 004^\circ 46' 28.73''$
 $T = 81.8424'$
 $L = 163.4318'$
 $Ch = 163.3055'$
 $E = 2.7877'$
 $e = 0.06''$
 $S = 0.032''$
 $V = 35$ mi/h

CURVE DATA
 CRL SH 74
 CURVE NO. 74-6
 P.I. STA. 812+80.32
 $\Delta = 015^\circ 58' 09.92''$
 $R = 273.0000'$
 $D = 020^\circ 59' 14.87''$
 $T = 38.2934'$
 $L = 76.0903'$
 $Ch = 75.8442'$
 $E = 2.6726'$
 $e = 0.06''$
 $S = 0.034''$
 $V = 15$ mi/h



NOTE:
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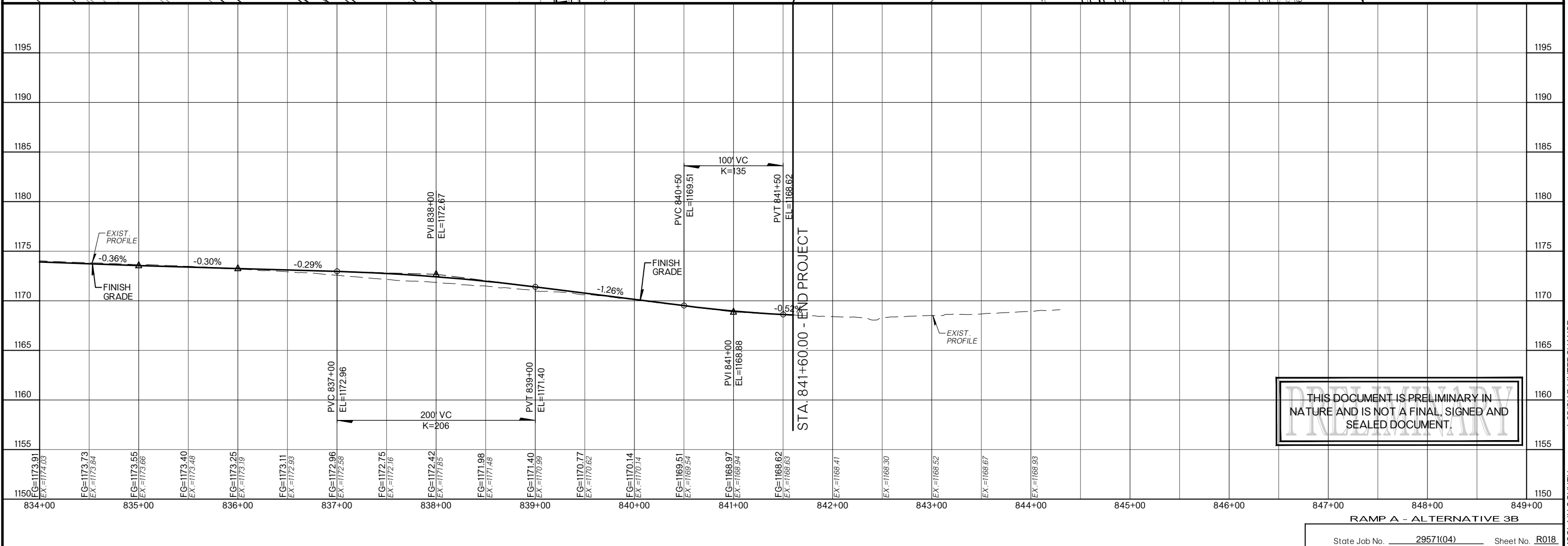
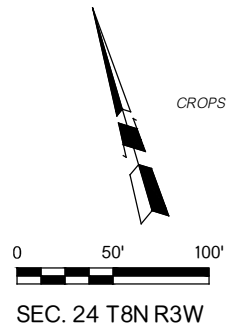
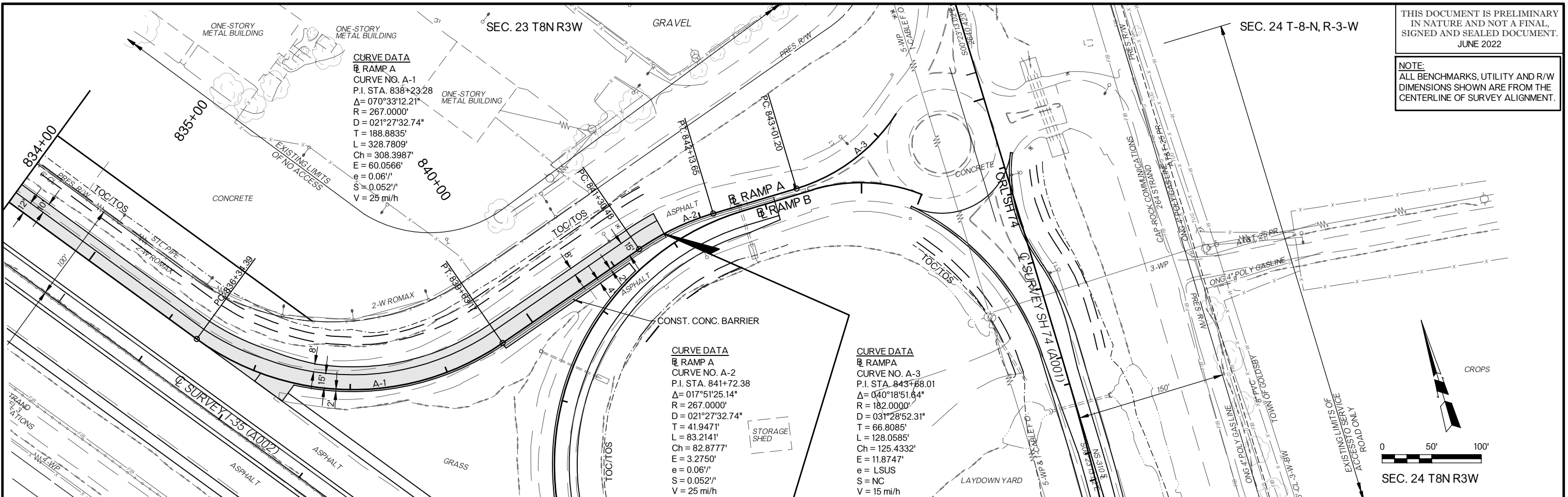
BM#M-44-859-TOP #4 REBAR
 W/ CAP PLS 1663
 STA. 816+61.6, 103.5' LT.
 ELEV. = 1167.82

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MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

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RAMP A - ALTERNATIVE 3B

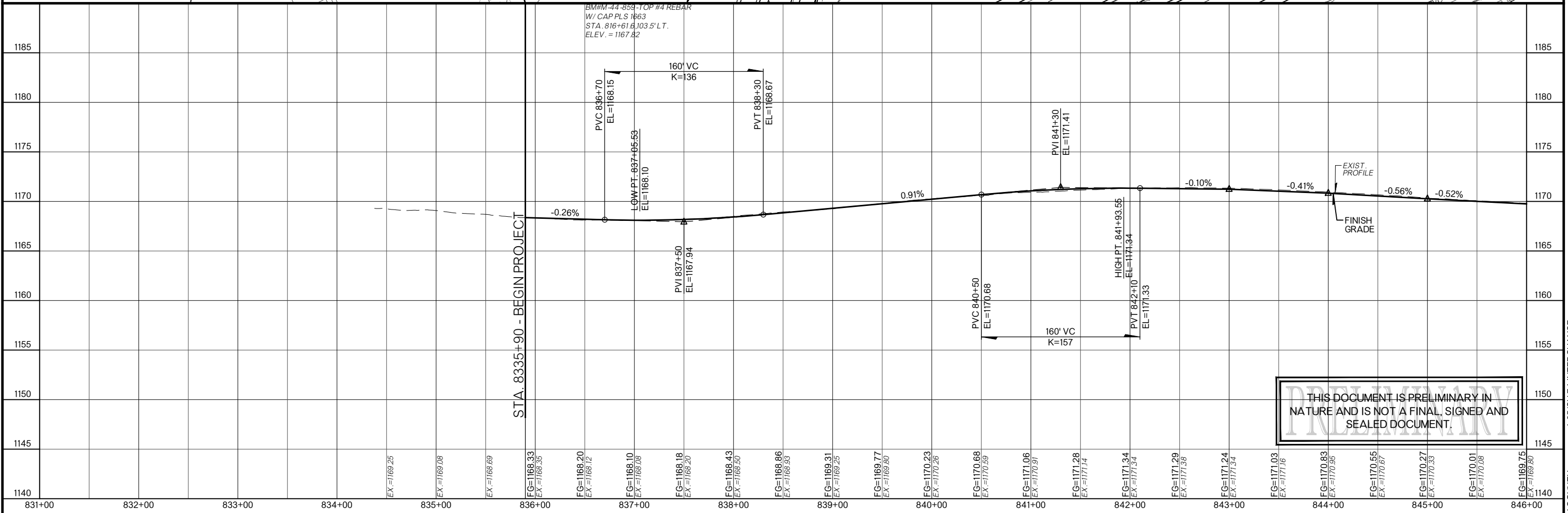
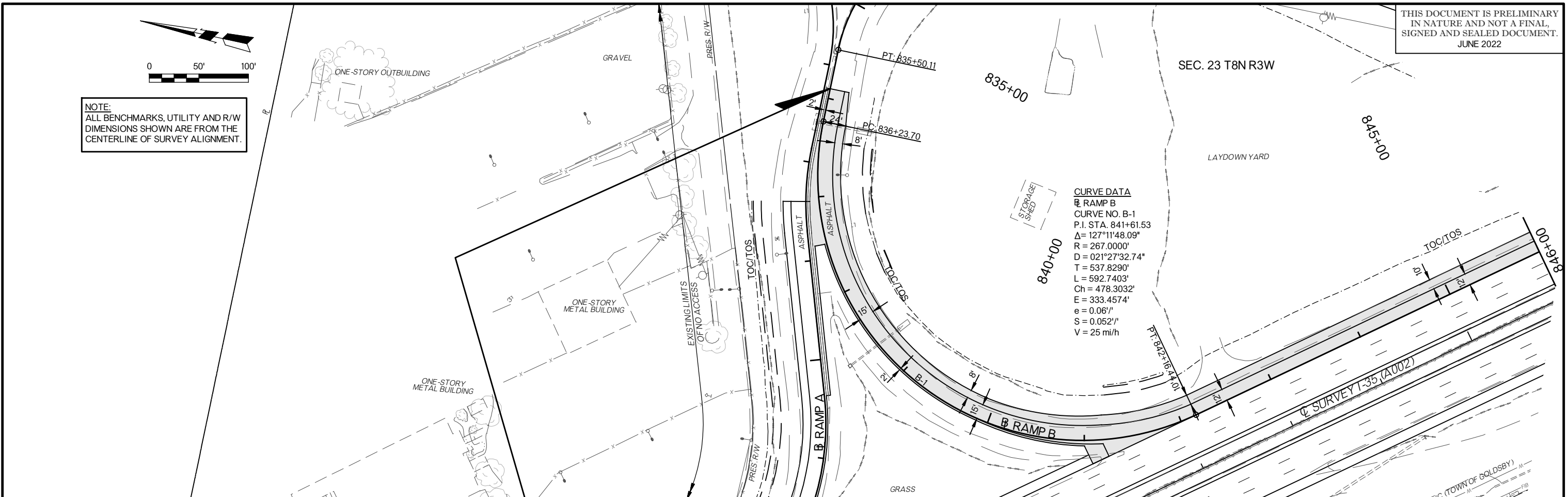
State Job No. 29571(04) Sheet No. R018

MOCLAIN COUNTY I-36/SH74 INTERCHANGE

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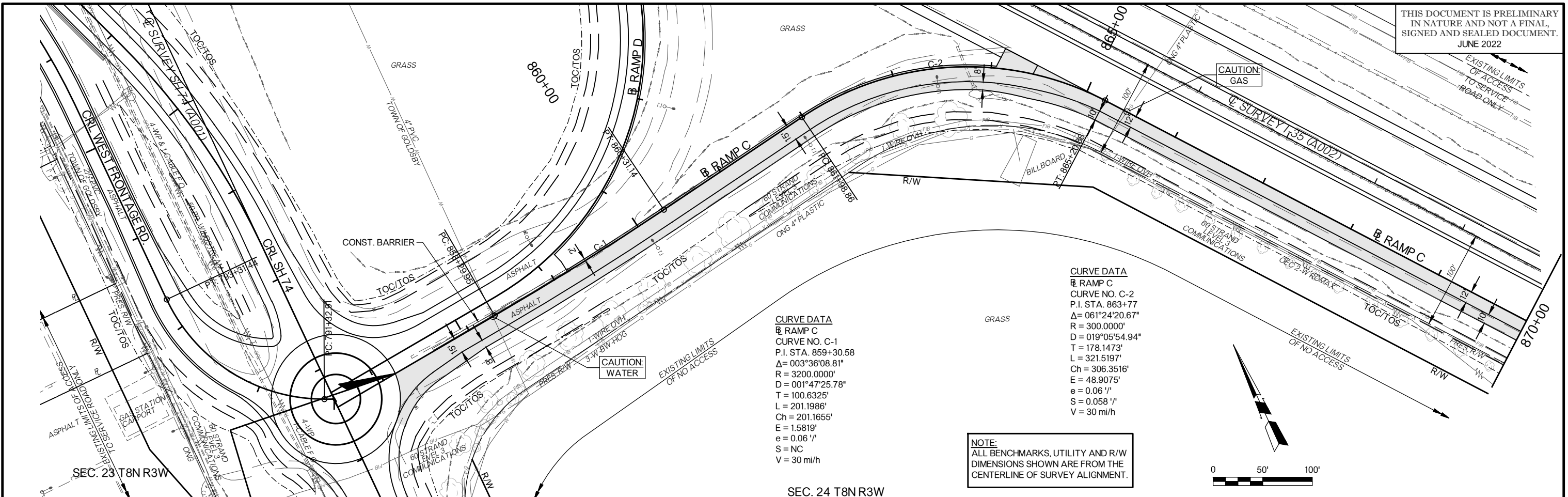


STA. 8335+90 - BEGIN PROJECT

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RAMP B - ALTERNATIVE 3B

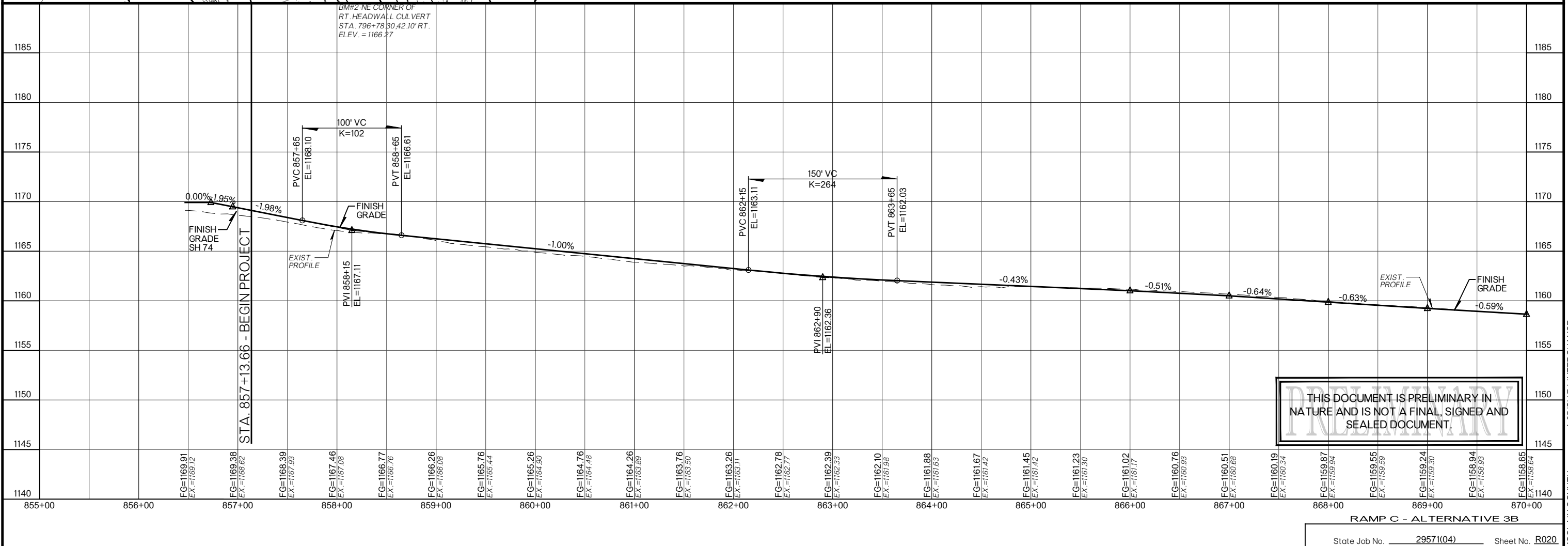
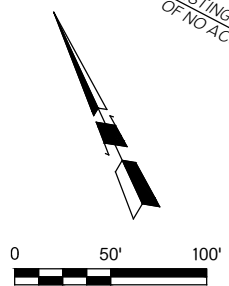
MOCLAIN COUNTY I-36/SH74 INTERCHANGE



CURVE DATA
 B RAMP C
 CURVE NO. C-1
 P.I. STA. 859+30.58
 $\Delta = 003^{\circ}36'08.81''$
 $R = 3200.0000'$
 $D = 001^{\circ}47'25.78''$
 $T = 100.6325'$
 $L = 201.1986'$
 $Ch = 201.1655'$
 $E = 1.5819'$
 $e = 0.06''$
 $S = NC$
 $V = 30 \text{ mi/h}$

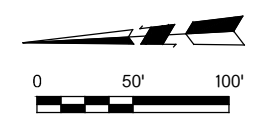
CURVE DATA
 B RAMP C
 CURVE NO. C-2
 P.I. STA. 863+77
 $\Delta = 061^{\circ}24'20.67''$
 $R = 300.0000'$
 $D = 019^{\circ}05'54.94''$
 $T = 178.1473'$
 $L = 321.5197'$
 $Ch = 306.3516'$
 $E = 48.9075'$
 $e = 0.06''$
 $S = 0.058''$
 $V = 30 \text{ mi/h}$

NOTE:
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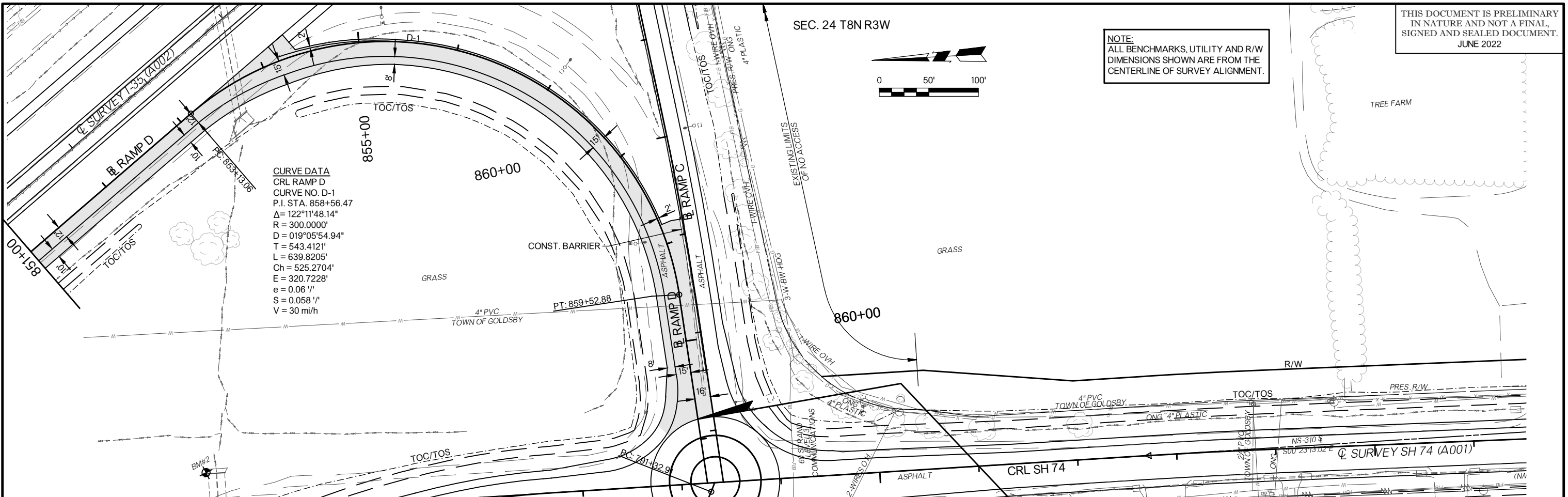


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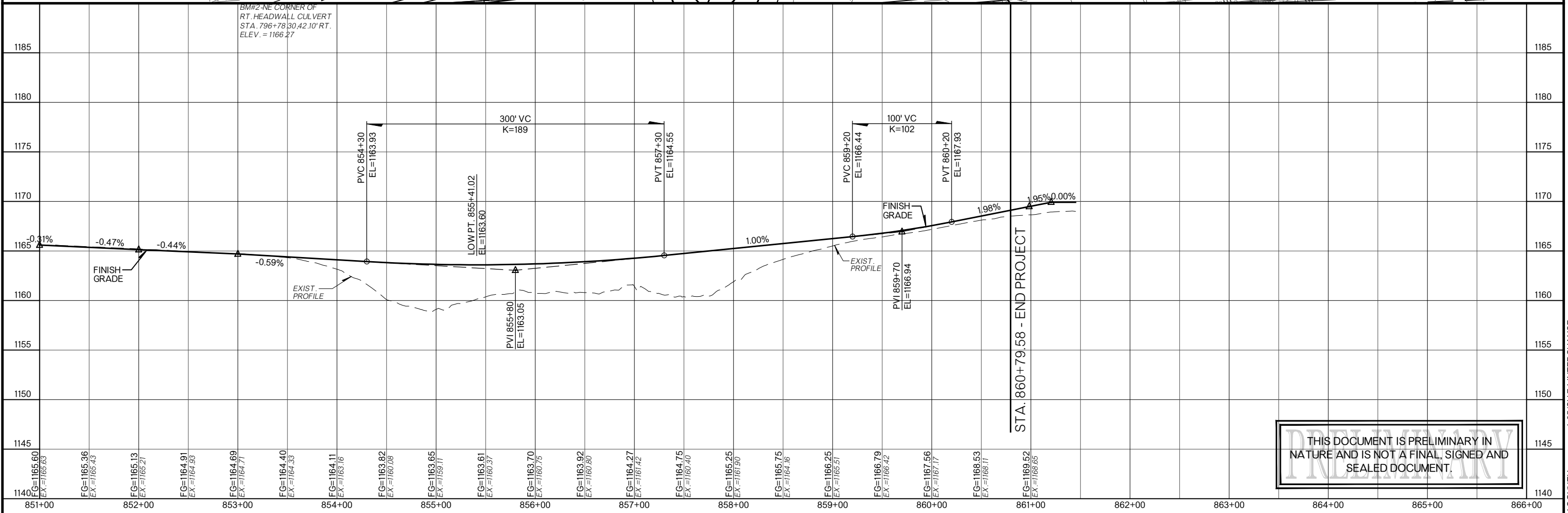
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CURVE DATA
CRL RAMP D
CURVE NO. D-1
P.I. STA. 858+56.47
 $\Delta = 122^\circ 11' 48.14''$
 $R = 300.0000'$
 $D = 019^\circ 05' 54.94''$
 $T = 543.4121'$
 $L = 639.8205'$
 $Ch = 525.2704'$
 $E = 320.7228'$
 $e = 0.06'$
 $S = 0.058'$
 $V = 30 \text{ mi/h}$

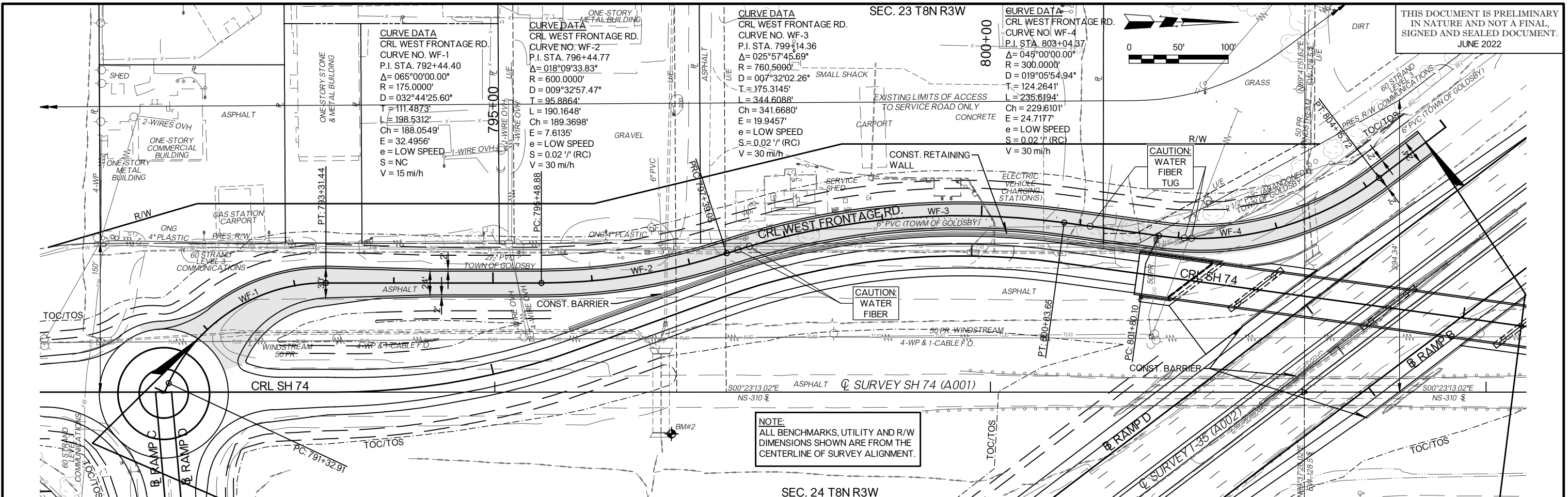


BM#2 NE CORNER OF
RT. HEADWALL CULVERT
STA. 796+78.30 42.10' RT.
ELEV. = 1166.27

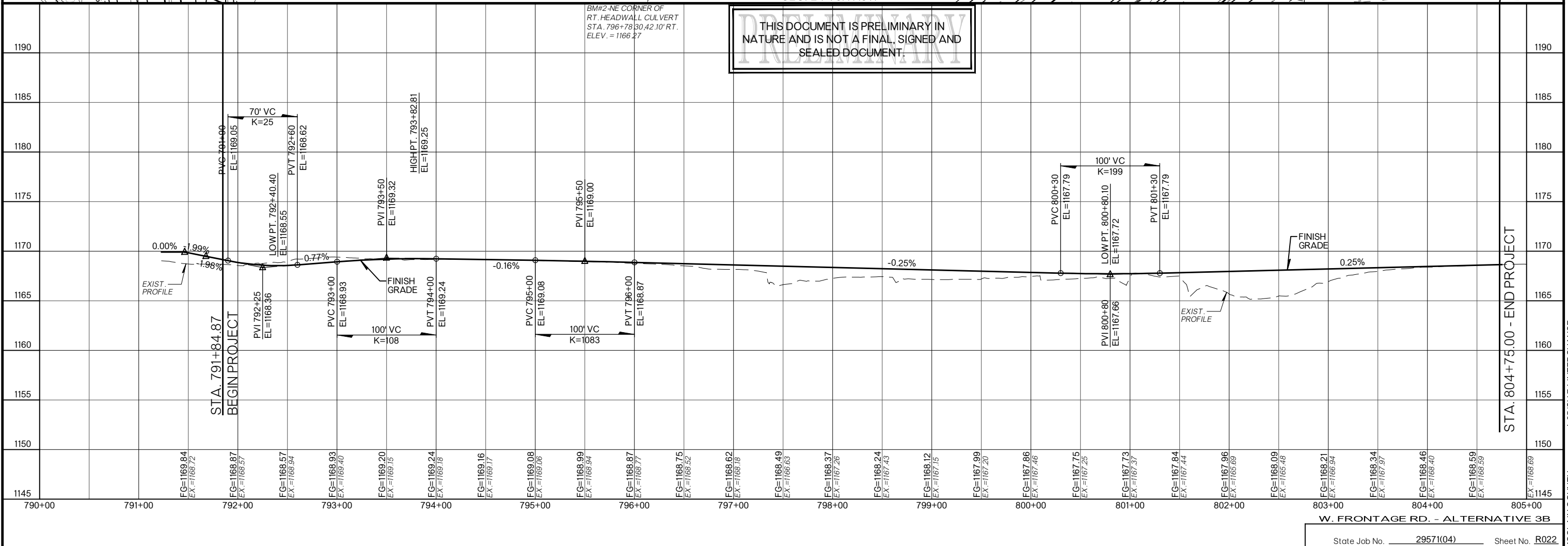
STA. 860+79.58 - END PROJECT

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MCCLENN COUNTY I-35/SH74 INTERCHANGE



APPENDIX G

ALTERNATIVE 4: 40° SKEW CONCEPTUAL PLANS

FOR SURVEY CONTROL DATA, SEE
SURVEY DATA SHEETS

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT NO. J2-9571(004)
GRADE, DRAIN, BRIDGE & SURFACE PLANS
I-35 & SH 74 INTERCHANGE

McCLAIN COUNTY

CONTROL SECTION NO. 74-44-38

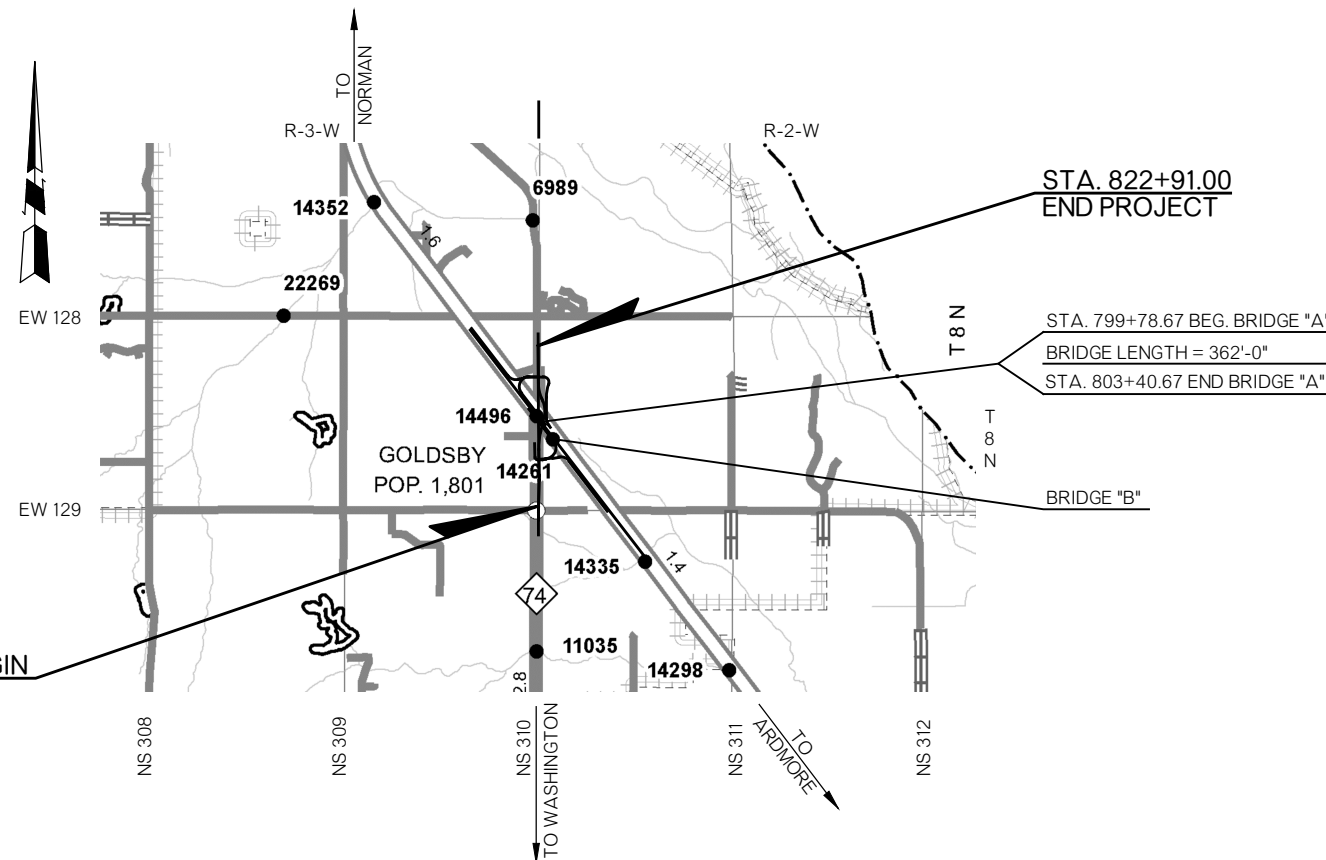
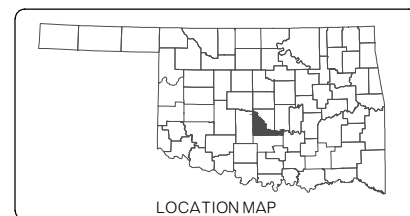
STATE JOB NO. 29571(04)

BRIDGE "A" LOCATION NO. 4405-2297X; EXIST. NBI NO. 14496
BRIDGE "B" LOCATION NO. 4405-2279EXF; EXIST. NBI NO. 14261

SH 74	
ADT 2021	= 8,400
ADT 2050	= 13,270
DHV (2-WAY)	= 1,327
K (DHV/ADT)	= 10%
D	= 65%
T (% DHV)	= 9%
T (% ADT)	= 15%
T3 (% ADT)	= 3%
V	= 45 MPH
20YR FLEX. ESALS	= 3.8 M

SCALES	
PLAN	1" = 50'
PROFILE HOR.	1" = 50'
VER.	1" = 5'
LAYOUT MAP	1" = 2,640'

CONVENTIONAL SYMBOLS	
	PROPOSED ROAD
	RAILROADS
	RANGE & TOWNSHIP SECTION LINES
	QUARTER SECTION LINES
	FENCES
	GROUND LINE
	EXISTING ROADS
	BASE LINE
	GRADE LINES
	TELEPHONE & TELEGRAPH
	POWER LINES
	BUILDINGS
	OIL WELLS
	DRAINAGE STRUCTURES - IN PLACE
	DRAINAGE STRUCTURES - NEW
	RIGHT-OF-WAY LINES - EXISTING
	RIGHT-OF-WAY LINES - NEW
	CONTROLLED ACCESS
	RIGHT-OF-WAY FENCE



PROJECT LENGTH BASED ON SH 74 CRL STATIONING.

NOTE:

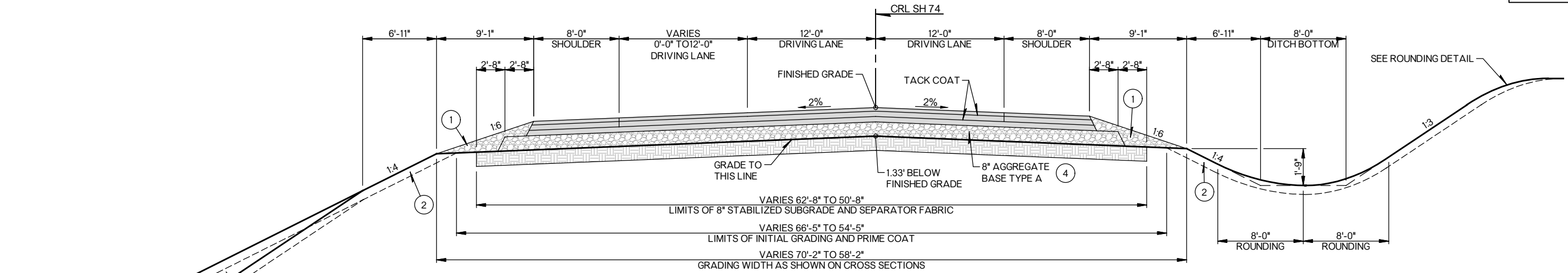
ROADWAY LENGTH	4,243.65 FT.	0.803 MI.
BRIDGE LENGTH	362.00 FT.	0.068 MI.
PROJECT LENGTH		0.871 MI.

EQUATIONS: NONE
EXCEPTION: NONE

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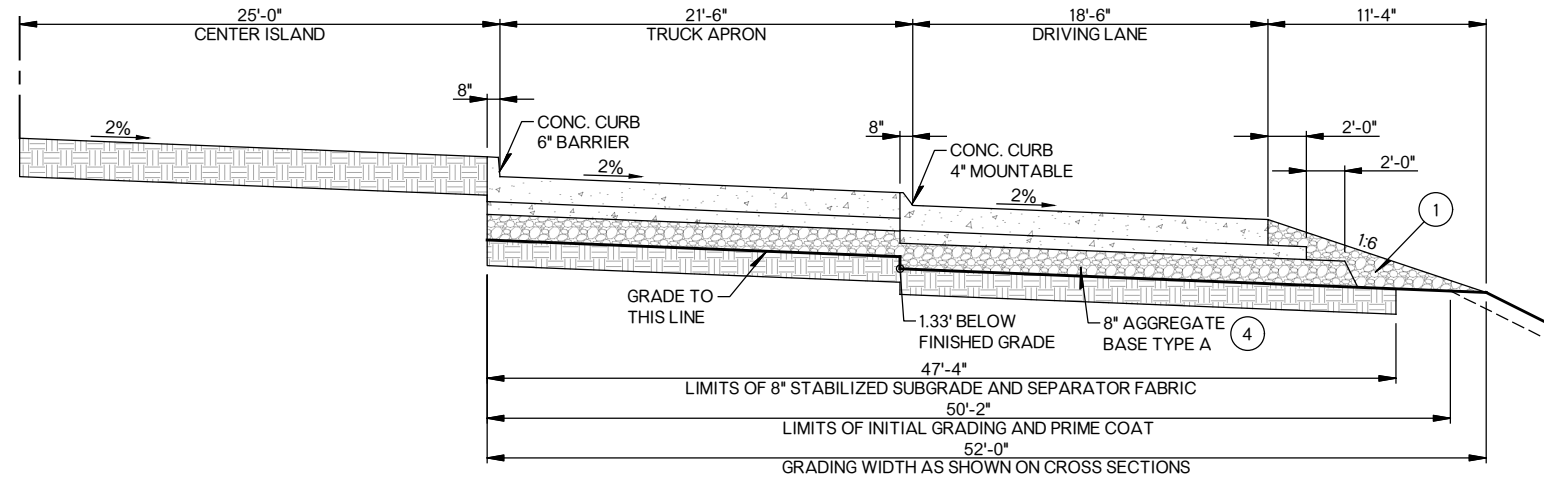


OKLAHOMA DEPARTMENT OF TRANSPORTATION		DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
DATE APPROVED		DATE APPROVED	
BY		BY	
CHIEF ENGINEER		DIVISION ADMINISTRATOR	
SWO	4892(1)	F.A. PROJECT NO.	J2-9571(004)
COUNTY	McCLAIN COUNTY	HIGHWAY	SH 74
		SHEET NO.	0001



TYPICAL SECTION NO. 1
SH 74

PAVEMENT STRUCTURE	PAVEMENT REQUIREMENTS	
	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



TYPICAL SECTION NO. 2
SH 74 ROUNDABOUT

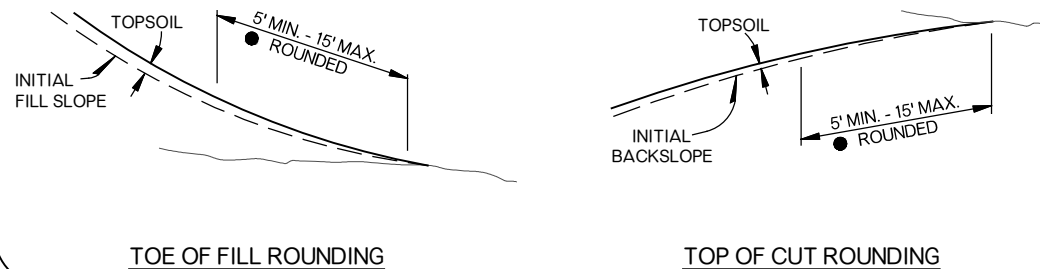
PAVEMENT STRUCTURE	PAVEMENT REQUIREMENTS	
	TRUCK APRON	DRIVING LANES
SURFACE COURSE	8" CONT. REINF. P.C.C. PAVEMENT	8" CONT. REINF. P.C.C. PAVEMENT
BASE COURSE	4" CEMENTITIOUS TREATED BASE	4" CEMENTITIOUS TREATED BASE

- 1 BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURE IN TBSC TYPE E.
- 2 TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATIONS SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

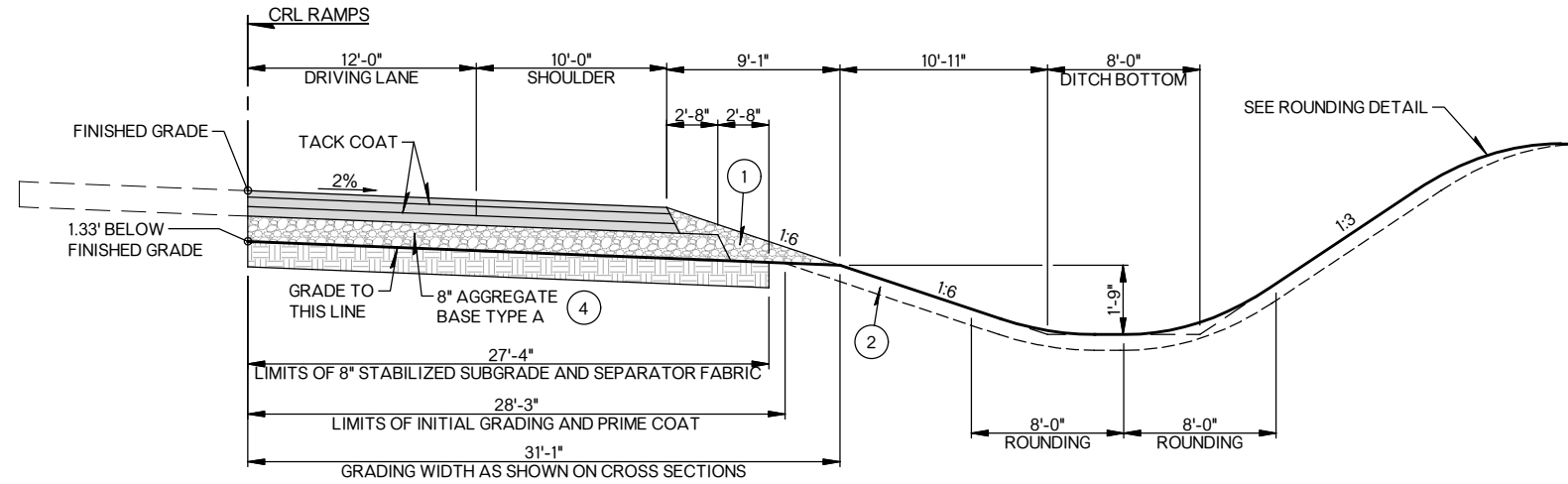
THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.
- 3 DISTANCE MEASURED VERTICALLY FROM EDGE OF FINISHED GRADE SHOULDER.
- 4 PRIME COAT ON TOP OF AGGREGATE BASE.

ROUNDING DETAIL

- INTERSECTION OF CUT AND/OR FILL SLOPES WITH GROUND LINE TO BE ROUNDED AS PART OF FINISHING OPERATIONS. ROUNDED SHALL BE 5' MINIMUM FOR SMALLER CUTS AND FILLS TO 15' MAXIMUM FOR LARGER CUTS AND FILLS OR AS DESIGNATED BY THE ENGINEER. COST OF ROUNDED TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.

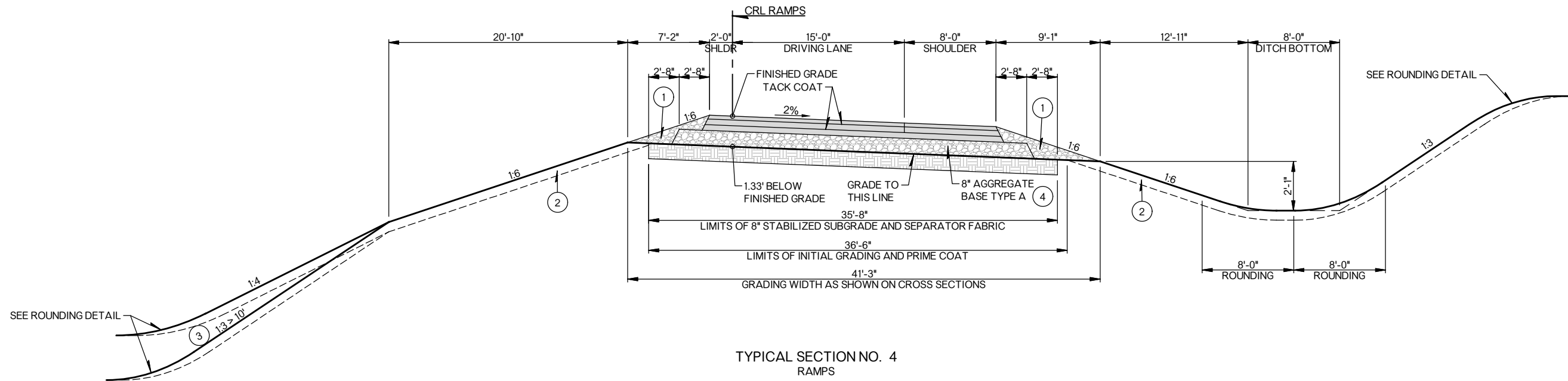


TYPICAL SECTION



TYPICAL SECTION NO. 3
RAMPS

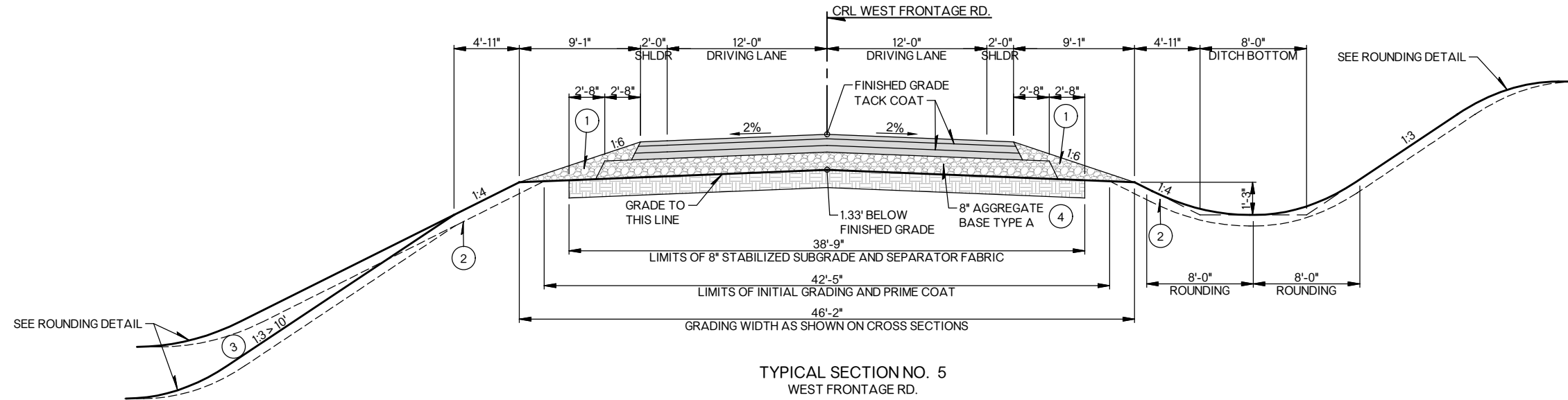
PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



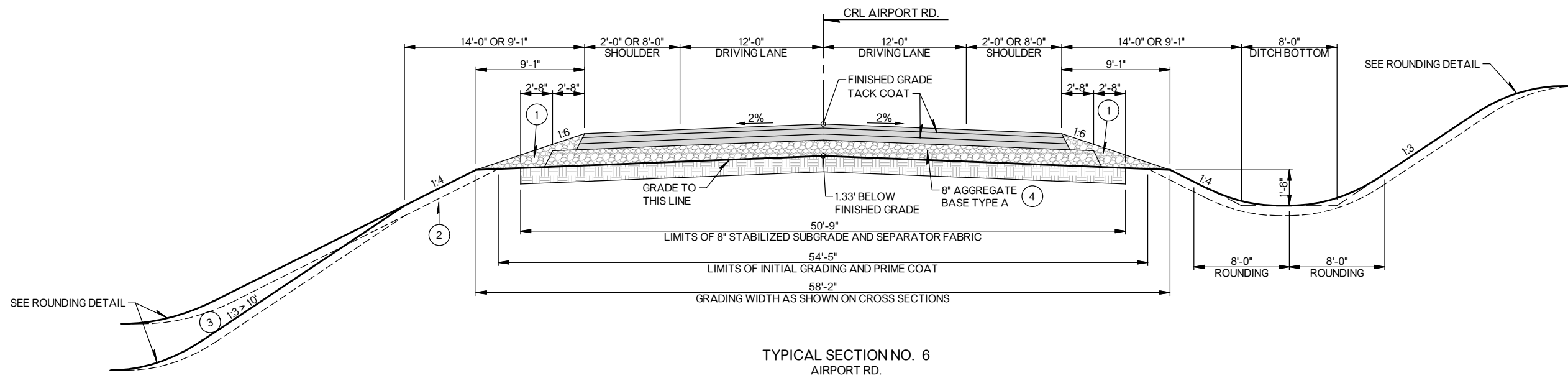
TYPICAL SECTION NO. 4
RAMPS

PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

TYPICAL SECTION



PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

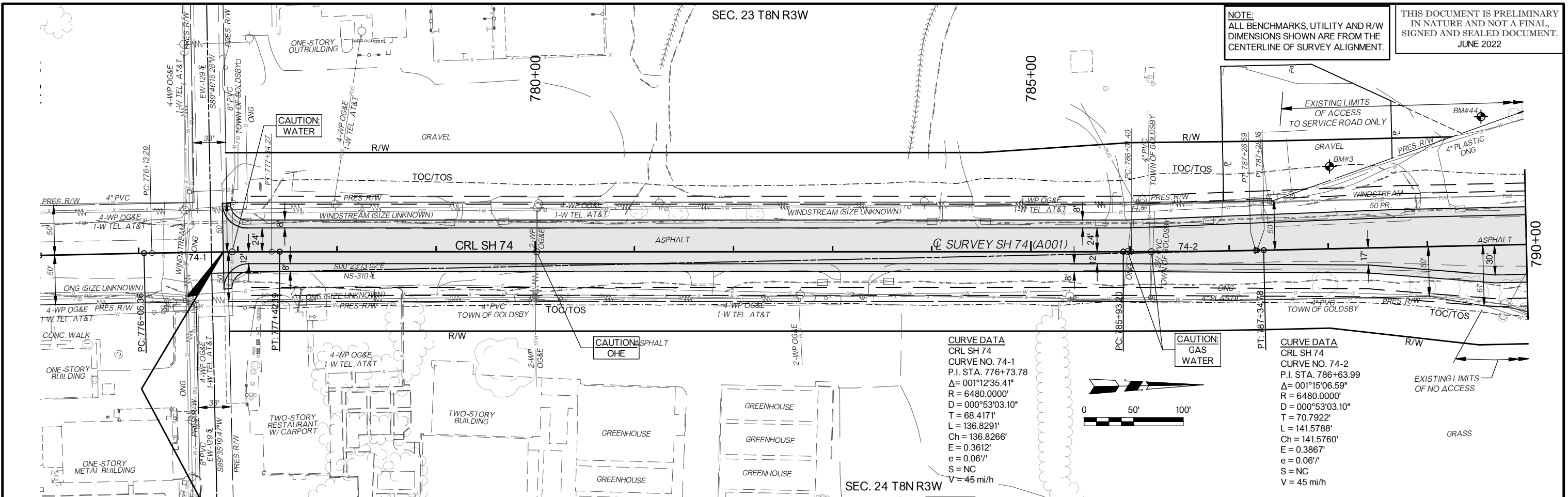


PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

TYPICAL SECTION

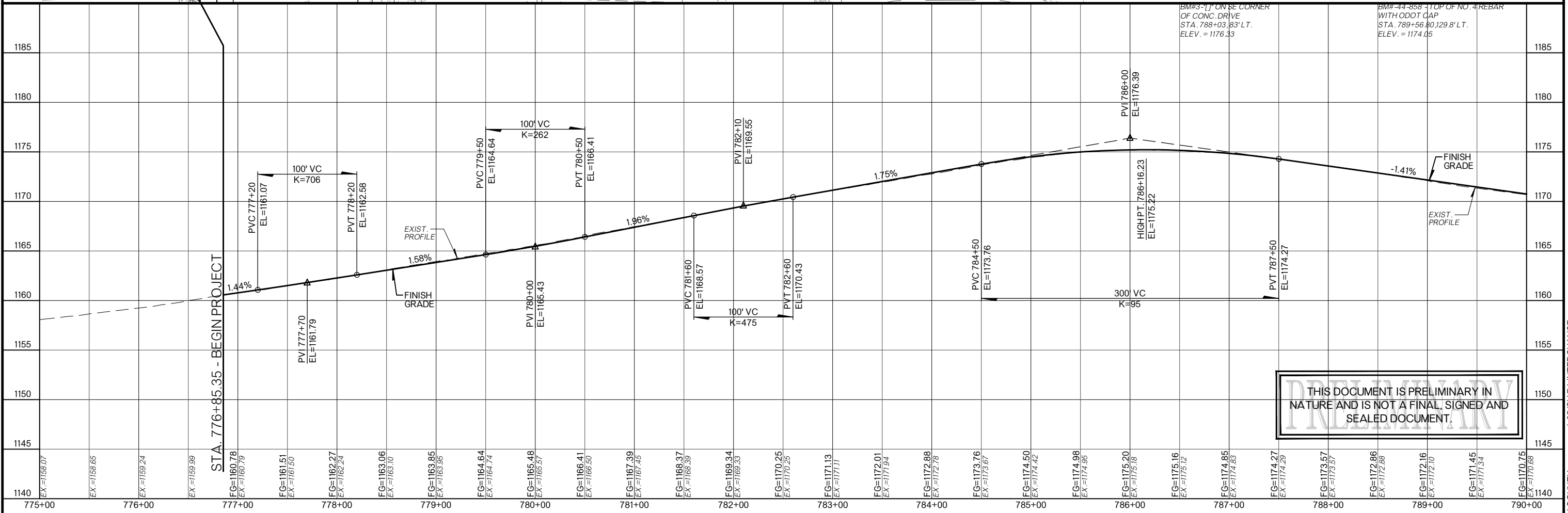
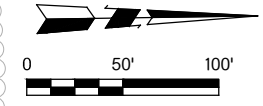
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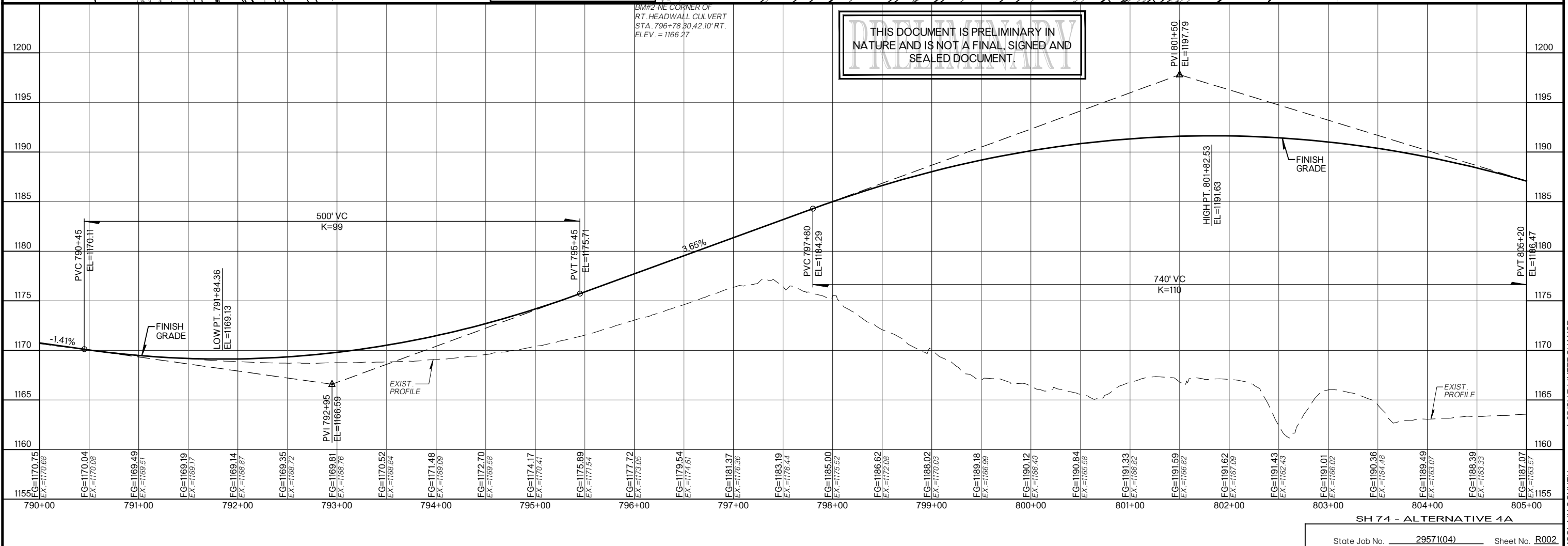
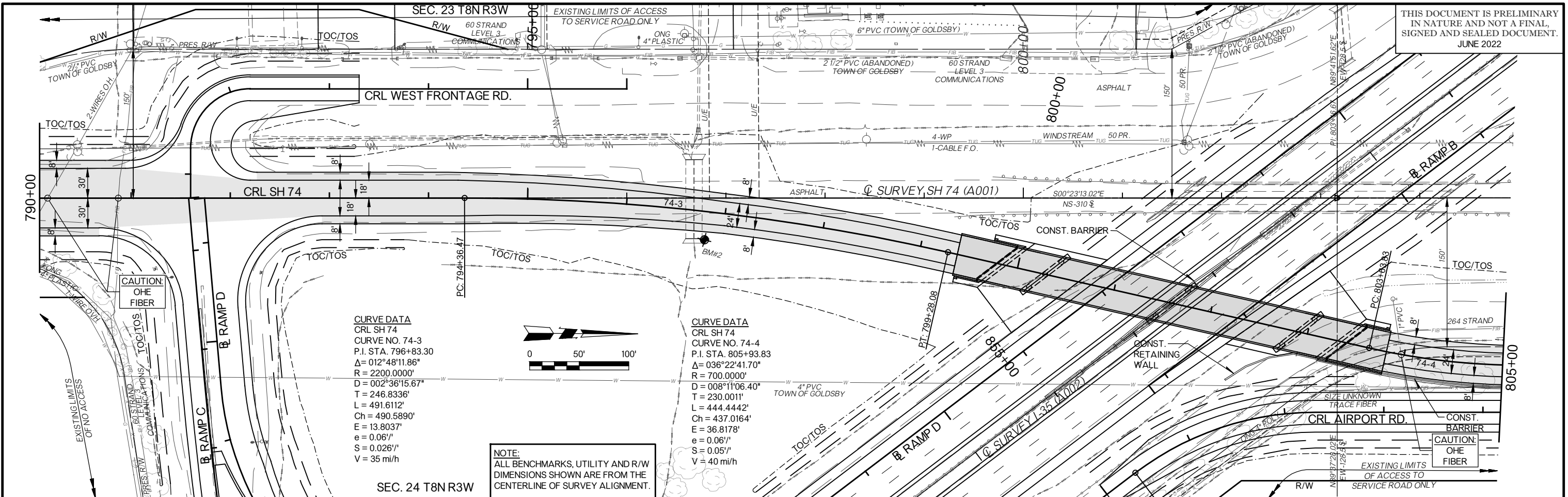
CURVE DATA
 CRL SH 74
 CURVE NO. 74-1
 P.I. STA. 776+73.78
 $\Delta = 001^{\circ}12'35.41''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 68.4171'$
 $L = 136.8291'$
 $Ch = 136.8266'$
 $E = 0.3612'$
 $e = 0.06''$
 $S = NC$
 $V = 45$ mi/h

CURVE DATA
 CRL SH 74
 CURVE NO. 74-2
 P.I. STA. 786+63.99
 $\Delta = 001^{\circ}15'06.59''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 70.7922'$
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 $Ch = 141.5760'$
 $E = 0.3867'$
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 $S = NC$
 $V = 45$ mi/h



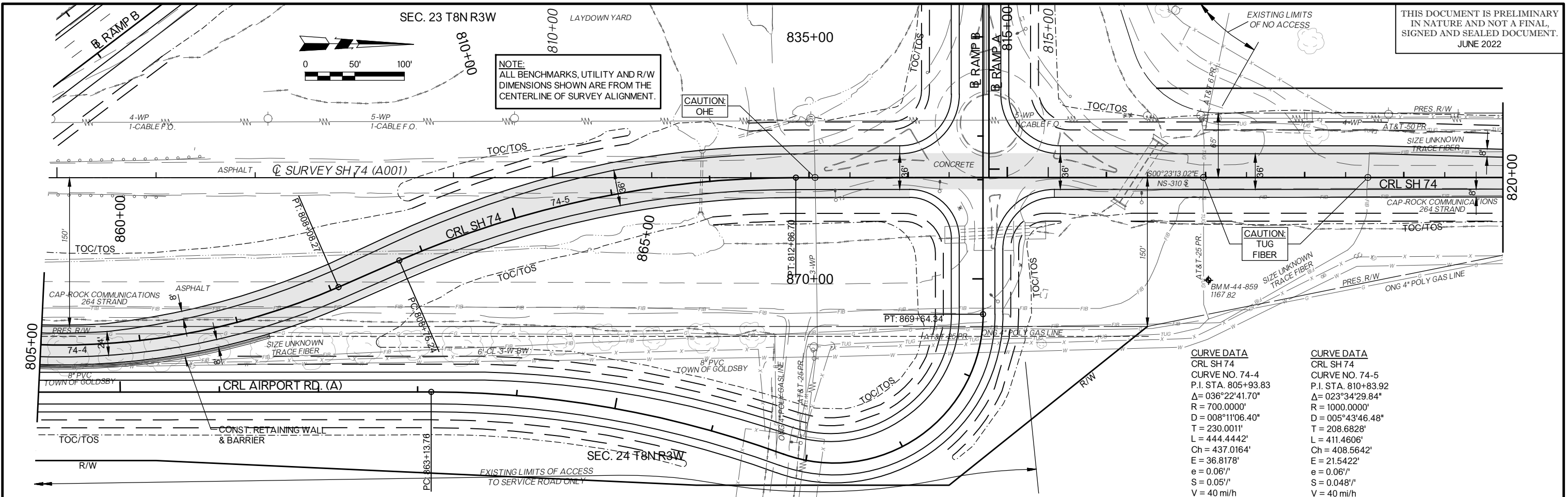
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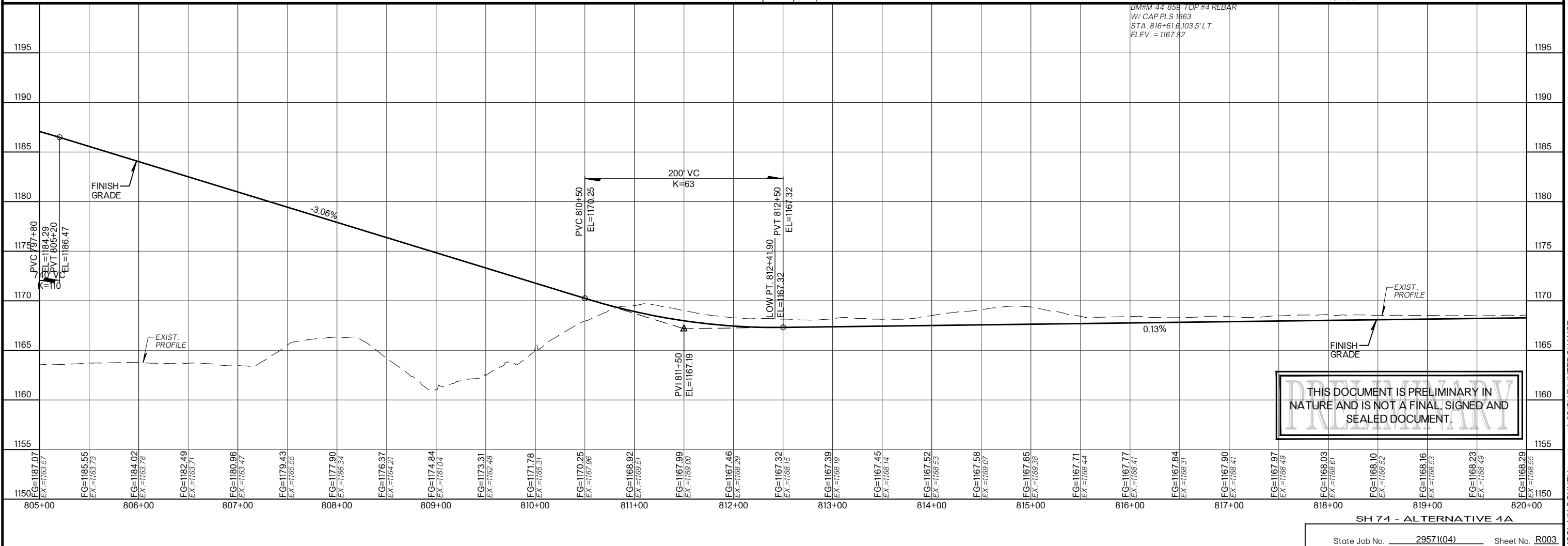
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CAUTION: OHE

CAUTION: TUG FIBER

CURVE DATA
 CRL SH 74
 CURVE NO. 74-4
 P.I. STA. 805+93.83
 $\Delta = 036^\circ 22' 41.70''$
 $R = 700.0000'$
 $D = 008^\circ 11' 06.40''$
 $T = 230.0011'$
 $L = 444.4442'$
 $Ch = 437.0164'$
 $E = 36.8178'$
 $e = 0.06''$
 $S = 0.05''$
 $V = 40 \text{ mi/h}$

CURVE DATA
 CRL SH 74
 CURVE NO. 74-5
 P.I. STA. 810+83.92
 $\Delta = 023^\circ 34' 29.84''$
 $R = 1000.0000'$
 $D = 005^\circ 43' 46.48''$
 $T = 208.6828'$
 $L = 411.4606'$
 $Ch = 408.5642'$
 $E = 21.5422'$
 $e = 0.06''$
 $S = 0.048''$
 $V = 40 \text{ mi/h}$



BM#M-44-859-TOP #4 REBAR
 W/ CAP PLS 1663
 STA. 816+61.6103.5' LT.
 ELEV. = 1167.82

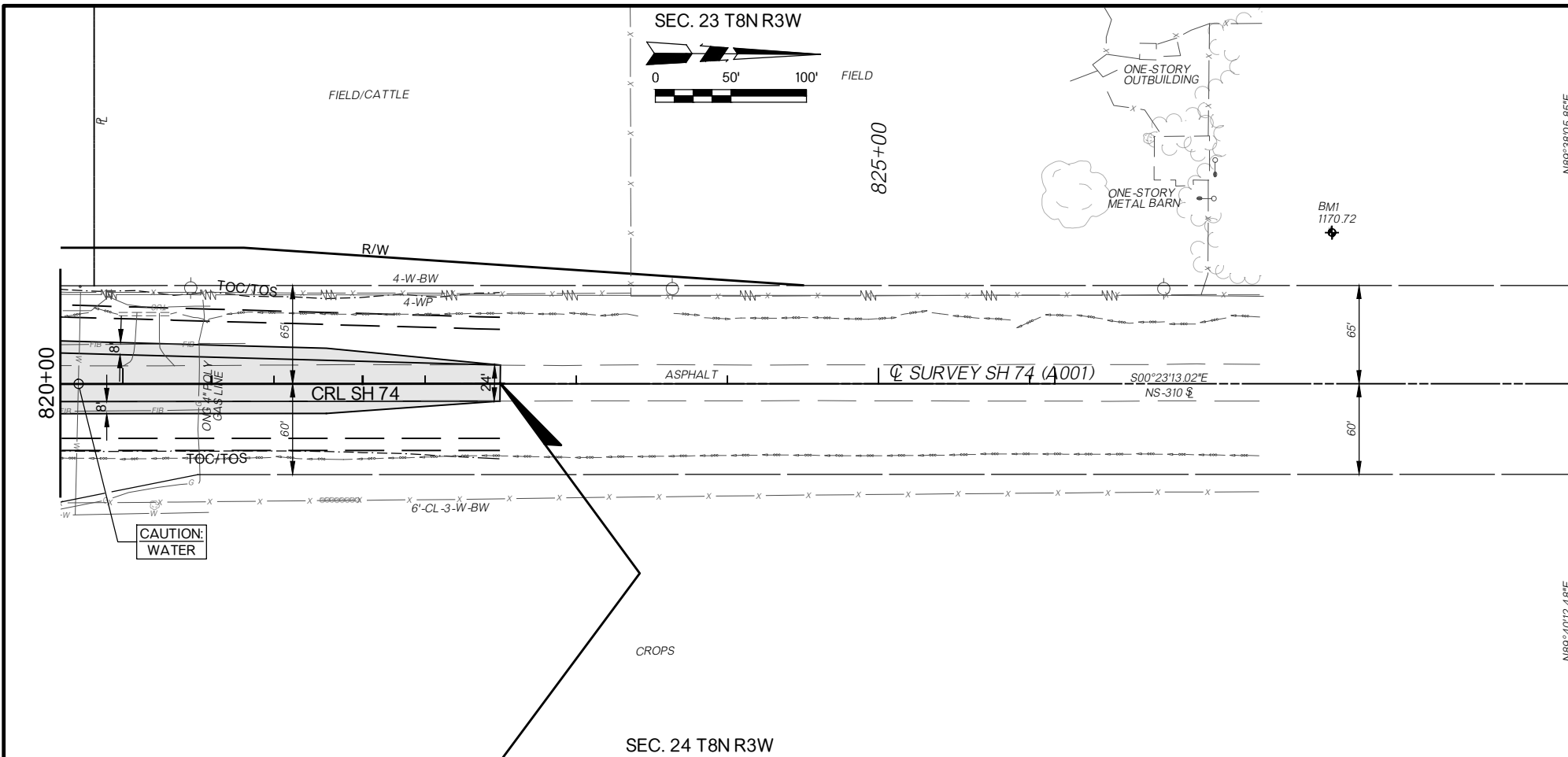
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SH 74 - ALTERNATIVE 4A

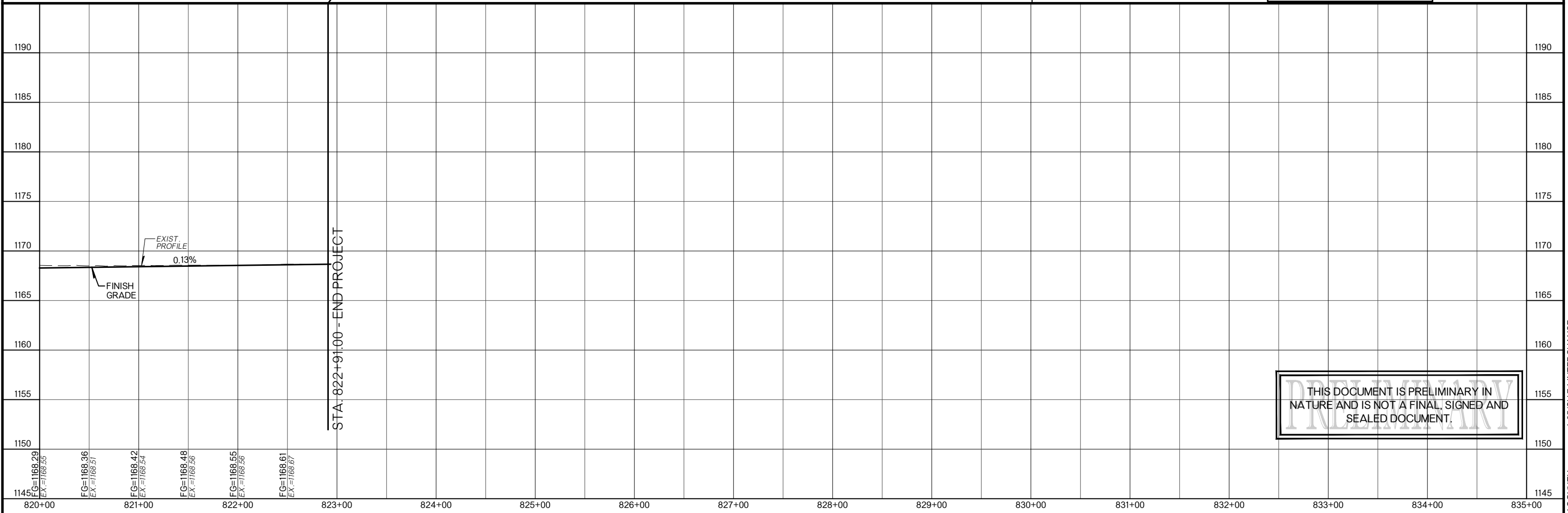
State Job No. 29571(04) Sheet No. R003

MOCLAIN COUNTY I-35/SH 74 INTERCHANGE

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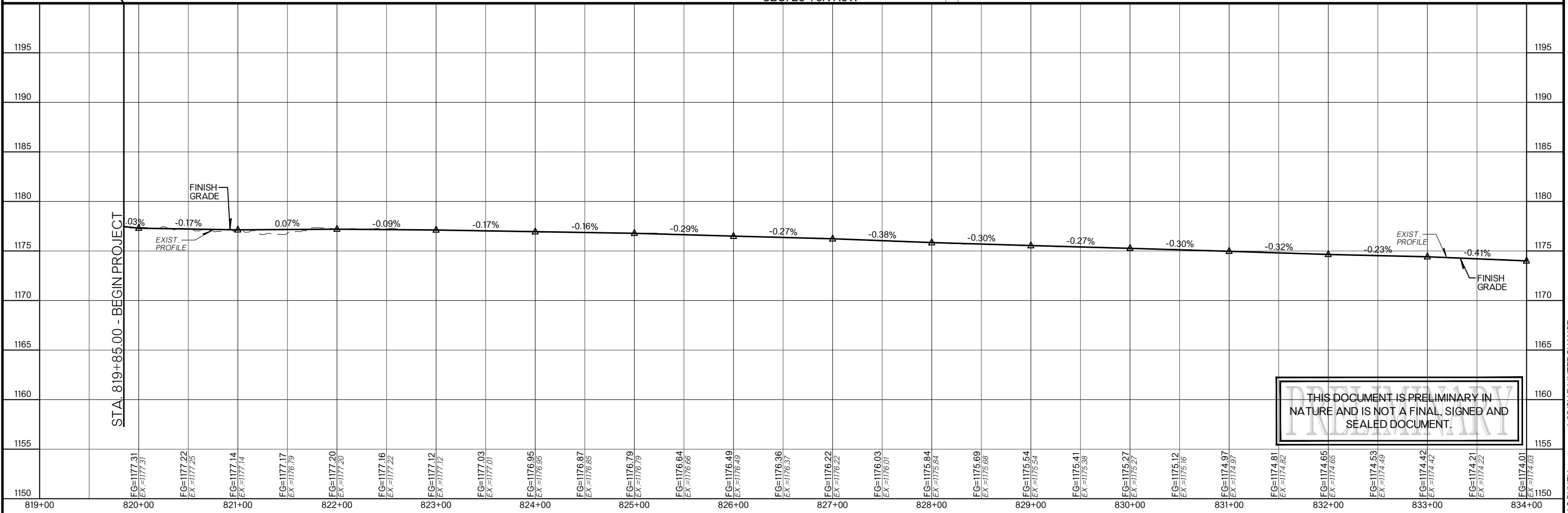
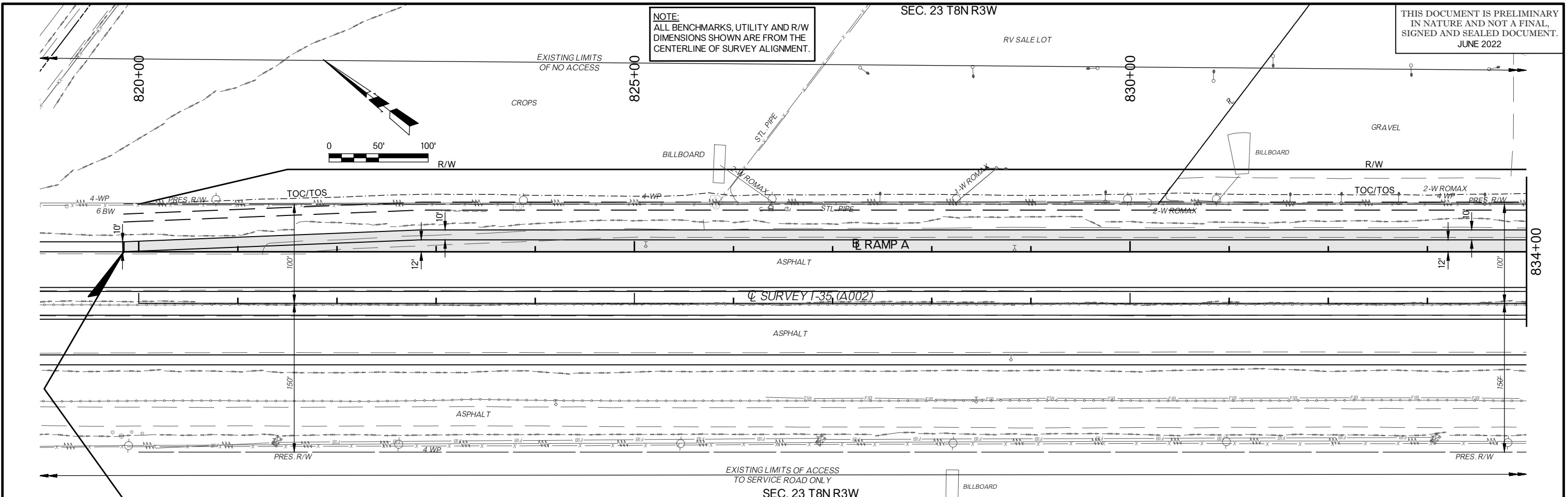
SH 74 - ALTERNATIVE 4A

MOCLAIN COUNTY I-36/SH 74 INTERCHANGE

NOTE:
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DIMENSIONS SHOWN ARE FROM THE
CENTERLINE OF SURVEY ALIGNMENT.

SEC. 23 T8N R3W

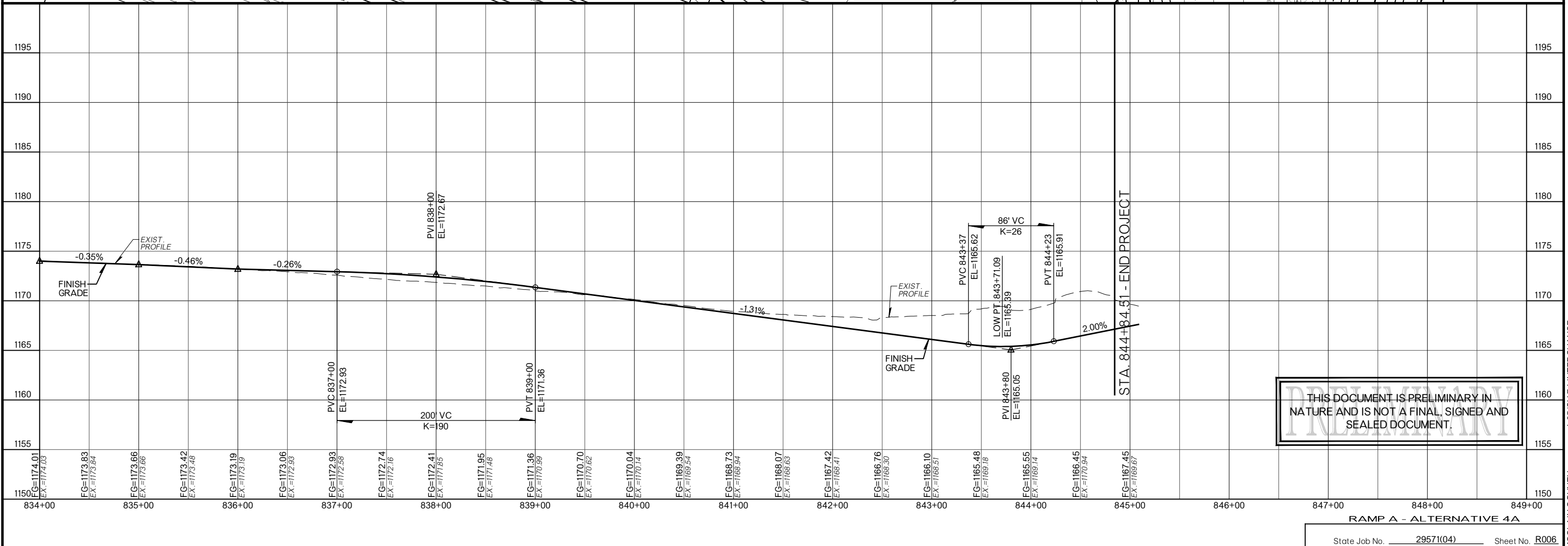
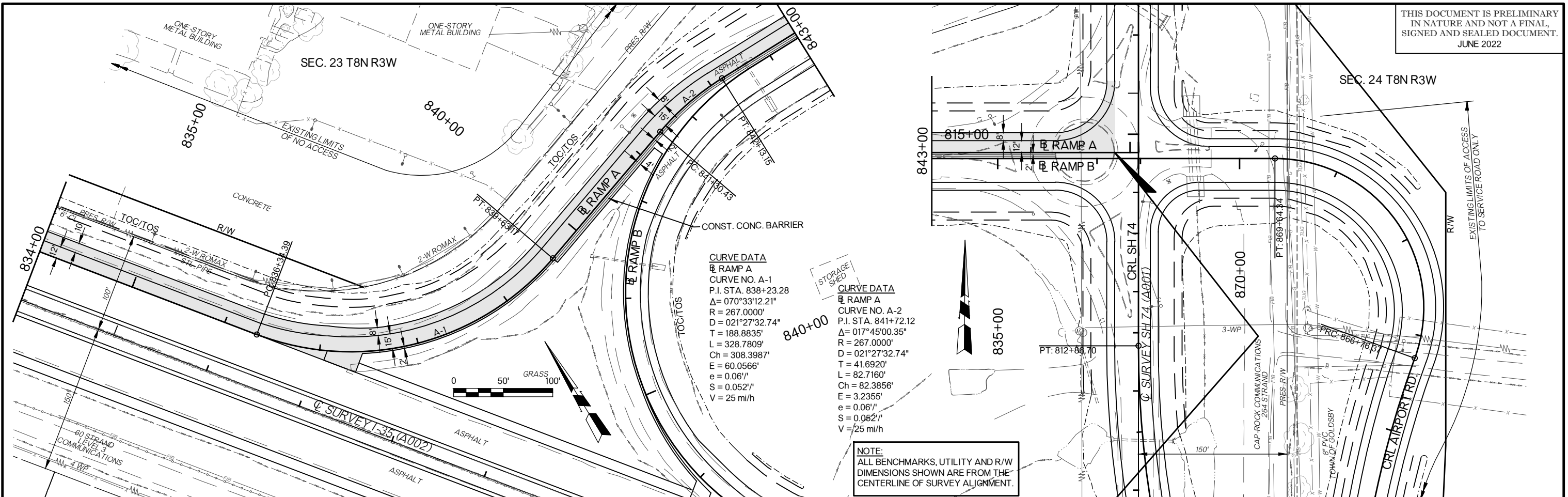
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JUNE 2022



STA. 819+85.00 - BEGIN PROJECT

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MOCLAIN COUNTY I-36/SH 74 INTERCHANGE

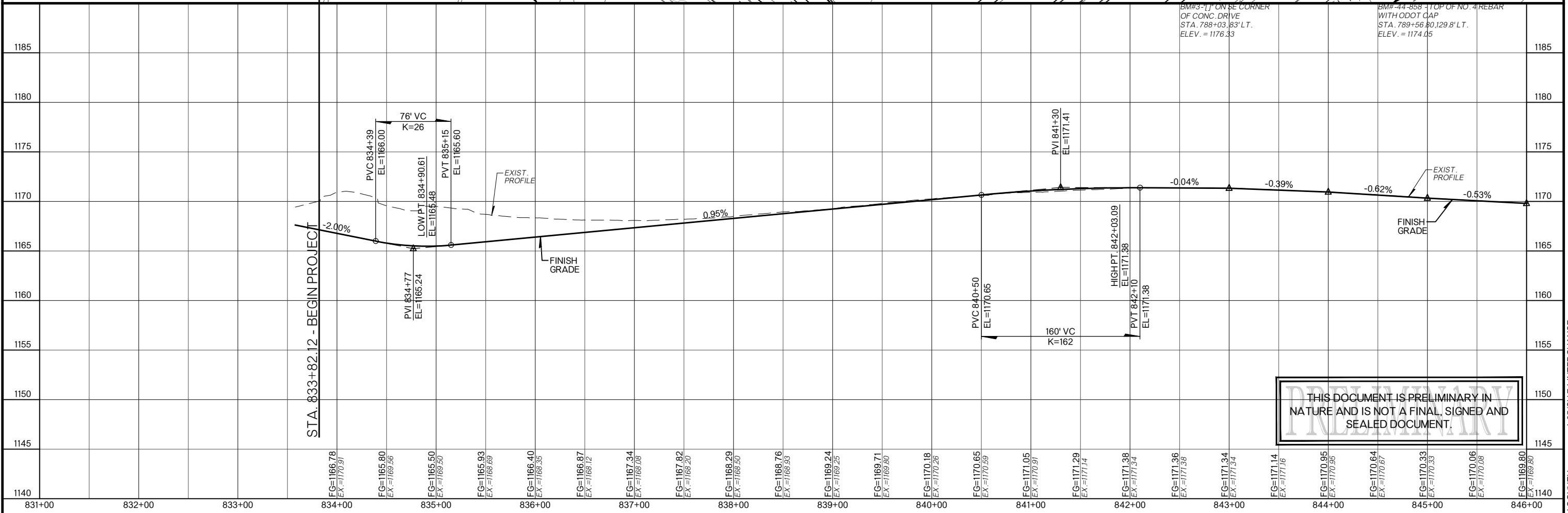
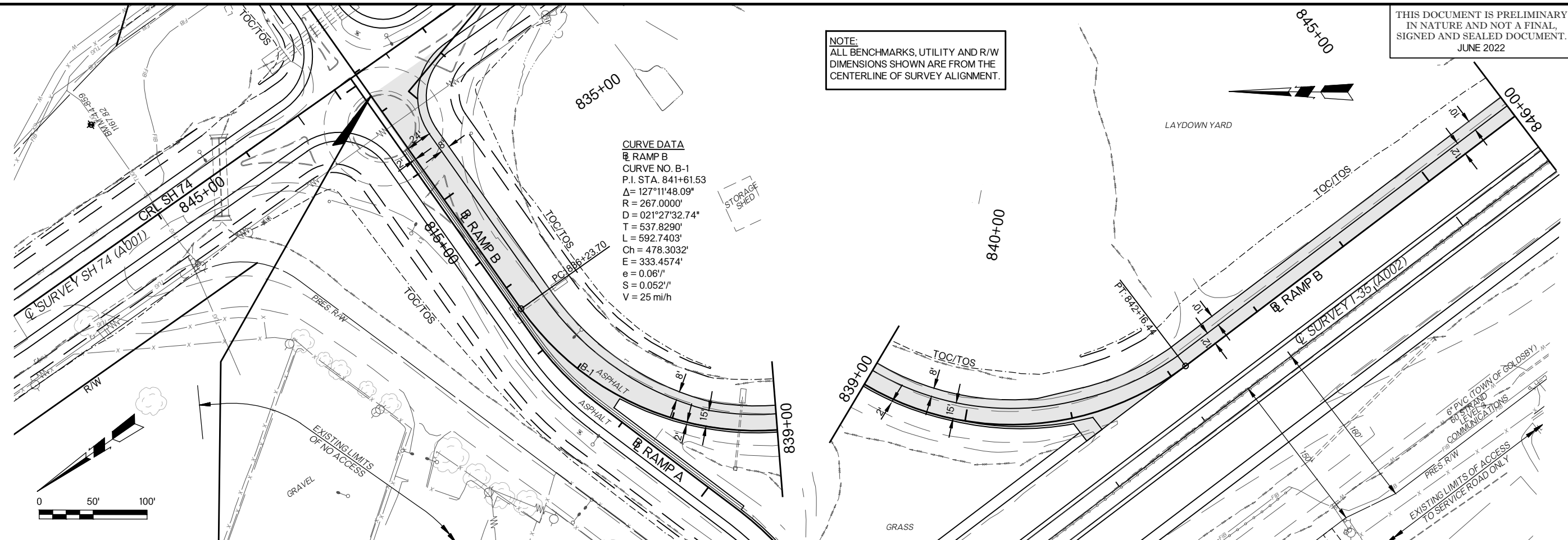
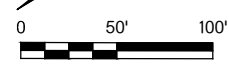


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THIS DOCUMENT IS PRELIMINARY IN NATURE AND NOT A FINAL, SIGNED AND SEALED DOCUMENT. JUNE 2022

NOTE:
ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.

CURVE DATA
 RAMP B
 CURVE NO. B-1
 P.I. STA. 841+61.53
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 $R = 267.0000'$
 $D = 021^{\circ}27'32.74''$
 $T = 537.8290'$
 $L = 592.7403'$
 $Ch = 478.3032'$
 $E = 333.4574'$
 $e = 0.061'$
 $S = 0.0521'$
 $V = 25 \text{ mi/h}$

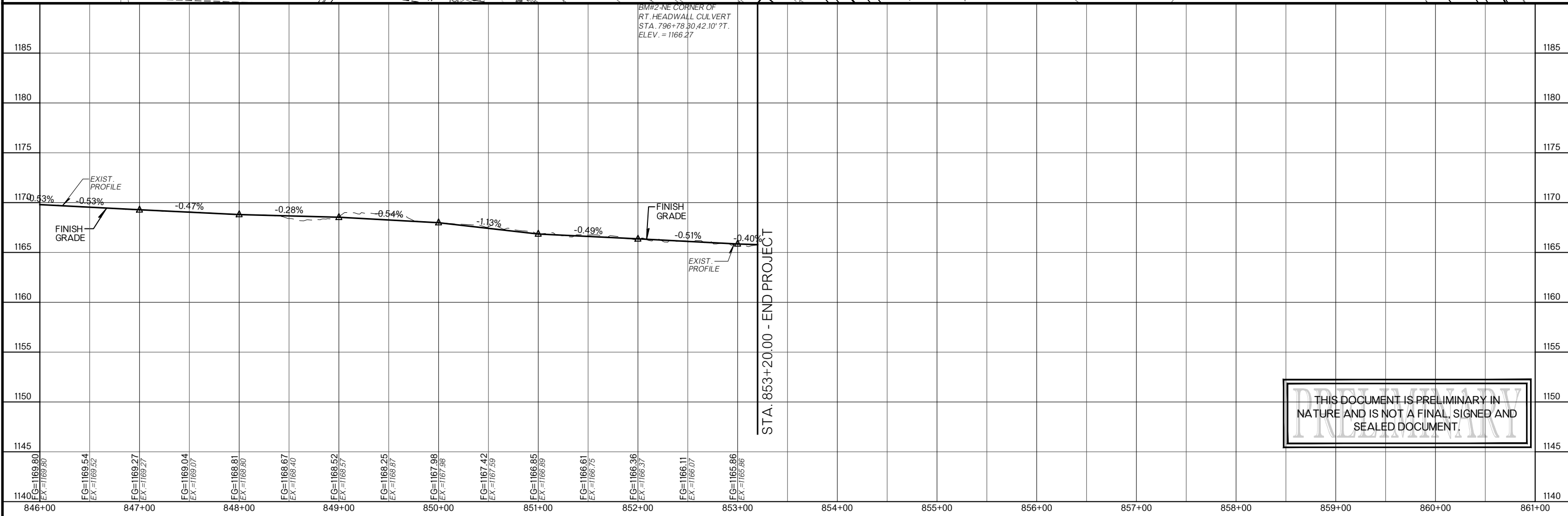
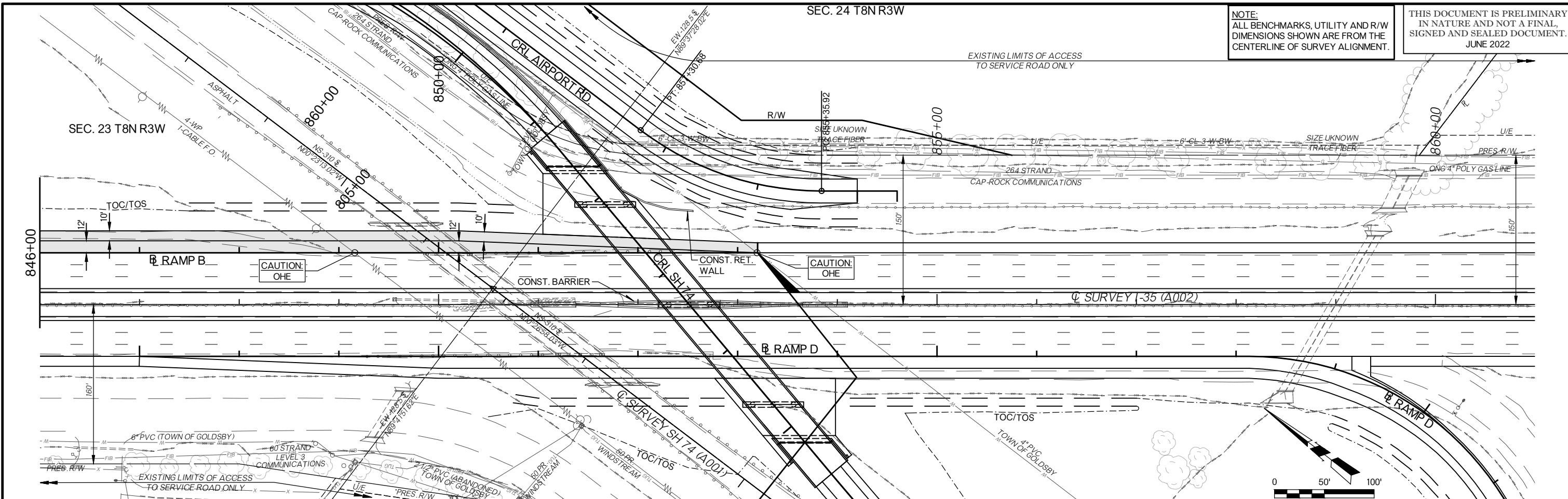


THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

RAMP B - ALTERNATIVE 4A

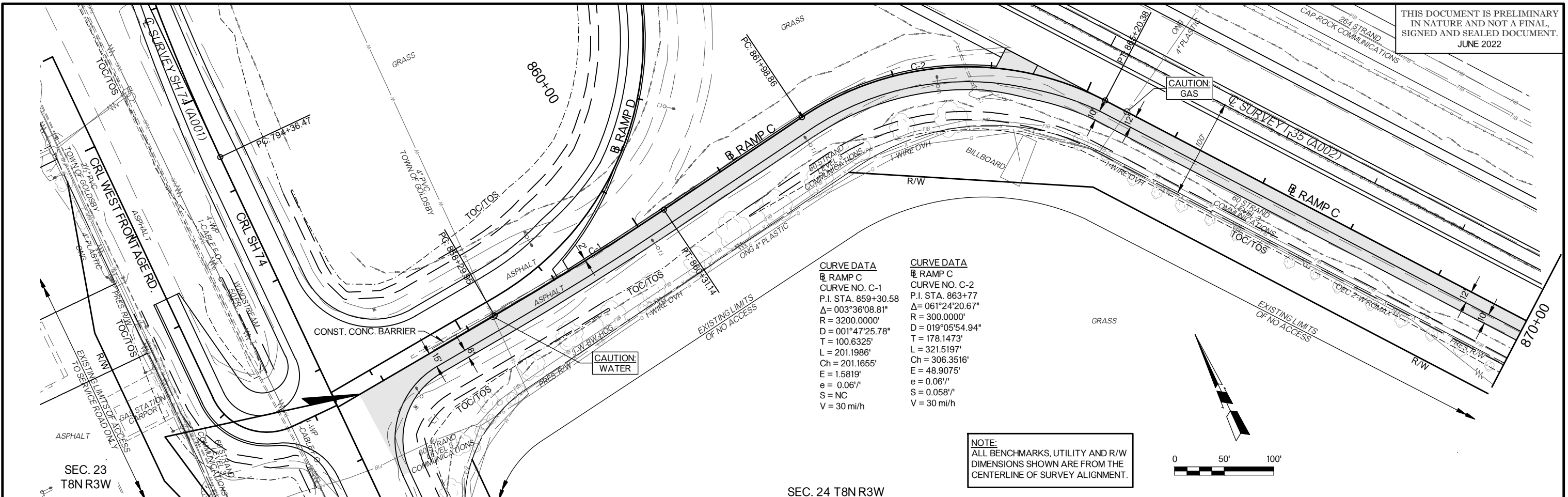
MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

NOTE: ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT. THIS DOCUMENT IS PRELIMINARY IN NATURE AND NOT A FINAL, SIGNED AND SEALED DOCUMENT. JUNE 2022



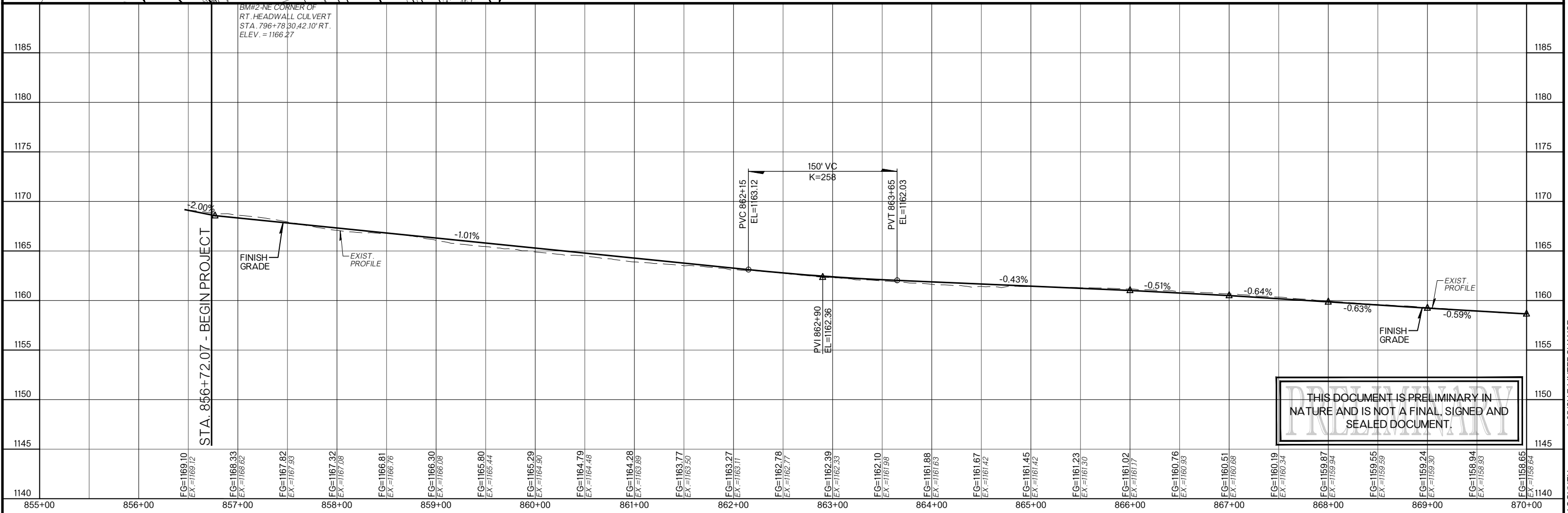
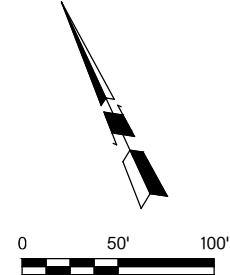
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

MOCLAIN COUNTY I-35/SH 74 INTERCHANGE



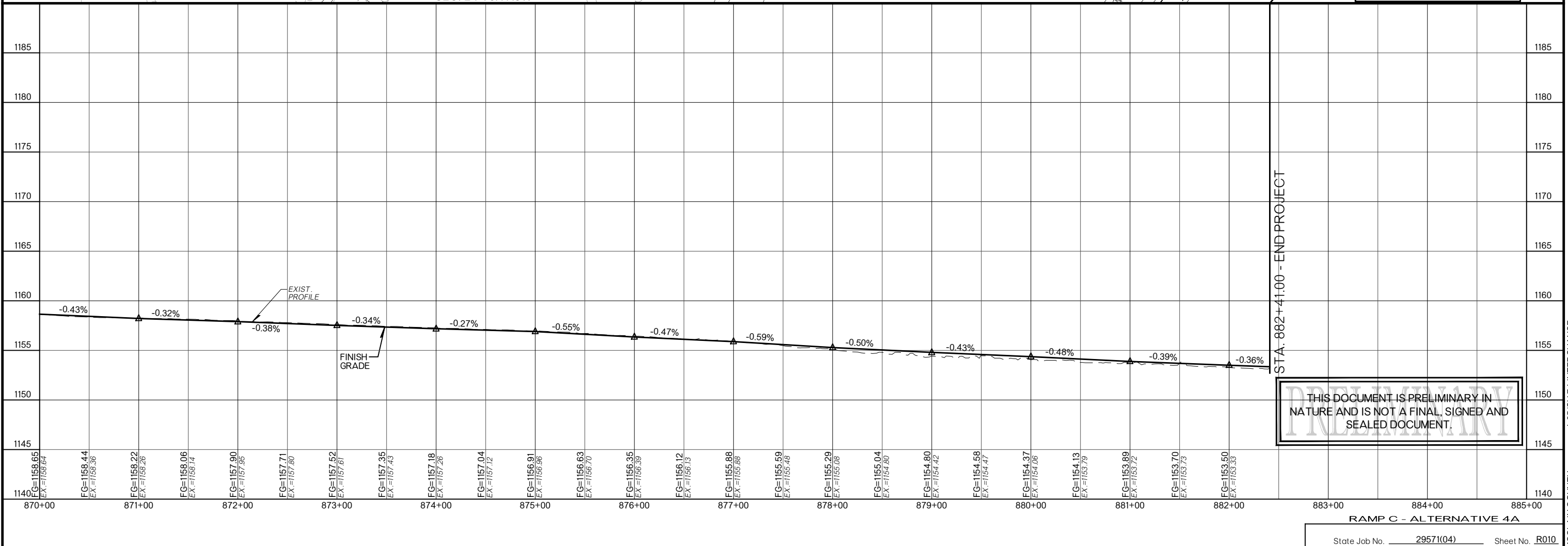
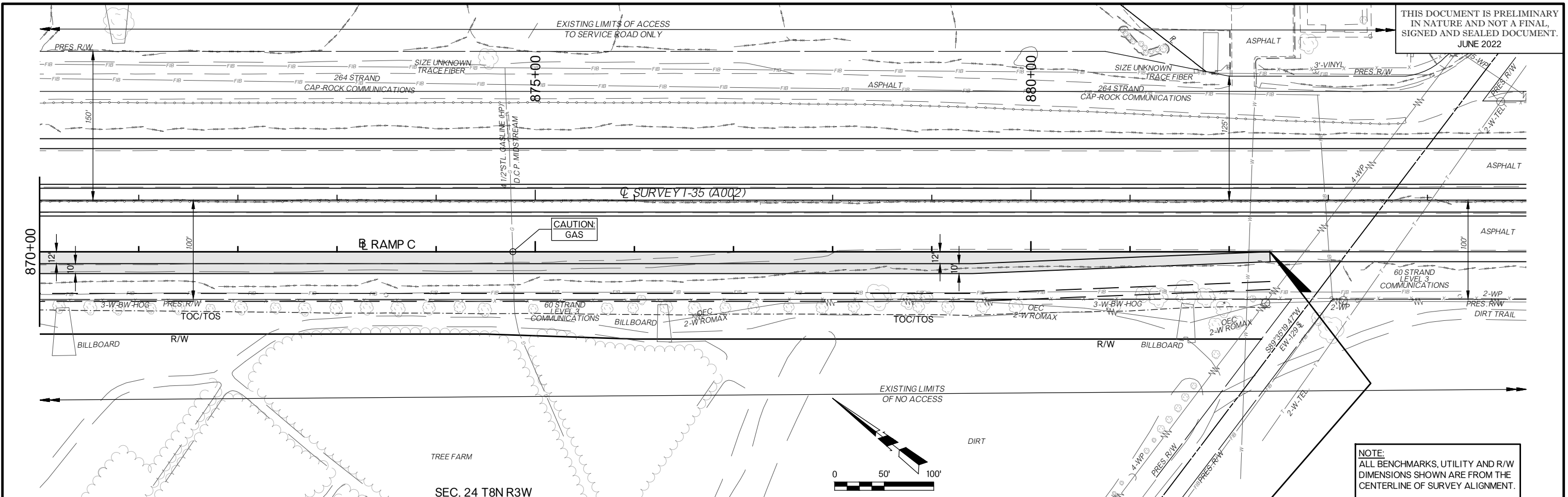
CURVE DATA		CURVE DATA	
RAMP C CURVE NO. C-1		RAMP C CURVE NO. C-2	
P.I. STA.	859+30.58	P.I. STA.	863+77
Δ	003°36'08.81"	Δ	061°24'20.67"
R	3200.0000'	R	300.0000'
D	001°47'25.78"	D	019°05'54.94"
T	100.6325'	T	178.1473'
L	201.1986'	L	321.5197'
Ch	201.1655'	Ch	306.3516'
E	1.5819'	E	48.9075'
e	0.06'/'	e	0.06'/'
S	NC	S	0.058'/'
V	30 mi/h	V	30 mi/h

NOTE:
ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.



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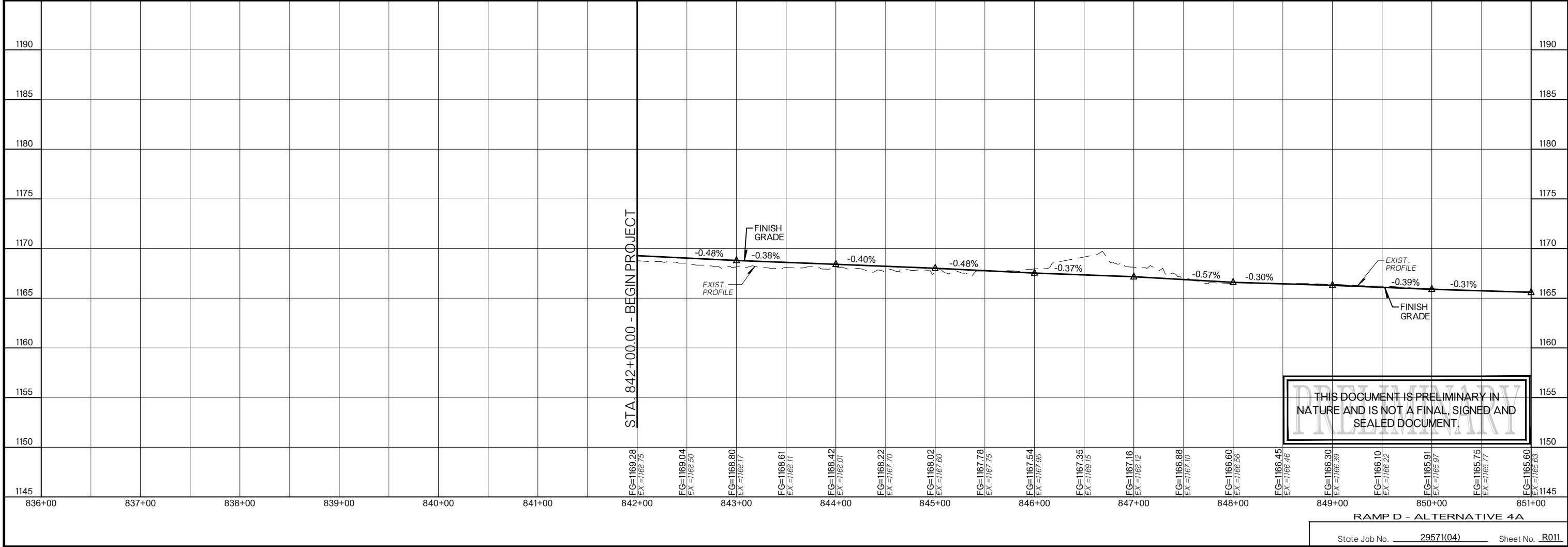
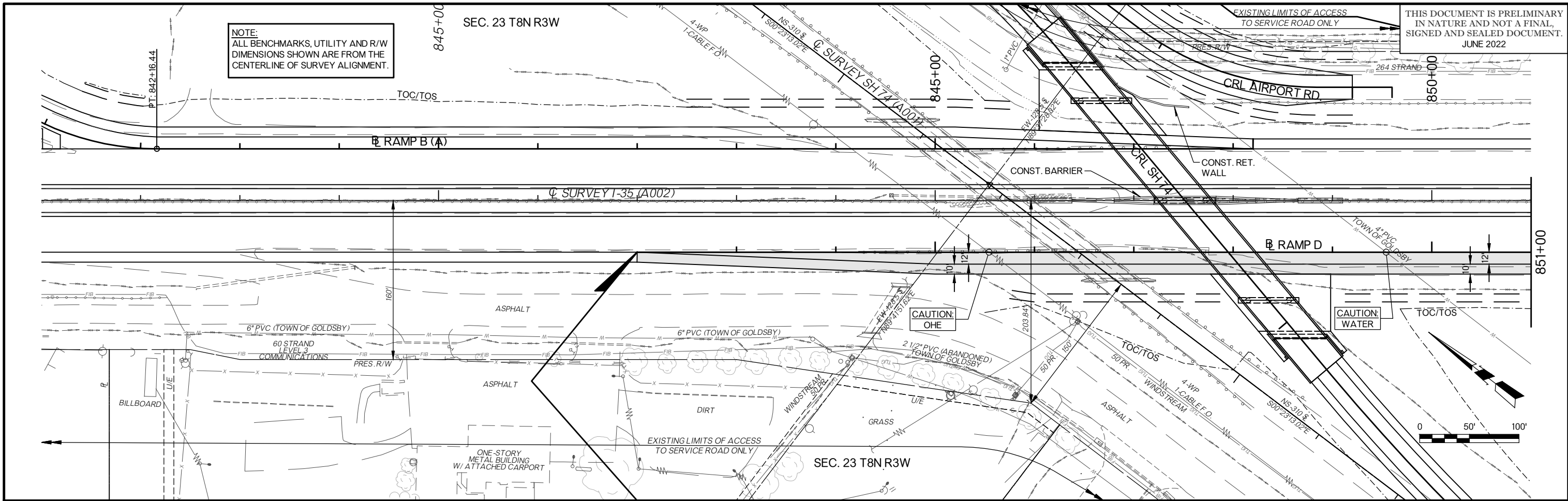
RAMP C - ALTERNATIVE 4A

State Job No. 29571(04) Sheet No. R010

MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

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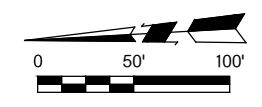


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MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

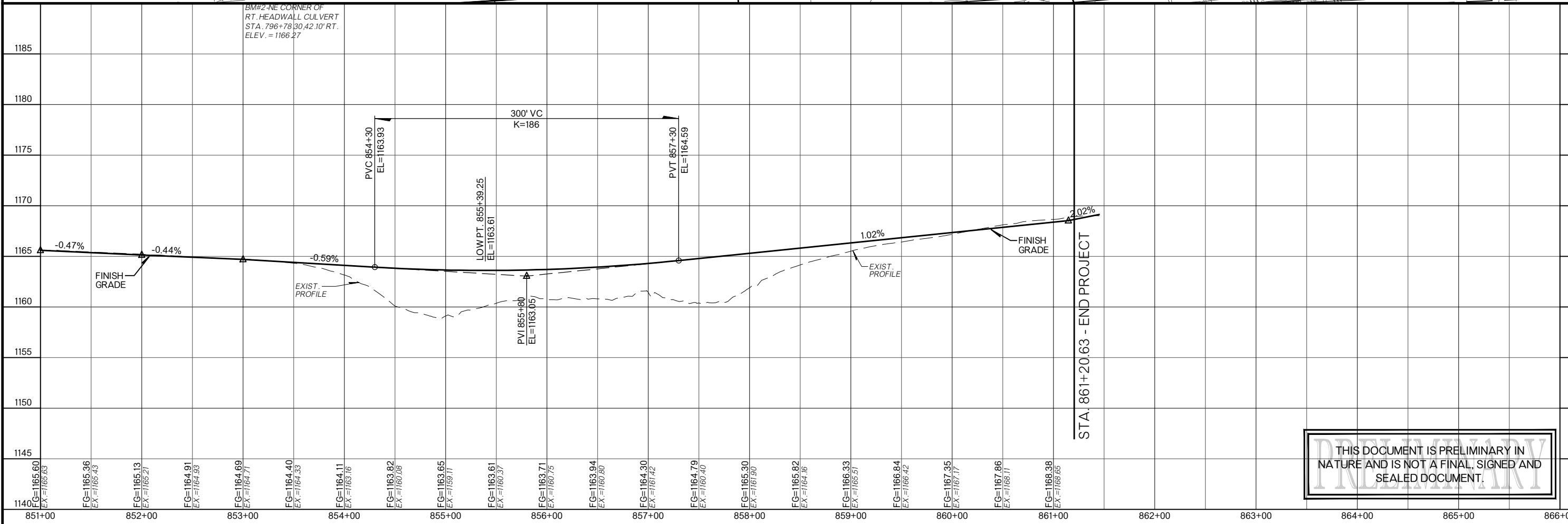
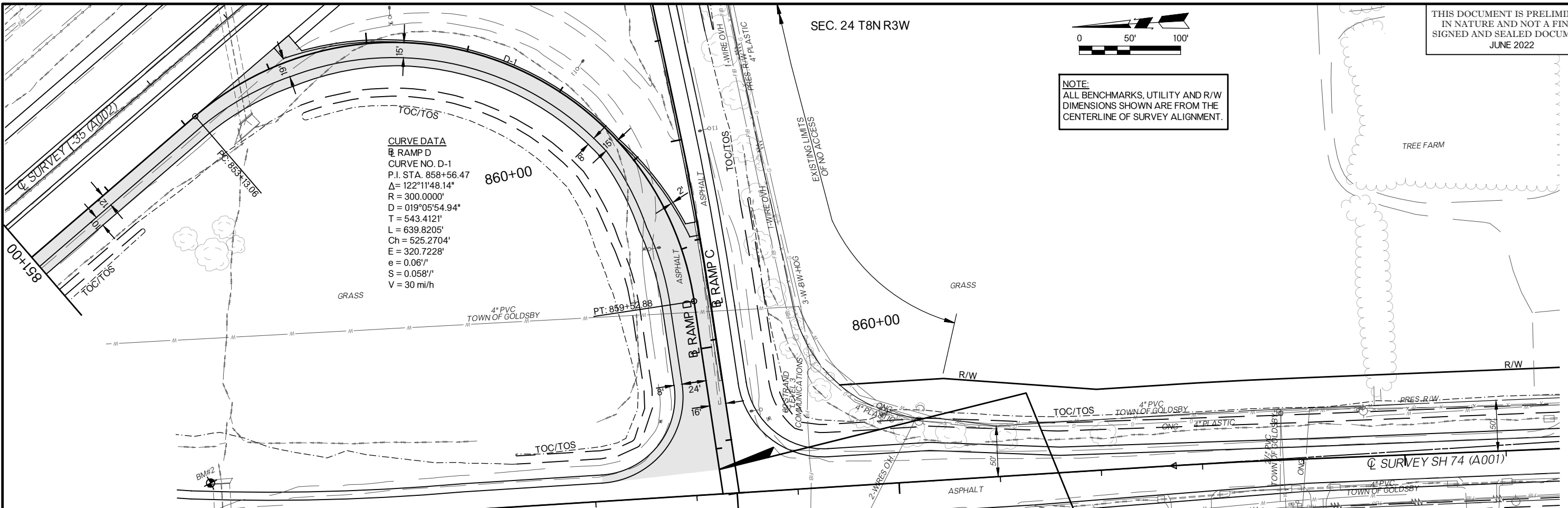
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SEC. 24 T8N R3W



NOTE:
ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.

CURVE DATA
 RAMP D
 CURVE NO. D-1
 P.I. STA. 858+56.47
 $\Delta = 122^{\circ}11'48.14''$
 $R = 300.0000'$
 $D = 019^{\circ}05'54.94''$
 $T = 543.4121'$
 $L = 639.8205'$
 $Ch = 525.2704'$
 $E = 320.7228'$
 $e = 0.061'$
 $S = 0.0581'$
 $V = 30 \text{ mi/h}$



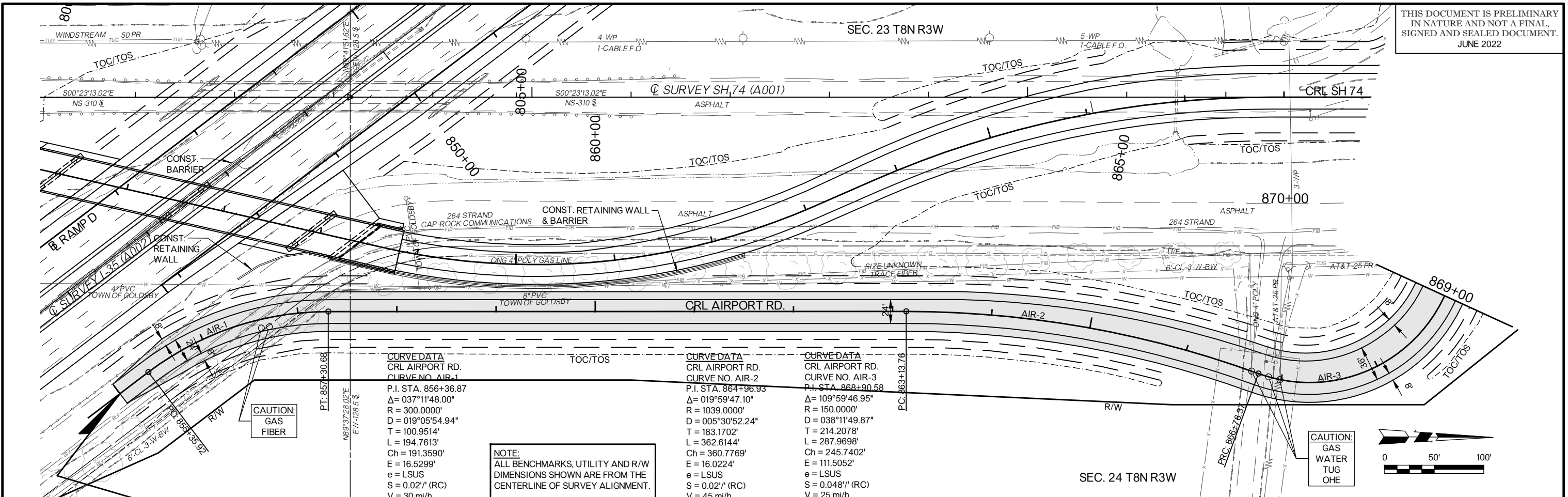
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RAMP D - ALTERNATIVE 4A

State Job No. 29571(04) Sheet No. R012

MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

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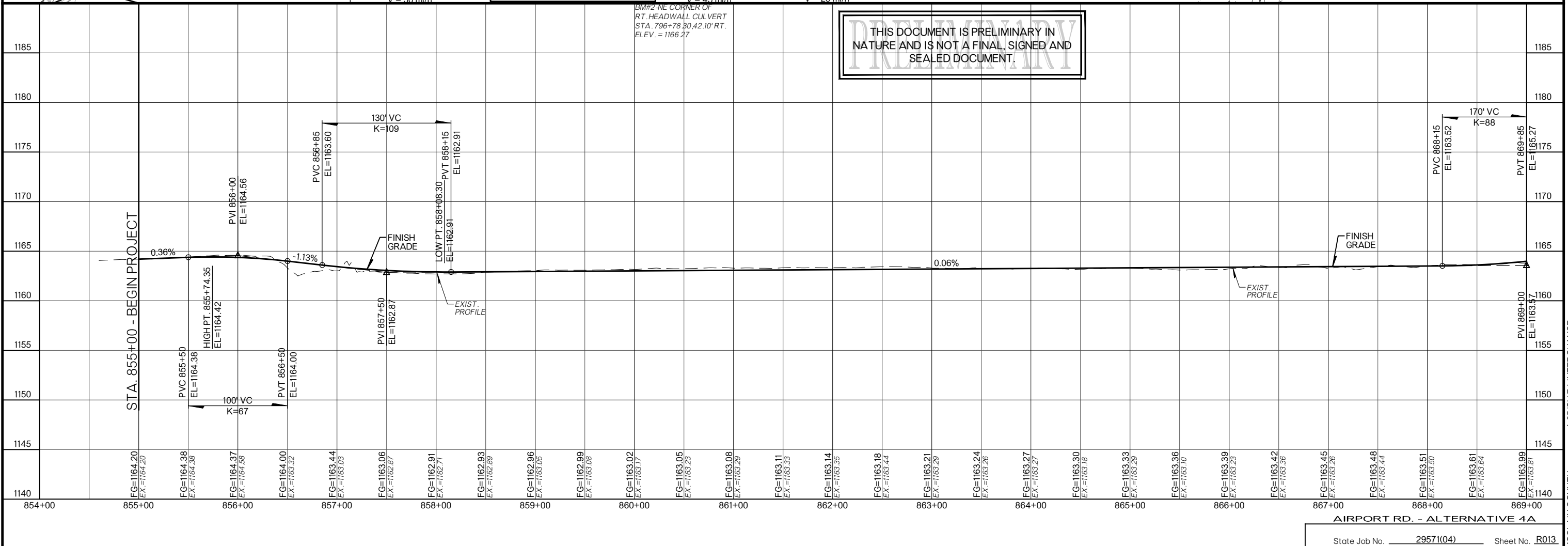


CURVE DATA
 CRL AIRPORT RD.
 CURVE NO. AIR-1
 P.I. STA. 856+36.87
 $\Delta = 037^{\circ}11'48.00''$
 $R = 300.0000'$
 $D = 019^{\circ}05'54.94''$
 $T = 100.9514'$
 $L = 194.7613'$
 $Ch = 191.3590'$
 $E = 16.5299'$
 $e = LSUS$
 $S = 0.02'' (RC)$
 $V = 30 \text{ mi/h}$

NOTE:
 ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.

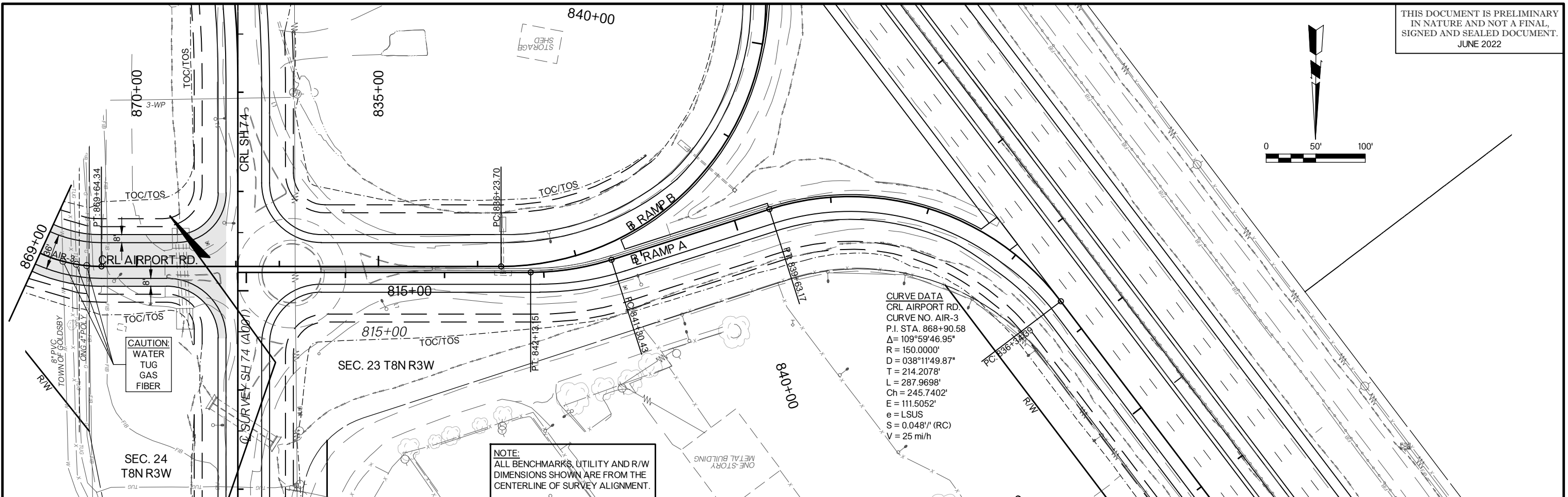
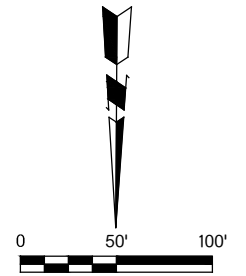
CURVE DATA
 CRL AIRPORT RD.
 CURVE NO. AIR-2
 P.I. STA. 864+96.93
 $\Delta = 019^{\circ}59'47.10''$
 $R = 1039.0000'$
 $D = 005^{\circ}30'52.24''$
 $T = 183.1702'$
 $L = 362.6144'$
 $Ch = 360.7769'$
 $E = 16.0224'$
 $e = LSUS$
 $S = 0.02'' (RC)$
 $V = 45 \text{ mi/h}$

CURVE DATA
 CRL AIRPORT RD.
 CURVE NO. AIR-3
 P.I. STA. 868+90.58
 $\Delta = 109^{\circ}59'46.95''$
 $R = 150.0000'$
 $D = 038^{\circ}11'49.87''$
 $T = 214.2078'$
 $L = 287.9698'$
 $Ch = 245.7402'$
 $E = 111.5052'$
 $e = LSUS$
 $S = 0.048'' (RC)$
 $V = 25 \text{ mi/h}$



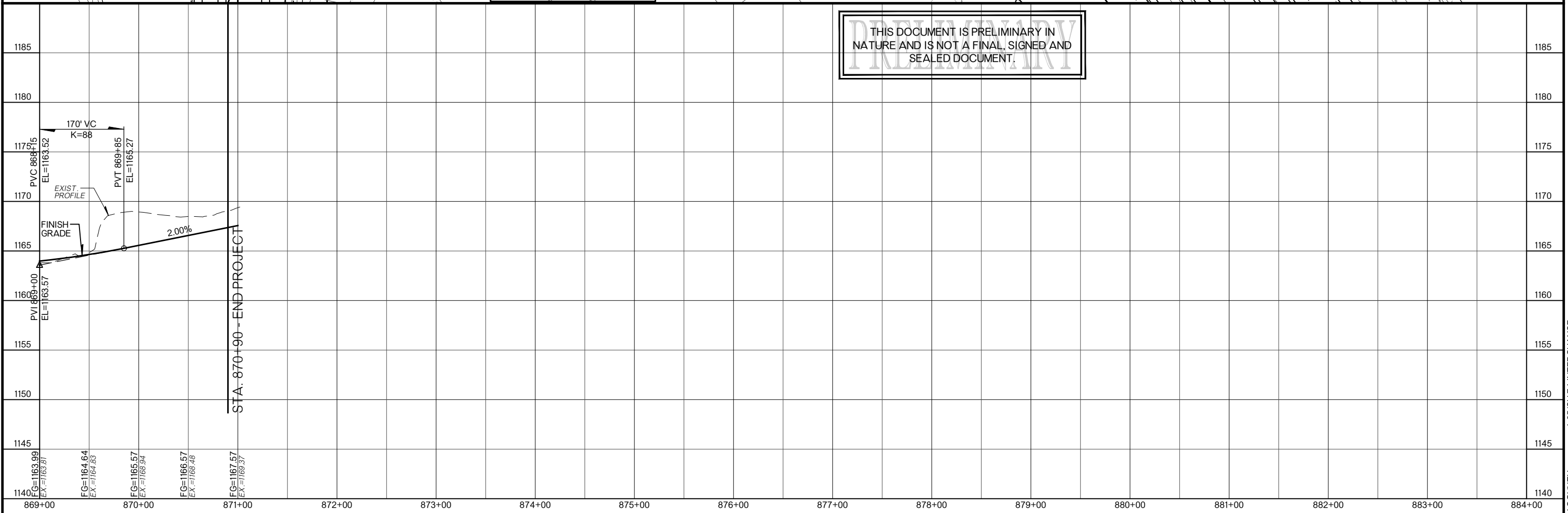
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MOCLAIN COUNTY I-35/SH74 INTERCHANGE



CURVE DATA
CRL AIRPORT RD
CURVE NO. AIR-3
P.I. STA. 868+90.58
 $\Delta = 109^\circ 59' 46.95''$
R = 150.0000'
D = $038^\circ 11' 49.87''$
T = 214.2078'
L = 287.9698'
Ch = 245.7402'
E = 111.5052'
e = LSUS
S = 0.048' (RC)
V = 25 mi/h

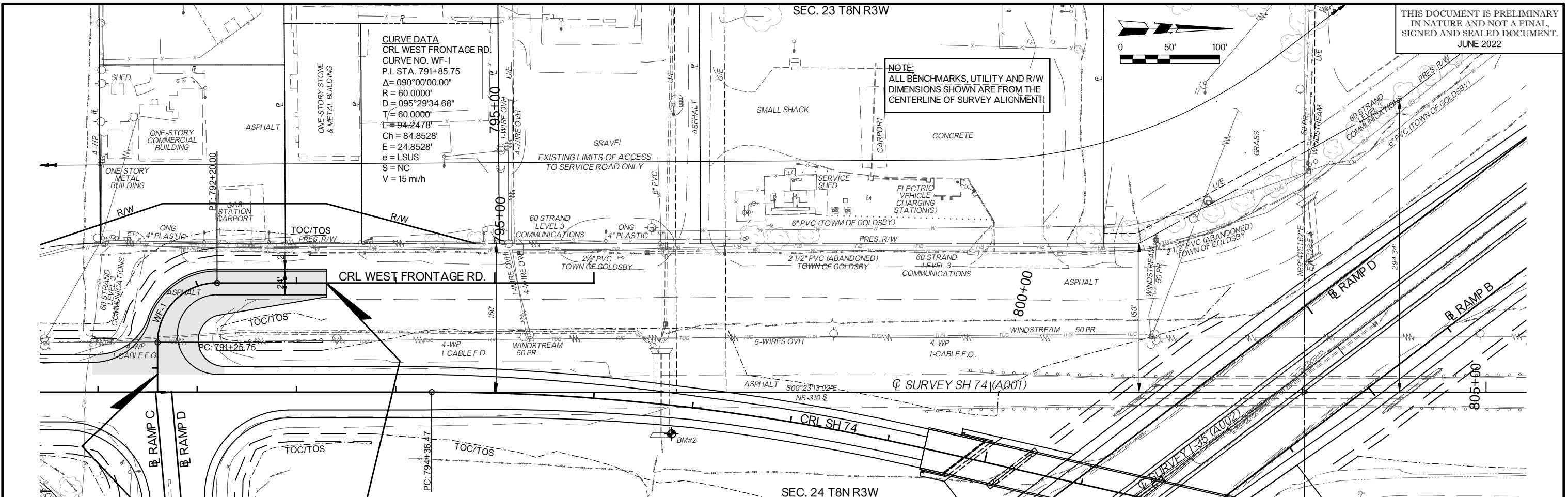
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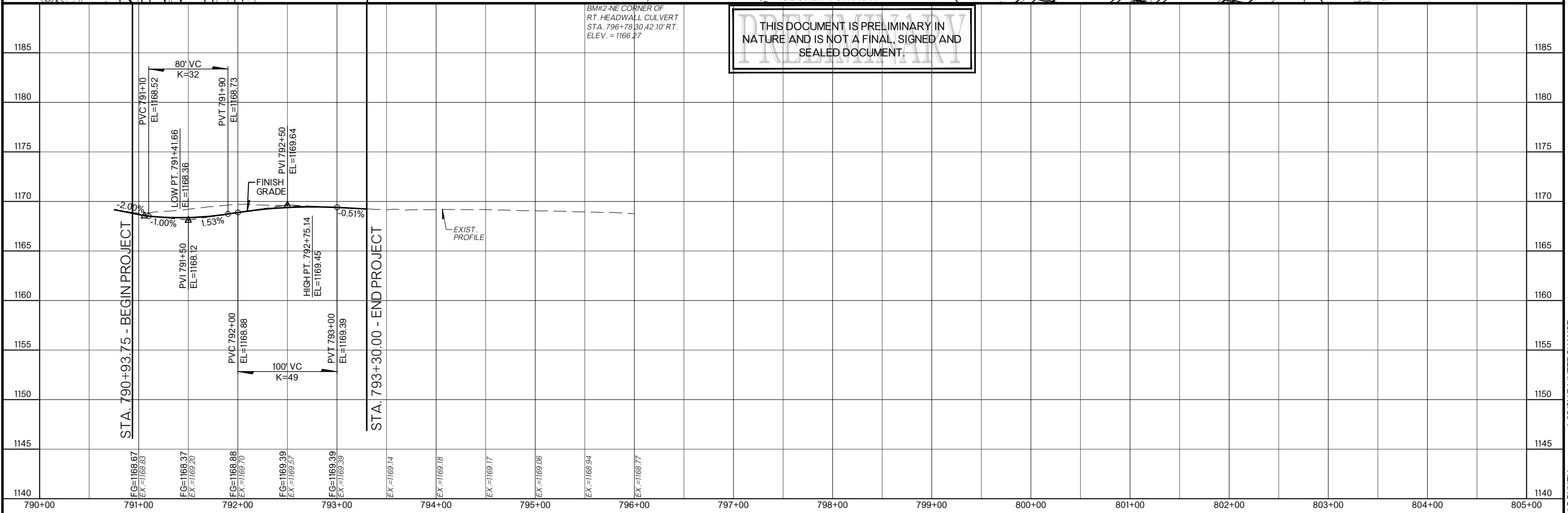


CURVE DATA
CRL WEST FRONTAGE RD
CURVE NO. WF-1
P.I. STA. 791+85.75
 $\Delta = 090^{\circ}00'00.00''$
 $R = 60.0000'$
 $D = 095^{\circ}29'34.68''$
 $T = 60.0000'$
 $L = 94.2478'$
 $Ch = 84.8528'$
 $E = 24.8528'$
 $e = LSUS$
 $S = NC$
 $V = 15 \text{ mi/h}$

NOTE:
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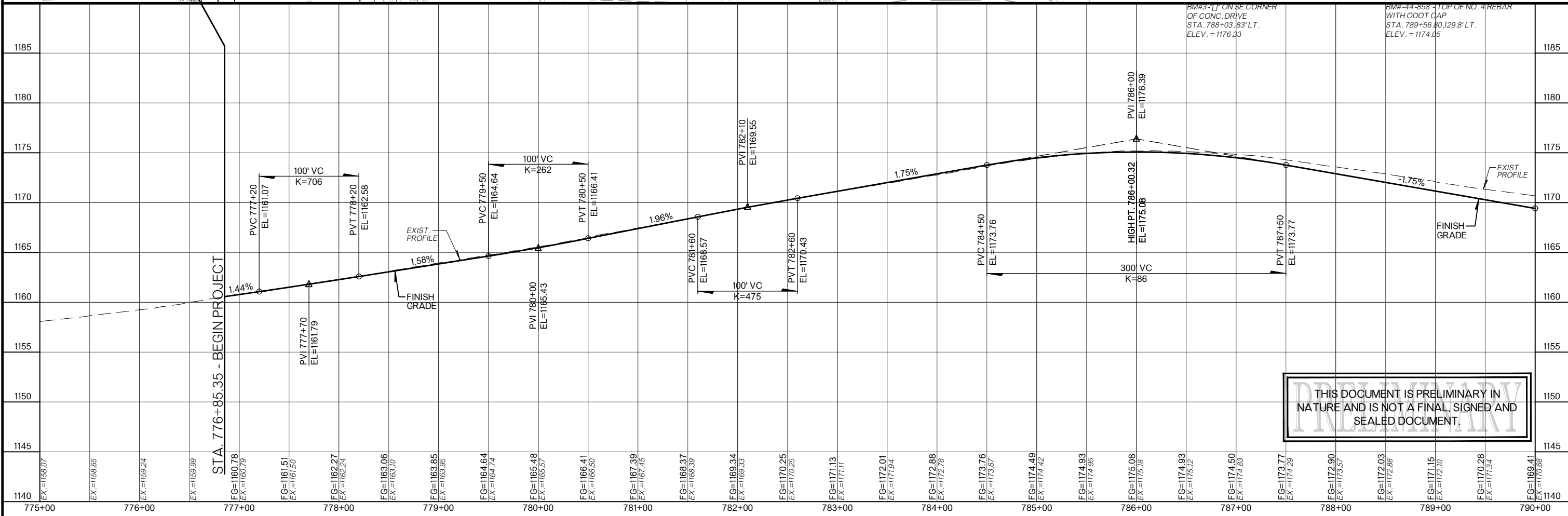
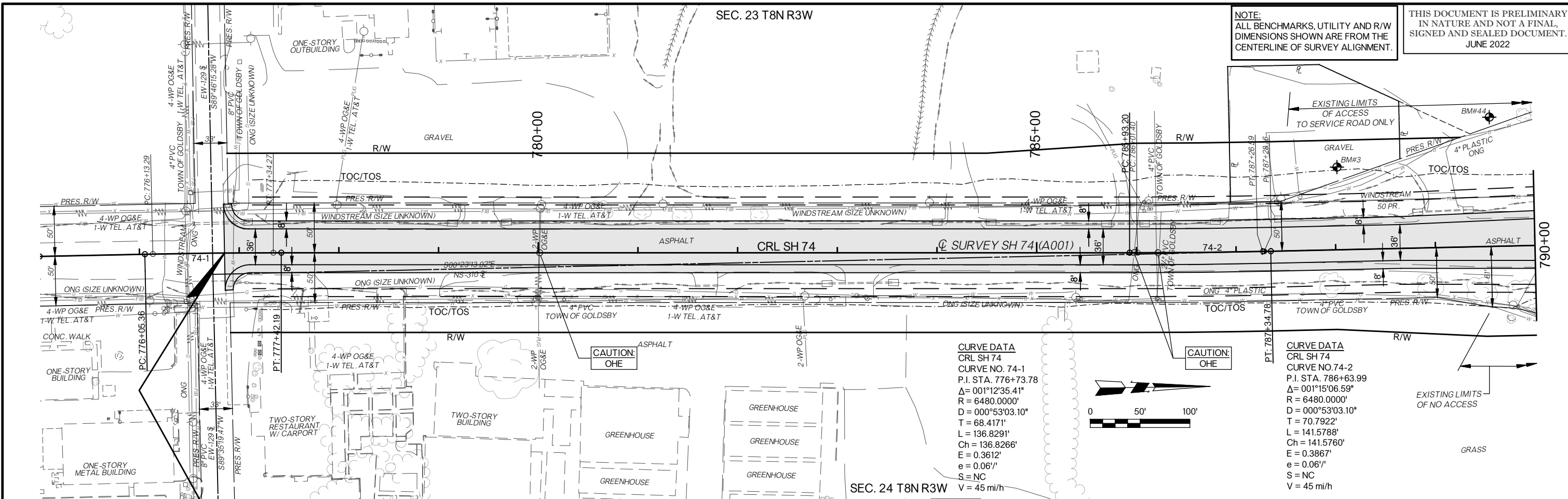


STA. 790+93.75 - BEGIN PROJECT

STA. 793+30.00 - END PROJECT

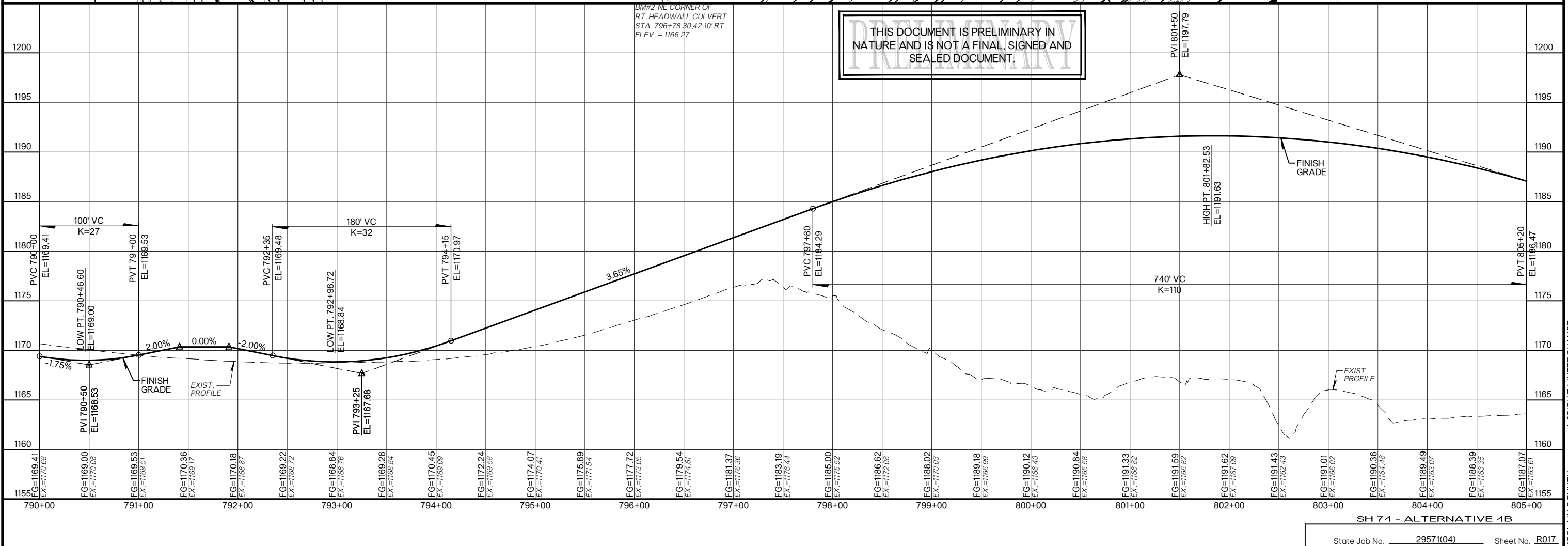
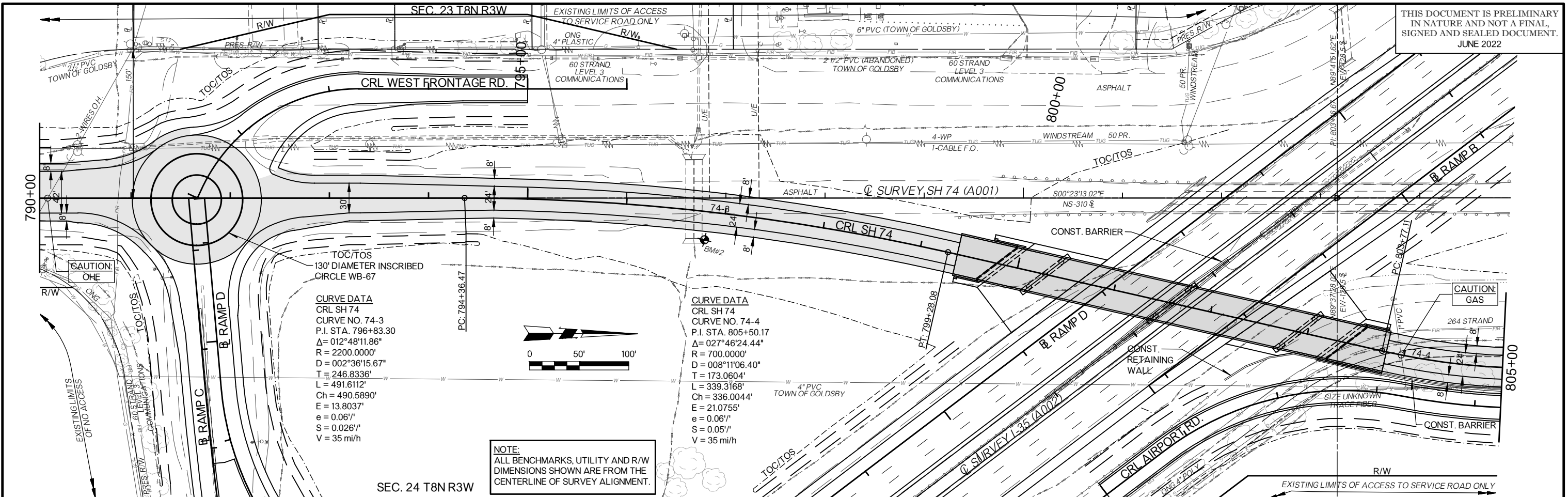
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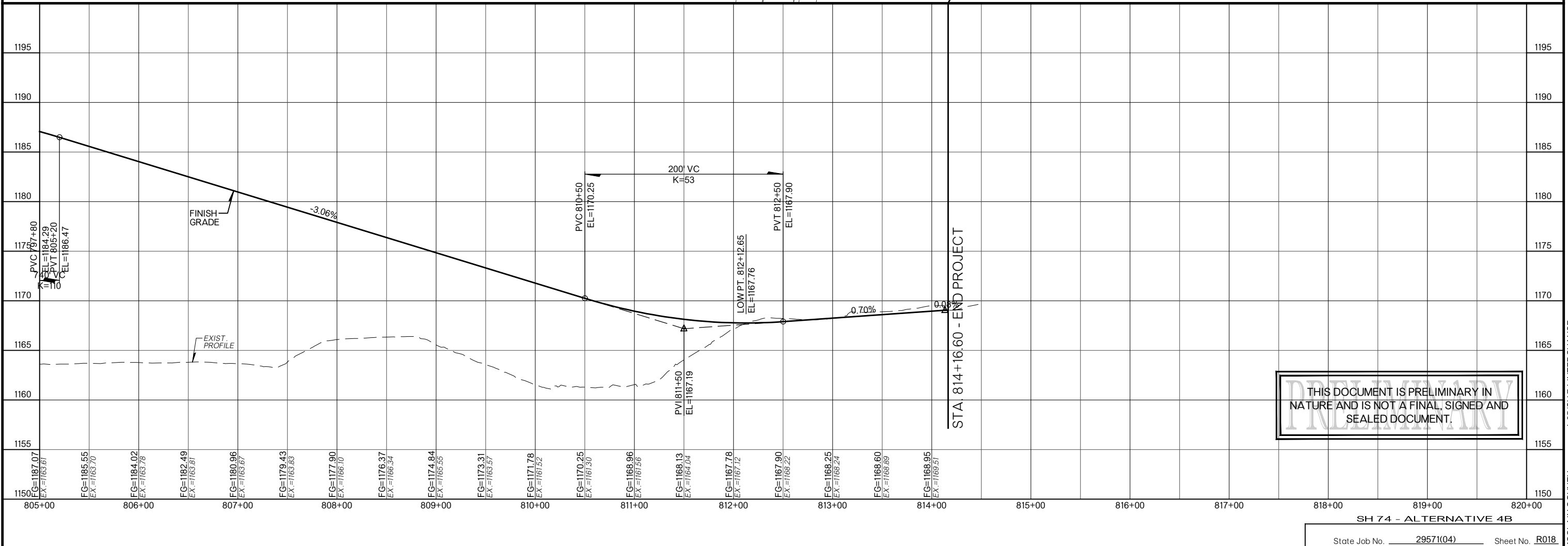
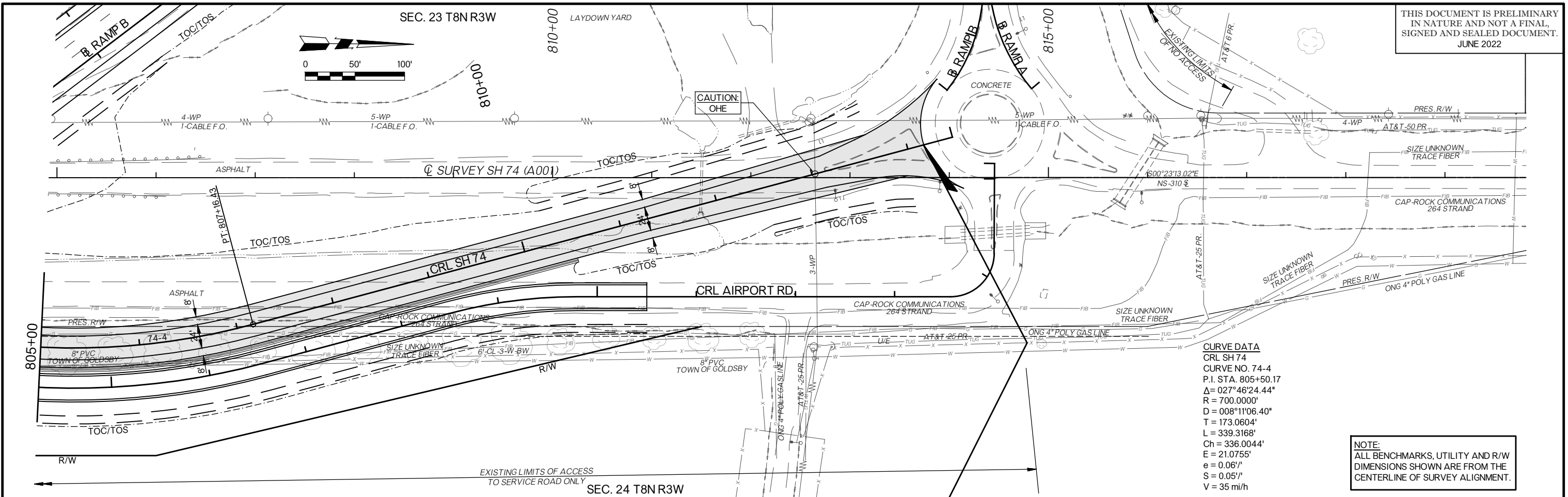
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MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

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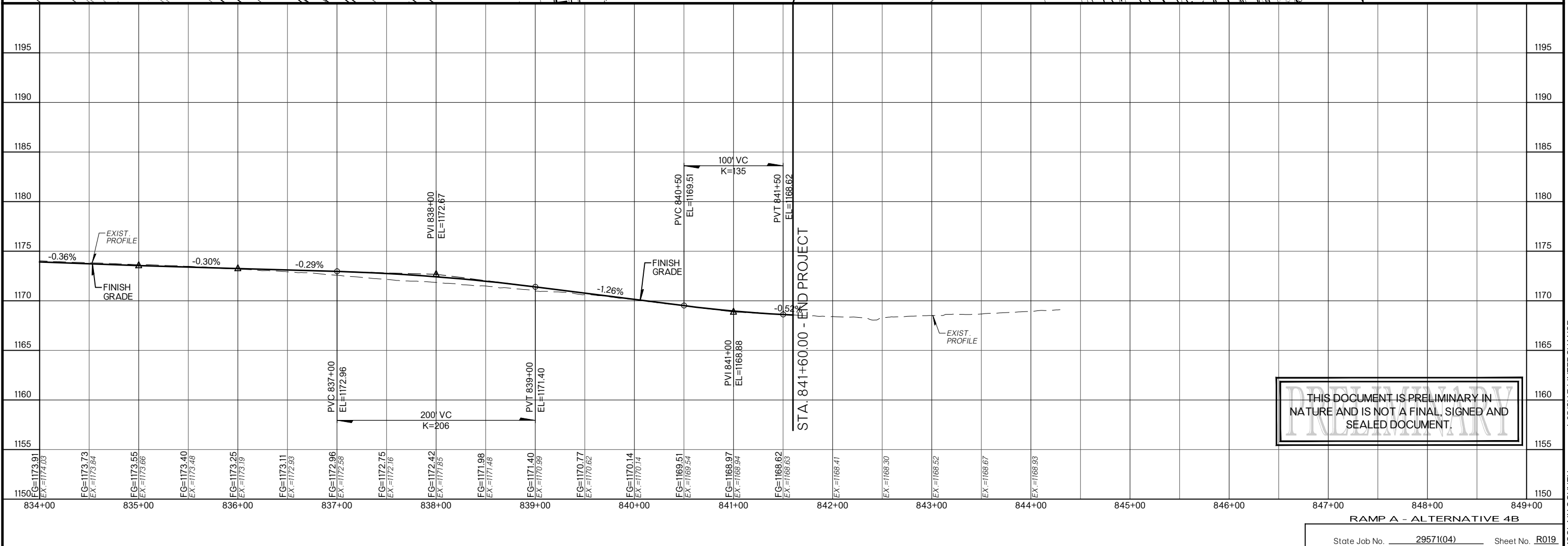
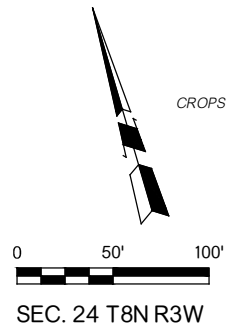
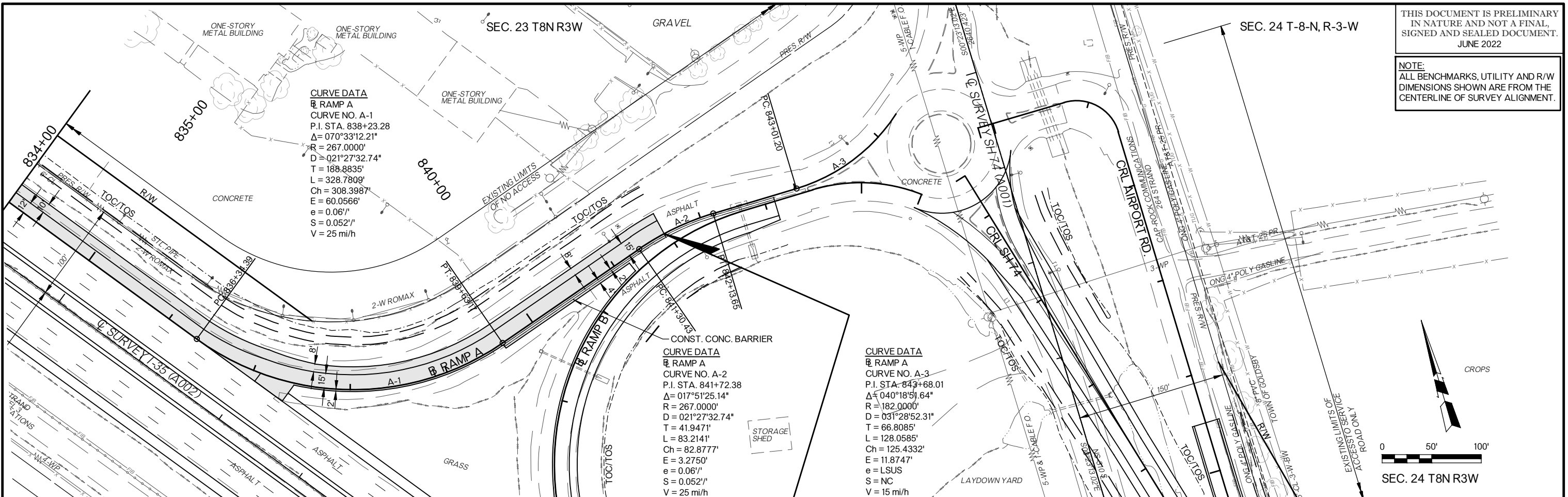


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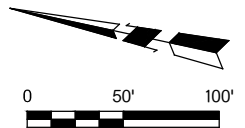
RAMP A - ALTERNATIVE 4B

State Job No. 29571(04) Sheet No. R019

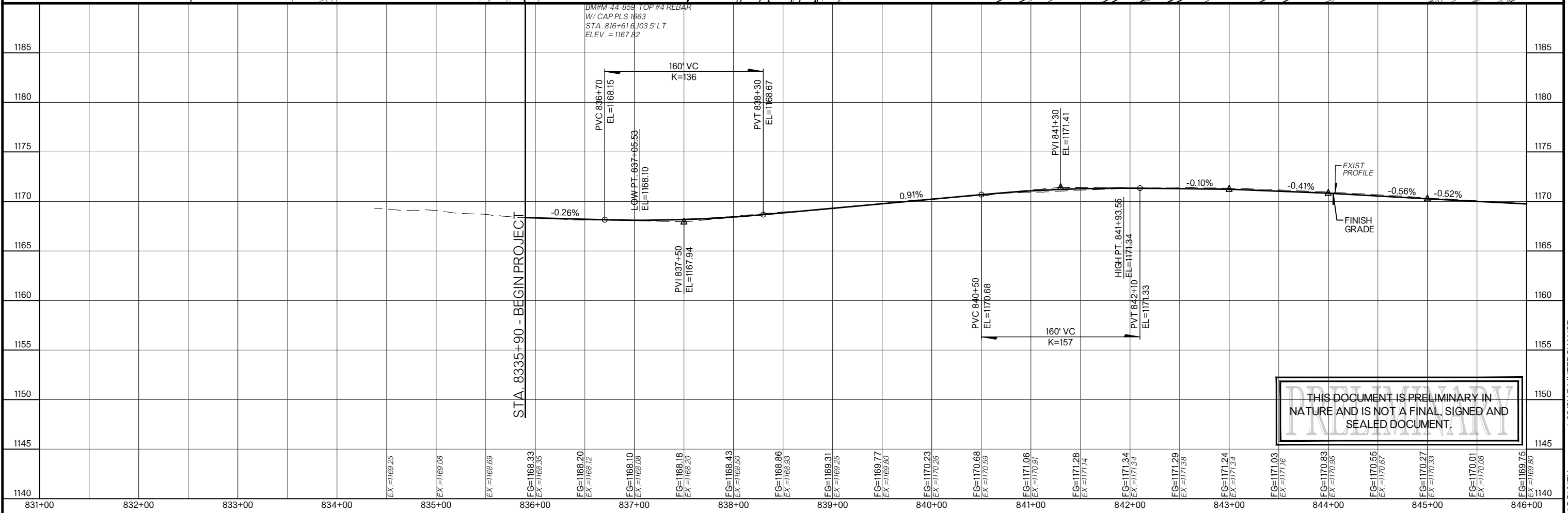
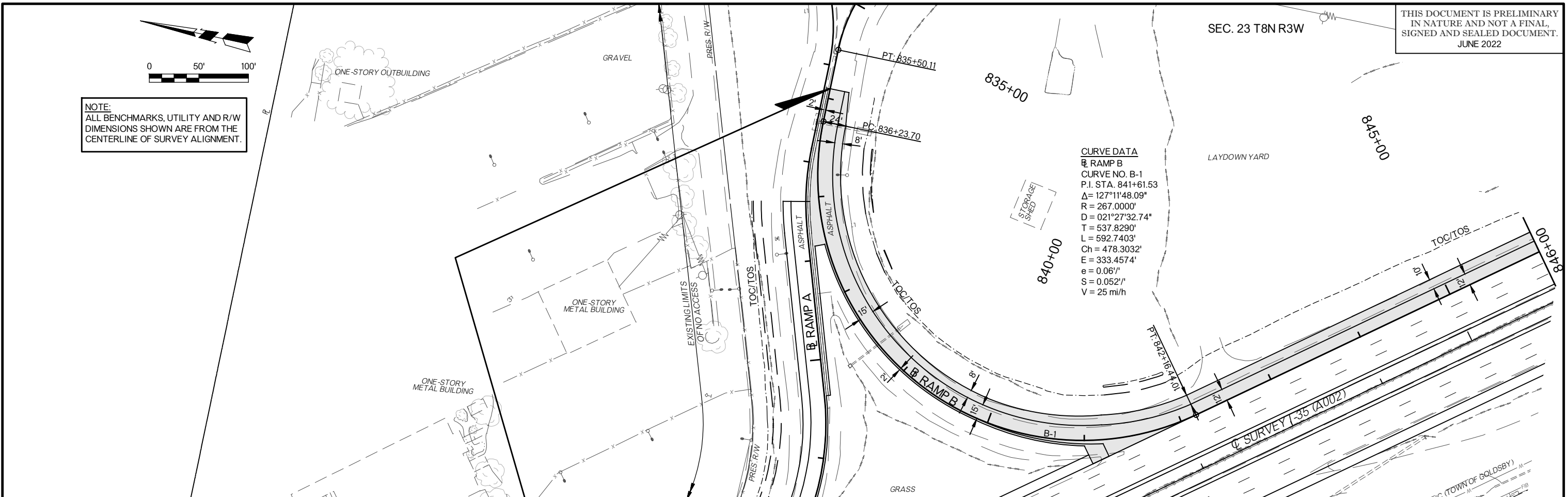
MOCLAIN COUNTY I-36/SH74 INTERCHANGE

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SEC. 23 T8N R3W



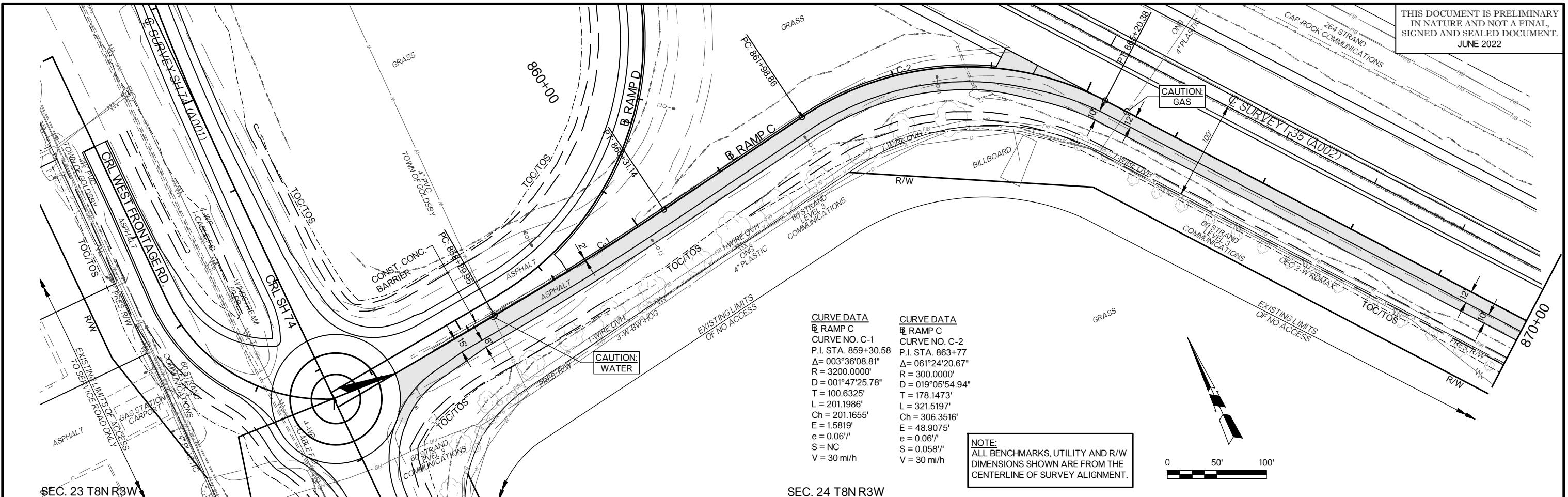
NOTE:
ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.



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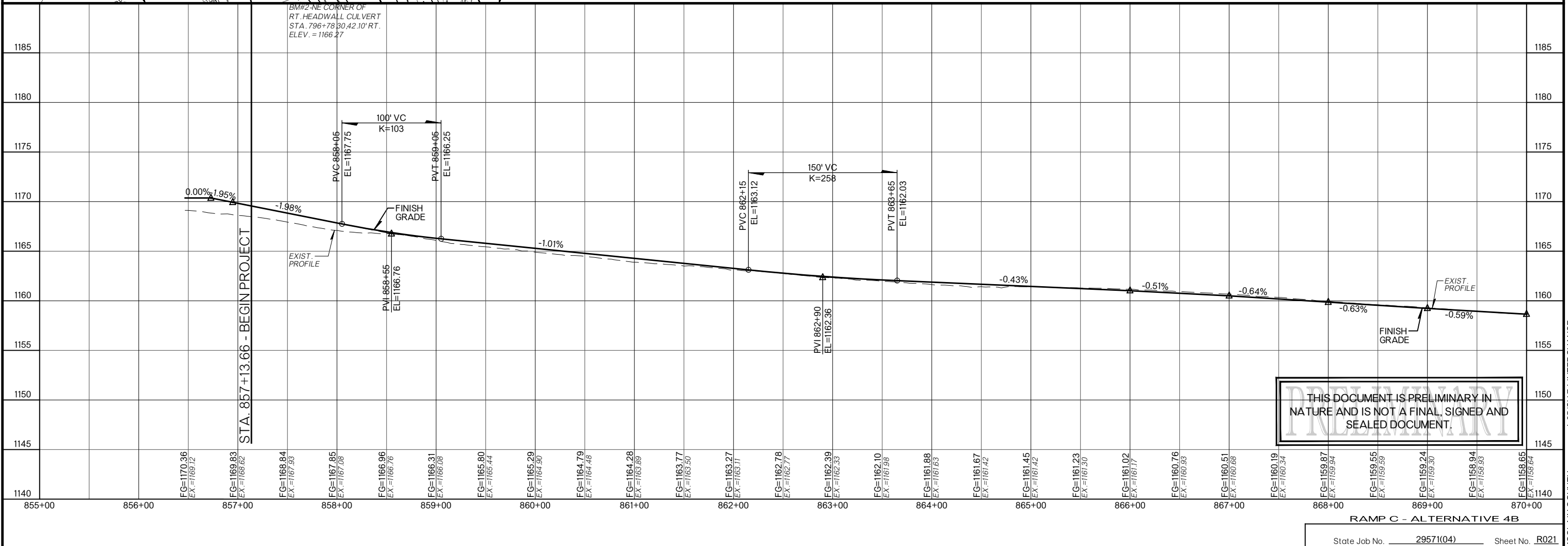
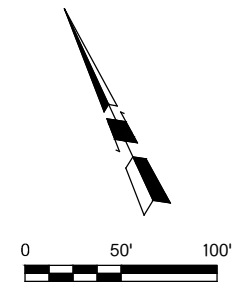
RAMP B - ALTERNATIVE 4B

MOCLAIN COUNTY I-36/SH74 INTERCHANGE



CURVE DATA	CURVE DATA
RAMP C	RAMP C
CURVE NO. C-1	CURVE NO. C-2
P.I. STA. 859+30.58	P.I. STA. 863+77
$\Delta = 003^{\circ}36'08.81''$	$\Delta = 061^{\circ}24'20.67''$
$R = 3200.0000'$	$R = 300.0000'$
$D = 001^{\circ}47'25.78''$	$D = 019^{\circ}05'54.94''$
$T = 100.6325'$	$T = 178.1473'$
$L = 201.1986'$	$L = 321.5197'$
$Ch = 201.1655'$	$Ch = 306.3516'$
$E = 1.5819'$	$E = 48.9075'$
$e = 0.06''$	$e = 0.06''$
$S = NC$	$S = 0.058''$
$V = 30 \text{ mi/h}$	$V = 30 \text{ mi/h}$

NOTE:
ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.

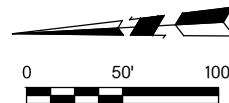


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RAMP C - ALTERNATIVE 4B

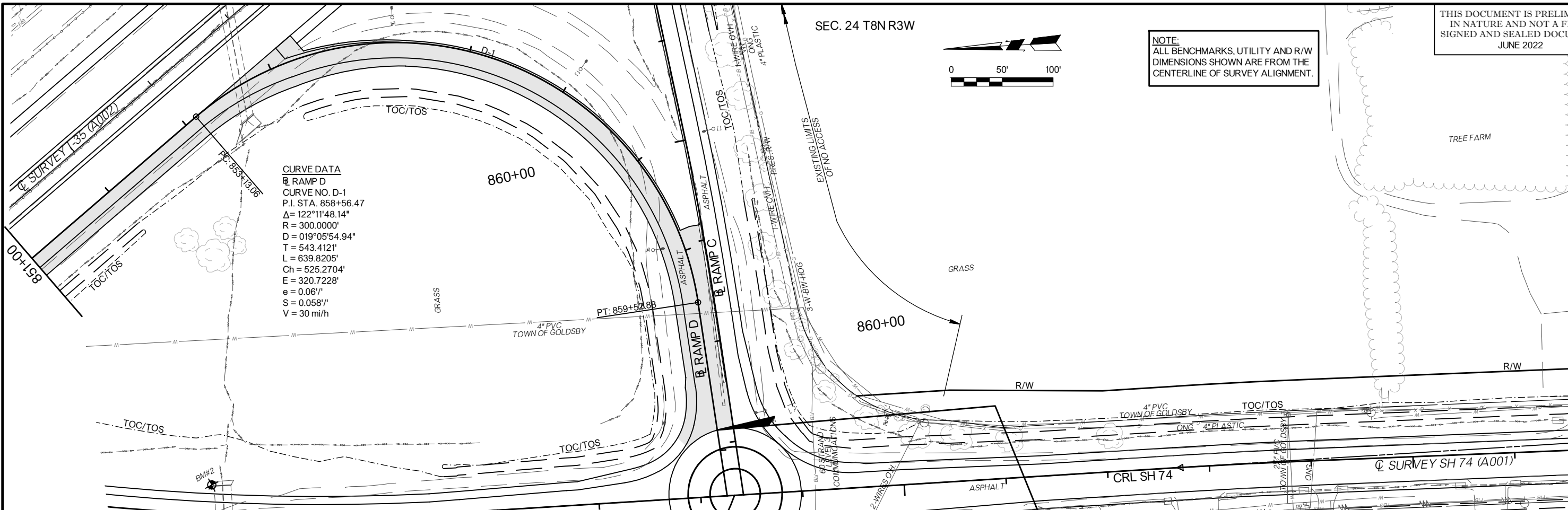
MCLAIN COUNTY I-36/SH74 INTERCHANGE

SEC. 24 T8N R3W

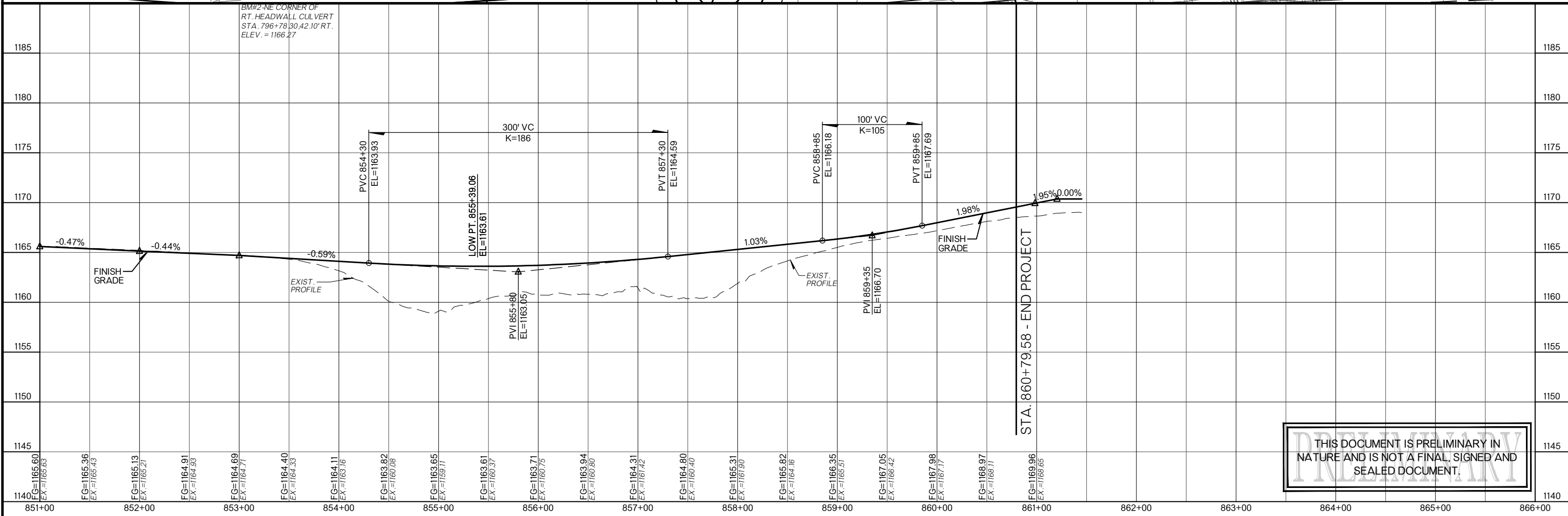


NOTE:
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CURVE DATA
RAMP D
 CURVE NO. D-1
 P.I. STA. 858+56.47
 $\Delta = 122^\circ 11' 48.14''$
 $R = 300.0000'$
 $D = 019^\circ 05' 54.94''$
 $T = 543.4121'$
 $L = 639.8205'$
 $Ch = 525.2704'$
 $E = 320.7228'$
 $e = 0.061'$
 $S = 0.0581''$
 $V = 30 \text{ mi/h}$



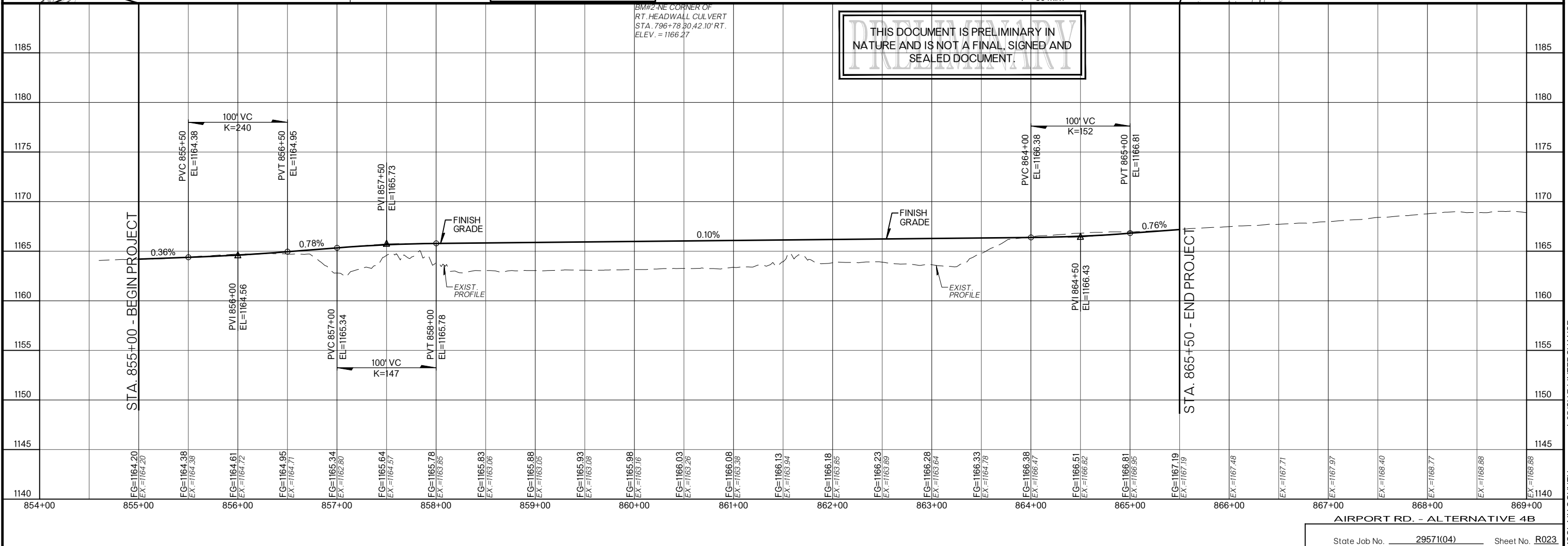
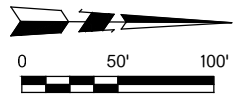
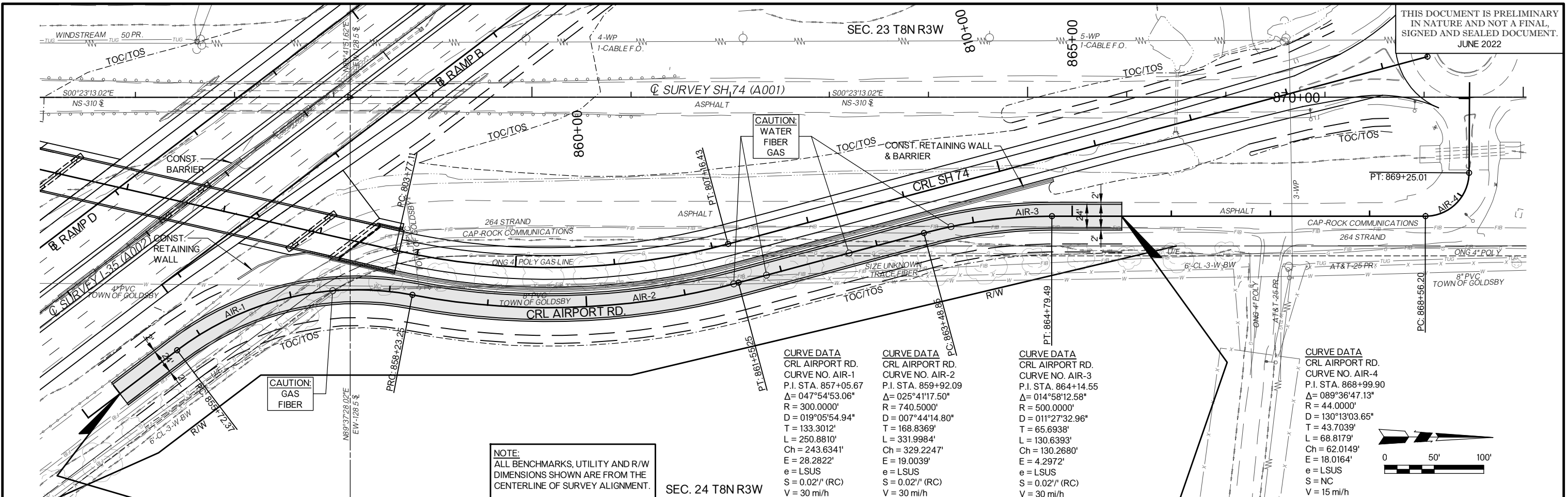
BM#2 NE CORNER OF
RT. HEADWALL CULVERT
STA. 796+78.30 42.10' RT.
ELEV. = 1166.27

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NATURE AND IS NOT A FINAL,
SIGNED AND SEALED DOCUMENT.

RAMP D - ALTERNATIVE 4B

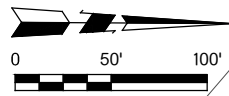
State Job No. 29571(04) Sheet No. R022

MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

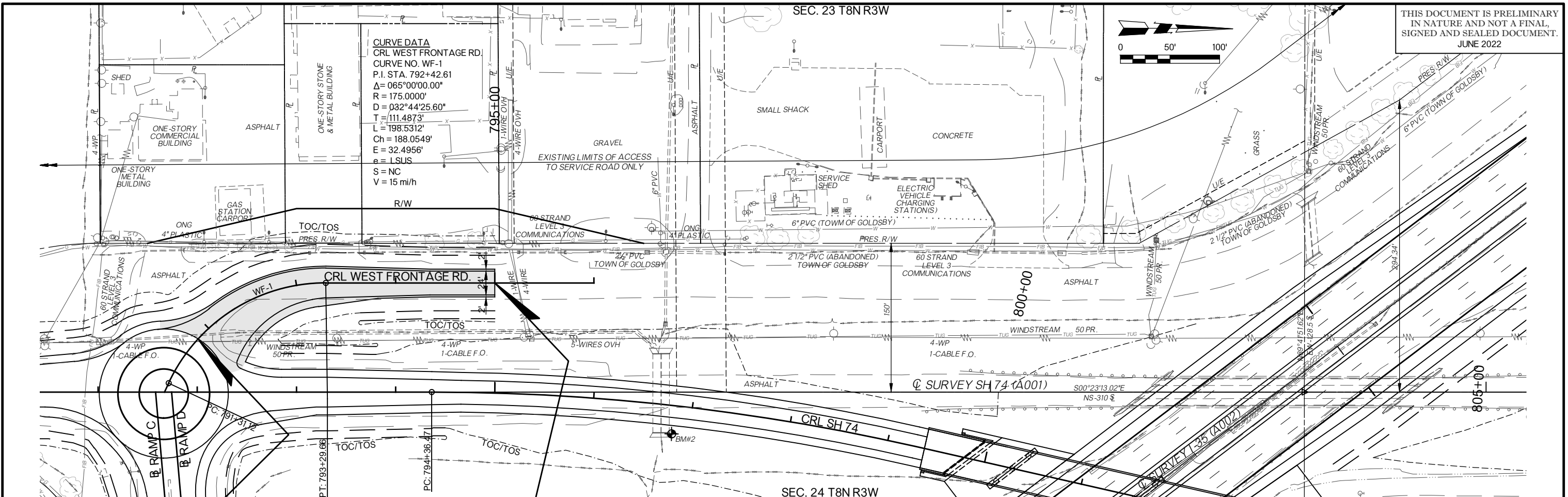


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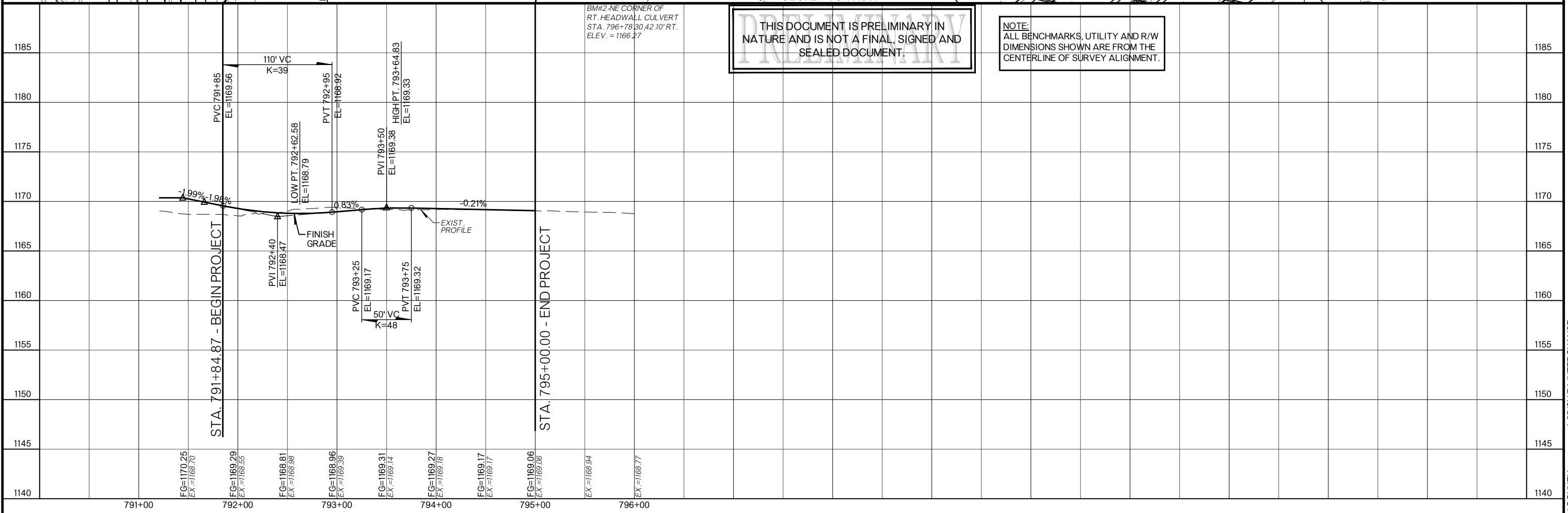
CURVE DATA
 CRL WEST FRONTAGE RD.
 CURVE NO. WF-1
 P.I. STA. 792+42.61
 $\Delta = 065^{\circ}00'00.00''$
 $R = 175.0000'$
 $D = 032^{\circ}44'25.60''$
 $T = 111.4873'$
 $L = 198.5312'$
 $Ch = 188.0549'$
 $E = 32.4956'$
 $e = L/SUS$
 $S = NC$
 $V = 15 \text{ mi/h}$



SEC. 24 T8N R3W

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NOTE: ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.



STA. 791+84.87 - BEGIN PROJECT

STA. 795+00.00 - END PROJECT



APPENDIX H

ALTERNATIVE 5: 53° SKEW CONCEPTUAL PLANS

FOR SURVEY CONTROL DATA, SEE
SURVEY DATA SHEETS

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT NO. J2-9571(004)
GRADE, DRAIN, BRIDGE & SURFACE PLANS
I-35 & SH 74 INTERCHANGE

McCLAIN COUNTY

CONTROL SECTION NO. 74-44-38

STATE JOB NO. 29571(04)

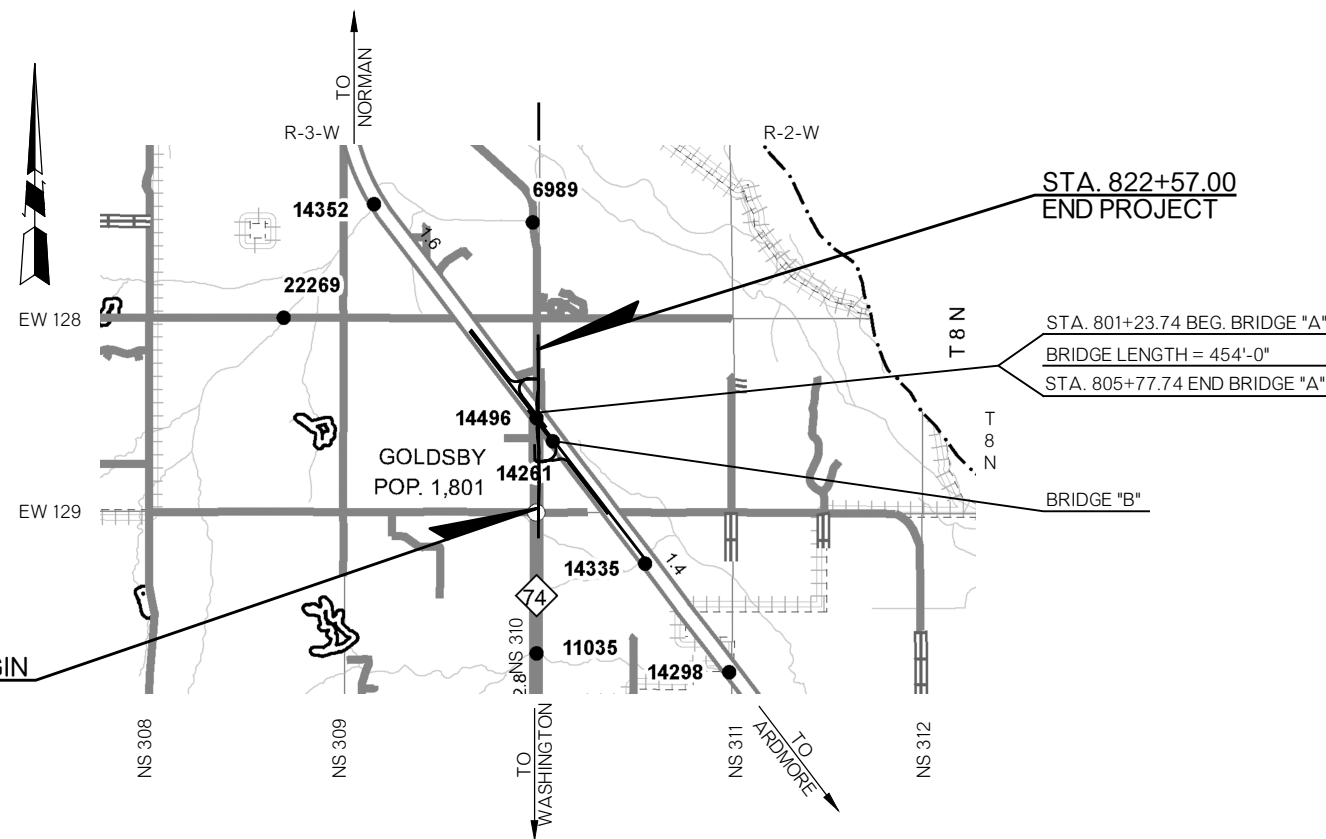
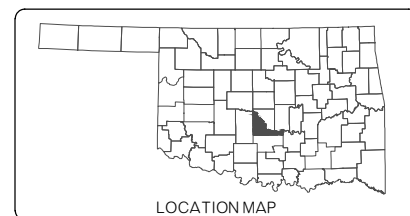
BRIDGE "A" LOCATION NO. 4405-2297X; EXIST. NBI NO. 14496
BRIDGE "B" LOCATION NO. 4405-2279EXF; EXIST. NBI NO. 14261

SH 74	
ADT 2021	= 8,400
ADT 2050	= 13,270
DHV (2-WAY)	= 1,327
K (DHV/ADT)	= 10%
D	= 65%
T (% DHV)	= 9%
T (% ADT)	= 15%
T3 (% ADT)	= 3%
V	= 45 MPH
20YR FLEX. ESALS	= 3.8 M

SCALES	
PLAN	1" = 50'
PROFILE HOR.	1" = 50'
VER.	1" = 5'
LAYOUT MAP	1" = 2,640'

CONVENTIONAL SYMBOLS

- PROPOSED ROAD
- RAILROADS
- RANGE & TOWNSHIP SECTION LINES
- QUARTER SECTION LINES
- FENCES
- GROUND LINE
- EXISTING ROADS
- BASE LINE
- GRADE LINES
- TELEPHONE & TELEGRAPH
- POWER LINES
- BUILDINGS
- OIL WELLS
- DRAINAGE STRUCTURES - IN PLACE
- DRAINAGE STRUCTURES - NEW
- RIGHT-OF-WAY LINES - EXISTING
- RIGHT-OF-WAY LINES - NEW
- CONTROLLED ACCESS
- RIGHT-OF-WAY FENCE



PROJECT LENGTH BASED ON SH 74 CRL STATIONING.

NOTE:

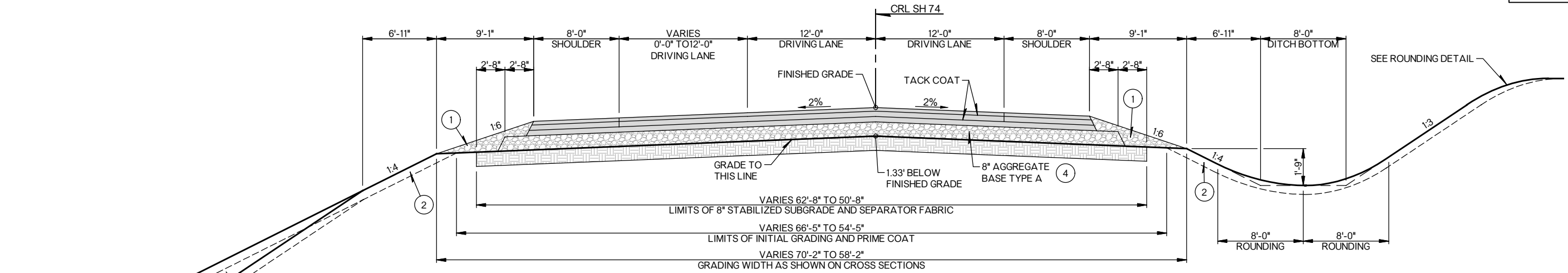
ROADWAY LENGTH	4,117.65 FT.	0.779 MI.
BRIDGE LENGTH	454.00 FT.	0.086 MI.
PROJECT LENGTH		0.865 MI.

EQUATIONS: NONE
EXCEPTION: NONE

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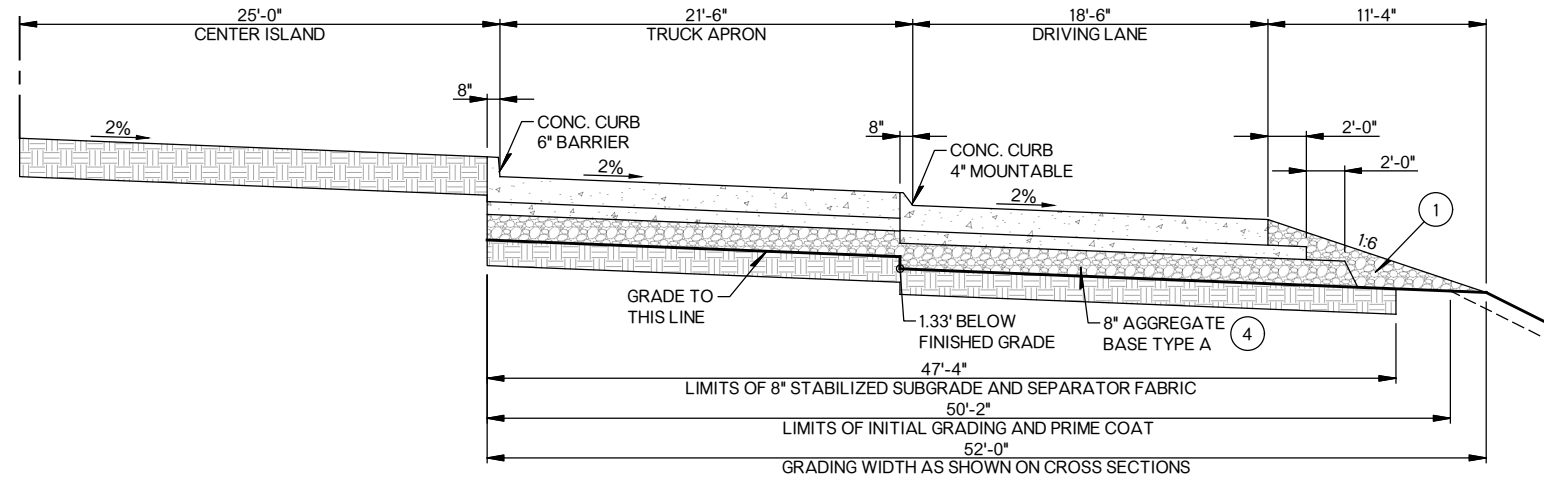


OKLAHOMA DEPARTMENT OF TRANSPORTATION		DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
DATE APPROVED		DATE APPROVED	
BY		BY	
	CHIEF ENGINEER		DIVISION ADMINISTRATOR
SWO	4892(1)	F.A. PROJECT NO.	J2-9571(004)
COUNTY	McCLAIN COUNTY	HIGHWAY	SH 74
		SHEET NO.	0001



TYPICAL SECTION NO. 1
SH 74

PAVEMENT STRUCTURE	PAVEMENT REQUIREMENTS	
	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



TYPICAL SECTION NO. 2
SH 74 ROUNDABOUT

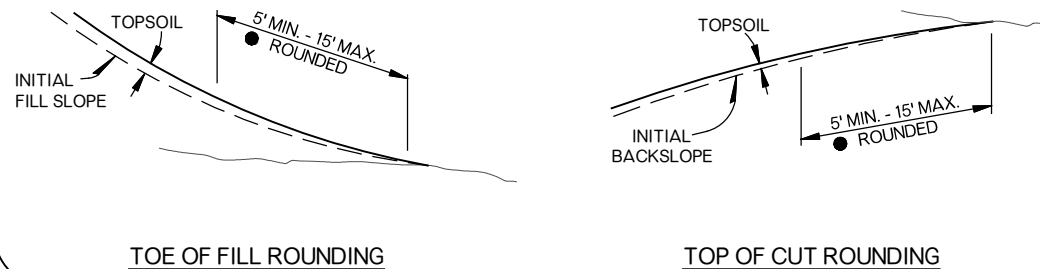
PAVEMENT STRUCTURE	PAVEMENT REQUIREMENTS	
	TRUCK APRON	DRIVING LANES
SURFACE COURSE	8" CONT. REINF. P.C.C. PAVEMENT	8" CONT. REINF. P.C.C. PAVEMENT
BASE COURSE	4" CEMENTITIOUS TREATED BASE	4" CEMENTITIOUS TREATED BASE

- 1 BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN TBSC TYPE E.
- 2 TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATIONS SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

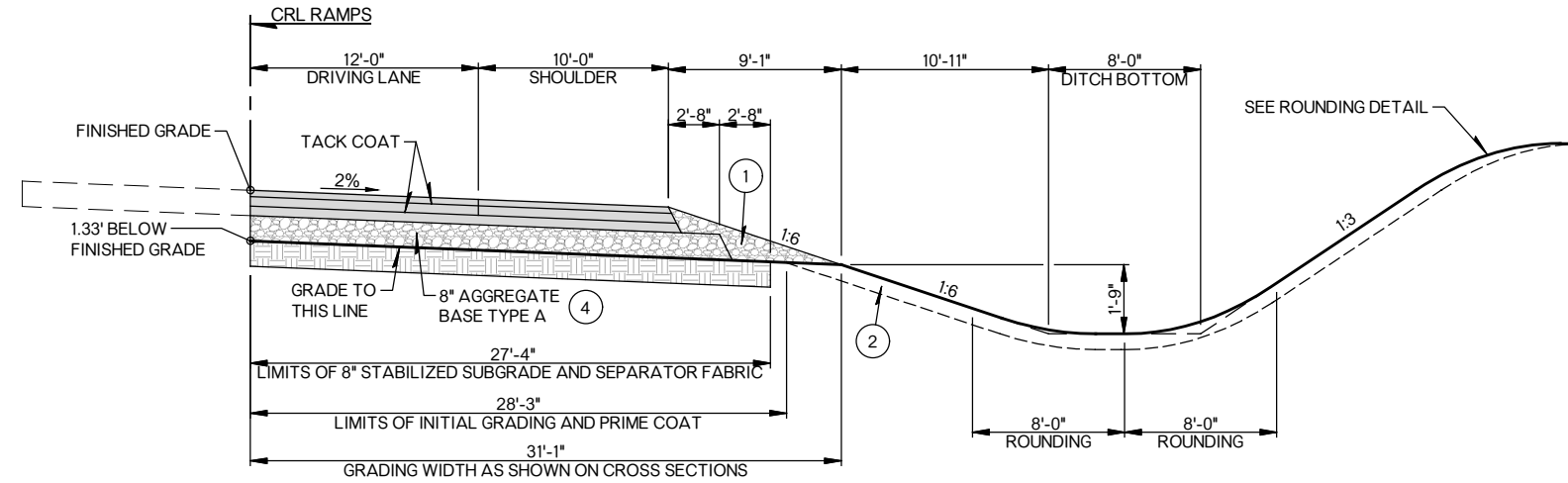
THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.
- 3 DISTANCE MEASURED VERTICALLY FROM EDGE OF FINISHED GRADE SHOULDER.
- 4 PRIME COAT ON TOP OF AGGREGATE BASE.

ROUNDING DETAIL

- INTERSECTION OF CUT AND/OR FILL SLOPES WITH GROUND LINE TO BE ROUNDED AS PART OF FINISHING OPERATIONS. ROUNDED SHALL BE 5' MINIMUM FOR SMALLER CUTS AND FILLS TO 15' MAXIMUM FOR LARGER CUTS AND FILLS OR AS DESIGNATED BY THE ENGINEER. COST OF ROUNDED TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.

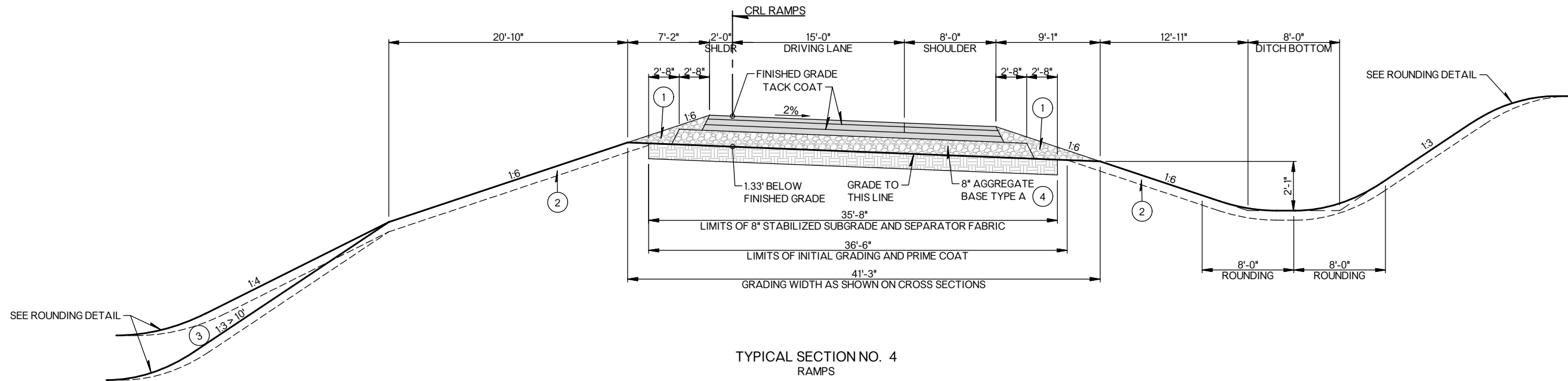


TYPICAL SECTION



TYPICAL SECTION NO. 3
RAMPS

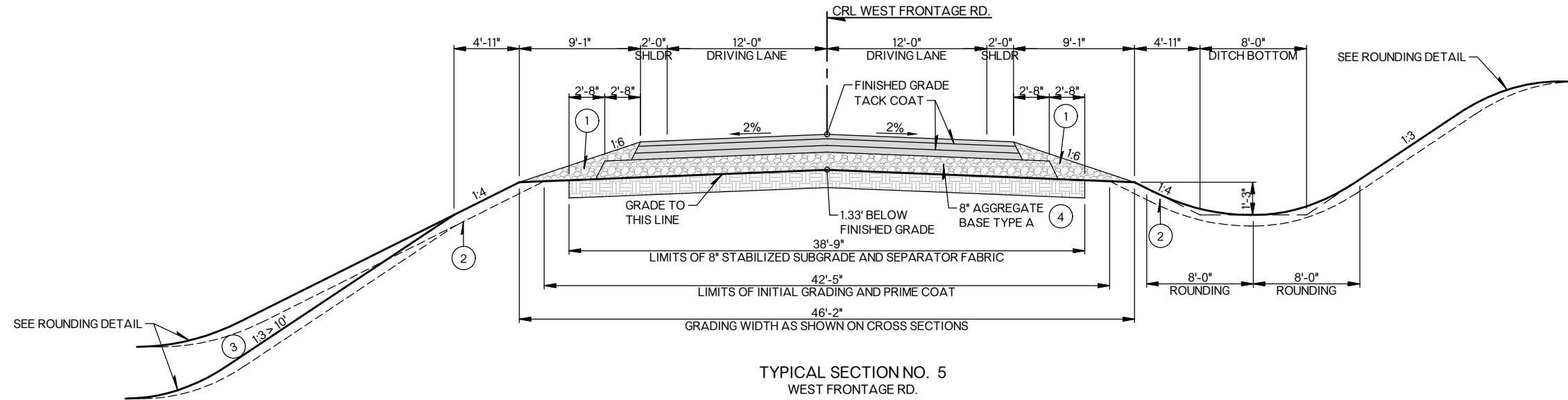
PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



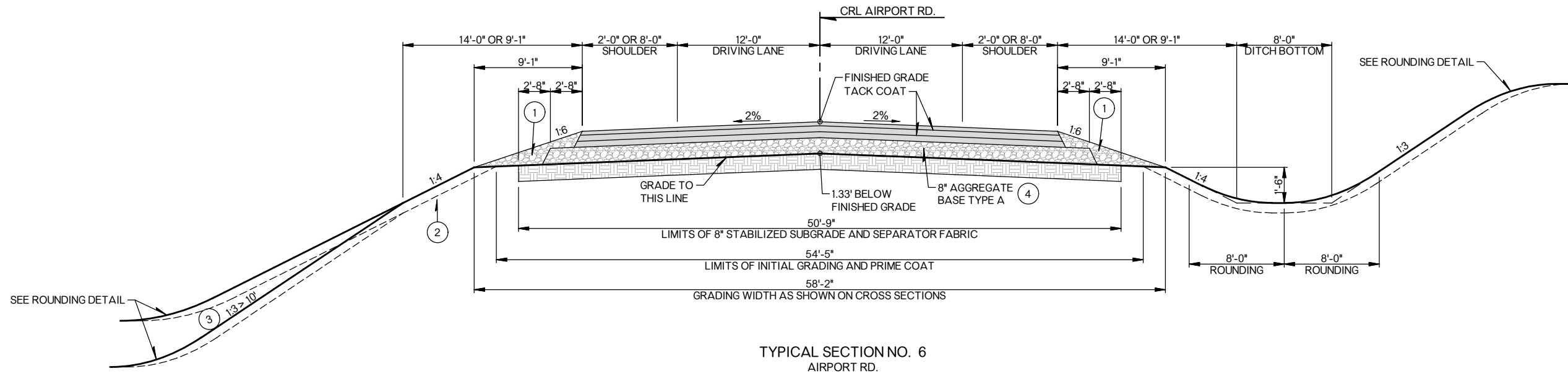
TYPICAL SECTION NO. 4
RAMPS

PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 70-28 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 70-28 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

TYPICAL SECTION



PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



PAVEMENT REQUIREMENTS		
PAVEMENT STRUCTURE	DRIVING LANES	SHOULDERS
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)

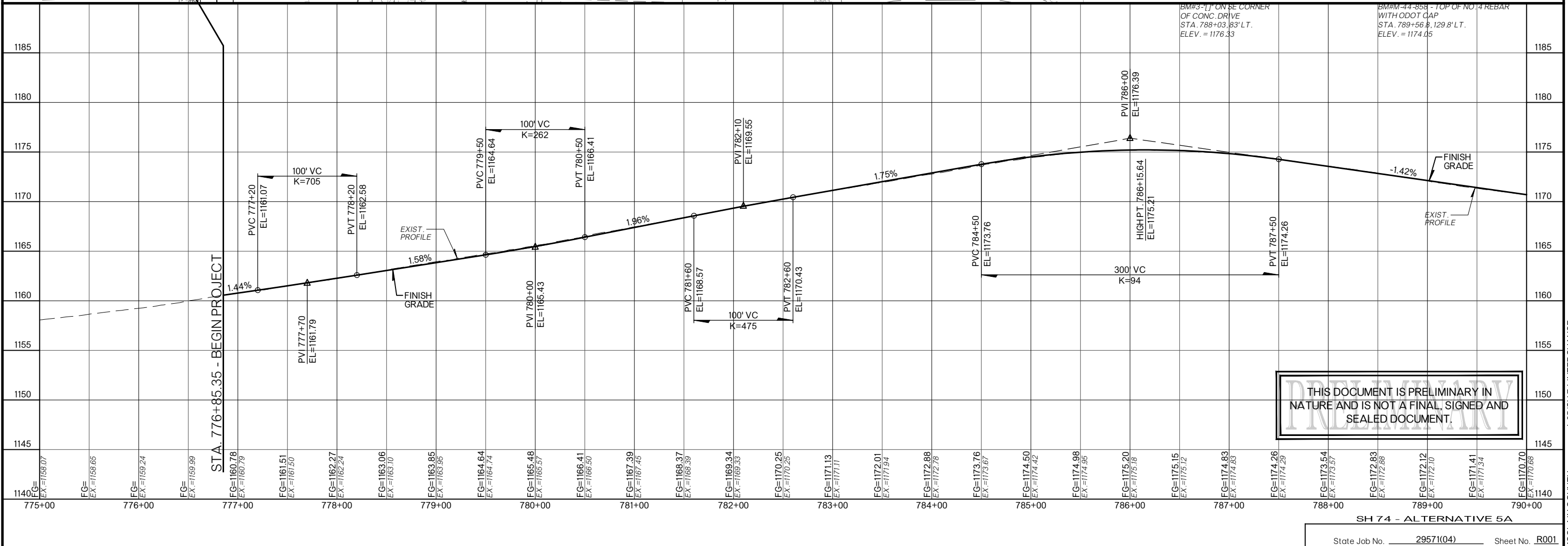
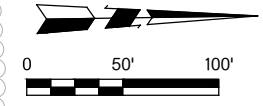
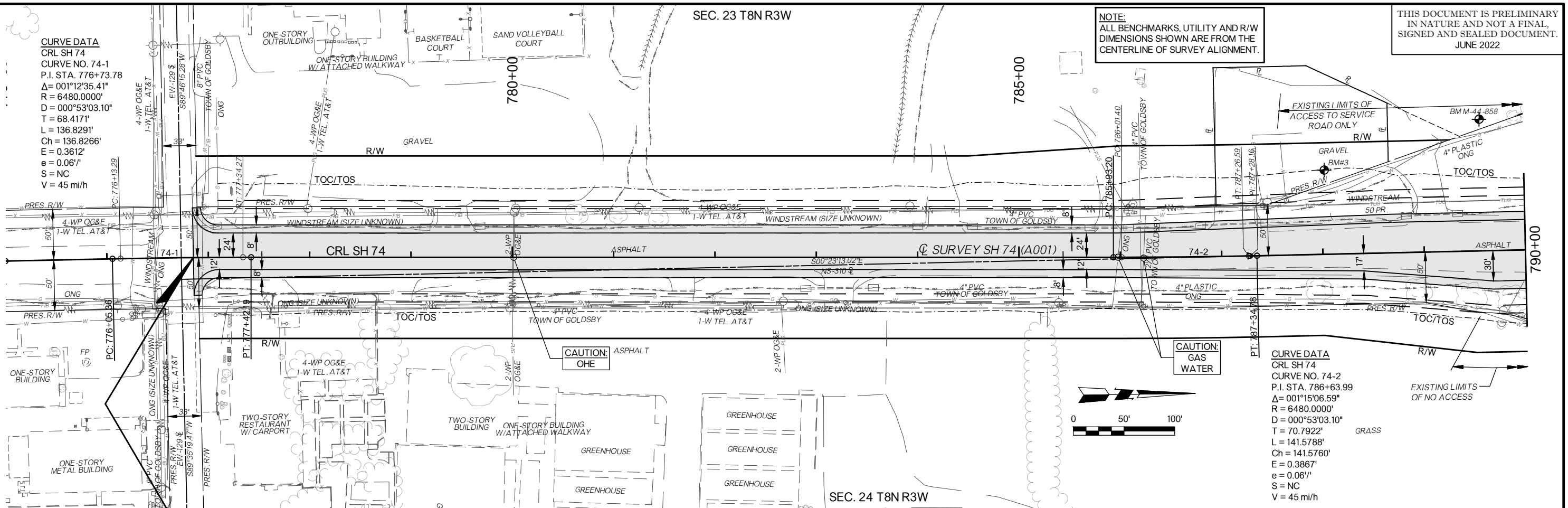
TYPICAL SECTION

NOTE:
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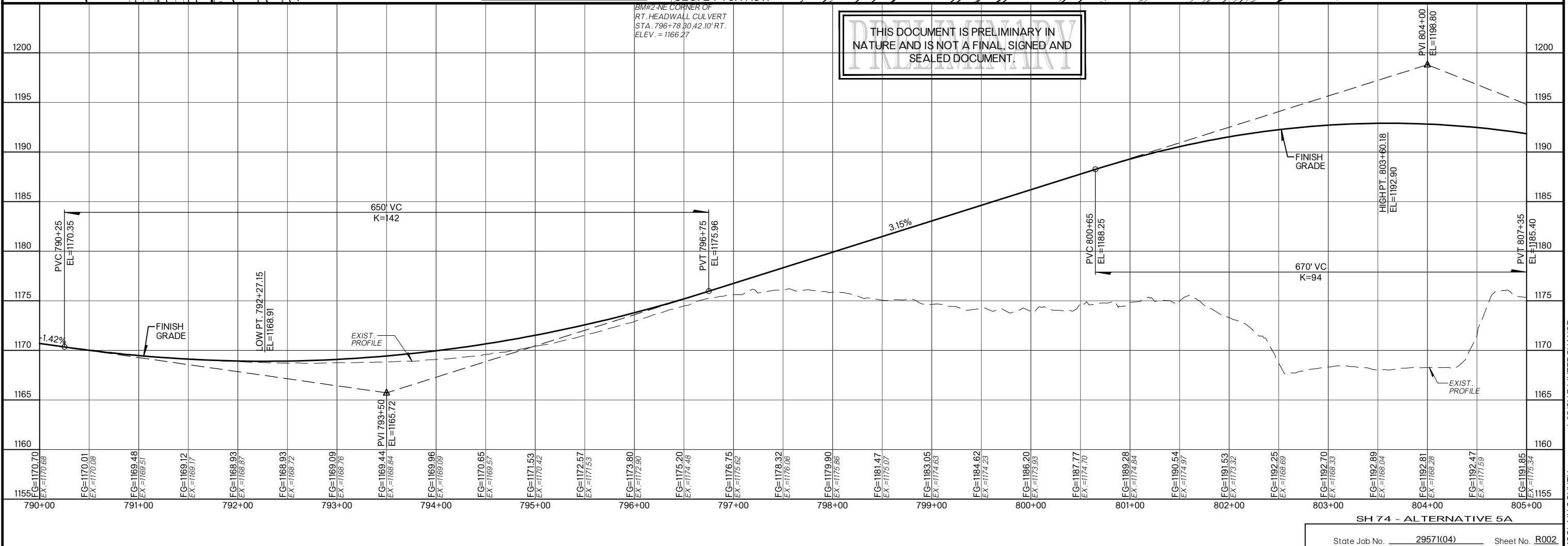
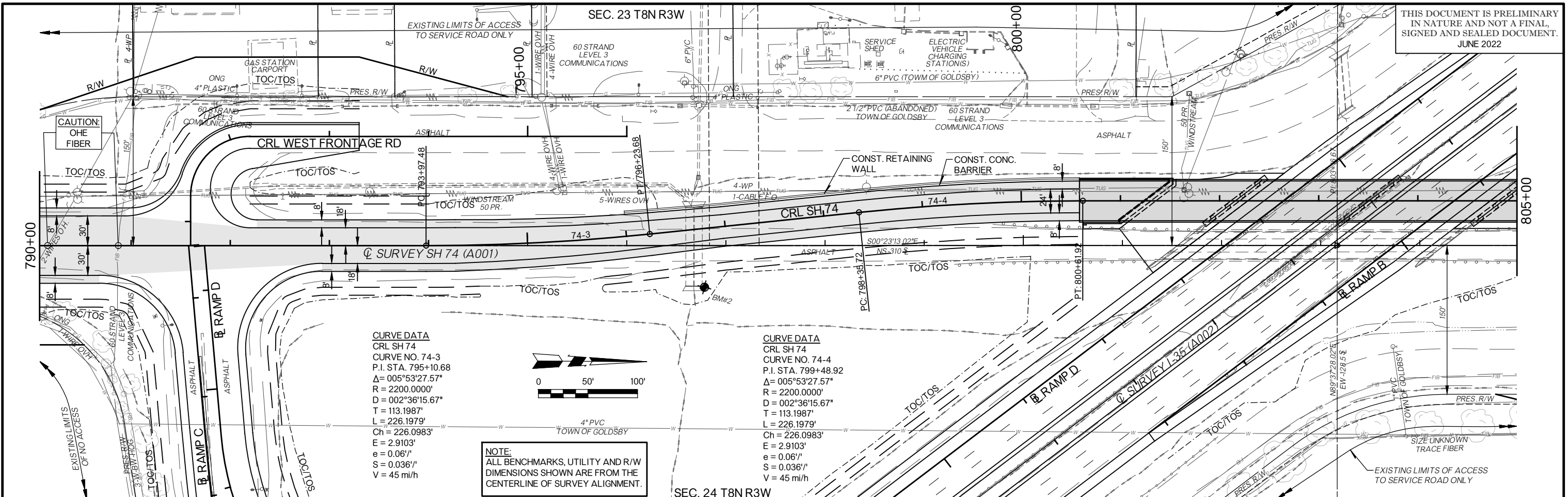
CURVE DATA
CRL SH 74
CURVE NO. 74-1
P.I. STA. 776+73.78
 $\Delta = 001^{\circ}12'35.41''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 68.4171'$
 $L = 136.8291'$
 $Ch = 136.8266'$
 $E = 0.3612'$
 $e = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$

CURVE DATA
CRL SH 74
CURVE NO. 74-2
P.I. STA. 786+63.99
 $\Delta = 001^{\circ}15'06.59''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 70.7922'$
 $L = 141.5788'$
 $Ch = 141.5760'$
 $E = 0.3867'$
 $e = 0.061'$
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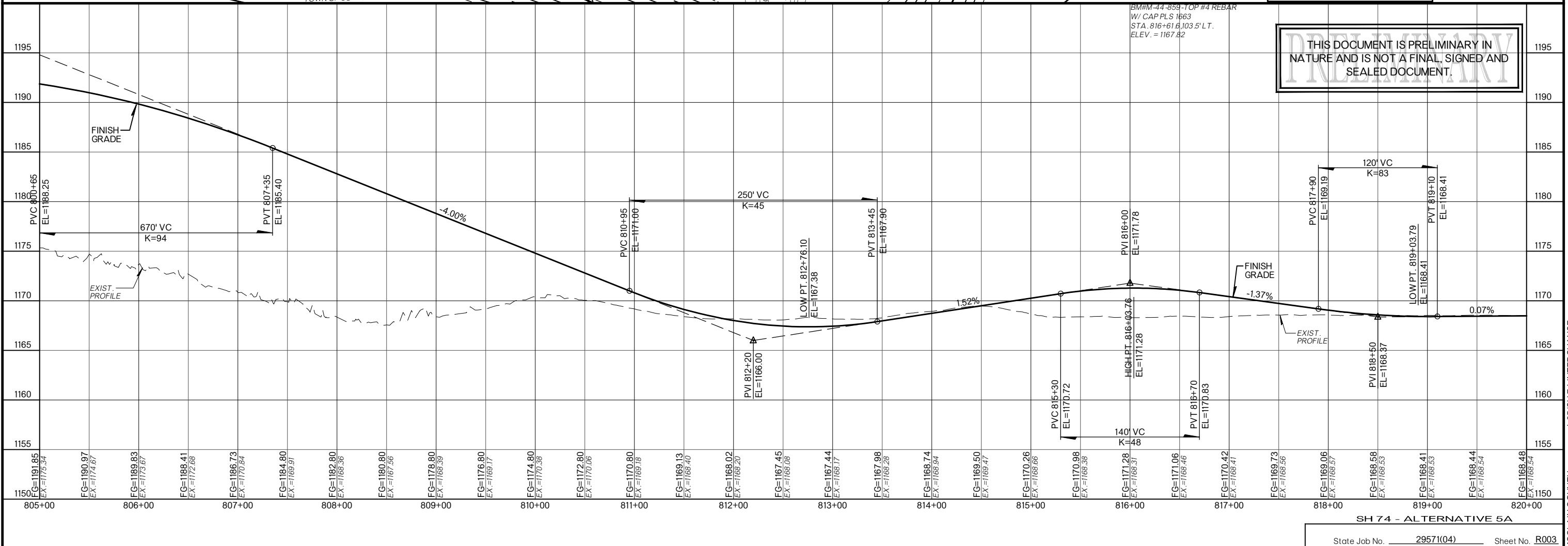
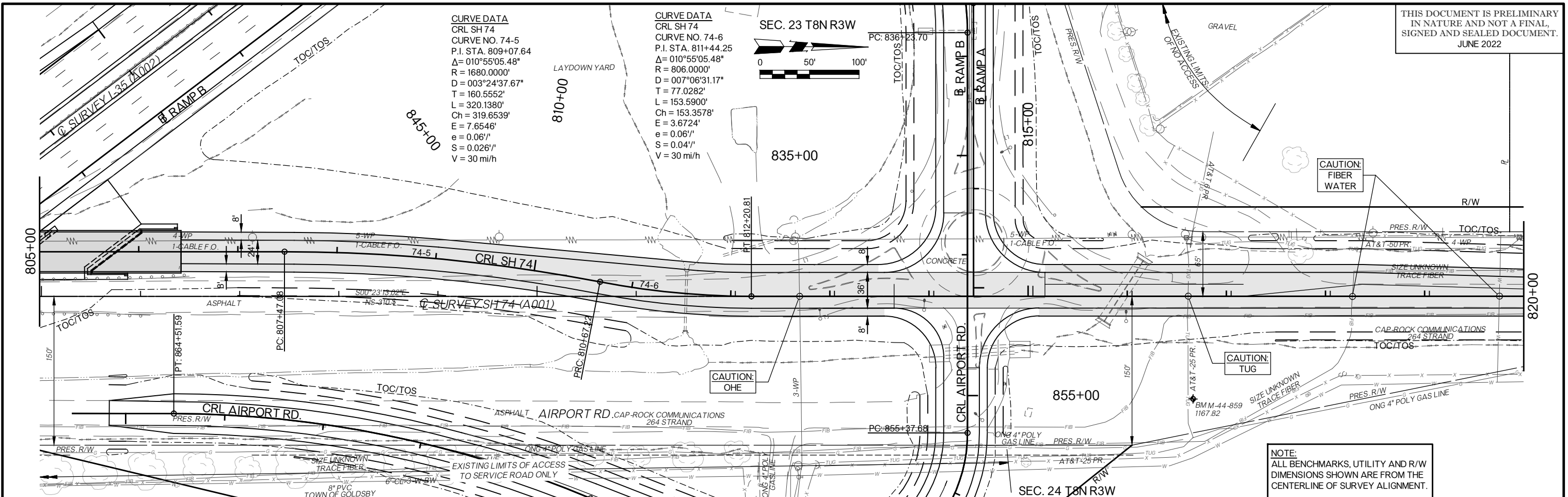
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MCCLENN COUNTY I-36/SH 74 INTERCHANGE

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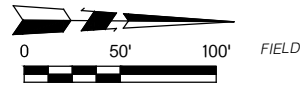
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SH 74 - ALTERNATIVE 5A

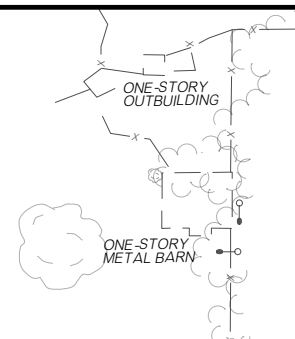
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SEC. 23 T8N R3W



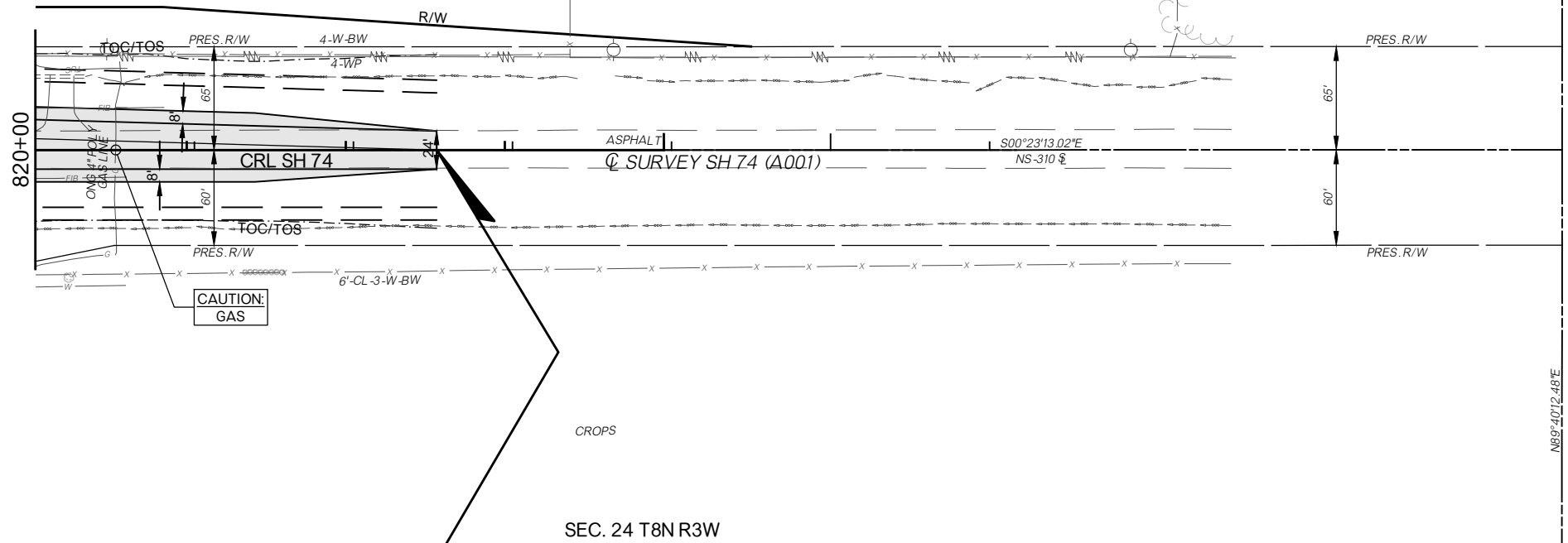
FIELD/CATTLE



BM1
1170.72

N89°38'05.85"E
E1W-128'

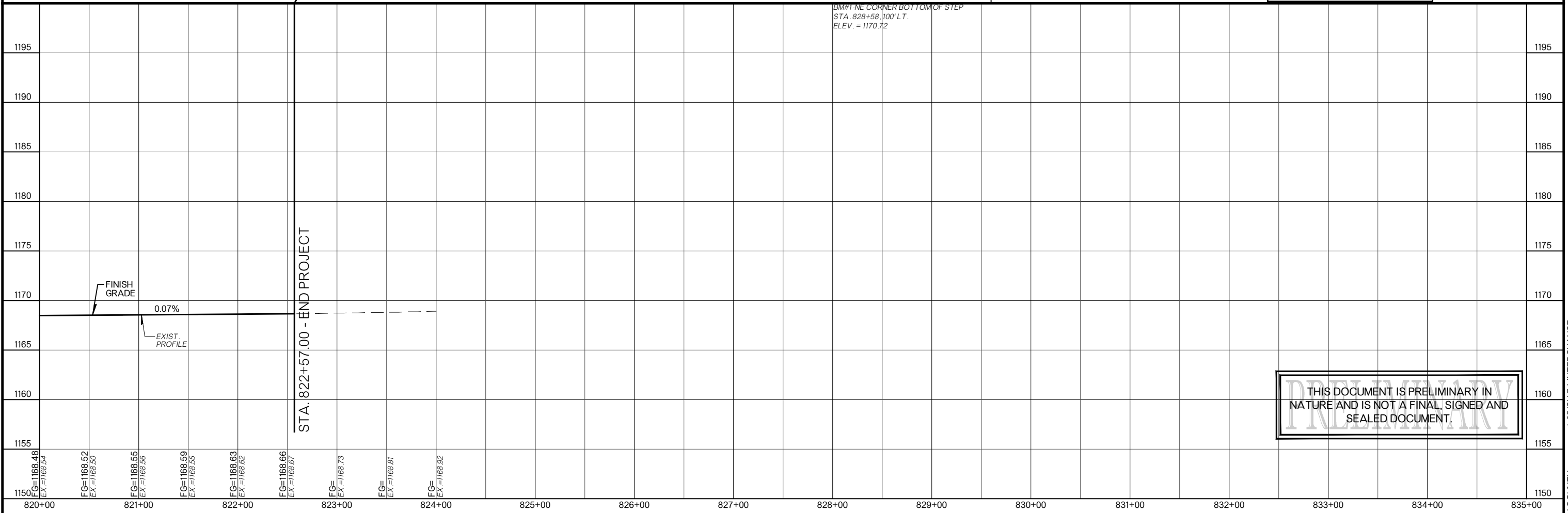
N89°40'12.48"E



NOTE:
ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.

SEC. 24 T8N R3W

BM#1-NE CORNER BOTTOM OF STEP
STA. 828+58.100' LT.
ELEV. = 1170.72



STA. 822+57.00 - END PROJECT

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SH 74 - ALTERNATIVE 5A

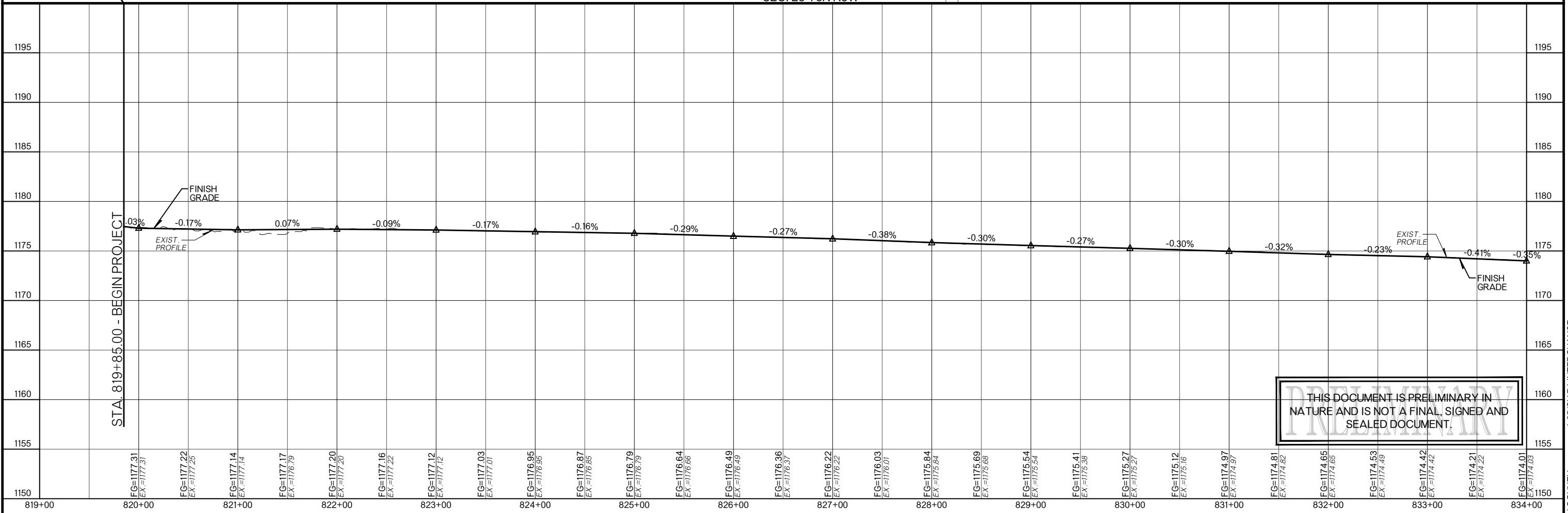
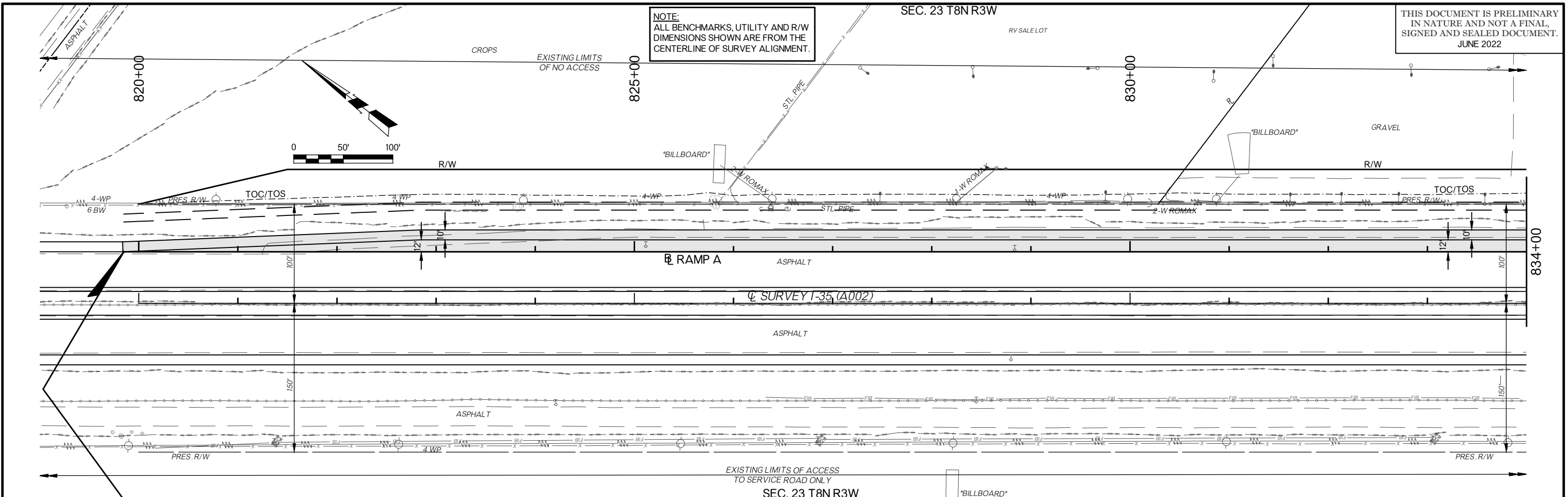
State Job No. 29571(04) Sheet No. R004

MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

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SEC. 23 T8N R3W

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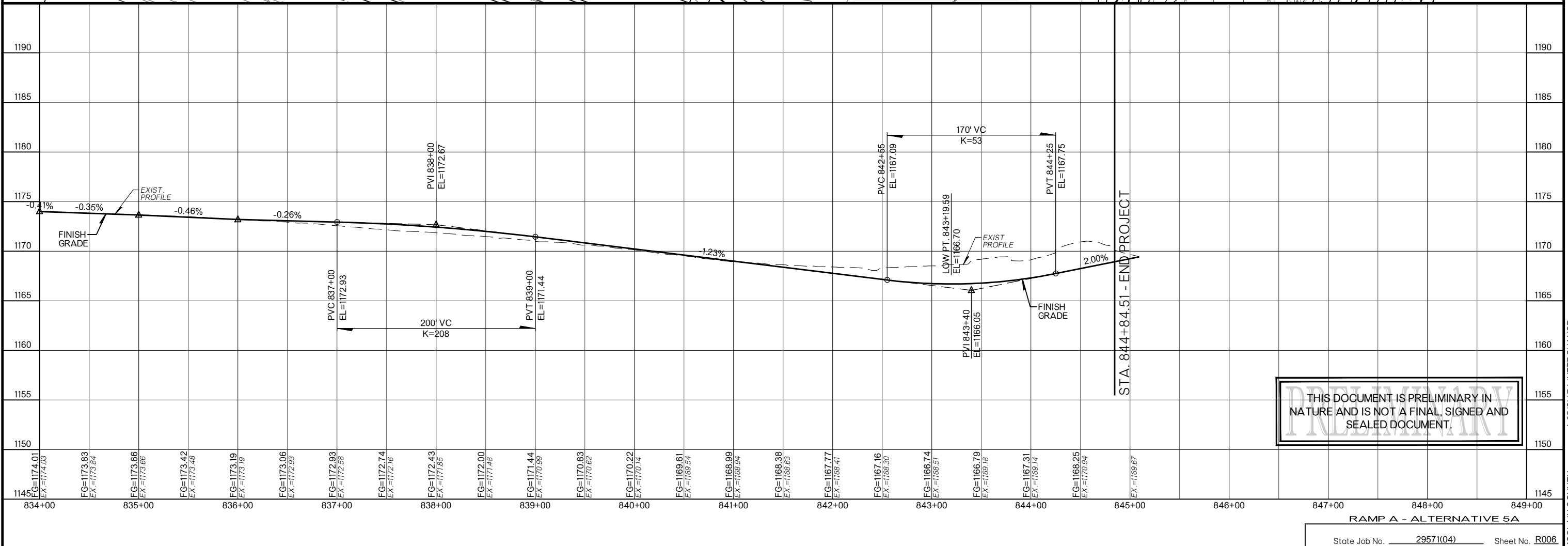
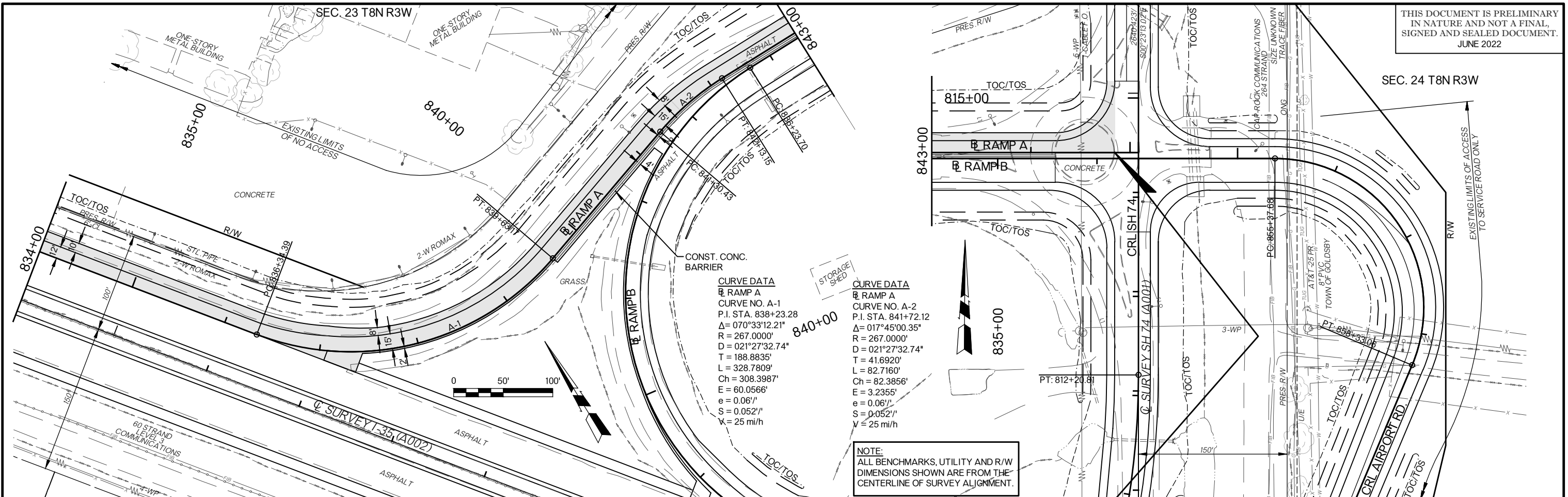
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RAMP A - ALTERNATIVE 5A

State Job No. 29571(04) Sheet No. R005

MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

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RAMP A - ALTERNATIVE 5A

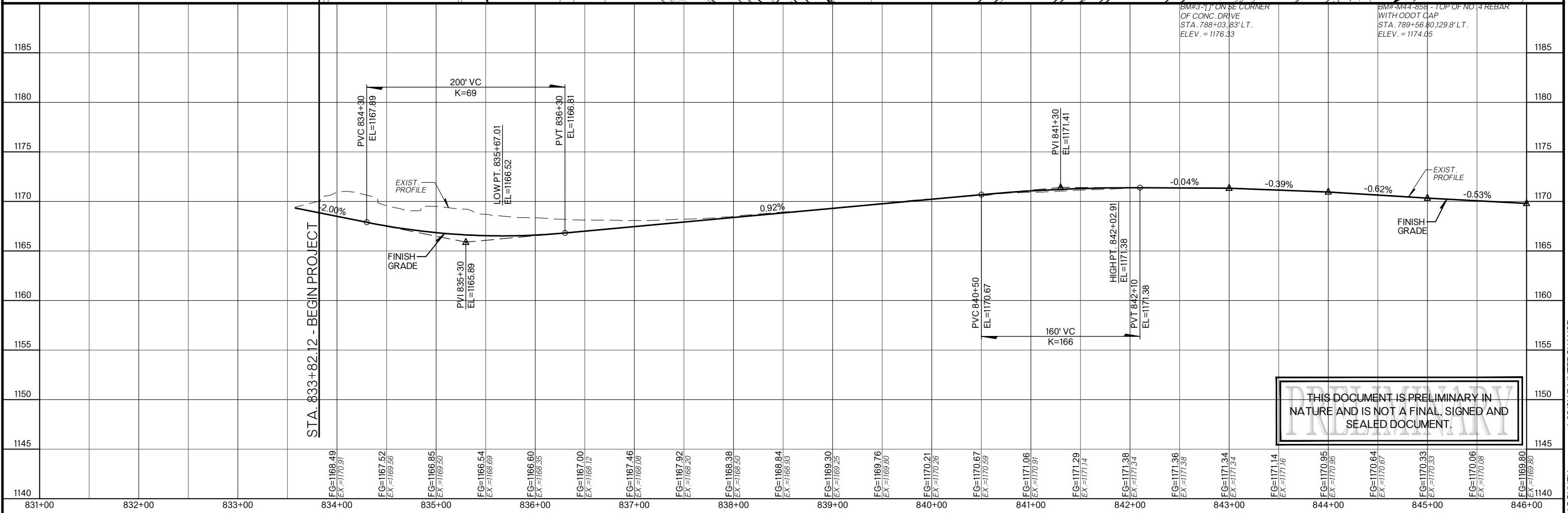
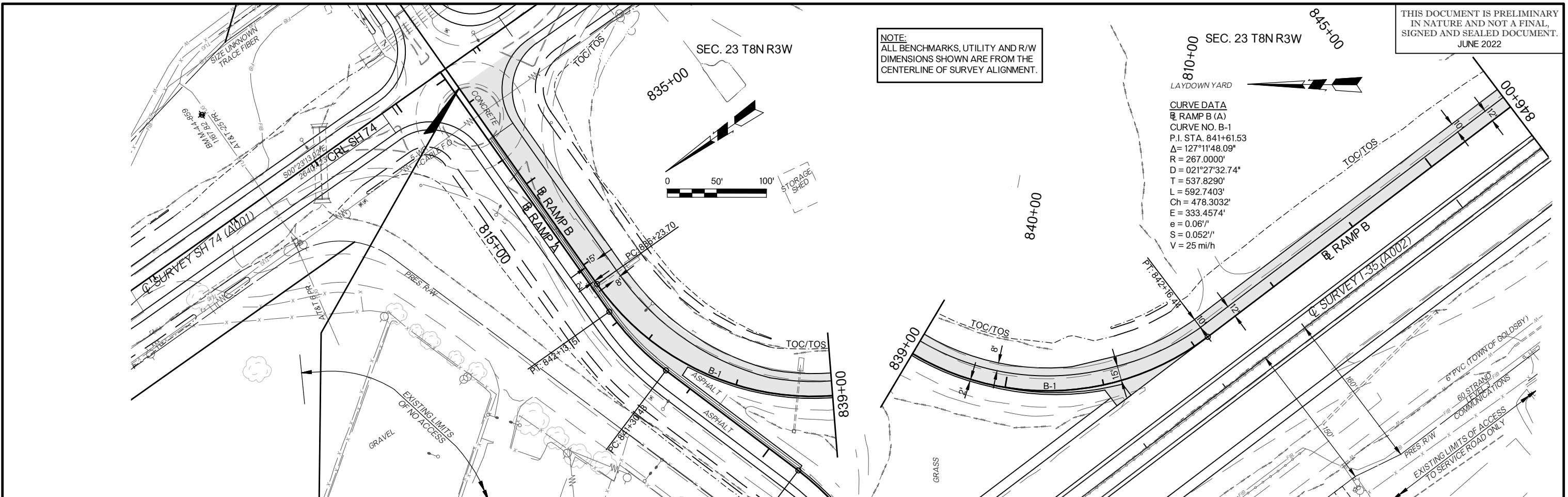
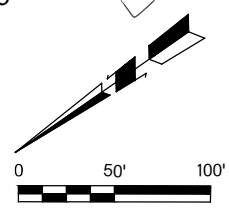
State Job No. 29571(04) Sheet No. R006

MCCLELLAN COUNTY I-36/SH 74 INTERCHANGE

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CURVE DATA
 RAMP B (A)
 CURVE NO. B-1
 P.I. STA. 841+61.53
 $\Delta = 127^{\circ}11'48.09''$
 $R = 267.0000'$
 $D = 021^{\circ}27'32.74''$
 $T = 537.8290'$
 $L = 592.7403'$
 $Ch = 478.3032'$
 $E = 333.4574'$
 $e = 0.067'$
 $S = 0.0521''$
 $V = 25 \text{ mi/h}$



BM#3-[] ON BE CORNER OF CONC. DRIVE STA. 788+03.83' LT. ELEV. = 1176.33
 BM#-M44-858 - TOP OF NO.14 REBAR WITH ODOT CAP STA. 789+56.80, 129.8' LT. ELEV. = 1174.05

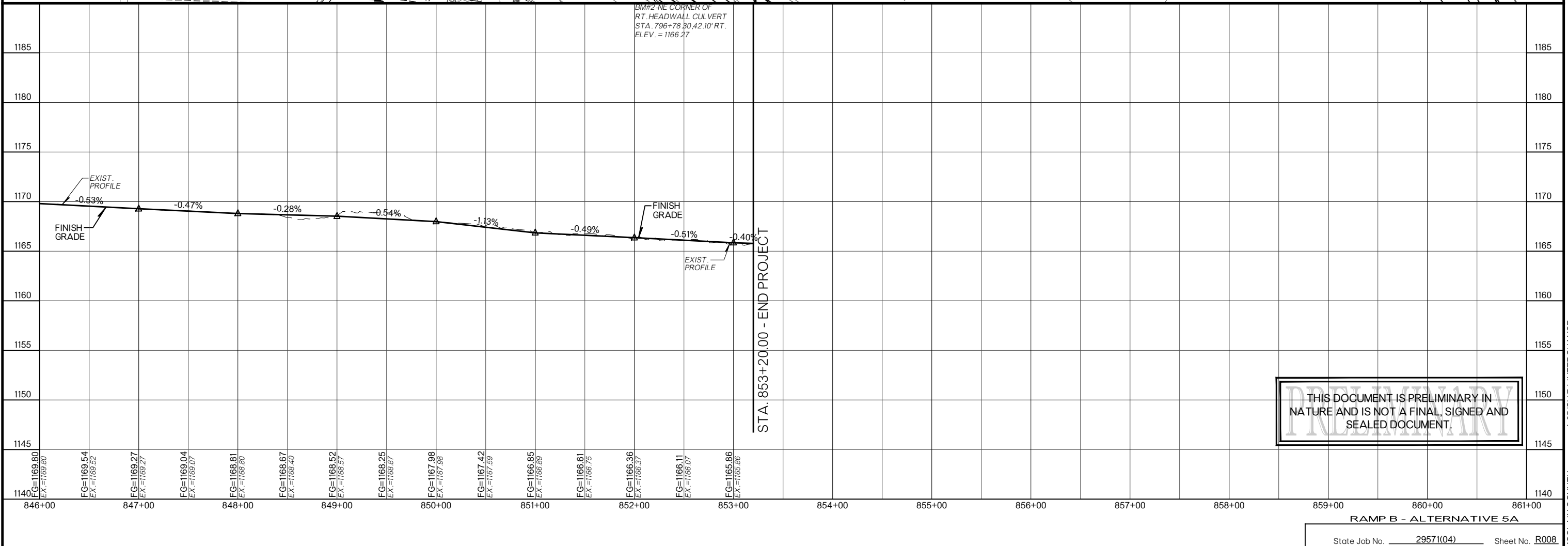
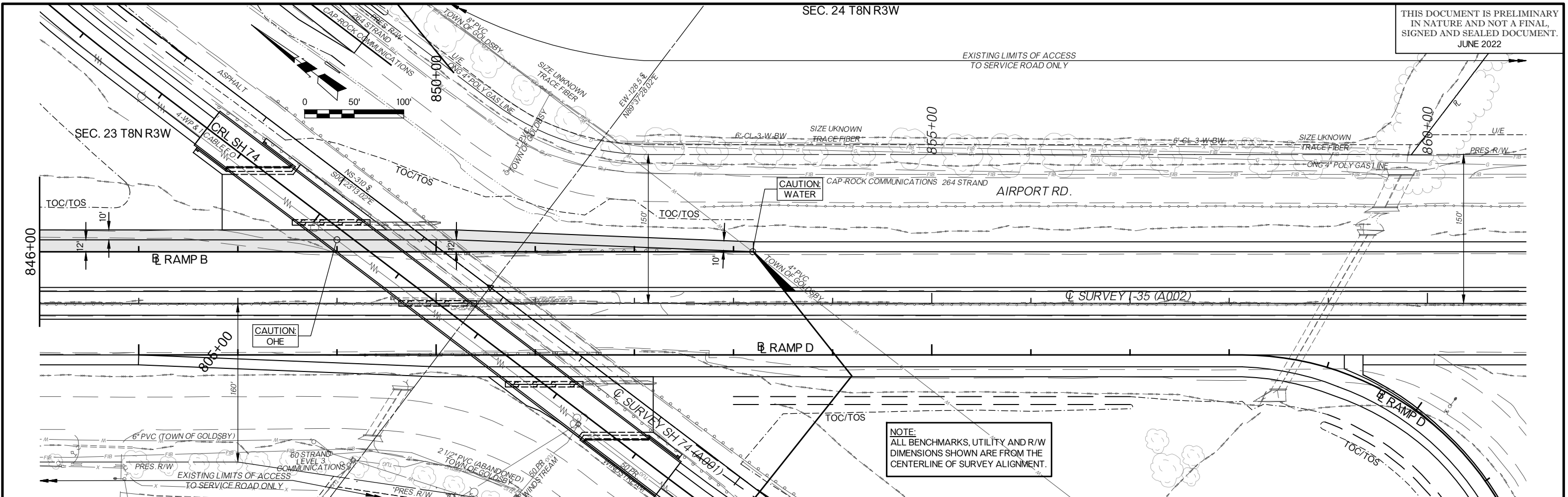
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RAMP B - ALTERNATIVE 5A

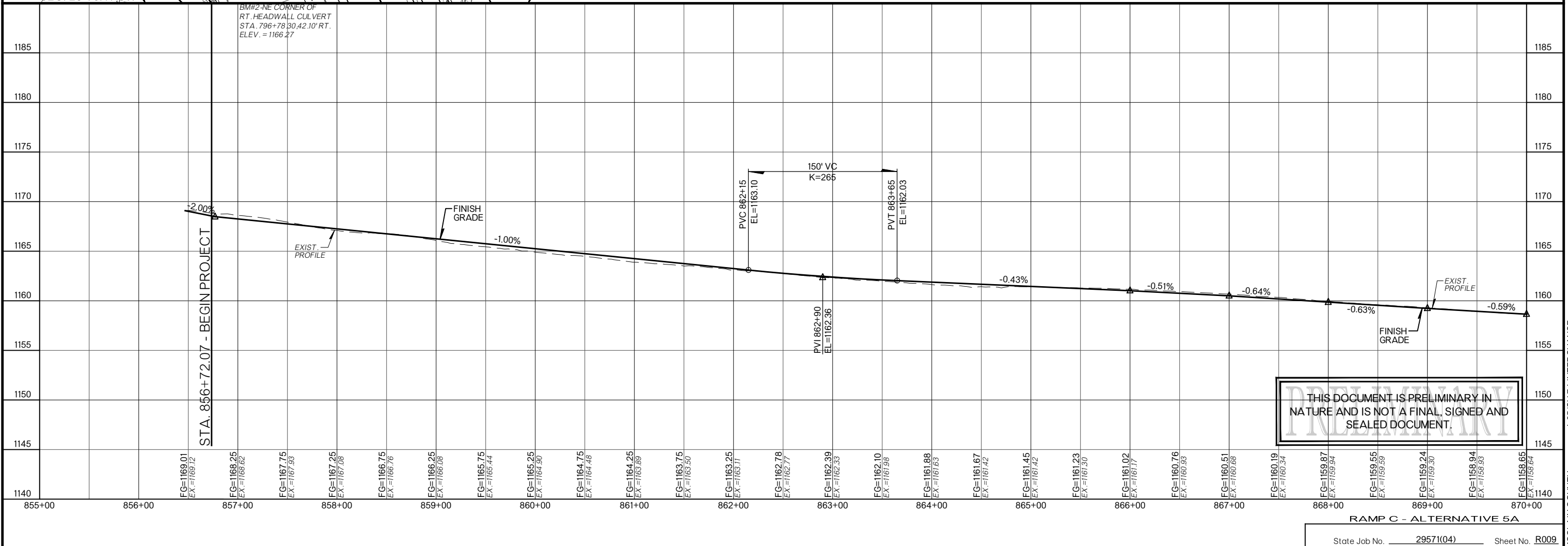
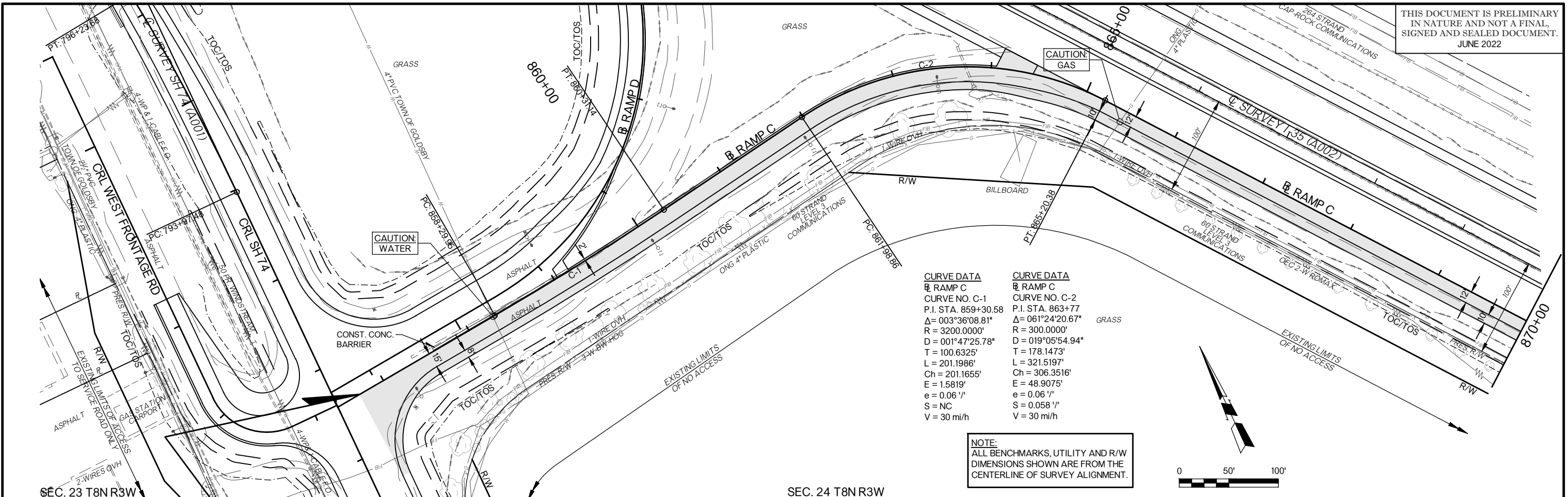
State Job No. 29571(04) Sheet No. R007

MCCLENNAN COUNTY I-36/SH74 INTERCHANGE

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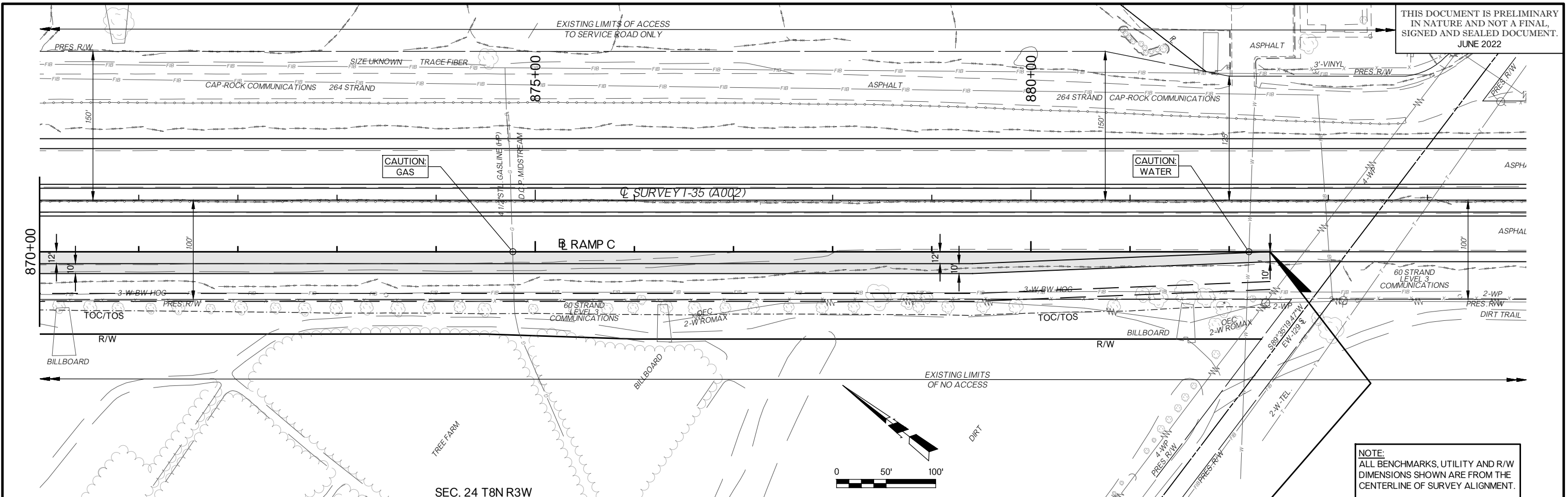
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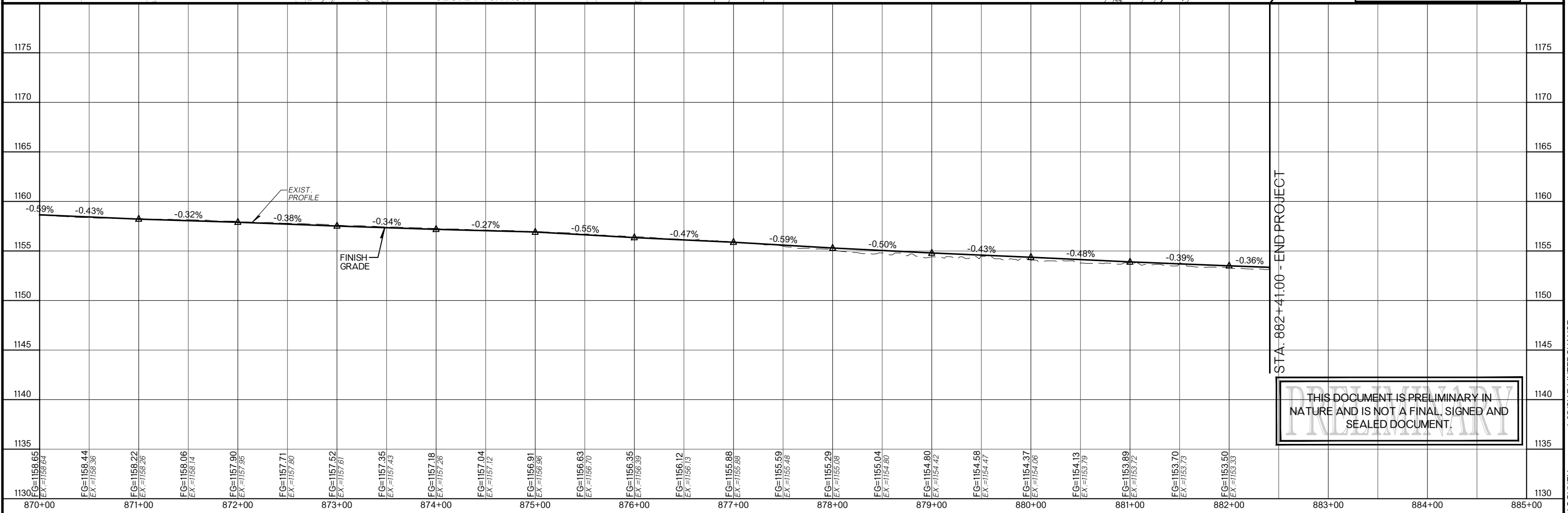
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MCCLELLAN COUNTY I-35/SH74 INTERCHANGE

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SEC. 24 T8N R3W



STA. 882+41.00 - END PROJECT

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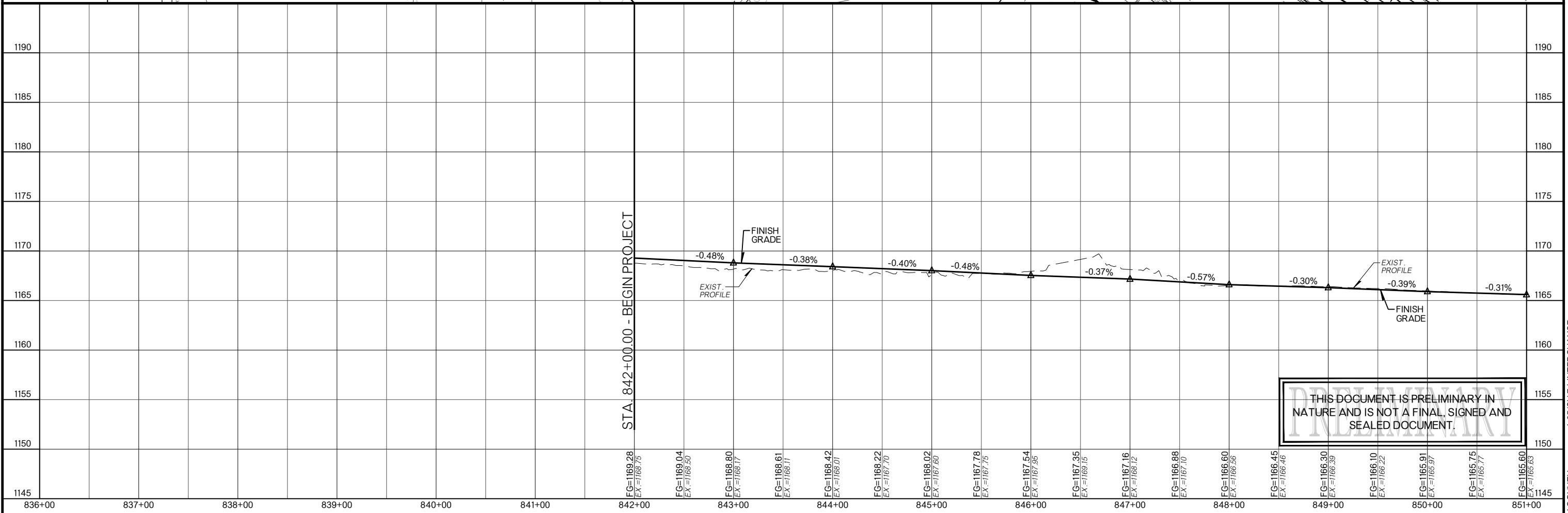
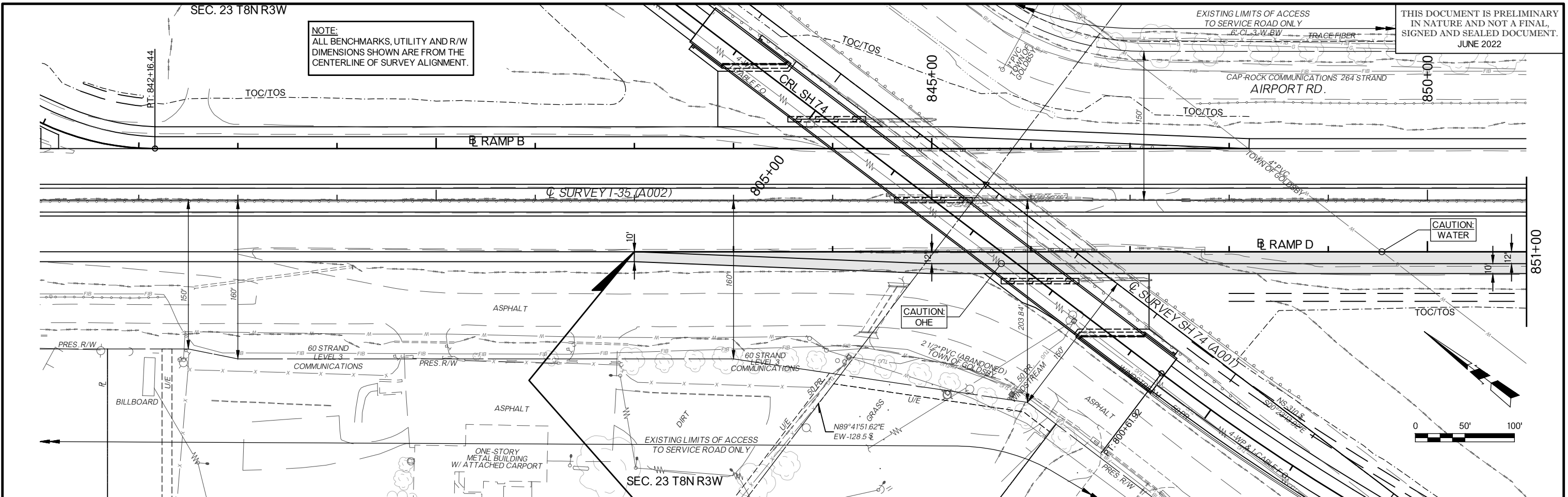
RAMP C - ALTERNATIVE 5A

State Job No. 29571(04) Sheet No. R010

MOCLAIN COUNTY I-36/SH 74 INTERCHANGE

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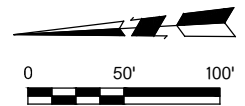


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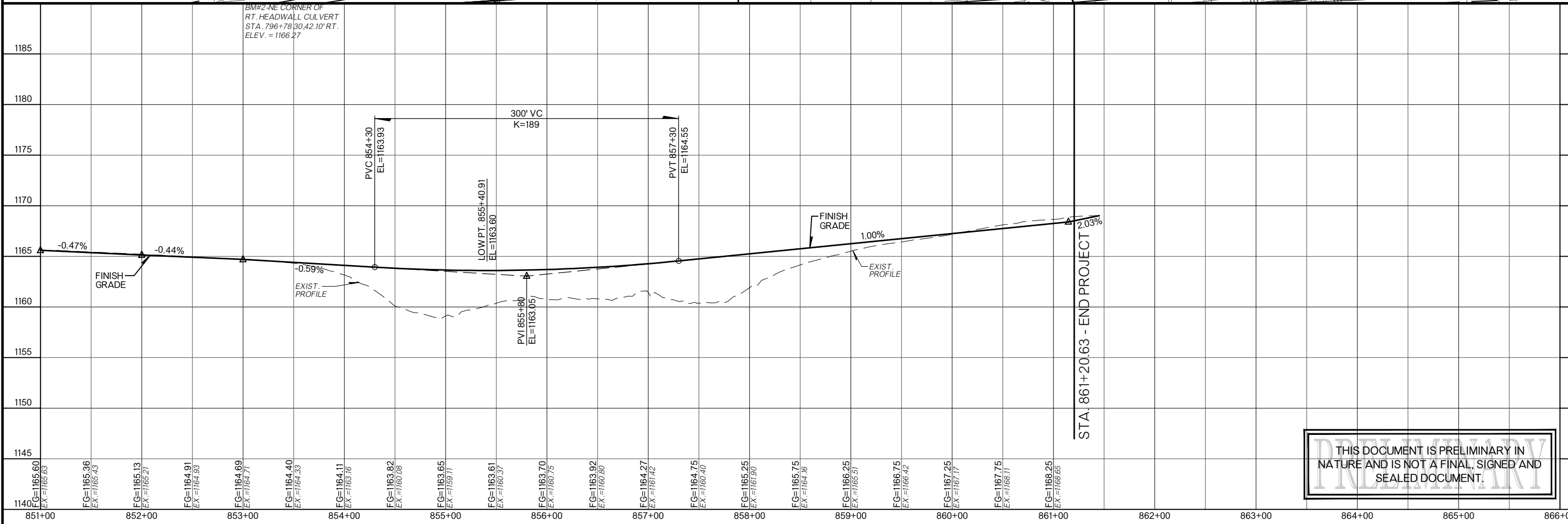
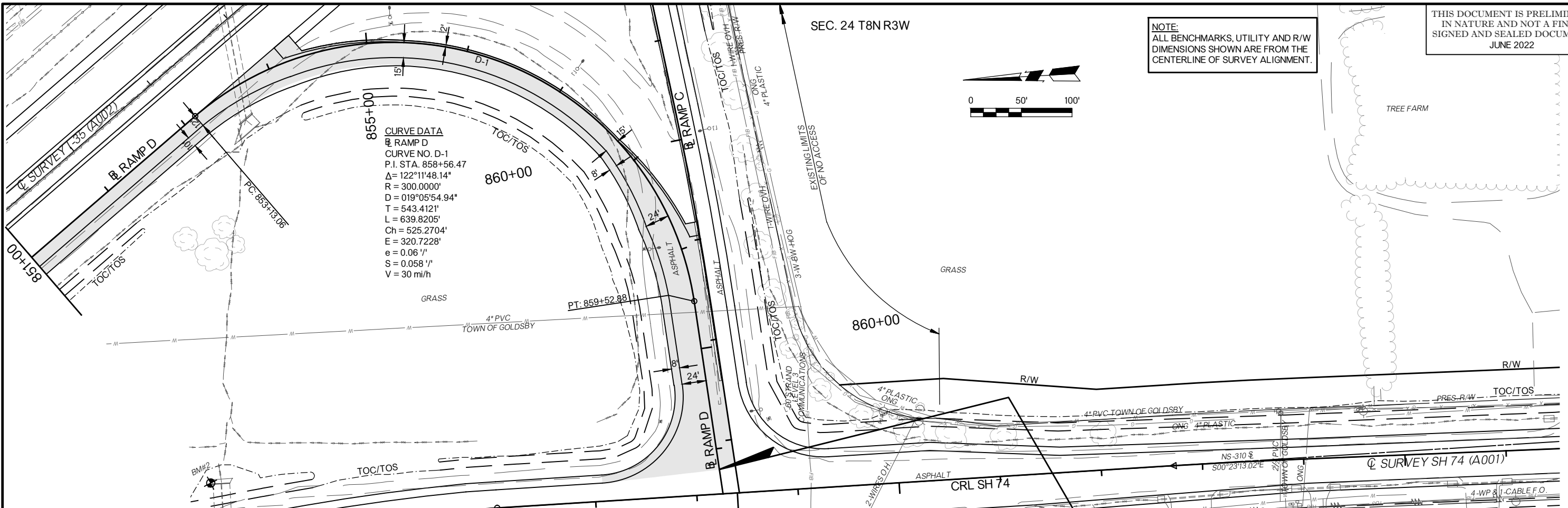
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SEC. 24 T8N R3W



CURVE DATA
 B RAMP D
 CURVE NO. D-1
 P.I. STA. 858+56.47
 $\Delta = 122^\circ 11' 48.14''$
 $R = 300.0000'$
 $D = 019^\circ 05' 54.94''$
 $T = 543.4121'$
 $L = 639.8205'$
 $Ch = 525.2704'$
 $E = 320.7228'$
 $e = 0.06'$
 $S = 0.058'$
 $V = 30$ mi/h



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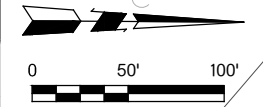
RAMP D - ALTERNATIVE 5A

State Job No. 29571(04) Sheet No. R012

MOCLAIN COUNTY I-36/SH 74 INTERCHANGE

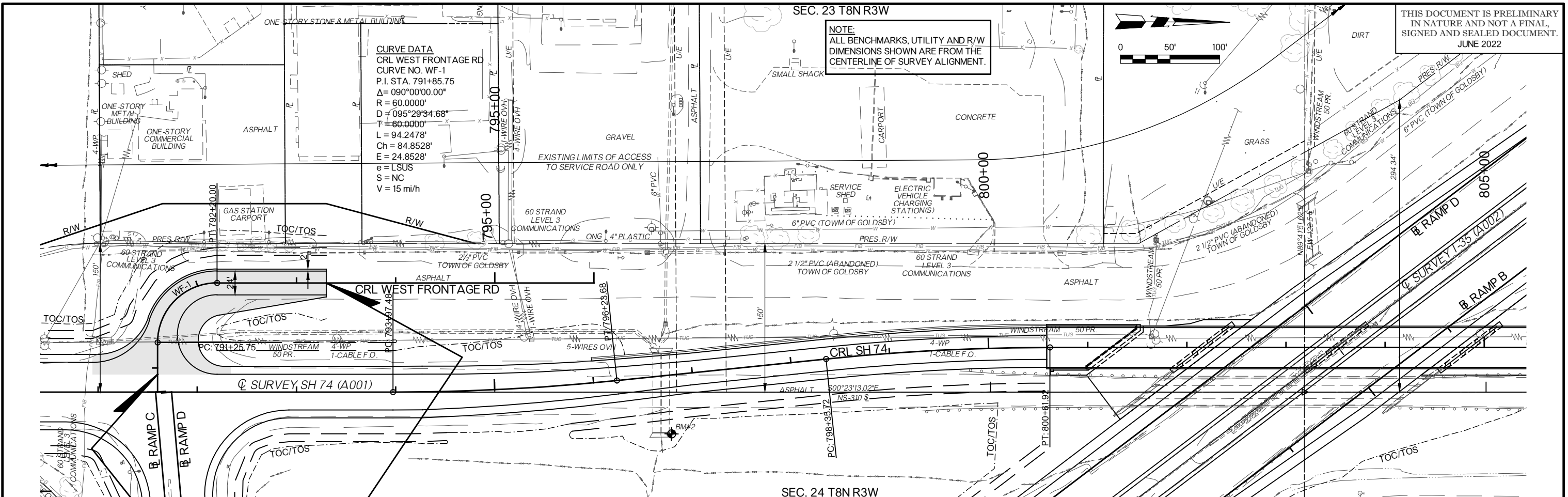
SEC. 23 T8N R3W

NOTE:
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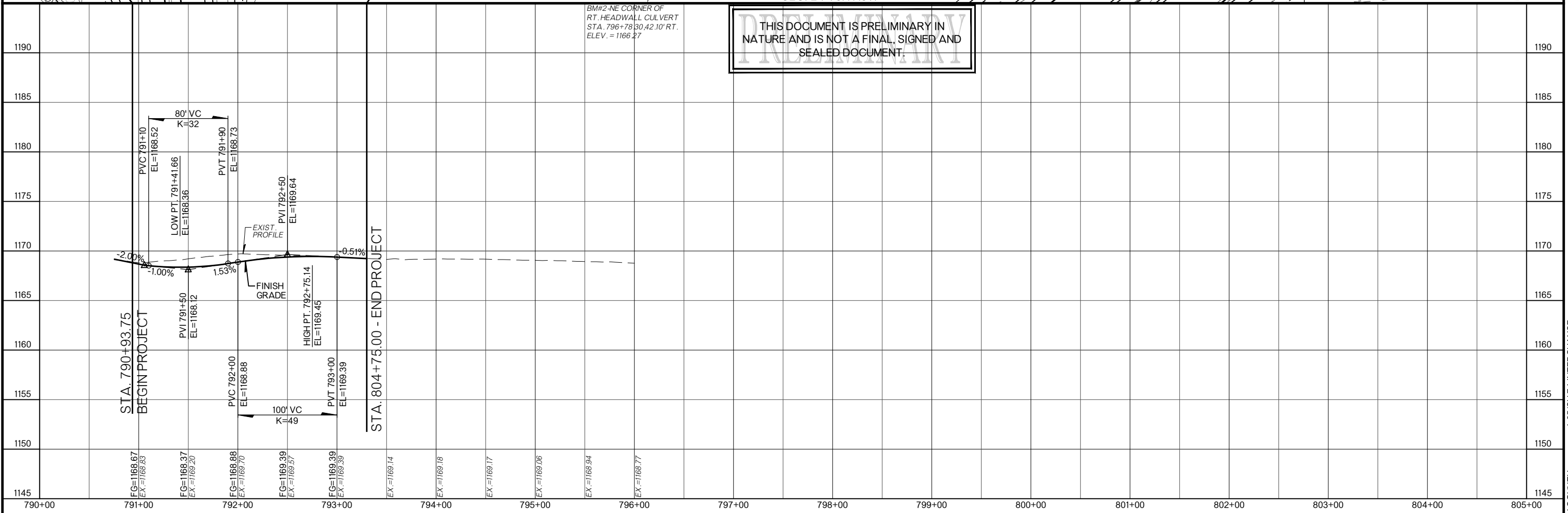
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JUNE 2022

CURVE DATA
CRL WEST FRONTAGE RD
CURVE NO. WF-1
P.I. STA. 791+85.75
 $\Delta = 090^{\circ}00'00.00''$
 $R = 60.0000'$
 $D = 095^{\circ}29'34.68''$
 $T = 60.0000'$
 $L = 94.2478'$
 $Ch = 84.8528'$
 $E = 24.8528'$
 $e = LSUS$
 $s = NC$
 $V = 15 \text{ mi/h}$



SEC. 24 T8N R3W

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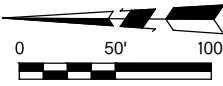
STA. 790+93.75
BEGIN PROJECT

STA. 804+75.00 - END PROJECT

W. FRONTAGE RD. - ALTERNATIVE 5A

State Job No. 29571(04) Sheet No. R013

MCCLELLAN COUNTY I-36/SH74 INTERCHANGE



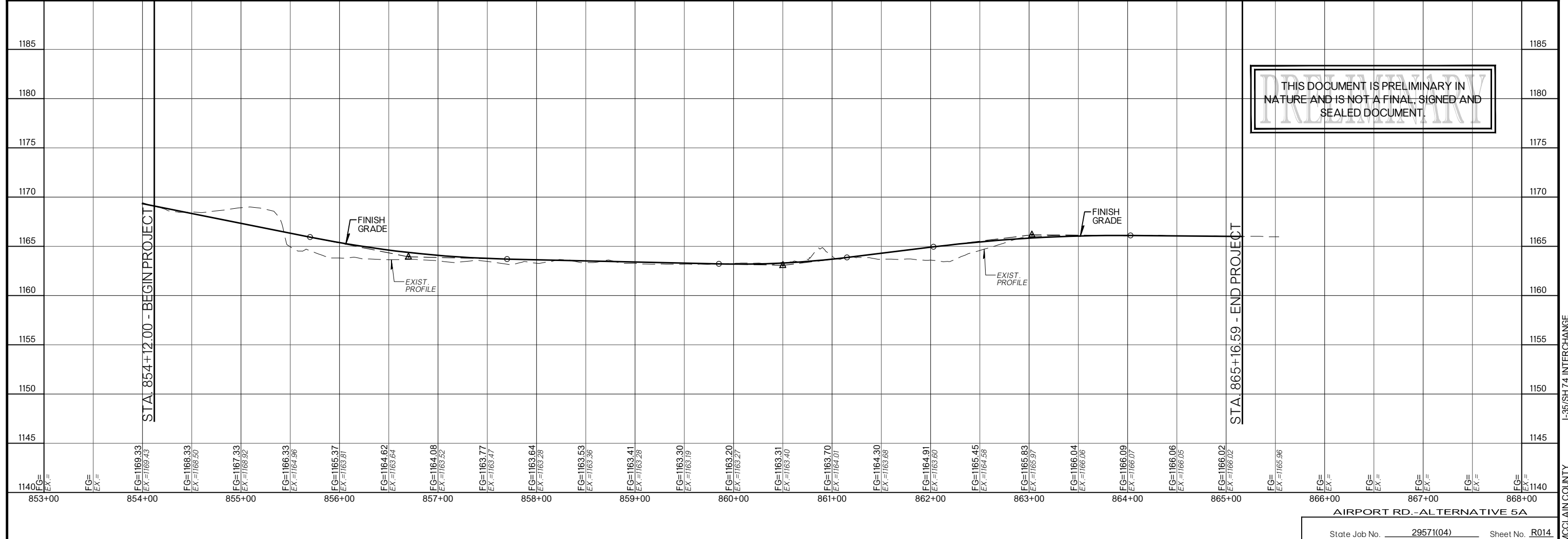
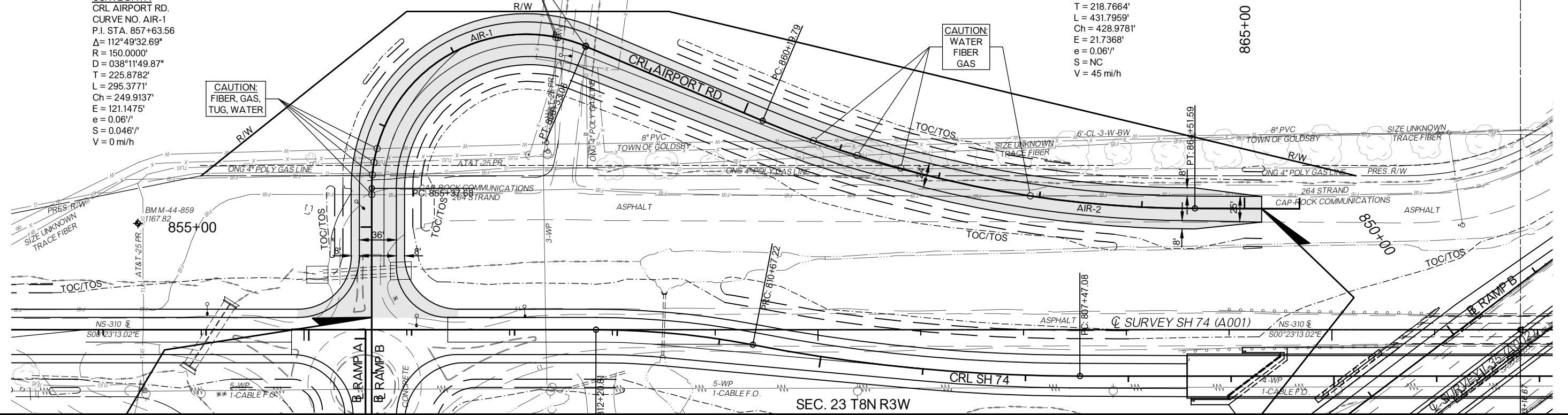
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 CURVE NO. AIR-1
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 $R = 150.0000'$
 $D = 038^{\circ}11'49.87''$
 $T = 225.8782'$
 $L = 295.3771'$
 $Ch = 249.9137'$
 $E = 121.1475'$
 $e = 0.061''$
 $S = 0.0461''$
 $V = 0 \text{ mi/h}$

SEC. 24 T8N R3W

CURVE DATA
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 CURVE NO. AIR-2
 P.I. STA. 862+38.56
 $\Delta = 022^{\circ}41'50.37''$
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 $D = 005^{\circ}15'23.38''$
 $T = 218.7664'$
 $L = 431.7959'$
 $Ch = 428.9781'$
 $E = 21.7368'$
 $e = 0.061''$
 $S = NC$
 $V = 45 \text{ mi/h}$

NOTE:
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AIRPORT RD. - ALTERNATIVE 5A

State Job No. 29571(04) Sheet No. R014

MCCLENN COUNTY I-36/SH 74 INTERCHANGE

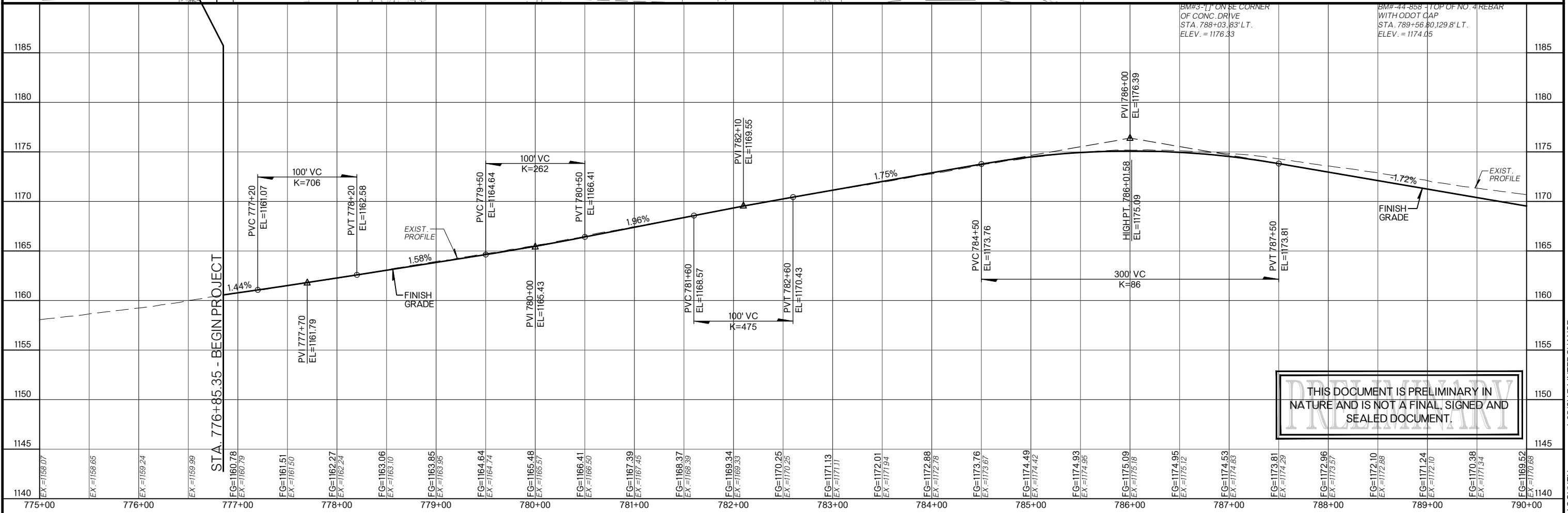
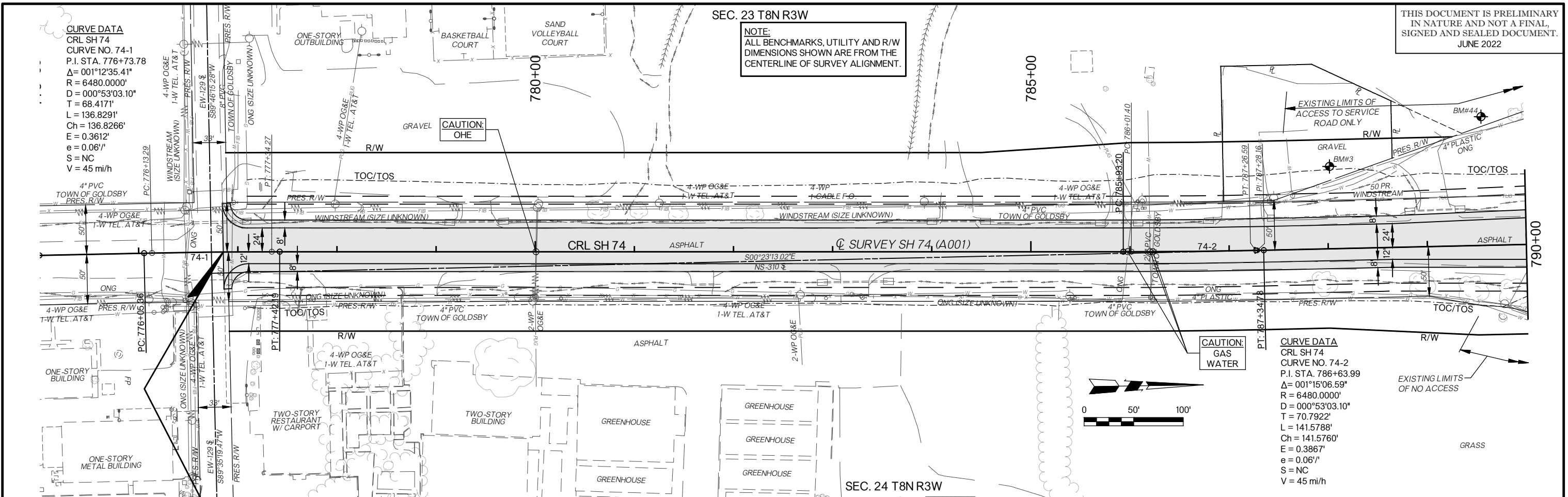
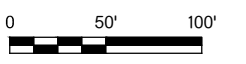
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SEC. 23 T8N R3W

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CURVE DATA
CRL SH 74
CURVE NO. 74-1
P.I. STA. 776+73.78
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 $D = 000^{\circ}53'03.10''$
 $T = 68.4171'$
 $L = 136.8291'$
 $Ch = 136.8266'$
 $E = 0.3612'$
 $e = 0.061'$
 $S = NC$
 $V = 45 \text{ mi/h}$

CURVE DATA
CRL SH 74
CURVE NO. 74-2
P.I. STA. 786+63.99
 $\Delta = 001^{\circ}15'06.59''$
 $R = 6480.0000'$
 $D = 000^{\circ}53'03.10''$
 $T = 70.7922'$
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 $Ch = 141.5760'$
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 $V = 45 \text{ mi/h}$

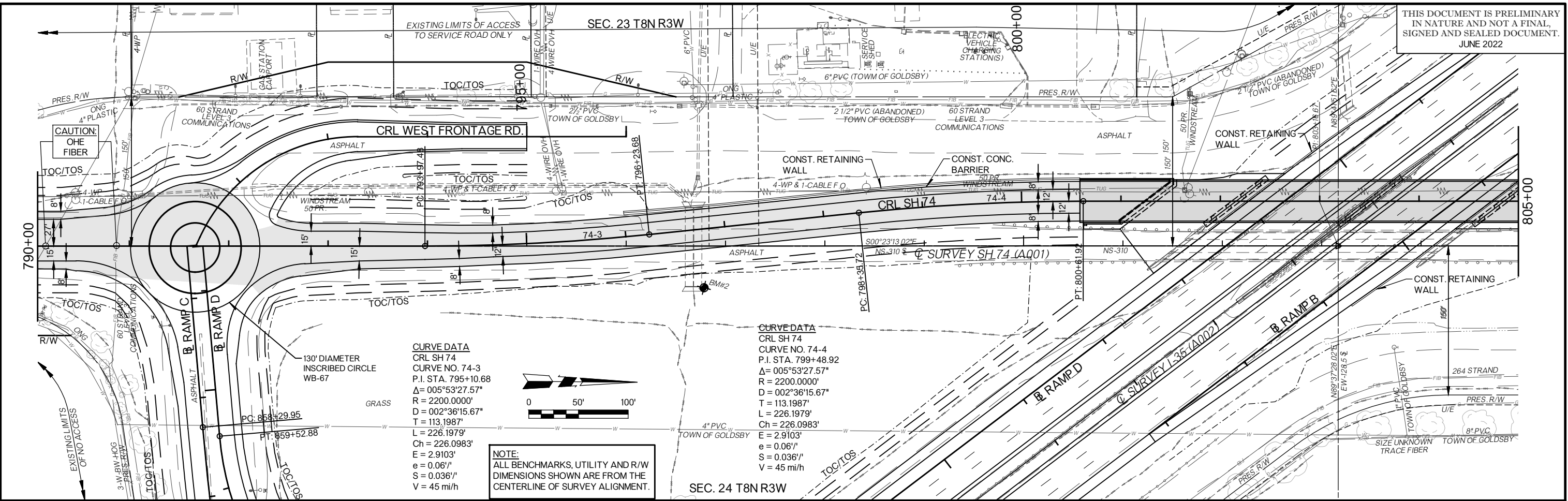


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SH 74 - ALTERNATIVE 5B

MOCLAIN COUNTY I-36/SH74 INTERCHANGE

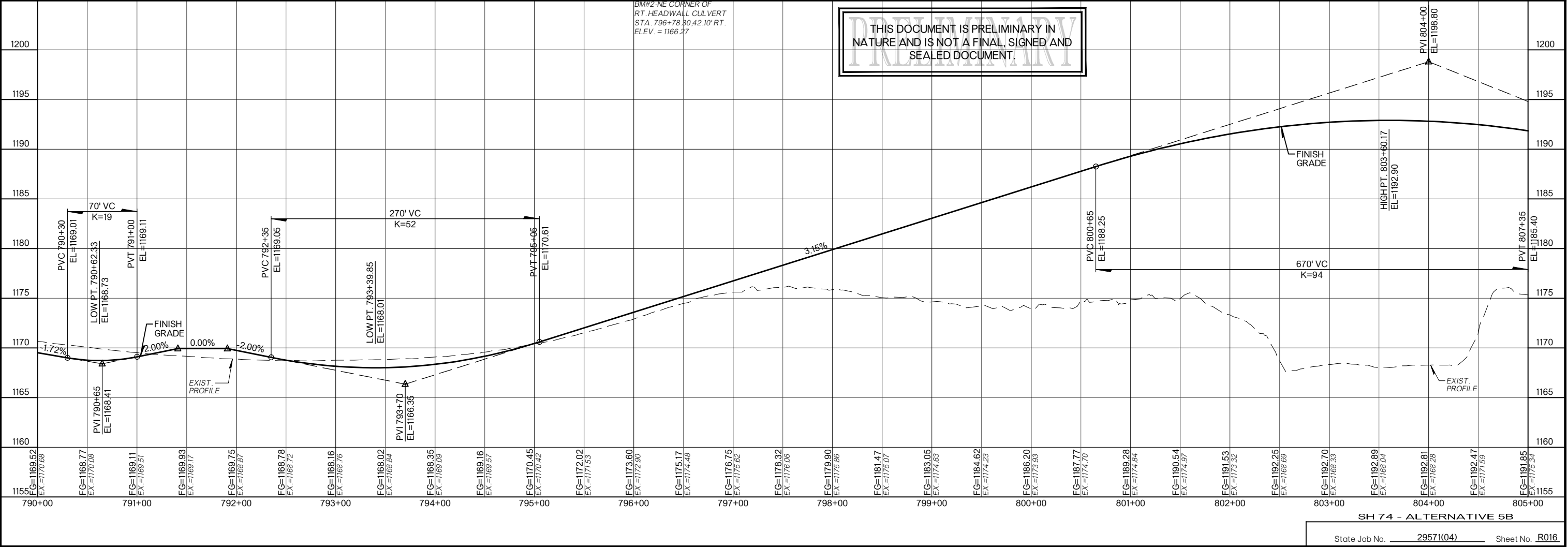
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JUNE 2022



CURVE DATA
CRL SH 74
CURVE NO. 74-3
P.I. STA. 795+10.68
 $\Delta = 005^{\circ}53'27.57''$
R = 2200.0000'
D = 002^{\circ}36'15.67''
T = 113.1987'
L = 226.1979'
Ch = 226.0983'
E = 2.9103'
e = 0.061''
S = 0.0361''
V = 45 mi/h

CURVE DATA
CRL SH 74
CURVE NO. 74-4
P.I. STA. 799+48.92
 $\Delta = 005^{\circ}53'27.57''$
R = 2200.0000'
D = 002^{\circ}36'15.67''
T = 113.1987'
L = 226.1979'
Ch = 226.0983'
E = 2.9103'
e = 0.061''
S = 0.0361''
V = 45 mi/h

NOTE:
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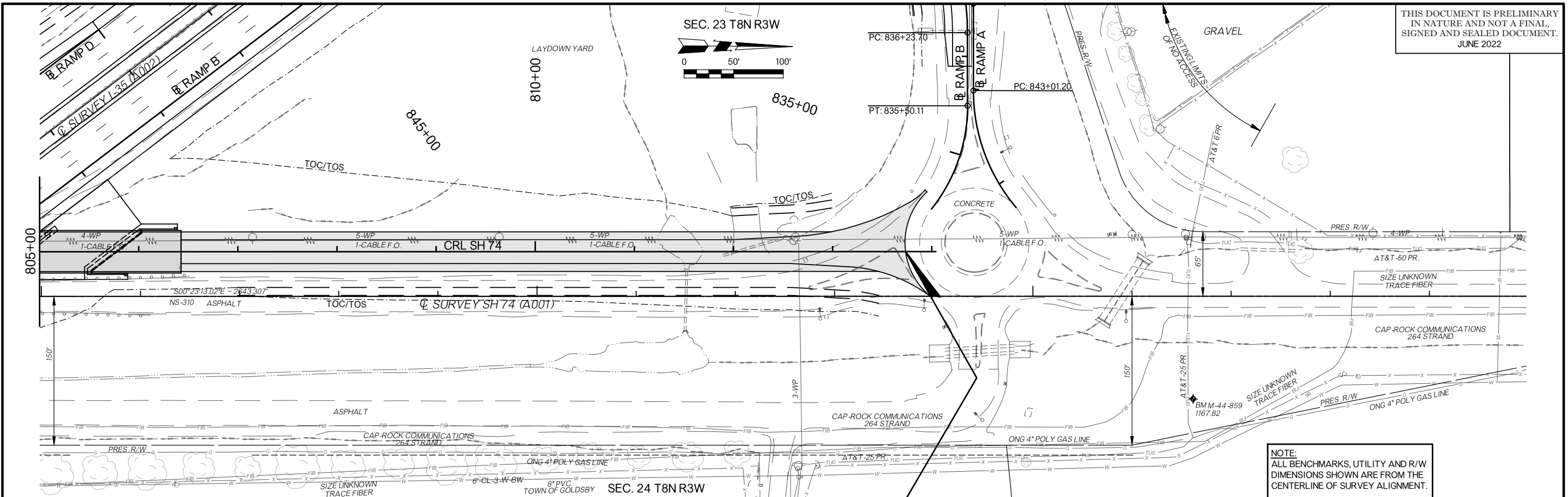
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SH 74 - ALTERNATIVE 5B

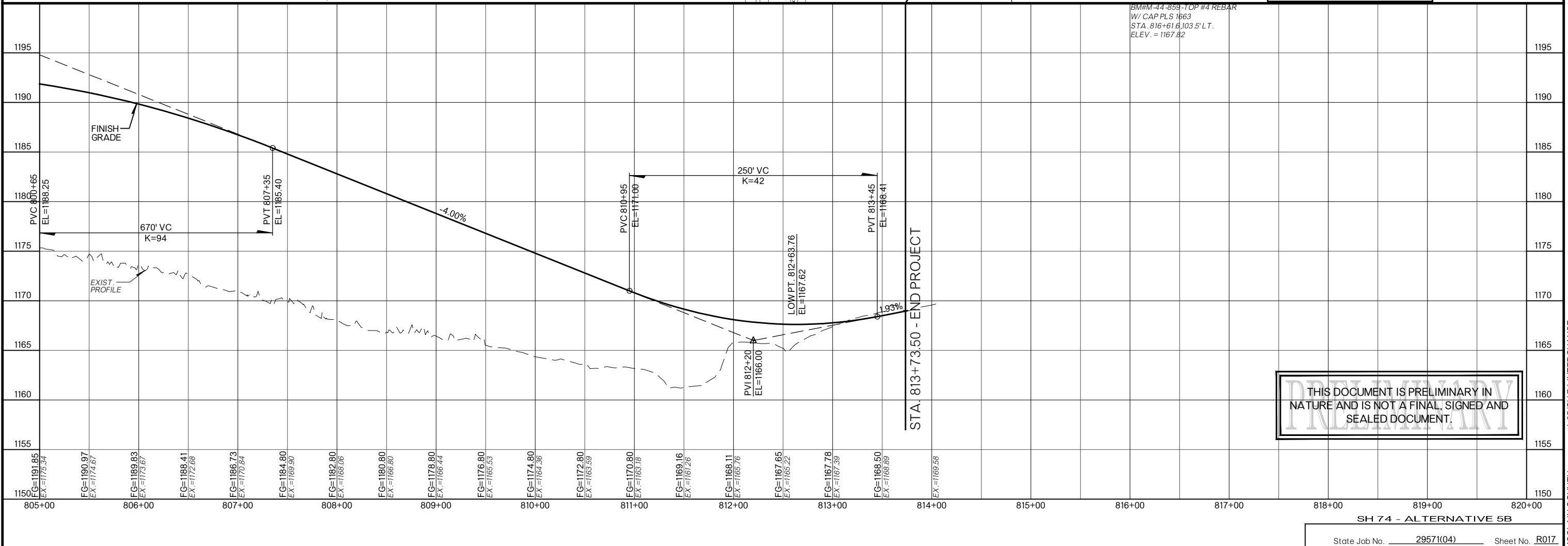
State Job No. 29571(04) Sheet No. R016

MOCLAIN COUNTY I-35/SH 74 INTERCHANGE

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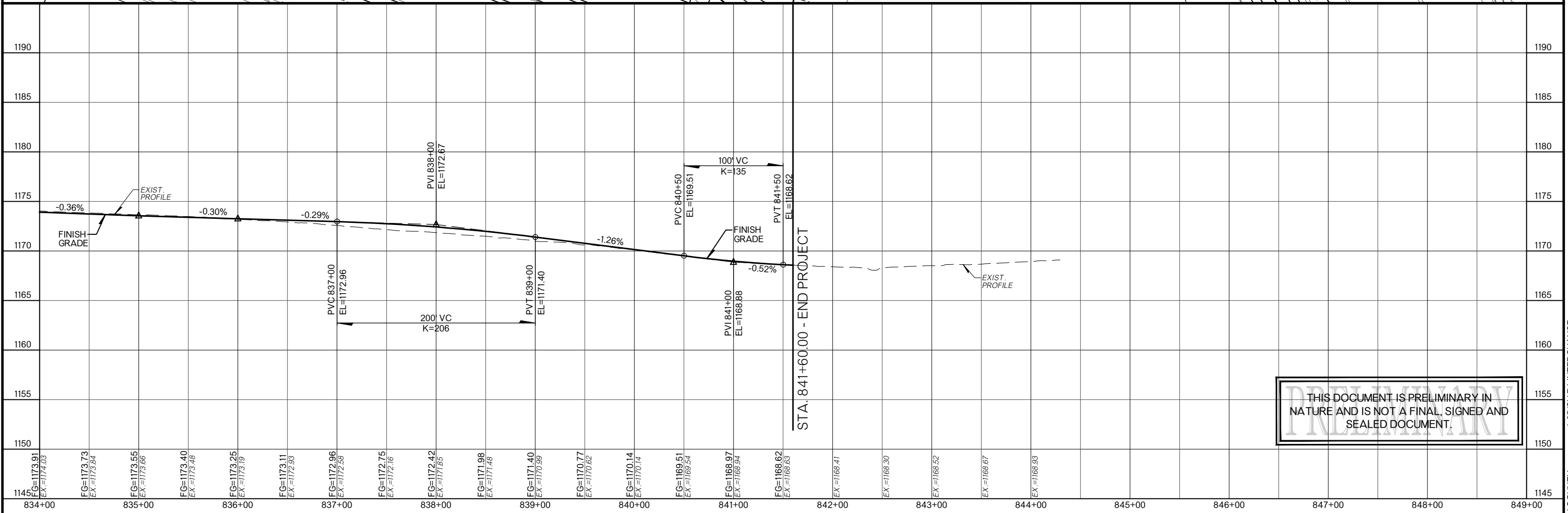
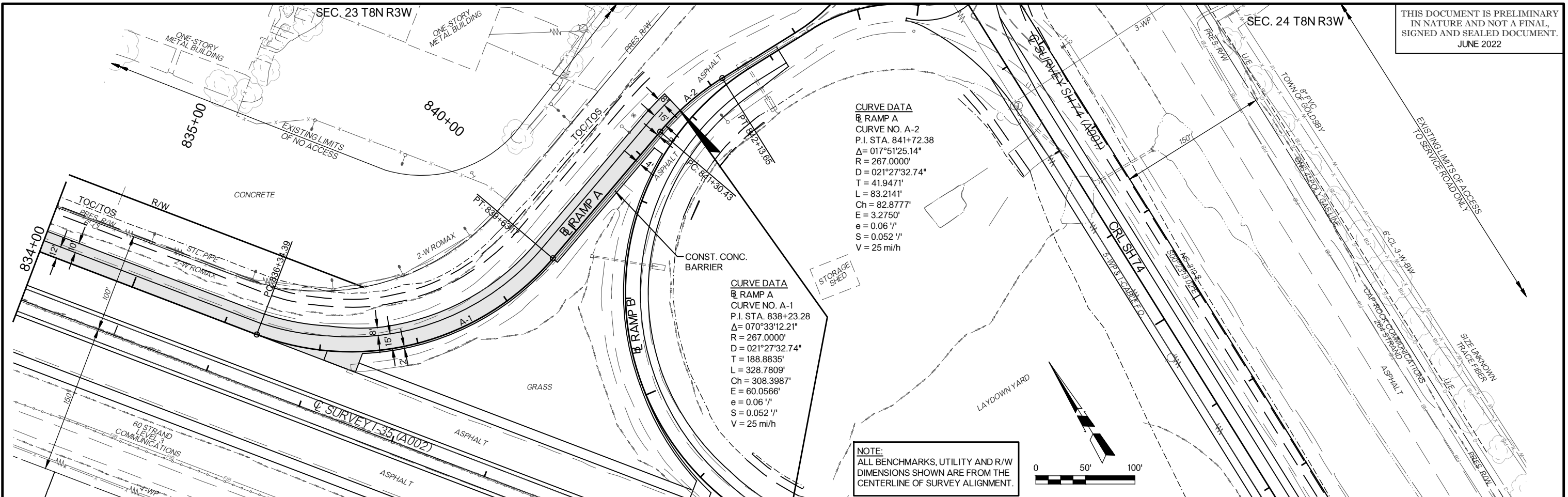
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MCCLELLAN COUNTY I-35/SH 74 INTERCHANGE

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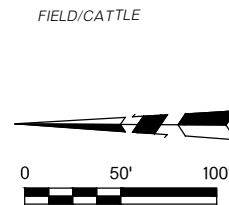


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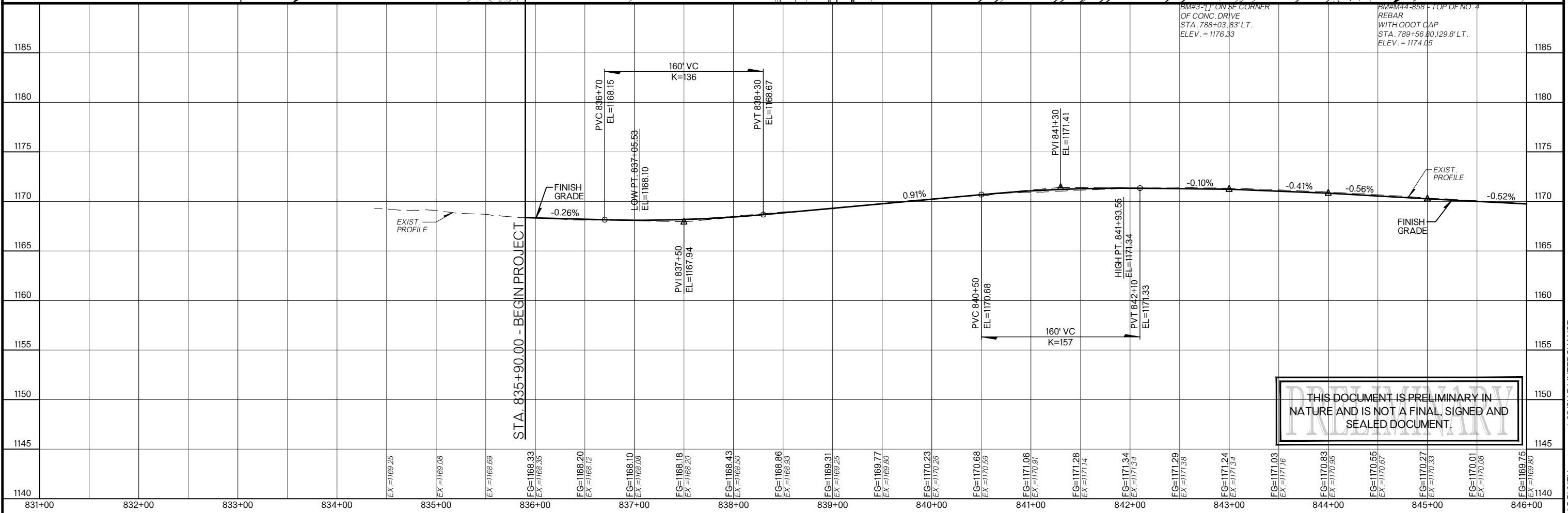
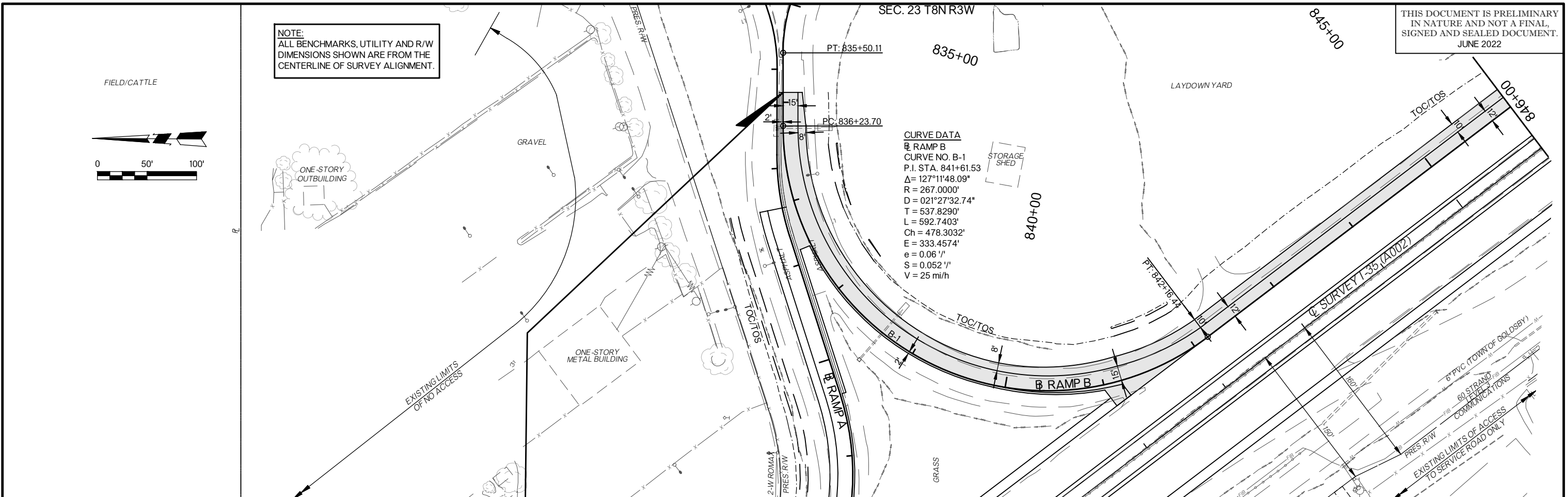
MCCLENN COUNTY I-36/SH74 INTERCHANGE

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NOTE:
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CURVE DATA
 RAMP B
 CURVE NO. B-1
 P.I. STA. 841+61.53
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 $R = 267.0000'$
 $D = 021^\circ 27' 32.74''$
 $T = 537.8290'$
 $L = 592.7403'$
 $Ch = 478.3032'$
 $E = 333.4574'$
 $e = 0.06'$
 $S = 0.052'$
 $V = 25$ mi/h

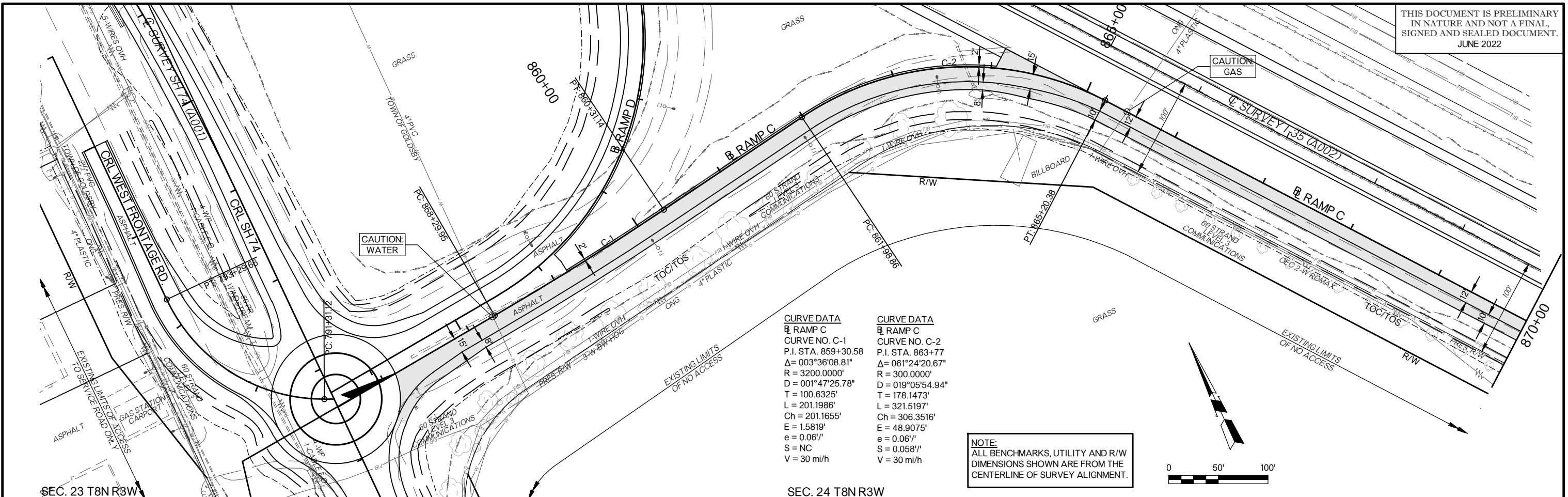


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RAMP B - ALTERNATIVE 5B

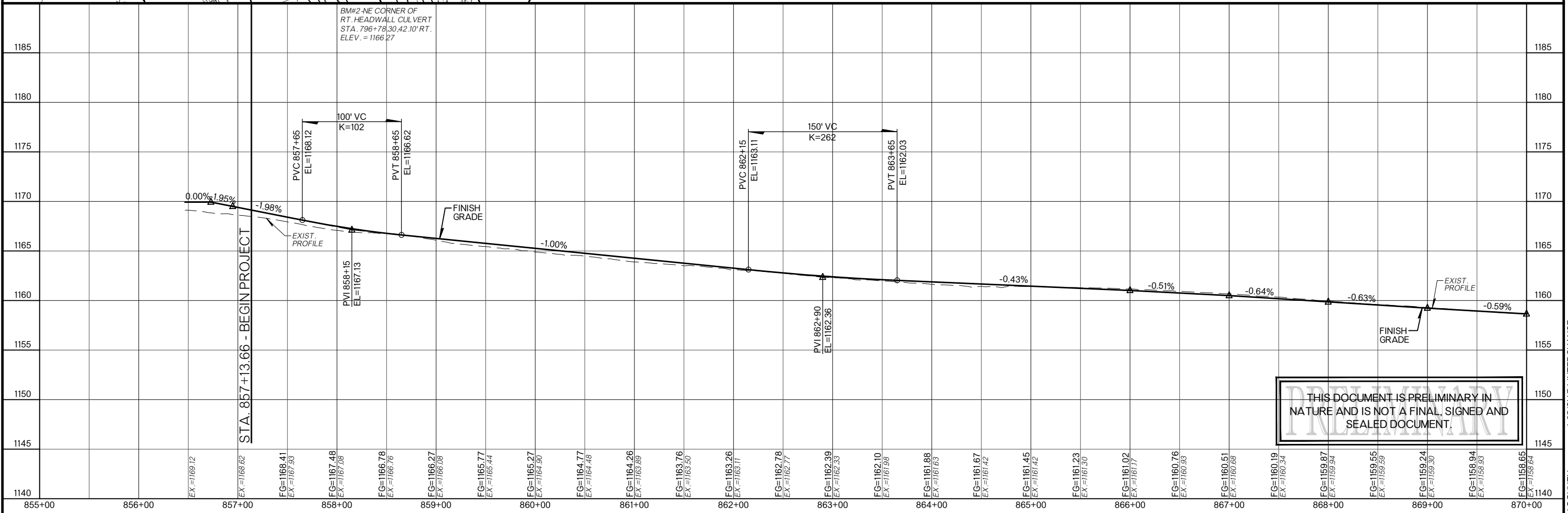
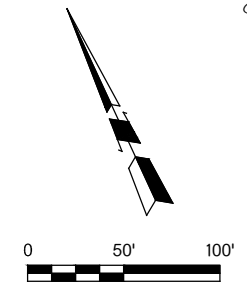
State Job No. 29571(04) Sheet No. R019

MOCLAIN COUNTY I-36/SH 74 INTERCHANGE



CURVE DATA		CURVE DATA	
B RAMP C		B RAMP C	
CURVE NO. C-1		CURVE NO. C-2	
P.I. STA. 859+30.58	P.I. STA. 863+77	P.I. STA. 859+30.58	P.I. STA. 863+77
$\Delta = 003^{\circ}36'08.81''$	$\Delta = 061^{\circ}24'20.67''$	$\Delta = 003^{\circ}36'08.81''$	$\Delta = 061^{\circ}24'20.67''$
$R = 3200.0000'$	$R = 300.0000'$	$R = 3200.0000'$	$R = 300.0000'$
$D = 001^{\circ}47'25.78''$	$D = 019^{\circ}05'54.94''$	$D = 001^{\circ}47'25.78''$	$D = 019^{\circ}05'54.94''$
$T = 100.6325'$	$T = 178.1473'$	$T = 100.6325'$	$T = 178.1473'$
$L = 201.1986'$	$L = 321.5197'$	$L = 201.1986'$	$L = 321.5197'$
$Ch = 201.1655'$	$Ch = 306.3516'$	$Ch = 201.1655'$	$Ch = 306.3516'$
$E = 1.5819'$	$E = 48.9075'$	$E = 1.5819'$	$E = 48.9075'$
$e = 0.06''$	$e = 0.06''$	$e = 0.06''$	$e = 0.06''$
$S = NC$	$S = 0.058''$	$S = NC$	$S = 0.058''$
$V = 30 \text{ mi/h}$	$V = 30 \text{ mi/h}$	$V = 30 \text{ mi/h}$	$V = 30 \text{ mi/h}$

NOTE:
ALL BENCHMARKS, UTILITY AND R/W DIMENSIONS SHOWN ARE FROM THE CENTERLINE OF SURVEY ALIGNMENT.



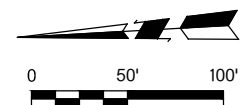
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RAMP C - ALTERNATIVE 5B

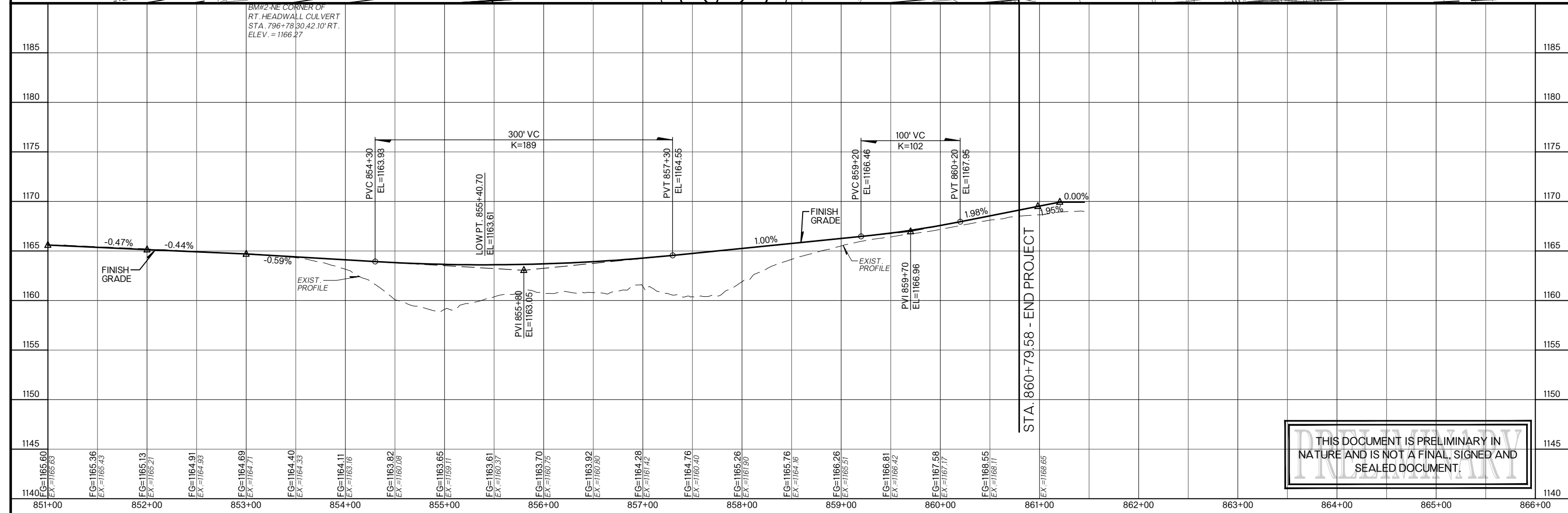
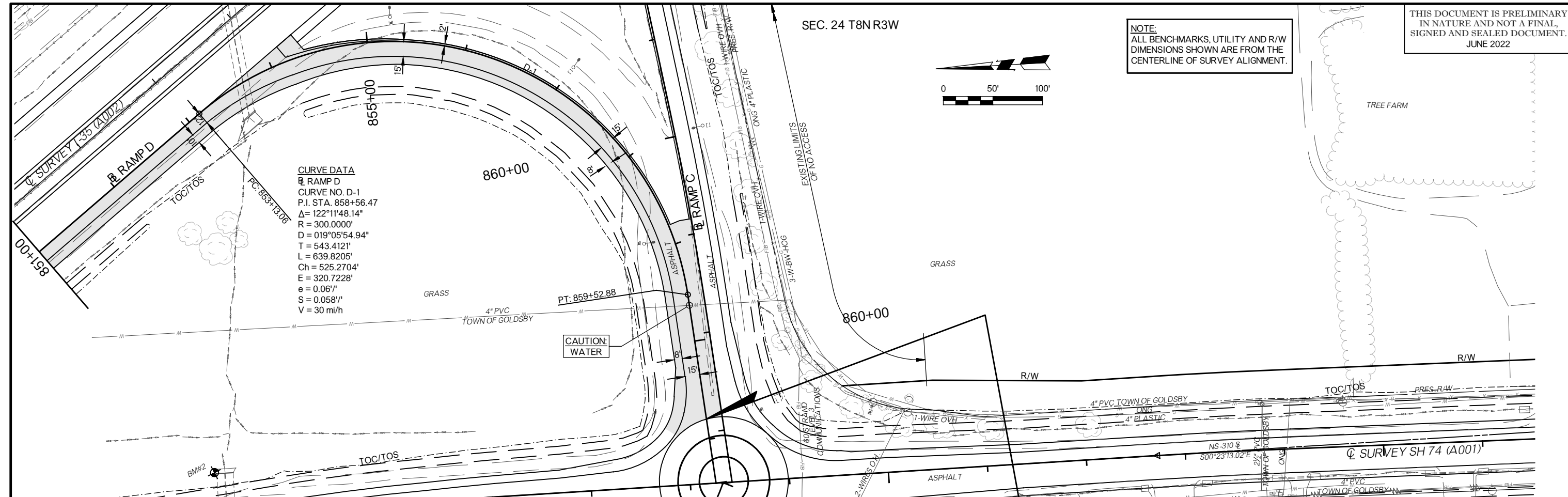
MOCLAIN COUNTY I-36/SH74 INTERCHANGE

NOTE:
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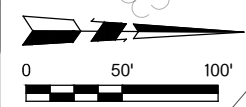


CURVE DATA
 RAMP D
 CURVE NO. D-1
 P.I. STA. 858+56.47
 $\Delta = 122^\circ 11' 48.14''$
 $R = 300.0000'$
 $D = 019^\circ 05' 54.94''$
 $T = 543.4121'$
 $L = 639.8205'$
 $Ch = 525.2704'$
 $E = 320.7228'$
 $e = 0.061''$
 $S = 0.0581''$
 $V = 30 \text{ mi/h}$



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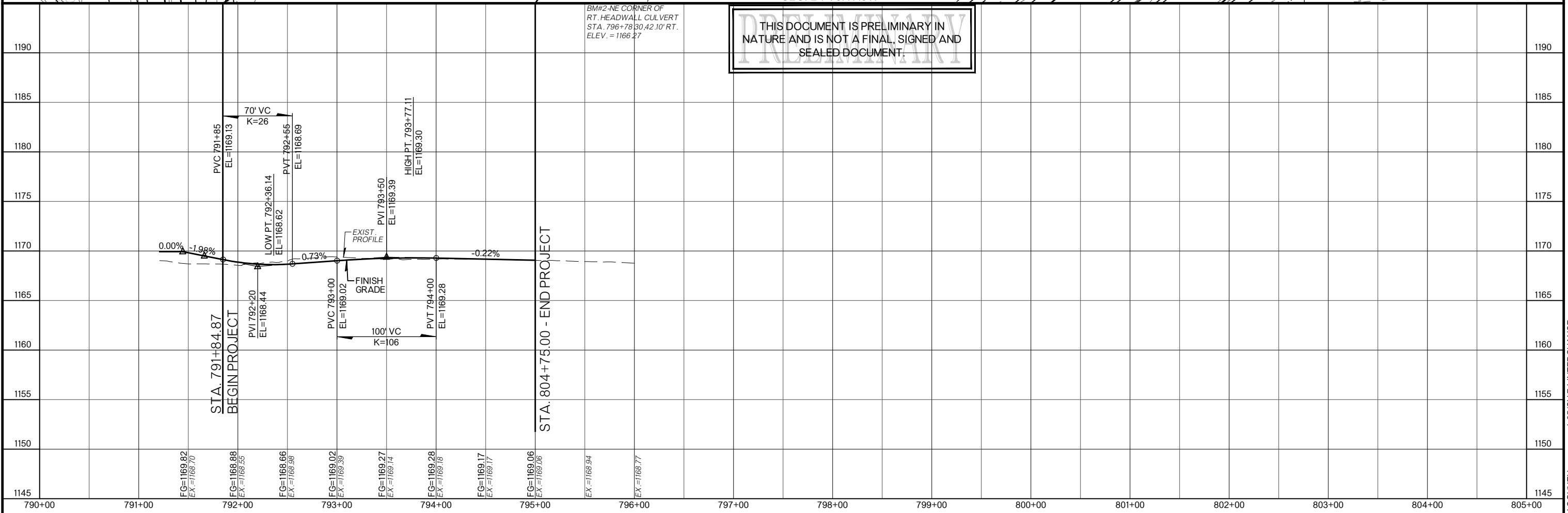
MOCLAIN COUNTY I-35/SH 74 INTERCHANGE



CURVE DATA
CRL WEST FRONTAGE RD (B)
CURVE NO. WF-1
P.I. STA. 792+42.61
 $\Delta = 065^{\circ}00'00.00''$
 $R = 175.0000'$
 $D = 032^{\circ}44'25.60''$
 $T = 111.4873'$
 $L = 198.5312'$
 $Ch = 188.0549'$
 $E = 32.4956'$
 $e = \text{LOW SPEED}$
 $S = \text{NC}$
 $V = 15 \text{ mi/h}$

NOTE:
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BM#2 - NE CORNER OF RT. HEADWALL CULVERT
STA. 796+78.30, 42.10' RT.
ELEV. = 1166.27



APPENDIX I

BRIDGE OPTIONS STUDY & BRIDGE CONCEPTUAL PLANS

New Bridge Options (SH-74/I-35 Alternatives Analysis)

J/P No. 29571(04)

A P.C. Beam Bridge and a Steel I-Beam or Plate Girder Bridge were analyzed for each new alignment alternative in this design report. A single SH-74 finish grade profile that would accommodate either beam type was developed for each alternative. In this appendix, you will find General Plan and Elevation sheets for each alternative of each beam type. The common bridge features for each alternative are as follows:

Alternative 1

1. Two (2) Span Bridge.
2. Vertical Abutments.
3. Oversized Bridge Deck.
4. TR-3 Traffic Rail & F-Shaped Concrete Parapets.
5. Pier on the centerline of I-35.

Alternative 2

1. Two (2) Span Bridge.
2. Vertical Abutments.
3. Oversized Bridge Deck
4. TR-3 Traffic Rail & F-Shaped Concrete Parapets.
5. Pier on the centerline of I-35.

Alternative 3

1. Four (4) Span Bridge.
2. Conventional Abutments (Non-integral).
3. 40' Clear Roadway.
4. F-Shaped Concrete Parapets.
5. Middle pier on the centerline of I-35.

Alternative 4

1. Four (4) Span Bridge.
2. Conventional Abutments (Non-integral).
3. 40' Clear Roadway.
4. F-Shaped Concrete Parapets.
5. Middle pier on the centerline of I-35.

Alternative 5

1. Four (4) Span Bridge.
2. Conventional Abutments (Non-integral).
3. 40' Clear Roadway.
4. F-Shaped Concrete Parapets.
5. Middle pier on the centerline of I-35.

Alternative 1

Alternative 1 features a two (2) span P.C. Beam or a two (2) span Steel I-Beam bridge with vertical abutments on about a 6-degree skew. The proposed SH-74 alignment is curved across the bridge, however a straight line CRL is proposed within the bridge limits to simplify construction. The bridge decks are oversized to accommodate the horizontal curve in the proposed SH-74 alignment and the truck turning radii at the SH-74 and Airport Road Intersection located at the east end of the bridge. F-shaped parapets will be constructed on the outside edges of the deck, and a TR-3 traffic rail will be constructed on the deck offset from SH-74 to help direct eastbound traffic. For the P.C. Beam option, Type IV Beams will be utilized.

New Bridge Options (SH-74/I-35 Alternatives Analysis)

J/P No. 29571(04)

For the Steel I-Beam option, the beams are anticipated to be continuous W36 sections. Both bridge decks are also superelevated with a cross slope of 2%. 30' of clear zone will be provided on I-35 under, so shoulder barriers will not be required for either beam option. The Type IV Beams have a superstructure depth of 5'-5" (not including deck cross slope), compared to approximately 3'-11" of superstructure depth for the continuous steel I-Beam spans. Both beam options can be constructed in a single phase.

Alternative 2

Alternative 2 features a two (2) span P.C. Beam or a two (2) span Steel I-Beam bridge with vertical abutments on a 20-degree skew. The bridge deck will be oversized to accommodate the truck turning radii at the SH-74 and Airport Road Intersection located at the east end of the bridge. F-shaped parapets will be constructed on the outside edges of the deck, and a TR-3 traffic rail will be constructed on the deck offset from SH-74 to help direct eastbound traffic. For the P.C. Beam option, Type IV Beams will be utilized. For the Steel I-Beam option, the beams are anticipated to be continuous W40 sections. The P.C. Beam option will have a normal 2% crown, with a slope break to a 1% slope at the TR3 rail to achieve the minimum vertical clearance. The Steel I-Beam option will have a normal 2% crown the full width. 30' of clear zone will be provided on I-35 under, so shoulder barriers will not be required for either beam option. The Type IV Beams have a superstructure depth of 5'-5" (not including deck cross slope), compared to approximately 4'-3" of superstructure depth for the continuous steel I-Beam spans. Both beam options can be constructed in a single phase.

Alternative 3

Alternative 3 features a four (4) span P.C. Beam or a four (4) span Steel Plate Girder bridge with conventional abutments on a 45-degree skew. The proposed SH-74 bridge will be offset to the north of the existing SH-74 bridge. For the P.C. Beam option, we found that Bulb Tee Beams will be required in the middle two (2) spans based on the skewed horizontal distance across I-35. Due to the limitations of the Bulb Tee Beam, the 30' of clear zone on I-35 could not be provided and shoulder barriers will be required for the outside piers. Type IV Beams will be utilized in the outer spans. For the steel plate girder option, the outer spans will be simply supported, and the two (2) center spans will be continuous. 30' of clear zone will be provided, so shoulder barrier will not be required for the steel option. The Bulb Tee Beams have a superstructure depth of 7'-0" (not including deck cross slope), compared to approximately 4'-11" of superstructure depth for the continuous steel plate girder spans. A retaining wall will be constructed between the south abutment and newly constructed West Frontage Road to retain the south embankment. Temporary sheet piling may be required between the new embankment and existing SH-74. Both beam options can be constructed in a single phase.

Alternative 4

Alternative 4 features a four (4) span P.C. Beam or a four (4) span Steel Plate Girder bridge with conventional abutments on a 40-degree skew. The proposed SH-74 bridge will be offset to the south of the existing SH-74 bridge. For the P.C. Beam option, we found that Bulb Tee Beams will be required in the middle two (2) spans based on the skewed horizontal distance across I-35. Type IV Beams will be utilized in the outer spans. For the steel plate girder option, the outer spans will be simply supported, and the two (2) center spans will be continuous. 30' of clear zone can be provided on I-35 for both beam options, so shoulder barriers are not required for this alternative. The Bulb Tee Beams have an overall structural depth of 7'-0" (not including deck cross slope), compared to approximately 4'-11" of superstructure depth for the continuous steel plate girder spans. A retaining wall will be constructed between the north abutment and

New Bridge Options (SH-74/I-35 Alternatives Analysis)

J/P No. 29571(04)

the newly constructed Airport Road to retain the north embankment. Temporary sheet piling may be required between the new embankment and existing SH-74. Both beam options can be constructed in a single phase.

Alternative 5

Alternative 5 features a four (4) span P.C. Beam or a four (4) span Steel Plate Girder bridge with conventional abutments on about a 53-degree skew. The proposed SH-74 bridge will be offset immediately to the north and parallel with the existing SH-74 bridge. For the P.C. Beam option, we found that Bulb Tee Beams will be required in the middle two (2) spans based on the skewed horizontal distance across I-35. Due to the limitations of the Bulb Tee Beam, the 30' of clear zone could not be provided on I-35, so shoulder barriers will be required for the outside piers. Type IV Beams will be utilized in the outer spans. For the steel plate girder option, the outer spans will be simply supported, and the two (2) center spans will be continuous. 30' of clear zone will be provided, so shoulder barrier will not be required for the steel option. The Bulb Tee Beams have an overall structural depth of 7'-0" (not including deck cross slope), compared to approximately 5'-11" of superstructure depth for the continuous steel plate girder spans. A retaining wall will be constructed between the south abutment and existing West Frontage Road to retain the south embankment. Temporary sheet piling may be required between the new embankment and existing SH-74. Both beam options can be constructed in a single phase.

ESTIMATED CONSTRUCTION COSTS - BRIDGE OPTIONS

Design Alternative	Bridge Option	Bridge Description	Est. Const. Cost	Notes
1	P.C. Beam	86'-86' Simple Spans, 107'-4" Out-To-Out, Oversized Deck	\$ 4,800,000	Includes existing bridge removal and median pier barrier costs and 20% contingency
	Steel I-Beam	85'-85' Cont. Spans, 104'-1" Out-To-Out, Oversized Deck	\$ 5,700,000	
2	P.C. Beam	104'-91' Simple Spans, 110'-11" Out-To-Out, Oversized Deck	\$ 5,600,000	Includes existing bridge removal and median pier barrier costs and 20% contingency
	Steel I-Beam	103'-90' Cont. Spans, 107'-10" Out-To-Out, Oversized Deck	\$ 6,600,000	
3	P.C. Beam	67'-135'-135'-67' Spans, 43'-0" Out-To-Out	\$ 4,400,000	Includes existing bridge removal, 54" barriers along I-35, median pier barrier, CIP retaining wall, temporary sheet piling costs and 20% contingency
	Steel Plate Girder	60'-142'-142'-60' Spans, 43'-0" Out-To-Out	\$ 5,000,000	
4	P.C. Beam	50'-131'-131'-50' Spans, 43'-0" Out-To-Out	\$ 4,100,000	Includes existing bridge removal, median pier barrier, CIP retaining wall, temporary sheet piling costs and 20% contingency
	Steel Plate Girder	50'-131'-131'-50' Spans, 43'-0" Out-To-Out	\$ 4,400,000	
5	P.C. Beam	92'-135'-135'-92' Spans, 43'-0" Out-To-Out	\$ 5,000,000	Includes existing bridge removal, 54" Barriers along I-35, median pier barrier, CIP retaining wall, temporary sheet piling costs and 20% contingency
	Steel Plate Girder	60'-165'-165'-60' Spans, 43'-0" Out-To-Out	\$ 5,600,000	

SEC. 24
T8N R3W

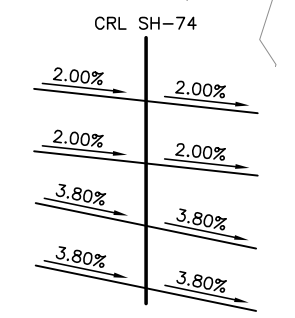
SEC. 24
T8N R3W

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS 1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

CRL SH-74
CURVE DATA
P.C. STA. 792+20.00
P.I. STA. 796+94.03
P.T. STA. 800+98.74

BRIDGE & APPR. SLABS	CRL SH-74 STA.
	800+98.74
	798+90.00
	798+40.74
	792+46.00

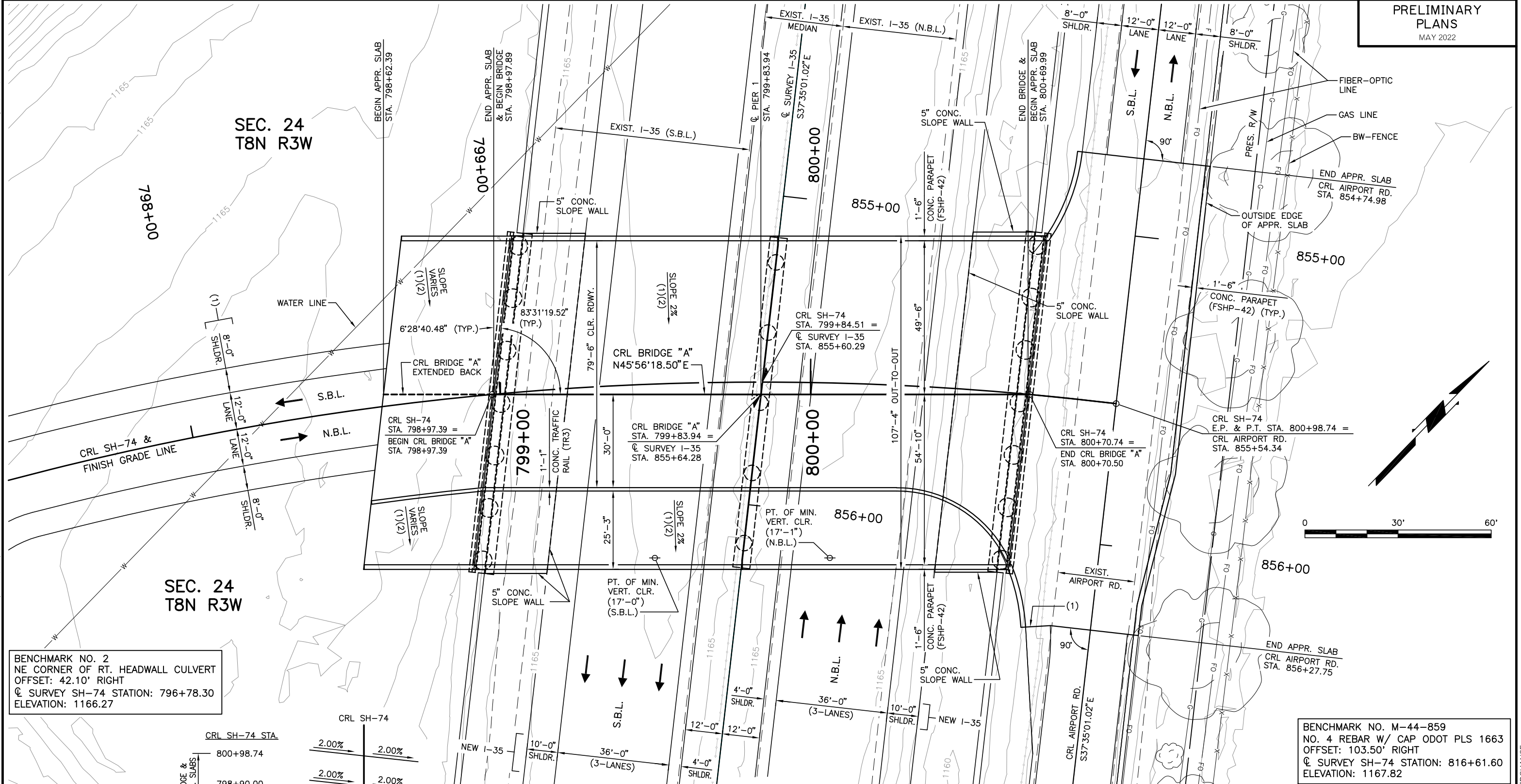


SUPERELEVATION DATA

NOTE: SUPERELEVATION RATES VARY LINEARLY BETWEEN STA. 798+40.74 AND STA. 798+90.00.

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PLAN
SCALE 1"=30'



- (1) RADIAL LINE OR RADIAL DIMENSION.
- (2) SEE SUPERELEVATION DATA.

NOTES: ALL BRIDGE STATIONING FOLLOWS CRL BRIDGE "A", UNLESS NOTED OTHERWISE.
FOR GENERAL BRIDGE ELEVATION, SEE SHEET NO. B002.

CONST. (2-86') PRESTRESSED CONCRETE BEAM SPANS; 79'-6" CLR. RDWY. W/ CONC. PARAPETS (FSHP-42) AND CONC. TRAFFIC RAIL (TR3) SKEWED 6'28'40.48" LF

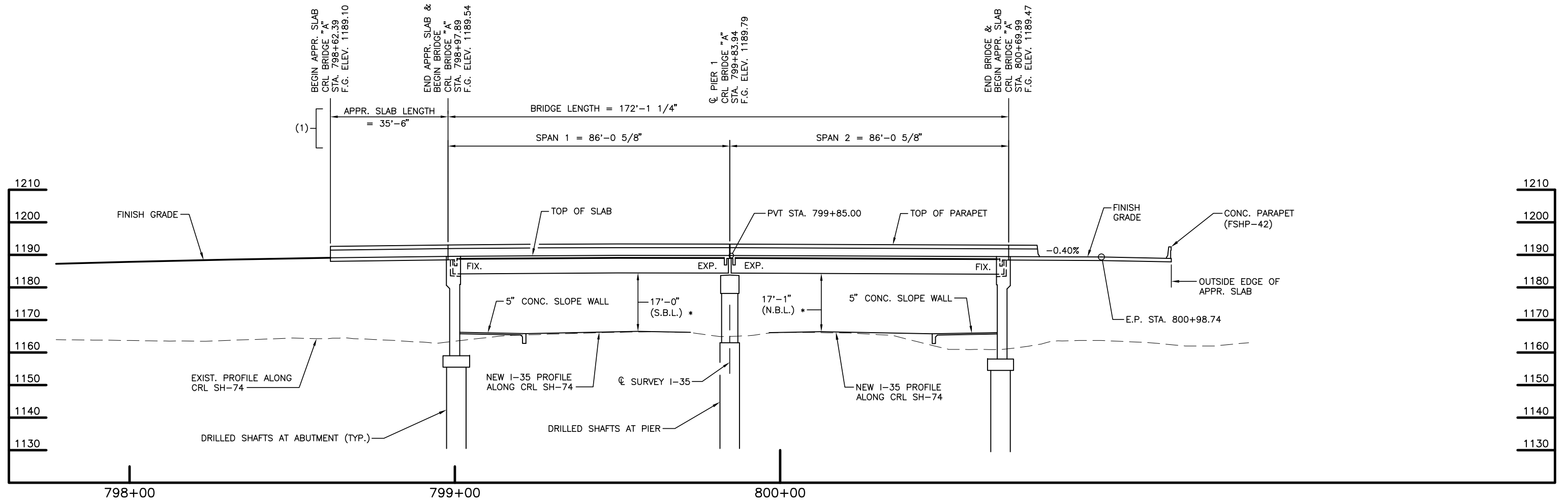
SH-74 OVER I-35
BRIDGE "A"

**GENERAL PLAN AND ELEVATION
(ALTERNATIVE 1) (P.C. BEAM)
(SHEET NO. 1 OF 2)**

CRL BRIDGE "A" STA. 799+83.94

State Job No. 29571(04) Sheet No. B001

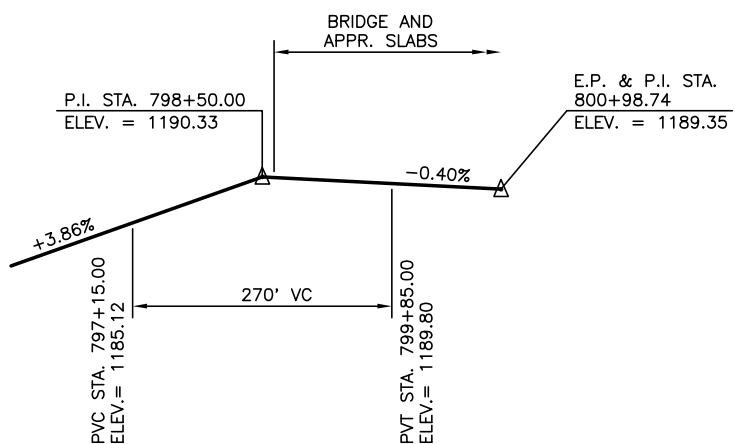
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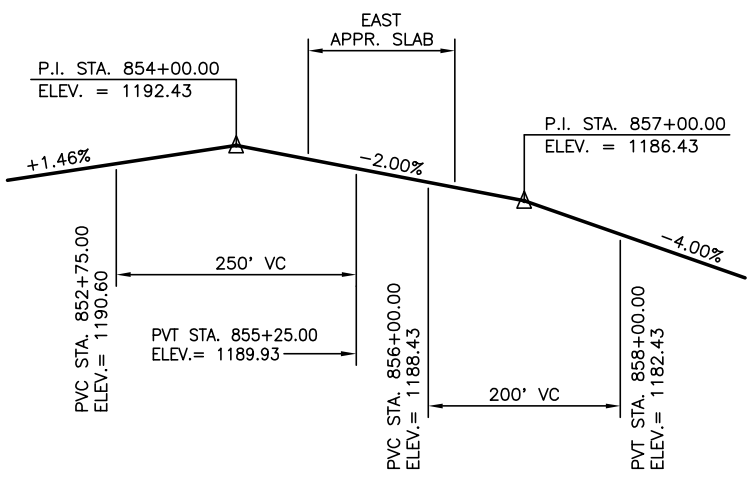
BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

ELEVATION
SCALE 1"=30'

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS 1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82



FINISH GRADE DATA
CRL SH-74



FINISH GRADE DATA
CRL AIRPORT RD.

(1) DIMENSIONS ARE ALONG CRL BRIDGE "A".
* MINIMUM ESTIMATED VERTICAL CLEARANCE.
(SEE SHEET NO. B001 FOR LOCATION.)

NOTES: ALL STATIONING FOLLOWS CRL SH-74,
UNLESS NOTED OTHERWISE.
ELEVATION OF BRIDGE IS SHOWN ALONG
CRL BRIDGE "A".
FOR PLAN VIEW, SEE SHEET NO. B001.

CONST. (2-86') PRESTRESSED CONCRETE
BEAM SPANS; 79'-6" CLR. RDWY. W/ CONC.
PARAPETS (FSHP-42) AND CONC. TRAFFIC
RAIL (TR3) SKEWED 6'28'40.48" LF

THIS DOCUMENT IS PRELIMINARY IN
NATURE AND IS NOT A FINAL, SIGNED AND
SEALED DOCUMENT.

SH-74 OVER I-35
BRIDGE "A"
GENERAL PLAN AND ELEVATION
(ALTERNATIVE 1) (P.C. BEAM)
(SHEET NO. 2 OF 2)
CRL BRIDGE "A" STA. 799+83.94
State Job No. 29571(04) Sheet No. B002

MCCLELLIN COUNTY I-35/SH-74 INTERCHANGE

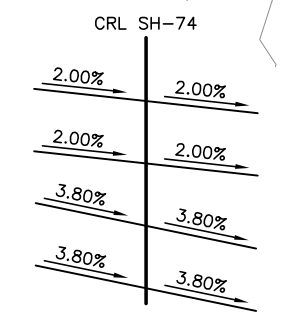
SEC. 24
T8N R3W

SEC. 24
T8N R3W

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS 1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

BRIDGE & APPR. SLABS	CRL SH-74 STA.
	800+98.74
	798+90.00
	798+40.74
	792+46.00



SUPERELEVATION DATA

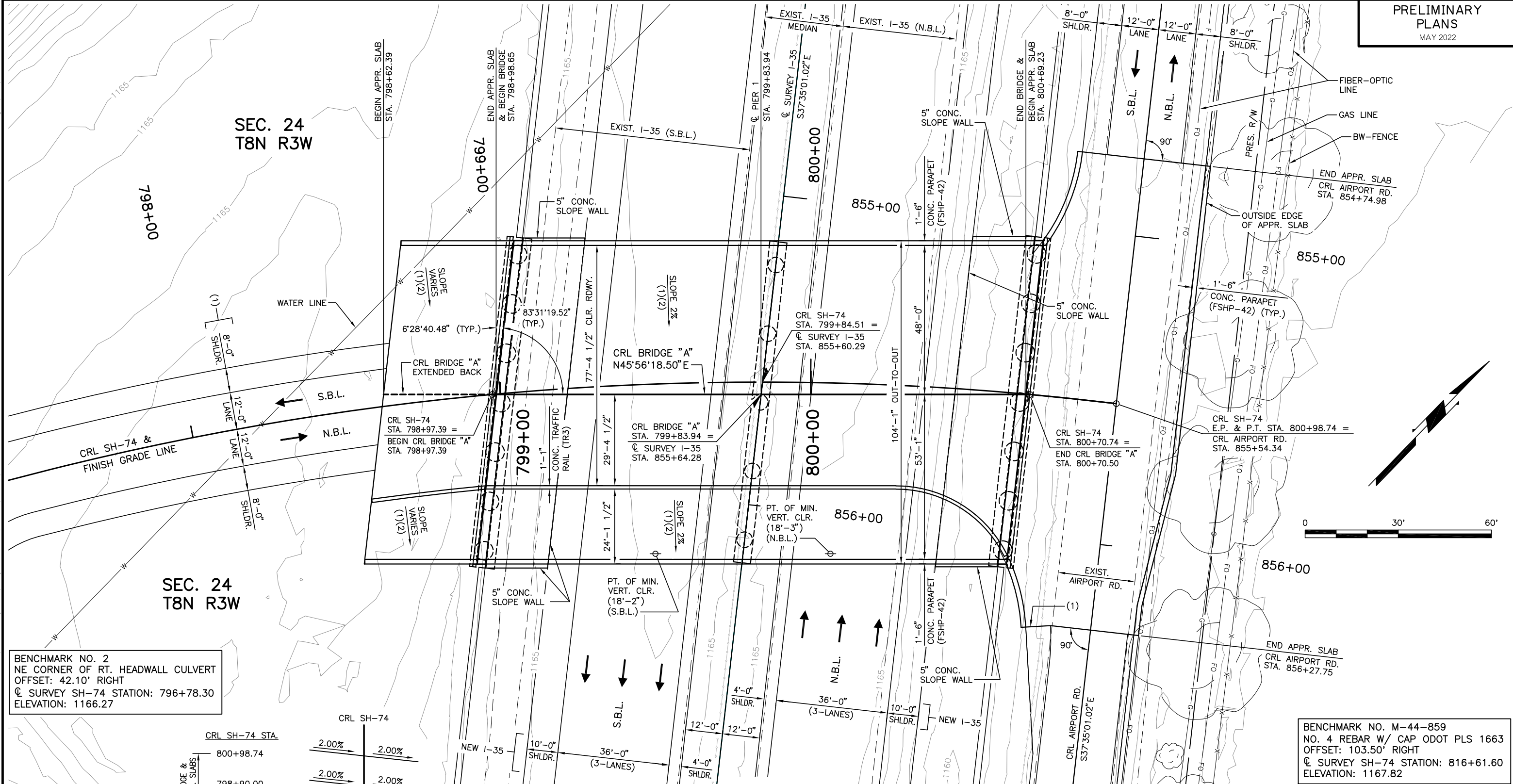
NOTE: SUPERELEVATION RATES VARY LINEARLY BETWEEN STA. 798+40.74 AND STA. 798+90.00.

CRL SH-74 CURVE DATA

P.C. STA. 792+20.00
P.I. STA. 796+94.03
P.T. STA. 800+98.74

Δ = 53°16'41.60" RT.
D = 06°03'46.96"
R = 945.0000'
L = 878.7370'
T = 474.0279'
S = VARIES (SEE "SUPERELEVATION DATA")

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.



PLAN
SCALE 1"=30'

- (1) RADIAL LINE OR RADIAL DIMENSION.
- (2) SEE SUPERELEVATION DATA.

NOTES: ALL BRIDGE STATIONING FOLLOWS CRL BRIDGE "A", UNLESS NOTED OTHERWISE.
FOR GENERAL BRIDGE ELEVATION, SEE SHEET NO. B004.

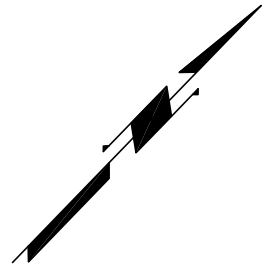
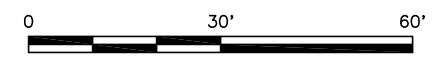
CONST. (2-85') CONTINUOUS STEEL I-BEAM SPANS; 77'-4 1/2" CLR. RDWY. W/ CONC. PARAPETS (FSHP-42) AND CONC. TRAFFIC RAIL (TR3) SKEWED 6'28'40.48" LF

SH-74 OVER I-35
BRIDGE "A"

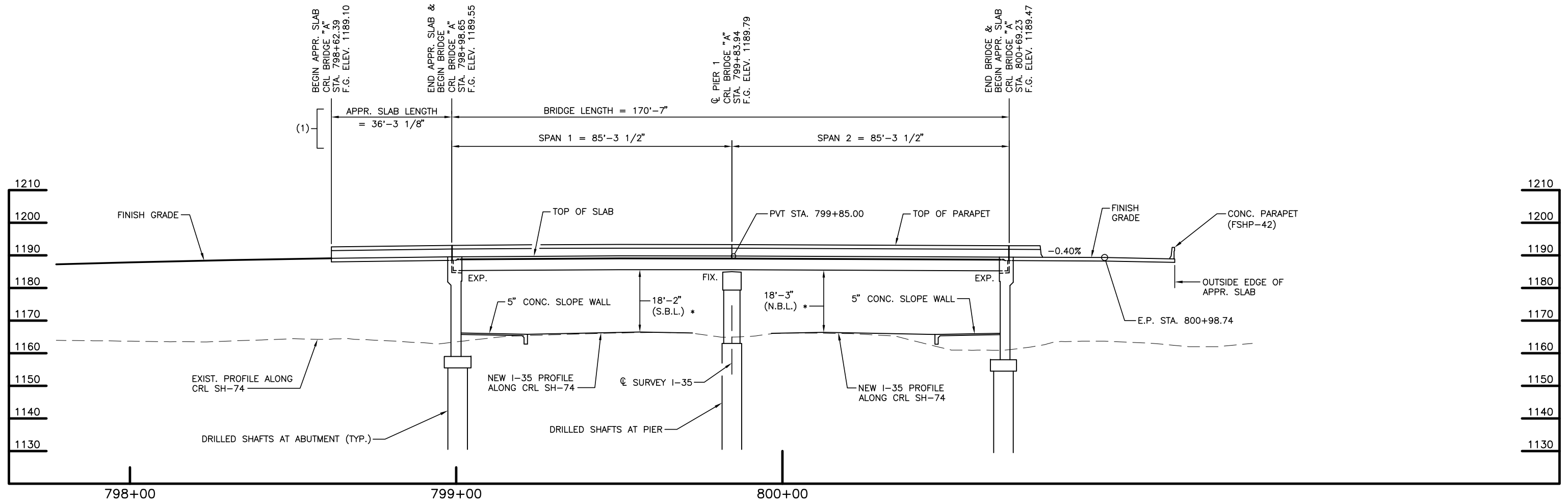
**GENERAL PLAN AND ELEVATION
(ALTERNATIVE 1) (STEEL I-BEAM)
(SHEET NO. 1 OF 2)**

CRL BRIDGE "A" STA. 799+83.94

State Job No. 29571(04) Sheet No. B003



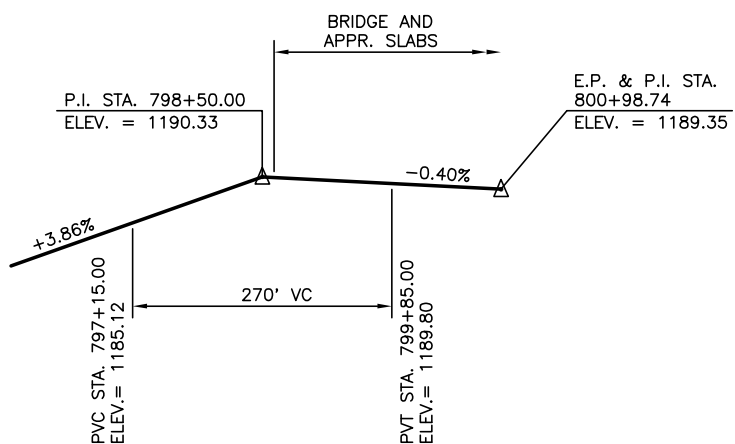
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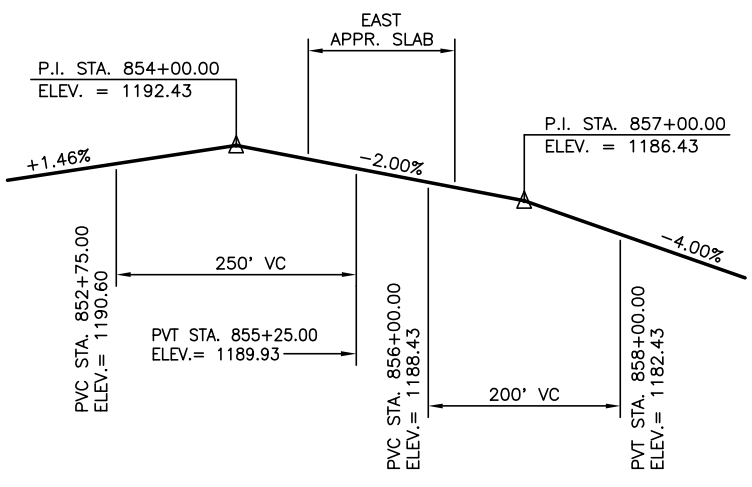
BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

ELEVATION
SCALE 1"=30'

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS 1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82



FINISH GRADE DATA
CRL SH-74



FINISH GRADE DATA
CRL AIRPORT RD.

(1) DIMENSIONS ARE ALONG CRL BRIDGE "A".
* MINIMUM ESTIMATED VERTICAL CLEARANCE.
(SEE SHEET NO. B003 FOR LOCATION.)

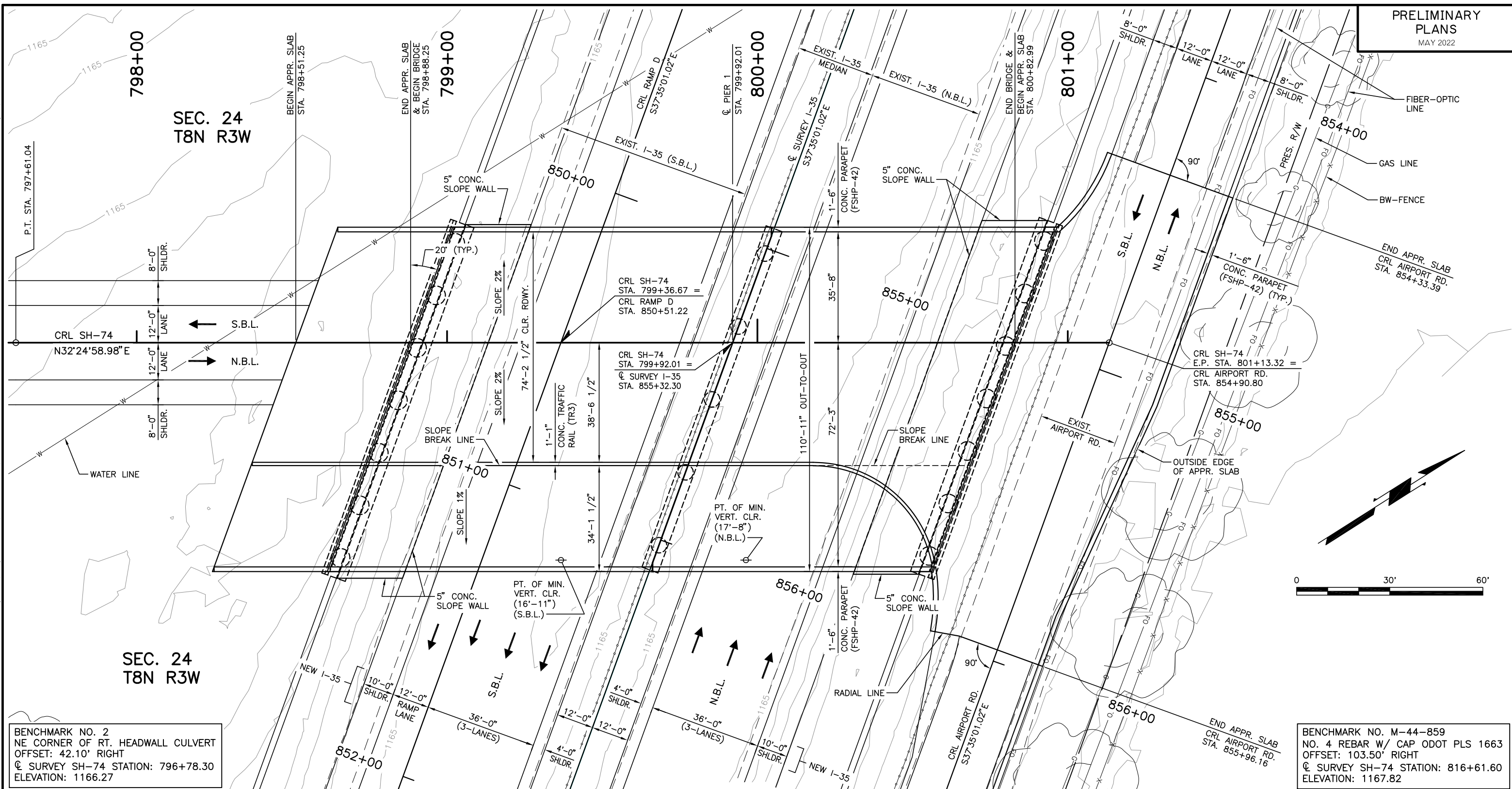
NOTES: ALL STATIONING FOLLOWS CRL SH-74,
UNLESS NOTED OTHERWISE.
ELEVATION OF BRIDGE IS SHOWN ALONG
CRL BRIDGE "A".
FOR PLAN VIEW, SEE SHEET NO. B003.

CONST. (2-85') CONTINUOUS STEEL I-BEAM
SPANS; 77'-4 1/2" CLR. RDWY. W/ CONC.
PARAPETS (FSHP-42) AND CONC. TRAFFIC
RAIL (TR3) SKEWED 6'28'40.48" LF

THIS DOCUMENT IS PRELIMINARY IN
NATURE AND IS NOT A FINAL, SIGNED AND
SEALED DOCUMENT.

SH-74 OVER I-35
BRIDGE "A"
**GENERAL PLAN AND ELEVATION
(ALTERNATIVE 1) (STEEL I-BEAM)**
(SHEET NO. 2 OF 2)
CRL BRIDGE "A" STA. 799+83.94
State Job No. 29571(04) Sheet No. B004

MCCLELLIN COUNTY I-35/SH-74 INTERCHANGE



SEC. 24
T8N R3W

SEC. 24
T8N R3W

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS 1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

PLAN
SCALE 1"=30'

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

NOTES: ALL STATIONING FOLLOWS CRL SH-74, UNLESS NOTED OTHERWISE.
FOR GENERAL BRIDGE ELEVATION, SEE SHEET NO. B006.

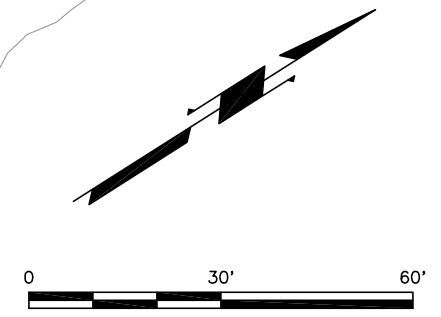
SH-74 OVER I-35
BRIDGE "A"

GENERAL PLAN AND ELEVATION
(ALTERNATIVE 2) (P.C. BEAM)
(SHEET NO. 1 OF 2)

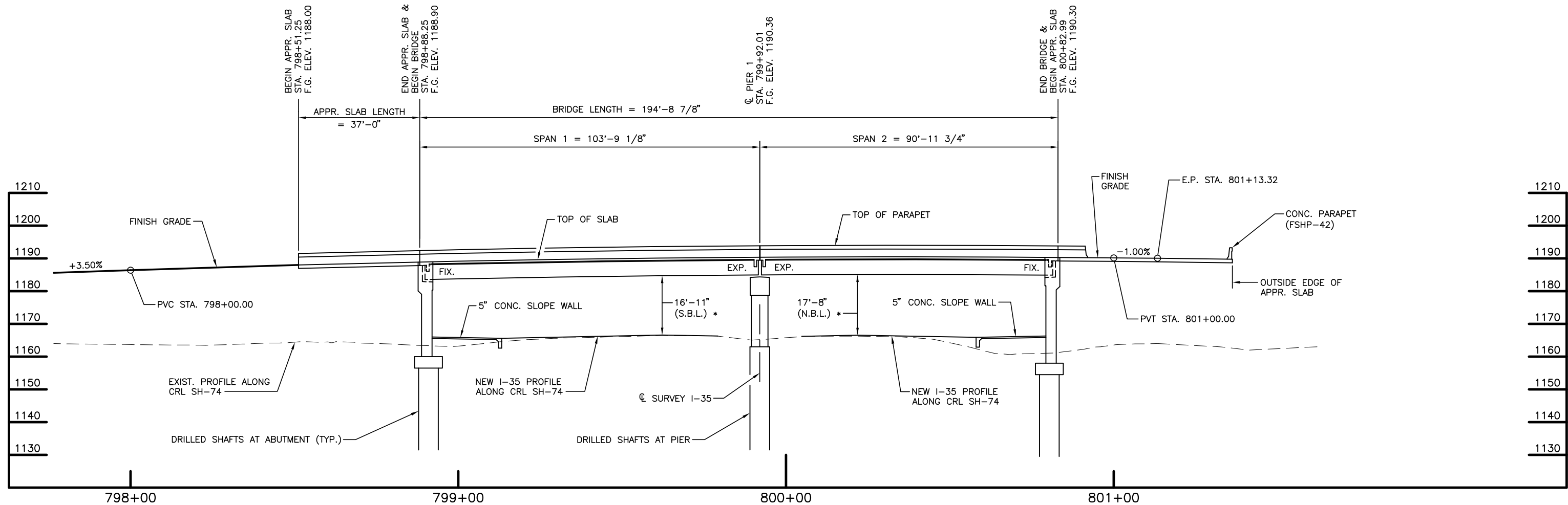
CRL STA. 799+85.62

State Job No. 29571(04)

Sheet No. B005



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BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
CL SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS 1663
OFFSET: 103.50' RIGHT
CL SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

ELEVATION
SCALE 1"=30'

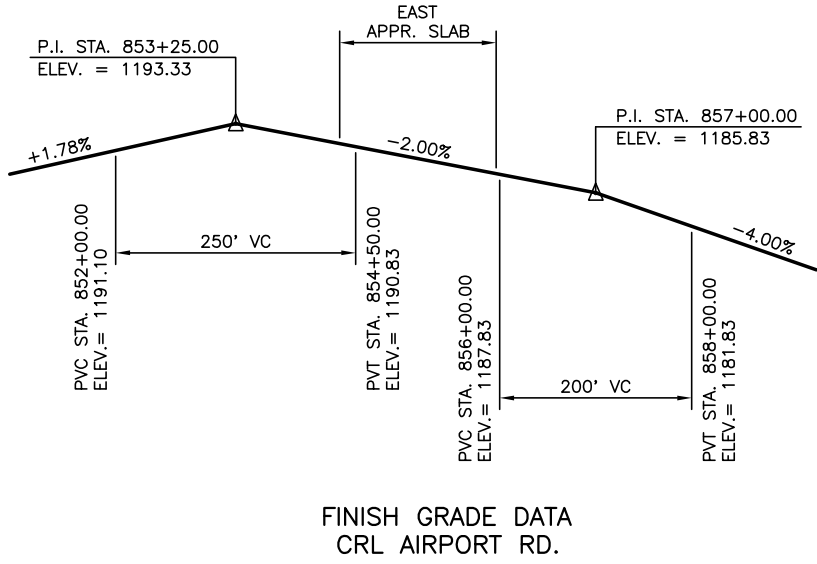
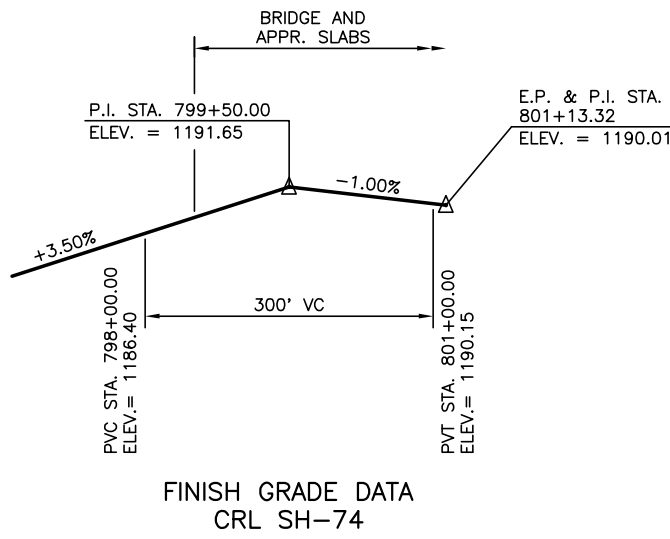
* MINIMUM ESTIMATED VERTICAL CLEARANCE.
(SEE SHEET NO. B005 FOR LOCATION.)

NOTES: ALL STATIONING FOLLOWS CRL SH-74,
UNLESS NOTED OTHERWISE.
FOR PLAN VIEW, SEE SHEET NO. B005.

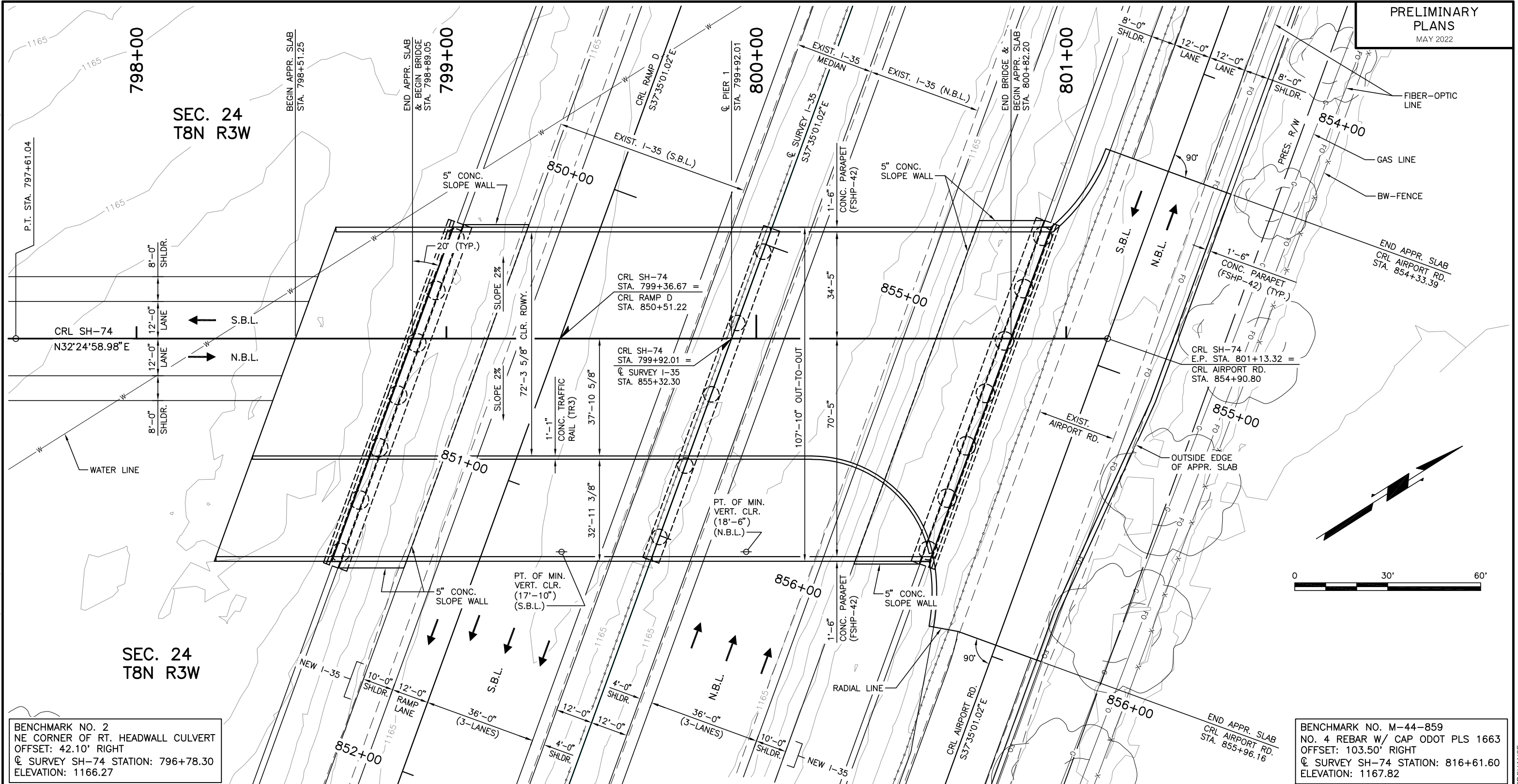
CONST. (104'-91') PRESTRESSED CONCRETE
BEAM SPANS; 74'-2 1/2" CLR. RDWY. W/
CONC. PARAPETS (FSHP-42) AND CONC.
TRAFFIC RAIL (TR3) SKEWED 20' LF

THIS DOCUMENT IS PRELIMINARY IN
NATURE AND IS NOT A FINAL, SIGNED AND
SEALED DOCUMENT.

SH-74 OVER I-35
BRIDGE "A"
**GENERAL PLAN AND ELEVATION
(ALTERNATIVE 2) (P.C. BEAM)
(SHEET NO. 2 OF 2)**
CRL STA. 799+85.62
State Job No. 29571(04) Sheet No. B006



MCCLEIN COUNTY I-35/SH-74 INTERCHANGE



BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS 1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

PLAN
SCALE 1"=30'

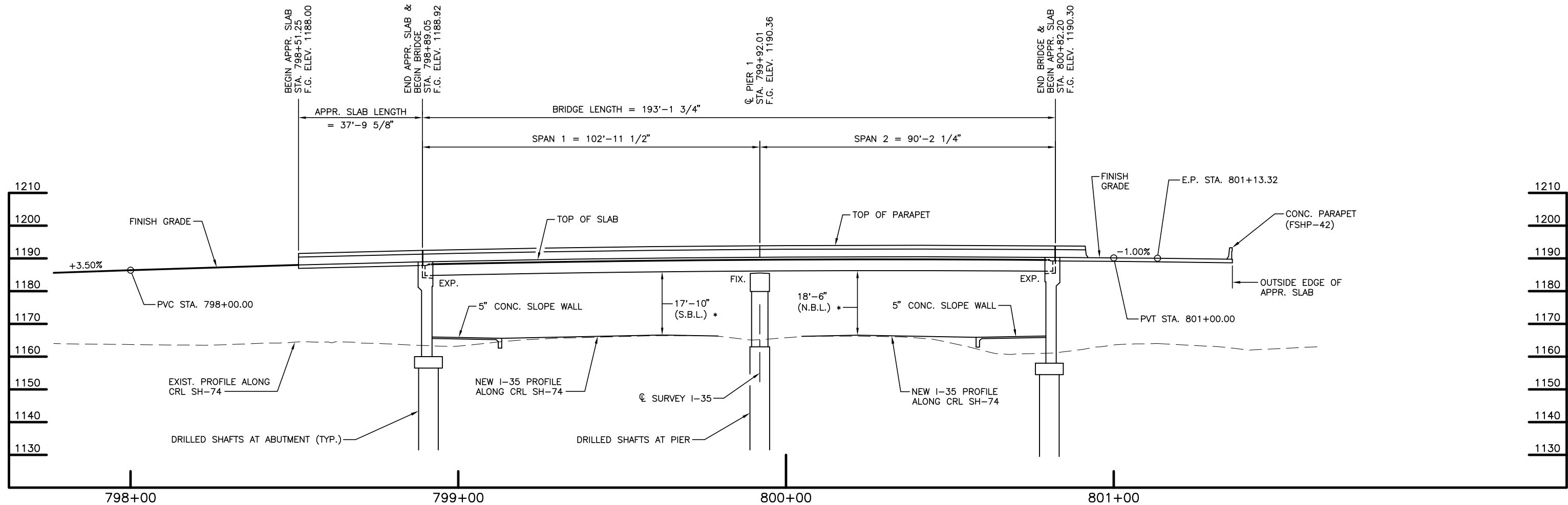
CONST. (103'-90') CONTINUOUS STEEL
I-BEAM SPANS; 72'-3 5/8" CLR. RDWY.
W/ CONC. PARAPETS (FSHP-42) AND CONC.
TRAFFIC RAIL (TR3) SKEWED 20' LF

THIS DOCUMENT IS PRELIMINARY IN
NATURE AND IS NOT A FINAL, SIGNED AND
SEALED DOCUMENT.

NOTES: ALL STATIONING FOLLOWS CRL SH-74, UNLESS
NOTED OTHERWISE.
FOR GENERAL BRIDGE ELEVATION, SEE SHEET
NO. B008.

SH-74 OVER I-35
BRIDGE "A"
**GENERAL PLAN AND ELEVATION
(ALTERNATIVE 2) (STEEL I-BEAM)
(SHEET NO. 1 OF 2)**
CRL STA. 799+85.62
State Job No. 29571(04) Sheet No. B007

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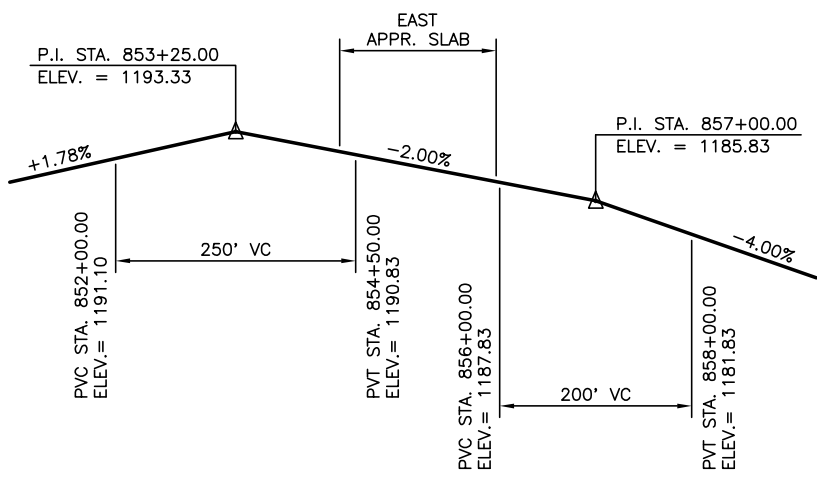
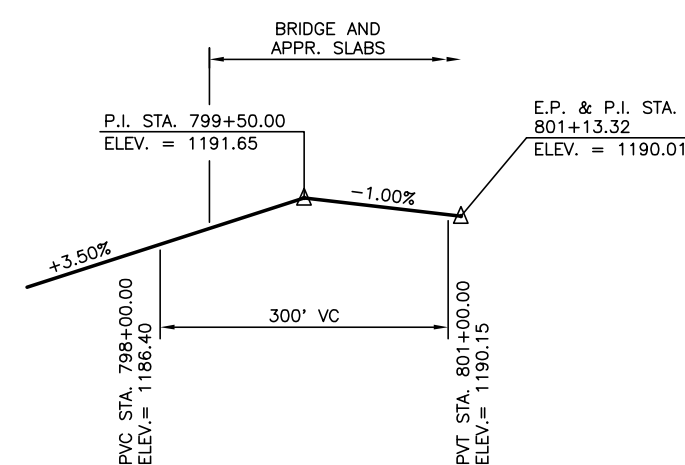
BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
CL SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS 1663
OFFSET: 103.50' RIGHT
CL SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

ELEVATION
SCALE 1"=30'

* MINIMUM ESTIMATED VERTICAL CLEARANCE.
(SEE SHEET NO. B007 FOR LOCATION.)

NOTES: ALL STATIONING FOLLOWS CRL SH-74,
UNLESS NOTED OTHERWISE.
FOR PLAN VIEW, SEE SHEET NO. B007.

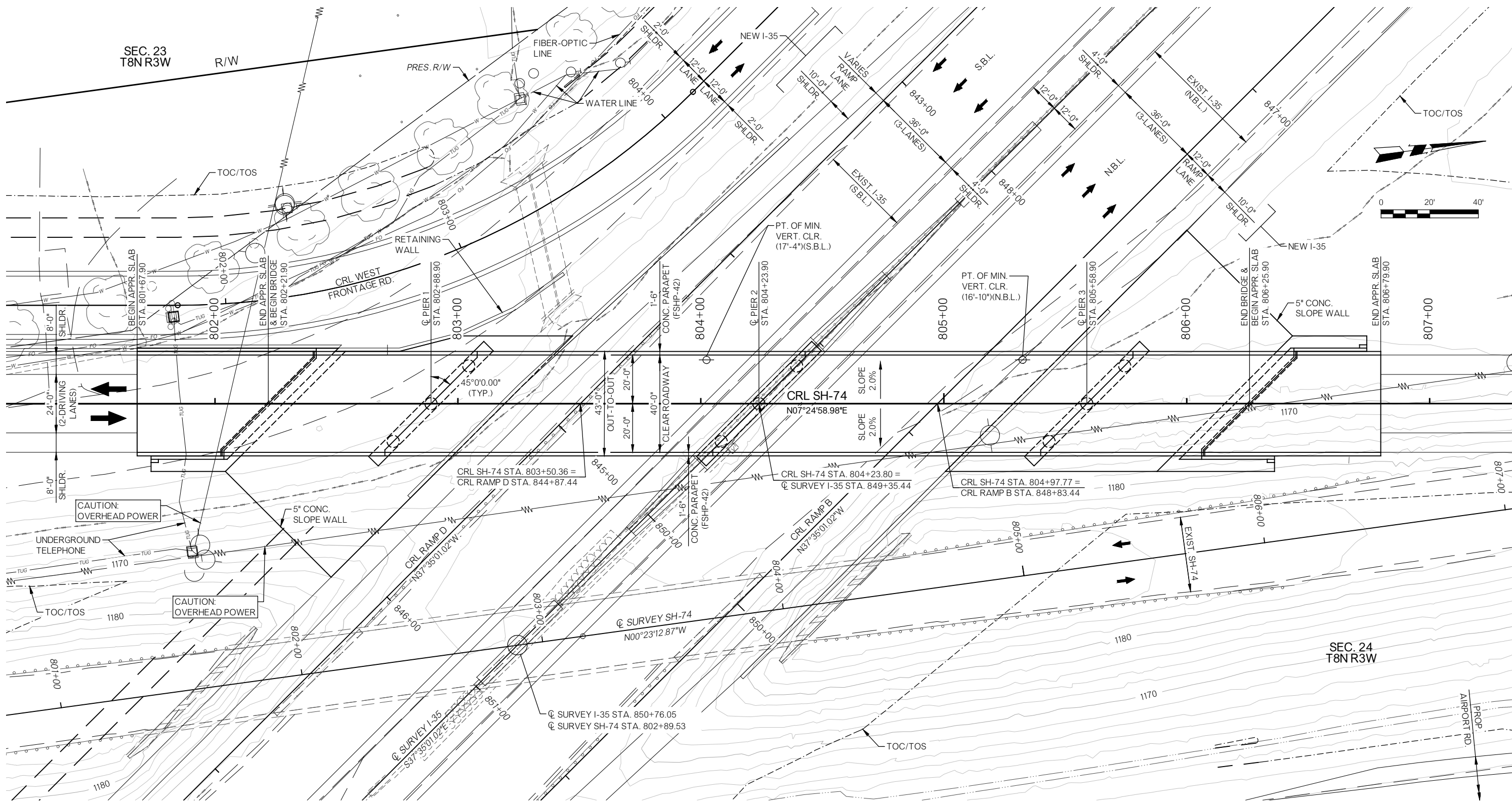


CONST. (103'-90') CONTINUOUS STEEL
I-BEAM SPANS; 72'-3 5/8" CLR. RDWY.
W/ CONC. PARAPETS (FSHP-42) AND CONC.
TRAFFIC RAIL (TR3) SKEWED 20' LF

THIS DOCUMENT IS PRELIMINARY IN
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SEALED DOCUMENT.

SH-74 OVER I-35
BRIDGE "A"
GENERAL PLAN AND ELEVATION
(ALTERNATIVE 2) (STEEL I-BEAM)
(SHEET NO. 2 OF 2)
CRL STA. 799+85.62
State Job No. 29571(04) Sheet No. B008

MCCLEIN COUNTY I-35/SH-74 INTERCHANGE



PLAN
SCALE 1" = 20"

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS
NOTED OTHERWISE.

FOR GENERAL BRIDGE ELEVATION, SEE SHEET
NO. B010.

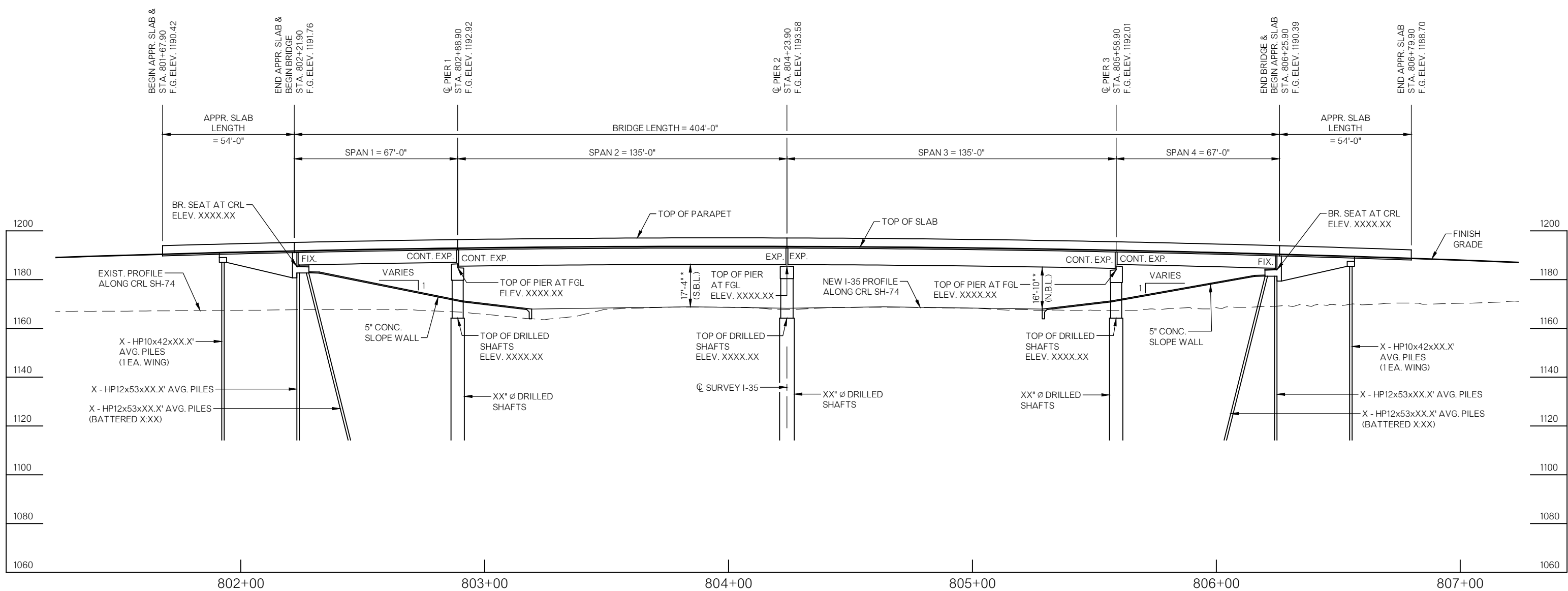
THIS DOCUMENT IS PRELIMINARY IN
NATURE AND IS NOT A FINAL, SIGNED AND
SEALED DOCUMENT.

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

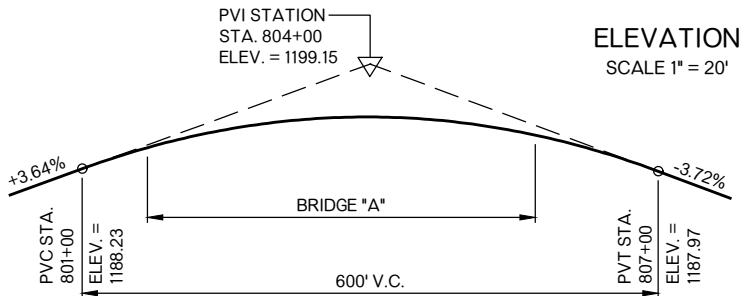
SH-74 OVER I-35
BRIDGE "A"

CONST. (67'-135'-135'-67') PRESTRESSED
CONCRETE BEAM SPANS; 40'-0" CLR. RDWY. W/
CONC. PARAPETS (FSHP-42) SKEWED 45° L.F.

GENERAL PLAN AND ELEVATION
(ALTERNATE 3)(P.C. BEAM)
(SHEET NO. 1 OF 2)



BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27



FINISH GRADE DATA
CRL SH-74

NOTES:
STATIONING FOLLOWS CRL SH-74.
FINISH GRADE IS ALONG FINISH GRADE LINE (FGL).

NOTES
* MINIMUM THEORETICAL VERTICAL CLEARANCE.
SEE PLAN VIEW FOR LOCATIONS.

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS NOTED OTHERWISE.
FOR PLAN VIEW, SEE SHEET NO. B009.

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

CONST. (67'-135'-135'-67') PRESTRESSED
CONCRETE BEAM SPANS; 40'-0" CLR. RDWY. W/
CONC. PARAPETS (FSHP-42) SKEWED 45° L.F.

THIS DOCUMENT IS PRELIMINARY IN
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SEALED DOCUMENT.

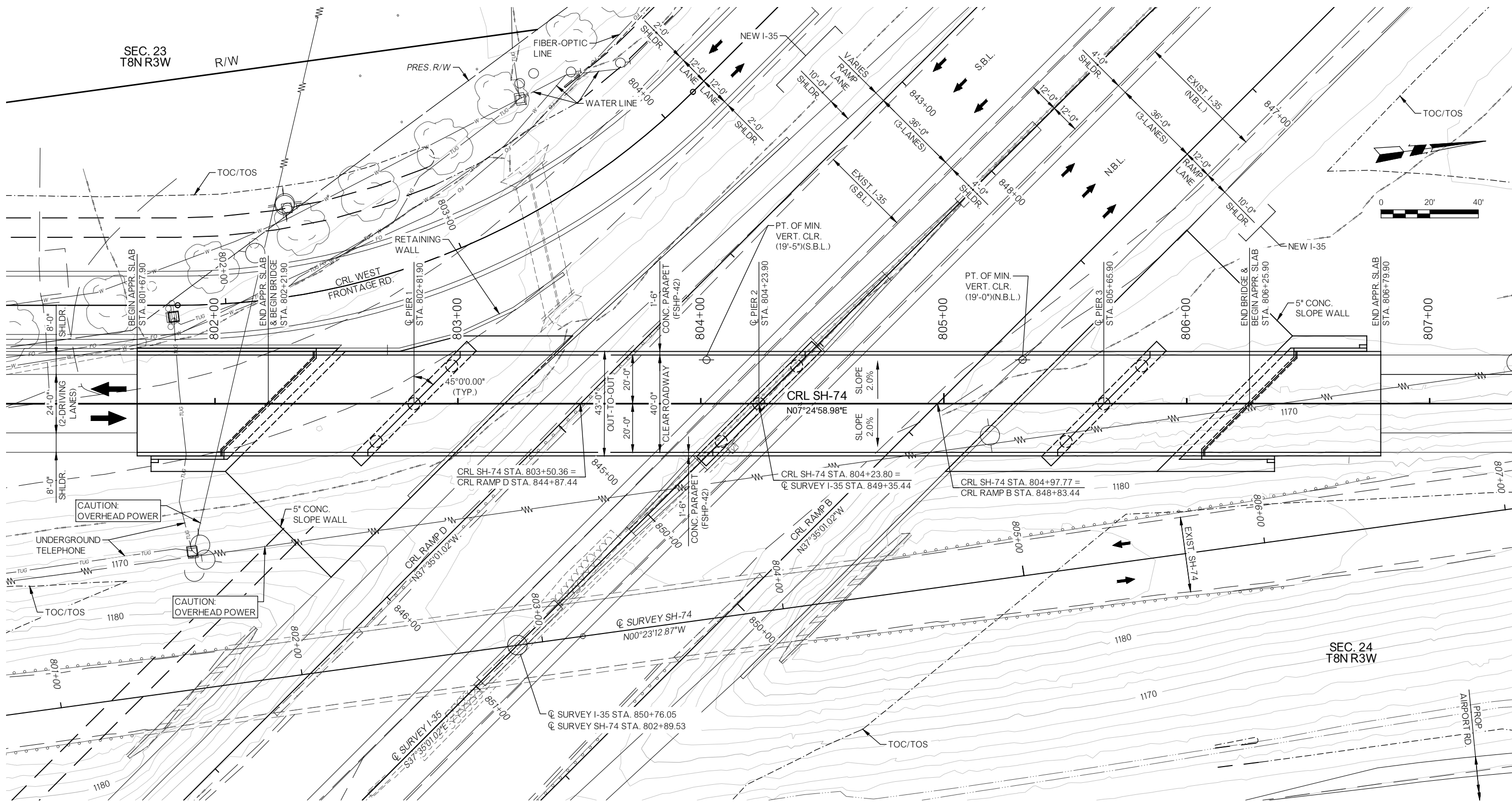
SH-74 OVER I-35
BRIDGE *A*

**GENERAL PLAN AND ELEVATION
(ALTERNATE 3)(P.C. BEAM)
(SHEET NO. 2 OF 2)**

CRL STA. 804+23.90

State Job No. 29571(04) Sheet No. B010

I-35/SH-74 INTERCHANGE
MCCLENN COUNTY



PLAN
SCALE 1" = 20'

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS
NOTED OTHERWISE.

FOR GENERAL BRIDGE ELEVATION, SEE SHEET
NO. B012.

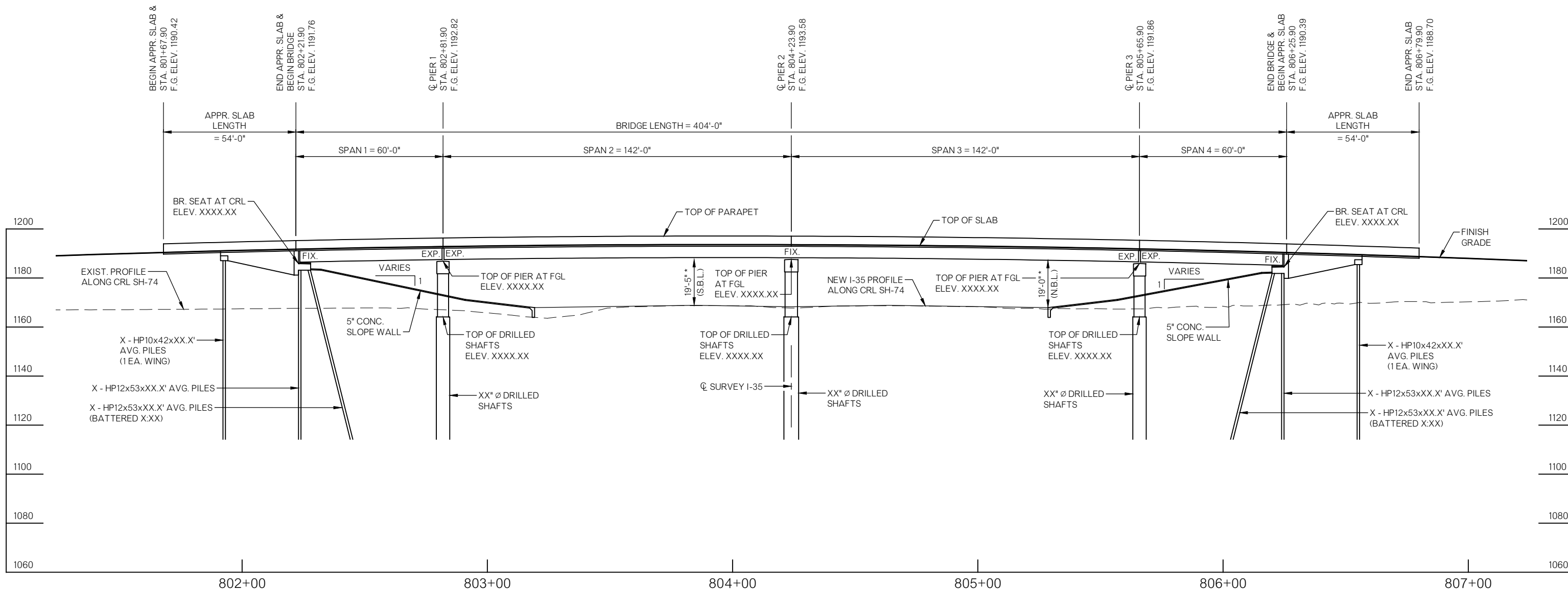
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NATURE AND IS NOT A FINAL, SIGNED AND
SEALED DOCUMENT.

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

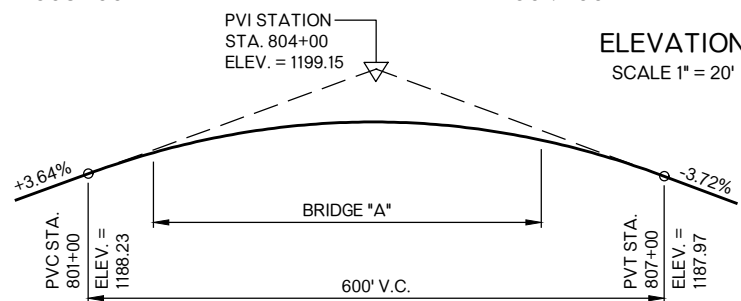
SH-74 OVER I-35
BRIDGE "A"

CONST. (60'-142'-142'-60') SIMPLE AND CONT.
STEEL GIRDER SPANS; 40'-0" CLR. RDWY. W/
CONC. PARAPETS (FSHP-42) SKEWED 45° L.F.

GENERAL PLAN AND ELEVATION
(ALTERNATE 3)(STEEL GIRDER)
(SHEET NO. 1 OF 2)



BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27



**FINISH GRADE DATA
CRL SH-74**

NOTES:
STATIONING FOLLOWS CRL SH-74.
FINISH GRADE IS ALONG FINISH GRADE LINE (FGL).

NOTES
* MINIMUM THEORETICAL VERTICAL CLEARANCE.
SEE PLAN VIEW FOR LOCATIONS.

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS NOTED OTHERWISE.
FOR PLAN VIEW, SEE SHEET NO. B011.

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

CONST. (60'-142'-142'-60') SIMPLE AND CONT.
STEEL GIRDER SPANS; 40'-0" CLR. RDWY. W/
CONC. PARAPETS (FSHP-42) SKEWED 45° L.F.

THIS DOCUMENT IS PRELIMINARY IN
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SEALED DOCUMENT.

SH-74 OVER I-35
BRIDGE "A"

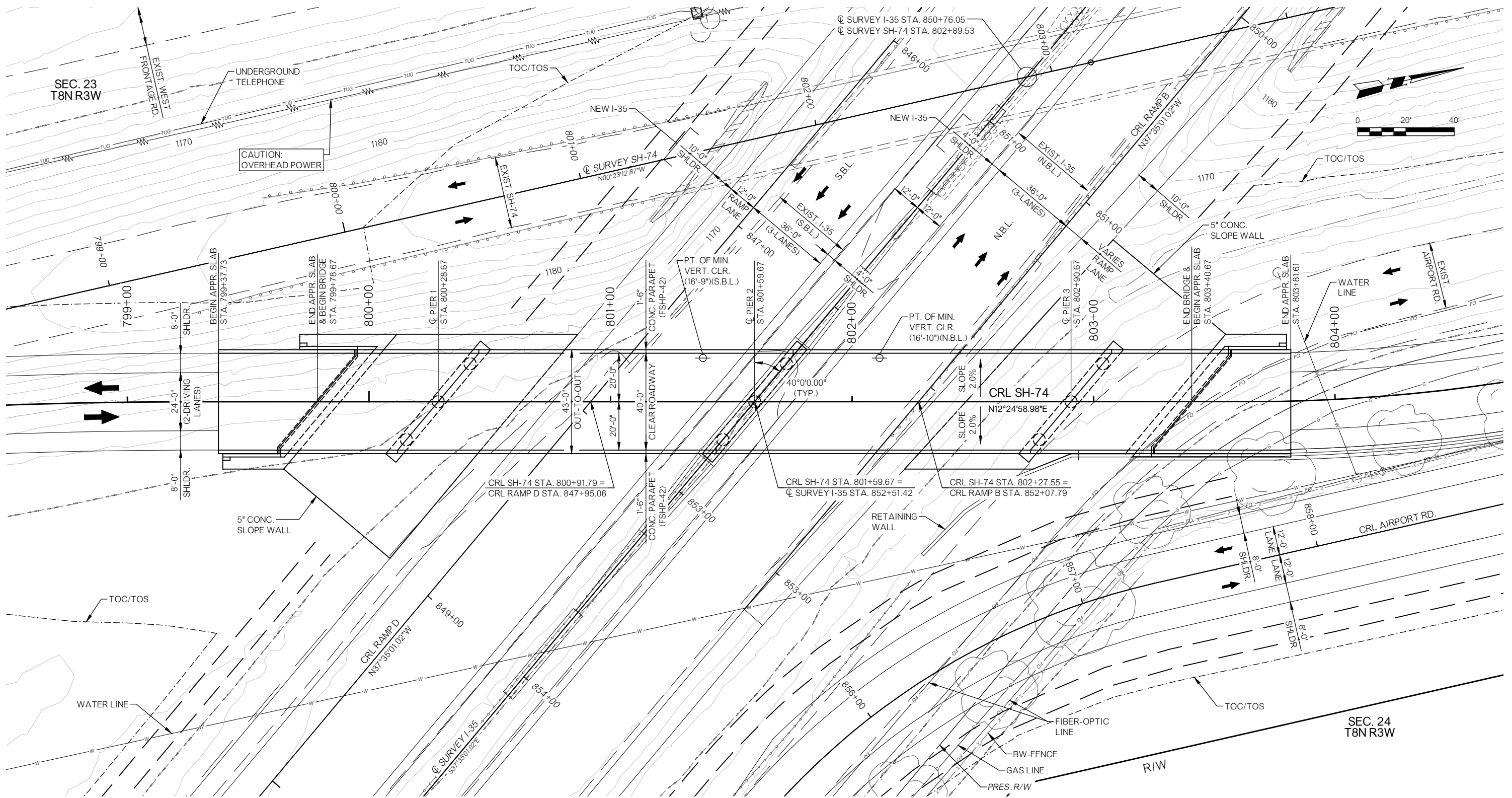
**GENERAL PLAN AND ELEVATION
(ALTERNATE 3)(STEEL GIRDER)
(SHEET NO. 2 OF 2)**

State Job No. 29571(04)

CRL STA. 804+23.90

Sheet No. B012

I-35/SH74 INTERCHANGE
MCCLAIN COUNTY



PLAN
SCALE 1" = 20'

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS
NOTED OTHERWISE.

FOR GENERAL BRIDGE ELEVATION, SEE SHEET
NO. B014.

THIS DOCUMENT IS PRELIMINARY IN
NATURE AND IS NOT A FINAL, SIGNED AND
SEALED DOCUMENT.

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

SH-74 OVER I-35
BRIDGE "A"

CONST. (50'-131'-131'-50') PRESTRESSED
CONCRETE BEAM SPANS; 40'-0" CLR. RDWY. W/
CONC. PARAPETS (FSP-42) SKEWED 40° L.F.

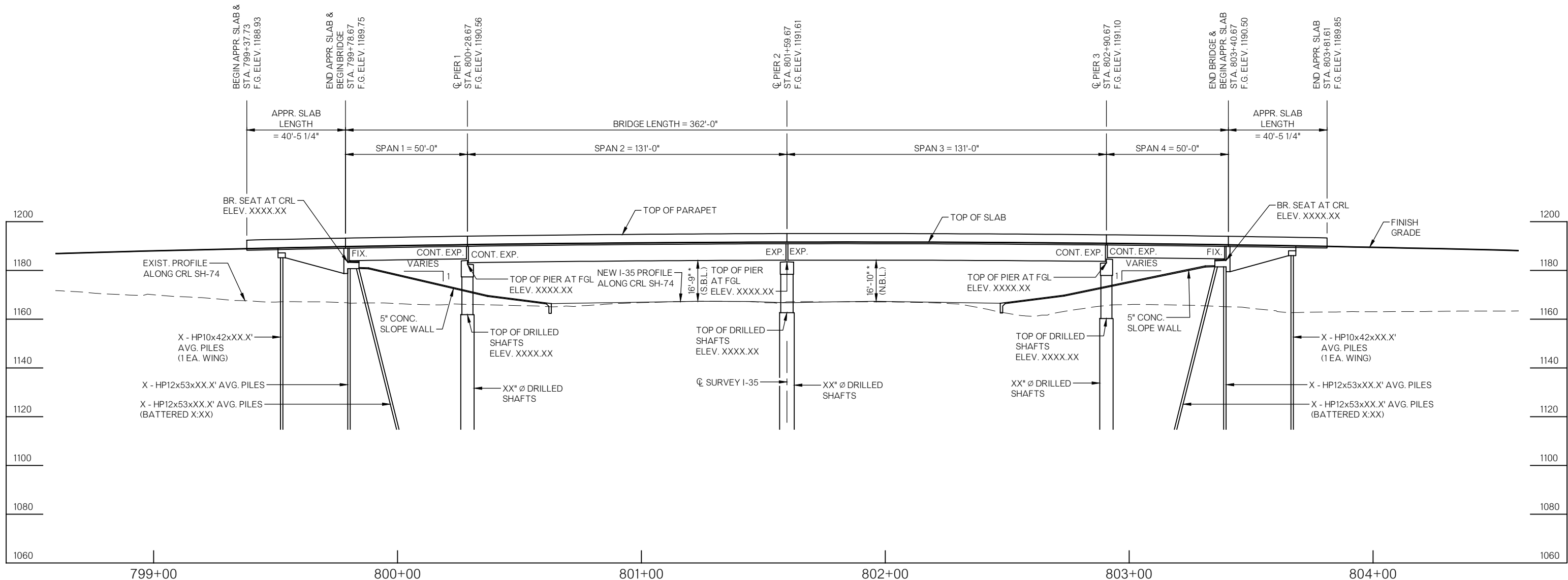
GENERAL PLAN AND ELEVATION
(ALTERNATE 4)(P.C. BEAM)
(SHEET NO. 1 OF 2)

State Job No. 29571(04)

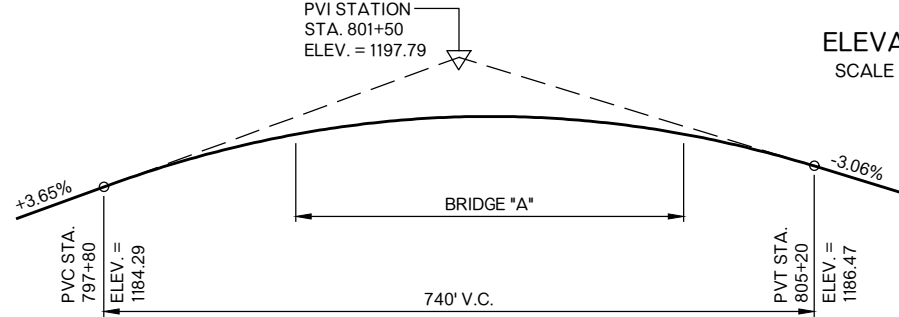
CRL STA. 801+59.67

Sheet No. B013

MCLAIN COUNTY I-35/SH74 INTERCHANGE



BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
C SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27



**FINISH GRADE DATA
CRL SH-74**

NOTES:
STATIONING FOLLOWS CRL SH-74.
FINISH GRADE IS ALONG FINISH GRADE LINE (FGL).

NOTES
* MINIMUM THEORETICAL VERTICAL CLEARANCE.
SEE PLAN VIEW FOR LOCATIONS.

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS NOTED OTHERWISE.
FOR PLAN VIEW, SEE SHEET NO. B013.

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
C SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

CONST. (50'-131'-131'-50') PRESTRESSED
CONCRETE BEAM SPANS; 40'-0" CLR. RDWY. W/
CONC. PARAPETS (FSHP-42) SKEWED 40° L.F.

THIS DOCUMENT IS PRELIMINARY IN
NATURE AND IS NOT A FINAL, SIGNED AND
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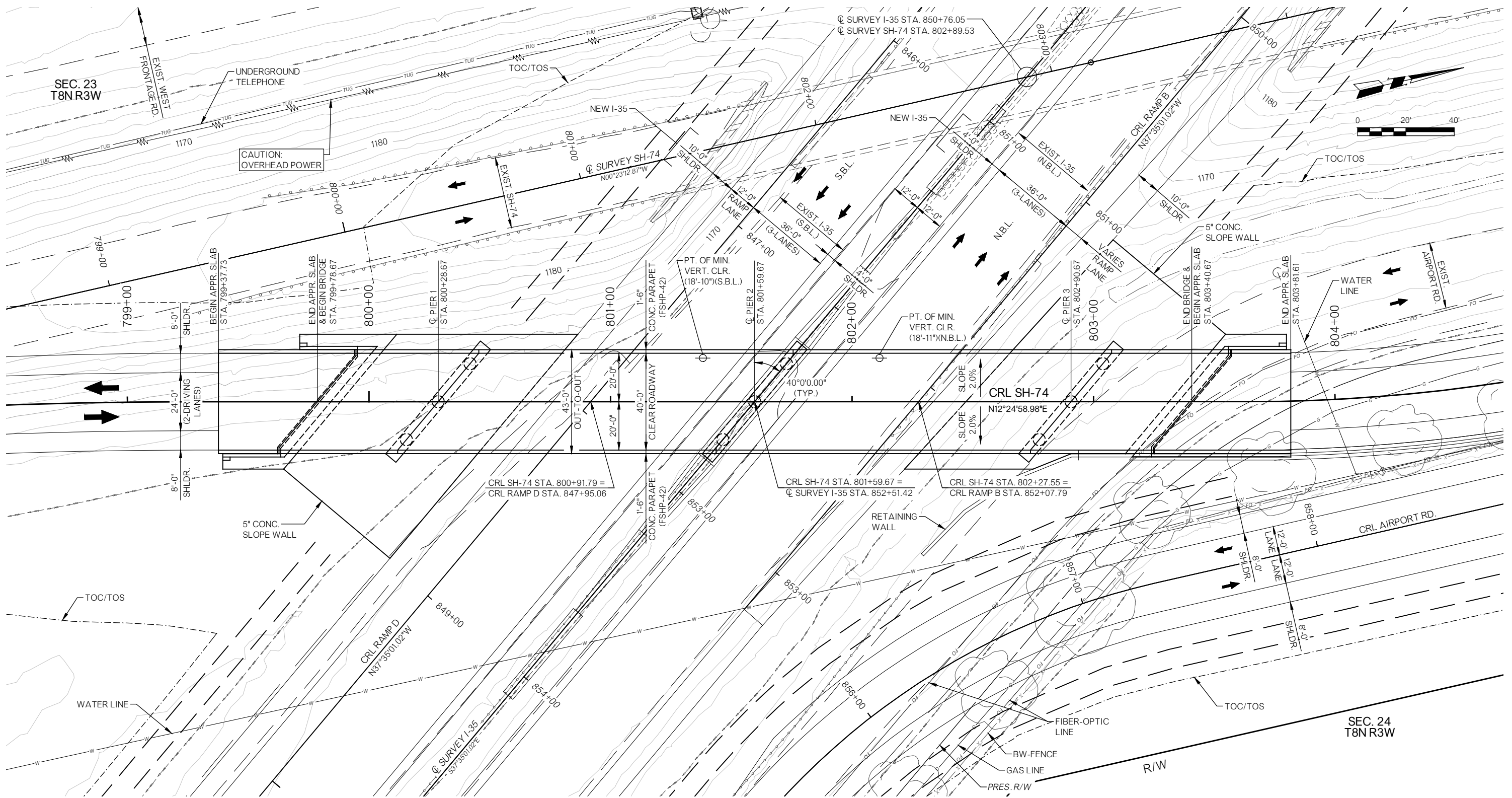
SH-74 OVER I-35
BRIDGE "A"

**GENERAL PLAN AND ELEVATION
(ALTERNATE 4)(P.C. BEAM)
(SHEET NO. 2 OF 2)**

CRL STA. 801+59.67

State Job No. 29571(04) Sheet No. B014

I-35/SH74 INTERCHANGE
MCLAIN COUNTY



PLAN
SCALE 1" = 20'

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS
NOTED OTHERWISE.

FOR GENERAL BRIDGE ELEVATION, SEE SHEET
NO. B016.

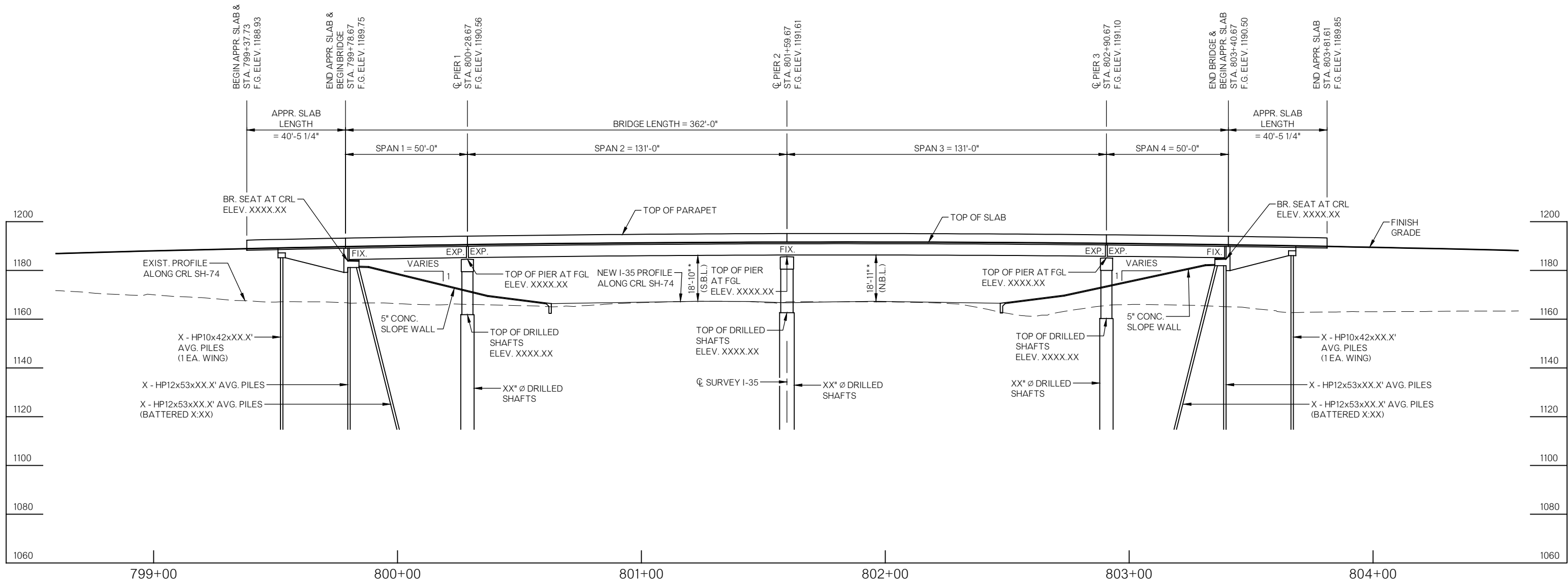
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BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

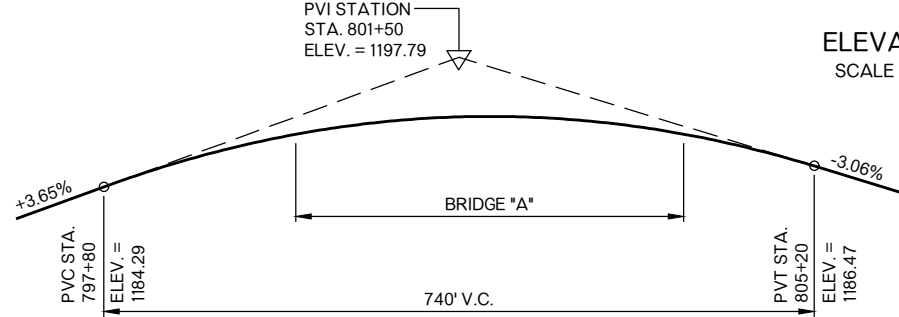
SH-74 OVER I-35
BRIDGE "A"
**GENERAL PLAN AND ELEVATION
(ALTERNATE 4)(STEEL GIRDER)
(SHEET NO. 1 OF 2)**
CRL STA. 801+59.67
State Job No. 29571(04) Sheet No. B015

CONST. (50'-131'-131'-50') SIMPLE AND CONT.
STEEL GIRDER SPANS; 40'-0" CLR. RDWY. W/
CONC. PARAPETS (FSHP-42) SKEWED 40° L.F.

MCLAIN COUNTY I-35/SH74 INTERCHANGE



BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27



**FINISH GRADE DATA
CRL SH-74**

NOTES:
STATIONING FOLLOWS CRL SH-74.
FINISH GRADE IS ALONG FINISH GRADE LINE (FGL).

NOTES
* MINIMUM THEORETICAL VERTICAL CLEARANCE.
SEE PLAN VIEW FOR LOCATIONS.

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS NOTED OTHERWISE.
FOR PLAN VIEW, SEE SHEET NO. B015.

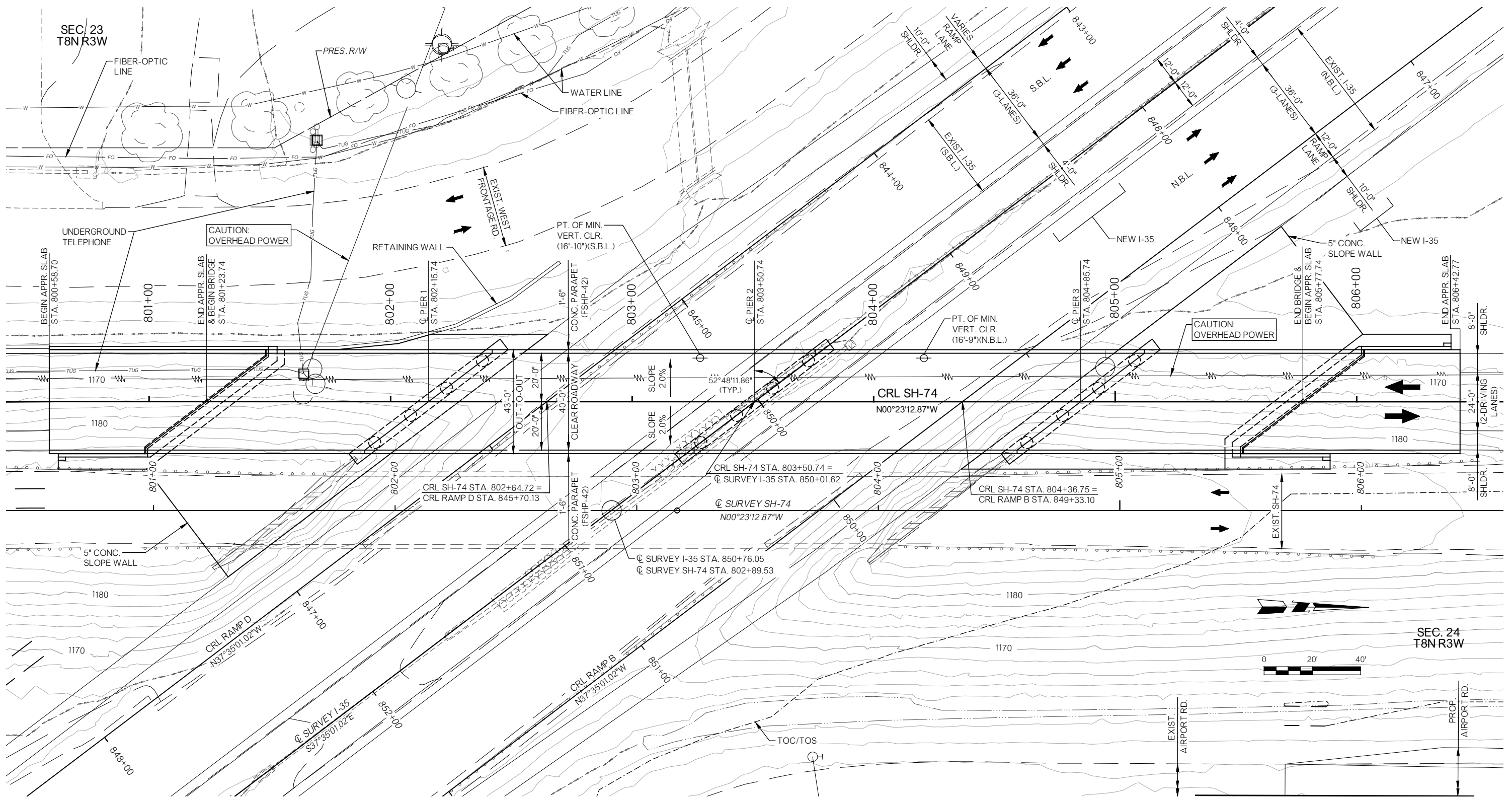
BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

CONST. (50'-131'-131'-50') SIMPLE AND CONT.
STEEL GIRDER SPANS; 40'-0" CLR. RDWY. W/
CONC. PARAPETS (FSHP-42) SKEWED 40° L.F.

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SH-74 OVER I-35
BRIDGE "A"
**GENERAL PLAN AND ELEVATION
(ALTERNATE 4)(STEEL GIRDER)
(SHEET NO. 2 OF 2)**
CRL STA. 801+59.67

I-35/SH74 INTERCHANGE
MCLAIN COUNTY



PLAN
SCALE 1" = 20'

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS
NOTED OTHERWISE.

FOR GENERAL BRIDGE ELEVATION, SEE SHEET
NO. B018.

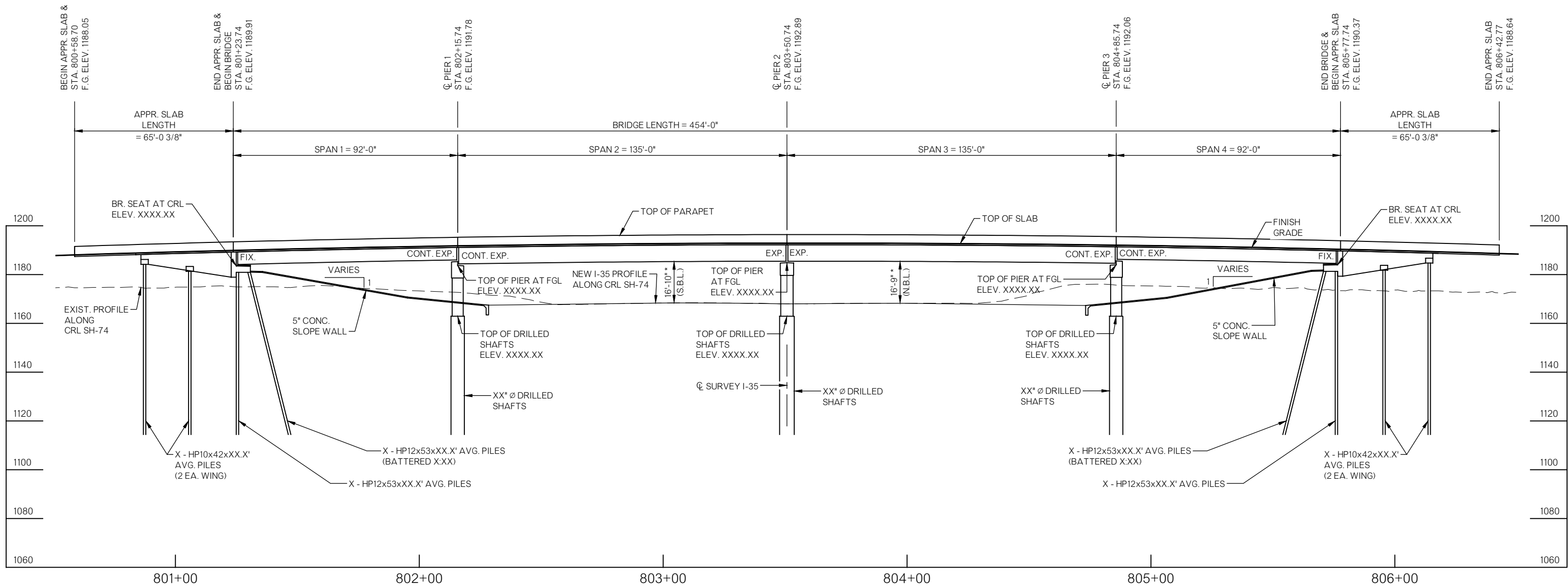
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BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

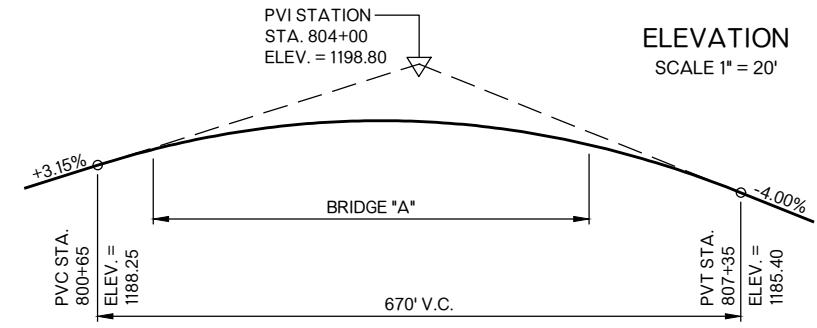
SH-74 OVER I-35
BRIDGE "A"
**GENERAL PLAN AND ELEVATION
(ALTERNATE 5)(P.C. BEAM)
(SHEET NO. 1 OF 2)**
CRL STA. 803+50.74
State Job No. 29571(04) Sheet No. B017

CONST. (92'-135'-135'-92') PRESTRESSED CONCRETE
BEAM SPANS; 40'-0" CLR. RDWY. W/ CONC.
PARAPETS (FSHP-42) SKEWED 52°48'11.86" L.F.

I-35/SH74 INTERCHANGE
MCCLAIN COUNTY



BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27



**FINISH GRADE DATA
CRL SH-74**

NOTES:
STATIONING FOLLOWS CRL SH-74.
FINISH GRADE IS ALONG FINISH GRADE LINE (FGL).

NOTES
* MINIMUM THEORETICAL VERTICAL CLEARANCE.
SEE PLAN VIEW FOR LOCATIONS.

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS NOTED OTHERWISE.
FOR PLAN VIEW, SEE SHEET NO. B017.

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

CONST. (92'-135'-135'-92') PRESTRESSED CONCRETE
BEAM SPANS; 40'-0" CLR. RDWY. W/ CONC.
PARAPETS (FSHP-42) SKEWED 52°48'11.86" L.F.

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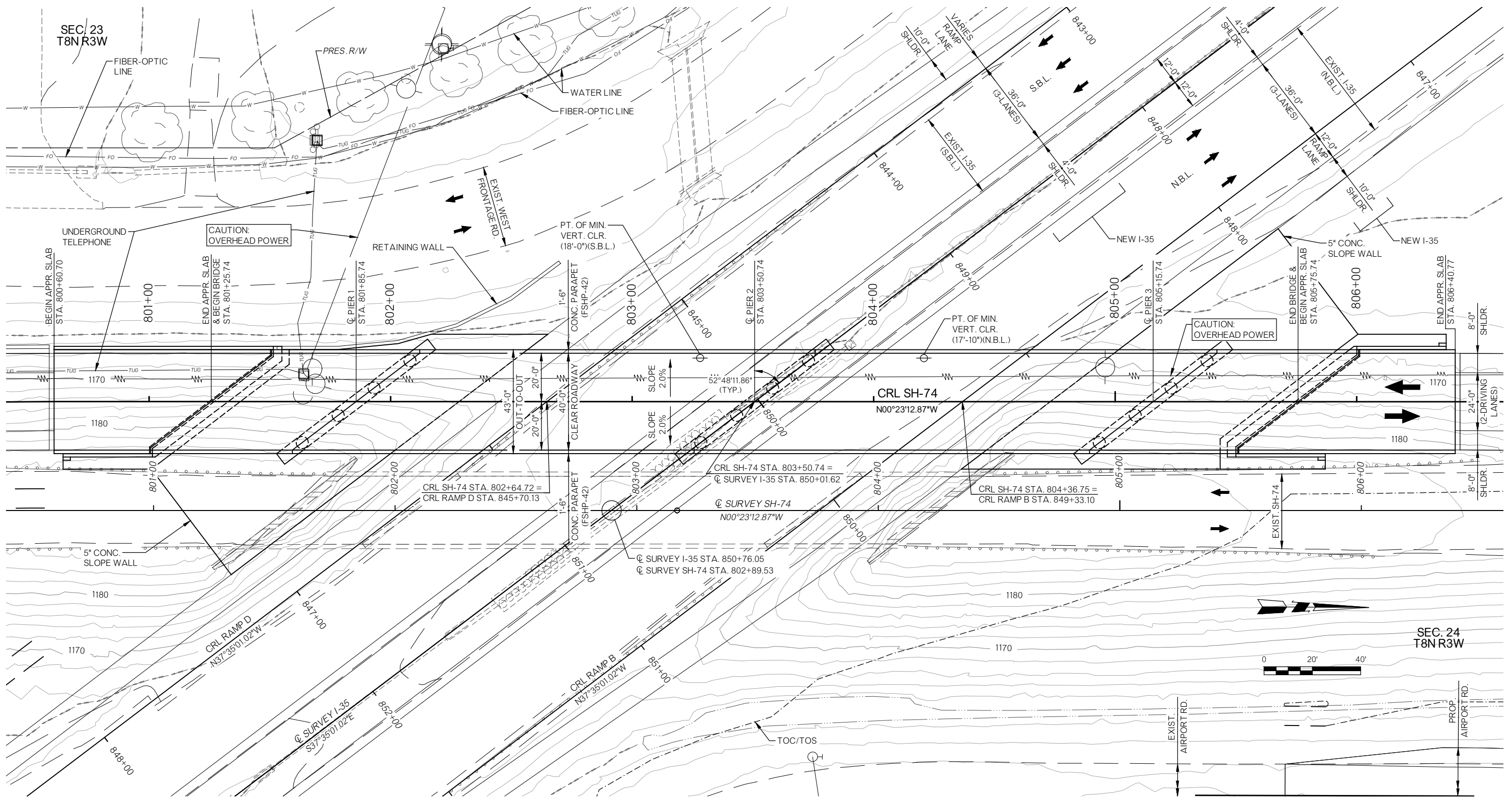
SH-74 OVER I-35
BRIDGE "A"

**GENERAL PLAN AND ELEVATION
(ALTERNATE 5)(P.C. BEAM)
(SHEET NO. 2 OF 2)**

CRL STA. 803+50.74

State Job No. 29571(04) Sheet No. B018

I-35/SH 74 INTERCHANGE
MCLAIN COUNTY



PLAN
SCALE 1" = 20"

BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS
NOTED OTHERWISE.

FOR GENERAL BRIDGE ELEVATION, SEE SHEET
NO. B020.

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BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

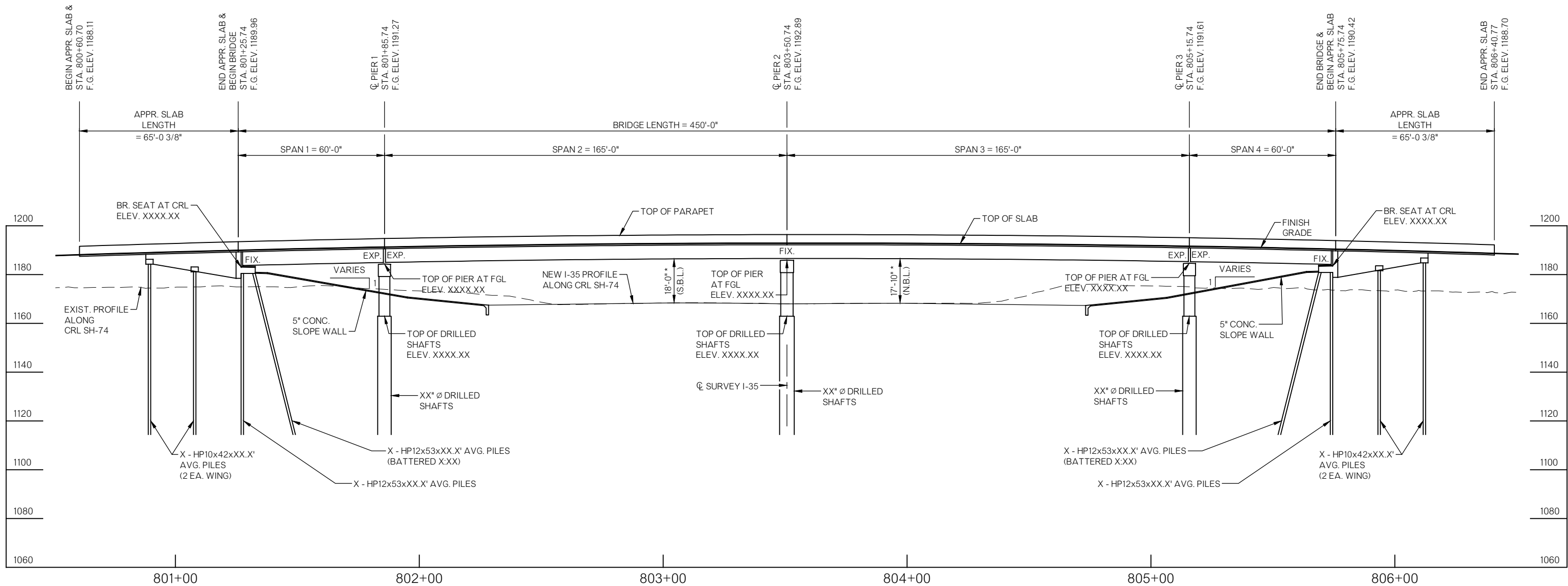
CONST. (60'-165'-165'-60') SIMPLE AND CONT. STEEL
GIRDER SPANS; 40'-0" CLR. RDWY. W/ CONC.
PARAPETS (FSHP-42) SKEWED 52°48'11.86" L.F.

**GENERAL PLAN AND ELEVATION
(ALTERNATE 5)(STEEL GIRDER)
(SHEET NO. 1 OF 2)**

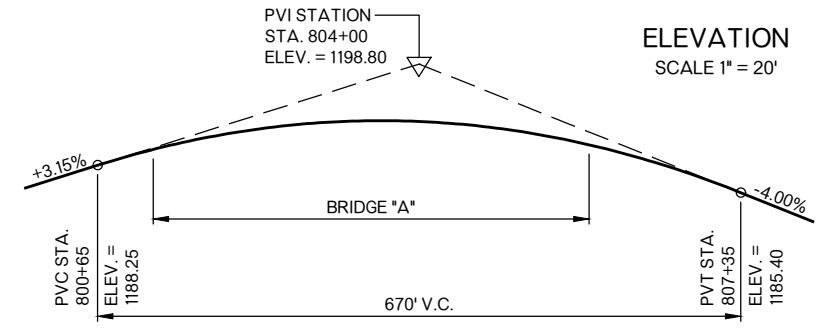
CRL STA. 803+50.74

State Job No. 29571(04) Sheet No. B019

I-35/SH74 INTERCHANGE
MCCLELLIN COUNTY



BENCHMARK NO. 2
NE CORNER OF RT. HEADWALL CULVERT
OFFSET: 42.10' RIGHT
Q SURVEY SH-74 STATION: 796+78.30
ELEVATION: 1166.27



NOTES:
STATIONING FOLLOWS CRL SH-74.
FINISH GRADE IS ALONG FINISH GRADE LINE (FGL).

NOTES
* MINIMUM THEORETICAL VERTICAL CLEARANCE.
SEE PLAN VIEW FOR LOCATIONS.

NOTES
ALL STATIONING FOLLOWS CRL SH-74, UNLESS NOTED OTHERWISE.
FOR PLAN VIEW, SEE SHEET NO. B019.

BENCHMARK NO. M-44-859
NO. 4 REBAR W/ CAP ODOT PLS1663
OFFSET: 103.50' RIGHT
Q SURVEY SH-74 STATION: 816+61.60
ELEVATION: 1167.82

CONST. (60'-165'-165'-60') SIMPLE AND CONT. STEEL GIRDER SPANS; 40'-0" CLR. RDWY. W/ CONC. PARAPETS (FSHP-42) SKEWED 52°48'11.86" L.F.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SH-74 OVER I-35
BRIDGE "A"
**GENERAL PLAN AND ELEVATION
(ALTERNATE 5)(STEEL GIRDER)
(SHEET NO. 2 OF 2)**
CRL STA. 803+50.74
State Job No. 29571(04) Sheet No. B020

I-35/SH-74 INTERCHANGE
MCLAIN COUNTY



APPENDIX J DESIGN CRITERIA

ALTERNATIVE 1

DESIGN FEATURE	SH-74		West Frontage Road		Airport Road		Ramps	
<u>Functional Classification</u>	Rural Major Collector		Rural Minor Arterial		Rural Minor Arterial		Ramps	
<u>Design Speed (mph)</u>	45		45		45		15 - 60	
<u>ADT</u>								
Existing (2021)	8400		180		840		4400	
Future (2050)	13270		285		1315		6950	
% Trucks (AADT)	15%		15%		15%		15%	
CRITERIA	ODOT/ AASHTO	PROJECT SPECIFIC	ODOT/ AASHTO	PROJECT SPECIFIC	ODOT/ AASHTO	PROJECT SPECIFIC	ODOT/ AASHTO	PROJECT SPECIFIC
<u>Stopping Sight Distance (K factor)</u>								
Crest	61	63	61	65	61	72	3-151	36
Sag	79	85	79	118	79	85	10-136	98
<u>Grades</u>								
Desirable Maximum-Level Terrain	8%	3.86%	6%	0.83%	6%	4.00%	5% (Upgrade) & 8% (Downgrade)	3.80%
Minimum (Des/Min)	0.5%/0%	0.40%	0.5%/0%	0.22%	0.5%/0%	0.48%	2% (Downgrade)	0.26%
<u>Horizontal Curves</u>								
Min Radius	643'	945.00	643'	450	643'	835	643'	150
Min Radius w/o Super	6480'	6,480.00	6480'	60	6480'	N/A	6480'	N/A
<u>Pavement Cross-Slope</u>								
Mainline	2%	2%	2%	2%	2%	2%	2%	2%
Shoulders	2%-4%	2%	2%-4%	2%	2%-4%	2%	2%	2%
<u>Maximum Superelevation Rate (E_{max})</u>	6%	3.80%	Low Speed	RC	Low Speed	4.60%	6%	5.40%
<u>Lane Widths</u>	12'	12'	12'	12'	12'	12'	12'	12'
<u>Shoulder Widths</u>	8'(4' paved/4' sod)	8'	4'(2'paved/2' sod)	8'	8' paved	8'	8' (gravel/sod)	8'
<u>Horizontal Clearance (Clear Zone)</u>								
Desirable Minimum W/ 6:1	20'-22'	N/A	10'-12'	N/A	14'-16'	N/A	16'-18'	30'
Desirable Minimum W/ 4:1 to 5:1	24'-28'	24'	12'-14'	16'	16'-20'	16'	20'-26'	N/A
Desirable Minimum W/ 3:1								
<u>Approach Taper Rate (Intersection)</u>	45:1	45:1	45:1	45:1	45:1	45:1	45:1	45:1
<u>Bay Taper Length (Intersection)</u>	10:1	10:1	10:1	10:1	10:1	10:1	10:1	10:1
<u>Departure Taper Rate (Intersection)</u>	45:1	45:1	45:1	45:1	45:1	45:1	45:1	45:1
<u>Intersection Sight Distance</u>								
Case B1 - Left Turn	500'	N/A	500'	500'	500'	500'	335'	N/A
Case B2 - Right Turn	430'	N/A	430'	430'	430'	N/A	290'	290'
Case D- Signalized Intersection	365'	365'	365'	N/A	365'	N/A	335'	N/A
Case E- All Way Stop	To Stop Bars	N/A	To Stop Bars	N/A	To Stop Bars	To Stop Bars	To Stop Bars	N/A
<u>Decision Sight Distance</u>								
Desirable Avoidance Maneuver A	395'	395	395'	395	395'	395	395'	395
Desirable Avoidance Maneuver C	675'	675	675'	675	675'	675	675'	675

ALTERNATIVE 2

DESIGN FEATURE	SH-74			West Frontage Road			Airport Road		Ramps		
Functional Classification	Rural Major Collector			Rural Minor Arterial			Rural Minor Arterial		Ramps		
Design Speed (mph)	45			45			45		15 - 60		
ADT											
Existing (2021)	8400			180			840		4400		
Future (2050)	13270			285			1315		6950		
% Trucks (AADT)	15%			15%			15%		15%		
CRITERIA	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)
<u>Stopping Sight Distance (K factor)</u>											
Crest	61	67	67	61	97	50	61	66	3-151	157	157
Sag	79	81	17	79	N/A	18	79	87	10-136	80	82
<u>Grades</u>											
Desirable Maximum-Level Terrain	8%	3.50%	3.50%	6%	0.66%	2.00%	6%	4.00%	5% (Upgrade) & 8% (Downgrade) 2% (Downgrade)	2.00%	1.98%
Minimum (Des/Min)	0.5%/0%	1.00%	1.00%	0.5%	0.38%	0.15%	0.5%/0%	0.53%		0.26%	0.26%
<u>Horizontal Curves</u>											
Min Radius	643'	945.00	945.00	643'	N/A	N/A	643'	835	643'	267	267
Min Radius w/o Super	6480'	6,480.00	6,480.00	6480'	60	222	6480'	N/A	6480'	3200	3200
<u>Pavement Cross-Slope</u>											
Mainline	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shoulders	2%-4%	2%	2%	2%-4%	2%	2%	2%-4%	2%	2%	2%	2%
<u>Maximum Superelevation Rate (E_{max})</u>	6%	3.80%	3.80%	Low Speed	NC	NC	Low Speed	NC	6%	5.80%	5.80%
<u>Lane Widths</u>	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'
<u>Shoulder Widths</u>	8'(4' paved/4' sod)	8'	8'	4' (2' paved/2' sod)	8'	8'	8' paved	8'	8' (gravel/sod)	8'	8'
<u>Horizontal Clearance (Clear Zone)</u>											
Desirable Minimum W/ 6:1	20'-22'	N/A	N/A	10'-12'	N/A	N/A	14'-16'	N/A	16'-18'	30'	30'
Desirable Minimum W/ 4:1 to 5:1	24'-28'	24'	24'	12'-14'	16'	16'	16'-20'	16'	20'-26'	N/A	N/A
Desirable Minimum W/ 3:1											
<u>Approach Taper Rate (Intersection)</u>	45:1	45:0	45:1	45:1	45:0	45:1	45:1	45:0	45:1	45:0	45:1
<u>Bay Taper Length (Intersection)</u>	10:1	10:0	10:1	10:1	10:0	10:1	10:1	10:0	10:1	10:0	10:1
<u>Departure Taper Rate (Intersection)</u>	45:1	45:0	45:1	45:1	45:0	45:1	45:1	45:0	45:1	45:0	45:1
<u>Intersection Sight Distance</u>											
Case B1 - Left Turn	500'	115	N/A	500'	N/A	N/A	500'	193.04	335'		N/A
Case B2 - Right Turn	430'	127	N/A	430'	430'	N/A	430'	N/A	290'	290'	N/A
Case D - Signalized Intersection	365'	365'	N/A	365'	365'	N/A	365'	N/A	335'	335'	N/A
Case E - All Way Stop	To Stop Bars	N/A	N/A	To Stop Bars	N/A	N/A	To Stop Bars	N/A	To Stop Bars	N/A	N/A
Case F - Left Turns from Major Rd.	365'	228'		365'	N/A	N/A	365'	365'	285'	N/A	N/A
<u>Decision Sight Distance</u>											
Desirable Avoidance Maneuver A	395'			395'			395'		395'		
Desirable Avoidance Maneuver C	675'			675'			675'		675'		

ALTERNATIVE 3

DESIGN FEATURE	SH-74			West Frontage Road			Airport Road		Ramps		
Functional Classification	Rural Major Collector			Rural Minor Arterial			Rural Minor Arterial		Ramps		
Design Speed (mph)	45			45			45		15 - 60		
ADT											
Existing (2021)	8400			180			840		4400		
Future (2050)	13270			285			1315		6950		
% Trucks (AADT)	15%			15%			15%		15%		
CRITERIA	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)
<u>Stopping Sight Distance (K factor)</u>											
Crest	61	82	82	61	63	108	61	154	3-151	149	157
Sag	79	52	19	79	28	25	79	49	10-136	40	102
<u>Grades</u>											
Desirable Maximum-Level Terrain	8%	3.72%	3.64%	6%	2.00%	1.99%	6%	2.00%	5% (Upgrade) & 8% (Downgrade)	2.04%	1.98%
Minimum (Des/Min)	0.5%/0%	0.12%	1.18%	0.5%/0%	0.16%	0.16%	0.5%/0%	0.07%	2% (Downgrade)	0.10%	0.10%
<u>Horizontal Curves</u>											
Min Radius	643'	273.00	720.00	643'	300.00	300.00	643'	150	643'	267	267
Min Radius w/o Super	6480'	6,480.00	6,480.00	6480'	60.00	175.00	6480'	1090	6480'	3200	3200
<u>Pavement Cross-Slope</u>											
Mainline	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shoulders	2%-4%	2%	2%	2%-4%	2%	2%	2%-4%	2%	2%	2%	2%
<u>Superelevation (E_s)</u>	4.4%			N/C			N/C		N/C		
<u>Lane Widths</u>	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'
<u>Shoulder Widths</u>	8'(4' paved/4' sod)	8'	8'	4'(2'paved/2' sod)	8'	8'	8' paved	8'	8' (gravel/sod)	8'	8'
<u>Horizontal Clearance (Clear Zone)</u>											
Desirable Minimum W/ 6:1	20'-22'	N/A	N/A	10'-12'	N/A	N/A	14'-16'	N/A	16'-18'	30'	30'
Desirable Minimum W/ 4:1 to 5:1	24'-28'	24'	24'	12'-14'	16'	16'	16'-20'	16'	20'-26'	N/A	N/A
Desirable Minimum W/ 3:1											
<u>Approach Taper Rate (Intersection)</u>	45:1	45:0	45:1	45:1	45:0	45:1	45:1	45:0	45:1	45:0	45:1
<u>Bay Taper Length (Intersection)</u>	10:1	10:0	10:1	10:1	10:0	10:1	10:1	10:0	10:1	10:0	10:1
<u>Departure Taper Rate (Intersection)</u>	45:1	45:0	45:1	45:1	45:0	45:1	45:1	45:0	45:1	45:0	45:1
<u>Intersection Sight Distance</u>											
Case B1 - Left Turn	500'	N/A	N/A	500'	N/A	N/A	500'	N/A	335'	N/A	N/A
Case B2 - Right Turn	430'	N/A	N/A	430'	430'	N/A	430'	430'	290'	290'	N/A
Case D- Signalized Intersection	365'	365'	N/A	365'	365'	N/A	365'	365'	335'	335'	N/A
Case E- All Way Stop	To Stop Bars	N/A	N/A	To Stop Bars	N/A	N/A	To Stop Bars	N/A	To Stop Bars	N/A	N/A
Case F- Left Turns from Major Rd.	365'	365'		365'	N/A	N/A	365'	365'	285'	N/A	N/A
<u>Decision Sight Distance</u>											
Desirable Avoidance Maneuver A	395'			395'			395'		395'		
Desirable Avoidance Maneuver C	675'			675'			675'		675'		

ALTERNATIVE 4

DESIGN FEATURE	SH-74			West Frontage Road			Airport Road			Ramps		
	Functional Classification	Rural Major Collector			Rural Minor Arterial			Rural Minor Arterial			Ramps	
Design Speed (mph)	45			45			45			15 - 60		
ADT	8400			180			840			4400		
Existing (2021)	13270			285			1315			6950		
Future (2050)	15%			15%			15%			15%		
% Trucks (AADT)	15%			15%			15%			15%		
CRITERIA	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)
<u>Stopping Sight Distance (K factor)</u>												
Crest	61	95	86	61	49	48	61	67	147	3-151	162	157
Sag	79	63	27	79	32	39	79	88	152	10-136	26	103
<u>Grades</u>												
Desirable Maximum-Level Terrain	8%	3.65%	3.65%	6%	2.00%	1.99%	6%	2.00%	0.78%	5% (Upgrade) & 8% (Downgrade) 2% (Downgrade)	2.02%	1.98%
Minimum (Des/Min)	0.5%/0%	0.13%	1.44%	0.5%/0%	0.51%	0.21%	0.5%/0%	0.06%	0.10%		0.10%	0.10%
<u>Horizontal Curves</u>												
Min Radius	643'	700.00	700.00	643'	60	175	643'	150	300	643'	267	267
Min Radius w/o Super	6480'	6,480.00	6,480.00	6480'	60	175	6480'	300	44	6480'	3200	3200
<u>Pavement Cross-Slope</u>												
Mainline	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shoulders	2%-4%	2%	2%	2%-4%	2%	2%	2%-4%	2%	2%	2%	2%	2%
<u>Maximum Superelevation Rate (E_{max})</u>	6%	5.00%	5.00%	Low Speed	NC	NC	Low Speed	4.80%	RC	6%	5.80%	5.80%
<u>Lane Widths</u>	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'
<u>Shoulder Widths</u>	8'(4' paved/4' sod)	8'	8'	4'(2'paved/2' sod)	8'	8'	8' paved	8'	8'	8' (gravel/sod)	8'	8'
<u>Horizontal Clearance (Clear Zone)</u>												
Desirable Minimum W/ 6:1	20'-22'	N/A	N/A	10'-12'	N/A	N/A	14'-16'	N/A	N/A	16'-18'	30'	30'
Desirable Minimum W/ 4:1 to 5:1	24'-28'	24'	24'	12'-14'	16'	16'	16'-20'	16'	16'	20'-26'	N/A	N/A
Desirable Minimum W/ 3:1												
<u>Approach Taper Rate (Intersection)</u>	45:1	45:0	45:1	45:1	45:0	45:1	45:1	45:0	45:0	45:1	45:0	45:1
<u>Bay Taper Length (Intersection)</u>	10:1	10:0	10:1	10:1	10:0	10:1	10:1	10:0	10:0	10:1	10:0	10:1
<u>Departure Taper Rate (Intersection)</u>	45:1	45:0	45:1	45:1	45:0	45:1	45:1	45:0	45:0	45:1	45:0	45:1
<u>Intersection Sight Distance</u>												
Case B1 - Left Turn	500'	N/A	N/A	500'	N/A	N/A	500'	N/A	N/A	335'	N/A	N/A
Case B2 - Right Turn	430'	N/A	N/A	430'	N/A	N/A	430'	430'	N/A	290'	290'	N/A
Case D- Signalized Intersection	365'	365'	N/A	365'	365'	N/A	365'	365'	N/A	335'	335'	N/A
Case E- All Way Stop	To Stop Bars	N/A	N/A	To Stop Bars	N/A	N/A	To Stop Bars	N/A	N/A	To Stop Bars	N/A	N/A
<u>Decision Sight Distance</u>												
Desirable Avoidance Maneuver A	395'			395'			395'			395'		
Desirable Avoidance Maneuver C	675'			675'			675'			675'		

ALTERNATIVE 5

DESIGN FEATURE	SH-74			West Frontage Road			Airport Road		Ramps		
Functional Classification	Rural Major Collector			Rural Minor Arterial			Rural Minor Arterial		Ramps		
Design Speed (mph)	45			45			45		15 - 60		
ADT											
Existing (2021)	8400			180			840		4400		
Future (2050)	13270			285			1315		6950		
% Trucks (AADT)	15%			15%			15%		15%		
CRITERIA	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)	ODOT/ AASHTO	PROJECT SPECIFIC	ODOT/ AASHTO	PROJECT SPECIFIC (A)	PROJECT SPECIFIC (B)
Stopping Sight Distance (K factor)											
Crest	61	48	86	61	49	106	61	153	3-151	157	157
Sag	79	45	19	79	32	26	79	89	10-136	135	102
Grades											
Desirable Maximum-Level Terrain	8%	4.00%	3.15%	6%	1.53%	1.99%	6%	2.00%	5% (Upgrade) & 8% (Downgrade)	2.03%	1.98%
Minimum (Des/Min)	0.5%/0%	0.10%	1.44%	0.5%/0%	0.51%	0.22%	0.5%/0%	0.08%	2% (Downgrade)	0.07%	0.10%
Horizontal Curves											
Min Radius	643'	806.00	2,200.00	643'	60	175	643'	150	643'	267	267
Min Radius w/o Super	6480'	6,480.00	6,480.00	6480'	60	175	6480'	1090	6480'	3200	3200
Pavement Cross-Slope											
Mainline	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shoulders	2%-4%	2%	2%	2%-4%	2%	2%	2%-4%	2%	2%	2%	2%
Maximum Superelevation Rate (E_{max})	6%	4.00%	3.60%	Low Speed	NC	NC	Low Speed	4.80%	6%	5.80%	5.80%
Lane Widths	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'	12'
Shoulder Widths	8'(4' paved/4' sod)	8'	8'	4'(2' paved/2' sod)	8'	8'	8' paved	8'	8' (gravel/sod)	8'	8'
Horizontal Clearance (Clear Zone)											
Desirable Minimum W/ 6:1	20'-22'	N/A	N/A	10'-12'	N/A	N/A	14'-16'	N/A	16'-18'	30'	30'
Desirable Minimum W/ 4:1 to 5:1	24'-28'	24'	24'	12'-14'	16'	16'	16'-20'	16'	20'-26'	N/A	N/A
Desirable Minimum W/ 3:1											
Approach Taper Rate (Intersection)	45:1	45:0	45:1	45:1	45:0	45:1	45:1	45:0	45:1	45:0	45:1
Bay Taper Length (Intersection)	10:1	10:0	10:1	10:1	10:0	10:1	10:1	10:0	10:1	10:0	10:1
Departure Taper Rate (Intersection)	45:1	45:0	45:1	45:1	45:0	45:1	45:1	45:0	45:1	45:0	45:1
Intersection Sight Distance											
Case B1 - Left Turn	500'	N/A	N/A	500'	N/A	N/A	500'	N/A	335'	N/A	N/A
Case B2 - Right Turn	430'	N/A	N/A	430'	N/A	N/A	430'	430'	290'	290'	N/A
Case D - Signalized Intersection	365'	365'	N/A	365'	365'	N/A	365'	365'	335'	335'	N/A
Case E - All Way Stop	To Stop Bars	N/A	N/A	To Stop Bars	N/A	N/A	To Stop Bars	N/A	To Stop Bars	N/A	N/A
Decision Sight Distance											
Desirable Avoidance Maneuver A	395'			395'			395'		395'		
Desirable Avoidance Maneuver C	675'			675'			675'		675'		



APPENDIX K

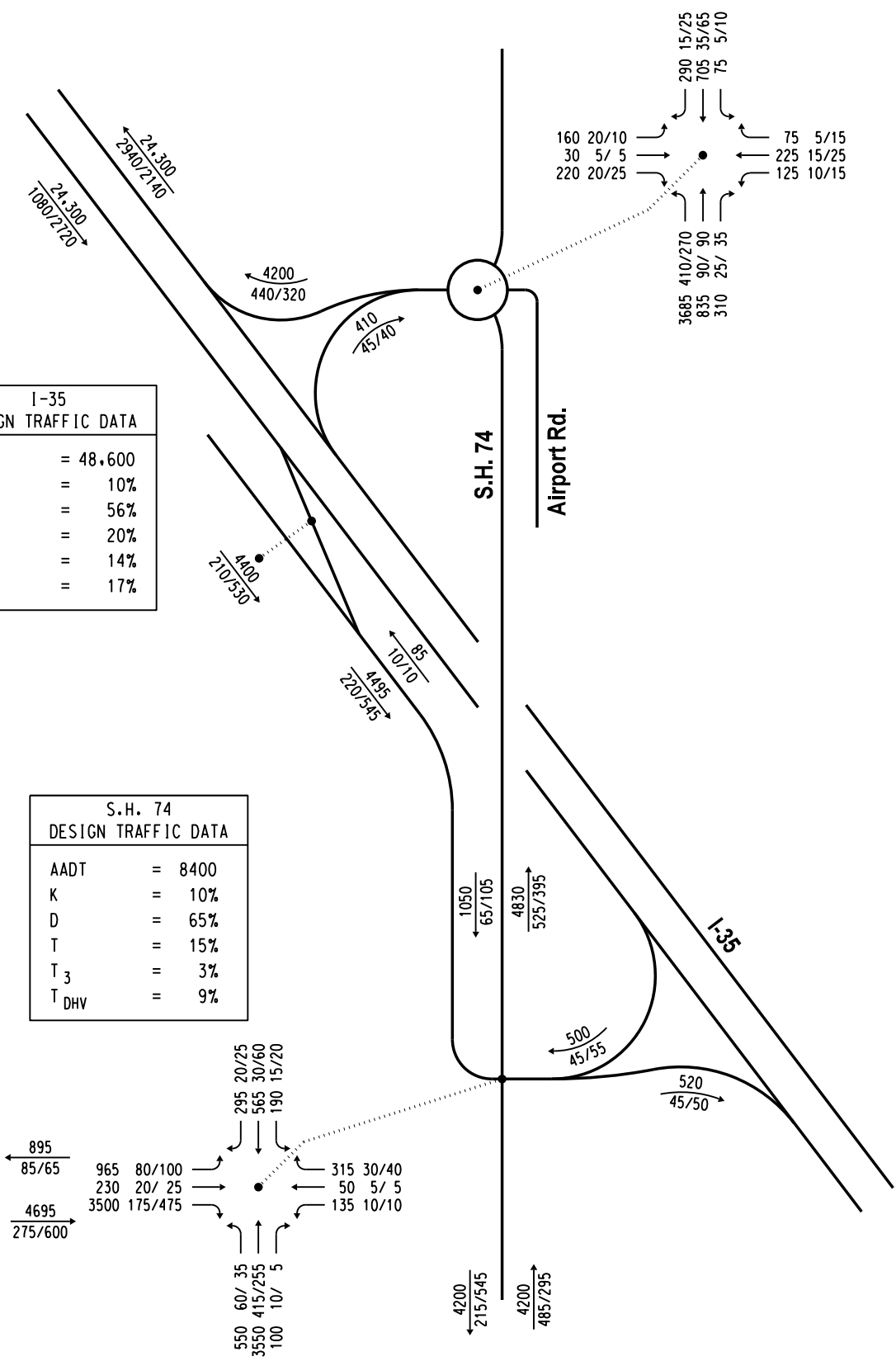
DESIGN TRAFFIC DATA BY TEC

G:\0\Projects\T-2888 - Design_C12327 JP_29571041_SH-74 & I-35 Interchange - McClain County\CAD\FIGURES.dgn 12-07-21



I-35 DESIGN TRAFFIC DATA	
AADT	= 48,600
K	= 10%
D	= 56%
T	= 20%
T ₃	= 14%
T _{DHV}	= 17%

S.H. 74 DESIGN TRAFFIC DATA	
AADT	= 8,400
K	= 10%
D	= 65%
T	= 15%
T ₃	= 3%
T _{DHV}	= 9%



LEGEND	
XXXX XXX/XXX	AADT
XXX/XXX	A.M. PEAK HOUR
XXX/XXX	P.M. PEAK HOUR

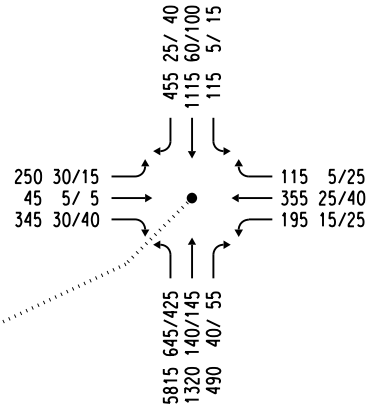
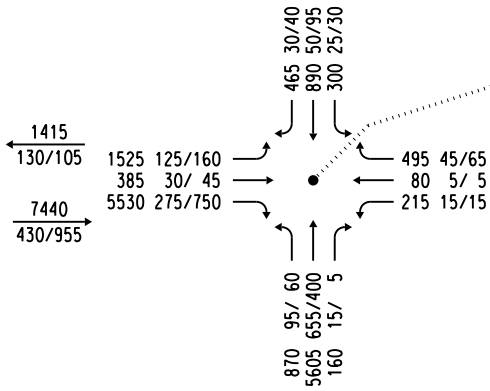
FIGURE 3. 2021 Design Traffic Data





I-35 DESIGN TRAFFIC DATA	
AAVT	= 76.780
K	= 10%
D	= 56%
T	= 20%
T ₃	= 14%
T _{DHV}	= 17%

S.H. 74 DESIGN TRAFFIC DATA	
AAVT	= 13.270
K	= 10%
D	= 65%
T	= 15%
T ₃	= 3%
T _{DHV}	= 9%



LEGEND	
XXXX XXX/XXX	AAVT
XXX/XXX	A.M. PEAK HOUR
XXX/XXX	P.M. PEAK HOUR

FIGURE 4. 2050 Design Traffic Data



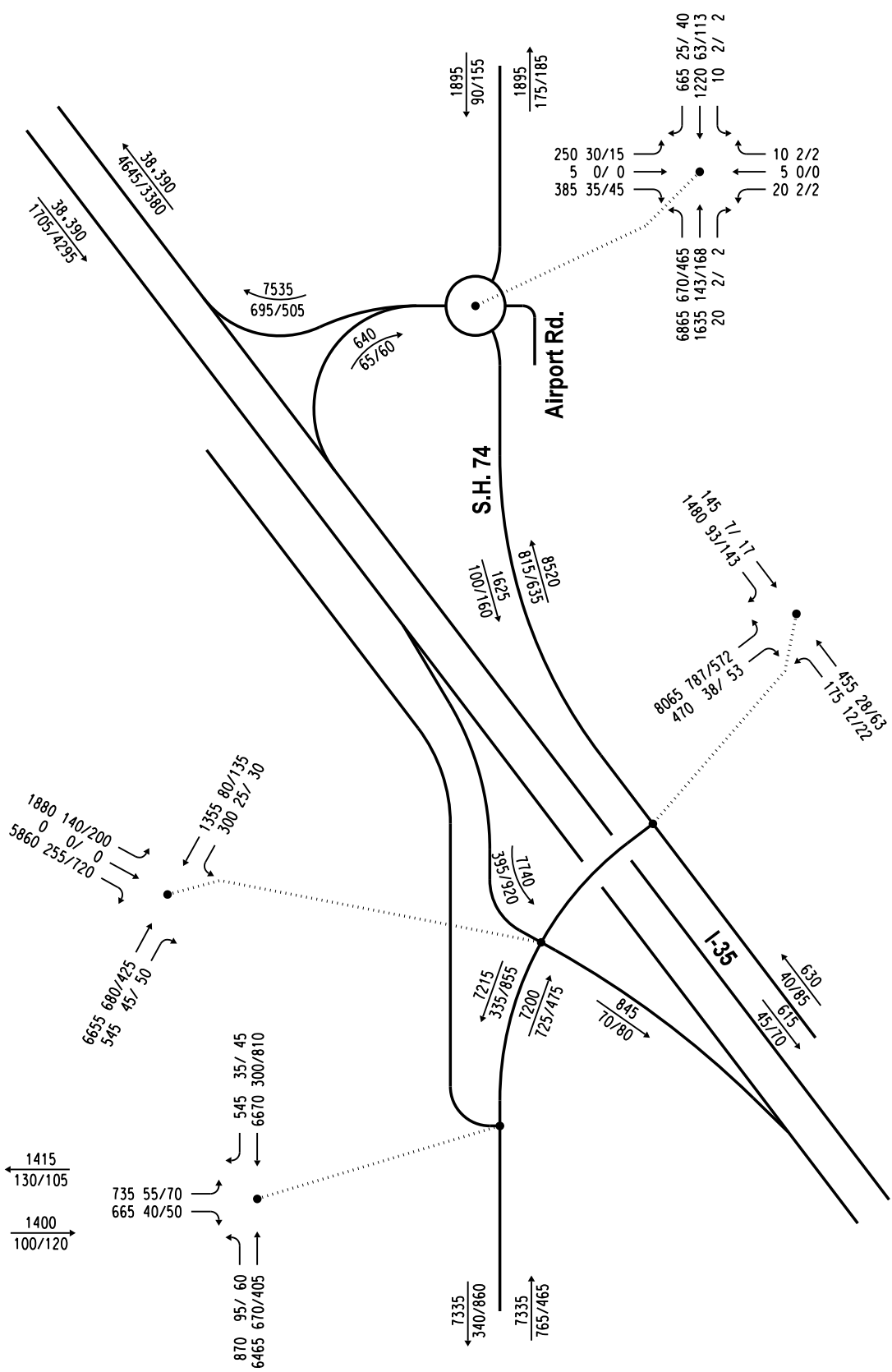


FIGURE . ALT 1 2050 Design Traffic Data



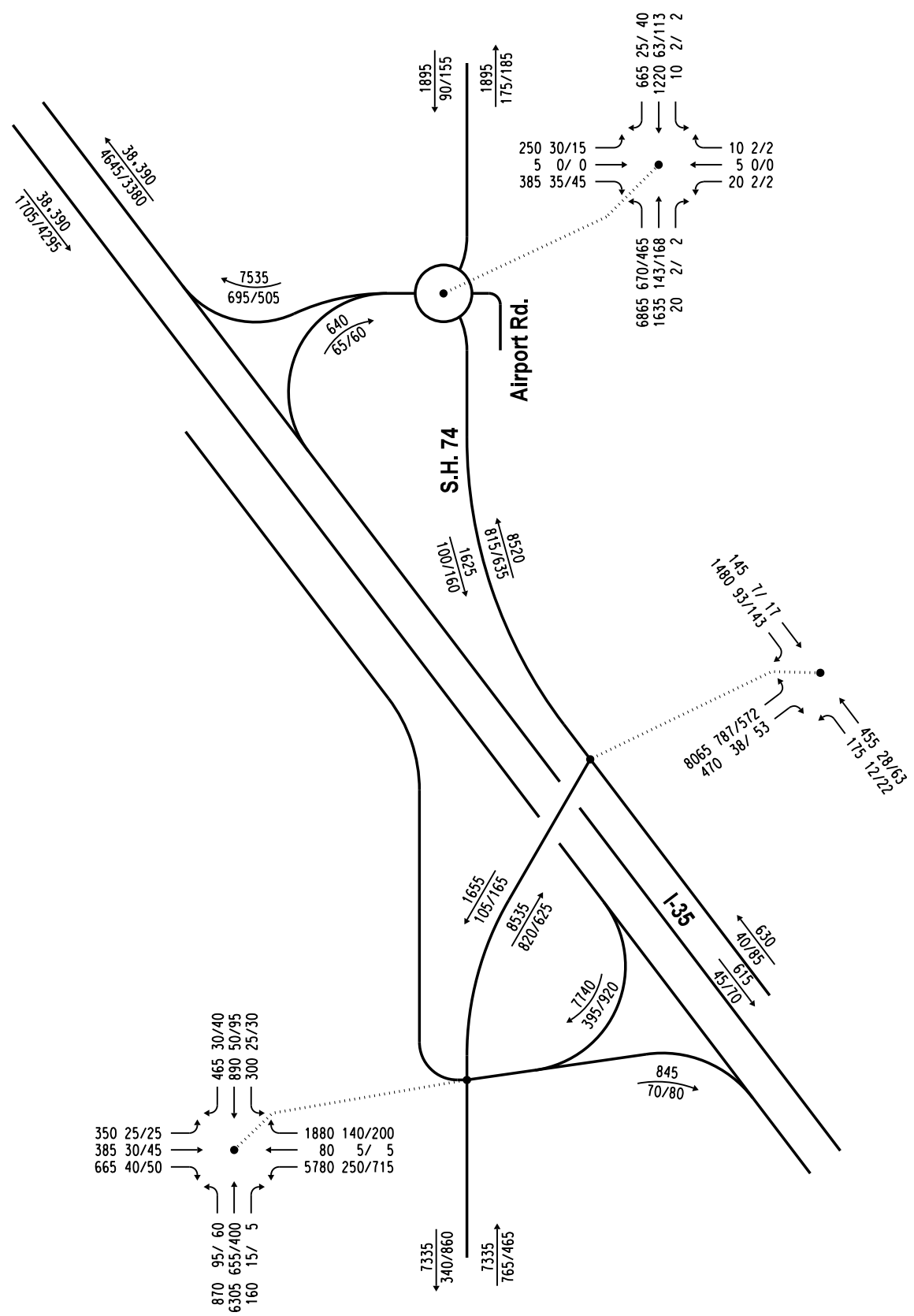


FIGURE . ALT 2 2050 Design Traffic Data



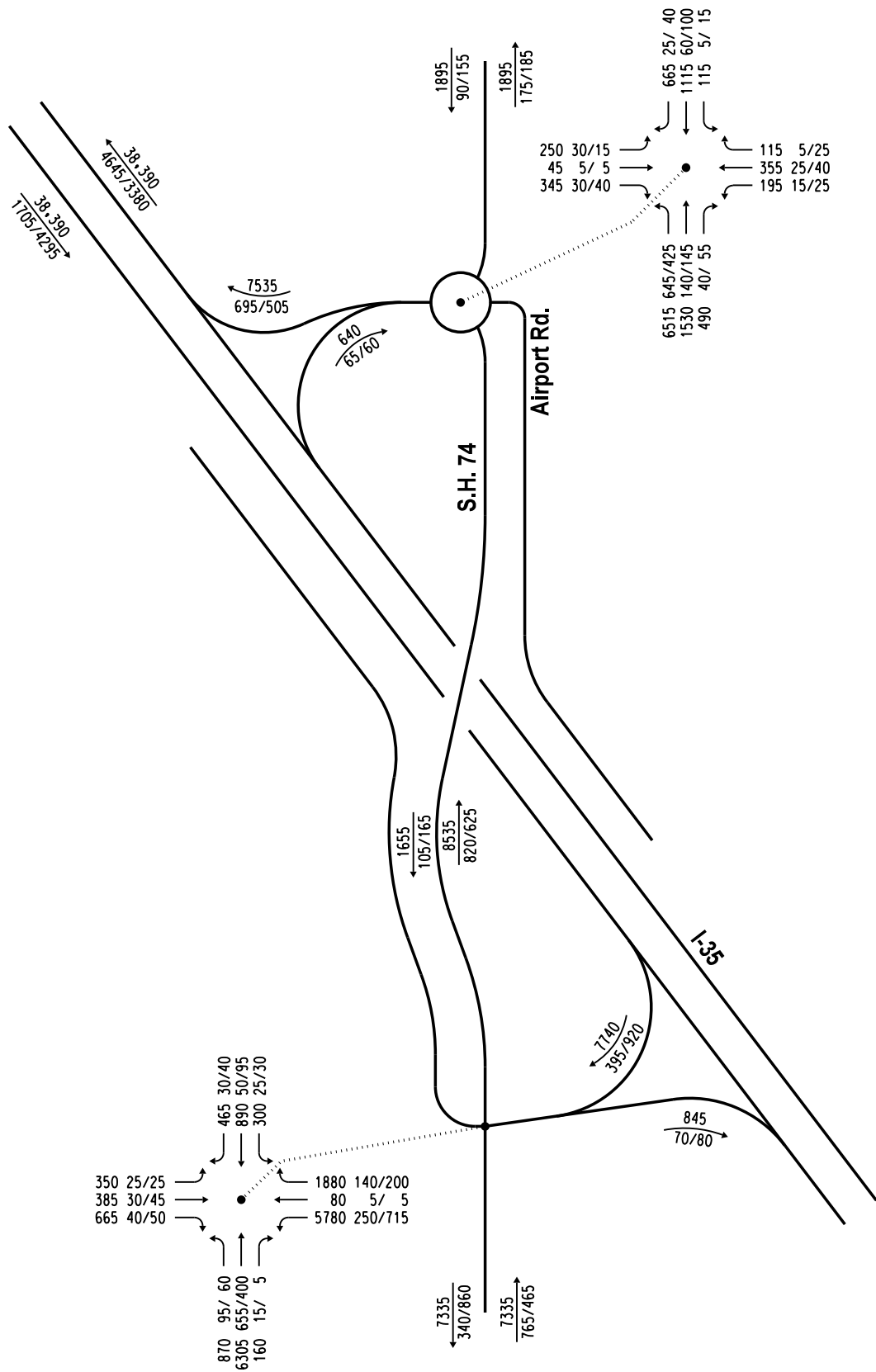
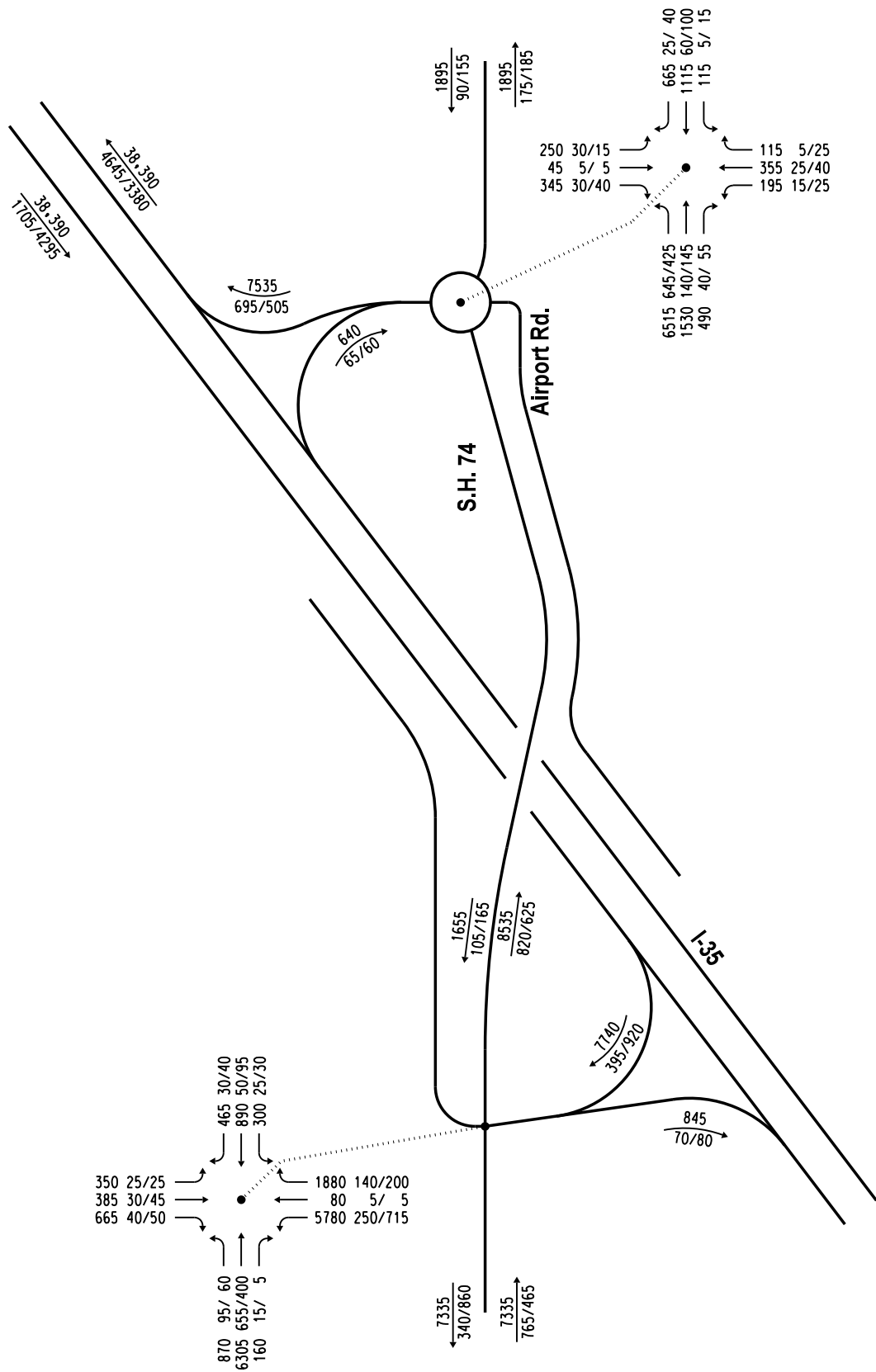


FIGURE . ALT 3 2050 Design Traffic Data





LEGEND	
XXX/XXX	P.M. PEAK HOUR
—	A.M. PEAK HOUR

FIGURE . ALT 4 2050 Design Traffic Data



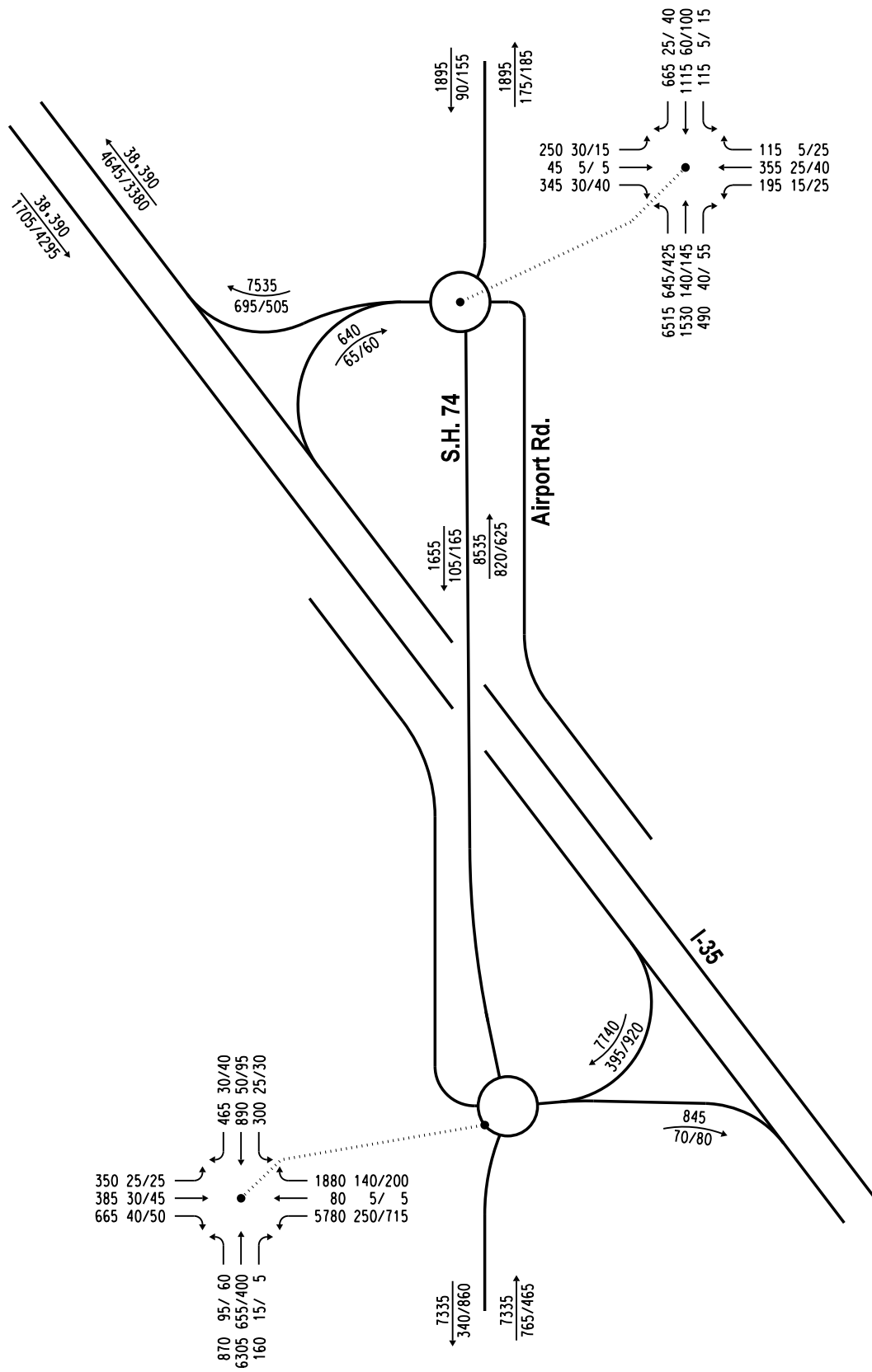
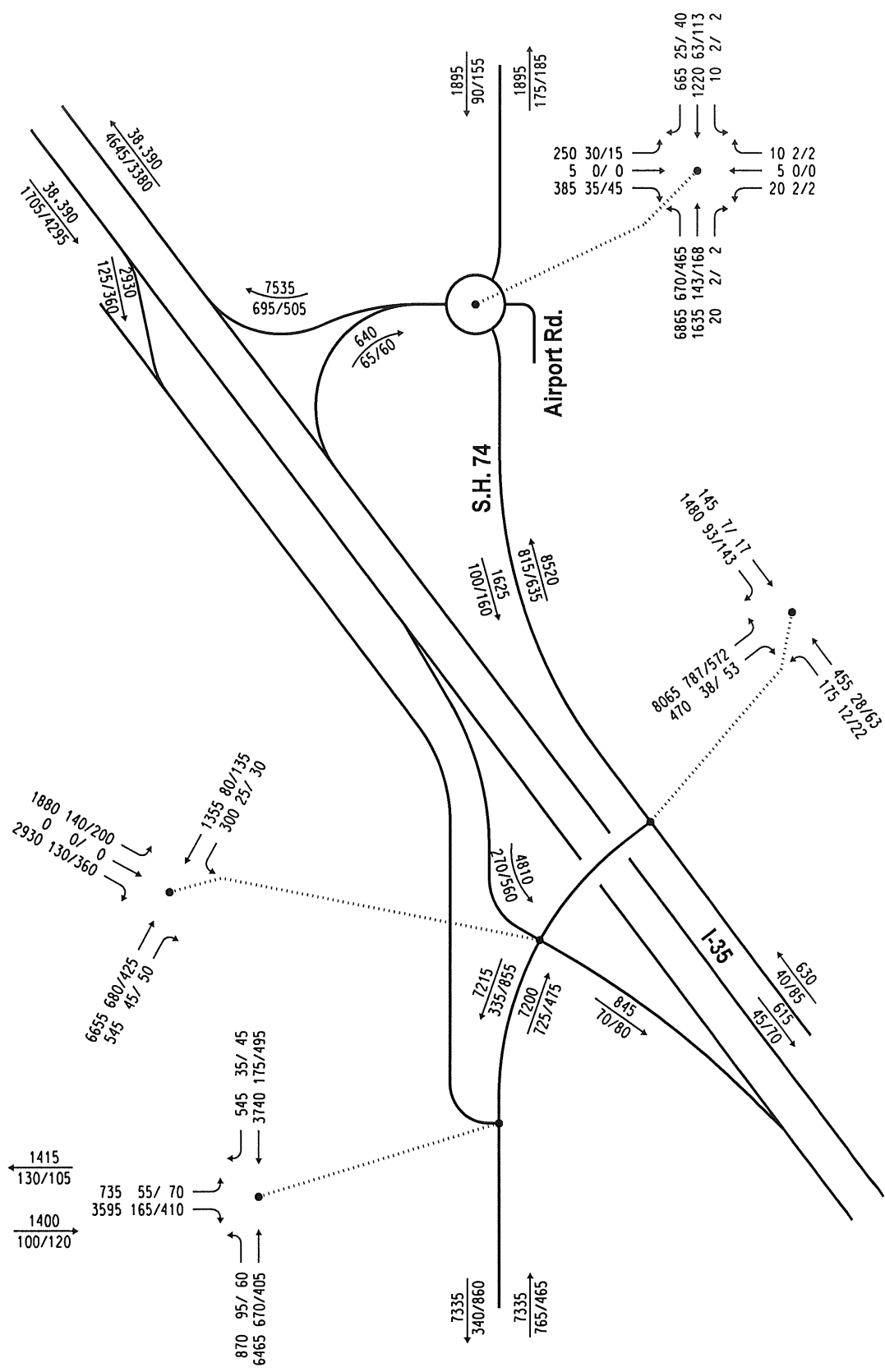


FIGURE . ALT 5 2050 Design Traffic Data

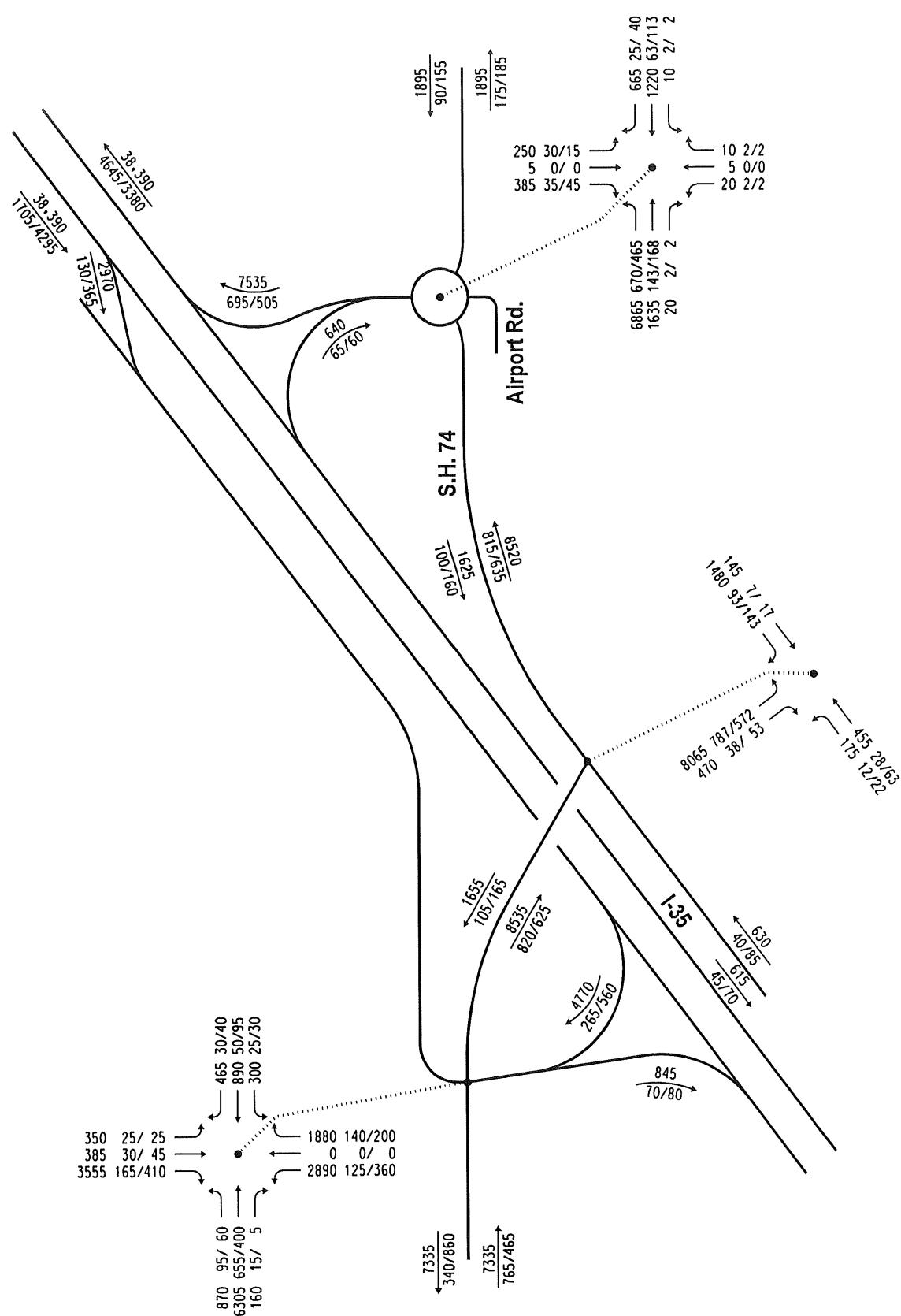




LEGEND	
xxx/xxx	P.M. PEAK HOUR
xxx/xxx	A.M. PEAK HOUR

FIGURE . ALT 1 2050 Design Traffic Data W/ Slip Ramp





LEGEND	
XXX/XXX	P. M. PEAK HOUR
---	A. M. PEAK HOUR

FIGURE . ALT 2 2050 Design Traffic Data W/ Slip Ramp



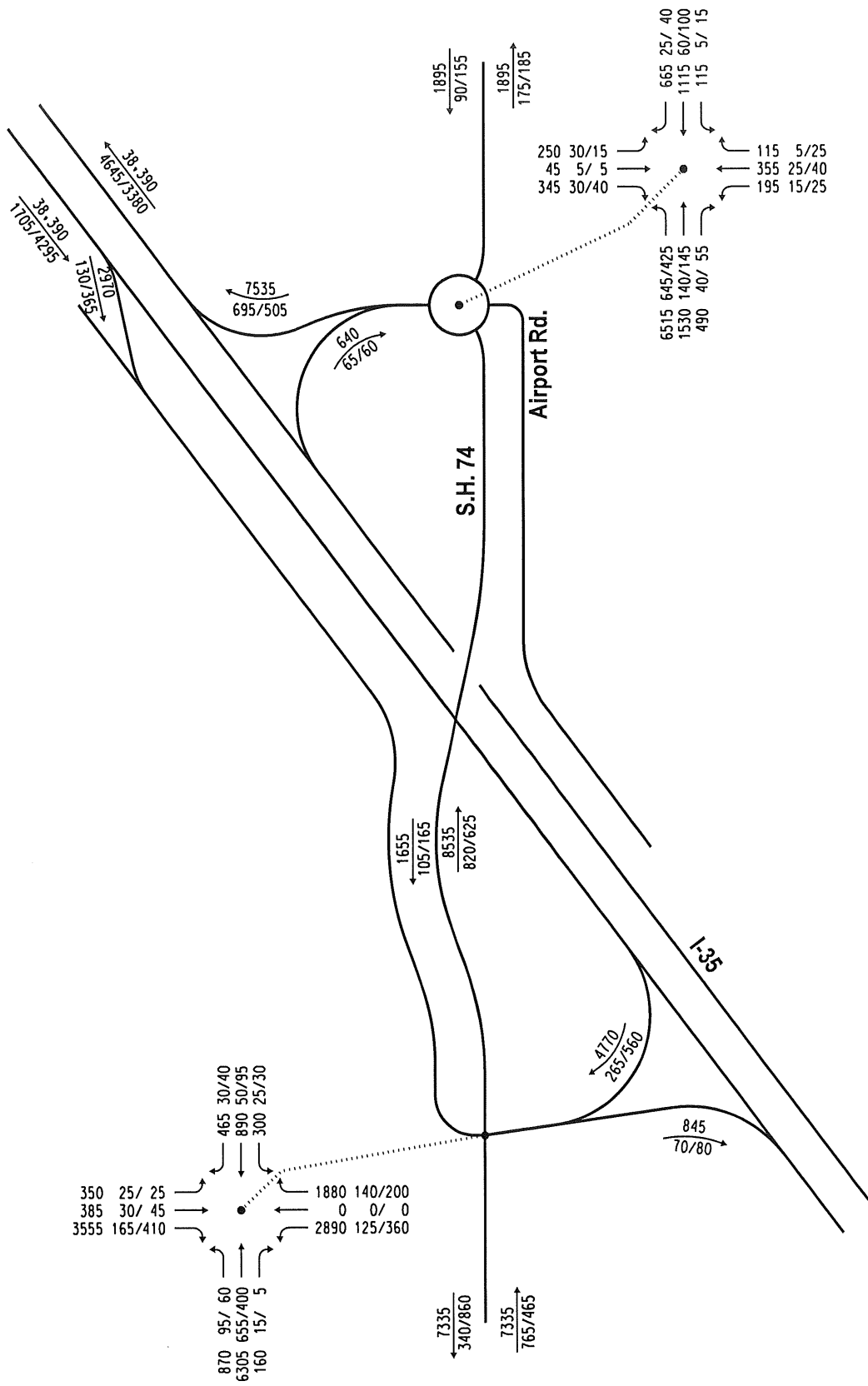
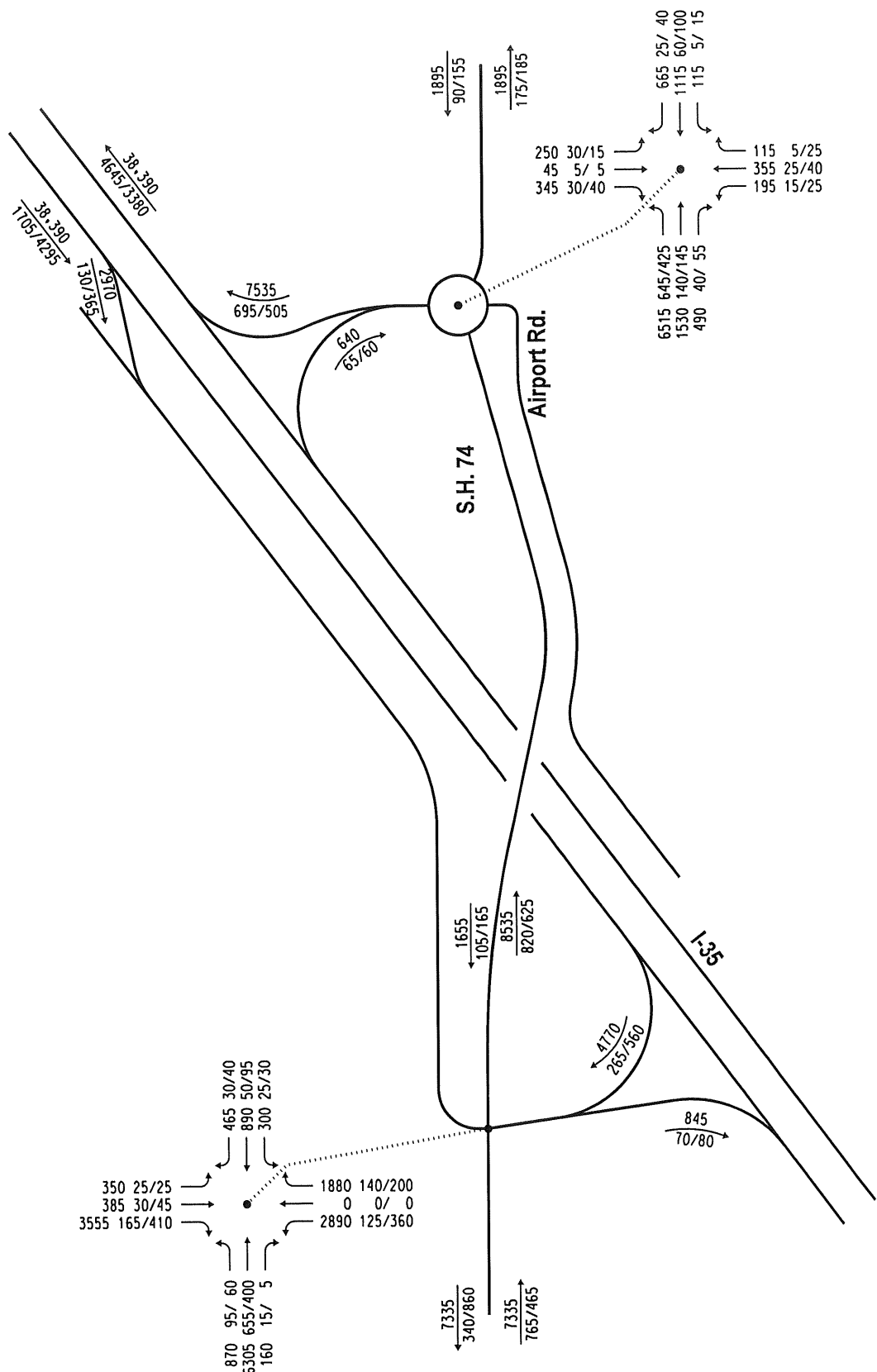


FIGURE . ALT 3 2050 Design Traffic Data W/ Slip Ramp

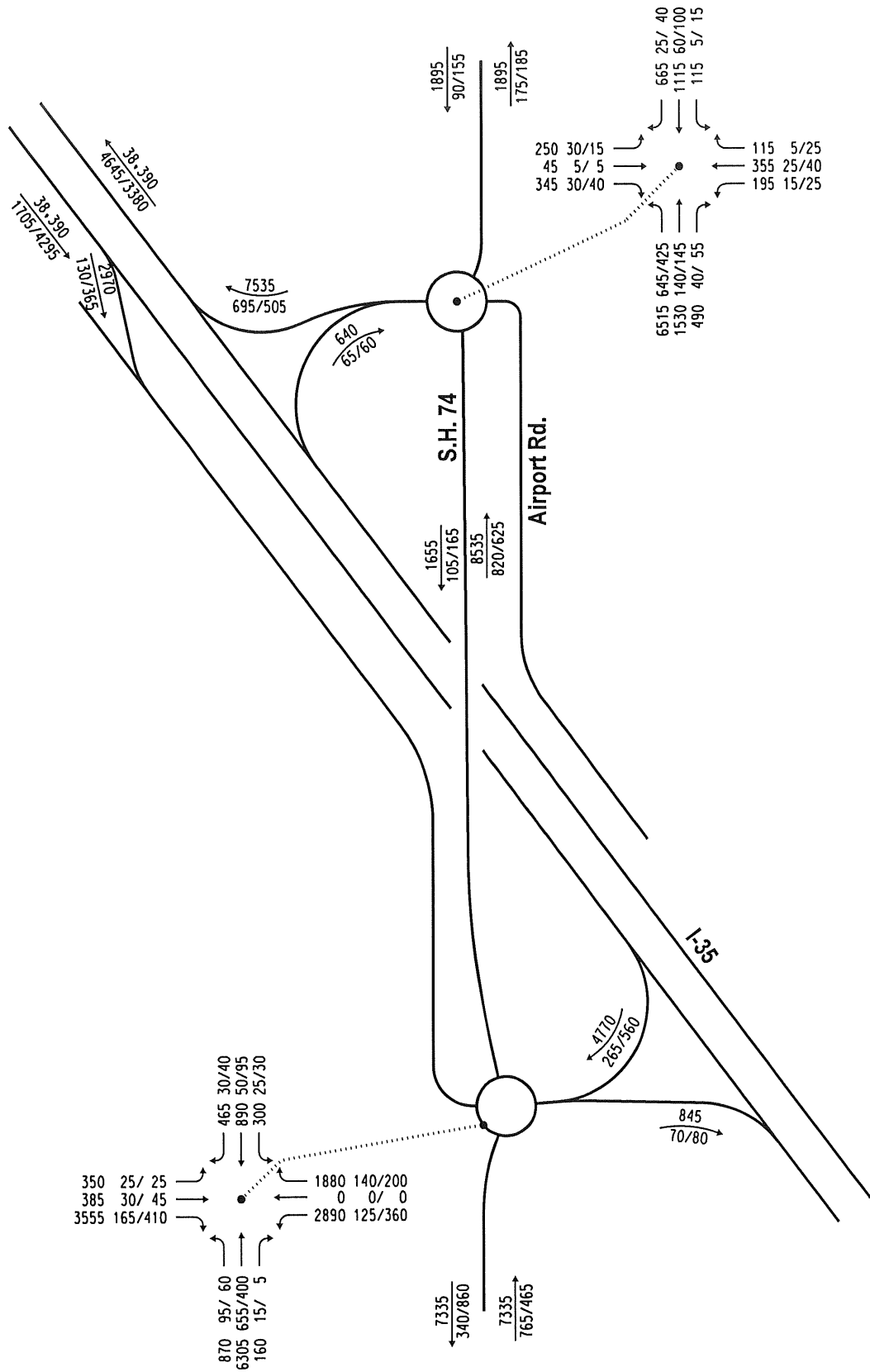




LEGEND	
XXX/XXX	P.M. PEAK HOUR
XXX/XXX	A.M. PEAK HOUR

FIGURE . ALT 4 2050 Design Traffic Data W/ Slip Ramp





LEGEND	
XXX/XXX	P.M. PEAK HOUR
XXX/XXX	A.M. PEAK HOUR

FIGURE . ALT 5 2050 Design Traffic Data W/ Slip Ramp





APPENDIX L

HIGHWAY CAPACITY SOFTWARE PRINTOUTS BY TEIM

HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	1/4/2022
Agency	ODOT	Analysis Year	2021
Jurisdiction	McClain County	Time Period Analyzed	I35 NB-AM Peak Hour-Existing Configuration
Project Description	I-35 & SH-74 Interchange Alternatives Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.64		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 NB to South Limits	5280	2
2	Diverge	Diverge	SH 74 Exit Ramp	1500	2
3	Basic	Basic	Between SH 74 Ramps	400	2
4	Merge	Merge	SH 74 Entrance Ramp	1500	2
5	Basic	Basic	I35 NB to North Limits	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.94		0.855		3167		4772		0.66		67.3		23.5		C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	3167	52	4800	2000	0.66	0.03	60.9	60.9	26.0	24.8	C

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.94		0.855		3111		4790		0.65		67.7		22.8		C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	3621	510	4800	2000	0.75	0.26	63.3	63.3	28.6	24.2	C

Segment 5: Basic

Time	PHF		fHV		Flow Rate		Capacity		d/c		Speed		Density		LOS
------	-----	--	-----	--	-----------	--	----------	--	-----	--	-------	--	---------	--	-----

Period			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.94	0.855	3658	4754	0.77	64.1	28.5	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	64.8	26.2	22.4	2.40	D

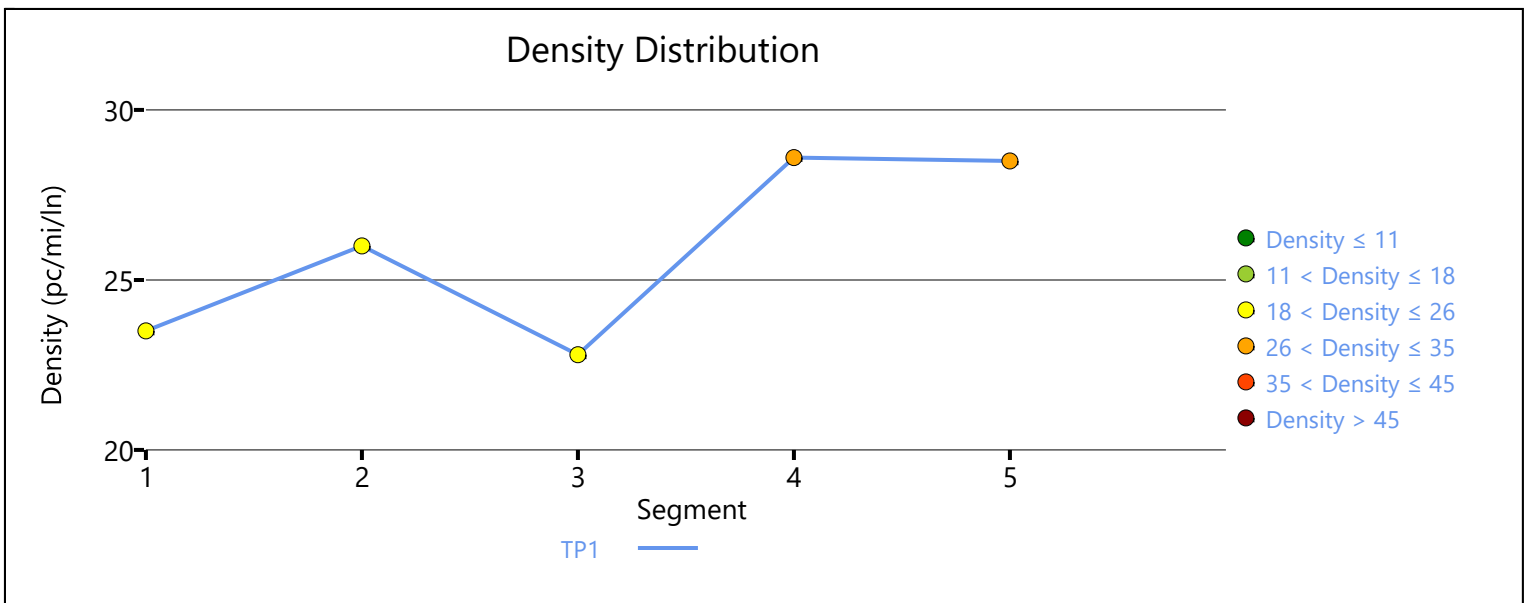
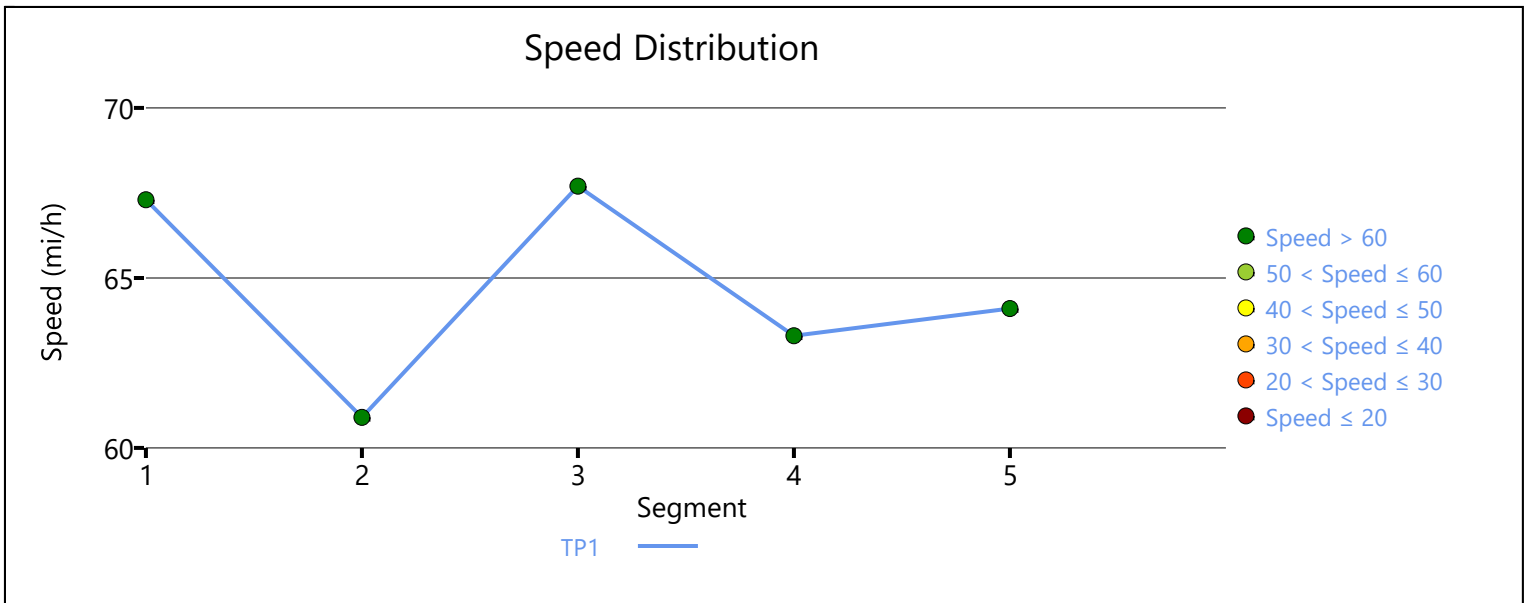
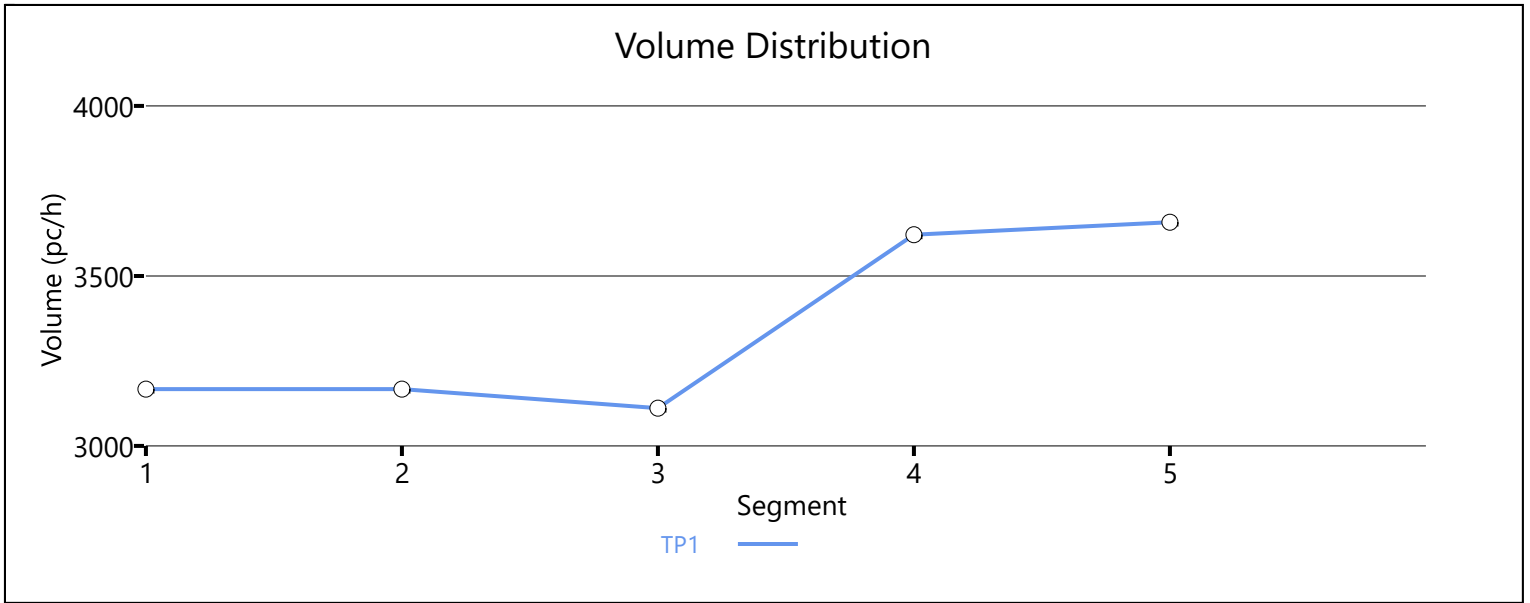
Facility Overall Results

Space Mean Speed, mi/h	64.8	Density, veh/mi/ln	22.4
Average Travel Time, min	2.40	Density, pc/mi/ln	26.2

Messages

Comments

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HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	1/3/2022
Agency	ODOT	Analysis Year	2021
Jurisdiction	McClain County	Time Period Analyzed	I35 SB-AM Peak Hour-Existing Configuration
Project Description	I-35 & SH-74 Interchange Alternatives Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.03		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 SB North Limits	5280	2
2	Diverge	Diverge	Slip Ramp	1500	2
3	Basic	Basic	SH 74 Underpass	180	2
4	Diverge	Diverge	SH 74 Exit Ramp	1500	2
5	Basic	Basic	Between SH 74 Ramps	740	2
6	Merge	Merge	SH 74 Entrance Ramp	1500	2
7	Basic	Basic	I35 SB South Limits	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	1344	4800	0.28	72.2	9.3	A

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	1344	244	4800	2000	0.28	0.12	58.6	58.6	11.5	11.8	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	1082	4800	0.23	68.4	7.5	A

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	1082	52	4800	2000	0.23	0.03	58.9	58.9	9.2	7.3	A

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	1027	4800	0.21	69.3	7.2	A

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	1079	52	4800	2000	0.22	0.03	63.2	63.2	8.5	8.9	A

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	1082	4800	0.23	71.8	7.5	A

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.1	8.7	7.5	2.70	A

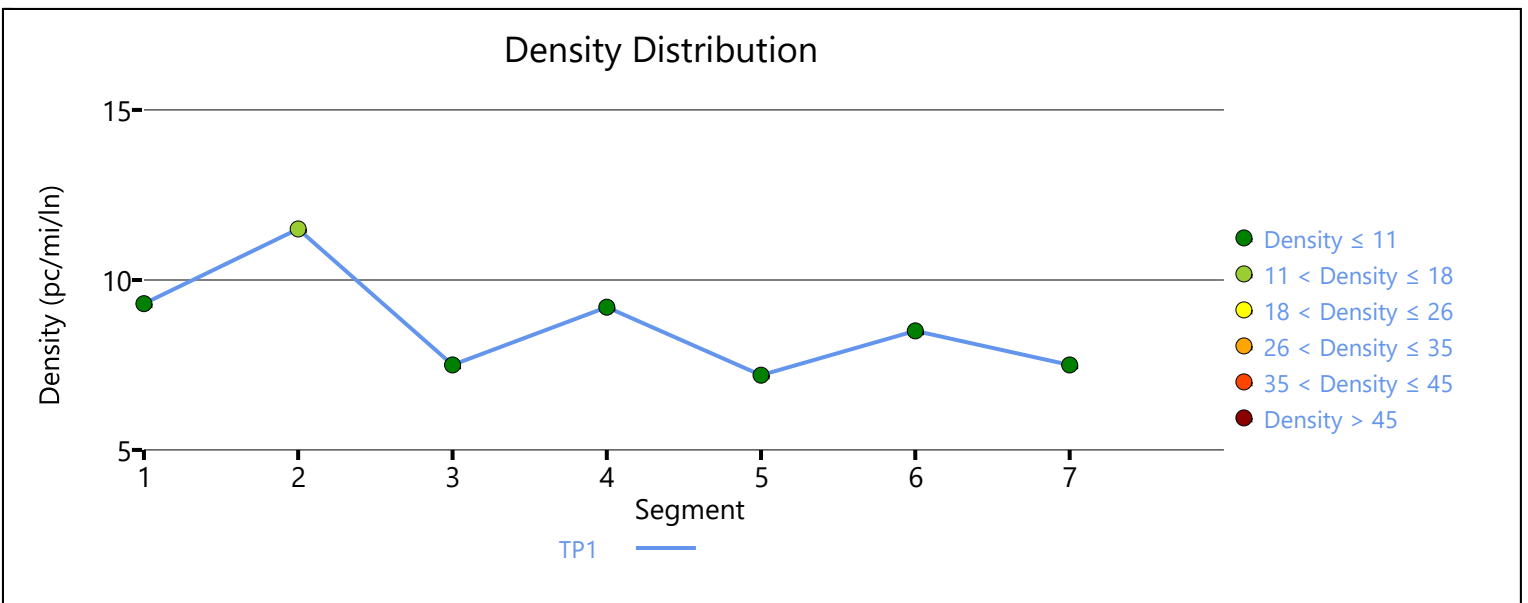
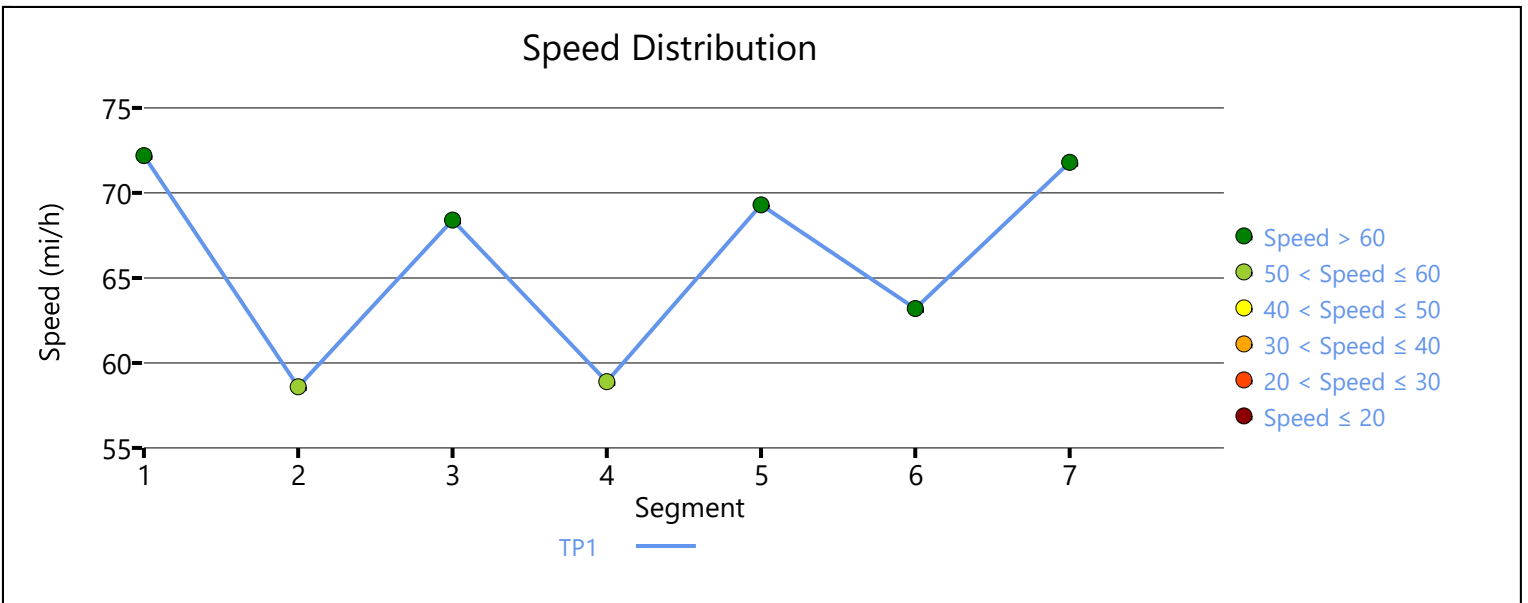
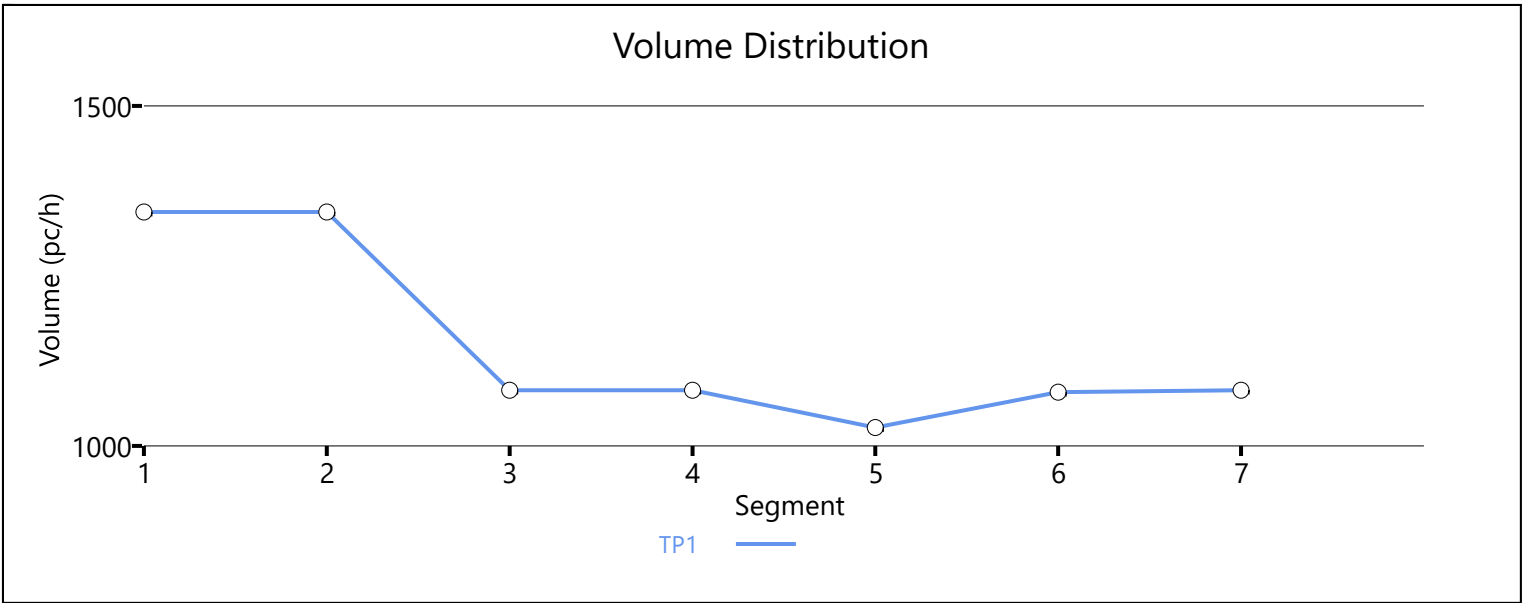
Facility Overall Results

Space Mean Speed, mi/h	68.1	Density, veh/mi/ln	7.5
Average Travel Time, min	2.70	Density, pc/mi/ln	8.7


Messages

Comments

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HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps/Airport Rd.	
Date Performed	1/5/2022				N/S Street Name		SH 74	
Analysis Year	2021				Analysis Time Period (hrs)		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Existing Conditions				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	20	5	20	0	10	15	5	0	410	90	25	0	5	35	15
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	24	6	24	0	12	18	6	0	486	107	30	0	6	41	18
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

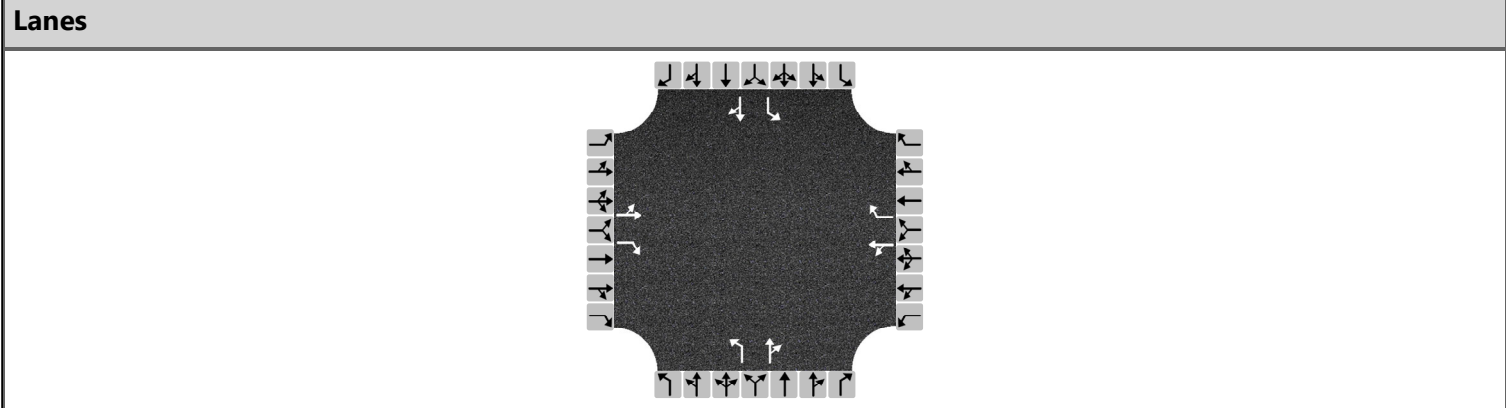
Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		54			36			623			65		
Entry Volume, veh/h		50			33			572			60		
Circulating Flow (v _c), pc/h		59			617			36			516		
Exiting Flow (v _{ex}), pc/h		42			522			137			77		
Capacity (C _{PCE}), pc/h		1299			735			1330			815		
Capacity (c), veh/h		1192			675			1220			748		
v/c Ratio (x)		0.04			0.05			0.47			0.08		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.4			5.9			7.9			5.6		
Lane LOS		A			A			A			A		
95% Queue, veh		0.1			0.2			2.6			0.3		
Approach Delay, s/veh		3.4			5.9			7.9			5.6		
Approach LOS		A			A			A			A		
Intersection Delay, s/veh LOS	7.3						A						

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	W. Frontage/SB Ramps
Analysis Year	2021	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Existing Conditions		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	80	20	175	10	5	30	60	415	10	15	30	20
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R		LT	R		L	TR		L	TR	
Flow Rate, v (veh/h)	109	190		16	33		65	462		16	54	
Percent Heavy Vehicles	9	9		9	9		9	9		9	9	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20		3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.097	0.169		0.014	0.029		0.058	0.411		0.014	0.048	
Final Departure Headway, hd (s)	6.76	5.66		7.07	6.04		6.23	5.72		6.79	6.01	
Final Degree of Utilization, x	0.204	0.299		0.032	0.055		0.113	0.733		0.031	0.091	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)	4.46	3.36		4.77	3.74		3.93	3.42		4.49	3.71	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	109	190		16	33		65	462		16	54	
Capacity	533	636		509	596		578	630		530	599	
95% Queue Length, Q ₉₅ (veh)	0.8	1.3		0.1	0.2		0.4	6.3		0.1	0.3	
Control Delay (s/veh)	11.2	10.8		10.0	9.1		9.7	22.5		9.7	9.3	
Level of Service, LOS	B	B		B	A		A	C		A	A	
Approach Delay (s/veh)	10.9			9.4			20.9			9.4		
Approach LOS	B			A			C			A		
Intersection Delay, s/veh LOS	16.3						C					

HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	1/4/2022
Agency	ODOT	Analysis Year	2021
Jurisdiction	McClain County	Time Period Analyzed	I35 NB-PM Peak Hour-Existing Configuration
Project Description	I-35 & SH-74 Interchange Alternatives Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.64		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 NB to South Limits	5280	2
2	Diverge	Diverge	SH 74 Exit Ramp	1500	2
3	Basic	Basic	Between SH 74 Ramps	400	2
4	Merge	Merge	SH 74 Entrance Ramp	1500	2
5	Basic	Basic	I35 NB to North Limits	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	2314	4772	0.48	68.6	16.9	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	2314	46	4800	2000	0.48	0.02	61.0	61.0	19.0	17.4	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	2265	4790	0.47	67.7	16.3	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	2636	371	4800	2000	0.55	0.19	66.4	66.4	19.8	16.5	B

Segment 5: Basic

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS
------	-----	-----	-----------	----------	-----	-------	---------	-----

Period			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.94	0.855	2663	4754	0.56	67.7	19.7	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.1	18.5	15.8	2.40	C

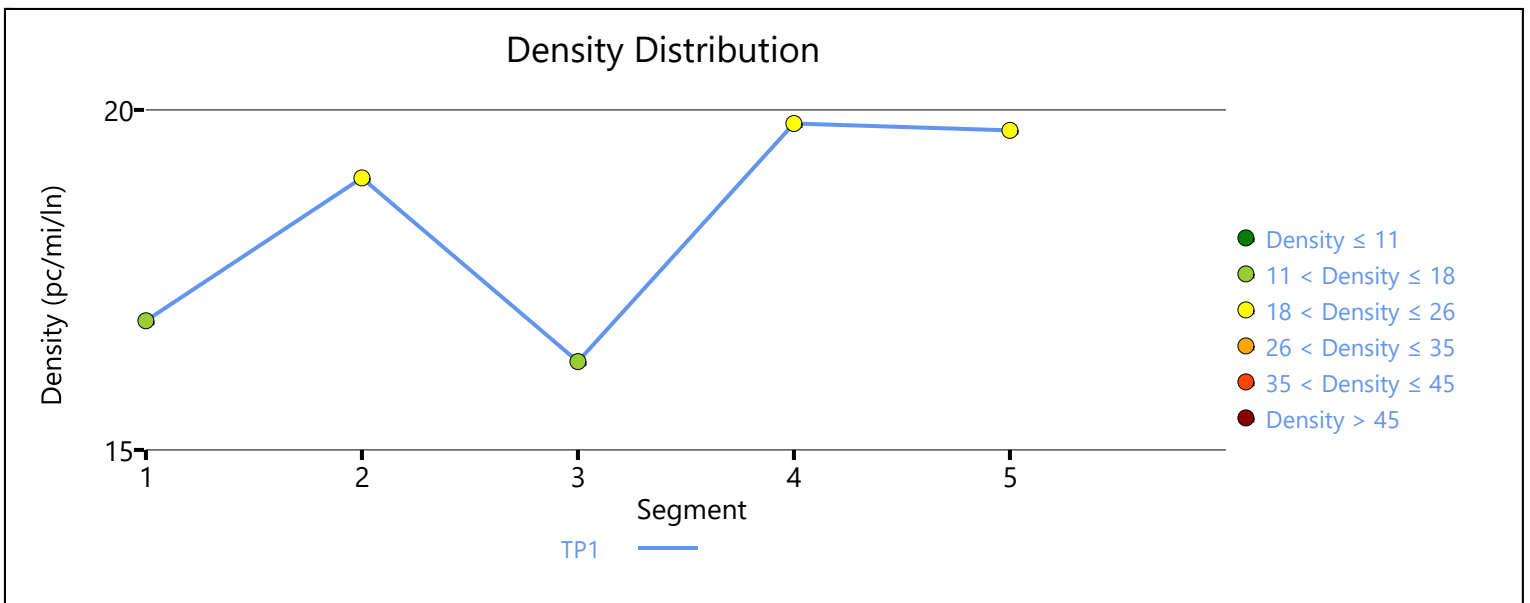
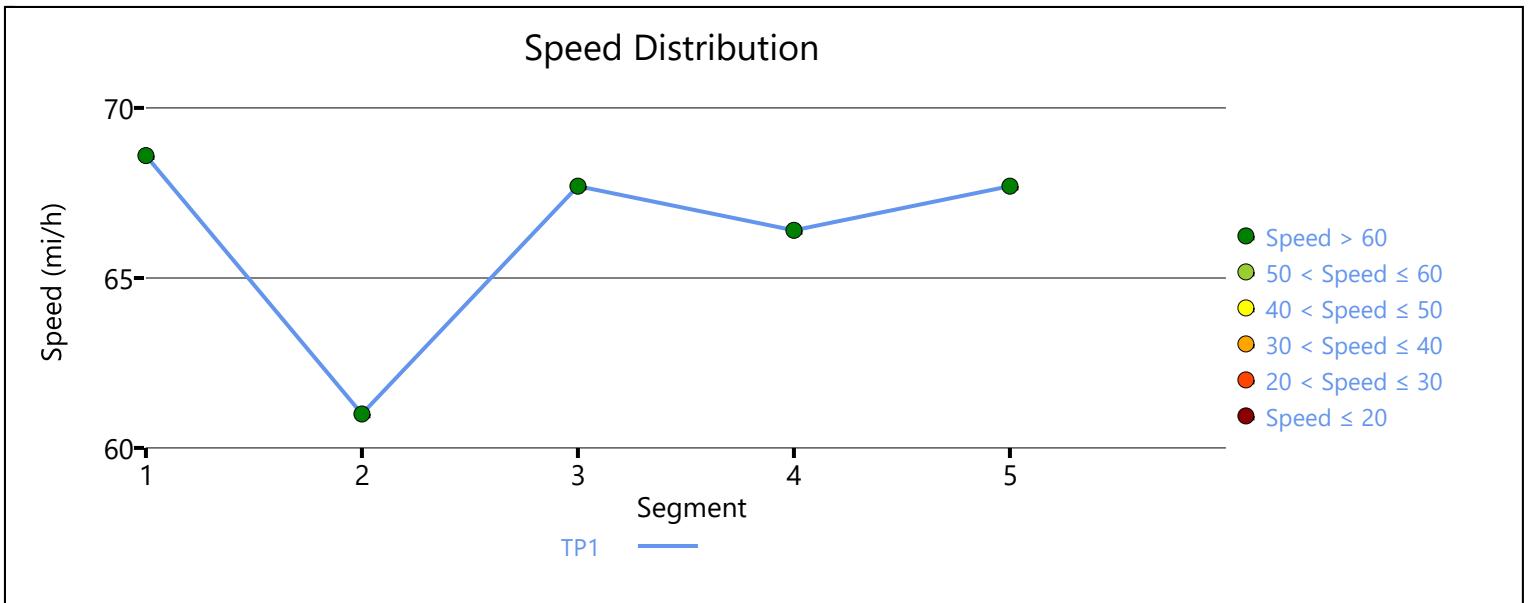
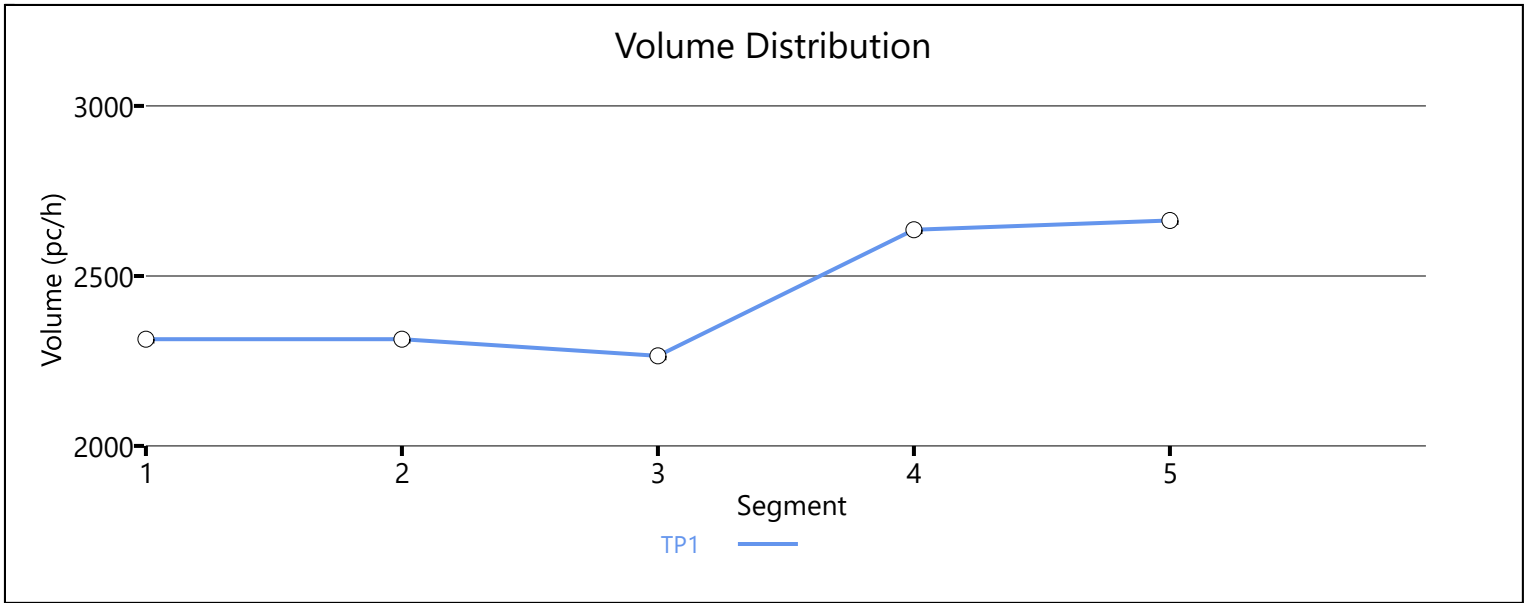
Facility Overall Results

Space Mean Speed, mi/h	67.1	Density, veh/mi/ln	15.8
Average Travel Time, min	2.40	Density, pc/mi/ln	18.5

Messages

Comments

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HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	1/3/2022
Agency	ODOT	Analysis Year	2021
Jurisdiction	McClain County	Time Period Analyzed	I35 SB-PM Peak Hour-Existing Configuration
Project Description	I-35 & SH-74 Interchange Preliminary Engineering	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.03		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 SB to North Limits	5280	2
2	Diverge	Diverge	Slip Ramp	1500	2
3	Basic	Basic	SH 74 Underpass	180	2
4	Diverge	Diverge	SH 74 Exit Ramp	1500	2
5	Basic	Basic	Between SH 74 Ramps	740	2
6	Merge	Merge	SH 74 Entrance Ramp	1500	2
7	Basic	Basic	I35 SB South Limits	5280	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	3384	4800	0.71	68.4	24.7	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	3384	615	4800	2000	0.71	0.31	57.6	57.6	29.4	29.3	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	2725	4800	0.57	68.2	19.1	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	2725	64	4800	2000	0.57	0.03	58.9	58.9	23.1	21.4	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	2656	4800	0.55	69.3	18.7	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	2714	58	4800	2000	0.57	0.03	61.8	61.8	22.0	21.7	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	2719	4800	0.57	71.2	19.1	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	66.4	22.6	19.3	2.70	C

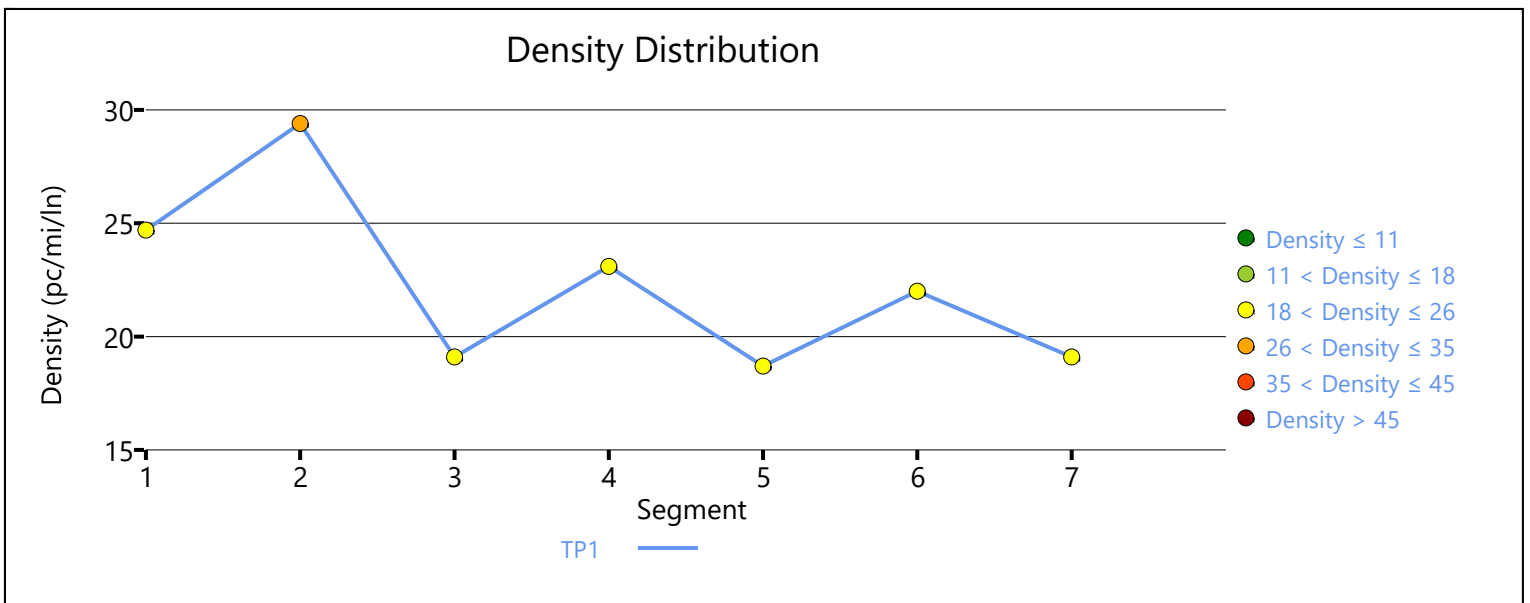
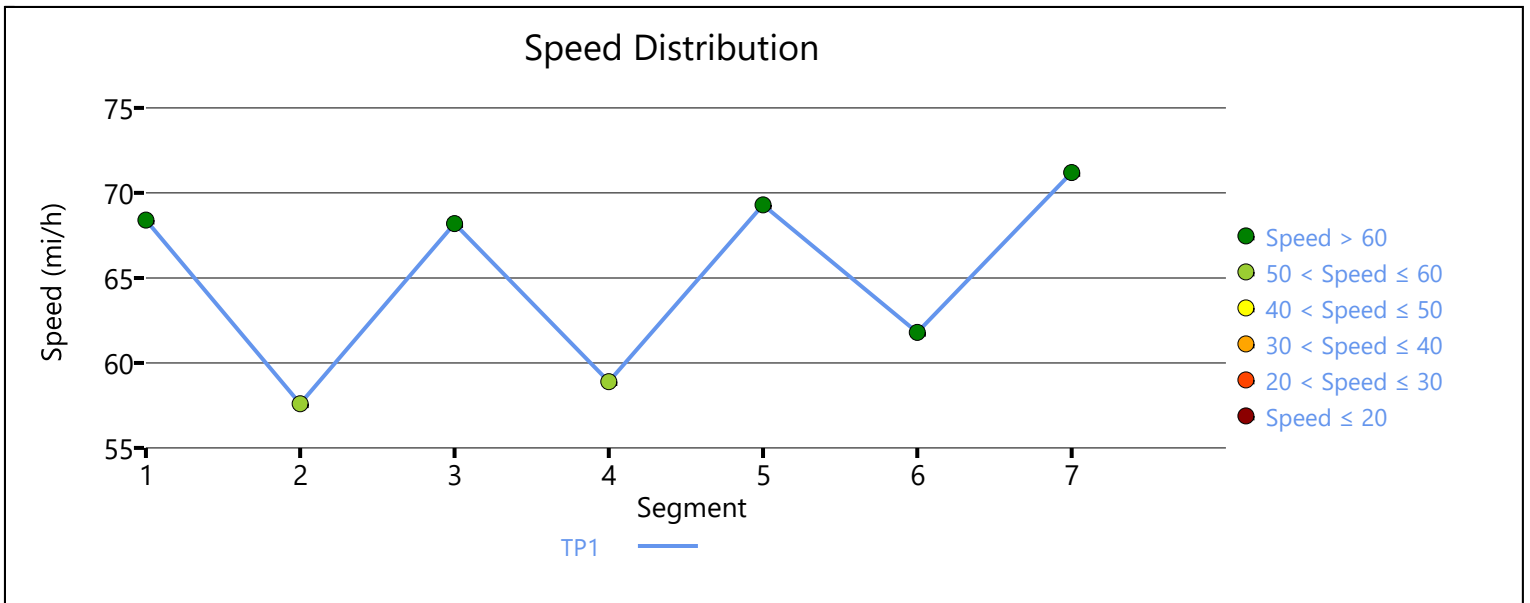
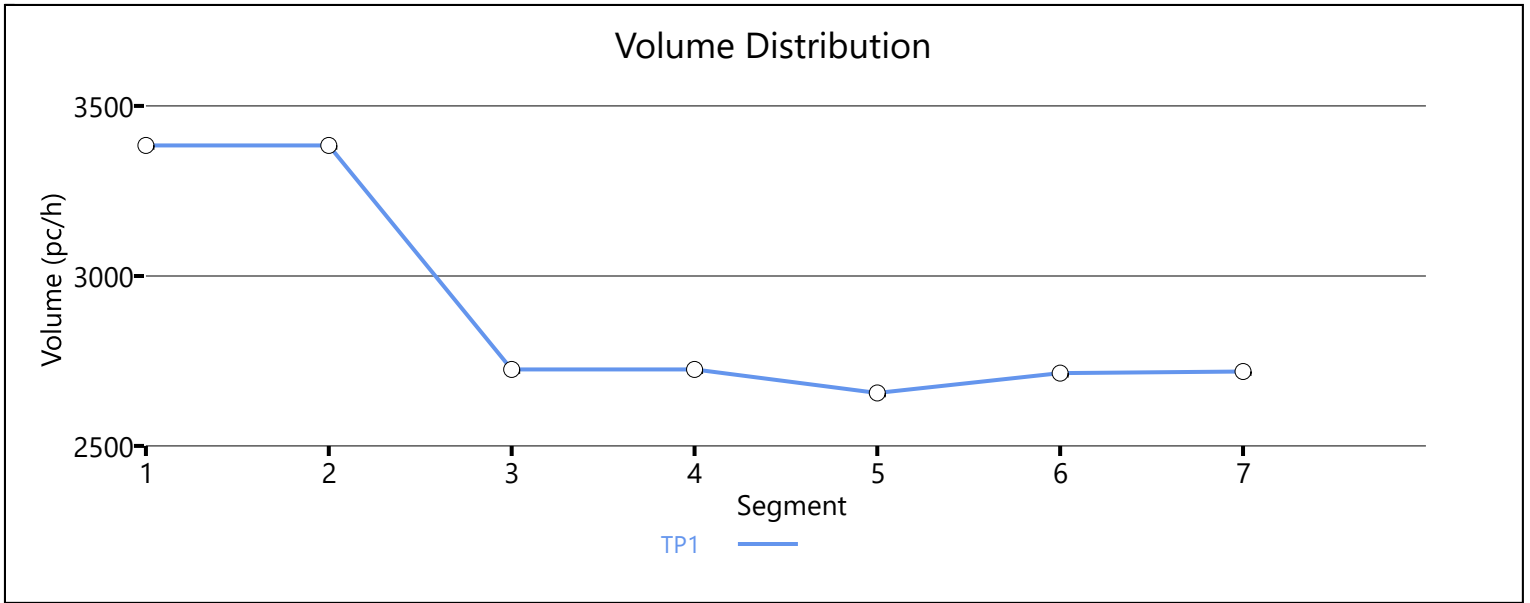
Facility Overall Results

Space Mean Speed, mi/h	66.4	Density, veh/mi/ln	19.3
Average Travel Time, min	2.70	Density, pc/mi/ln	22.6

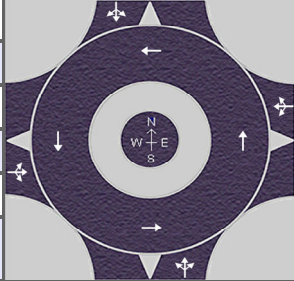
Messages

Comments

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HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps/Airport Rd.	
Date Performed	1/5/2022				N/S Street Name		SH 74	
Analysis Year	2021				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Existing Conditions				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	10	5	25	0	15	25	15	0	270	90	35	0	10	65	25
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	12	6	30	0	18	30	18	0	320	107	41	0	12	77	30
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

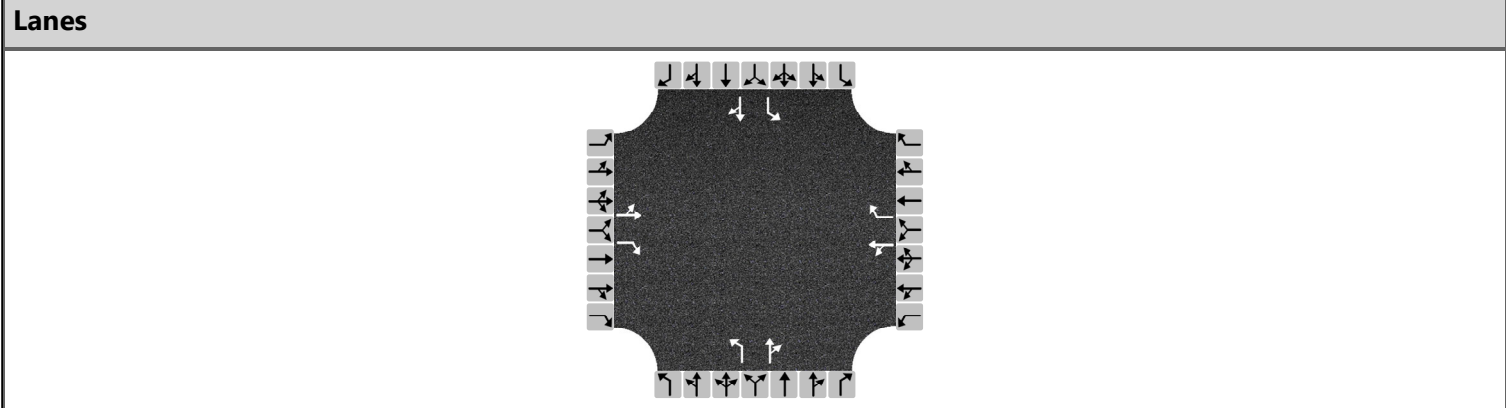
Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		48			66			468			119		
Entry Volume, veh/h		44			61			429			109		
Circulating Flow (v _c), pc/h		107			439			30			368		
Exiting Flow (v _{ex}), pc/h		59			380			137			125		
Capacity (C _{PCE}), pc/h		1237			882			1338			948		
Capacity (c), veh/h		1135			809			1228			870		
v/c Ratio (x)		0.04			0.07			0.35			0.13		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.5			5.2			6.2			5.4		
Lane LOS		A			A			A			A		
95% Queue, veh		0.1			0.2			1.6			0.4		
Approach Delay, s/veh		3.5			5.2			6.2			5.4		
Approach LOS		A			A			A			A		
Intersection Delay, s/veh LOS	5.8						A						

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps & SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	W. Frontage Rd/SB Ramps
Analysis Year	2023	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Existing Conditions		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	100	25	475	10	5	40	35	255	5	20	60	25
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R		LT	R		L	TR		L	TR	
Flow Rate, v (veh/h)	136	516		16	43		38	283		22	92	
Percent Heavy Vehicles	9	9		9	9		9	9		9	9	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20		3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.121	0.459		0.014	0.039		0.034	0.251		0.019	0.082	
Final Departure Headway, hd (s)	6.50	5.40		7.22	6.19		7.15	6.63		7.49	6.79	
Final Degree of Utilization, x	0.245	0.775		0.033	0.075		0.076	0.521		0.045	0.174	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, ts (s)	4.20	3.10		4.92	3.89		4.85	4.33		5.19	4.49	

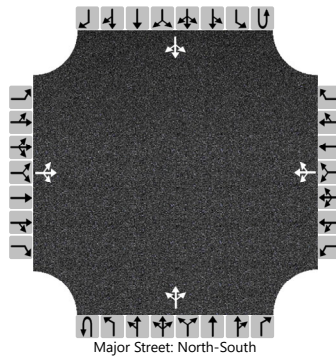
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	136	516		16	43		38	283		22	92	
Capacity	554	666		498	582		504	543		480	530	
95% Queue Length, Q ₉₅ (veh)	1.0	7.4		0.1	0.2		0.2	3.0		0.1	0.6	
Control Delay (s/veh)	11.3	24.2		10.2	9.4		10.4	16.3		10.5	10.9	
Level of Service, LOS	B	C		B	A		B	C		B	B	
Approach Delay (s/veh)	21.5			9.6			15.6			10.8		
Approach LOS	C			A			C			B		
Intersection Delay, s/veh LOS	18.2						C					

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps & SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/6/2022			East/West Street	NB Ramps/Airport Rd		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Existing Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		30	5	30		15	25	5		645	140	40		5	60	25
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

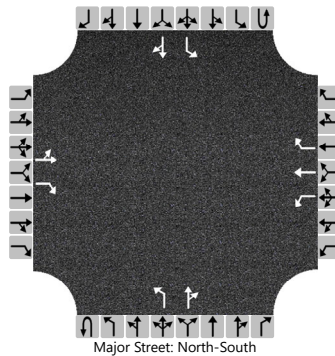
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			71				49			701				5		
Capacity, c (veh/h)			26				36			1459				1336		
v/c Ratio			2.71				1.35			0.48				0.00		
95% Queue Length, Q ₉₅ (veh)			8.6				5.2			2.7				0.0		
Control Delay (s/veh)			1088.9				443.0			9.7				7.7		
Level of Service (LOS)			F				F			A				A		
Approach Delay (s/veh)	1088.9				443.0				8.8				0.5			
Approach LOS	F				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	1/5/2022			East/West Street	W. Frontage/SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Existing Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		1	1	1	0	1	1	0	0	1	1	0
Configuration		LT		R		L	T	R		L		TR		L		TR
Volume (veh/h)		125	30	275		15	5	45		95	655	15		25	50	30
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized	No				No											
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

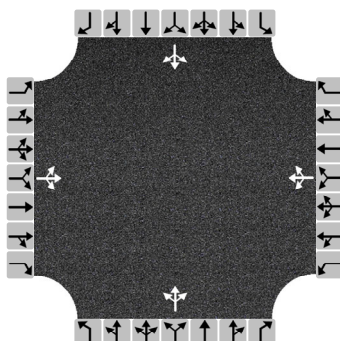
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		168		299		16	5	49		103				27		
Capacity, c (veh/h)		133		969		73	172	400		1466				844		
v/c Ratio		1.26		0.31		0.22	0.03	0.12		0.07				0.03		
95% Queue Length, Q ₉₅ (veh)		10.4		1.3		0.8	0.1	0.4		0.2				0.1		
Control Delay (s/veh)		228.5		10.4		68.0	26.6	15.2		7.6				9.4		
Level of Service (LOS)		F		B		F	D	C		A				A		
Approach Delay (s/veh)	89.0				28.3				0.9				2.2			
Approach LOS	F				D											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps & SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/6/2022	East/West Street	NB Ramps/Airport Rd
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Existing Conditions		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	30	5	30	15	25	5	645	140	40	5	60	25
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	71			49			897			98		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

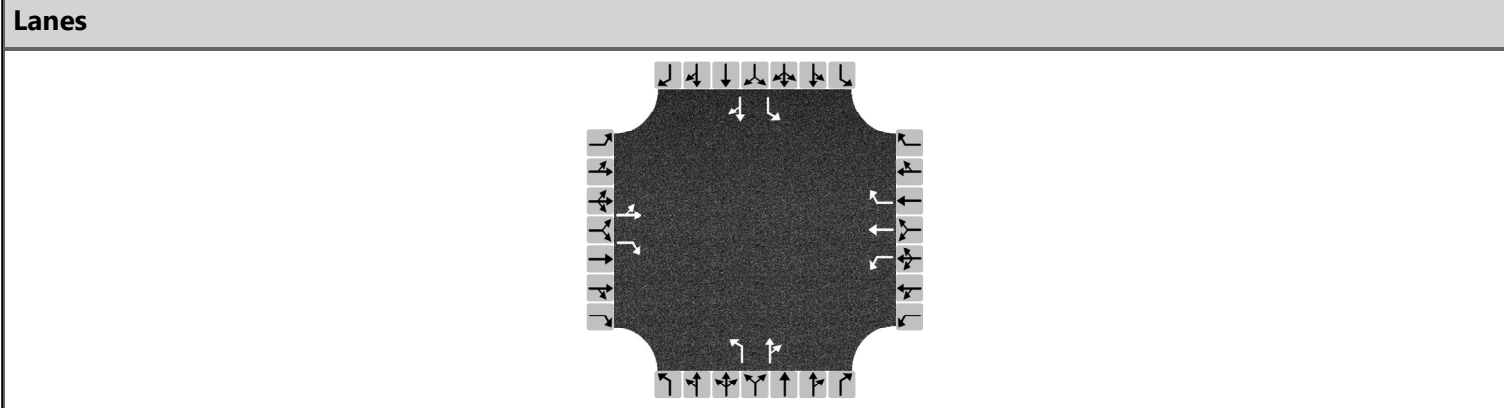
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.063			0.043			0.797			0.087		
Final Departure Headway, hd (s)	6.03			6.26			4.70			5.15		
Final Degree of Utilization, x	0.118			0.085			1.170			0.140		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.03			4.26			2.70			3.15		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	71			49			897			98		
Capacity	597			575			767			698		
95% Queue Length, Q ₉₅ (veh)	0.4			0.3			28.2			0.5		
Control Delay (s/veh)	9.8			9.8			108.6			9.0		
Level of Service, LOS	A			A			F			A		
Approach Delay (s/veh)	9.8			9.8			108.6			9.0		
Approach LOS	A			A			F			A		
Intersection Delay, s/veh LOS	89.2						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/13/2022	East/West Street	W. Frontage/SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Existing Conditions		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	125	30	275	15	5	45	95	655	15	25	50	30
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R		L	T	R	L	TR		L	TR	
Flow Rate, v (veh/h)	168	299		16	5	49	103	728		27	87	
Percent Heavy Vehicles	9	9		9	9	9	9	9		9	9	

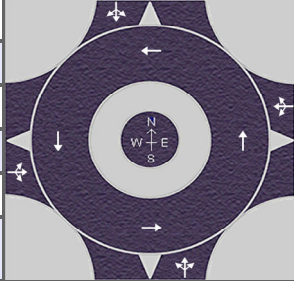
Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20		3.20	3.20	3.20	3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.150	0.266		0.014	0.005	0.043	0.092	0.647		0.024	0.077	
Final Departure Headway, hd (s)	7.88	6.78		9.05	8.55	7.86	7.47	6.95		8.73	7.97	
Final Degree of Utilization, x	0.369	0.563		0.041	0.013	0.107	0.214	1.406		0.066	0.193	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3		2.3	2.3	
Service Time, ts (s)	5.58	4.48		6.75	6.25	5.56	5.17	4.65		6.43	5.67	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	168	299		16	5	49	103	728		27	87	
Capacity	457	531		398	421	458	482	518		412	452	
95% Queue Length, Q ₉₅ (veh)	1.7	3.5		0.1	0.0	0.4	0.8	34.2		0.2	0.7	
Control Delay (s/veh)	15.1	17.9		12.1	11.4	11.5	12.2	213.7		12.0	12.6	
Level of Service, LOS	C	C		B	B	B	B	F		B	B	
Approach Delay (s/veh)	16.9			11.6			188.6			12.4		
Approach LOS	C			B			F			B		
Intersection Delay, s/veh LOS	112.6						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps/Airport Rd.	
Date Performed	4/27/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Existing Conditions				Jurisdiction		McClain County	

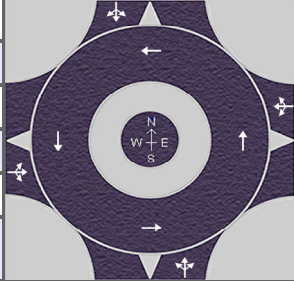
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	30	5	30	0	15	25	5	0	645	140	40	0	5	60	25
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v_{pce}), pc/h	0	36	6	36	0	18	30	6	0	764	166	47	0	6	71	30
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v_e), pc/h		78			54			977			107		
Entry Volume, veh/h		72			50			896			98		
Circulating Flow (v_c), pc/h		95			966			48			812		
Exiting Flow (v_{ex}), pc/h		59			824			208			125		
Capacity (C_{pce}), pc/h		1253			515			1314			603		
Capacity (c), veh/h		1149			473			1206			553		
v/c Ratio (x)		0.06			0.10			0.74			0.18		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.7			9.0			14.8			8.8		
Lane LOS		A			A			B			A		
95% Queue, veh		0.2			0.3			7.3			0.6		
Approach Delay, s/veh		3.7			9.0			14.8			8.8		
Approach LOS		A			A			B			A		
Intersection Delay, s/veh LOS	13.3						B						

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps and SH74	
Agency or Co.	ODOT				E/W Street Name		W. Frontage/SB Ramps	
Date Performed	5/13/2022				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Existing Conditions				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	125	30	275	0	15	5	45	0	95	655	15	0	25	50	30
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v_{pce}), pc/h	0	148	36	326	0	18	6	53	0	113	776	18	0	30	59	36
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v_e), pc/h		510			77			907			125		
Entry Volume, veh/h		468			71			832			115		
Circulating Flow (v_c), pc/h		107			1037			214			137		
Exiting Flow (v_{ex}), pc/h		84			155			977			403		
Capacity (C_{pce}), pc/h		1237			479			1109			1200		
Capacity (c), veh/h		1135			440			1018			1101		
v/c Ratio (x)		0.41			0.16			0.82			0.10		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		7.4			10.6			21.2			4.2		
Lane LOS		A			B			C			A		
95% Queue, veh		2.1			0.6			9.5			0.3		
Approach Delay, s/veh		7.4			10.6			21.2			4.2		
Approach LOS		A			B			C			A		
Intersection Delay, s/veh LOS	15.1						C						

HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	1/4/2022
Agency	ODOT	Analysis Year	2050
Jurisdiction	McClain County	Time Period Analyzed	135 NB-AM Peak Hour-Existing Configuration
Project Description	I-35 & SH-74 Interchange Alternatives Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.64		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 NB South Limits	5280	3
2	Diverge	Diverge	SH 74 Exit Ramp	1500	3
3	Basic	Basic	Between SH 74 Ramps	400	3
4	Merge	Merge	SH 74 Entrance Ramp	1500	3
5	Basic	Basic	I35 NB North Limits	5280	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.94		0.855		4996		7158		0.70		66.6		25.0		C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	4996	75	7200	2000	0.69	0.04	66.6	60.9	25.0	24.9	C

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.94		0.855		4915		7185		0.68		67.4		24.3		C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	5721	806	7200	2000	0.79	0.40	64.5	62.0	29.6	25.8	C

Segment 5: Basic

Time	PHF		fHV		Flow Rate		Capacity		d/c		Speed		Density		LOS
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Period			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.94	0.855	5780	7131	0.81	62.6	30.8	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	64.7	27.7	23.7	2.50	D

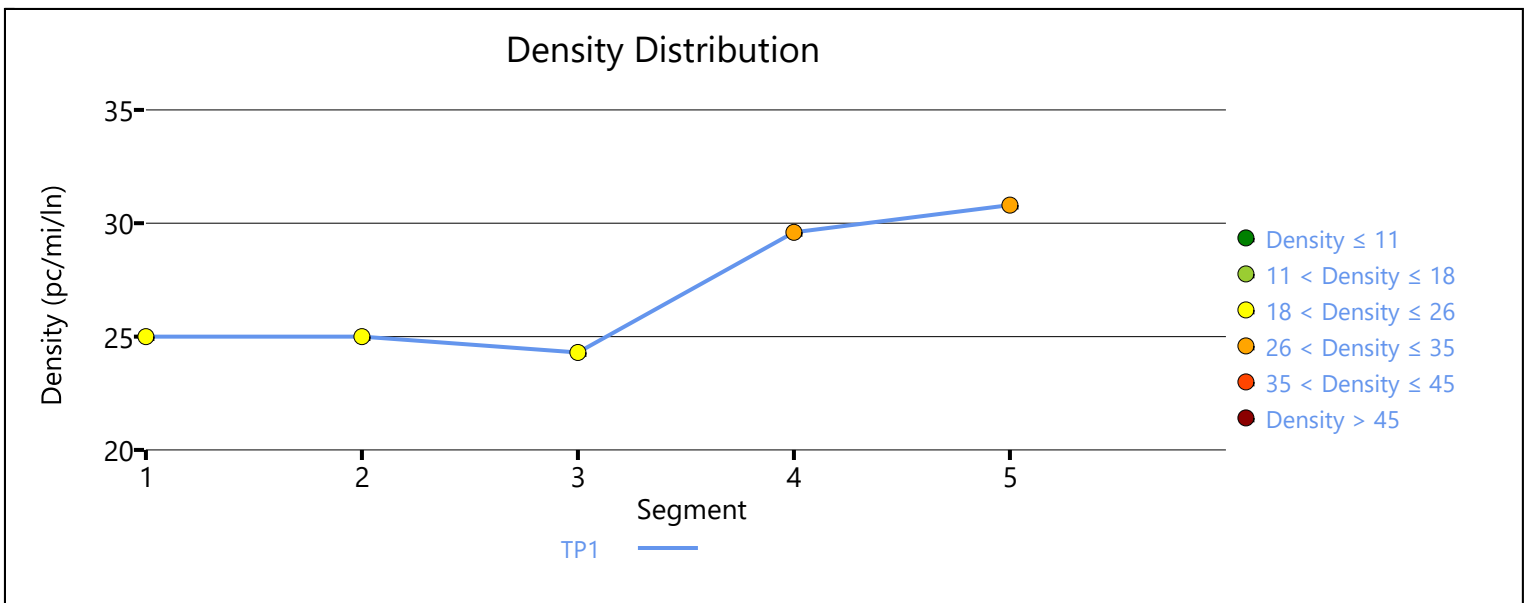
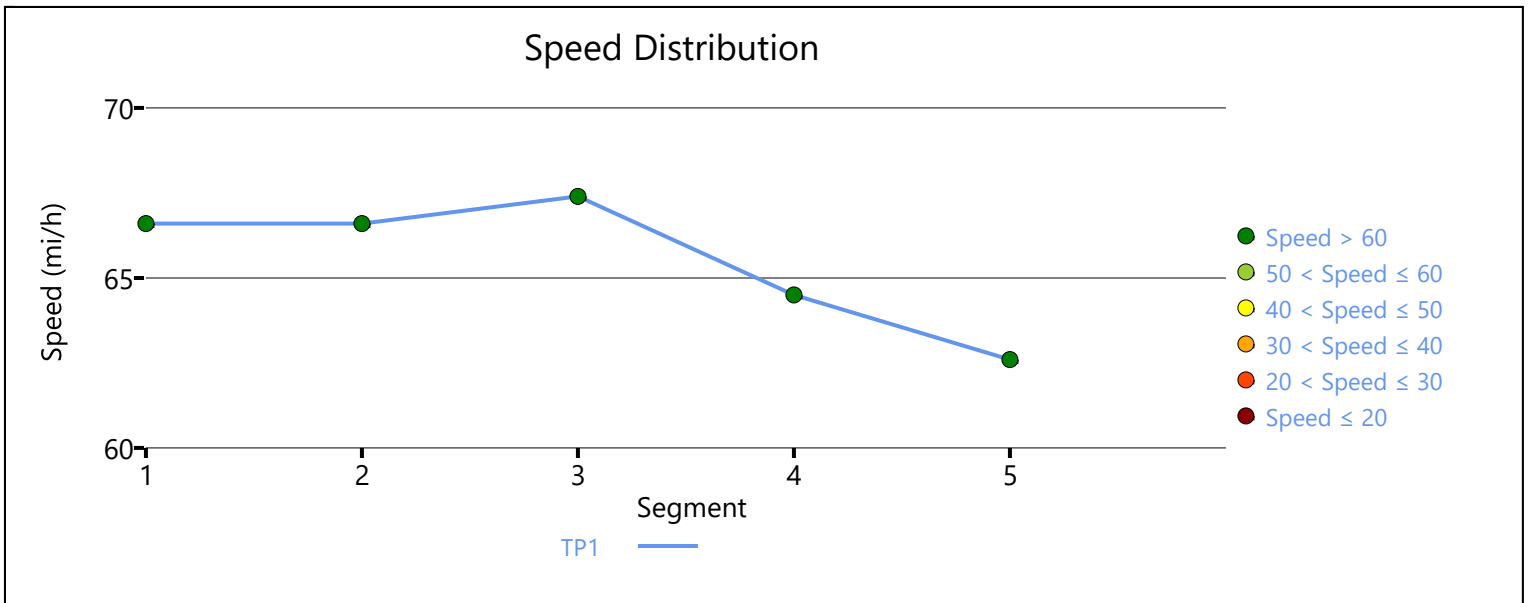
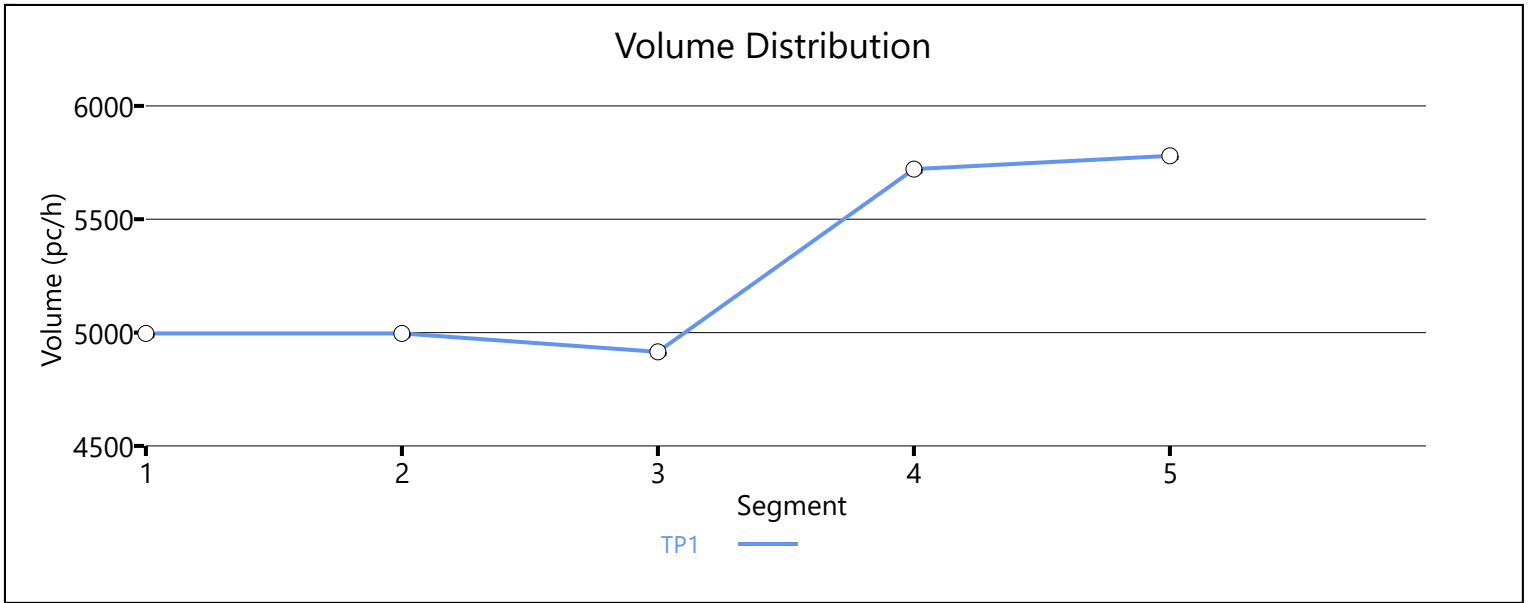
Facility Overall Results

Space Mean Speed, mi/h	64.7	Density, veh/mi/ln	23.7
Average Travel Time, min	2.50	Density, pc/mi/ln	27.7

Messages

Comments

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HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	1/3/2022
Agency	ODOT	Analysis Year	2050
Jurisdiction	McClain County	Time Period Analyzed	I35 SB-AM Peak Hour-Existing Configuration
Project Description	I-35 & SH-74 Interchange Alternatives Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.03		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 SB North Limits	5280	3
2	Diverge	Diverge	Slip Ramp	1500	3
3	Basic	Basic	SH 74 Underpass	180	3
4	Diverge	Diverge	SH 74 Exit Ramp	1500	3
5	Basic	Basic	Between SH 74 Ramps	740	3
6	Merge	Merge	SH 74 Entrance Ramp	1500	3
7	Basic	Basic	I35 SB South Limits	5280	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	2121	7200	0.29	72.2	9.8	A

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	2121	383	7200	2000	0.29	0.19	62.4	58.2	11.3	13.8	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	1711	7200	0.24	69.4	7.9	A

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	1711	75	7200	2000	0.24	0.04	63.2	58.8	9.0	8.6	A

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	1630	7200	0.23	70.0	7.6	A

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	1711	81	7200	2000	0.24	0.04	65.9	63.2	8.7	8.8	A

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	1717	7200	0.24	71.8	8.0	A

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.4	9.0	7.7	2.60	A

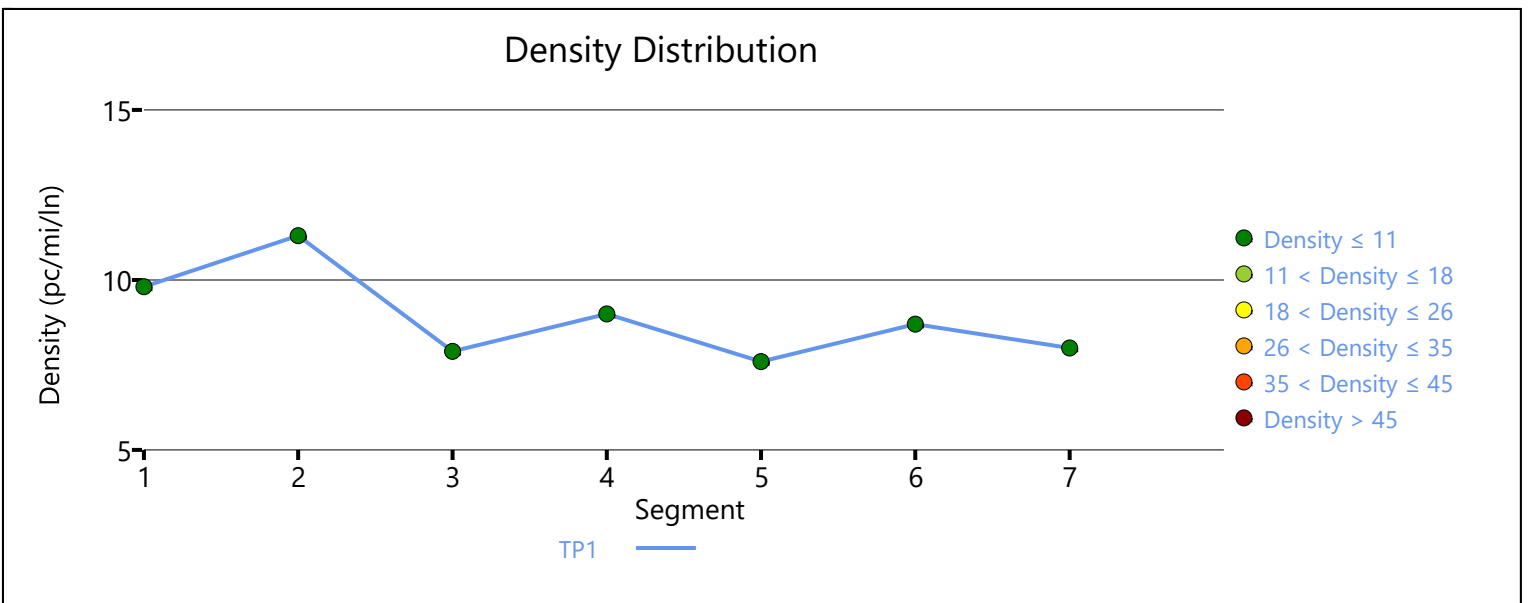
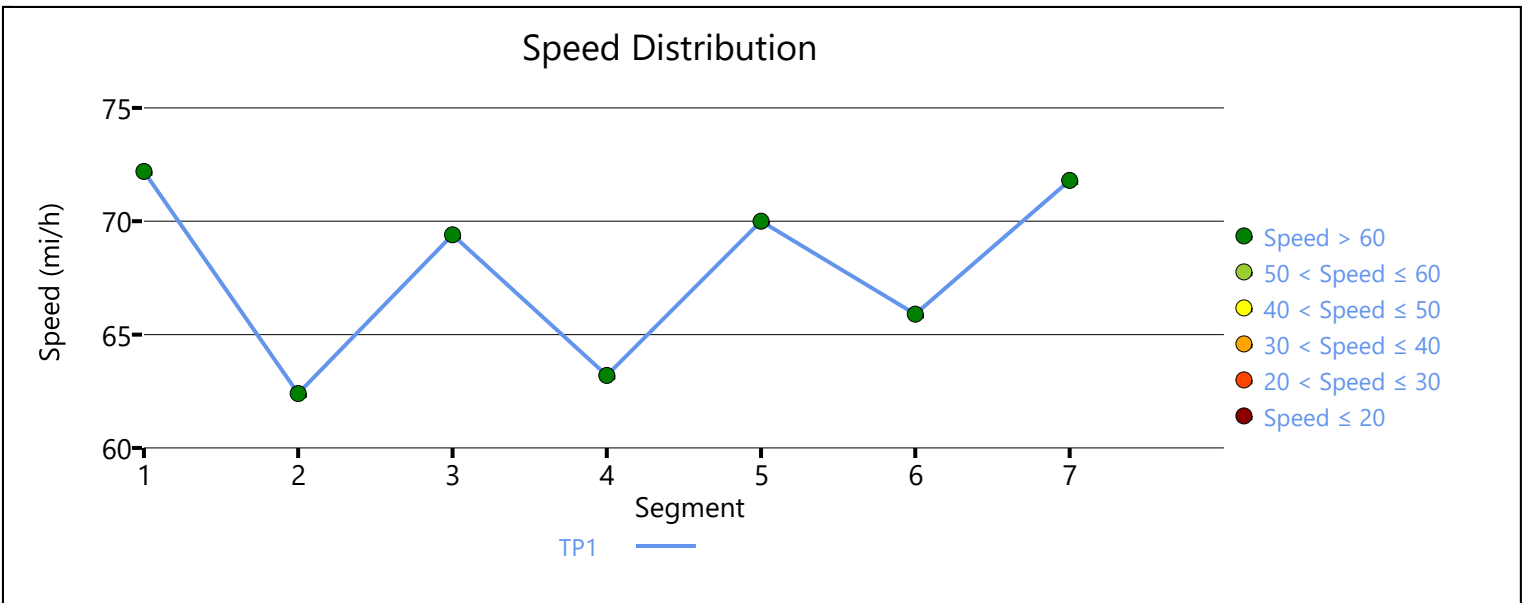
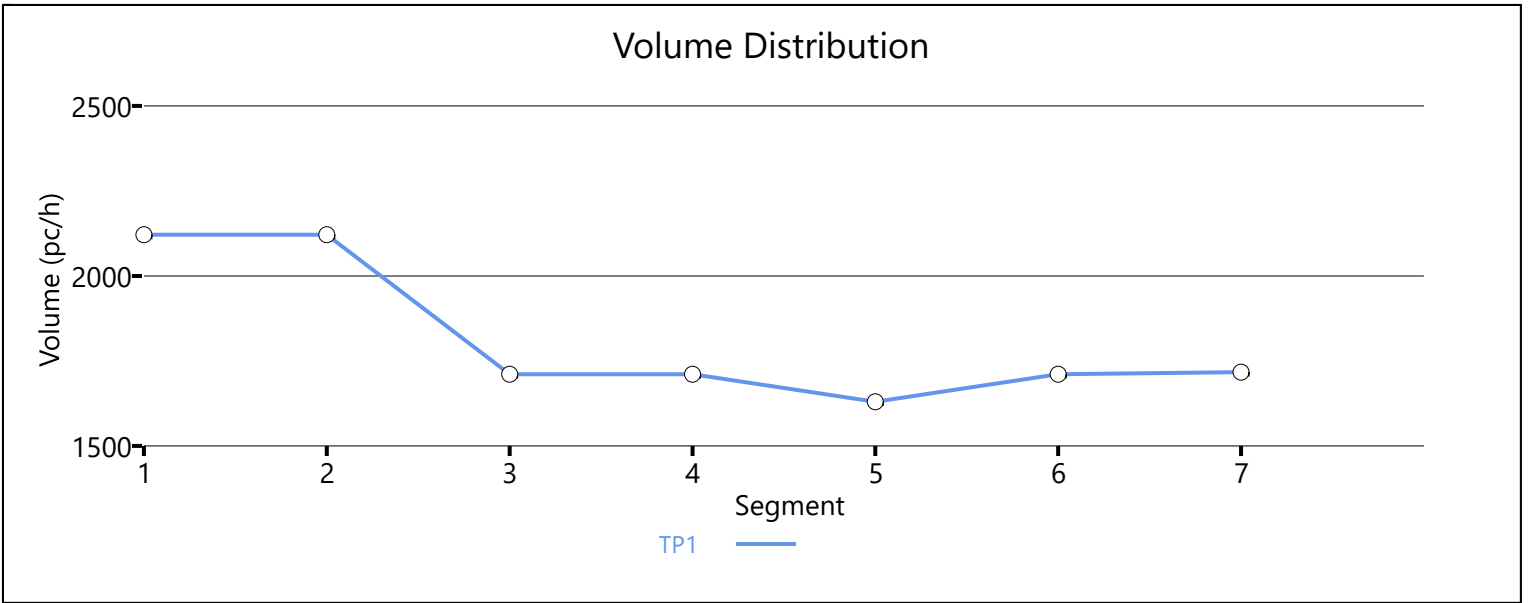
Facility Overall Results

Space Mean Speed, mi/h	69.4	Density, veh/mi/ln	7.7
Average Travel Time, min	2.60	Density, pc/mi/ln	9.0

Messages

Comments

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HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	4/25/2022
Agency	ODOT	Analysis Year	2050
Jurisdiction	McClain County	Time Period Analyzed	I35 NB-AM Peak Hour- Alternatives 1-5
Project Description	I-35 & SH-74 Interchange Alternatives Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.64		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 NB South Limits	5280	3
2	Diverge	Diverge	SH 74 Exit Ramp	1500	3
3	Basic	Basic	Between SH 74 Ramps	360	3
4	Merge	Merge	SH 74 Entrance Ramp	1500	3
5	Basic	Basic	I35 NB North Limits	5280	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	4996	7158	0.70	66.6	25.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	4996	75	7200	2000	0.69	0.04	66.6	60.9	25.0	20.7	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	4915	7185	0.68	67.4	24.3	C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	5721	806	7200	2000	0.79	0.40	64.5	62.0	29.6	25.8	C

Segment 5: Basic

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS
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Period			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.94	0.855	5780	7131	0.81	62.6	30.8	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	64.7	27.7	23.7	2.40	D

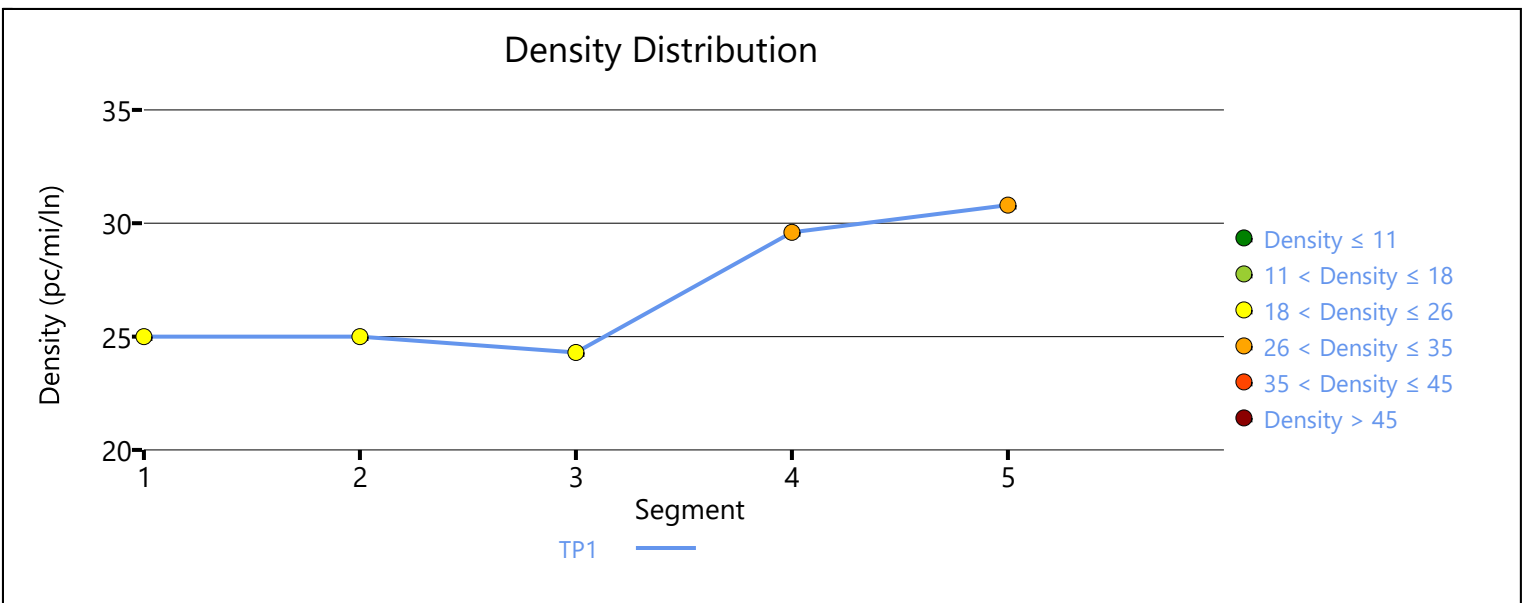
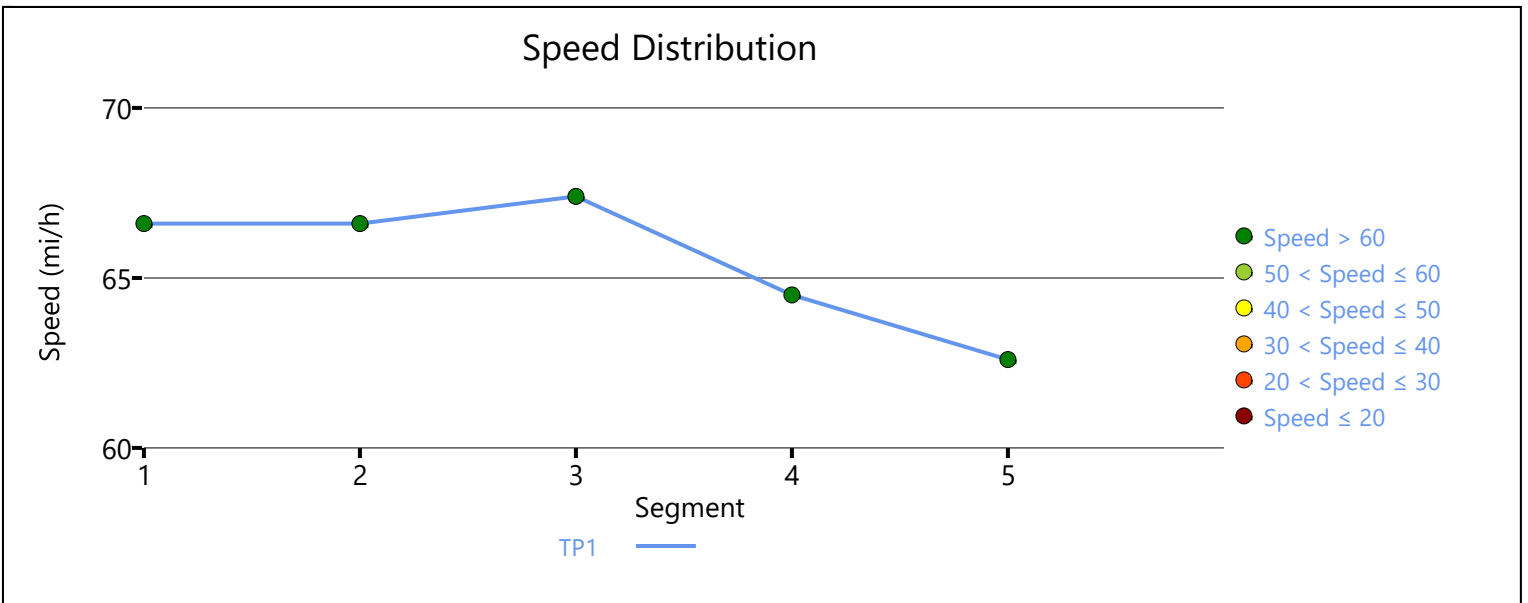
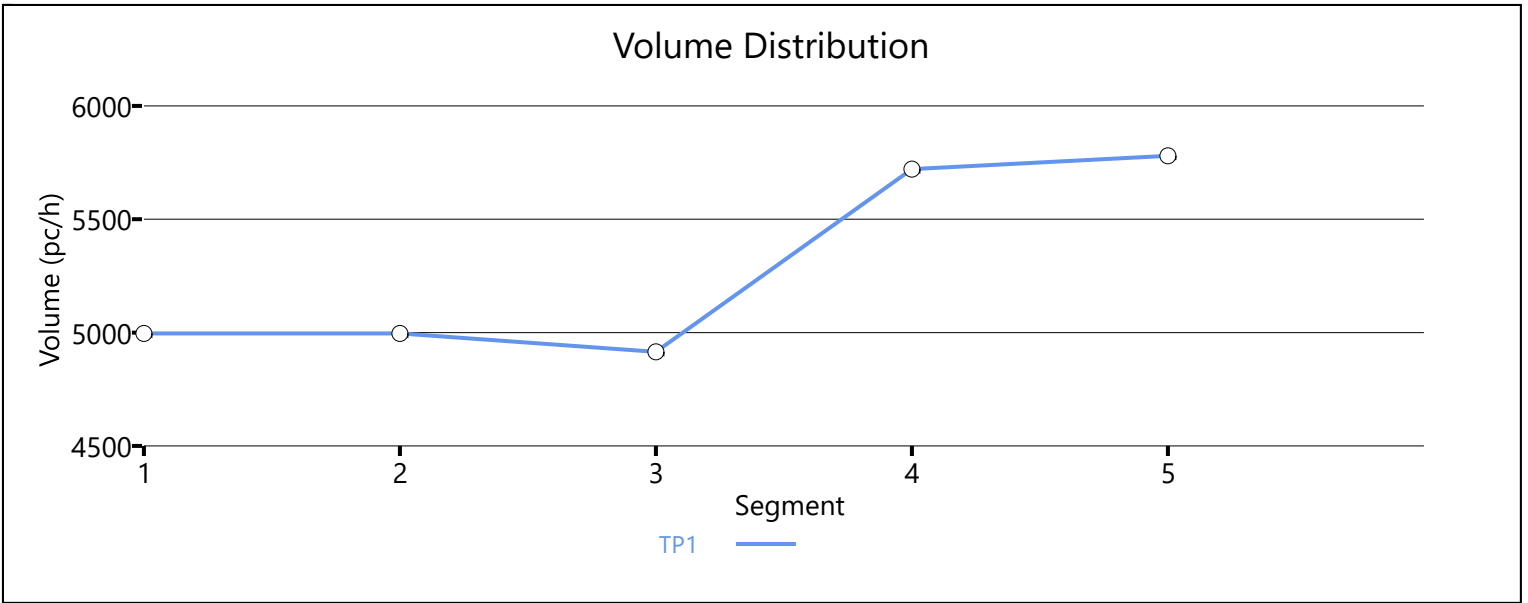
Facility Overall Results

Space Mean Speed, mi/h	64.7	Density, veh/mi/ln	23.7
Average Travel Time, min	2.40	Density, pc/mi/ln	27.7

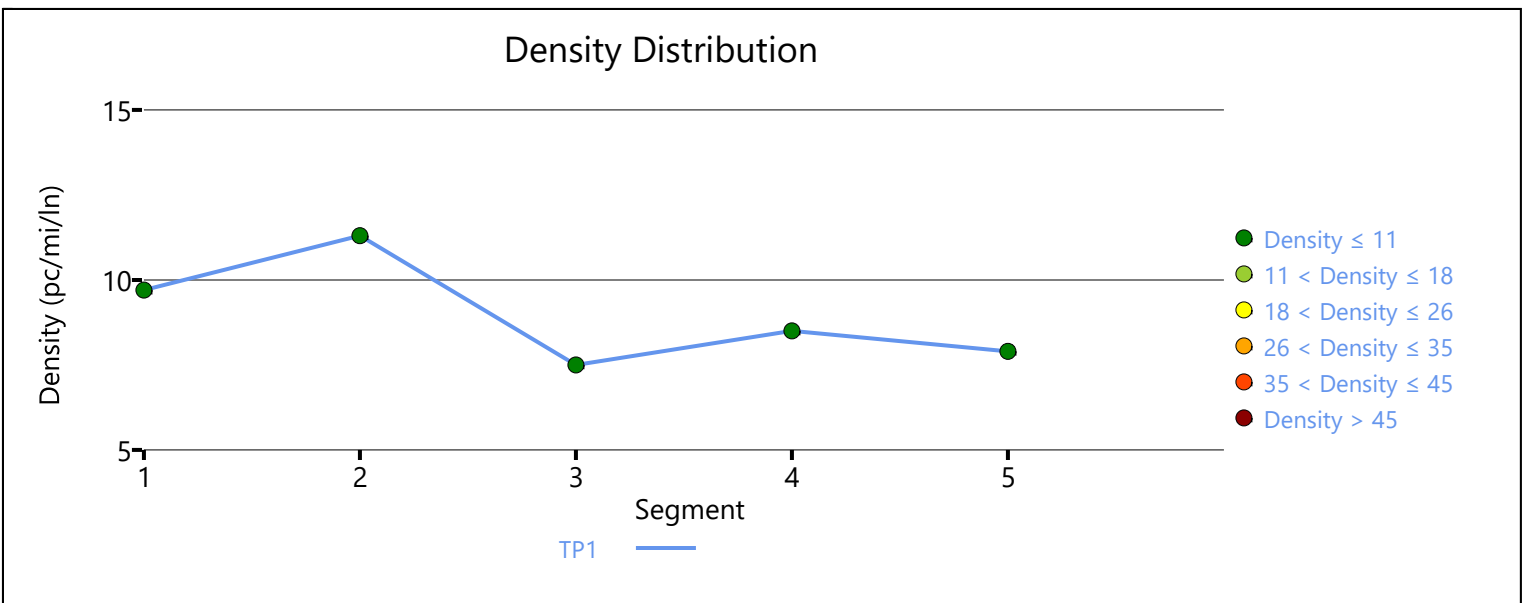
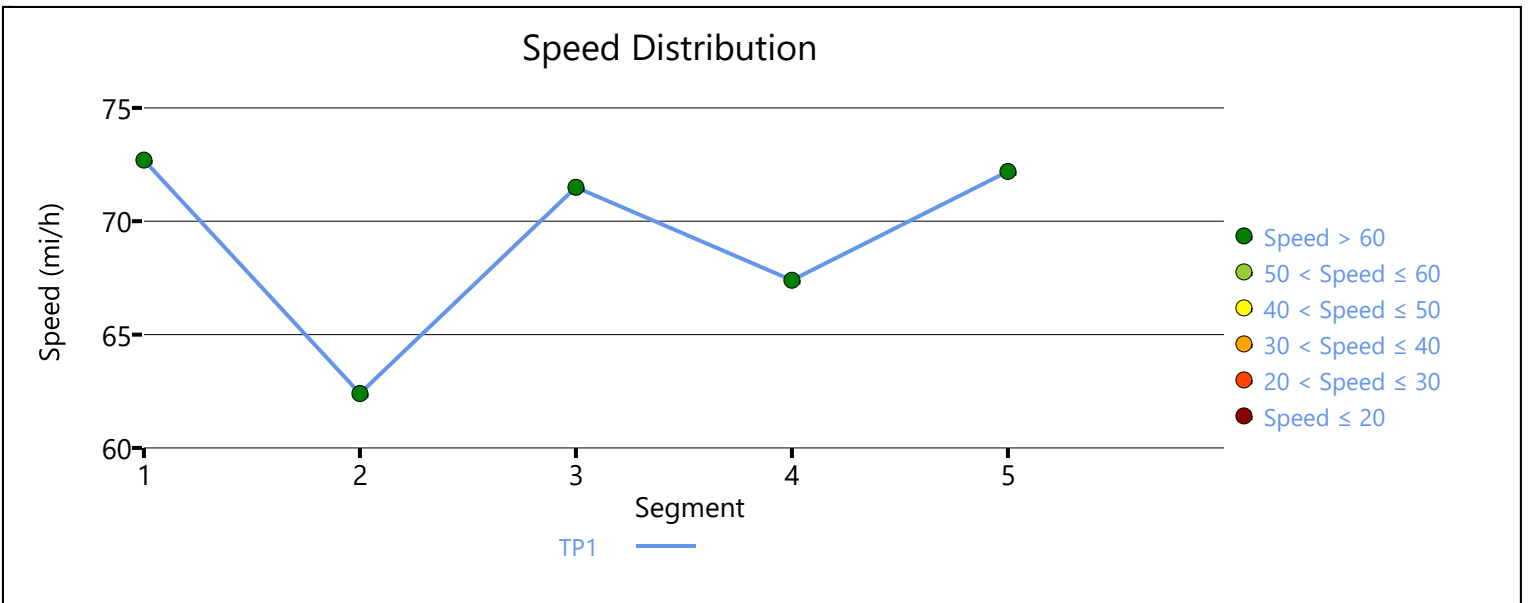
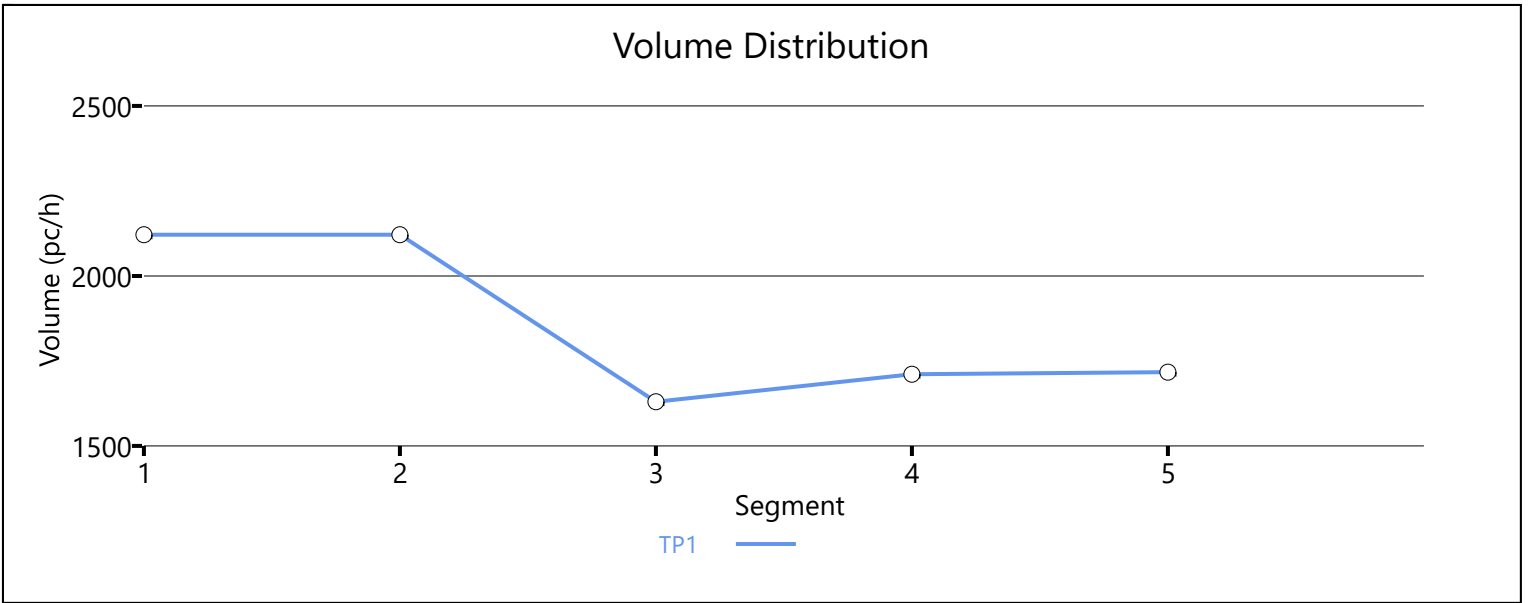
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Comments

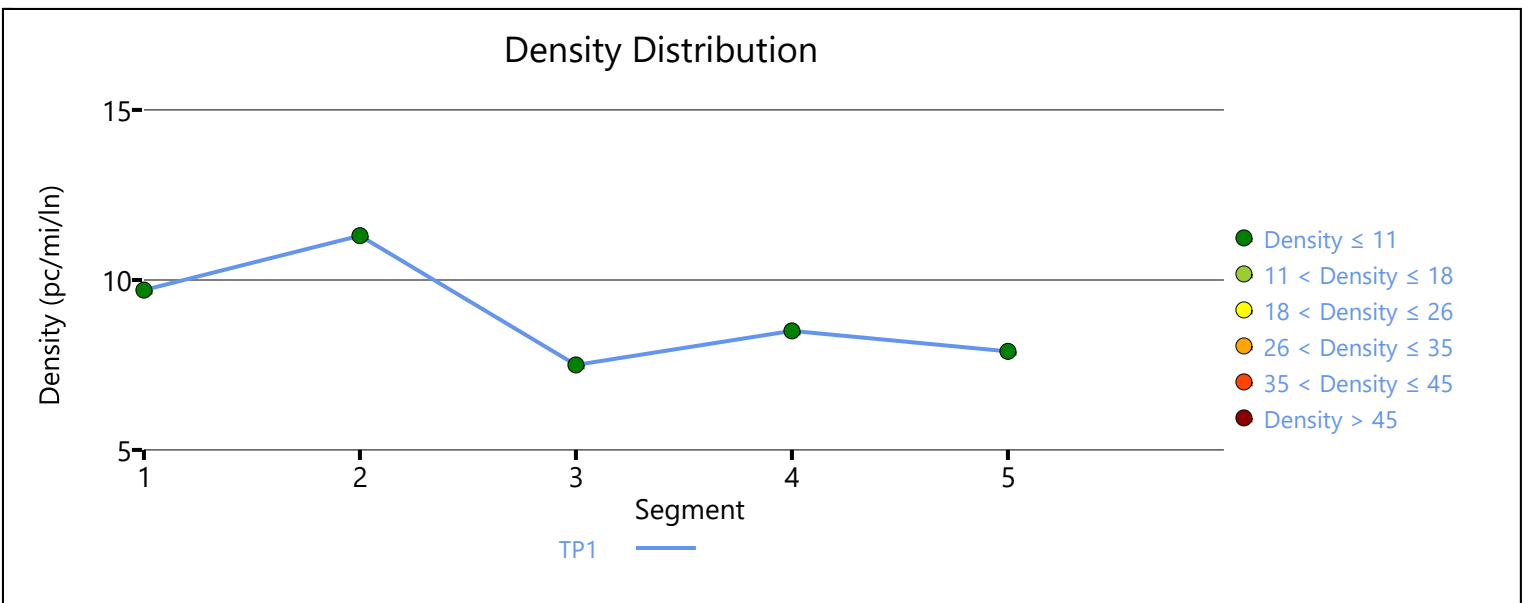
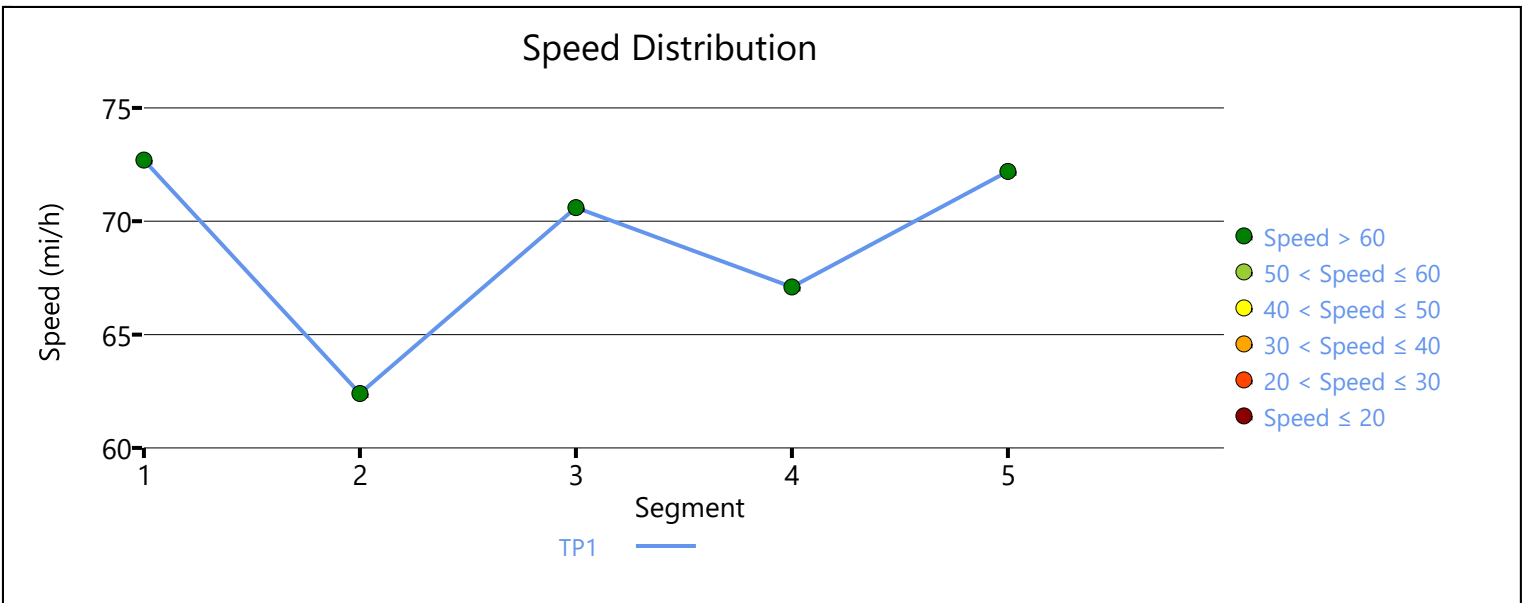
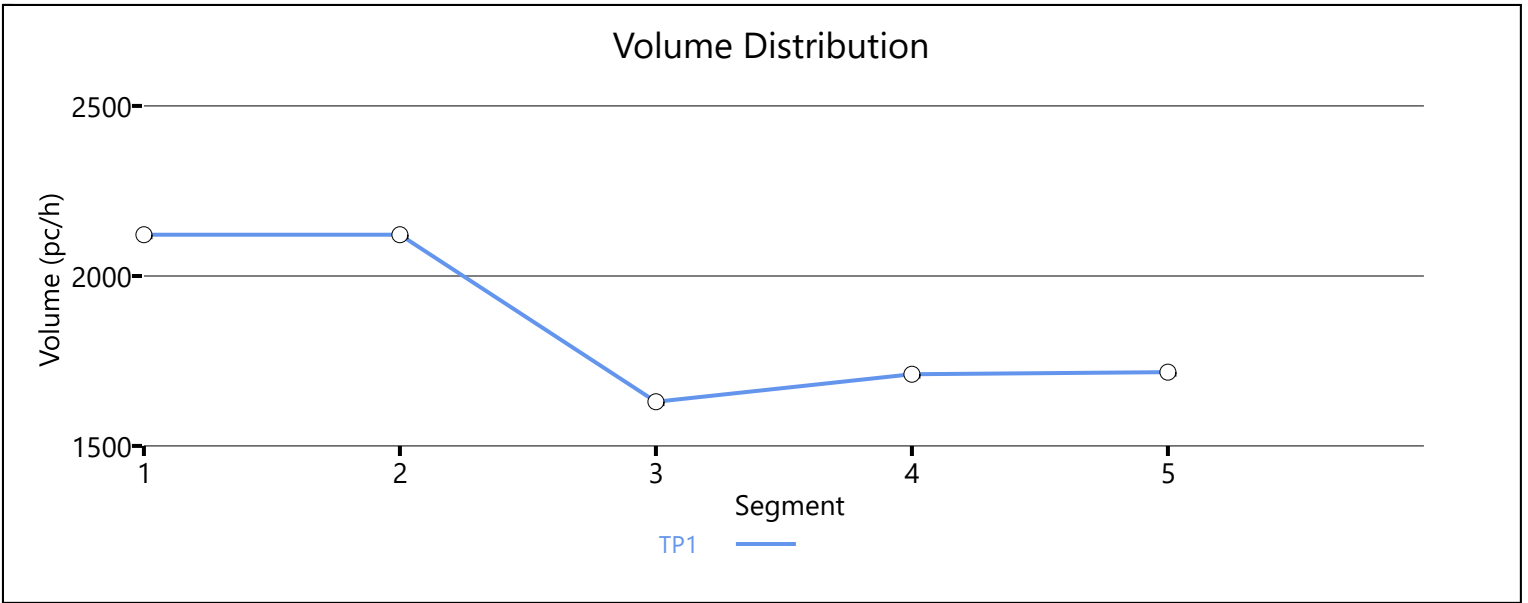
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1	0.94	0.94	0.855	0.917	1711	75	7200	2000	0.24	0.04	63.8	59.3	8.9	3.0	A	
Segment 5: Basic																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
1	0.94		0.855		1630		7200		0.23		70.8		7.6		A	
Segment 6: Merge																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.		
1	0.94	0.94	0.855	0.917	1711	81	7200	2000	0.24	0.04	67.4	65.1	8.5	5.2	A	
Segment 7: Basic																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
1	0.94		0.855		1717		7200		0.24		71.8		8.0		A	
Facility Analysis Results																
AP	VMT veh-mi/AP		VMT-Demand veh-mi/AP		VHD veh-h/AP		Total Delay Cost \$/AP		Speed mi/h		Density pc/mi/ln		Density veh/mi/ln		TT min	LOS
1	1368		1281		0.62		15.56		69.5		8.9		7.6		3.00	A
Facility Overall Results																
Space Mean Speed, mi/h					69.5				Average Density, veh/mi/ln				7.6			
Average Travel Time, min					3.00				Average Density, pc/mi/ln				8.9			
Total VMT, veh-mi					1368				Total VHD, veh-h				0.62			
Vehicle Value of Time (VOT), \$/h					25.00				Total Delay Cost, \$				15.56			

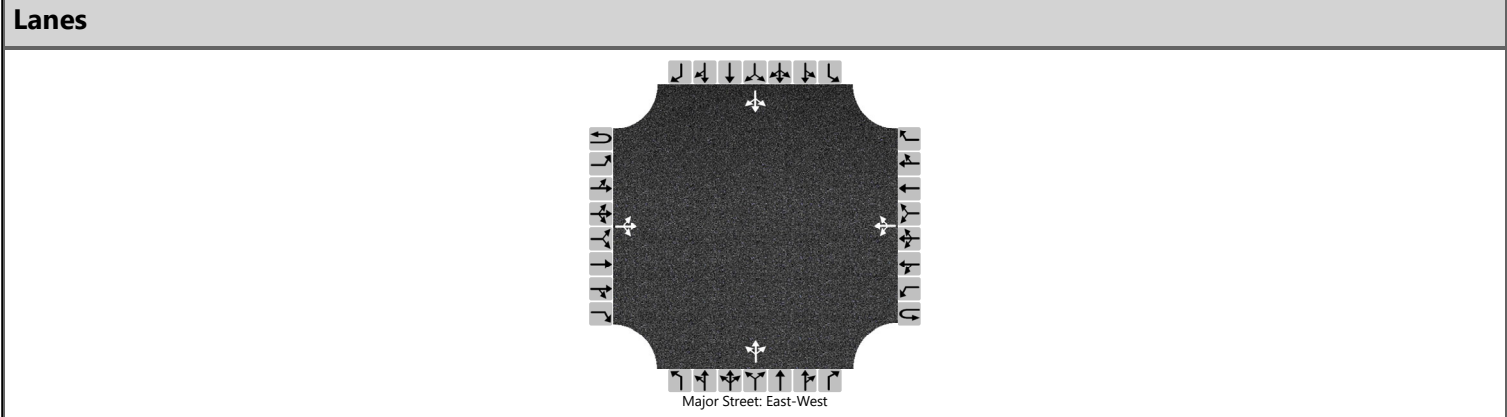


1	0.94	0.94	0.855	0.917	1711	75	7200	2000	0.24	0.04	63.8	59.3	8.9	3.8	A	
Segment 5: Basic																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
1	0.94		0.855		1630		7200		0.23		70.0		7.6		A	
Segment 6: Merge																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.		
1	0.94	0.94	0.855	0.917	1711	81	7200	2000	0.24	0.04	67.1	64.7	8.5	6.3	A	
Segment 7: Basic																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
1	0.94		0.855		1717		7200		0.24		72.2		7.9		A	
Facility Analysis Results																
AP	VMT veh-mi/AP		VMT-Demand veh-mi/AP		VHD veh-h/AP		Total Delay Cost \$/AP		Speed mi/h		Density pc/mi/ln		Density veh/mi/ln		TT min	LOS
1	1369		1282		0.61		15.31		69.5		8.9		7.6		3.00	A
Facility Overall Results																
Space Mean Speed, mi/h					69.5				Average Density, veh/mi/ln				7.6			
Average Travel Time, min					3.00				Average Density, pc/mi/ln				8.9			
Total VMT, veh-mi					1369				Total VHD, veh-h				0.61			
Vehicle Value of Time (VOT), \$/h					25.00				Total Delay Cost, \$				15.31			



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/13/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 1						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		30	0	35		2	0	2		670	143	2		2	63	25
Percent Heavy Vehicles (%)		9				9				9	9	9		9	9	9
Proportion Time Blocked																
Percent Grade (%)									2				2			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.19				4.19				7.59	6.99	6.49		7.59	6.99	6.49
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.28				2.28				3.58	4.08	3.38		3.58	4.08	3.38

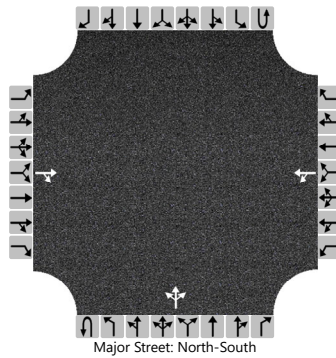
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		33				2					886					98		
Capacity, c (veh/h)		1575				1528					724					807		
v/c Ratio		0.02				0.00					1.22					0.12		
95% Queue Length, Q ₉₅ (veh)		0.1				0.0					30.9					0.4		
Control Delay (s/veh)		7.3				7.4					132.5					10.1		
Level of Service (LOS)		A				A					F					B		
Approach Delay (s/veh)		3.5				3.7					132.5				10.1			
Approach LOS											F				B			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	Airport Rd. and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/27/2022			East/West Street	Airport Rd.		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 1						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	0	0
Configuration				TR		LT					LTR					
Volume (veh/h)			7	93		12	28			787	0	38				
Percent Heavy Vehicles (%)			9	9		9	9			9						
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)			6.5	7.1		7.1	6.5			5.3						
Critical Headway (sec)			6.99	7.39		7.59	6.99			5.39						
Base Follow-Up Headway (sec)			4.0	3.9		3.5	4.0			3.1						
Follow-Up Headway (sec)			4.08	3.98		3.58	4.08			3.18						

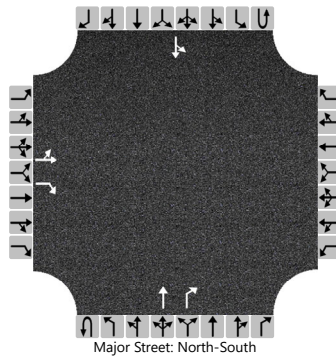
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			109	43					855							
Capacity, c (veh/h)			904	11					1132							
v/c Ratio			0.12	3.80					0.76							
95% Queue Length, Q ₉₅ (veh)			0.4	6.5					7.6							
Control Delay (s/veh)			9.5	1915.0					17.3							
Level of Service (LOS)			A	F					C							
Approach Delay (s/veh)	9.5				1915.0				17.1							
Approach LOS	A				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	I35 SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/27/2022			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 1						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	1		0	0	0		0	1	1		0	0	1	0
Configuration		LT		R							T	R		LT			
Volume (veh/h)		140	0	255							680	45			25	80	
Percent Heavy Vehicles (%)		9	9	9											9		
Proportion Time Blocked																	
Percent Grade (%)		2															
Right Turn Channelized		Yes									No						
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2											4.1		
Critical Headway (sec)		7.59	6.99	6.49											4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3											2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38											2.28		

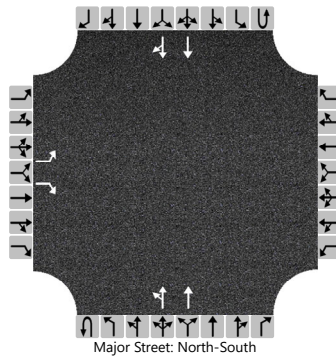
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		152		277											27			
Capacity, c (veh/h)		220		948											801			
v/c Ratio		0.69		0.29											0.03			
95% Queue Length, Q ₉₅ (veh)		4.4		1.2											0.1			
Control Delay (s/veh)		51.5		10.4											9.7			
Level of Service (LOS)		F		B											A			
Approach Delay (s/veh)		24.9													2.6			
Approach LOS		C																

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	W. Frontage Rd. and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/25/2022			East/West Street	W. Frontage Rd.		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 1						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		1	0	1		0	0	0	0	0	2	0	0	0	2	0	
Configuration		L		R						LT	T				T	TR	
Volume (veh/h)		55		40						95	670				300	35	
Percent Heavy Vehicles (%)		9		9						9							
Proportion Time Blocked																	
Percent Grade (%)		2															
Right Turn Channelized		No															
Median Type Storage		Undivided															

Critical and Follow-up Headways

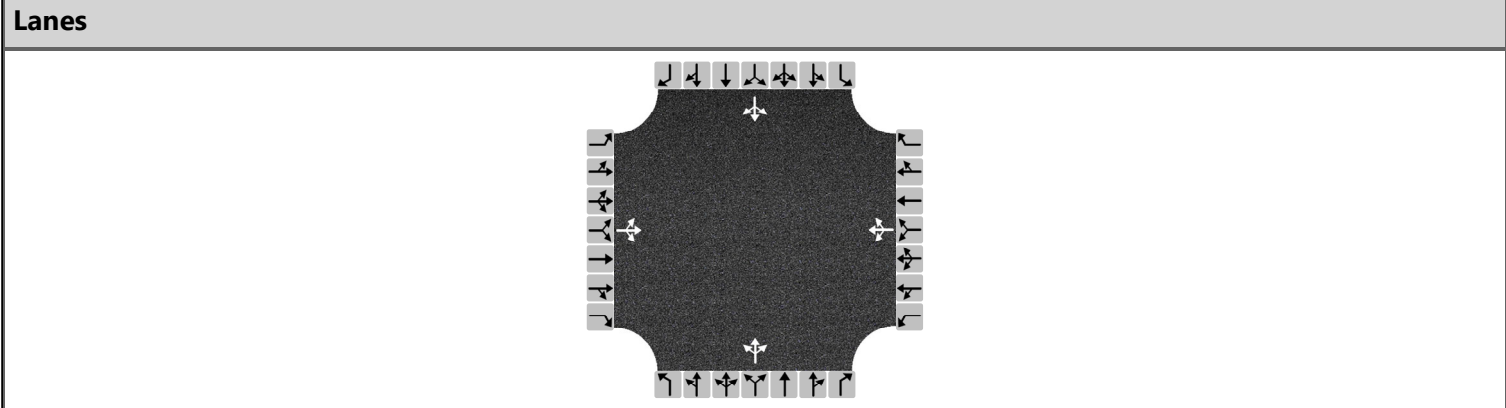
Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		7.38		7.28						4.28						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.59		3.39						2.29						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60		43						103						
Capacity, c (veh/h)		198		800						1142						
v/c Ratio		0.30		0.05						0.09						
95% Queue Length, Q ₉₅ (veh)		1.2		0.2						0.3						
Control Delay (s/veh)		30.8		9.8						8.5						
Level of Service (LOS)		D		A						A						
Approach Delay (s/veh)		21.9								1.5						
Approach LOS		C														

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/13/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 1		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	30	0	35	2	0	2	670	143	2	2	63	25
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	71			4			886			98		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

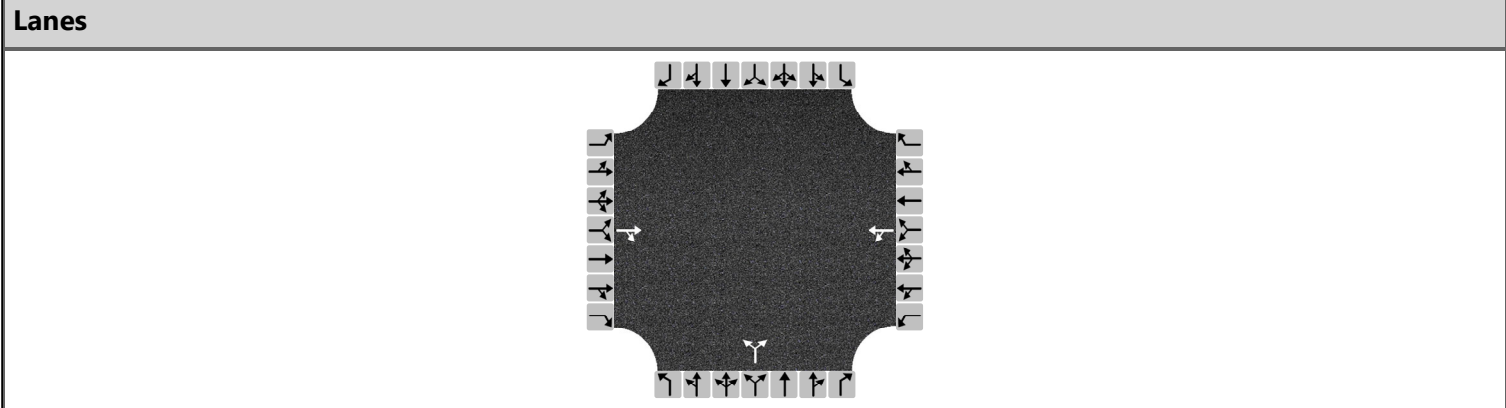
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.063			0.004			0.787			0.087		
Final Departure Headway, hd (s)	5.87			6.05			4.57			4.96		
Final Degree of Utilization, x	0.115			0.007			1.125			0.135		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.87			4.05			2.57			2.96		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	71			4			886			98		
Capacity	614			595			788			726		
95% Queue Length, Q ₉₅ (veh)	0.4			0.0			25.4			0.5		
Control Delay (s/veh)	9.6			9.1			91.4			8.7		
Level of Service, LOS	A			A			F			A		
Approach Delay (s/veh)	9.6			9.1			91.4			8.7		
Approach LOS	A			A			F			A		
Intersection Delay, s/veh LOS	77.9						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	Airport Rd and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	4/25/2022	East/West Street	Airport Rd
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 1		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume		7	93	12	28		787		38			
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	TR			LT			LR					
Flow Rate, v (veh/h)	109			43			897					
Percent Heavy Vehicles	9			9			2					

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20					
Initial Degree of Utilization, x	0.097			0.039			0.797					
Final Departure Headway, hd (s)	5.46			6.18			4.55					
Final Degree of Utilization, x	0.165			0.075			1.133					
Move-Up Time, m (s)	2.0			2.0			2.0					
Service Time, ts (s)	3.46			4.18			2.55					

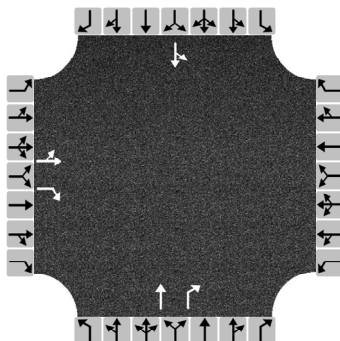
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	109			43			897					
Capacity	659			582			791					
95% Queue Length, Q ₉₅ (veh)	0.6			0.2			26.1					
Control Delay (s/veh)	9.5			9.7			94.2					
Level of Service, LOS	A			A			F					
Approach Delay (s/veh)	9.5			9.7			94.2					
Approach LOS	A			A			F					
Intersection Delay, s/veh LOS	82.0						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	I35 SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	4/25/2022	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 1		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	140	0	255					680	45	25	80	
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R					T	R		LT		
Flow Rate, v (veh/h)	152	277					739	49		114		
Percent Heavy Vehicles	9	9					9	9		9		

Departure Headway and Service Time

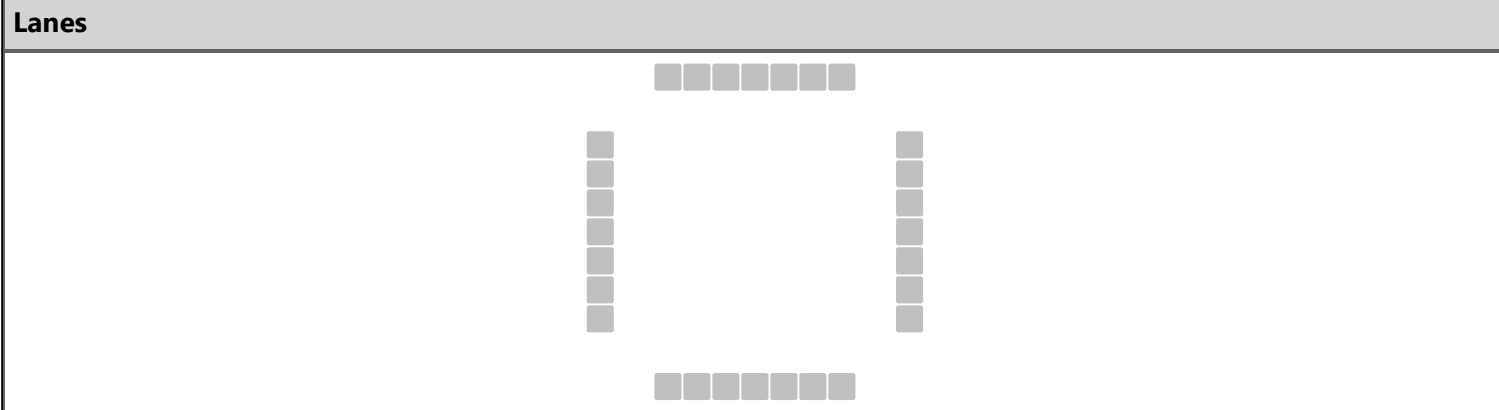
Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20		
Initial Degree of Utilization, x	0.135	0.246					0.657	0.043		0.101		
Final Departure Headway, hd (s)	7.30	6.11					6.17	5.47		6.72		
Final Degree of Utilization, x	0.308	0.470					1.268	0.074		0.213		
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.0		
Service Time, ts (s)	5.00	3.81					3.87	3.17		4.72		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	152	277					739	49		114		
Capacity	493	589					583	658		536		
95% Queue Length, Q ₉₅ (veh)	1.3	2.5					29.1	0.2		0.8		
Control Delay (s/veh)	13.2	14.1					153.7	8.6		11.5		
Level of Service, LOS	B	B					F	A		B		
Approach Delay (s/veh)	13.8						144.7			11.5		
Approach LOS	B						F			B		
Intersection Delay, s/veh LOS	91.1						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SH74 and W. Frontage Rd
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	W. Frontage Rd
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 1		

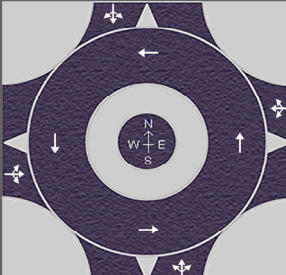


Vehicle Volume and Adjustments												
Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	155		275				95	670			65	35
% Thrus in Shared Lane							50					50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	R					LT	T		T	TR	
Flow Rate, v (veh/h)	168	299					467	364		35	73	
Percent Heavy Vehicles	9	9					9	9		9	9	

Departure Headway and Service Time												
Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.150	0.266					0.415	0.324		0.031	0.065	
Final Departure Headway, hd (s)	7.47	6.28					6.44	6.32		7.36	6.99	
Final Degree of Utilization, x	0.350	0.521					0.836	0.640		0.072	0.142	
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.3	2.3	
Service Time, ts (s)	5.17	3.98					4.14	4.02		5.06	4.69	

Capacity, Delay and Level of Service												
Flow Rate, v (veh/h)	168	299					467	364		35	73	
Capacity	482	573					559	569		489	515	
95% Queue Length, Q ₉₅ (veh)	1.6	3.0					8.7	4.5		0.2	0.5	
Control Delay (s/veh)	14.1	15.6					33.7	19.6		10.6	10.8	
Level of Service, LOS	B	C					D	C		B	B	
Approach Delay (s/veh)	15.1						27.5			10.8		
Approach LOS	C						D			B		
Intersection Delay, s/veh LOS	22.1						C					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 1				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	30	0	35	0	2	0	2	0	670	143	2	0	2	63	25
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	36	0	41	0	2	0	2	0	794	169	2	0	2	75	30
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

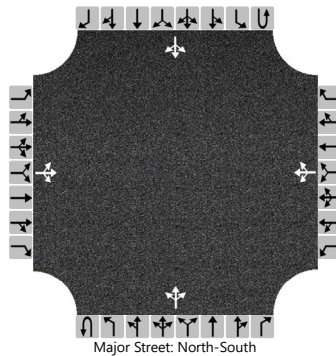
Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		77			4			965			107		
Entry Volume, veh/h		71			4			885			98		
Circulating Flow (v _c), pc/h		79			999			38			796		
Exiting Flow (v _{ex}), pc/h		4			824			207			118		
Capacity (C _{PCE}), pc/h		1273			498			1328			613		
Capacity (c), veh/h		1168			457			1218			562		
v/c Ratio (x)		0.06			0.01			0.73			0.17		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.6			8.0			14.0			8.6		
Lane LOS		A			A			B			A		
95% Queue, veh		0.2			0.0			6.9			0.6		
Approach Delay, s/veh		3.6			8.0			14.0			8.6		
Approach LOS		A			A			B			A		
Intersection Delay, s/veh LOS	12.8						B						

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/16/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 2						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		30	0	35		2	0	2		670	143	2		2	63	25
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.19	6.59	6.29		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

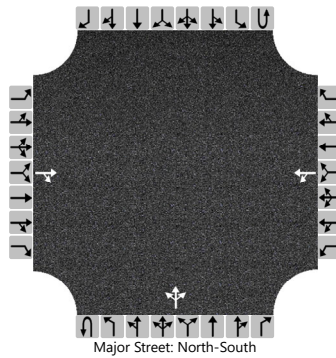
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			71				4			728				2		
Capacity, c (veh/h)			81				71			1455				1380		
v/c Ratio			0.87				0.06			0.50				0.00		
95% Queue Length, Q ₉₅ (veh)			4.5				0.2			2.9				0.0		
Control Delay (s/veh)			154.4				59.3			9.9				7.6		
Level of Service (LOS)			F				F			A				A		
Approach Delay (s/veh)	154.4				59.3				9.1				0.2			
Approach LOS	F				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	Airport Rd. and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/27/2022			East/West Street	Airport Rd.		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 2						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	0	0
Configuration				TR		LT					LTR					
Volume (veh/h)			7	93		12	28			787	0	38				
Percent Heavy Vehicles (%)			9	9		9	9			9						
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)			6.5	7.1		7.1	6.5			5.3						
Critical Headway (sec)			6.99	7.39		7.59	6.99			5.39						
Base Follow-Up Headway (sec)			4.0	3.9		3.5	4.0			3.1						
Follow-Up Headway (sec)			4.08	3.98		3.58	4.08			3.18						

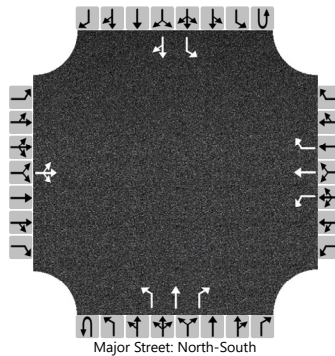
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				109		43				855						
Capacity, c (veh/h)				904		11				1132						
v/c Ratio				0.12		3.80				0.76						
95% Queue Length, Q ₉₅ (veh)				0.4		6.5				7.6						
Control Delay (s/veh)				9.5		1915.0				17.3						
Level of Service (LOS)				A		F				C						
Approach Delay (s/veh)	9.5				1915.0				17.1							
Approach LOS	A				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	3/31/2023			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 2						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		1	1	1	0	1	1	1	0	1	1	0
Configuration			LTR			L	T	R		L	T	R		L		TR
Volume (veh/h)		125	30	275		15	5	45		95	655	15		25	50	30
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				0											
Right Turn Channelized					No				No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

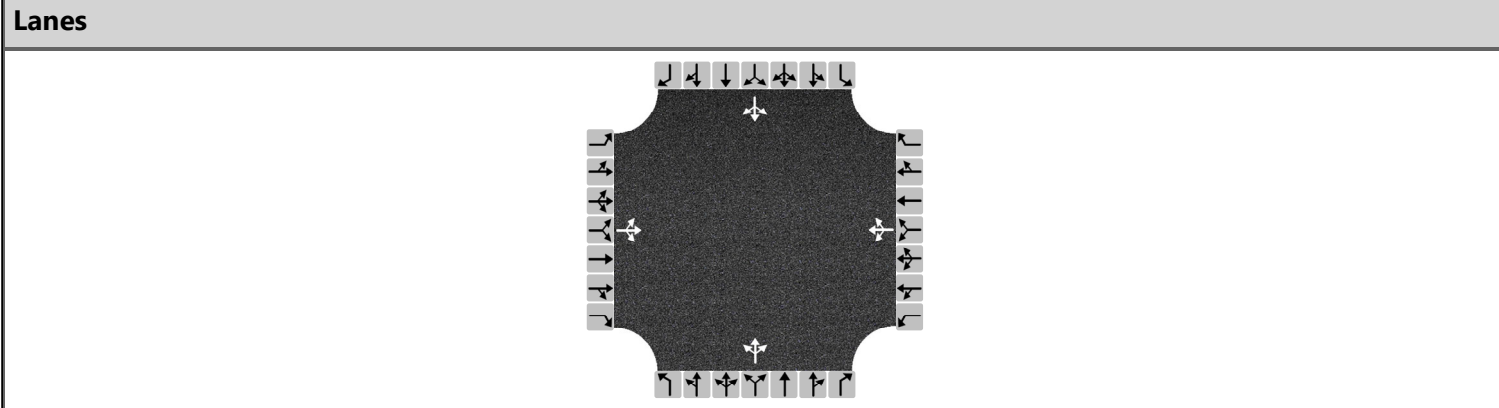
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			467			16	5	49			103				27	
Capacity, c (veh/h)			300			81	186	421			1466				844	
v/c Ratio			1.56			0.20	0.03	0.12			0.07				0.03	
95% Queue Length, Q ₉₅ (veh)			27.3			0.7	0.1	0.4			0.2				0.1	
Control Delay (s/veh)			297.1			60.5	24.9	14.7			7.6				9.4	
Level of Service (LOS)			F			F	C	B			A				A	
Approach Delay (s/veh)	297.1				26.1				0.9				2.2			
Approach LOS	F				D											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 2		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	30	0	35	2	0	2	670	143	2	2	63	25
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	71			4			886			98		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

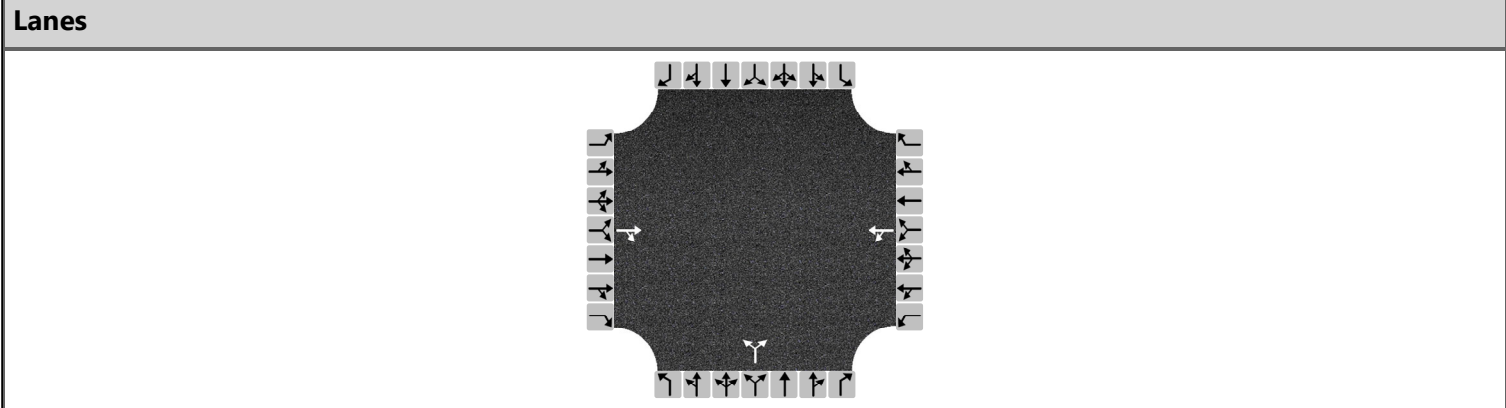
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.063			0.004			0.787			0.087		
Final Departure Headway, hd (s)	5.87			6.05			4.57			4.96		
Final Degree of Utilization, x	0.115			0.007			1.125			0.135		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.87			4.05			2.57			2.96		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	71			4			886			98		
Capacity	614			595			788			726		
95% Queue Length, Q ₉₅ (veh)	0.4			0.0			25.4			0.5		
Control Delay (s/veh)	9.6			9.1			91.4			8.7		
Level of Service, LOS	A			A			F			A		
Approach Delay (s/veh)	9.6			9.1			91.4			8.7		
Approach LOS	A			A			F			A		
Intersection Delay, s/veh LOS	77.9						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	Airport Rd and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	4/25/2022	East/West Street	Airport Rd
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 2		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume		7	93	12	28		787		38			
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	TR			LT			LR					
Flow Rate, v (veh/h)	109			43			897					
Percent Heavy Vehicles	9			9			9					

Departure Headway and Service Time

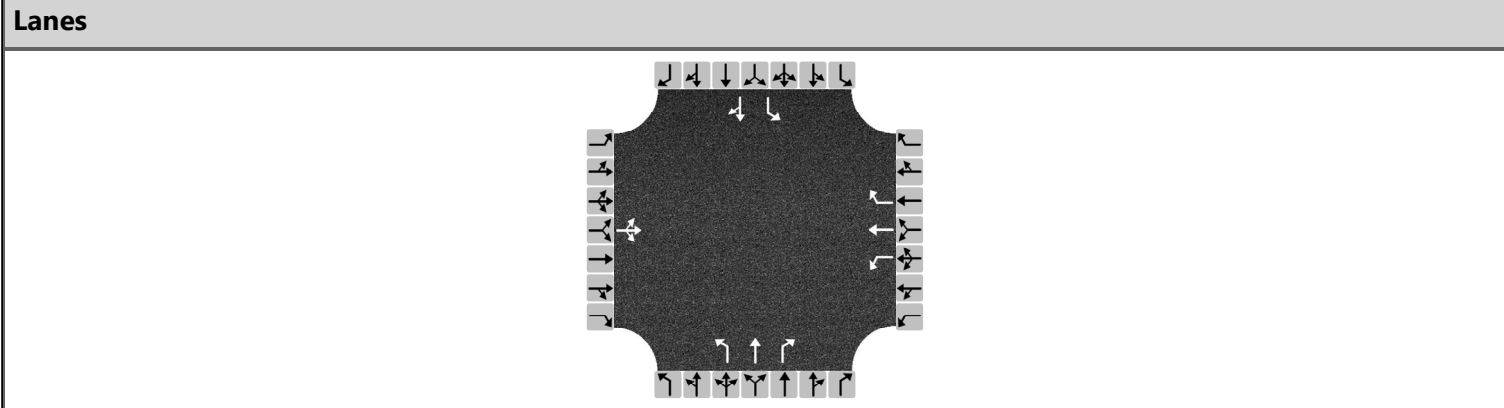
Initial Departure Headway, hd (s)	3.20			3.20			3.20					
Initial Degree of Utilization, x	0.097			0.039			0.797					
Final Departure Headway, hd (s)	5.46			6.18			4.67					
Final Degree of Utilization, x	0.165			0.075			1.163					
Move-Up Time, m (s)	2.0			2.0			2.0					
Service Time, ts (s)	3.46			4.18			2.67					

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	109			43			897					
Capacity	659			582			771					
95% Queue Length, Q ₉₅ (veh)	0.6			0.2			27.8					
Control Delay (s/veh)	9.5			9.7			105.9					
Level of Service, LOS	A			A			F					
Approach Delay (s/veh)	9.5			9.7			105.9					
Approach LOS	A			A			F					
Intersection Delay, s/veh LOS	91.9						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 2		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	125	30	275	15	5	45	95	655	15	25	50	30
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	T	R	L	T	R	L	TR	
Flow Rate, v (veh/h)	467			16	5	49	103	712	16	27	87	
Percent Heavy Vehicles	9			9	9	9	9	9	9	9	9	

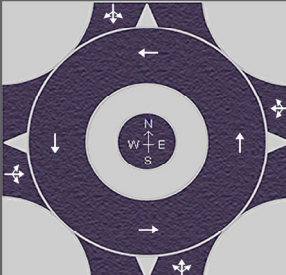
Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
Initial Degree of Utilization, x	0.415			0.014	0.005	0.043	0.092	0.633	0.014	0.024	0.077	
Final Departure Headway, hd (s)	7.16			8.70	8.21	7.51	7.78	7.28	6.57	9.02	8.26	
Final Degree of Utilization, x	0.930			0.039	0.012	0.102	0.223	1.439	0.030	0.068	0.199	
Move-Up Time, m (s)	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Service Time, ts (s)	4.86			6.40	5.91	5.21	5.48	4.98	4.27	6.72	5.96	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	467			16	5	49	103	712	16	27	87	
Capacity	503			414	439	480	462	495	548	399	436	
95% Queue Length, Q ₉₅ (veh)	11.2			0.1	0.0	0.3	0.8	34.8	0.1	0.2	0.7	
Control Delay (s/veh)	51.0			11.8	11.0	11.1	12.7	229.1	9.5	12.4	13.0	
Level of Service, LOS	F			B	B	B	B	F	A	B	B	
Approach Delay (s/veh)	51.0			11.2			197.9			12.9		
Approach LOS	F			B			F			B		
Intersection Delay, s/veh LOS	128.5						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 2				Jurisdiction		McClain County	

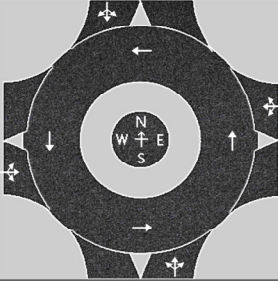
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	30	0	35	0	2	0	2	0	670	143	2	0	2	63	25
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	36	0	41	0	2	0	2	0	794	169	2	0	2	75	30
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		77			4			965			107		
Entry Volume, veh/h		71			4			885			98		
Circulating Flow (v _c), pc/h		79			999			38			796		
Exiting Flow (v _{ex}), pc/h		4			824			207			118		
Capacity (C _{PCE}), pc/h		1273			498			1328			613		
Capacity (c), veh/h		1168			457			1218			562		
v/c Ratio (x)		0.06			0.01			0.73			0.17		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.6			8.0			14.0			8.6		
Lane LOS		A			A			B			A		
95% Queue, veh		0.2			0.0			6.9			0.6		
Approach Delay, s/veh		3.6			8.0			14.0			8.6		
Approach LOS		A			A			B			A		
Intersection Delay, s/veh LOS	12.8						B						

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps/Frontage & SH74	
Agency or Co.	ODOT				E/W Street Name		SB Ramps/Frontage	
Date Performed	3/26/2023				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period, hrs		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 2				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	125	30	275	0	15	5	45	0	95	655	15	0	25	50	30
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	148	36	326	0	18	6	53	0	113	776	18	0	30	59	36
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		510			77			907			125	
Entry Volume, veh/h		468			71			832			115	
Circulating Flow (v _c), pc/h	107			1037			214			137		
Exiting Flow (v _{ex}), pc/h	84			155			977			403		
Capacity (C _{pce}), pc/h		1237			479			1109			1200	
Capacity (c), veh/h		1135			440			1018			1101	
v/c Ratio (x)		0.41			0.16			0.82			0.10	

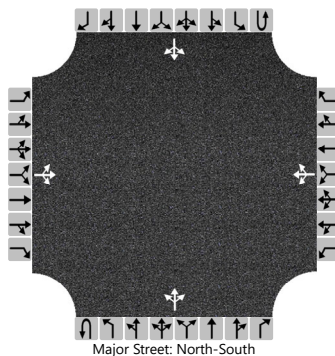
Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.4			10.6			21.2			4.2	
Lane LOS		A			B			C			A	
95% Queue, veh		2.1			0.6			9.5			0.3	
Approach Delay, s/veh LOS	7.4	A		10.6	B		21.2	C		4.2	A	
Intersection Delay, s/veh LOS	15.1									C		

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/16/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 3						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		30	5	30		15	25	5		645	140	40		5	60	25
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

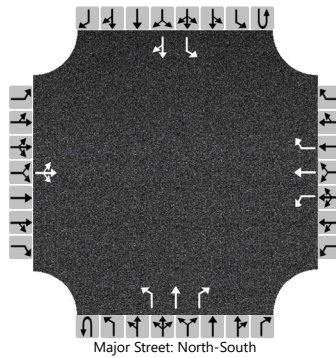
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			71				49			701				5		
Capacity, c (veh/h)			26				36			1459				1336		
v/c Ratio			2.71				1.35			0.48				0.00		
95% Queue Length, Q ₉₅ (veh)			8.6				5.2			2.7				0.0		
Control Delay (s/veh)			1088.9				443.0			9.7				7.7		
Level of Service (LOS)			F				F			A				A		
Approach Delay (s/veh)	1088.9				443.0				8.8				0.5			
Approach LOS	F				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	3/31/2023			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 3						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		1	1	1	0	1	1	1	0	1	1	0
Configuration			LTR			L	T	R		L	T	R		L		TR
Volume (veh/h)		125	30	275		15	5	45		95	655	15		25	50	30
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				0											
Right Turn Channelized					No				No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

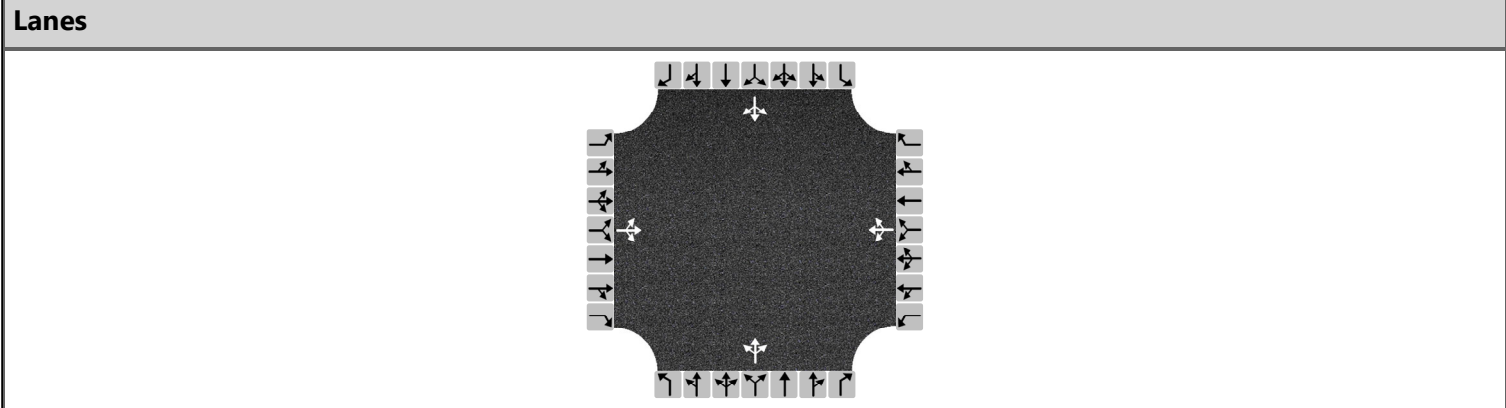
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			467			16	5	49		103				27		
Capacity, c (veh/h)			300			81	186	421		1466				844		
v/c Ratio			1.56			0.20	0.03	0.12		0.07				0.03		
95% Queue Length, Q ₉₅ (veh)			27.3			0.7	0.1	0.4		0.2				0.1		
Control Delay (s/veh)			297.1			60.5	24.9	14.7		7.6				9.4		
Level of Service (LOS)			F			F	C	B		A				A		
Approach Delay (s/veh)	297.1				26.1				0.9				2.2			
Approach LOS	F				D											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 3		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	30	5	30	15	25	5	645	140	40	5	60	25
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	71			49			897			98		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

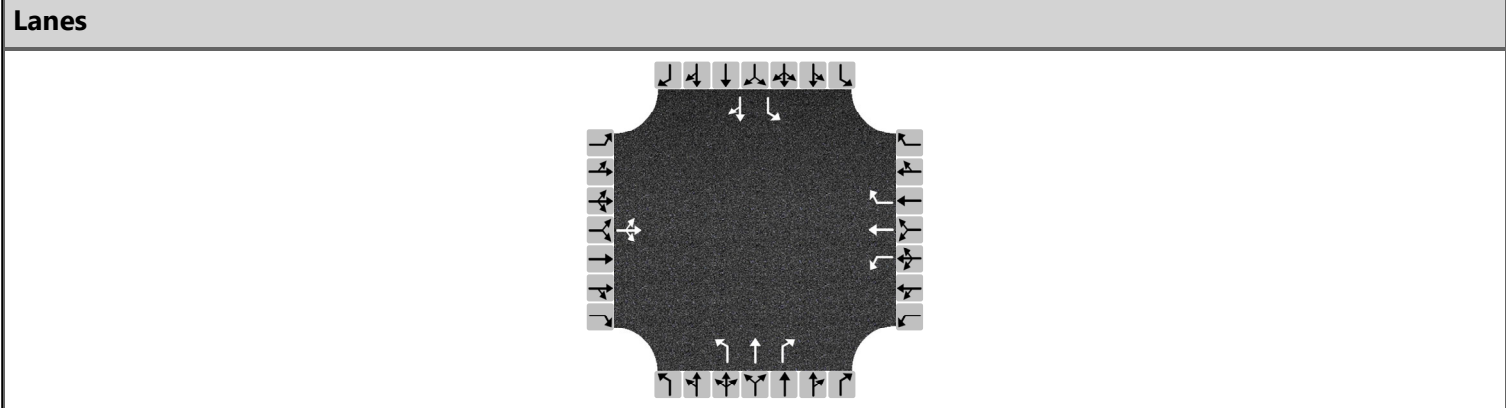
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.063			0.043			0.797			0.087		
Final Departure Headway, hd (s)	6.03			6.26			4.70			5.15		
Final Degree of Utilization, x	0.118			0.085			1.170			0.140		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.03			4.26			2.70			3.15		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	71			49			897			98		
Capacity	597			575			767			698		
95% Queue Length, Q ₉₅ (veh)	0.4			0.3			28.2			0.5		
Control Delay (s/veh)	9.8			9.8			108.6			9.0		
Level of Service, LOS	A			A			F			A		
Approach Delay (s/veh)	9.8			9.8			108.6			9.0		
Approach LOS	A			A			F			A		
Intersection Delay, s/veh LOS	89.2						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 3		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	125	30	275	15	5	45	95	655	15	25	50	30
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	T	R	L	T	R	L	TR	
Flow Rate, v (veh/h)	467			16	5	49	103	712	16	27	87	
Percent Heavy Vehicles	9			9	9	9	9	9	9	9	9	


Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
Initial Degree of Utilization, x	0.415			0.014	0.005	0.043	0.092	0.633	0.014	0.024	0.077	
Final Departure Headway, hd (s)	7.16			8.70	8.21	7.51	7.78	7.28	6.57	9.02	8.26	
Final Degree of Utilization, x	0.930			0.039	0.012	0.102	0.223	1.439	0.030	0.068	0.199	
Move-Up Time, m (s)	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Service Time, ts (s)	4.86			6.40	5.91	5.21	5.48	4.98	4.27	6.72	5.96	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	467			16	5	49	103	712	16	27	87	
Capacity	503			414	439	480	462	495	548	399	436	
95% Queue Length, Q ₉₅ (veh)	11.2			0.1	0.0	0.3	0.8	34.8	0.1	0.2	0.7	
Control Delay (s/veh)	51.0			11.8	11.0	11.1	12.7	229.1	9.5	12.4	13.0	
Level of Service, LOS	F			B	B	B	B	F	A	B	B	
Approach Delay (s/veh)	51.0			11.2			197.9			12.9		
Approach LOS	F			B			F			B		
Intersection Delay, s/veh LOS	128.5						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 3				Jurisdiction		McClain County	

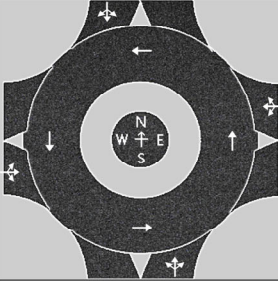
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	30	5	30	0	15	25	5	0	645	140	40	0	5	60	25
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	36	6	36	0	18	30	6	0	764	166	47	0	6	71	30
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		78			54			977			107		
Entry Volume, veh/h		72			50			896			98		
Circulating Flow (v _c), pc/h		95			966			48			812		
Exiting Flow (v _{ex}), pc/h		59			824			208			125		
Capacity (C _{PCE}), pc/h		1253			515			1314			603		
Capacity (c), veh/h		1149			473			1206			553		
v/c Ratio (x)		0.06			0.10			0.74			0.18		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.7			9.0			14.8			8.8		
Lane LOS		A			A			B			A		
95% Queue, veh		0.2			0.3			7.3			0.6		
Approach Delay, s/veh		3.7			9.0			14.8			8.8		
Approach LOS		A			A			B			A		
Intersection Delay, s/veh LOS	13.3						B						

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps/Frontage & SH74	
Agency or Co.	ODOT				E/W Street Name		SB Ramps/Frontage	
Date Performed	3/26/2023				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period, hrs		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 3				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	125	30	275	0	15	5	45	0	95	655	15	0	25	50	30
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	148	36	326	0	18	6	53	0	113	776	18	0	30	59	36
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		510			77			907			125	
Entry Volume, veh/h		468			71			832			115	
Circulating Flow (v _c), pc/h	107			1037			214			137		
Exiting Flow (v _{ex}), pc/h	84			155			977			403		
Capacity (C _{pce}), pc/h		1237			479			1109			1200	
Capacity (c), veh/h		1135			440			1018			1101	
v/c Ratio (x)		0.41			0.16			0.82			0.10	

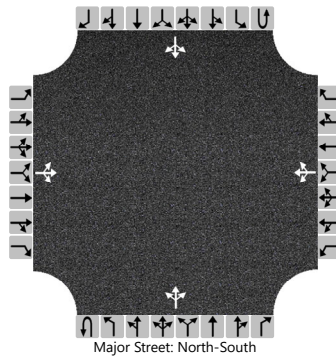
Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.4			10.6			21.2			4.2	
Lane LOS		A			B			C			A	
95% Queue, veh		2.1			0.6			9.5			0.3	
Approach Delay, s/veh LOS	7.4	A		10.6	B		21.2	C		4.2	A	
Intersection Delay, s/veh LOS	15.1									C		

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/16/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 4						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0	
Configuration			LTR				LTR				LTR				LTR		
Volume (veh/h)		30	5	30		15	25	5		645	140	40		5	60	25	
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9			
Proportion Time Blocked																	
Percent Grade (%)		2				2											
Right Turn Channelized																	
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

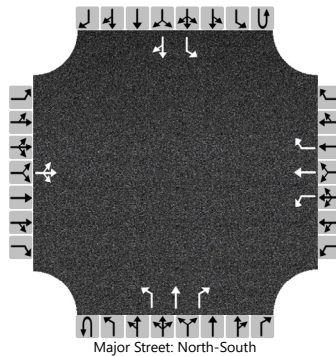
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			71				49			701				5			
Capacity, c (veh/h)			26				36			1459				1336			
v/c Ratio			2.71				1.35			0.48				0.00			
95% Queue Length, Q ₉₅ (veh)			8.6				5.2			2.7				0.0			
Control Delay (s/veh)			1088.9				443.0			9.7				7.7			
Level of Service (LOS)			F				F			A				A			
Approach Delay (s/veh)		1088.9				443.0				8.8				0.5			
Approach LOS		F				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/25/2022			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 4						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		1	1	1	0	1	1	1	0	1	1	0
Configuration			LTR			L	T	R		L	T	R		L		TR
Volume (veh/h)		25	30	40		250	5	140		95	655	15		25	50	30
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				0											
Right Turn Channelized					No				No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

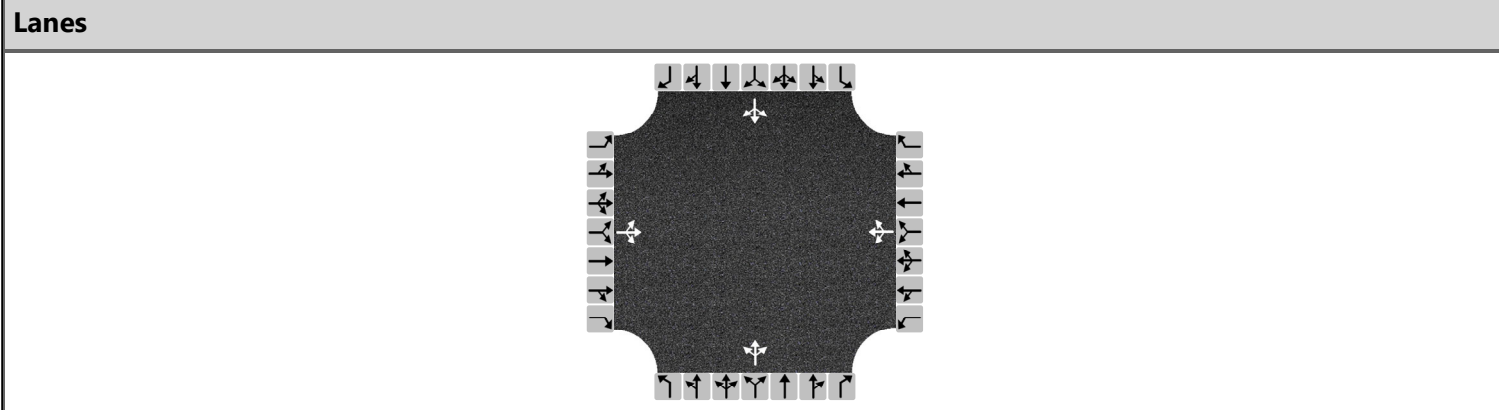
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			103			272	5	152		103				27		
Capacity, c (veh/h)			185			137	186	421		1466				844		
v/c Ratio			0.56			1.99	0.03	0.36		0.07				0.03		
95% Queue Length, Q ₉₅ (veh)			3.0			21.6	0.1	1.6		0.2				0.1		
Control Delay (s/veh)			46.8			524.0	24.9	18.3		7.6				9.4		
Level of Service (LOS)			E			F	C	C		A				A		
Approach Delay (s/veh)	46.8				338.4				0.9				2.2			
Approach LOS	E				F											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 4		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	30	5	30	15	25	5	645	140	40	5	60	25
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	71			49			897			98		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

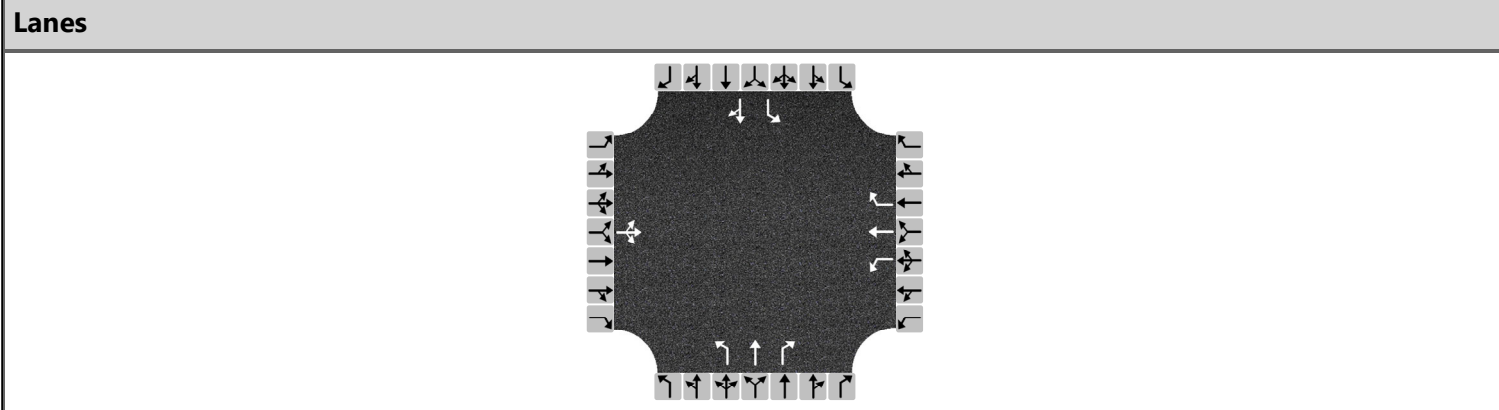
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.063			0.043			0.797			0.087		
Final Departure Headway, hd (s)	6.03			6.26			4.70			5.15		
Final Degree of Utilization, x	0.118			0.085			1.170			0.140		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.03			4.26			2.70			3.15		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	71			49			897			98		
Capacity	597			575			767			698		
95% Queue Length, Q ₉₅ (veh)	0.4			0.3			28.2			0.5		
Control Delay (s/veh)	9.8			9.8			108.6			9.0		
Level of Service, LOS	A			A			F			A		
Approach Delay (s/veh)	9.8			9.8			108.6			9.0		
Approach LOS	A			A			F			A		
Intersection Delay, s/veh LOS	89.2						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 4		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	125	30	275	15	5	45	95	655	15	25	50	30
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	T	R	L	T	R	L	TR	
Flow Rate, v (veh/h)	467			16	5	49	103	712	16	27	87	
Percent Heavy Vehicles	9			9	9	9	9	9	9	9	9	

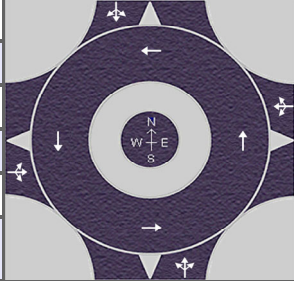
Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
Initial Degree of Utilization, x	0.415			0.014	0.005	0.043	0.092	0.633	0.014	0.024	0.077	
Final Departure Headway, hd (s)	7.16			8.70	8.21	7.51	7.78	7.28	6.57	9.02	8.26	
Final Degree of Utilization, x	0.930			0.039	0.012	0.102	0.223	1.439	0.030	0.068	0.199	
Move-Up Time, m (s)	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Service Time, ts (s)	4.86			6.40	5.91	5.21	5.48	4.98	4.27	6.72	5.96	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	467			16	5	49	103	712	16	27	87	
Capacity	503			414	439	480	462	495	548	399	436	
95% Queue Length, Q ₉₅ (veh)	11.2			0.1	0.0	0.3	0.8	34.8	0.1	0.2	0.7	
Control Delay (s/veh)	51.0			11.8	11.0	11.1	12.7	229.1	9.5	12.4	13.0	
Level of Service, LOS	F			B	B	B	B	F	A	B	B	
Approach Delay (s/veh)	51.0			11.2			197.9			12.9		
Approach LOS	F			B			F			B		
Intersection Delay, s/veh LOS	128.5						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 4				Jurisdiction		McClain County	

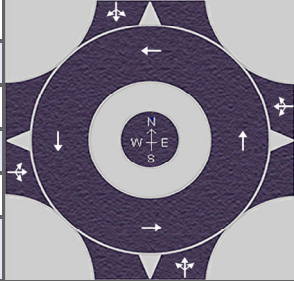
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	30	5	30	0	15	25	5	0	645	140	40	0	5	60	25
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	36	6	36	0	18	30	6	0	764	166	47	0	6	71	30
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		78			54			977			107		
Entry Volume, veh/h		72			50			896			98		
Circulating Flow (v _c), pc/h		95			966			48			812		
Exiting Flow (v _{ex}), pc/h		59			824			208			125		
Capacity (C _{PCE}), pc/h		1253			515			1314			603		
Capacity (c), veh/h		1149			473			1206			553		
v/c Ratio (x)		0.06			0.10			0.74			0.18		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.7			9.0			14.8			8.8		
Lane LOS		A			A			B			A		
95% Queue, veh		0.2			0.3			7.3			0.6		
Approach Delay, s/veh		3.7			9.0			14.8			8.8		
Approach LOS		A			A			B			A		
Intersection Delay, s/veh LOS	13.3						B						

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps/Frontage & SH74	
Agency or Co.	ODOT				E/W Street Name		SB Ramps/Frontage	
Date Performed	4/26/2022				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 4				Jurisdiction		McClain County	

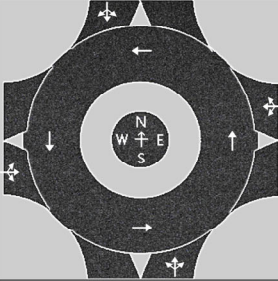
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	25	30	40	0	250	5	140	0	95	655	15	0	25	50	30
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	30	36	47	0	296	6	166	0	113	776	18	0	30	59	36
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		113			468			907			125		
Entry Volume, veh/h		104			429			832			115		
Circulating Flow (v _c), pc/h		385			919			96			415		
Exiting Flow (v _{ex}), pc/h		84			155			972			402		
Capacity (C _{PCE}), pc/h		932			540			1251			904		
Capacity (c), veh/h		855			496			1148			829		
v/c Ratio (x)		0.12			0.87			0.72			0.14		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		5.4			42.6			14.5			5.7		
Lane LOS		A			E			B			A		
95% Queue, veh		0.4			9.2			6.7			0.5		
Approach Delay, s/veh		5.4			42.6			14.5			5.7		
Approach LOS		A			E			B			A		
Intersection Delay, s/veh LOS	21.3						C						

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps/Frontage & SH74	
Agency or Co.	ODOT				E/W Street Name		SB Ramps/Frontage	
Date Performed	3/26/2023				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period, hrs		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 4				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	125	30	275	0	15	5	45	0	95	655	15	0	25	50	30
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	148	36	326	0	18	6	53	0	113	776	18	0	30	59	36
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		510			77			907			125	
Entry Volume, veh/h		468			71			832			115	
Circulating Flow (v _c), pc/h	107			1037			214			137		
Exiting Flow (v _{ex}), pc/h	84			155			977			403		
Capacity (C _{PCE}), pc/h		1237			479			1109			1200	
Capacity (c), veh/h		1135			440			1018			1101	
v/c Ratio (x)		0.41			0.16			0.82			0.10	

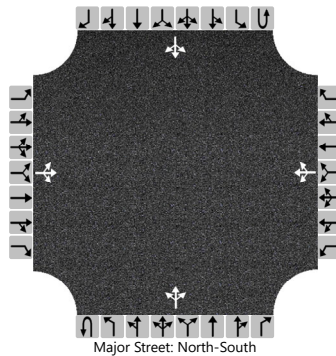
Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.4			10.6			21.2			4.2	
Lane LOS		A			B			C			A	
95% Queue, veh		2.1			0.6			9.5			0.3	
Approach Delay, s/veh LOS	7.4	A		10.6	B		21.2	C		4.2	A	
Intersection Delay, s/veh LOS	15.1									C		

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/16/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 5						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		30	5	30		15	25	5		645	140	40		5	60	25
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

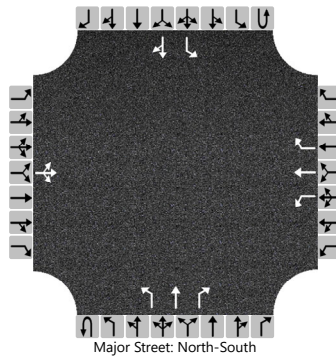
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			71				49			701				5		
Capacity, c (veh/h)			26				36			1459				1336		
v/c Ratio			2.71				1.35			0.48				0.00		
95% Queue Length, Q ₉₅ (veh)			8.6				5.2			2.7				0.0		
Control Delay (s/veh)			1088.9				443.0			9.7				7.7		
Level of Service (LOS)			F				F			A				A		
Approach Delay (s/veh)	1088.9				443.0				8.8				0.5			
Approach LOS	F				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	3/31/2023			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 5						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	1	0	1	1	1	0	1	1	0	
Configuration			LTR			L	T	R		L	T	R		L		TR	
Volume (veh/h)		125	30	275		15	5	45		95	655	15		25	50	30	
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9			
Proportion Time Blocked																	
Percent Grade (%)		2				0											
Right Turn Channelized						No				No							
Median Type Storage		Undivided															

Critical and Follow-up Headways

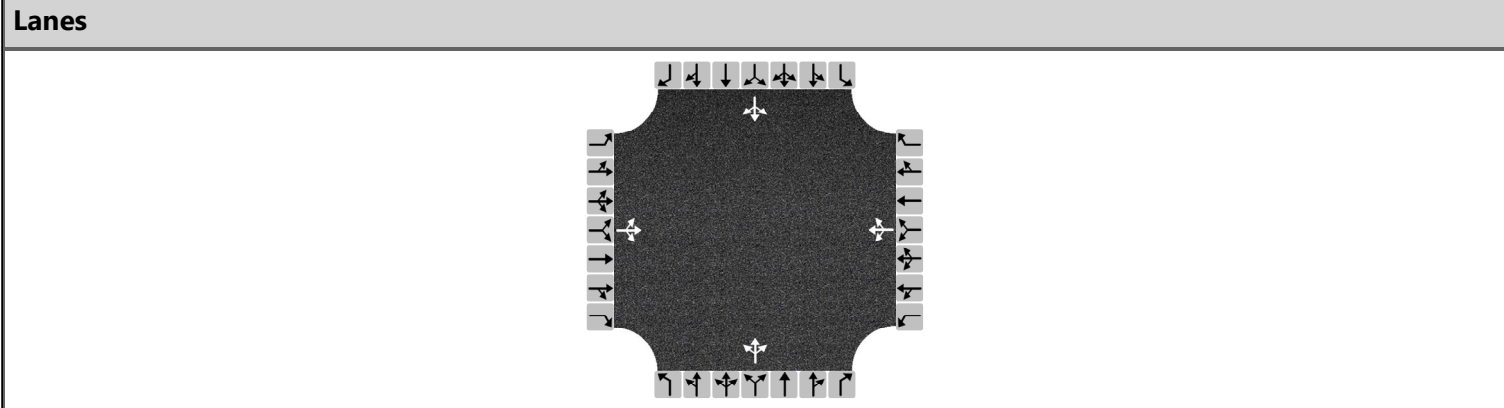
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			467			16	5	49			103				27		
Capacity, c (veh/h)			300			81	186	421			1466				844		
v/c Ratio			1.56			0.20	0.03	0.12			0.07				0.03		
95% Queue Length, Q ₉₅ (veh)			27.3			0.7	0.1	0.4			0.2				0.1		
Control Delay (s/veh)			297.1			60.5	24.9	14.7			7.6				9.4		
Level of Service (LOS)			F			F	C	B			A				A		
Approach Delay (s/veh)		297.1				26.1				0.9				2.2			
Approach LOS		F				D											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 5		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	30	5	30	15	25	5	645	140	40	5	60	25
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	71			49			897			98		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

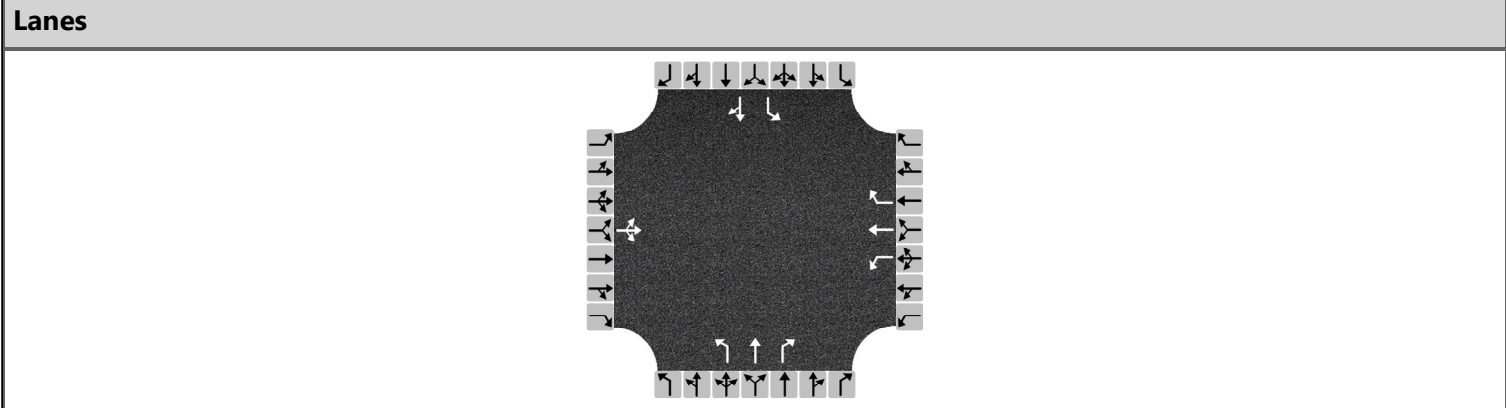
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.063			0.043			0.797			0.087		
Final Departure Headway, hd (s)	6.03			6.26			4.70			5.15		
Final Degree of Utilization, x	0.118			0.085			1.170			0.140		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.03			4.26			2.70			3.15		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	71			49			897			98		
Capacity	597			575			767			698		
95% Queue Length, Q ₉₅ (veh)	0.4			0.3			28.2			0.5		
Control Delay (s/veh)	9.8			9.8			108.6			9.0		
Level of Service, LOS	A			A			F			A		
Approach Delay (s/veh)	9.8			9.8			108.6			9.0		
Approach LOS	A			A			F			A		
Intersection Delay, s/veh LOS	89.2						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	AM		
Project Description	Alternative 5		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	125	30	275	15	5	45	95	655	15	25	50	30
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	T	R	L	T	R	L	TR	
Flow Rate, v (veh/h)	467			16	5	49	103	712	16	27	87	
Percent Heavy Vehicles	9			9	9	9	9	9	9	9	9	

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
Initial Degree of Utilization, x	0.415			0.014	0.005	0.043	0.092	0.633	0.014	0.024	0.077	
Final Departure Headway, hd (s)	7.16			8.70	8.21	7.51	7.78	7.28	6.57	9.02	8.26	
Final Degree of Utilization, x	0.930			0.039	0.012	0.102	0.223	1.439	0.030	0.068	0.199	
Move-Up Time, m (s)	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Service Time, ts (s)	4.86			6.40	5.91	5.21	5.48	4.98	4.27	6.72	5.96	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	467			16	5	49	103	712	16	27	87	
Capacity	503			414	439	480	462	495	548	399	436	
95% Queue Length, Q ₉₅ (veh)	11.2			0.1	0.0	0.3	0.8	34.8	0.1	0.2	0.7	
Control Delay (s/veh)	51.0			11.8	11.0	11.1	12.7	229.1	9.5	12.4	13.0	
Level of Service, LOS	F			B	B	B	B	F	A	B	B	
Approach Delay (s/veh)	51.0			11.2			197.9			12.9		
Approach LOS	F			B			F			B		
Intersection Delay, s/veh LOS	128.5						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection	NB Ramps and SH 74		
Agency or Co.	ODOT				E/W Street Name	NB Ramps		
Date Performed	4/25/2022				N/S Street Name	SH 74		
Analysis Year	2050				Analysis Time Period (hrs)	0.25		
Time Analyzed	AM				Peak Hour Factor	0.92		
Project Description	Alternative 5				Jurisdiction	McClain County		

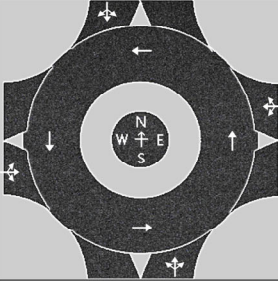
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	30	5	30	0	15	25	5	0	645	140	40	0	5	60	25
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	36	6	36	0	18	30	6	0	764	166	47	0	6	71	30
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		78			54			977			107		
Entry Volume, veh/h		72			50			896			98		
Circulating Flow (v _c), pc/h	95			966			48			812			
Exiting Flow (v _{ex}), pc/h	59			824			208			125			
Capacity (C _{PCE}), pc/h		1253			515			1314			603		
Capacity (c), veh/h		1149			473			1206			553		
v/c Ratio (x)		0.06			0.10			0.74			0.18		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.7			9.0			14.8			8.8		
Lane LOS		A			A			B			A		
95% Queue, veh		0.2			0.3			7.3			0.6		
Approach Delay, s/veh	3.7			9.0			14.8			8.8			
Approach LOS	A			A			B			A			
Intersection Delay, s/veh LOS	13.3						B						

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps/Frontage & SH74	
Agency or Co.	ODOT				E/W Street Name		SB Ramps/Frontage	
Date Performed	3/26/2022				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period, hrs		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 5				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	125	30	275	0	15	5	45	0	95	655	15	0	25	50	30
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	148	36	326	0	18	6	53	0	113	776	18	0	30	59	36
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

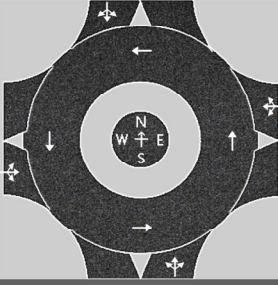
Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		510			77			907			125	
Entry Volume, veh/h		468			71			832			115	
Circulating Flow (v _c), pc/h	107			1037			214			137		
Exiting Flow (v _{ex}), pc/h	84			155			977			403		
Capacity (C _{pce}), pc/h		1237			479			1109			1200	
Capacity (c), veh/h		1135			440			1018			1101	
v/c Ratio (x)		0.41			0.16			0.82			0.10	

Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.4			10.6			21.2			4.2	
Lane LOS		A			B			C			A	
95% Queue, veh		2.1			0.6			9.5			0.3	
Approach Delay, s/veh LOS	7.4	A		10.6	B		21.2	C		4.2	A	
Intersection Delay, s/veh LOS	15.1									C		

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps/Frontage & SH74	
Agency or Co.	ODOT				E/W Street Name		SB Ramps/Frontage	
Date Performed	3/31/2023				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period, hrs		0.25	
Time Analyzed	AM				Peak Hour Factor		0.92	
Project Description	Alternative 5-If Slip Ramp Traffic Splits 50/50				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	63	30	138	0	152	5	107	0	95	655	15	0	25	50	30
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	75	36	164	0	180	6	127	0	113	776	18	0	30	59	36
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		275			313			907			125	
Entry Volume, veh/h		252			287			832			115	
Circulating Flow (v _c), pc/h	269			964			141			299		
Exiting Flow (v _{ex}), pc/h	84			155			978			403		
Capacity (C _{PCE}), pc/h		1049			516			1195			1017	
Capacity (c), veh/h		962			474			1096			933	
v/c Ratio (x)		0.26			0.61			0.76			0.12	

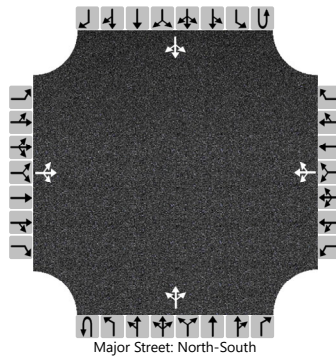
Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		6.4			21.7			16.6			5.0	
Lane LOS		A			C			C			A	
95% Queue, veh		1.1			4.0			7.7			0.4	
Approach Delay, s/veh LOS	6.4 A			21.7 C			16.6 C			5.0 A		
Intersection Delay, s/veh LOS	14.9									B		

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/13/2022			East/West Street	NB Ramps/Airport Rd.		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Existing Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		15	5	40		25	40	25		425	145	55		15	100	40
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)		2				2										
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

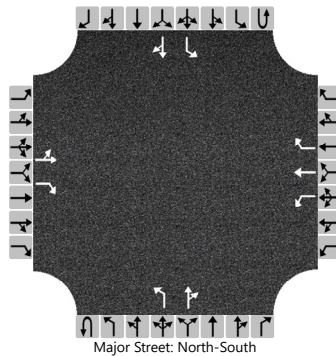
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			65				98			462				16			
Capacity, c (veh/h)			140				105			1387				1312			
v/c Ratio			0.47				0.93			0.33				0.01			
95% Queue Length, Q ₉₅ (veh)			2.1				5.6			1.5				0.0			
Control Delay (s/veh)			51.3				143.9			8.9				7.8			
Level of Service (LOS)			F				F			A				A			
Approach Delay (s/veh)		51.3				143.9				7.1				0.8			
Approach LOS		F				F				A				A			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	1/5/2022			East/West Street	W. Frontage/SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Existing Conditions						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	1		1	1	1	0	1	1	0	0	1	1	0	
Configuration		LT		R		L	T	R		L		TR		L		TR	
Volume (veh/h)		160	45	750		15	5	65		60	400	5		30	95	40	
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9			
Proportion Time Blocked																	
Percent Grade (%)		2				2											
Right Turn Channelized		No				No											
Median Type Storage		Undivided															

Critical and Follow-up Headways

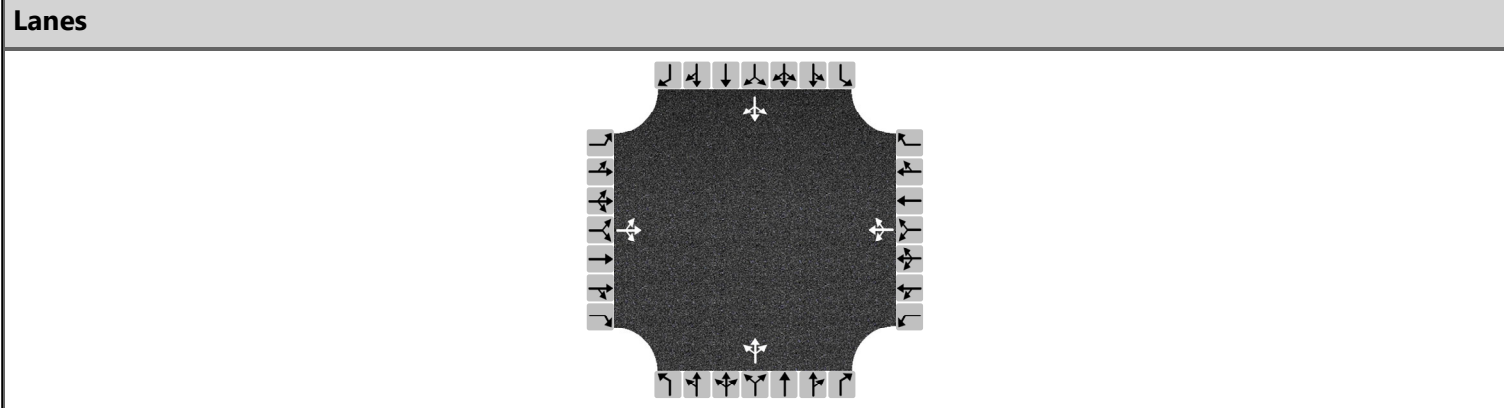
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		223		815		16	5	71		65				33				
Capacity, c (veh/h)		222		901		11	270	590		1393				1083				
v/c Ratio		1.00		0.90		1.51	0.02	0.12		0.05				0.03				
95% Queue Length, Q ₉₅ (veh)		9.2		12.9		2.8	0.1	0.4		0.1				0.1				
Control Delay (s/veh)		107.8		33.3		940.5	18.6	11.9		7.7				8.4				
Level of Service (LOS)		F		D		F	C	B		A				A				
Approach Delay (s/veh)		49.3				176.2					1.0				1.5			
Approach LOS		F				F												

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/13/2022	East/West Street	NB Ramps/Airport Rd.
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Existing Conditions		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	15	5	40	25	40	25	425	145	55	15	100	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	65			98			679			168		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

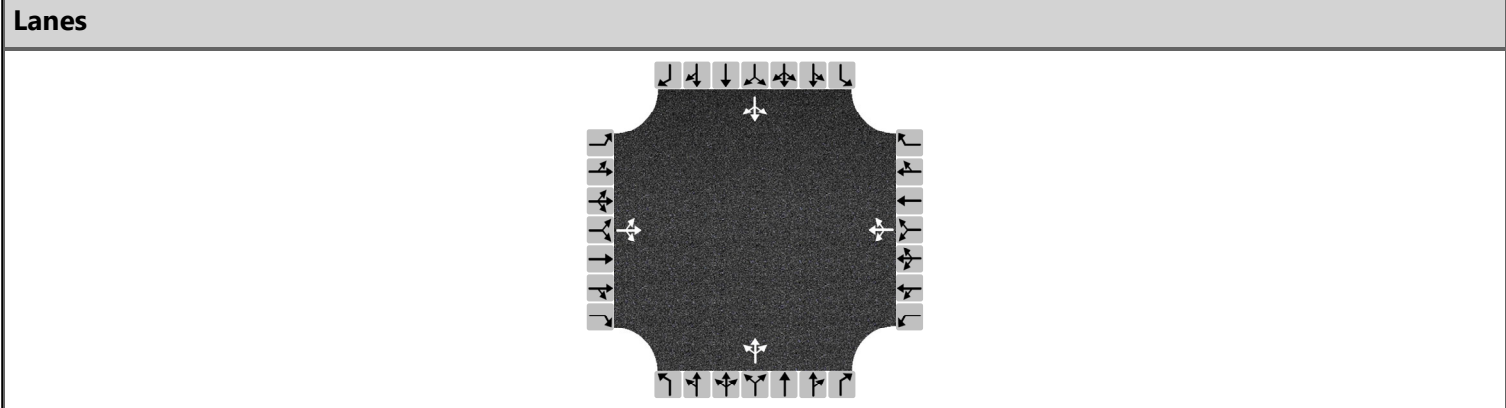
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.058			0.087			0.604			0.150		
Final Departure Headway, hd (s)	6.05			6.20			4.90			5.32		
Final Degree of Utilization, x	0.110			0.169			0.925			0.249		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.05			4.20			2.90			3.32		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	65			98			679			168		
Capacity	595			580			734			676		
95% Queue Length, Q ₉₅ (veh)	0.4			0.6			12.9			1.0		
Control Delay (s/veh)	9.8			10.5			39.3			10.1		
Level of Service, LOS	A			B			E			B		
Approach Delay (s/veh)	9.8			10.5			39.3			10.1		
Approach LOS	A			B			E			B		
Intersection Delay, s/veh LOS	29.8						D					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/13/2022	East/West Street	W. Frontage/SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Existing Conditions		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	160	45	750	15	5	65	60	400	5	30	95	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	1038			92			505			179		
Percent Heavy Vehicles	9			9			9			9		

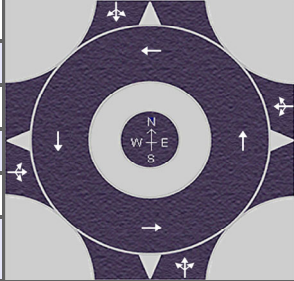
Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.923			0.082			0.449			0.159		
Final Departure Headway, hd (s)	6.25			7.55			6.72			7.44		
Final Degree of Utilization, x	1.803			0.194			0.943			0.370		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.25			5.55			4.72			5.44		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	1038			92			505			179		
Capacity	576			477			536			484		
95% Queue Length, Q ₉₅ (veh)	63.9			0.7			12.0			1.7		
Control Delay (s/veh)	384.2			12.4			51.9			14.7		
Level of Service, LOS	F			B			F			B		
Approach Delay (s/veh)	384.2			12.4			51.9			14.7		
Approach LOS	F			B			F			B		
Intersection Delay, s/veh LOS	236.3						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Rsmpts and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps/Airport Rd.	
Date Performed	1/5/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Existing Conditions				Jurisdiction		McClain County	

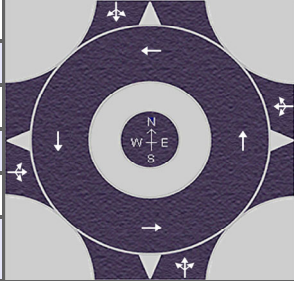
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	15	5	40	0	25	40	25	0	425	145	55	0	15	100	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	18	6	47	0	30	47	30	0	504	172	65	0	18	118	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		71			107			741			183		
Entry Volume, veh/h		65			98			680			168		
Circulating Flow (v _c), pc/h	166			694			42			581			
Exiting Flow (v _{ex}), pc/h	89			598			220			195			
Capacity (C _{PCE}), pc/h		1165			680			1322			763		
Capacity (c), veh/h		1069			624			1213			700		
v/c Ratio (x)		0.06			0.16			0.56			0.24		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.9			7.6			9.5			8.0		
Lane LOS		A			A			A			A		
95% Queue, veh		0.2			0.6			3.6			0.9		
Approach Delay, s/veh	3.9			7.6			9.5			8.0			
Approach LOS	A			A			A			A			
Intersection Delay, s/veh LOS	8.7						A						

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps and SH74	
Agency or Co.	ODOT				E/W Street Name		W. Frontage/SB Ramps	
Date Performed	5/13/2022				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Existing Conditions				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	160	45	750	0	15	5	65	0	60	400	5	0	30	95	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v_{pce}), pc/h	0	190	53	889	0	18	6	77	0	71	474	6	0	36	113	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Right
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Right
Entry Flow (v_e), pc/h		1132			101			551					196
Entry Volume, veh/h		1039			93			506					180
Circulating Flow (v_c), pc/h		167			735			279					95
Exiting Flow (v_{ex}), pc/h		95			124			741					1020
Capacity (C_{pce}), pc/h		1164			652			1038					1253
Capacity (c), veh/h		1068			598			952					1149
v/c Ratio (x)		0.97			0.15			0.53					0.16

Delay and Level of Service														
Approach	EB			WB			NB			SB				
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Right	
Lane Control Delay (d), s/veh		41.0			7.9			10.6					4.5	
Lane LOS		E			A			B					A	
95% Queue, veh		18.0			0.5			3.2					0.6	
Approach Delay, s/veh		41.0			7.9			10.6					4.5	
Approach LOS		E			A			B					A	
Intersection Delay, s/veh LOS	27.2							D						

HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	1/4/2022
Agency	ODOT	Analysis Year	2050
Jurisdiction	McClain County	Time Period Analyzed	135 NB-PM Peak Hour-Existing Configuration
Project Description	I-35 & SH-74 Interchange Alternatives Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.64		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 NB South Limits	5280	3
2	Diverge	Diverge	SH 74 Exit Ramp	1500	3
3	Basic	Basic	Between SH 74 Ramps	400	3
4	Merge	Merge	SH 74 Entrance Ramp	1500	3
5	Basic	Basic	I35 NB North Limits	5280	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	3652	7158	0.51	68.6	17.7	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	3652	70	7200	2000	0.51	0.04	66.5	60.9	18.3	18.6	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	3577	7185	0.50	68.9	17.2	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	4163	586	7200	2000	0.58	0.29	67.9	66.0	20.4	17.7	B

Segment 5: Basic

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS
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Period			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.94	0.855	4206	7131	0.59	67.5	20.8	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.9	19.2	16.4	2.30	C

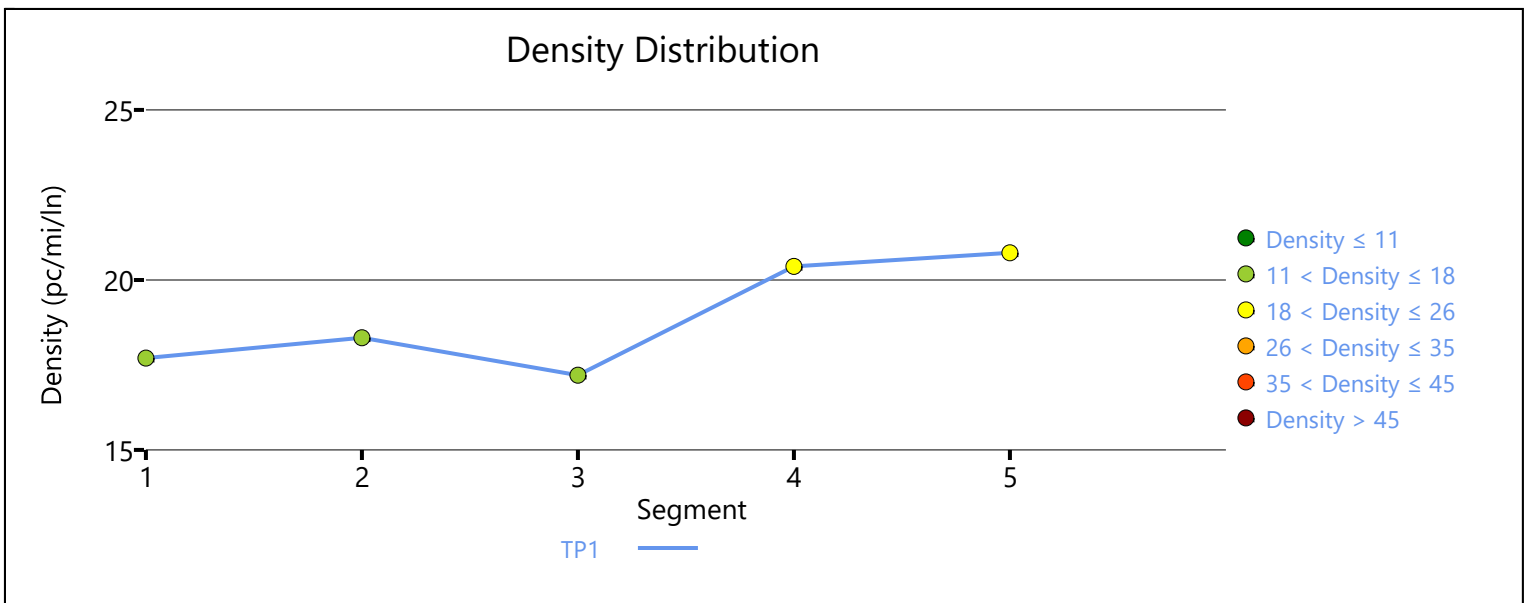
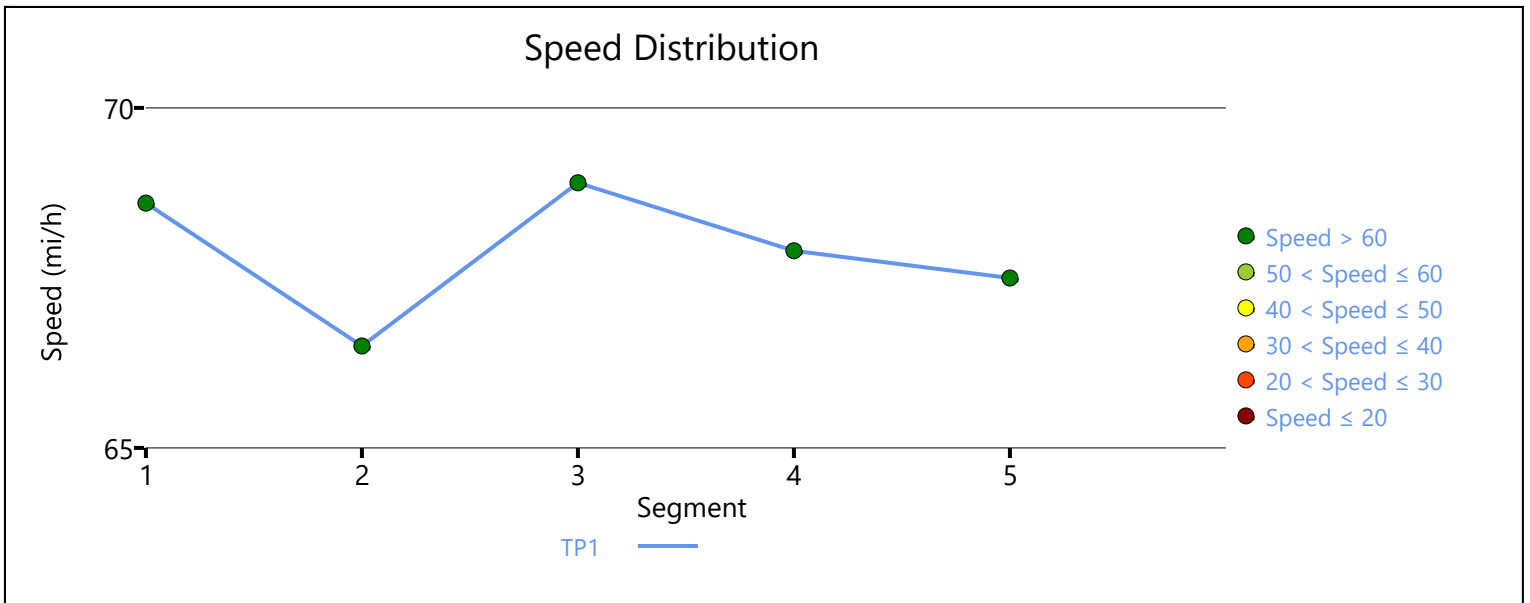
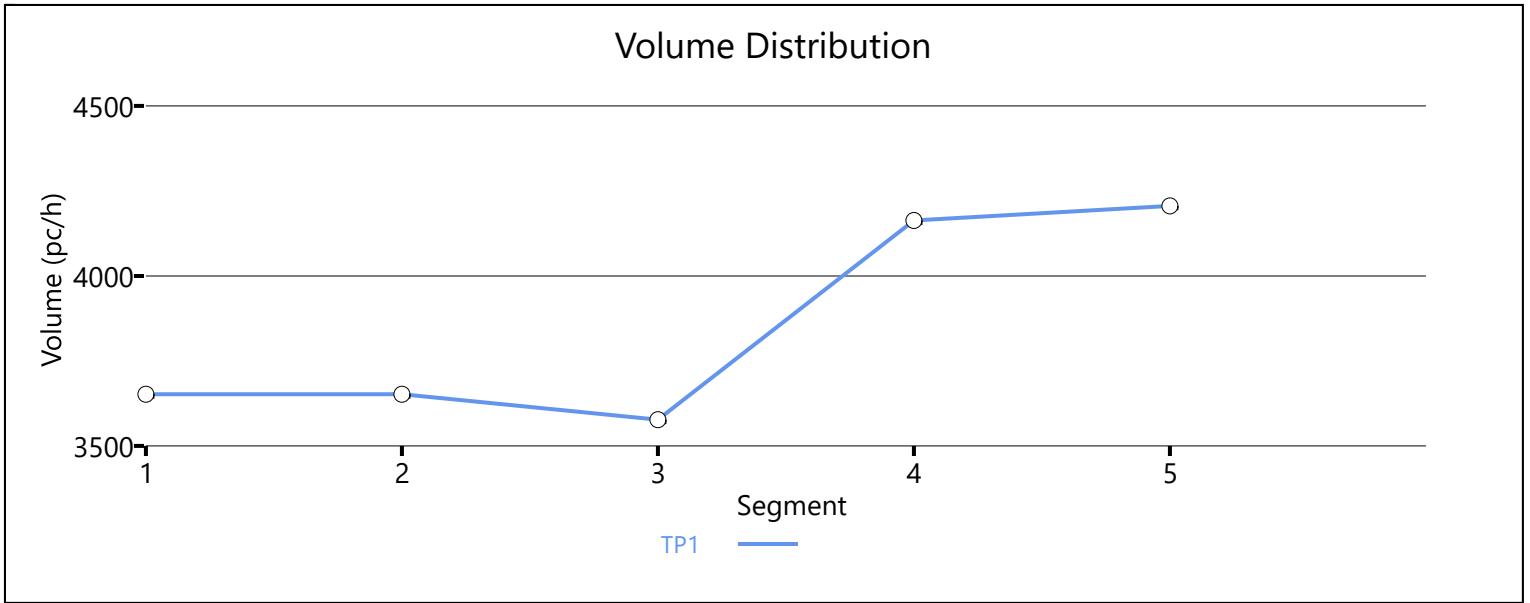
Facility Overall Results

Space Mean Speed, mi/h	67.9	Density, veh/mi/ln	16.4
Average Travel Time, min	2.30	Density, pc/mi/ln	19.2

Messages

Comments

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HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	1/3/2022
Agency	ODOT	Analysis Year	2050
Jurisdiction	McClain County	Time Period Analyzed	I35 SB-PM Peak Hour-Existing Configuration
Project Description	I-35 & SH-74 Interchange Alternative Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	3.03		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 SB North Limits	5280	3
2	Diverge	Diverge	Slip Ramp	1500	3
3	Basic	Basic	SH 74 Underpass	180	3
4	Diverge	Diverge	SH 74 Exit Ramp	1500	3
5	Basic	Basic	Between SH 74 Ramps	740	3
6	Merge	Merge	SH 74 Entrance Ramp	1500	3
7	Basic	Basic	I35 SB South Limits	5280	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	5344	7200	0.74	67.1	26.5	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	5344	969	7200	2000	0.74	0.48	62.0	56.6	28.7	30.4	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	4305	7200	0.60	69.3	20.3	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	4305	99	7200	2000	0.60	0.05	64.0	58.8	22.4	22.2	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	4199	7200	0.58	70.1	19.8	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	4292	93	7200	2000	0.60	0.05	63.9	62.0	22.4	20.9	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	4299	7200	0.60	70.7	20.3	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.1	23.5	20.1	2.70	C

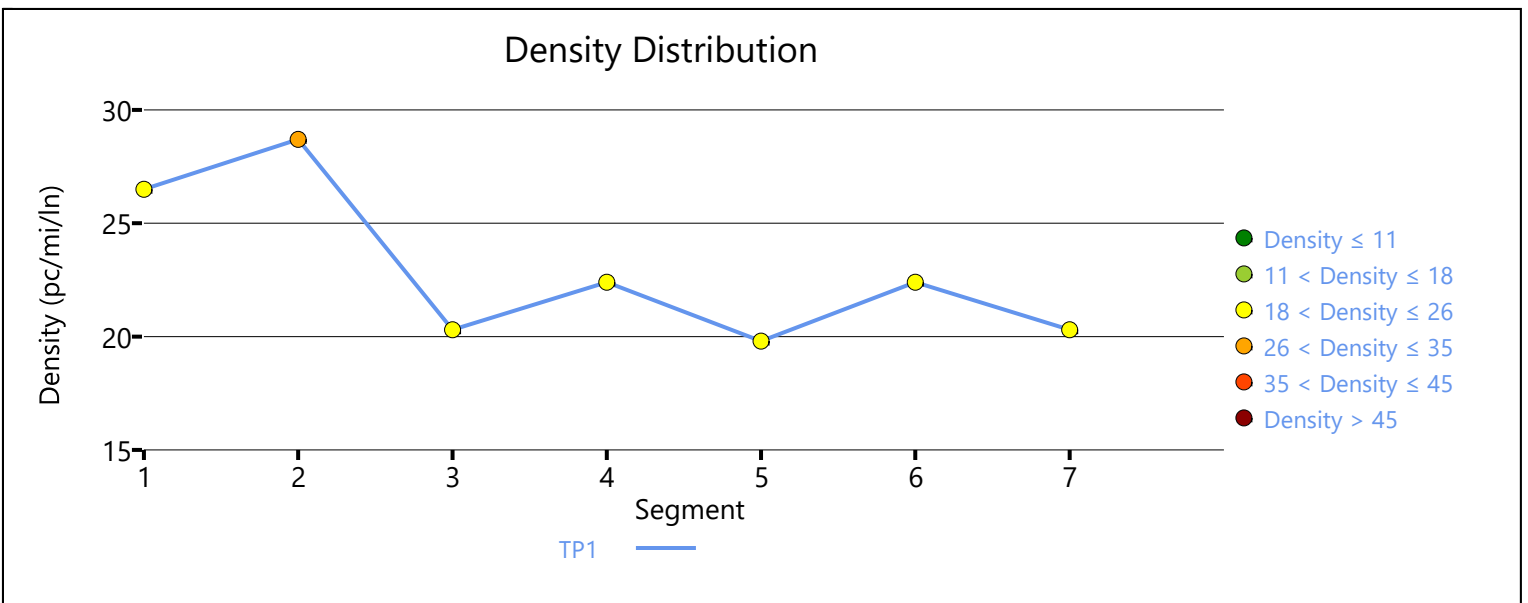
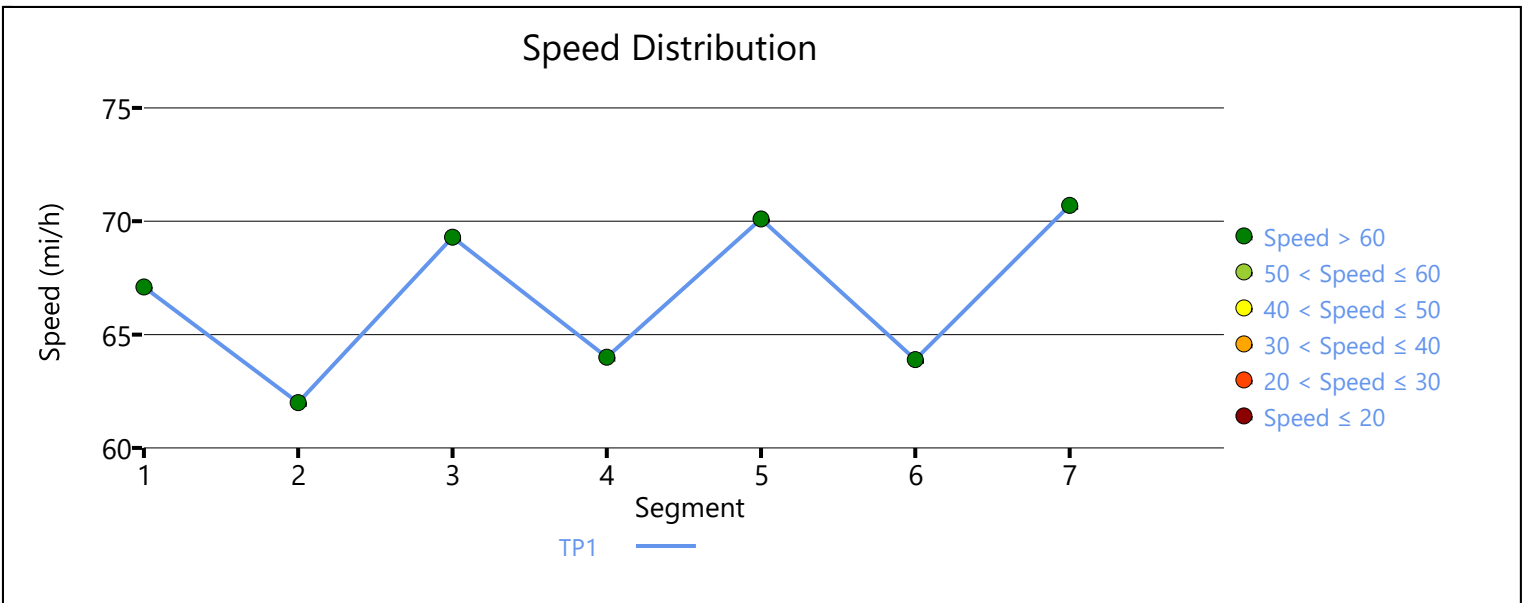
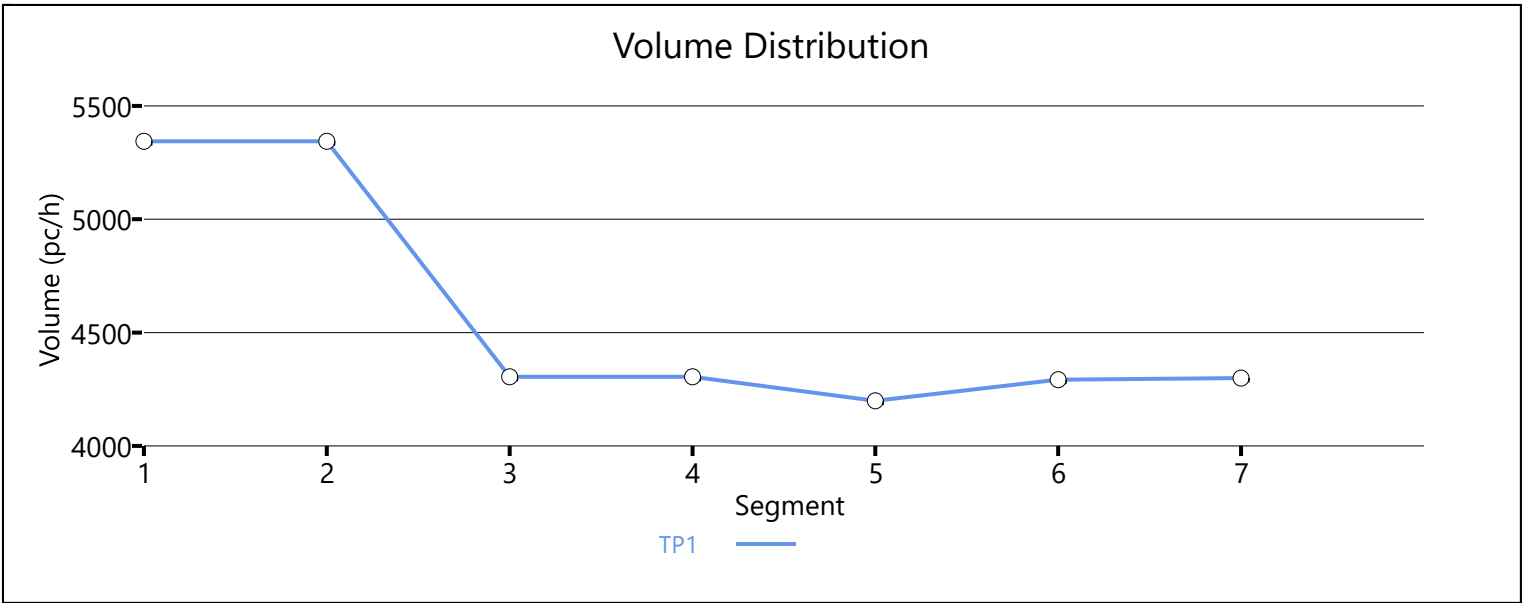
Facility Overall Results

Space Mean Speed, mi/h	67.1	Density, veh/mi/ln	20.1
Average Travel Time, min	2.70	Density, pc/mi/ln	23.5

Messages

Comments

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HCS7 Freeway Facilities Report

Project Information

Analyst	TEIM Design	Date	4/25/2022
Agency	ODOT	Analysis Year	2050
Jurisdiction	McClain County	Time Period Analyzed	I35 NB-PM Peak Hour- Alternatives 1-5
Project Description	I-35 & SH-74 Interchange Alternatives Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	5
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	2.66		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	I35 NB South Limits	5280	3
2	Diverge	Diverge	SH 74 Exit Ramp	1500	3
3	Basic	Basic	Between SH 74 Ramps	472	3
4	Merge	Merge	SH 74 Entrance Ramp	1500	3
5	Basic	Basic	I35 NB North Limits	5280	3

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	3652	7158	0.51	68.6	17.7	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	3652	70	7200	2000	0.51	0.04	66.5	60.9	18.3	14.2	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.855	3577	7185	0.50	68.9	17.2	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.94	0.855	0.917	4163	586	7200	2000	0.58	0.29	67.5	65.4	20.6	19.3	B

Segment 5: Basic

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS
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Period			(pc/h)	(pc/h)	Ratio	(mi/h)	(pc/mi/ln)	
1	0.94	0.855	4206	7131	0.59	67.5	20.8	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.8	19.2	16.4	2.40	C

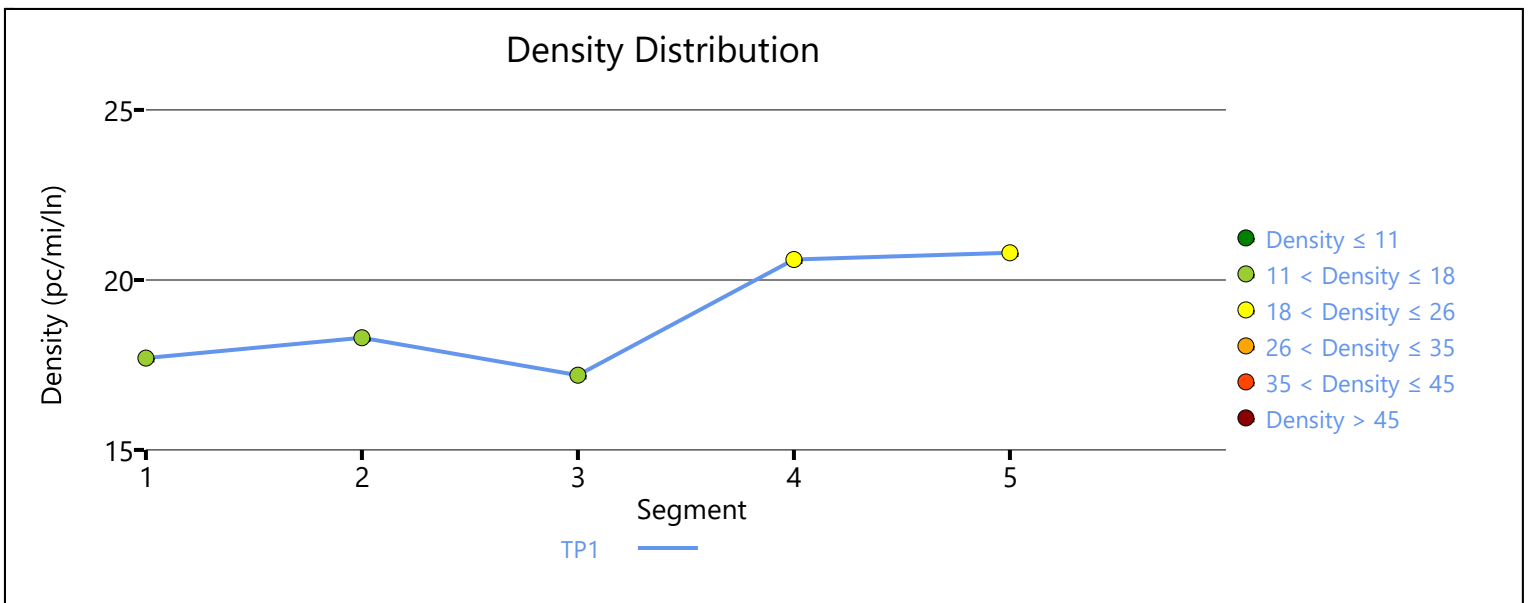
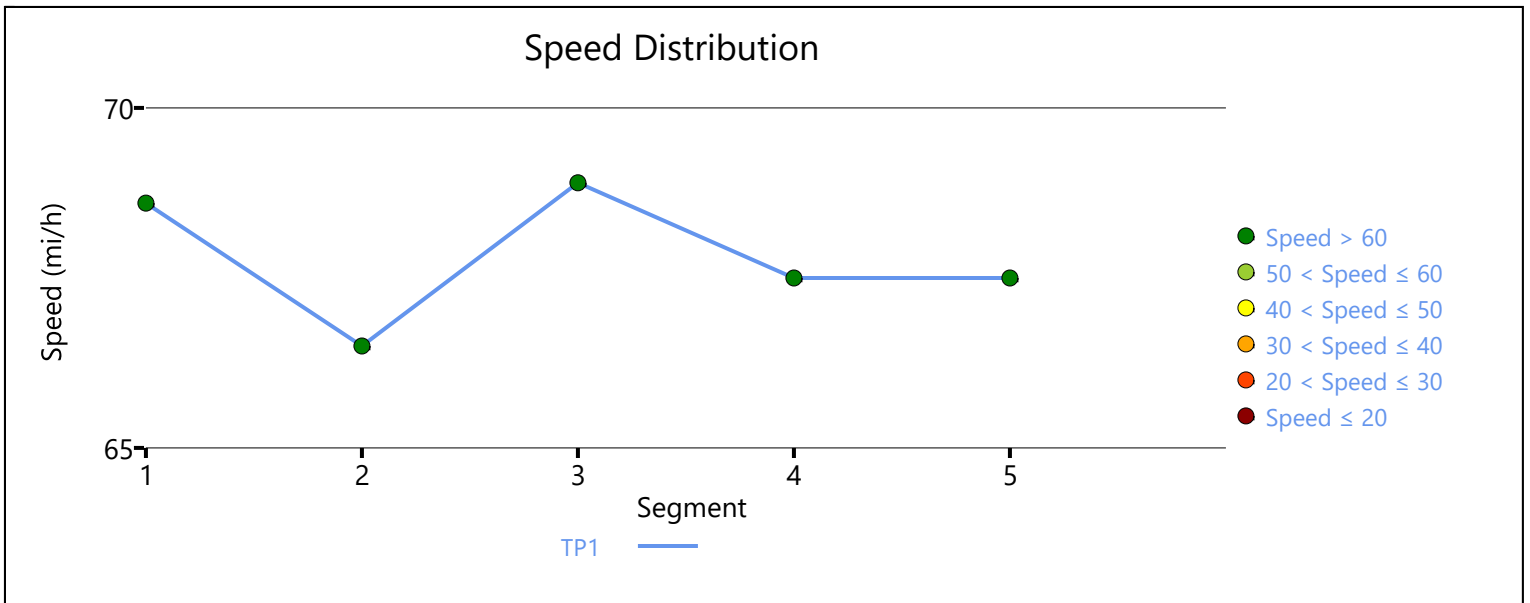
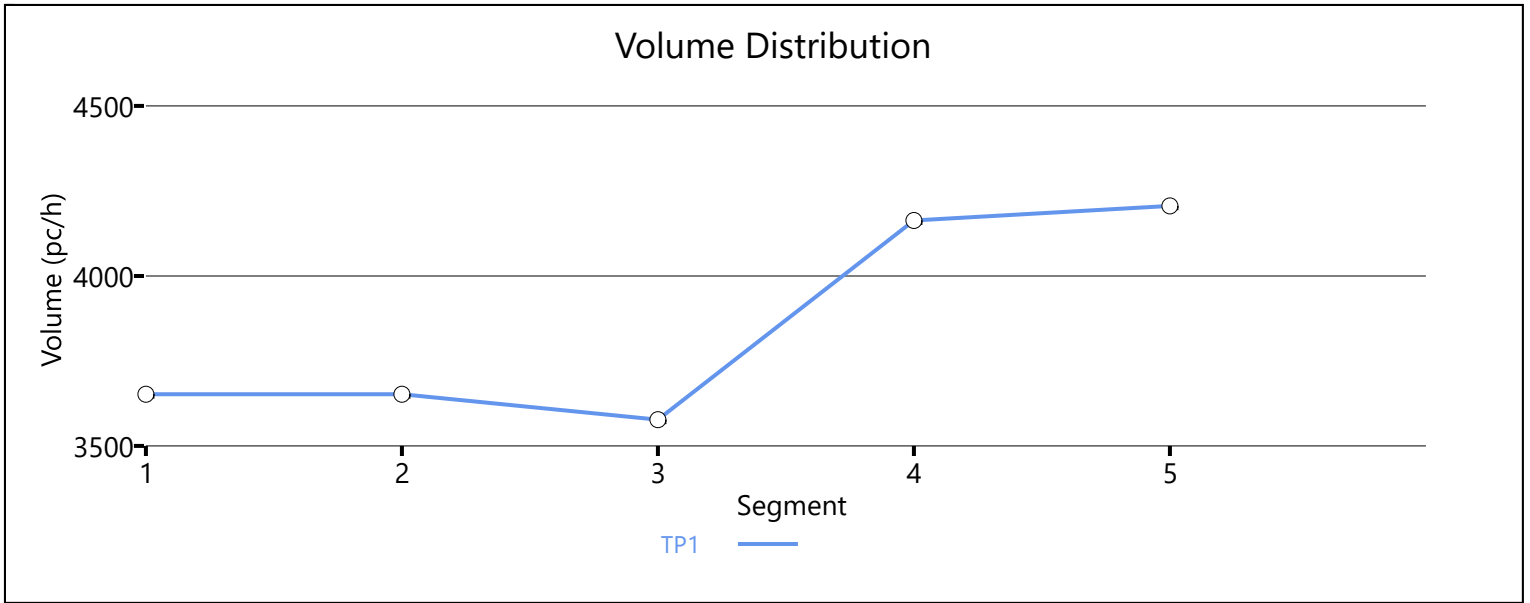
Facility Overall Results

Space Mean Speed, mi/h	67.8	Density, veh/mi/ln	16.4
Average Travel Time, min	2.40	Density, pc/mi/ln	19.2

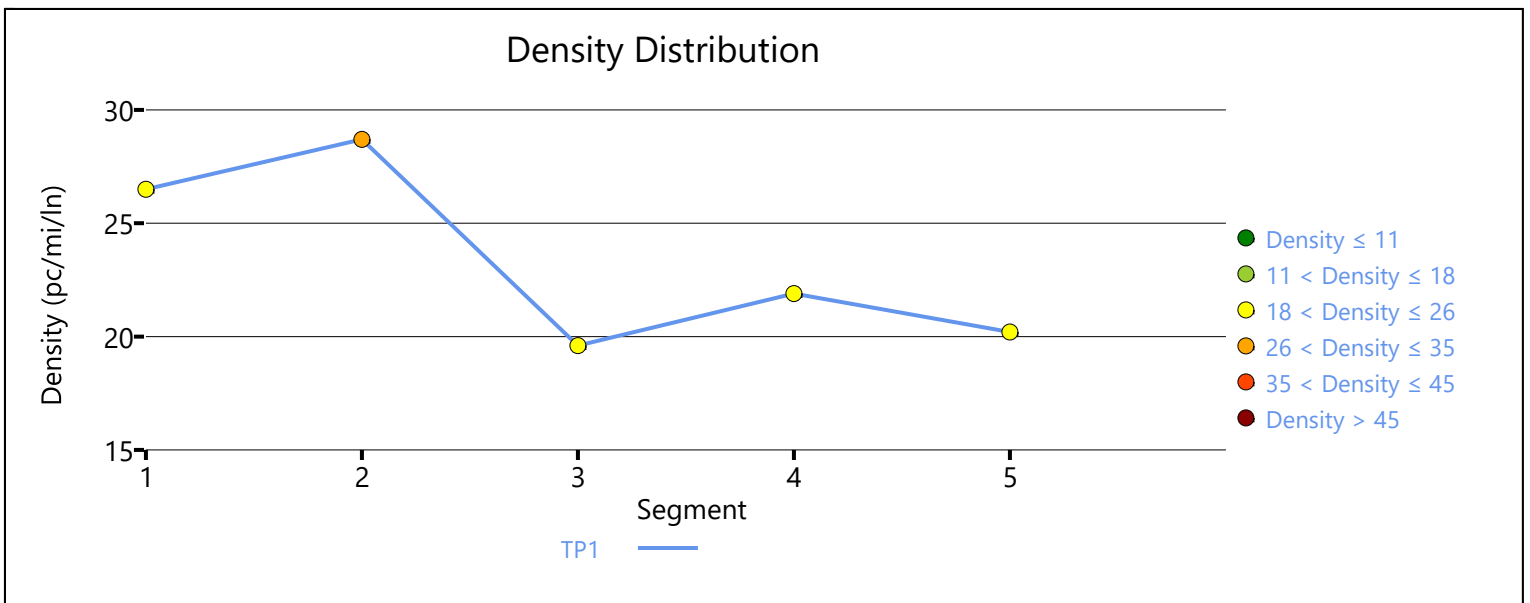
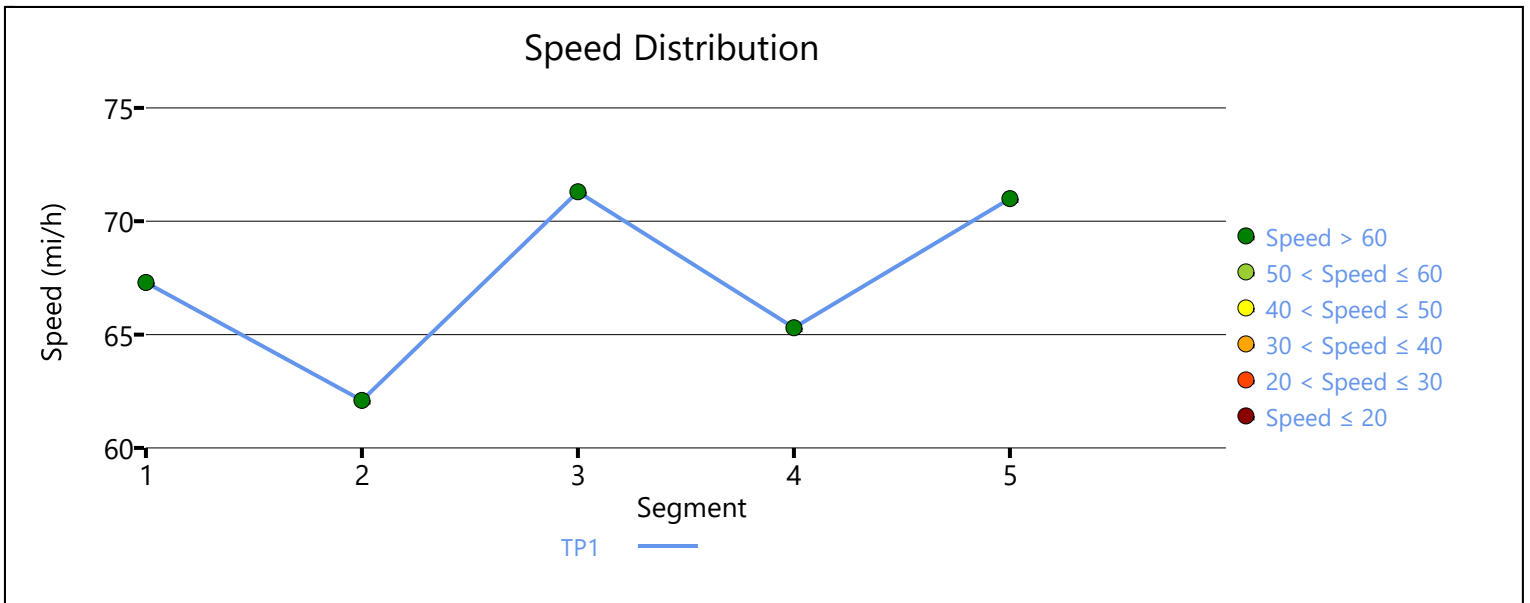
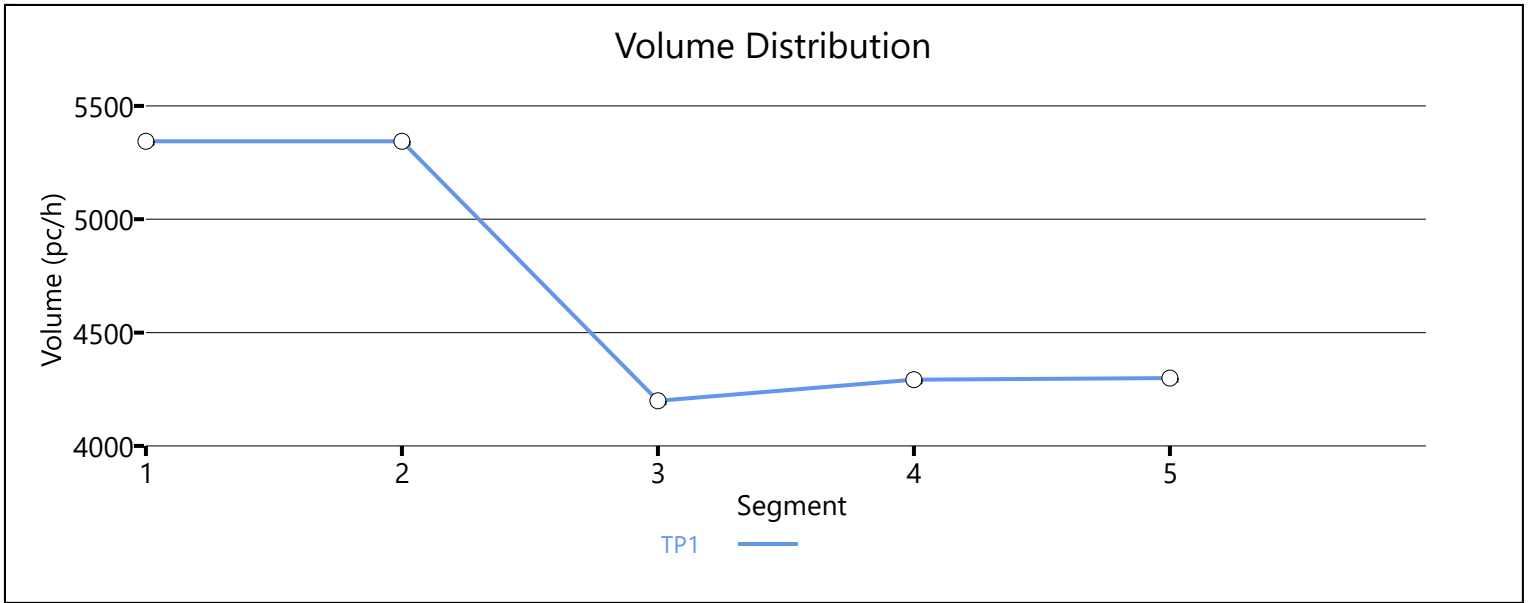
Messages

Comments

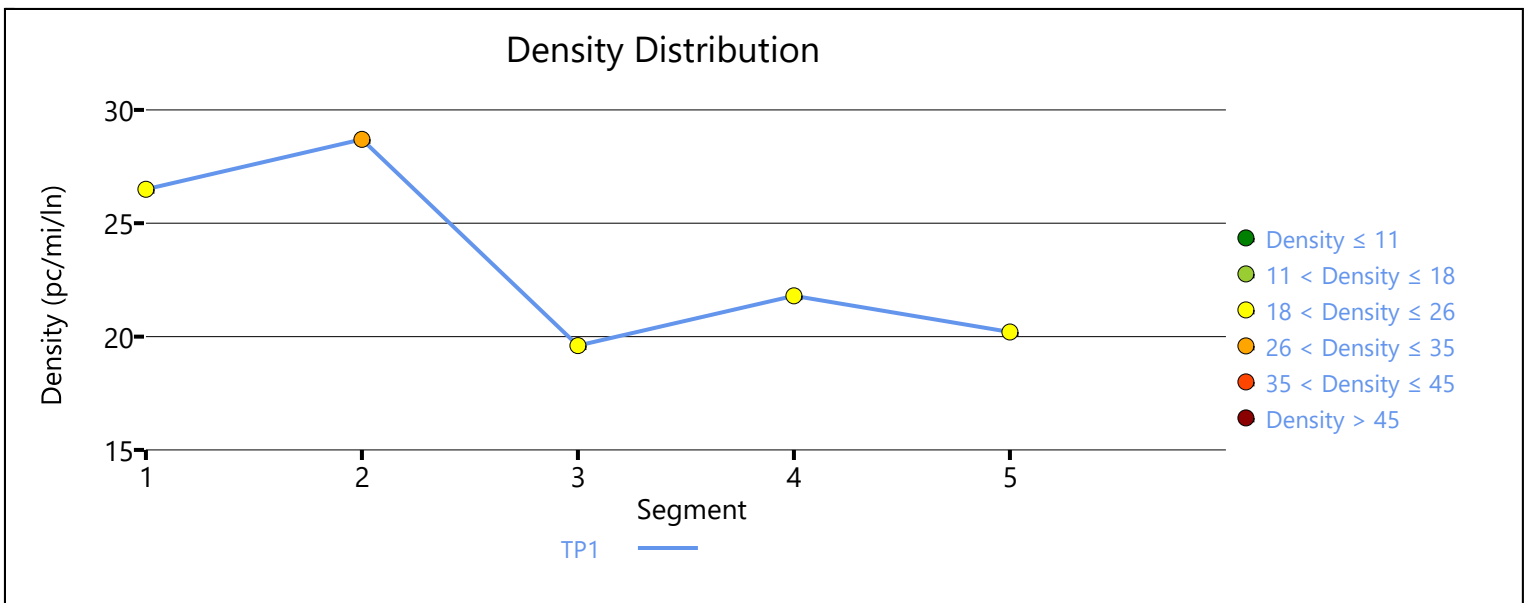
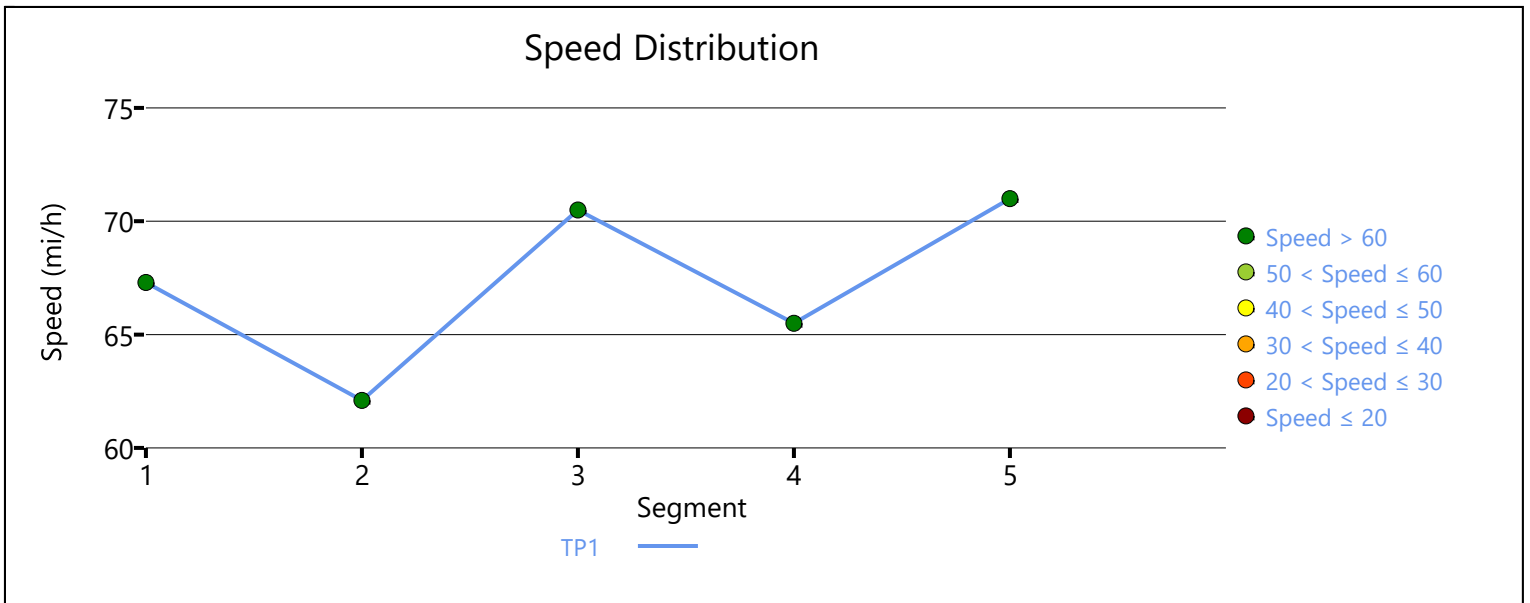
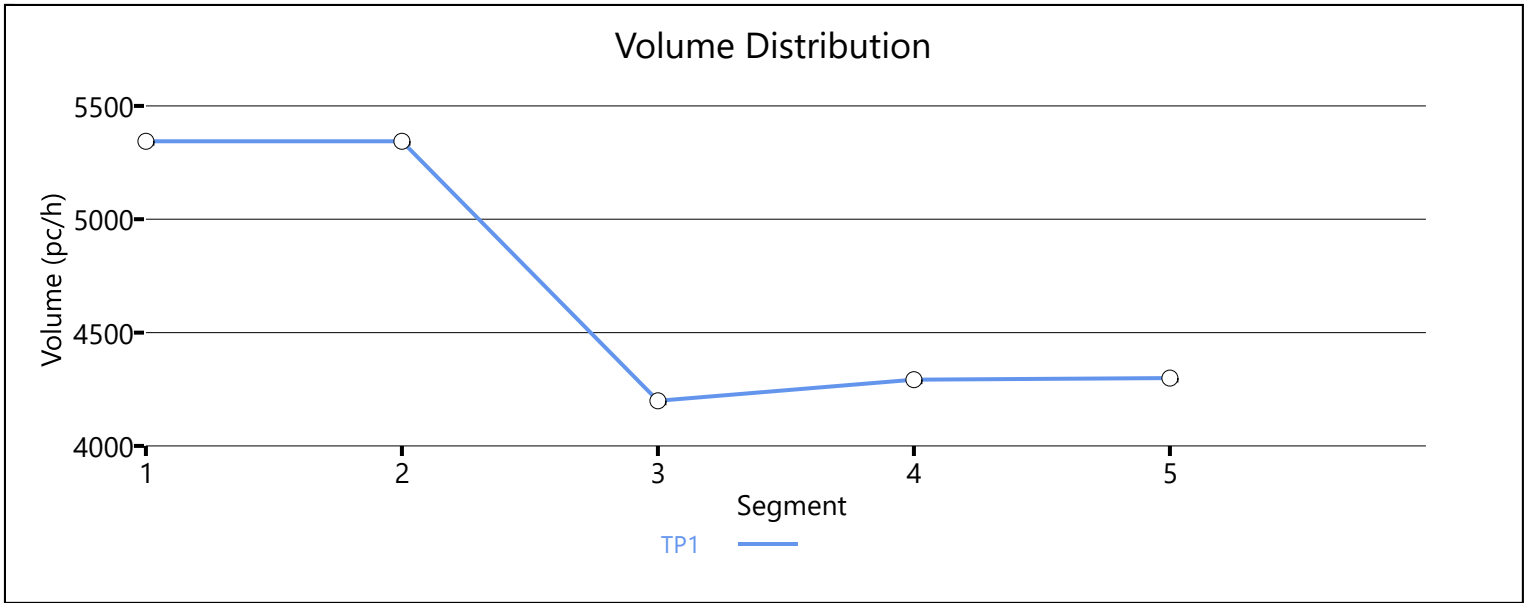
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1	0.94	0.94	0.855	0.917	4305	99	7200	2000	0.60	0.05	64.6	59.3	22.2	16.6	B	
Segment 5: Basic																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
1	0.94		0.855		4199		7200		0.58		70.6		19.8		C	
Segment 6: Merge																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.		
1	0.94	0.94	0.855	0.917	4292	93	7200	2000	0.60	0.05	65.3	63.7	21.9	17.7	B	
Segment 7: Basic																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
1	0.94		0.855		4299		7200		0.60		70.7		20.3		C	
Facility Analysis Results																
AP	VMT veh-mi/AP		VMT-Demand veh-mi/AP		VHD veh-h/AP		Total Delay Cost \$/AP		Speed mi/h		Density pc/mi/ln		Density veh/mi/ln		TT min	LOS
1	3446		3234		3.05		76.17		67.5		23.1		19.8		3.10	C
Facility Overall Results																
Space Mean Speed, mi/h					67.5				Average Density, veh/mi/ln				19.8			
Average Travel Time, min					3.10				Average Density, pc/mi/ln				23.1			
Total VMT, veh-mi					3446				Total VHD, veh-h				3.05			
Vehicle Value of Time (VOT), \$/h					25.00				Total Delay Cost, \$				76.17			



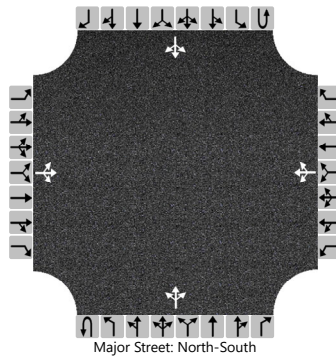
1	0.94	0.94	0.855	0.917	4305	99	7200	2000	0.60	0.05	64.6	59.3	22.2	17.4	B	
Segment 5: Basic																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
1	0.94		0.855		4199		7200		0.58		70.2		19.8		C	
Segment 6: Merge																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R Infl.	F	R Infl.		
1	0.94	0.94	0.855	0.917	4292	93	7200	2000	0.60	0.05	65.6	64.1	21.8	16.5	B	
Segment 7: Basic																
AP	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS	
1	0.94		0.855		4299		7200		0.60		70.7		20.3		C	
Facility Analysis Results																
AP	VMT veh-mi/AP		VMT-Demand veh-mi/AP		VHD veh-h/AP		Total Delay Cost \$/AP		Speed mi/h		Density pc/mi/ln		Density veh/mi/ln		TT min	LOS
1	3443		3231		2.99		74.70		67.4		23.2		19.8		3.10	C
Facility Overall Results																
Space Mean Speed, mi/h					67.4				Average Density, veh/mi/ln				19.8			
Average Travel Time, min					3.10				Average Density, pc/mi/ln				23.2			
Total VMT, veh-mi					3443				Total VHD, veh-h				2.99			
Vehicle Value of Time (VOT), \$/h					25.00				Total Delay Cost, \$				74.70			



HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/13/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 1						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		15	0	45		2	0	2		465	168	2		2	113	40
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

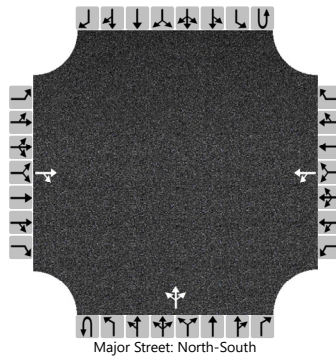
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			65				4			505					2	
Capacity, c (veh/h)			232				122			1370					1349	
v/c Ratio			0.28				0.04			0.37					0.00	
95% Queue Length, Q ₉₅ (veh)			1.1				0.1			1.7					0.0	
Control Delay (s/veh)			26.4				35.6			9.2					7.7	
Level of Service (LOS)			D				E			A					A	
Approach Delay (s/veh)	26.4				35.6				7.7				0.1			
Approach LOS	D				E											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	Airport Rd. and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/27/2022			East/West Street	Airport Rd.		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 1						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	0	0
Configuration				TR		LT					LTR					
Volume (veh/h)			17	143		22	63			572	0	53				
Percent Heavy Vehicles (%)			9	9		9	9			9						
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)			6.5	7.1		7.1	6.5			5.3						
Critical Headway (sec)			6.99	7.39		7.59	6.99			5.39						
Base Follow-Up Headway (sec)			4.0	3.9		3.5	4.0			3.1						
Follow-Up Headway (sec)			4.08	3.98		3.58	4.08			3.18						

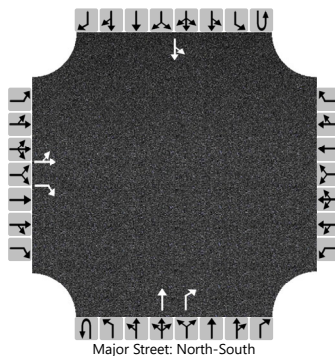
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				174		92				622						
Capacity, c (veh/h)				904		43				1132						
v/c Ratio				0.19		2.17				0.55						
95% Queue Length, Q ₉₅ (veh)				0.7		9.8				3.5						
Control Delay (s/veh)				9.9		740.2				12.0						
Level of Service (LOS)				A		F				B						
Approach Delay (s/veh)	9.9				740.2				11.6							
Approach LOS	A				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/27/2022			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 1						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound					
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	1	1		0	0	0	0	0	1	1	0	0	1	0		
Configuration		LT		R							T	R		LT				
Volume (veh/h)		200	0	720							425	50		30	135			
Percent Heavy Vehicles (%)		9	9	9										9				
Proportion Time Blocked																		
Percent Grade (%)		2																
Right Turn Channelized		No									No							
Median Type Storage		Undivided																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2										4.1		
Critical Headway (sec)		7.59	6.99	6.49										4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3										2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38										2.28		

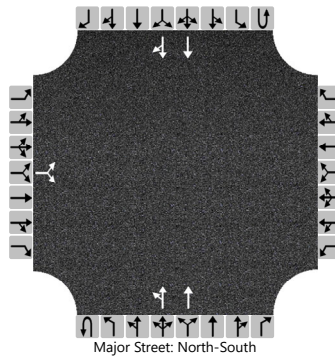
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		217		783										33			
Capacity, c (veh/h)		310		875										1015			
v/c Ratio		0.70		0.89										0.03			
95% Queue Length, Q ₉₅ (veh)		4.9		12.3										0.1			
Control Delay (s/veh)		39.9		32.5										8.7			
Level of Service (LOS)		E		D										A			
Approach Delay (s/veh)		34.1												1.8			
Approach LOS		D															

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	W. Frontage Rd. and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/25/2022			East/West Street	W. Frontage Rd.		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 1						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	2	0	0	0	2	0
Configuration			LR							LT	T				T	TR
Volume (veh/h)		70		50						60	405				810	45
Percent Heavy Vehicles (%)		9		9						9						
Proportion Time Blocked																
Percent Grade (%)	2															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

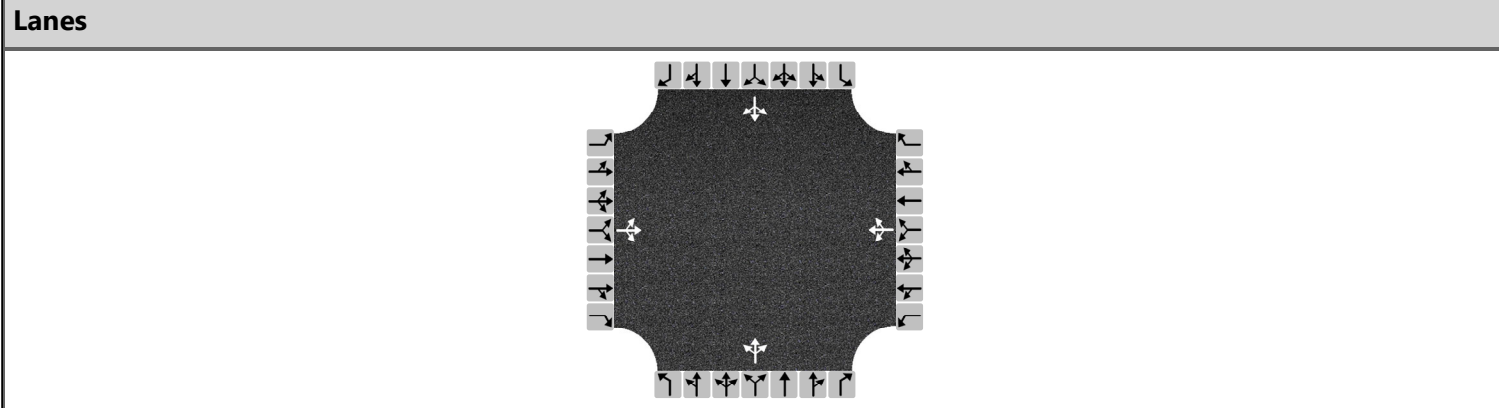
Base Critical Headway (sec)		7.5		6.9									4.1				
Critical Headway (sec)		7.38		7.28									4.28				
Base Follow-Up Headway (sec)		3.5		3.3									2.2				
Follow-Up Headway (sec)		3.59		3.39									2.29				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			130										65				
Capacity, c (veh/h)			173										690				
v/c Ratio			0.75										0.09				
95% Queue Length, Q ₉₅ (veh)			4.8										0.3				
Control Delay (s/veh)			71.3										10.8				
Level of Service (LOS)			F										B				
Approach Delay (s/veh)	71.3								1.8								
Approach LOS	F																

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/13/2022	East/West Street	NB Ramps
Analysis Year	2022	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 1		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	15	0	45	2	0	2	465	168	2	2	113	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	65			4			690			168		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

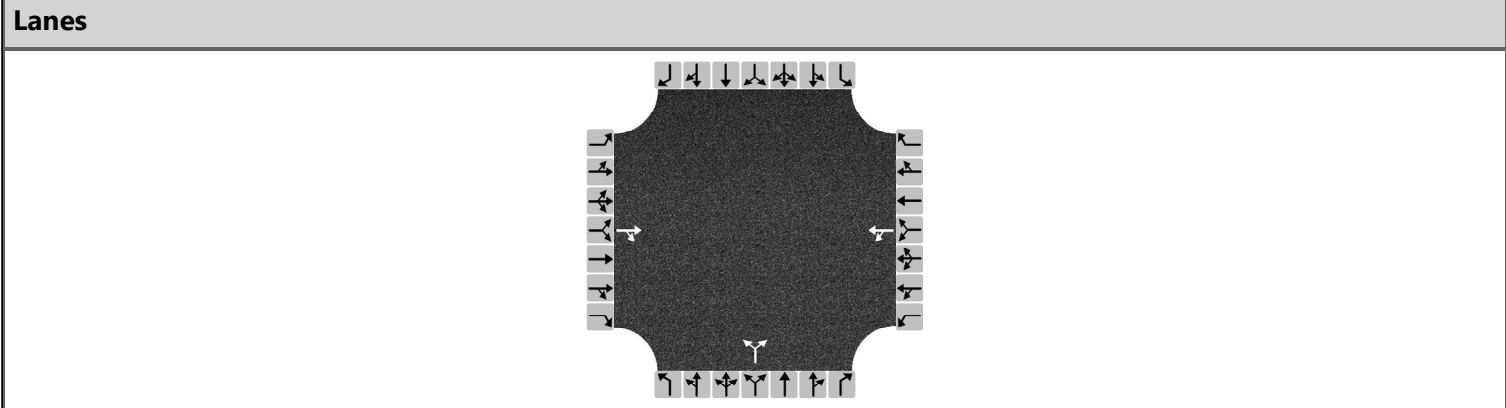
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.058			0.004			0.614			0.150		
Final Departure Headway, hd (s)	5.67			6.01			4.61			4.88		
Final Degree of Utilization, x	0.103			0.007			0.883			0.228		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.67			4.01			2.61			2.88		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	65			4			690			168		
Capacity	635			599			782			738		
95% Queue Length, Q ₉₅ (veh)	0.3			0.0			11.4			0.9		
Control Delay (s/veh)	9.3			9.1			31.5			9.3		
Level of Service, LOS	A			A			D			A		
Approach Delay (s/veh)	9.3			9.1			31.5			9.3		
Approach LOS	A			A			D			A		
Intersection Delay, s/veh LOS	25.8						D					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	Airport Rd and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	4/25/2022	East/West Street	Airport Rd
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 1		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume		17	143	22	63		572		53			
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	TR			LT			LR					
Flow Rate, v (veh/h)	174			92			679					
Percent Heavy Vehicles	9			9			9					

Departure Headway and Service Time

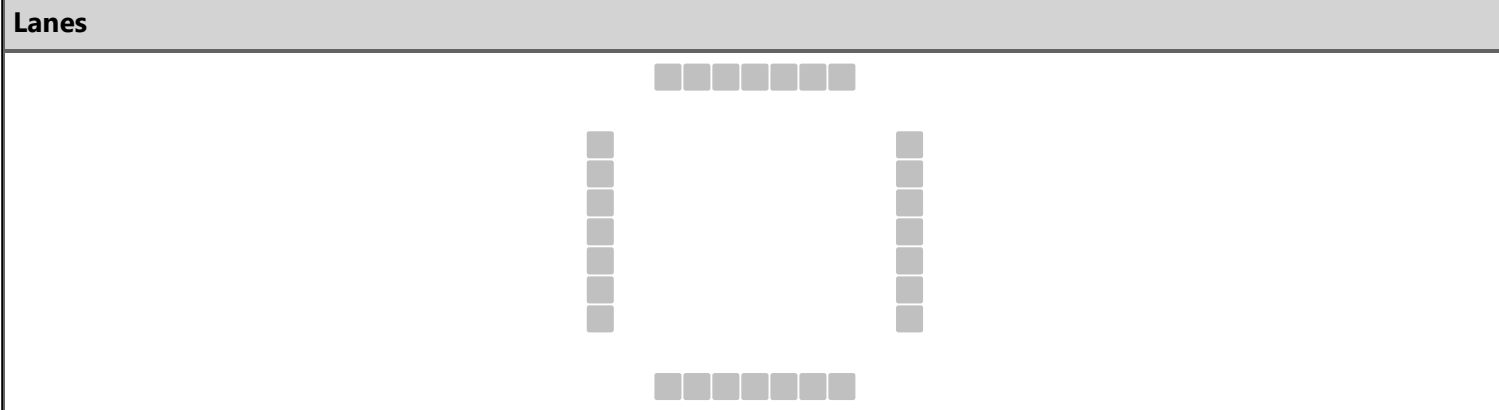
Initial Departure Headway, hd (s)	3.20			3.20			3.20					
Initial Degree of Utilization, x	0.155			0.082			0.604					
Final Departure Headway, hd (s)	5.52			6.25			4.98					
Final Degree of Utilization, x	0.267			0.160			0.940					
Move-Up Time, m (s)	2.0			2.0			2.0					
Service Time, ts (s)	3.52			4.25			2.98					

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	174			92			679					
Capacity	652			576			723					
95% Queue Length, Q ₉₅ (veh)	1.1			0.6			13.5					
Control Delay (s/veh)	10.5			10.4			42.2					
Level of Service, LOS	B			B			E					
Approach Delay (s/veh)	10.5			10.4			42.2					
Approach LOS	B			B			E					
Intersection Delay, s/veh LOS	33.3						D					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SH74 and W. Frontage Rd
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	W. Frontage Rd
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 1		



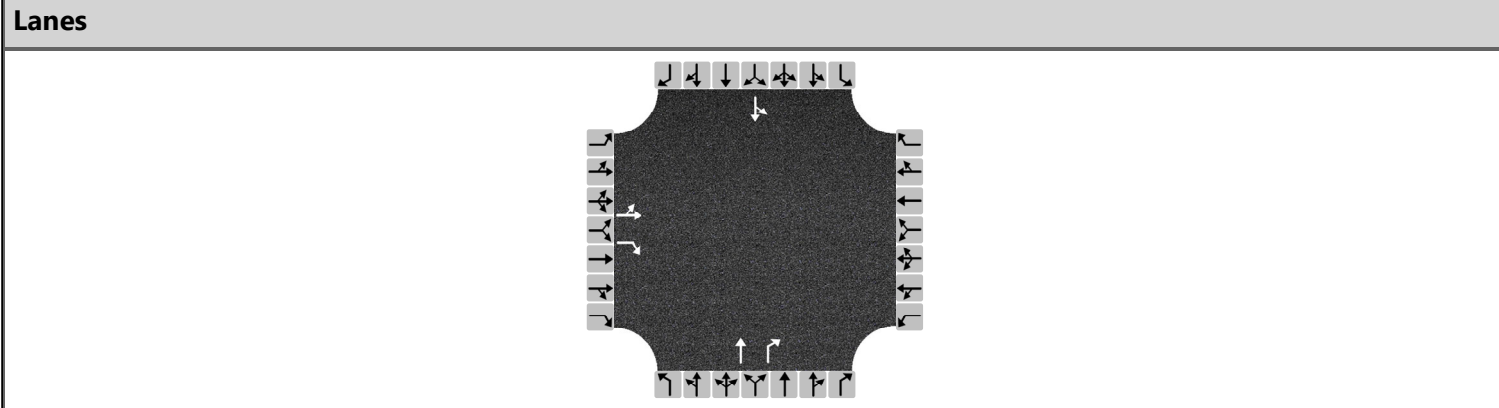
Vehicle Volume and Adjustments												
Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	205		750				60	405			110	45
% Thrus in Shared Lane							50					50
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LR						LT	T		T	TR	
Flow Rate, v (veh/h)	1038						285	220		60	109	
Percent Heavy Vehicles	9						9	9		9	9	

Departure Headway and Service Time												
Initial Departure Headway, hd (s)	3.20						3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.923						0.254	0.196		0.053	0.097	
Final Departure Headway, hd (s)	5.42						7.01	6.90		7.45	7.14	
Final Degree of Utilization, x	1.562						0.556	0.422		0.124	0.215	
Move-Up Time, m (s)	2.0						2.3	2.3		2.3	2.3	
Service Time, ts (s)	3.42						4.71	4.60		5.15	4.84	

Capacity, Delay and Level of Service												
Flow Rate, v (veh/h)	1038						285	220		60	109	
Capacity	665						513	522		483	504	
95% Queue Length, Q ₉₅ (veh)	53.9						3.4	2.1		0.4	0.8	
Control Delay (s/veh)	275.4						18.1	14.5		11.2	11.8	
Level of Service, LOS	F						C	B		B	B	
Approach Delay (s/veh)	275.4						16.6			11.6		
Approach LOS	F						C			B		
Intersection Delay, s/veh LOS	173.0						F					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	4/25/2022	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 1		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	200	0	720				425	50		30	135	
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R					T	R		LT		
Flow Rate, v (veh/h)	217	783					462	54		179		
Percent Heavy Vehicles	9	9					9	9		9		


Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20					3.20	3.20		3.20		
Initial Degree of Utilization, x	0.193	0.696					0.411	0.048		0.159		
Final Departure Headway, hd (s)	7.44	6.22					7.20	6.51		7.42		
Final Degree of Utilization, x	0.449	1.353					0.924	0.098		0.369		
Move-Up Time, m (s)	2.3	2.3					2.3	2.3		2.0		
Service Time, ts (s)	5.14	3.92					4.90	4.21		5.42		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	217	783					462	54		179		
Capacity	484	578					500	553		485		
95% Queue Length, Q ₉₅ (veh)	2.3	34.1					11.0	0.3		1.7		
Control Delay (s/veh)	16.1	188.9					50.2	9.9		14.7		
Level of Service, LOS	C	F					F	A		B		
Approach Delay (s/veh)	151.3						45.9			14.7		
Approach LOS	F						E			B		
Intersection Delay, s/veh LOS	104.8						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Alternative 1				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	15	0	45	0	2	0	2	0	465	168	2	0	2	113	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	18	0	53	0	2	0	2	0	551	199	2	0	2	134	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

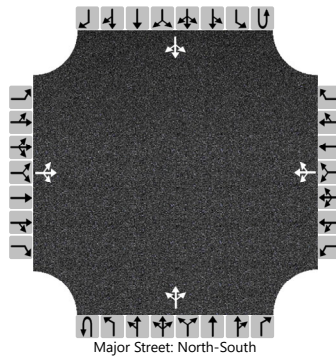
Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		71			4			752			183		
Entry Volume, veh/h		65			4			690			168		
Circulating Flow (v _c), pc/h	138			768			20			553			
Exiting Flow (v _{ex}), pc/h	4			598			219			189			
Capacity (C _{PCE}), pc/h		1199			630			1352			785		
Capacity (c), veh/h		1100			578			1240			720		
v/c Ratio (x)		0.06			0.01			0.56			0.23		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.8			6.3			9.3			7.7		
Lane LOS		A			A			A			A		
95% Queue, veh		0.2			0.0			3.6			0.9		
Approach Delay, s/veh	3.8			6.3			9.3			7.7			
Approach LOS	A			A			A			A			
Intersection Delay, s/veh LOS	8.6						A						

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/16/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 2						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		15	0	45		2	0	2		465	168	2		2	113	40
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

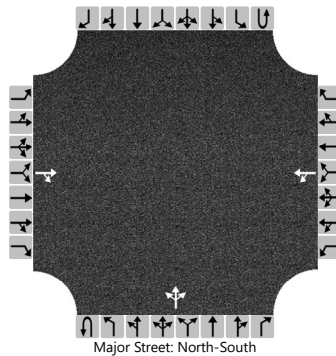
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			65				4			505				2		
Capacity, c (veh/h)			232				122			1370				1349		
v/c Ratio			0.28				0.04			0.37				0.00		
95% Queue Length, Q ₉₅ (veh)			1.1				0.1			1.7				0.0		
Control Delay (s/veh)			26.4				35.6			9.2				7.7		
Level of Service (LOS)			D				E			A				A		
Approach Delay (s/veh)	26.4				35.6				7.7				0.1			
Approach LOS	D				E											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	Airport Rd. and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/27/2022			East/West Street	Airport Rd.		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 2						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LTR					
Volume (veh/h)			17	143		22	63			572	0	53				
Percent Heavy Vehicles (%)			9	9		9	9			9						
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)			6.5	7.1		7.1	6.5			5.3						
Critical Headway (sec)			6.99	7.39		7.59	6.99			5.39						
Base Follow-Up Headway (sec)			4.0	3.9		3.5	4.0			3.1						
Follow-Up Headway (sec)			4.08	3.98		3.58	4.08			3.18						

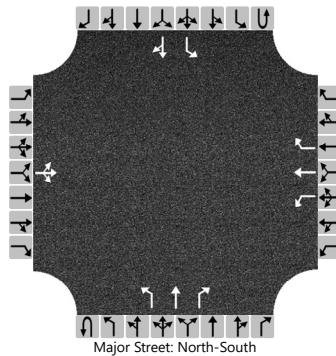
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			174	92					622							
Capacity, c (veh/h)			904	43					1132							
v/c Ratio			0.19	2.17					0.55							
95% Queue Length, Q ₉₅ (veh)			0.7	9.8					3.5							
Control Delay (s/veh)			9.9	740.2					12.0							
Level of Service (LOS)			A	F					B							
Approach Delay (s/veh)	9.9				740.2				11.6							
Approach LOS	A				F											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	3/31/2023			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 2						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	1	0	1	1	1	0	1	1	0	
Configuration			LTR			L	T	R		L	T	R		L		TR	
Volume (veh/h)		160	45	750		15	5	65		60	400	5		30	95	40	
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9			
Proportion Time Blocked																	
Percent Grade (%)		2				0											
Right Turn Channelized						No				No							
Median Type Storage		Undivided															

Critical and Follow-up Headways

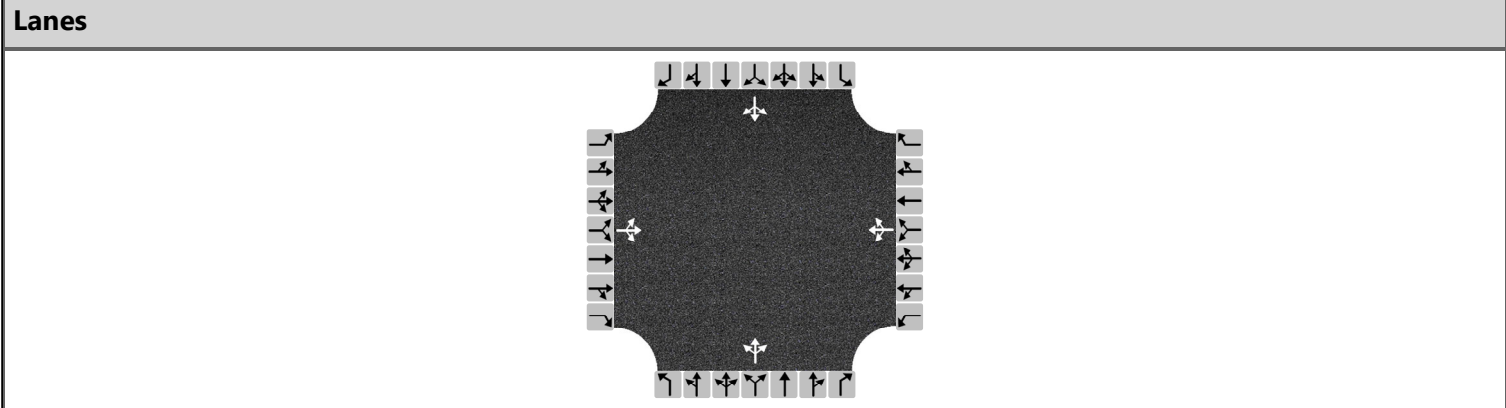
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			1038		16	5	71		65					33			
Capacity, c (veh/h)			553		12	290	607		1393					1083			
v/c Ratio			1.88		1.34	0.02	0.12		0.05					0.03			
95% Queue Length, Q ₉₅ (veh)			66.4		2.7	0.1	0.4		0.1					0.1			
Control Delay (s/veh)			418.9		804.0	17.6	11.7		7.7					8.4			
Level of Service (LOS)			F		F	C	B		A					A			
Approach Delay (s/veh)		418.9				151.9				1.0				1.5			
Approach LOS		F				F											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 2		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	15	0	45	2	0	2	465	168	2	2	113	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	65			4			690			168		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

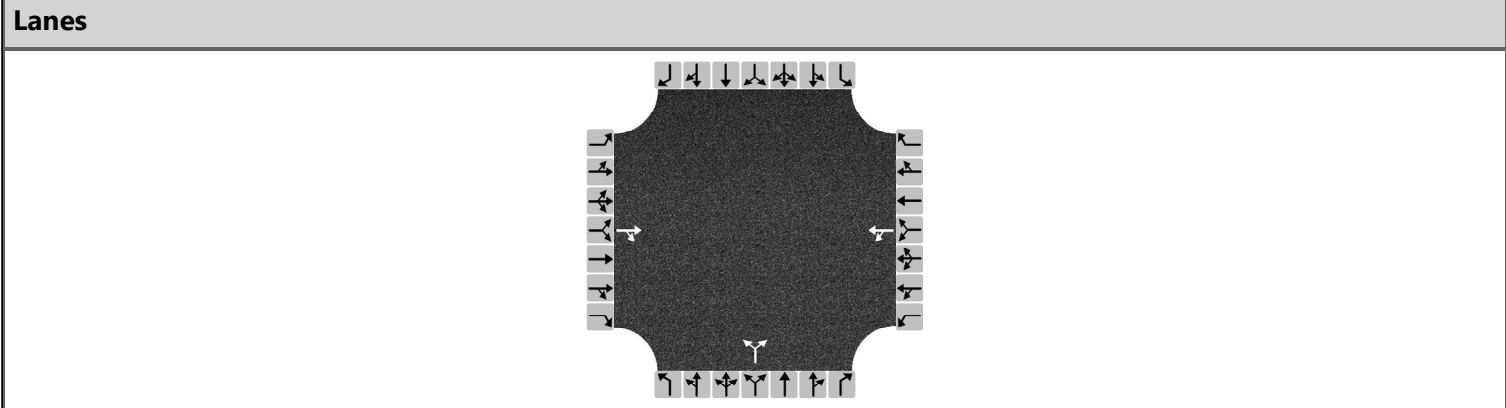
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.058			0.004			0.614			0.150		
Final Departure Headway, hd (s)	5.67			6.01			4.61			4.88		
Final Degree of Utilization, x	0.103			0.007			0.883			0.228		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	3.67			4.01			2.61			2.88		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	65			4			690			168		
Capacity	635			599			782			738		
95% Queue Length, Q ₉₅ (veh)	0.3			0.0			11.4			0.9		
Control Delay (s/veh)	9.3			9.1			31.5			9.3		
Level of Service, LOS	A			A			D			A		
Approach Delay (s/veh)	9.3			9.1			31.5			9.3		
Approach LOS	A			A			D			A		
Intersection Delay, s/veh LOS	25.8						D					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	Airport Rd and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	4/25/2022	East/West Street	Airport Rd
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 2		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume		17	143	22	63		572		53			
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	TR			LT			LR					
Flow Rate, v (veh/h)	174			92			679					
Percent Heavy Vehicles	9			9			9					

Departure Headway and Service Time

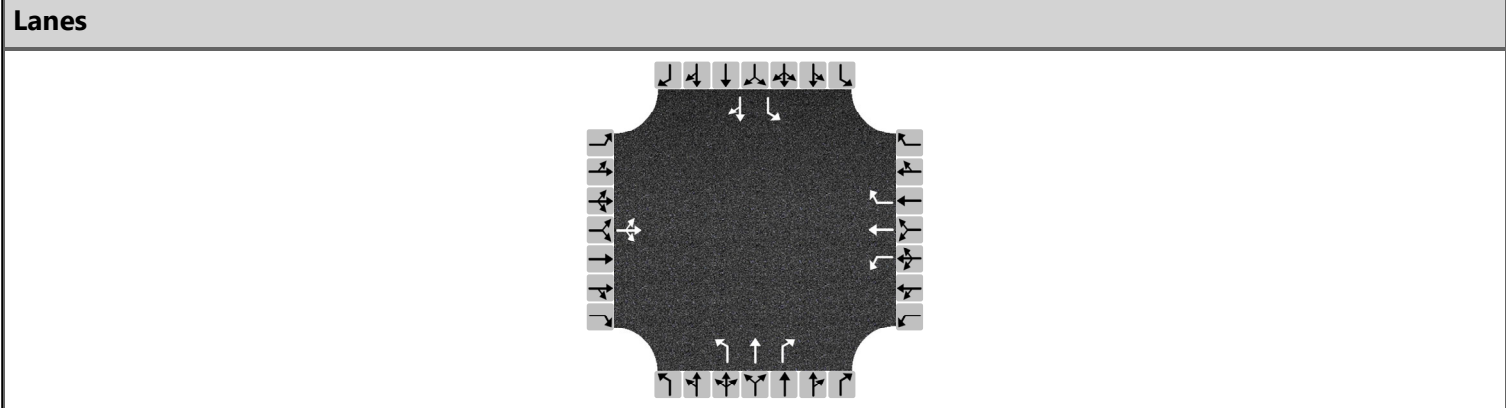
Initial Departure Headway, hd (s)	3.20			3.20			3.20					
Initial Degree of Utilization, x	0.155			0.082			0.604					
Final Departure Headway, hd (s)	5.52			6.25			4.98					
Final Degree of Utilization, x	0.267			0.160			0.940					
Move-Up Time, m (s)	2.0			2.0			2.0					
Service Time, ts (s)	3.52			4.25			2.98					

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	174			92			679					
Capacity	652			576			723					
95% Queue Length, Q ₉₅ (veh)	1.1			0.6			13.5					
Control Delay (s/veh)	10.5			10.4			42.2					
Level of Service, LOS	B			B			E					
Approach Delay (s/veh)	10.5			10.4			42.2					
Approach LOS	B			B			E					
Intersection Delay, s/veh LOS	33.3						D					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 2		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	160	45	750	15	5	65	60	400	5	30	95	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	T	R	L	T	R	L	TR	
Flow Rate, v (veh/h)	1038			16	5	71	65	435	5	33	147	
Percent Heavy Vehicles	9			9	9	9	9	9	9	9	9	

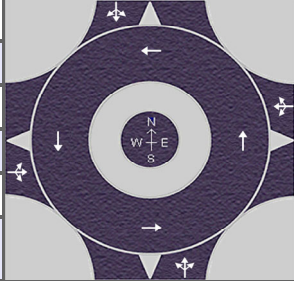
Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
Initial Degree of Utilization, x	0.923			0.014	0.005	0.063	0.058	0.386	0.005	0.029	0.130	
Final Departure Headway, hd (s)	7.20			8.92	8.42	7.72	8.17	7.67	6.97	9.07	8.36	
Final Degree of Utilization, x	2.075			0.040	0.013	0.152	0.148	0.926	0.011	0.082	0.341	
Move-Up Time, m (s)	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Service Time, ts (s)	4.90			6.62	6.12	5.42	5.87	5.37	4.67	6.77	6.06	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	1038			16	5	71	65	435	5	33	147	
Capacity	500			404	427	466	441	469	516	397	430	
95% Queue Length, Q ₉₅ (veh)	72.6			0.1	0.0	0.5	0.5	10.8	0.0	0.3	1.5	
Control Delay (s/veh)	507.0			12.0	11.2	11.8	12.3	52.7	9.7	12.6	15.3	
Level of Service, LOS	F			B	B	B	B	F	A	B	C	
Approach Delay (s/veh)	507.0			11.8			47.0			14.8		
Approach LOS	F			B			E			B		
Intersection Delay, s/veh LOS	305.1						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Alternative 2				Jurisdiction		McClain County	

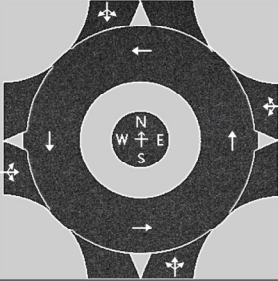
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	15	0	45	0	2	0	2	0	465	168	2	0	2	113	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	18	0	53	0	2	0	2	0	551	199	2	0	2	134	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		71			4			752			183		
Entry Volume, veh/h		65			4			690			168		
Circulating Flow (v _c), pc/h	138			768			20			553			
Exiting Flow (v _{ex}), pc/h	4			598			219			189			
Capacity (C _{PCE}), pc/h		1199			630			1352			785		
Capacity (c), veh/h		1100			578			1240			720		
v/c Ratio (x)		0.06			0.01			0.56			0.23		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.8			6.3			9.3			7.7		
Lane LOS		A			A			A			A		
95% Queue, veh		0.2			0.0			3.6			0.9		
Approach Delay, s/veh	3.8			6.3			9.3			7.7			
Approach LOS	A			A			A			A			
Intersection Delay, s/veh LOS	8.6						A						

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection	SB Ramps/Frontage & SH74		
Agency or Co.	ODOT				E/W Street Name	SB Ramps/Frontage		
Date Performed	3/26/2023				N/S Street Name	SH74		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	PM				Peak Hour Factor	0.92		
Project Description	Alternative 2				Jurisdiction	McClain County		

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR							
Volume (V), veh/h	0	160	45	750	0	15	5	65	0	60	400	5	0	30	95	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	190	53	889	0	18	6	77	0	71	474	6	0	36	113	47
Right-Turn Bypass	None				None				None							
Conflicting Lanes	1				1				1							
Pedestrians Crossing, p/h	0				0				0							
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		1132			101			551			196	
Entry Volume, veh/h		1039			93			506			180	
Circulating Flow (v _c), pc/h	167			735			279			95		
Exiting Flow (v _{ex}), pc/h	95			124			741			1020		
Capacity (C _{PCE}), pc/h		1164			652			1038			1253	
Capacity (c), veh/h		1068			598			952			1149	
v/c Ratio (x)		0.97			0.15			0.53			0.16	

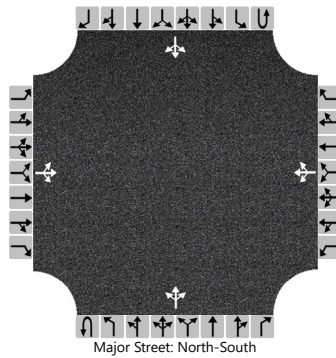
Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		41.0			7.9			10.6			4.5	
Lane LOS		E			A			B			A	
95% Queue, veh		18.0			0.5			3.2			0.6	
Approach Delay, s/veh LOS	41.0	E		7.9	A		10.6	B		4.5	A	
Intersection Delay, s/veh LOS	27.2									D		

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/16/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 3						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		15	5	40		25	40	25		425	145	55		15	100	40
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

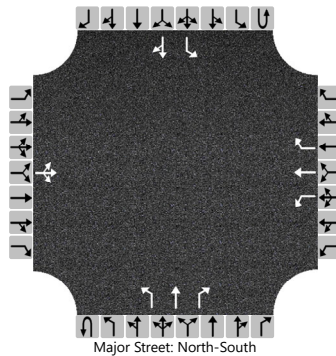
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			65				98			462				16		
Capacity, c (veh/h)			140				105			1387				1312		
v/c Ratio			0.47				0.93			0.33				0.01		
95% Queue Length, Q ₉₅ (veh)			2.1				5.6			1.5				0.0		
Control Delay (s/veh)			51.3				143.9			8.9				7.8		
Level of Service (LOS)			F				F			A				A		
Approach Delay (s/veh)	51.3				143.9				7.1				0.8			
Approach LOS	F				F				A				A			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	3/31/2023			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 3						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		1	1	1	0	1	1	1	0	1	1	0
Configuration			LTR			L	T	R		L	T	R		L		TR
Volume (veh/h)		160	45	750		15	5	65		60	400	5		30	95	40
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				0											
Right Turn Channelized					No				No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

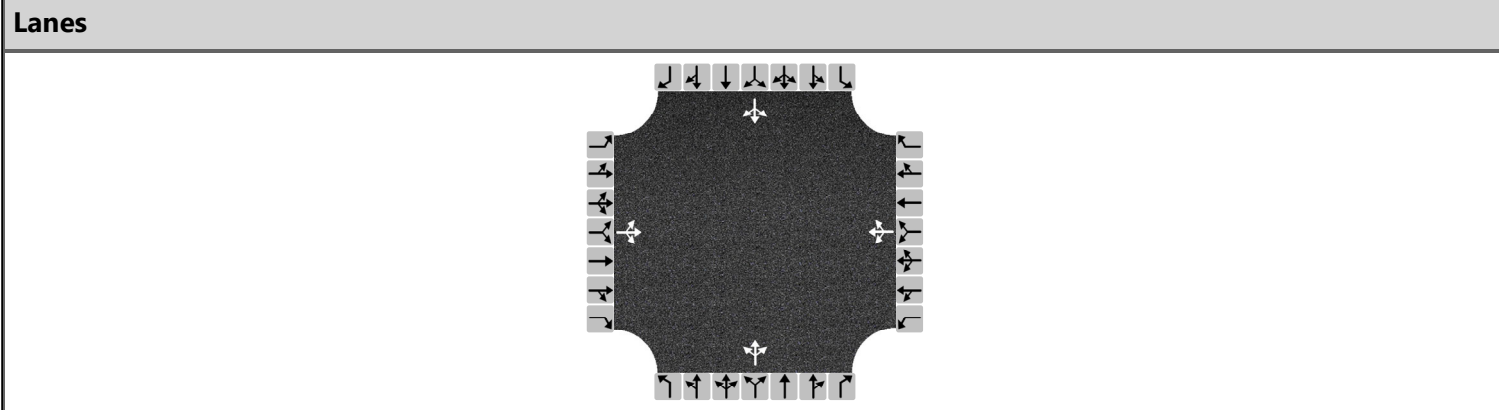
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			1038			16	5	71		65				33		
Capacity, c (veh/h)			553			12	290	607		1393				1083		
v/c Ratio			1.88			1.34	0.02	0.12		0.05				0.03		
95% Queue Length, Q ₉₅ (veh)			66.4			2.7	0.1	0.4		0.1				0.1		
Control Delay (s/veh)			418.9			804.0	17.6	11.7		7.7				8.4		
Level of Service (LOS)			F			F	C	B		A				A		
Approach Delay (s/veh)	418.9				151.9				1.0				1.5			
Approach LOS	F				F											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 3		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	15	5	40	25	40	25	425	145	55	15	100	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	65			98			679			168		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

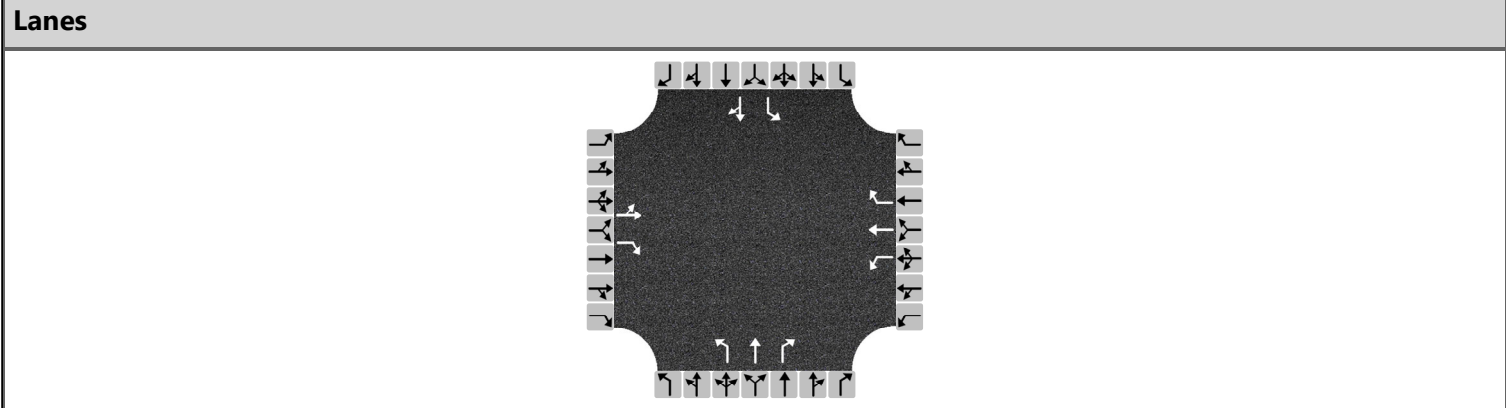
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.058			0.087			0.604			0.150		
Final Departure Headway, hd (s)	6.05			6.20			4.90			5.32		
Final Degree of Utilization, x	0.110			0.169			0.925			0.249		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.05			4.20			2.90			3.32		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	65			98			679			168		
Capacity	595			580			734			676		
95% Queue Length, Q ₉₅ (veh)	0.4			0.6			12.9			1.0		
Control Delay (s/veh)	9.8			10.5			39.3			10.1		
Level of Service, LOS	A			B			E			B		
Approach Delay (s/veh)	9.8			10.5			39.3			10.1		
Approach LOS	A			B			E			B		
Intersection Delay, s/veh LOS	29.8						D					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 3		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	160	45	750	15	5	65	60	400	5	30	95	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LT	R		L	T	R	L	T	R	L	TR	
Flow Rate, v (veh/h)	223	815		16	5	71	65	435	5	33	147	
Percent Heavy Vehicles	9	9		9	9	9	9	9	9	9	9	


Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20	3.20		3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
Initial Degree of Utilization, x	0.198	0.725		0.014	0.005	0.063	0.058	0.386	0.005	0.029	0.130	
Final Departure Headway, hd (s)	8.21	7.10		9.96	9.46	8.77	8.55	8.05	7.36	9.46	8.76	
Final Degree of Utilization, x	0.508	1.608		0.045	0.014	0.172	0.155	0.973	0.011	0.086	0.357	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Service Time, ts (s)	5.91	4.80		7.66	7.16	6.47	6.25	5.75	5.06	7.16	6.46	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	223	815		16	5	71	65	435	5	33	147	
Capacity	439	507		361	380	411	421	447	489	381	411	
95% Queue Length, Q ₉₅ (veh)	2.8	45.3		0.1	0.0	0.6	0.5	12.0	0.0	0.3	1.6	
Control Delay (s/veh)	19.1	301.0		13.1	12.3	13.3	12.8	64.3	10.1	13.0	16.3	
Level of Service, LOS	C	F		B	B	B	B	F	B	B	C	
Approach Delay (s/veh)	240.5			13.2			57.1			15.7		
Approach LOS	F			B			F			C		
Intersection Delay, s/veh LOS	155.6						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Alternative 3				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	15	5	40	0	25	40	25	0	425	145	55	0	15	100	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	18	6	47	0	30	47	30	0	504	172	65	0	18	118	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		71			107			741			183		
Entry Volume, veh/h		65			98			680			168		
Circulating Flow (v _c), pc/h		166			694			42			581		
Exiting Flow (v _{ex}), pc/h		89			598			220			195		
Capacity (C _{PCE}), pc/h		1165			680			1322			763		
Capacity (c), veh/h		1069			624			1213			700		
v/c Ratio (x)		0.06			0.16			0.56			0.24		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.9			7.6			9.5			8.0		
Lane LOS		A			A			A			A		
95% Queue, veh		0.2			0.6			3.6			0.9		
Approach Delay, s/veh		3.9			7.6			9.5			8.0		
Approach LOS		A			A			A			A		
Intersection Delay, s/veh LOS	8.7						A						

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection	SB Ramps/Frontage & SH74		
Agency or Co.	ODOT				E/W Street Name	SB Ramps/Frontage		
Date Performed	3/26/2023				N/S Street Name	SH74		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	PM				Peak Hour Factor	0.92		
Project Description	Alternative 3				Jurisdiction	McClain County		

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR							
Volume (V), veh/h	0	160	45	750	0	15	5	65	0	60	400	5	0	30	95	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	190	53	889	0	18	6	77	0	71	474	6	0	36	113	47
Right-Turn Bypass	None				None				None							
Conflicting Lanes	1				1				1							
Pedestrians Crossing, p/h	0				0				0							
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		1132			101			551			196	
Entry Volume, veh/h		1039			93			506			180	
Circulating Flow (v _c), pc/h	167			735			279			95		
Exiting Flow (v _e), pc/h	95			124			741			1020		
Capacity (C _{PCE}), pc/h		1164			652			1038			1253	
Capacity (c), veh/h		1068			598			952			1149	
v/c Ratio (x)		0.97			0.15			0.53			0.16	

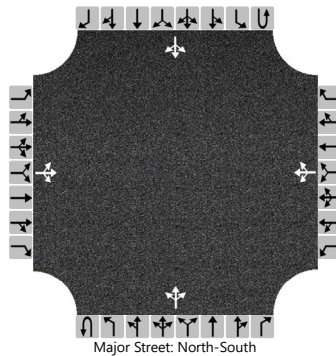
Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		41.0			7.9			10.6			4.5	
Lane LOS		E			A			B			A	
95% Queue, veh		18.0			0.5			3.2			0.6	
Approach Delay, s/veh LOS	41.0	E		7.9	A		10.6	B		4.5	A	
Intersection Delay, s/veh LOS	27.2									D		

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	NB Ramps and SH 74	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Time Analyzed	PM	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Alternative 4		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0	
Configuration			LTR				LTR				LTR				LTR		
Volume (veh/h)		15	5	40		25	40	25		425	145	55		15	100	40	
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9			
Proportion Time Blocked																	
Percent Grade (%)		2				2											
Right Turn Channelized																	
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

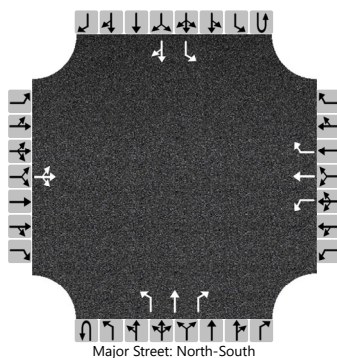
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			65				98			462				16			
Capacity, c (veh/h)			140				105			1387				1312			
v/c Ratio			0.47				0.93			0.33				0.01			
95% Queue Length, Q ₉₅ (veh)			2.1				5.6			1.5				0.0			
Control Delay (s/veh)			51.3				143.9			8.9				7.8			
Level of Service (LOS)			F				F			A				A			
Approach Delay (s/veh)		51.3				143.9				7.1				0.8			
Approach LOS		F				F				A				A			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	4/25/2022			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 4						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		1	1	1	0	1	1	1	0	1	1	0
Configuration			LTR			L	T	R		L	T	R		L		TR
Volume (veh/h)		25	45	50		715	5	200		60	400	5		30	95	40
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				0											
Right Turn Channelized					No				No							
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

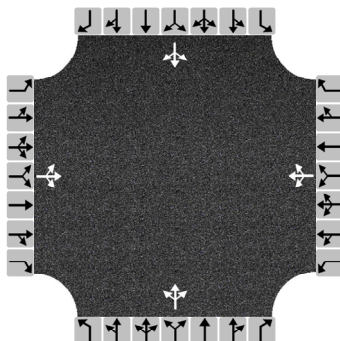
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			130			777	5	217		65				33		
Capacity, c (veh/h)			302			220	290	607		1393				1083		
v/c Ratio			0.43			3.53	0.02	0.36		0.05				0.03		
95% Queue Length, Q ₉₅ (veh)			2.1			73.6	0.1	1.6		0.1				0.1		
Control Delay (s/veh)			25.7			1182.7	17.6	14.2		7.7				8.4		
Level of Service (LOS)			D			F	C	B		A				A		
Approach Delay (s/veh)	25.7				922.3				1.0				1.5			
Approach LOS	D				F											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 4		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	15	5	40	25	40	25	425	145	55	15	100	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	65			98			679			168		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.058			0.087			0.604			0.150		
Final Departure Headway, hd (s)	6.05			6.20			4.90			5.32		
Final Degree of Utilization, x	0.110			0.169			0.925			0.249		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.05			4.20			2.90			3.32		

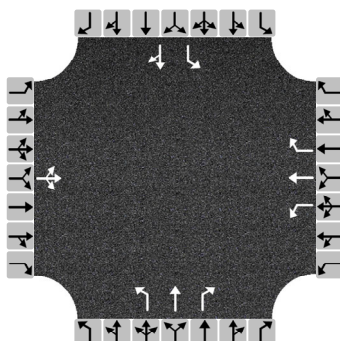
Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	65			98			679			168		
Capacity	595			580			734			676		
95% Queue Length, Q ₉₅ (veh)	0.4			0.6			12.9			1.0		
Control Delay (s/veh)	9.8			10.5			39.3			10.1		
Level of Service, LOS	A			B			E			B		
Approach Delay (s/veh)	9.8			10.5			39.3			10.1		
Approach LOS	A			B			E			B		
Intersection Delay, s/veh LOS	29.8						D					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	4/25/2022	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 4		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	25	45	50	715	5	200	60	400	5	30	95	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	T	R	L	T	R	L	TR	
Flow Rate, v (veh/h)	130			777	5	217	65	435	5	33	147	
Percent Heavy Vehicles	9			9	9	9	9	9	9	9	9	


Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
Initial Degree of Utilization, x	0.116			0.691	0.005	0.193	0.058	0.386	0.005	0.029	0.130	
Final Departure Headway, hd (s)	9.23			8.21	7.70	6.99	8.73	8.23	7.54	9.73	9.03	
Final Degree of Utilization, x	0.335			1.773	0.012	0.422	0.158	0.995	0.011	0.088	0.368	
Move-Up Time, m (s)	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Service Time, ts (s)	6.93			5.91	5.40	4.69	6.43	5.93	5.24	7.43	6.73	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	130			777	5	217	65	435	5	33	147	
Capacity	390			438	467	515	412	437	478	370	399	
95% Queue Length, Q ₉₅ (veh)	1.4			48.4	0.0	2.1	0.6	12.6	0.0	0.3	1.7	
Control Delay (s/veh)	16.5			376.6	10.5	14.7	13.1	70.4	10.3	13.4	16.9	
Level of Service, LOS	C			F	B	B	B	F	B	B	C	
Approach Delay (s/veh)	16.5			295.9			62.4			16.3		
Approach LOS	C			F			F			C		
Intersection Delay, s/veh LOS	183.2						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Alternative 4				Jurisdiction		McClain County	

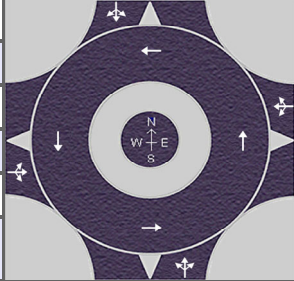
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	15	5	40	0	25	40	25	0	425	145	55	0	15	100	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	18	6	47	0	30	47	30	0	504	172	65	0	18	118	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		71			107			741			183		
Entry Volume, veh/h		65			98			680			168		
Circulating Flow (v _c), pc/h		166			694			42			581		
Exiting Flow (v _{ex}), pc/h		89			598			220			195		
Capacity (C _{PCE}), pc/h		1165			680			1322			763		
Capacity (c), veh/h		1069			624			1213			700		
v/c Ratio (x)		0.06			0.16			0.56			0.24		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.9			7.6			9.5			8.0		
Lane LOS		A			A			A			A		
95% Queue, veh		0.2			0.6			3.6			0.9		
Approach Delay, s/veh		3.9			7.6			9.5			8.0		
Approach LOS		A			A			A			A		
Intersection Delay, s/veh LOS	8.7						A						

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps/Frontage & SH74	
Agency or Co.	ODOT				E/W Street Name		SB Ramps/Frontage	
Date Performed	4/26/2022				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Alternative 4				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	25	45	50	0	715	5	200	0	60	400	5	0	30	95	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	30	53	59	0	847	6	237	0	71	474	6	0	36	113	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

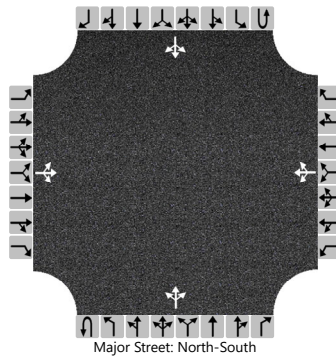
Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		142			1090			551			196		
Entry Volume, veh/h		130			1000			506			180		
Circulating Flow (v _c), pc/h	996			575			119			924			
Exiting Flow (v _{ex}), pc/h	95			124			741			1019			
Capacity (C _{PCE}), pc/h		500			768			1222			538		
Capacity (c), veh/h		458			704			1121			493		
v/c Ratio (x)		0.28			1.42			0.45			0.36		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		12.4			215.0			8.1			13.2		
Lane LOS		B			F			A			B		
95% Queue, veh		1.2			45.3			2.4			1.7		
Approach Delay, s/veh	12.4			215.0			8.1			13.2			
Approach LOS	B			F			A			B			
Intersection Delay, s/veh LOS	122.9						F						

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	NB Ramps and SH 74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	5/16/2022			East/West Street	NB Ramps		
Analysis Year	2050			North/South Street	SH 74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 5						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		15	5	40		25	40	25		425	145	55		15	100	40
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9		
Proportion Time Blocked																
Percent Grade (%)	2				2											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.59	6.99	6.49		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

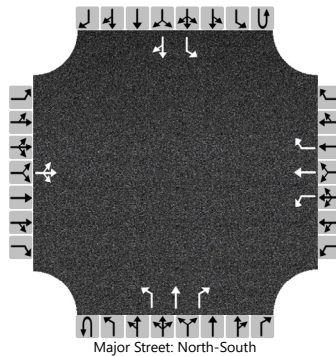
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			65				98			462				16		
Capacity, c (veh/h)			140				105			1387				1312		
v/c Ratio			0.47				0.93			0.33				0.01		
95% Queue Length, Q ₉₅ (veh)			2.1				5.6			1.5				0.0		
Control Delay (s/veh)			51.3				143.9			8.9				7.8		
Level of Service (LOS)			F				F			A				A		
Approach Delay (s/veh)	51.3				143.9				7.1				0.8			
Approach LOS	F				F				A				A			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	TEIM Design			Intersection	SB Ramps and SH74		
Agency/Co.	ODOT			Jurisdiction	McClain County		
Date Performed	3/31/2023			East/West Street	SB Ramps		
Analysis Year	2050			North/South Street	SH74		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Alternative 5						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		1	1	1	0	1	1	1	0	1	1	0	
Configuration			LTR			L	T	R		L	T	R		L		TR	
Volume (veh/h)		160	45	750		15	5	65		60	400	5		30	95	40	
Percent Heavy Vehicles (%)		9	9	9		9	9	9		9				9			
Proportion Time Blocked																	
Percent Grade (%)		2				0											
Right Turn Channelized						No				No							
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.59	6.99	6.49		7.19	6.59	6.29		4.19				4.19		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.58	4.08	3.38		3.58	4.08	3.38		2.28				2.28		

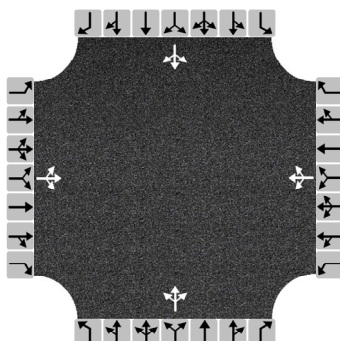
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			1038			16	5	71		65				33			
Capacity, c (veh/h)			553			12	290	607		1393				1083			
v/c Ratio			1.88			1.34	0.02	0.12		0.05				0.03			
95% Queue Length, Q ₉₅ (veh)			66.4			2.7	0.1	0.4		0.1				0.1			
Control Delay (s/veh)			418.9			804.0	17.6	11.7		7.7				8.4			
Level of Service (LOS)			F			F	C	B		A				A			
Approach Delay (s/veh)		418.9				151.9				1.0				1.5			
Approach LOS		F				F											

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	NB Ramps and SH 74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	5/16/2022	East/West Street	NB Ramps
Analysis Year	2050	North/South Street	SH 74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 5		

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	15	5	40	25	40	25	425	145	55	15	100	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	65			98			679			168		
Percent Heavy Vehicles	9			9			9			9		

Departure Headway and Service Time

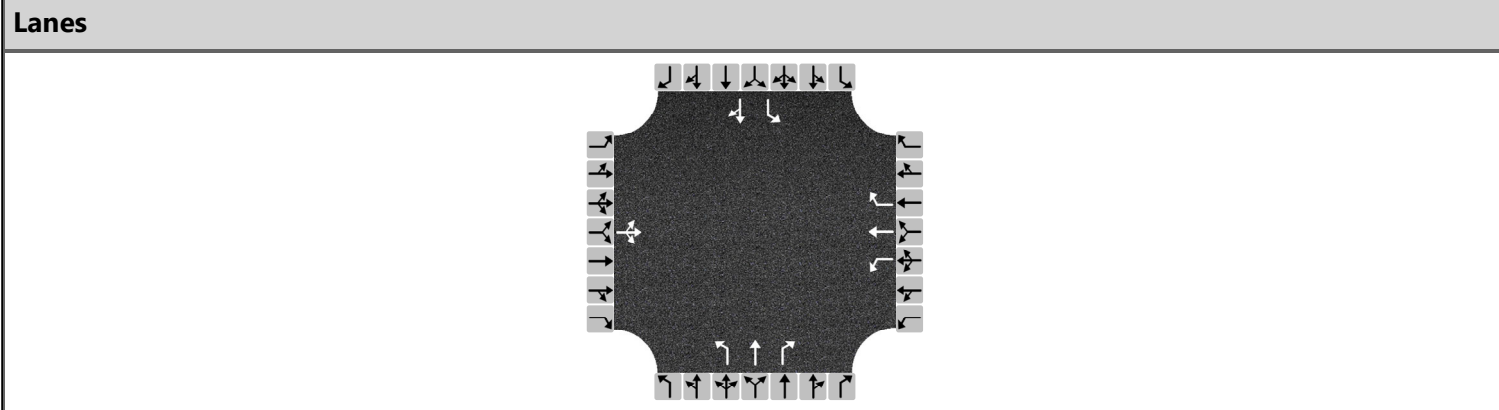
Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.058			0.087			0.604			0.150		
Final Departure Headway, hd (s)	6.05			6.20			4.90			5.32		
Final Degree of Utilization, x	0.110			0.169			0.925			0.249		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	4.05			4.20			2.90			3.32		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	65			98			679			168		
Capacity	595			580			734			676		
95% Queue Length, Q ₉₅ (veh)	0.4			0.6			12.9			1.0		
Control Delay (s/veh)	9.8			10.5			39.3			10.1		
Level of Service, LOS	A			B			E			B		
Approach Delay (s/veh)	9.8			10.5			39.3			10.1		
Approach LOS	A			B			E			B		
Intersection Delay, s/veh LOS	29.8						D					

HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	TEIM Design	Intersection	SB Ramps and SH74
Agency/Co.	ODOT	Jurisdiction	McClain County
Date Performed	3/31/2023	East/West Street	SB Ramps
Analysis Year	2050	North/South Street	SH74
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.92
Time Analyzed	PM		
Project Description	Alternative 5		



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	160	45	750	15	5	65	60	400	5	30	95	40
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	T	R	L	T	R	L	TR	
Flow Rate, v (veh/h)	1038			16	5	71	65	435	5	33	147	
Percent Heavy Vehicles	9			9	9	9	9	9	9	9	9	

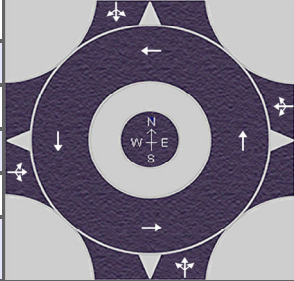
Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20	
Initial Degree of Utilization, x	0.923			0.014	0.005	0.063	0.058	0.386	0.005	0.029	0.130	
Final Departure Headway, hd (s)	7.20			8.92	8.42	7.72	8.17	7.67	6.97	9.07	8.36	
Final Degree of Utilization, x	2.075			0.040	0.013	0.152	0.148	0.926	0.011	0.082	0.341	
Move-Up Time, m (s)	2.3			2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Service Time, ts (s)	4.90			6.62	6.12	5.42	5.87	5.37	4.67	6.77	6.06	

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	1038			16	5	71	65	435	5	33	147	
Capacity	500			404	427	466	441	469	516	397	430	
95% Queue Length, Q ₉₅ (veh)	72.6			0.1	0.0	0.5	0.5	10.8	0.0	0.3	1.5	
Control Delay (s/veh)	507.0			12.0	11.2	11.8	12.3	52.7	9.7	12.6	15.3	
Level of Service, LOS	F			B	B	B	B	F	A	B	C	
Approach Delay (s/veh)	507.0			11.8			47.0			14.8		
Approach LOS	F			B			E			B		
Intersection Delay, s/veh LOS	305.1						F					

HCS7 Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		NB Ramps and SH 74	
Agency or Co.	ODOT				E/W Street Name		NB Ramps	
Date Performed	4/25/2022				N/S Street Name		SH 74	
Analysis Year	2050				Analysis Time Period (hrs)		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Alternative 5				Jurisdiction		McClain County	

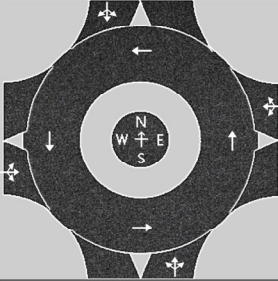
Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	15	5	40	0	25	40	25	0	425	145	55	0	15	100	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (v _{PCE}), pc/h	0	18	6	47	0	30	47	30	0	504	172	65	0	18	118	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		71			107			741			183		
Entry Volume, veh/h		65			98			680			168		
Circulating Flow (v _c), pc/h		166			694			42			581		
Exiting Flow (v _{ex}), pc/h		89			598			220			195		
Capacity (C _{PCE}), pc/h		1165			680			1322			763		
Capacity (c), veh/h		1069			624			1213			700		
v/c Ratio (x)		0.06			0.16			0.56			0.24		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		3.9			7.6			9.5			8.0		
Lane LOS		A			A			A			A		
95% Queue, veh		0.2			0.6			3.6			0.9		
Approach Delay, s/veh		3.9			7.6			9.5			8.0		
Approach LOS		A			A			A			A		
Intersection Delay, s/veh LOS	8.7						A						

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection		SB Ramps/Frontage & SH74	
Agency or Co.	ODOT				E/W Street Name		SB Ramps/Frontage	
Date Performed	3/26/2023				N/S Street Name		SH74	
Analysis Year	2050				Analysis Time Period, hrs		0.25	
Time Analyzed	PM				Peak Hour Factor		0.92	
Project Description	Alternative 5				Jurisdiction		McClain County	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR							
Volume (V), veh/h	0	160	45	750	0	15	5	65	0	60	400	5	0	30	95	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	190	53	889	0	18	6	77	0	71	474	6	0	36	113	47
Right-Turn Bypass	None				None				None							
Conflicting Lanes	1				1				1							
Pedestrians Crossing, p/h	0				0				0							
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

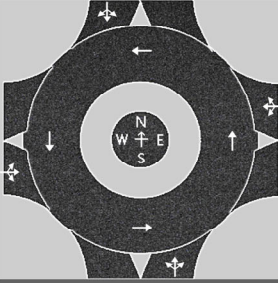
Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		1132			101			551			196	
Entry Volume, veh/h		1039			93			506			180	
Circulating Flow (v _c), pc/h	167			735			279			95		
Exiting Flow (v _{ex}), pc/h	95			124			741			1020		
Capacity (C _{PCE}), pc/h		1164			652			1038			1253	
Capacity (c), veh/h		1068			598			952			1149	
v/c Ratio (x)		0.97			0.15			0.53			0.16	

Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		41.0			7.9			10.6			4.5	
Lane LOS		E			A			B			A	
95% Queue, veh		18.0			0.5			3.2			0.6	
Approach Delay, s/veh LOS	41.0 E			7.9 A			10.6 B			4.5 A		
Intersection Delay, s/veh LOS	27.2									D		

HCS Roundabouts Report

General Information				Site Information				
Analyst	TEIM Design				Intersection	SB Ramps/Frontage & SH74		
Agency or Co.	ODOT				E/W Street Name	SB Ramps/Frontage		
Date Performed	3/31/2023				N/S Street Name	SH74		
Analysis Year	2050				Analysis Time Period, hrs	0.25		
Time Analyzed	PM				Peak Hour Factor	0.92		
Project Description	Alternative 5-If Slip Ramp Traffic Splits 50/50				Jurisdiction	McClain County		

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	80	45	375	0	390	5	145	0	60	400	5	0	30	95	40
Percent Heavy Vehicles, %	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Flow Rate (V _{PCE}), pc/h	0	95	53	444	0	462	6	172	0	71	474	6	0	36	113	47
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		592			640			551			196	
Entry Volume, veh/h		543			587			506			180	
Circulating Flow (v _c), pc/h	611			640			184			539		
Exiting Flow (v _{ex}), pc/h	95			124			741			1019		
Capacity (C _{PCE}), pc/h		740			718			1144			796	
Capacity (c), veh/h		679			659			1049			731	
v/c Ratio (x)		0.80			0.89			0.48			0.25	

Delay and Level of Service

Approach	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		27.0			38.2			9.0			7.8	
Lane LOS		D			E			A			A	
95% Queue, veh		8.1			11.0			2.7			1.0	
Approach Delay, s/veh LOS	27.0		D	38.2		E	9.0		A	7.8		A
Intersection Delay, s/veh LOS	23.7						C					



APPENDIX M

SYNCHRO PRINTOUTS FROM TEC

HCM 6th Signalized Intersection Summary
3: SH 74 & Airport Rd.

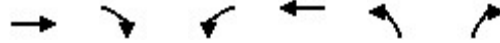
Alternative 1 With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	7	93	12	28	787	38
Future Volume (veh/h)	7	93	12	28	787	38
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	8	103	13	31	828	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9
Cap, veh/h	11	143	92	104	1167	56
Arrive On Green	0.10	0.10	0.10	0.10	0.73	0.73
Sat Flow, veh/h	109	1405	138	1020	1594	77
Grp Volume(v), veh/h	0	111	44	0	869	0
Grp Sat Flow(s),veh/h/ln	0	1514	1158	0	1673	0
Q Serve(g_s), s	0.0	4.3	0.1	0.0	17.4	0.0
Cycle Q Clear(g_c), s	0.0	4.3	4.3	0.0	17.4	0.0
Prop In Lane		0.93	0.30		0.95	0.05
Lane Grp Cap(c), veh/h	0	154	195	0	1224	0
V/C Ratio(X)	0.00	0.72	0.23	0.00	0.71	0.00
Avail Cap(c_a), veh/h	0	378	426	0	1224	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.00	0.74	0.00
Uniform Delay (d), s/veh	0.0	26.1	24.9	0.0	4.5	0.0
Incr Delay (d2), s/veh	0.0	6.3	0.6	0.0	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.6	0.0	2.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	32.4	25.4	0.0	7.1	0.0
LnGrp LOS	A	C	C	A	A	A
Approach Vol, veh/h	111			44	869	
Approach Delay, s/veh	32.4			25.4	7.1	
Approach LOS	C			C	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		48.9		11.1		11.1
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		35.0		15.0		15.0
Max Q Clear Time (g_c+l1), s		19.4		6.3		6.3
Green Ext Time (p_c), s		3.1		0.3		0.1
Intersection Summary						
HCM 6th Ctrl Delay			10.6			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary
 3: SH 74 & Airport Rd.

Alternative 1 With Slip Ramp - 2050 PM
 SH 74 & I-35 Interchange Study



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	17	143	22	63	572	53
Future Volume (veh/h)	17	143	22	63	572	53
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	19	159	24	70	602	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9
Cap, veh/h	26	216	109	166	975	91
Arrive On Green	0.16	0.16	0.16	0.16	0.64	0.64
Sat Flow, veh/h	162	1359	118	1046	1521	141
Grp Volume(v), veh/h	0	178	94	0	659	0
Grp Sat Flow(s),veh/h/ln	0	1522	1164	0	1665	0
Q Serve(g_s), s	0.0	5.6	0.2	0.0	11.7	0.0
Cycle Q Clear(g_c), s	0.0	5.6	5.7	0.0	11.7	0.0
Prop In Lane		0.89	0.26		0.91	0.08
Lane Grp Cap(c), veh/h	0	242	275	0	1068	0
V/C Ratio(X)	0.00	0.74	0.34	0.00	0.62	0.00
Avail Cap(c_a), veh/h	0	457	494	0	1068	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.00	0.89	0.00
Uniform Delay (d), s/veh	0.0	20.0	18.8	0.0	5.3	0.0
Incr Delay (d2), s/veh	0.0	4.4	0.7	0.0	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.1	0.9	0.0	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	24.4	19.5	0.0	7.7	0.0
LnGrp LOS	A	C	B	A	A	A
Approach Vol, veh/h	178			94	659	
Approach Delay, s/veh	24.4			19.5	7.7	
Approach LOS	C			B	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		37.1		12.9		12.9
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		25.0		15.0		15.0
Max Q Clear Time (g_c+l1), s		13.7		7.6		7.7
Green Ext Time (p_c), s		1.8		0.5		0.2
Intersection Summary						
HCM 6th Ctrl Delay			12.1			
HCM 6th LOS			B			

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr.

Alternative 1 With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	55	165	95	670	175	35
Future Volume (vph)	55	165	95	670	175	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Fr _t	0.899				0.975	
Fl _t Protected	0.988			0.994		
Satd. Flow (prot)	1548	0	0	3292	3229	0
Fl _t Permitted	0.988			0.994		
Satd. Flow (perm)	1548	0	0	3292	3229	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	2299			1050	483	
Travel Time (s)	52.3			15.9	7.3	
Peak Hour Factor	0.90	0.90	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	61	183	100	705	184	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	244	0	0	805	221	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		↑↑		↑↑	
Traffic Vol, veh/h	55	165	95	670	175	35
Future Vol, veh/h	55	165	95	670	175	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	95	95	95	95
Heavy Vehicles, %	9	9	9	9	9	9
Mvmt Flow	61	183	100	705	184	37


















Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	756	111	221	0	0
Stage 1	203	-	-	-	-
Stage 2	553	-	-	-	-
Critical Hdwy	6.98	7.08	4.28	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-
Follow-up Hdwy	3.59	3.39	2.29	-	-
Pot Cap-1 Maneuver	330	899	1296	-	-
Stage 1	791	-	-	-	-
Stage 2	521	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	288	899	1296	-	-
Mov Cap-2 Maneuver	288	-	-	-	-
Stage 1	691	-	-	-	-
Stage 2	521	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	1.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1296	-	587	-	-
HCM Lane V/C Ratio	0.077	-	0.416	-	-
HCM Control Delay (s)	8	0.4	15.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2	-	-

Lanes, Volumes, Timings
2: SH 74 & SB I-35 Off/SB I-35 On

Alternative 1 With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	0	130	0	0	0	0	680	45	25	80	0
Future Volume (vph)	140	0	130	0	0	0	0	680	45	25	80	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected		0.950									0.988	
Satd. Flow (prot)	0	1656	1482	0	0	0	0	1743	1482	0	1722	0
Flt Permitted		0.950									0.841	
Satd. Flow (perm)	0	1656	1482	0	0	0	0	1743	1482	0	1466	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137						47			
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		1780			1171			483			398	
Travel Time (s)		40.5			26.6			7.3			6.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	2%	2%	2%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	147	0	137	0	0	0	0	716	47	26	84	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	137	0	0	0	0	716	47	0	110	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4		4						2	6		
Detector Phase	4	4	4					2	2	6	6	
Switch Phase												

Lanes, Volumes, Timings
2: SH 74 & SB I-35 Off/SB I-35 On

Alternative 1 With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	20.0	20.0	
Total Split (s)	20.0	20.0	20.0					40.0	40.0	40.0	40.0	
Total Split (%)	33.3%	33.3%	33.3%					66.7%	66.7%	66.7%	66.7%	
Maximum Green (s)	15.0	15.0	15.0					35.0	35.0	35.0	35.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)		5.0	5.0					5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)		10.6	10.6					39.4	39.4		39.4	
Actuated g/C Ratio		0.18	0.18					0.66	0.66		0.66	
v/c Ratio		0.50	0.37					0.63	0.05		0.11	
Control Delay		27.5	7.2					10.0	2.0		4.5	
Queue Delay		0.0	0.0					0.2	0.0		0.0	
Total Delay		27.5	7.2					10.2	2.0		4.5	
LOS		C	A					B	A		A	
Approach Delay		17.7						9.7			4.5	
Approach LOS		B						A			A	

Intersection Summary


















Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	50 (83%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	11.2
Intersection LOS:	B
Intersection Capacity Utilization:	51.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 2: SH 74 & SB I-35 Off/SB I-35 On



HCM 6th Signalized Intersection Summary
2: SH 74 & SB I-35 Off/SB I-35 On

Alternative 1 With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	0	130	0	0	0	0	680	45	25	80	0
Future Volume (veh/h)	140	0	130	0	0	0	0	680	45	25	80	0
Initial Q (Qb), veh	0	0	0					0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767				0	1767	1767	1767	1767	0
Adj Flow Rate, veh/h	147	0	0				0	716	47	26	84	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9				0	9	9	9	9	0
Cap, veh/h	192	0					0	1270	1077	232	701	0
Arrive On Green	0.11	0.00	0.00				0.00	0.72	0.72	0.72	0.72	0.00
Sat Flow, veh/h	1682	0	1497				0	1767	1497	220	975	0
Grp Volume(v), veh/h	147	0	0				0	716	47	110	0	0
Grp Sat Flow(s),veh/h/ln	1682	0	1497				0	1767	1497	1195	0	0
Q Serve(g_s), s	5.1	0.0	0.0				0.0	11.5	0.5	0.5	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	0.0				0.0	11.5	0.5	12.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.24		0.00
Lane Grp Cap(c), veh/h	192	0					0	1270	1077	934	0	0
V/C Ratio(X)	0.76	0.00					0.00	0.56	0.04	0.12	0.00	0.00
Avail Cap(c_a), veh/h	421	0					0	1270	1077	934	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.8	0.0	0.0				0.0	4.0	2.4	2.8	0.0	0.0
Incr Delay (d2), s/veh	6.2	0.0	0.0				0.0	1.8	0.1	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0				0.0	2.0	0.1	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	0.0	0.0				0.0	5.8	2.5	3.0	0.0	0.0
LnGrp LOS	C	A					A	A	A	A	A	A
Approach Vol, veh/h		147						763			110	
Approach Delay, s/veh		32.0						5.6			3.0	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		48.1		11.9				48.1				
Change Period (Y+Rc), s		5.0		5.0				5.0				
Max Green Setting (Gmax), s		35.0		15.0				35.0				
Max Q Clear Time (g_c+I1), s		13.5		7.1				14.0				
Green Ext Time (p_c), s		4.8		0.4				0.5				
Intersection Summary												
HCM 6th Ctrl Delay			9.1									
HCM 6th LOS			A									
Notes												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

Lanes, Volumes, Timings
3: SH 74 & Airport Rd.

Alternative 1 With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	7	93	12	28	787	38
Future Volume (vph)	7	93	12	28	787	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	50
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875				0.994	
Flt Protected				0.985	0.954	
Satd. Flow (prot)	1525	0	0	1717	1653	0
Flt Permitted				0.861	0.954	
Satd. Flow (perm)	1525	0	0	1501	1653	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	103				7	
Link Speed (mph)	30			30	45	
Link Distance (ft)	1506			1049	398	
Travel Time (s)	34.2			23.8	6.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	8	103	13	31	828	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	0	44	868	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	

Lanes, Volumes, Timings
3: SH 74 & Airport Rd.

Alternative 1 With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

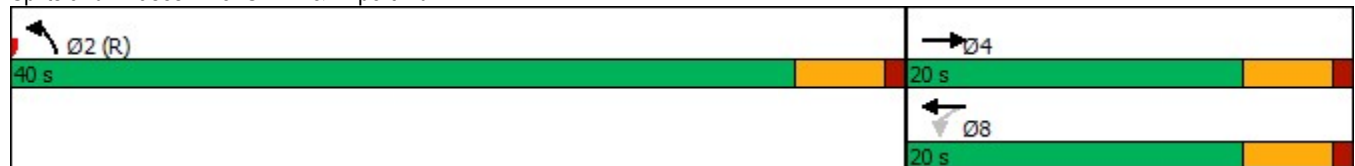


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0		20.0	20.0	40.0	
Total Split (%)	33.3%		33.3%	33.3%	66.7%	
Maximum Green (s)	15.0		15.0	15.0	35.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	C-Max	
Act Effct Green (s)	7.3			7.3	45.8	
Actuated g/C Ratio	0.12			0.12	0.76	
v/c Ratio	0.40			0.24	0.69	
Control Delay	11.4			26.3	9.1	
Queue Delay	0.0			0.0	0.5	
Total Delay	11.4			26.3	9.5	
LOS	B			C	A	
Approach Delay	11.4			26.3	9.5	
Approach LOS	B			C	A	

Intersection Summary

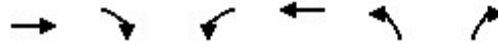
Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	60
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	10.5
Intersection LOS:	B
Intersection Capacity Utilization:	63.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 3: SH 74 & Airport Rd.



HCM 6th Signalized Intersection Summary
3: SH 74 & Airport Rd.

Alternative 1 With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	7	93	12	28	787	38
Future Volume (veh/h)	7	93	12	28	787	38
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	8	103	13	31	828	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9
Cap, veh/h	11	143	92	104	1167	56
Arrive On Green	0.10	0.10	0.10	0.10	0.73	0.73
Sat Flow, veh/h	109	1405	138	1020	1594	77
Grp Volume(v), veh/h	0	111	44	0	869	0
Grp Sat Flow(s),veh/h/ln	0	1514	1158	0	1673	0
Q Serve(g_s), s	0.0	4.3	0.1	0.0	17.4	0.0
Cycle Q Clear(g_c), s	0.0	4.3	4.3	0.0	17.4	0.0
Prop In Lane		0.93	0.30		0.95	0.05
Lane Grp Cap(c), veh/h	0	154	195	0	1224	0
V/C Ratio(X)	0.00	0.72	0.23	0.00	0.71	0.00
Avail Cap(c_a), veh/h	0	378	426	0	1224	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.00	0.74	0.00
Uniform Delay (d), s/veh	0.0	26.1	24.9	0.0	4.5	0.0
Incr Delay (d2), s/veh	0.0	6.3	0.6	0.0	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.6	0.0	2.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	32.4	25.4	0.0	7.1	0.0
LnGrp LOS	A	C	C	A	A	A
Approach Vol, veh/h	111			44	869	
Approach Delay, s/veh	32.4			25.4	7.1	
Approach LOS	C			C	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		48.9		11.1		11.1
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		35.0		15.0		15.0
Max Q Clear Time (g_c+l1), s		19.4		6.3		6.3
Green Ext Time (p_c), s		3.1		0.3		0.1
Intersection Summary						
HCM 6th Ctrl Delay			10.6			
HCM 6th LOS			B			

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr.

Alternative 1 With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	70	410	60	405	495	45
Future Volume (vph)	70	410	60	405	495	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.885				0.988	
Flt Protected	0.993			0.994		
Satd. Flow (prot)	1532	0	0	3292	3272	0
Flt Permitted	0.993			0.994		
Satd. Flow (perm)	1532	0	0	3292	3272	0
Link Speed (mph)	30			45	45	
Link Distance (ft)	2299			1050	483	
Travel Time (s)	52.3			15.9	7.3	
Peak Hour Factor	0.90	0.90	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	78	456	63	426	521	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	534	0	0	489	568	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	67.2%
ICU Level of Service	C
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	20.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	70	410	60	405	495	45
Future Vol, veh/h	70	410	60	405	495	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	95	95	95	95
Heavy Vehicles, %	9	9	9	9	9	9
Mvmt Flow	78	456	63	426	521	47


















Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	884	284	568	0	0
Stage 1	545	-	-	-	-
Stage 2	339	-	-	-	-
Critical Hdwy	6.98	7.08	4.28	-	-
Critical Hdwy Stg 1	5.98	-	-	-	-
Critical Hdwy Stg 2	5.98	-	-	-	-
Follow-up Hdwy	3.59	3.39	2.29	-	-
Pot Cap-1 Maneuver	272	692	953	-	-
Stage 1	526	-	-	-	-
Stage 2	673	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	248	692	953	-	-
Mov Cap-2 Maneuver	248	-	-	-	-
Stage 1	480	-	-	-	-
Stage 2	673	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	59.1	1.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	953	-	549	-	-
HCM Lane V/C Ratio	0.066	-	0.971	-	-
HCM Control Delay (s)	9	0.3	59.1	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	13.2	-	-

Lanes, Volumes, Timings
2: SH 74 & SB I-35 Off/SB I-35 On

Alternative 1 With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	0	360	0	0	0	0	425	50	30	135	0
Future Volume (vph)	200	0	360	0	0	0	0	425	50	30	135	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.850						0.850			
Fl _t Protected		0.950									0.991	
Satd. Flow (prot)	0	1656	1482	0	0	0	0	1743	1482	0	1727	0
Fl _t Permitted		0.950									0.896	
Satd. Flow (perm)	0	1656	1482	0	0	0	0	1743	1482	0	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			379						53			
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		1780			1171			483			398	
Travel Time (s)		40.5			26.6			7.3			6.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	2%	2%	2%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	211	0	379	0	0	0	0	447	53	32	142	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	379	0	0	0	0	447	53	0	174	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2	1	1	2	
Detector Template	Left	Thru	Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20					100	20	20	100	
Trailing Detector (ft)	0	0	0					0	0	0	0	
Detector 1 Position(ft)	0	0	0					0	0	0	0	
Detector 1 Size(ft)	20	6	20					6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4		4						2	6		
Detector Phase	4	4	4					2	2	6	6	
Switch Phase												

Lanes, Volumes, Timings
2: SH 74 & SB I-35 Off/SB I-35 On

Alternative 1 With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	5.0					5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	20.0	20.0					20.0	20.0	20.0	20.0	
Total Split (s)	21.0	21.0	21.0					29.0	29.0	29.0	29.0	
Total Split (%)	42.0%	42.0%	42.0%					58.0%	58.0%	58.0%	58.0%	
Maximum Green (s)	16.0	16.0	16.0					24.0	24.0	24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0					4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0					1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0					0.0	0.0		0.0	
Total Lost Time (s)		5.0	5.0					5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Recall Mode	None	None	None					C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)		12.0	12.0					28.0	28.0		28.0	
Actuated g/C Ratio		0.24	0.24					0.56	0.56		0.56	
v/c Ratio		0.53	0.59					0.46	0.06		0.20	
Control Delay		20.7	6.1					9.5	2.8		10.6	
Queue Delay		0.0	0.0					0.0	0.0		0.0	
Total Delay		20.7	6.1					9.5	2.8		10.6	
LOS		C	A					A	A		B	
Approach Delay		11.3						8.8			10.6	
Approach LOS		B						A			B	

Intersection Summary


















Area Type:	Other
Cycle Length:	50
Actuated Cycle Length:	50
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.59
Intersection Signal Delay:	10.2
Intersection LOS:	B
Intersection Capacity Utilization	52.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 2: SH 74 & SB I-35 Off/SB I-35 On



HCM 6th Signalized Intersection Summary
2: SH 74 & SB I-35 Off/SB I-35 On

Alternative 1 With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	0	360	0	0	0	0	425	50	30	135	0
Future Volume (veh/h)	200	0	360	0	0	0	0	425	50	30	135	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767				0	1767	1767	1767	1767	0
Adj Flow Rate, veh/h	211	0	0				0	447	53	32	142	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9				0	9	9	9	9	0
Cap, veh/h	276	0					0	1123	952	211	861	0
Arrive On Green	0.16	0.00	0.00				0.00	0.64	0.64	0.64	0.64	0.00
Sat Flow, veh/h	1682	0	1497				0	1767	1497	198	1354	0
Grp Volume(v), veh/h	211	0	0				0	447	53	174	0	0
Grp Sat Flow(s),veh/h/ln	1682	0	1497				0	1767	1497	1552	0	0
Q Serve(g_s), s	6.0	0.0	0.0				0.0	6.2	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	0.0				0.0	6.2	0.7	2.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	0.18		0.00
Lane Grp Cap(c), veh/h	276	0					0	1123	952	1072	0	0
V/C Ratio(X)	0.76	0.00					0.00	0.40	0.06	0.16	0.00	0.00
Avail Cap(c_a), veh/h	538	0					0	1123	952	1072	0	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00				0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.0	0.0	0.0				0.0	4.4	3.4	3.7	0.0	0.0
Incr Delay (d2), s/veh	4.4	0.0	0.0				0.0	1.1	0.1	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.0				0.0	1.2	0.1	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	0.0				0.0	5.5	3.5	4.0	0.0	0.0
LnGrp LOS	C	A					A	A	A	A	A	A
Approach Vol, veh/h		211						500			174	
Approach Delay, s/veh		24.3						5.3			4.0	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		36.8		13.2				36.8				
Change Period (Y+Rc), s		5.0		5.0				5.0				
Max Green Setting (Gmax), s		24.0		16.0				24.0				
Max Q Clear Time (g_c+I1), s		8.2		8.0				4.0				
Green Ext Time (p_c), s		2.4		0.7				0.8				
Intersection Summary												
HCM 6th Ctrl Delay			9.6									
HCM 6th LOS			A									
Notes												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

Lanes, Volumes, Timings
3: SH 74 & Airport Rd.

Alternative 1 With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	17	143	22	63	572	53
Future Volume (vph)	17	143	22	63	572	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	50
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.879				0.989	
Flt Protected				0.987	0.956	
Satd. Flow (prot)	1532	0	0	1720	1648	0
Flt Permitted				0.856	0.956	
Satd. Flow (perm)	1532	0	0	1492	1648	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	159				13	
Link Speed (mph)	30			30	45	
Link Distance (ft)	1506			1049	398	
Travel Time (s)	34.2			23.8	6.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	19	159	24	70	602	56
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	0	0	94	658	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0		20.0	20.0	30.0	
Total Split (%)	40.0%		40.0%	40.0%	60.0%	
Maximum Green (s)	15.0		15.0	15.0	25.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	C-Max	
Act Effect Green (s)	8.4			8.4	34.7	
Actuated g/C Ratio	0.17			0.17	0.69	
v/c Ratio	0.46			0.38	0.57	
Control Delay	8.8			22.1	5.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	8.8			22.1	5.9	
LOS	A			C	A	
Approach Delay	8.8			22.1	5.9	
Approach LOS	A			C	A	

Intersection Summary

Area Type:	Other
Cycle Length:	50
Actuated Cycle Length:	50
Offset:	48 (96%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	8.1
Intersection LOS:	A
Intersection Capacity Utilization:	61.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 3: SH 74 & Airport Rd.



HCM 6th Signalized Intersection Summary
3: SH 74 & Airport Rd.

Alternative 1 With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	17	143	22	63	572	53
Future Volume (veh/h)	17	143	22	63	572	53
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	19	159	24	70	602	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9
Cap, veh/h	26	216	109	166	975	91
Arrive On Green	0.16	0.16	0.16	0.16	0.64	0.64
Sat Flow, veh/h	162	1359	118	1046	1521	141
Grp Volume(v), veh/h	0	178	94	0	659	0
Grp Sat Flow(s),veh/h/ln	0	1522	1164	0	1665	0
Q Serve(g_s), s	0.0	5.6	0.2	0.0	11.7	0.0
Cycle Q Clear(g_c), s	0.0	5.6	5.7	0.0	11.7	0.0
Prop In Lane		0.89	0.26		0.91	0.08
Lane Grp Cap(c), veh/h	0	242	275	0	1068	0
V/C Ratio(X)	0.00	0.74	0.34	0.00	0.62	0.00
Avail Cap(c_a), veh/h	0	457	494	0	1068	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.00	0.89	0.00
Uniform Delay (d), s/veh	0.0	20.0	18.8	0.0	5.3	0.0
Incr Delay (d2), s/veh	0.0	4.4	0.7	0.0	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.1	0.9	0.0	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	24.4	19.5	0.0	7.7	0.0
LnGrp LOS	A	C	B	A	A	A
Approach Vol, veh/h	178			94	659	
Approach Delay, s/veh	24.4			19.5	7.7	
Approach LOS	C			B	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		37.1		12.9		12.9
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		25.0		15.0		15.0
Max Q Clear Time (g_c+l1), s		13.7		7.6		7.7
Green Ext Time (p_c), s		1.8		0.5		0.2
Intersection Summary						
HCM 6th Ctrl Delay			12.1			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary
3: SH 74 & Airport Rd.

Alternative 2A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	7	93	12	28	787	38
Future Volume (veh/h)	7	93	12	28	787	38
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	8	103	13	31	828	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9
Cap, veh/h	11	145	108	101	1110	54
Arrive On Green	0.10	0.10	0.10	0.10	0.70	0.70
Sat Flow, veh/h	109	1405	144	979	1594	77
Grp Volume(v), veh/h	0	111	44	0	869	0
Grp Sat Flow(s),veh/h/ln	0	1514	1123	0	1673	0
Q Serve(g_s), s	0.0	3.5	0.0	0.0	16.4	0.0
Cycle Q Clear(g_c), s	0.0	3.5	3.6	0.0	16.4	0.0
Prop In Lane		0.93	0.30		0.95	0.05
Lane Grp Cap(c), veh/h	0	157	209	0	1165	0
V/C Ratio(X)	0.00	0.71	0.21	0.00	0.75	0.00
Avail Cap(c_a), veh/h	0	454	515	0	1165	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.00	0.77	0.00
Uniform Delay (d), s/veh	0.0	21.7	20.6	0.0	4.8	0.0
Incr Delay (d2), s/veh	0.0	5.8	0.5	0.0	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.3	0.4	0.0	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	27.5	21.1	0.0	8.2	0.0
LnGrp LOS	A	C	C	A	A	A
Approach Vol, veh/h	111			44	869	
Approach Delay, s/veh	27.5			21.1	8.2	
Approach LOS	C			C	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		39.8		10.2		10.2
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		25.0		15.0		15.0
Max Q Clear Time (g_c+l1), s		18.4		5.5		5.6
Green Ext Time (p_c), s		2.0		0.3		0.1
Intersection Summary						
HCM 6th Ctrl Delay			10.8			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary
3: SH 74 & Airport Rd.























Alternative 2A With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	17	143	22	63	572	53
Future Volume (veh/h)	17	143	22	63	572	53
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	19	159	24	70	602	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9
Cap, veh/h	25	211	99	159	1008	94
Arrive On Green	0.16	0.16	0.16	0.16	0.66	0.66
Sat Flow, veh/h	162	1359	110	1026	1521	141
Grp Volume(v), veh/h	0	178	94	0	659	0
Grp Sat Flow(s),veh/h/ln	0	1522	1136	0	1665	0
Q Serve(g_s), s	0.0	6.2	0.2	0.0	12.1	0.0
Cycle Q Clear(g_c), s	0.0	6.2	6.3	0.0	12.1	0.0
Prop In Lane		0.89	0.26		0.91	0.08
Lane Grp Cap(c), veh/h	0	236	258	0	1104	0
V/C Ratio(X)	0.00	0.75	0.36	0.00	0.60	0.00
Avail Cap(c_a), veh/h	0	415	441	0	1104	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.00	0.84	0.00
Uniform Delay (d), s/veh	0.0	22.2	20.8	0.0	5.2	0.0
Incr Delay (d2), s/veh	0.0	4.8	0.9	0.0	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	1.1	0.0	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	27.1	21.7	0.0	7.2	0.0
LnGrp LOS	A	C	C	A	A	A
Approach Vol, veh/h	178			94	659	
Approach Delay, s/veh	27.1			21.7	7.2	
Approach LOS	C			C	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		41.5		13.5		13.5
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		30.0		15.0		15.0
Max Q Clear Time (g_c+l1), s		14.1		8.2		8.3
Green Ext Time (p_c), s		2.1		0.5		0.2
Intersection Summary						
HCM 6th Ctrl Delay			12.4			
HCM 6th LOS			B			

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr.

Alternative 2A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	30	165	125	0	140	95	655	15	25	50	30
Future Volume (vph)	25	30	165	125	0	140	95	655	15	25	50	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		175	200		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899				0.850			0.850		0.944	
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1558	0	1656	1743	1482	1656	1743	1482	1656	1646	0
Flt Permitted		0.961		0.328			0.702			0.240		
Satd. Flow (perm)	0	1506	0	572	1743	1482	1224	1743	1482	418	1646	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		127				334			131			32
Link Speed (mph)		30			30			45				45
Link Distance (ft)		701			559			1050				1003
Travel Time (s)		15.9			12.7			15.9				15.2
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	28	33	183	132	0	147	100	689	16	26	53	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	244	0	132	0	147	100	689	16	26	85	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		D,P+P		Perm	D,P+P	NA	Perm	D,P+P		NA
Protected Phases		4		3	8		5	2		1		6

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr.

Alternative 2A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

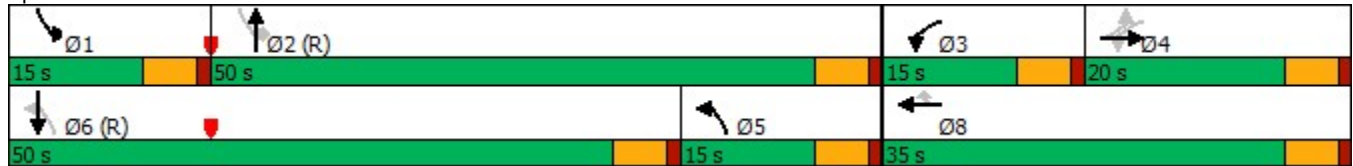


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4		8	6		2	2		
Detector Phase	4	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0		15.0	20.0	20.0	15.0	20.0	20.0	15.0	20.0	
Total Split (s)	20.0	20.0		15.0	35.0	35.0	15.0	50.0	50.0	15.0	50.0	
Total Split (%)	20.0%	20.0%		15.0%	35.0%	35.0%	15.0%	50.0%	50.0%	15.0%	50.0%	
Maximum Green (s)	15.0	15.0		10.0	30.0	30.0	10.0	45.0	45.0	10.0	45.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		12.2		21.7		26.7	59.3	58.5	58.5	61.3	51.3	
Actuated g/C Ratio		0.12		0.22		0.27	0.59	0.58	0.58	0.61	0.51	
v/c Ratio		0.83		0.58		0.23	0.13	0.68	0.02	0.08	0.10	
Control Delay		43.3		39.0		0.8	8.9	21.3	0.1	7.1	5.2	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		43.3		39.0		0.8	8.9	21.3	0.1	7.1	5.2	
LOS		D		D		A	A	C	A	A	A	
Approach Delay		43.3			18.9			19.3			5.6	
Approach LOS		D			B			B			A	

Intersection Summary























Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	2 (2%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	22.3
Intersection LOS:	C
Intersection Capacity Utilization:	68.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 1: SH 74 & W. Interstate Dr.



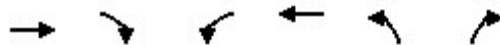
HCM 6th Signalized Intersection Summary
1: SH 74 & W. Interstate Dr.

Alternative 2A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	30	165	125	0	140	95	655	15	25	50	30
Future Volume (veh/h)	25	30	165	125	0	140	95	655	15	25	50	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	28	33	183	132	0	147	100	689	16	26	53	32
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	57	40	170	289	501	424	789	955	810	289	464	280
Arrive On Green	0.15	0.15	0.15	0.08	0.00	0.28	0.12	0.54	0.54	0.03	0.45	0.45
Sat Flow, veh/h	111	266	1130	1682	1767	1497	1682	1767	1497	1682	1032	623
Grp Volume(v), veh/h	244	0	0	132	0	147	100	689	16	26	0	85
Grp Sat Flow(s),veh/h/ln	1507	0	0	1682	1767	1497	1682	1767	1497	1682	0	1655
Q Serve(g_s), s	9.8	0.0	0.0	6.5	0.0	7.8	0.0	29.4	0.5	0.7	0.0	3.0
Cycle Q Clear(g_c), s	15.0	0.0	0.0	6.5	0.0	7.8	0.0	29.4	0.5	0.7	0.0	3.0
Prop In Lane	0.11		0.75	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	266	0	0	289	501	424	789	955	810	289	0	745
V/C Ratio(X)	0.92	0.00	0.00	0.46	0.00	0.35	0.13	0.72	0.02	0.09	0.00	0.11
Avail Cap(c_a), veh/h	266	0	0	317	530	449	789	955	810	414	0	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.0	0.0	0.0	31.9	0.0	28.5	11.7	17.3	10.7	14.0	0.0	15.9
Incr Delay (d2), s/veh	34.0	0.0	0.0	1.1	0.0	0.5	0.1	4.7	0.0	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	0.0	0.0	2.7	0.0	2.8	1.0	11.7	0.2	0.2	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.9	0.0	0.0	33.0	0.0	28.9	11.7	22.0	10.7	14.2	0.0	16.3
LnGrp LOS	E	A	A	C	A	C	B	C	B	B	A	B
Approach Vol, veh/h		244			279			805			111	
Approach Delay, s/veh		76.9			30.9			20.5			15.8	
Approach LOS		E			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	59.1	13.4	20.0	16.6	50.0		33.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	45.0	10.0	15.0	10.0	45.0		30.0				
Max Q Clear Time (g_c+I1), s	2.7	31.4	8.5	17.0	2.0	5.0		9.8				
Green Ext Time (p_c), s	0.0	3.7	0.0	0.0	0.1	0.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				31.7								
HCM 6th LOS				C								

Lanes, Volumes, Timings
3: SH 74 & Airport Rd.

Alternative 2A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	7	93	12	28	787	38
Future Volume (vph)	7	93	12	28	787	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	50
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875				0.994	
Flt Protected				0.985	0.954	
Satd. Flow (prot)	1525	0	0	1717	1653	0
Flt Permitted				0.787	0.954	
Satd. Flow (perm)	1525	0	0	1372	1653	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	103				7	
Link Speed (mph)	45			45	45	
Link Distance (ft)	1506			1049	1003	
Travel Time (s)	22.8			15.9	15.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	8	103	13	31	828	40
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	0	44	868	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	

Lanes, Volumes, Timings
3: SH 74 & Airport Rd.

Alternative 2A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

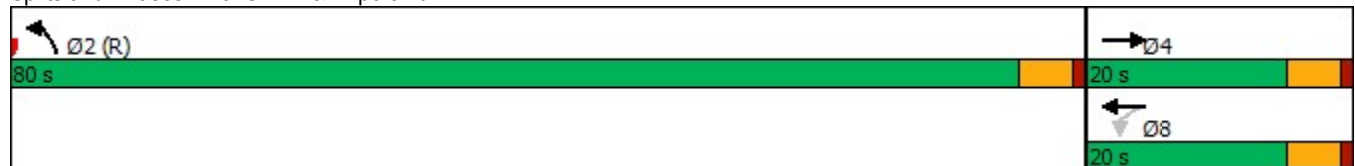


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	20.0		20.0	20.0	80.0	
Total Split (%)	20.0%		20.0%	20.0%	80.0%	
Maximum Green (s)	15.0		15.0	15.0	75.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	C-Max	
Act Effct Green (s)	8.3			8.3	81.7	
Actuated g/C Ratio	0.08			0.08	0.82	
v/c Ratio	0.50			0.39	0.64	
Control Delay	18.4			52.5	4.8	
Queue Delay	0.0			0.0	0.0	
Total Delay	18.4			52.5	4.8	
LOS	B			D	A	
Approach Delay	18.4			52.5	4.8	
Approach LOS	B			D	A	

Intersection Summary

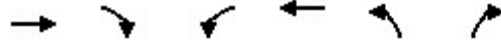
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	8.3
Intersection LOS:	A
Intersection Capacity Utilization	63.1%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 3: SH 74 & Airport Rd.



HCM 6th Signalized Intersection Summary
 3: SH 74 & Airport Rd.























Alternative 2A With Slip Ramp - 2050 AM
 SH 74 & I-35 Interchange Study



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	7	93	12	28	787	38
Future Volume (veh/h)	7	93	12	28	787	38
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	8	103	13	31	828	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9
Cap, veh/h	10	130	56	90	1287	62
Arrive On Green	0.09	0.09	0.09	0.09	0.81	0.81
Sat Flow, veh/h	109	1405	103	976	1594	77
Grp Volume(v), veh/h	0	111	44	0	869	0
Grp Sat Flow(s),veh/h/ln	0	1514	1080	0	1673	0
Q Serve(g_s), s	0.0	7.2	0.1	0.0	20.8	0.0
Cycle Q Clear(g_c), s	0.0	7.2	7.3	0.0	20.8	0.0
Prop In Lane		0.93	0.30		0.95	0.05
Lane Grp Cap(c), veh/h	0	140	147	0	1351	0
V/C Ratio(X)	0.00	0.79	0.30	0.00	0.64	0.00
Avail Cap(c_a), veh/h	0	227	236	0	1351	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.00	0.77	0.00
Uniform Delay (d), s/veh	0.0	44.4	42.3	0.0	3.9	0.0
Incr Delay (d2), s/veh	0.0	9.6	1.1	0.0	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	1.0	0.0	3.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	54.0	43.4	0.0	5.7	0.0
LnGrp LOS	A	D	D	A	A	A
Approach Vol, veh/h	111			44	869	
Approach Delay, s/veh	54.0			43.4	5.7	
Approach LOS	D			D	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		85.7		14.3		14.3
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		75.0		15.0		15.0
Max Q Clear Time (g_c+I1), s		22.8		9.2		9.3
Green Ext Time (p_c), s		3.6		0.2		0.0
Intersection Summary						
HCM 6th Ctrl Delay			12.5			
HCM 6th LOS			B			

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr.

Alternative 2A With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	45	410	360	5	200	60	400	5	30	95	40
Future Volume (vph)	25	45	410	360	5	200	60	400	5	30	95	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		175	200		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.885				0.850			0.850		0.956	
Flt Protected		0.997		0.950			0.950			0.950		
Satd. Flow (prot)	0	1538	0	1656	1743	1482	1656	1743	1482	1656	1666	0
Flt Permitted		0.985		0.215			0.661			0.301		
Satd. Flow (perm)	0	1520	0	375	1743	1482	1152	1743	1482	525	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		296				211			145		23	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		701			559			1050			1003	
Travel Time (s)		15.9			12.7			15.9			15.2	
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	28	50	456	379	5	211	63	421	5	32	100	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	534	0	379	5	211	63	421	5	32	142	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	60		60	15		60	60		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		D,P+P	NA	Perm	D,P+P	NA	Perm	D,P+P	NA	
Protected Phases		4		3	8		5	2		1	6	

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr.

Alternative 2A With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study

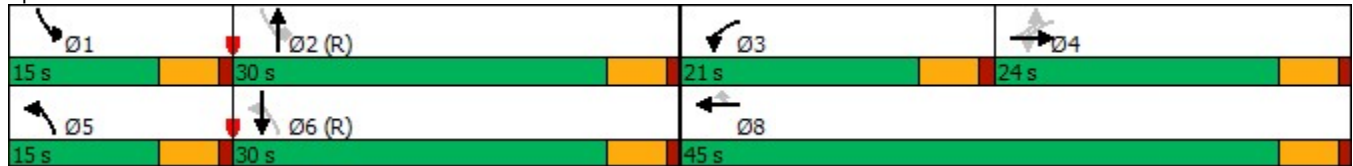


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4		8	6		2	2		
Detector Phase	4	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0		15.0	15.0	15.0	15.0	20.0	20.0	15.0	20.0	
Total Split (s)	24.0	24.0		21.0	45.0	45.0	15.0	30.0	30.0	15.0	30.0	
Total Split (%)	26.7%	26.7%		23.3%	50.0%	50.0%	16.7%	33.3%	33.3%	16.7%	33.3%	
Maximum Green (s)	19.0	19.0		16.0	40.0	40.0	10.0	25.0	25.0	10.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		18.6		34.6	39.6	39.6	36.4	33.2	33.2	37.4	30.0	
Actuated g/C Ratio		0.21		0.38	0.44	0.44	0.40	0.37	0.37	0.42	0.33	
v/c Ratio		0.97		1.02	0.01	0.27	0.12	0.66	0.01	0.11	0.25	
Control Delay		50.1		77.8	14.0	3.2	15.3	31.9	0.0	9.4	12.4	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		50.1		77.8	14.0	3.2	15.3	31.9	0.0	9.4	12.4	
LOS		D		E	B	A	B	C	A	A	B	
Approach Delay		50.1			50.8			29.5			11.8	
Approach LOS		D			D			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 78 (87%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 41.0
 Intersection LOS: D
 Intersection Capacity Utilization 90.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: SH 74 & W. Interstate Dr.



HCM 6th Signalized Intersection Summary
 1: SH 74 & W. Interstate Dr.

Alternative 2A With Slip Ramp - 2050 PM
 SH 74 & I-35 Interchange Study

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	45	410	360	5	200	60	400	5	30	95	40
Future Volume (veh/h)	25	45	410	360	5	200	60	400	5	30	95	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	28	50	456	379	5	211	63	421	5	32	100	42
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	52	37	272	458	785	665	489	633	536	275	407	171
Arrive On Green	0.21	0.21	0.21	0.18	0.44	0.44	0.04	0.36	0.36	0.03	0.34	0.34
Sat Flow, veh/h	47	173	1287	1682	1767	1497	1682	1767	1497	1682	1181	496
Grp Volume(v), veh/h	534	0	0	379	5	211	63	421	5	32	0	142
Grp Sat Flow(s),veh/h/ln	1507	0	0	1682	1767	1497	1682	1767	1497	1682	0	1677
Q Serve(g_s), s	11.4	0.0	0.0	16.0	0.1	8.2	2.1	18.1	0.2	1.1	0.0	5.5
Cycle Q Clear(g_c), s	19.0	0.0	0.0	16.0	0.1	8.2	2.1	18.1	0.2	1.1	0.0	5.5
Prop In Lane	0.05		0.85	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	360	0	0	458	785	665	489	633	536	275	0	578
V/C Ratio(X)	1.48	0.00	0.00	0.83	0.01	0.32	0.13	0.67	0.01	0.12	0.00	0.25
Avail Cap(c_a), veh/h	360	0	0	458	785	665	602	633	536	411	0	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	0.0	21.7	13.9	16.2	17.6	24.3	18.6	19.0	0.0	21.1
Incr Delay (d2), s/veh	231.6	0.0	0.0	11.9	0.0	0.3	0.1	5.5	0.0	0.2	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.1	0.0	0.0	7.6	0.1	2.7	0.8	7.9	0.1	0.4	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	268.2	0.0	0.0	33.6	13.9	16.4	17.8	29.8	18.6	19.2	0.0	22.1
LnGrp LOS	F	A	A	C	B	B	B	C	B	B	A	C
Approach Vol, veh/h		534			595			489				174
Approach Delay, s/veh		268.2			27.4			28.1				21.6
Approach LOS		F			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	37.2	21.0	24.0	9.0	36.0		45.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	25.0	16.0	19.0	10.0	25.0		40.0				
Max Q Clear Time (g_c+I1), s	3.1	20.1	18.0	21.0	4.1	7.5		10.2				
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	0.6		0.7				
Intersection Summary												
HCM 6th Ctrl Delay				98.8								
HCM 6th LOS				F								

Lanes, Volumes, Timings
3: SH 74 & Airport Rd.

Alternative 2A With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	17	143	22	63	572	53
Future Volume (vph)	17	143	22	63	572	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	50
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.879				0.989	
Flt Protected				0.987	0.956	
Satd. Flow (prot)	1532	0	0	1720	1648	0
Flt Permitted				0.628	0.956	
Satd. Flow (perm)	1532	0	0	1095	1648	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	159				12	
Link Speed (mph)	30			30	45	
Link Distance (ft)	1506			1049	1003	
Travel Time (s)	34.2			23.8	15.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	19	159	24	70	602	56
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	0	0	94	658	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	

Lanes, Volumes, Timings
3: SH 74 & Airport Rd.

Alternative 2A With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study

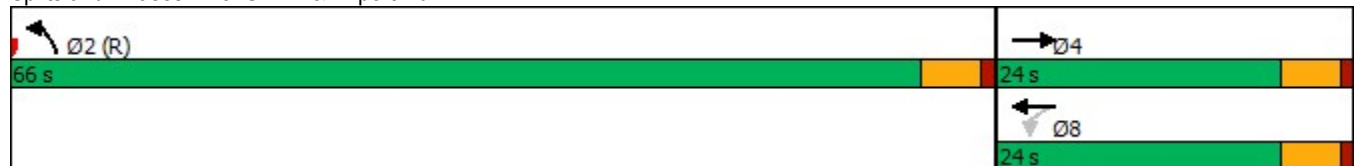


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	
Total Split (s)	24.0		24.0	24.0	66.0	
Total Split (%)	26.7%		26.7%	26.7%	73.3%	
Maximum Green (s)	19.0		19.0	19.0	61.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	C-Max	
Act Effct Green (s)	10.7			10.7	69.3	
Actuated g/C Ratio	0.12			0.12	0.77	
v/c Ratio	0.55			0.72	0.52	
Control Delay	14.8			67.0	4.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	14.8			67.0	4.4	
LOS	B			E	A	
Approach Delay	14.8			67.0	4.4	
Approach LOS	B			E	A	

Intersection Summary

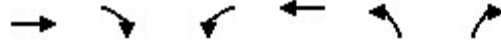
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.72
Intersection Signal Delay:	12.7
Intersection LOS:	B
Intersection Capacity Utilization	61.7%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 3: SH 74 & Airport Rd.



HCM 6th Signalized Intersection Summary
 3: SH 74 & Airport Rd.

Alternative 2A With Slip Ramp - 2050 PM
 SH 74 & I-35 Interchange Study



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	
Traffic Volume (veh/h)	17	143	22	63	572	53
Future Volume (veh/h)	17	143	22	63	572	53
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	19	159	24	70	602	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9
Cap, veh/h	23	193	61	127	1137	106
Arrive On Green	0.14	0.14	0.14	0.14	0.75	0.75
Sat Flow, veh/h	162	1359	78	898	1521	141
Grp Volume(v), veh/h	0	178	94	0	659	0
Grp Sat Flow(s),veh/h/ln	0	1522	976	0	1665	0
Q Serve(g_s), s	0.0	10.2	0.3	0.0	14.9	0.0
Cycle Q Clear(g_c), s	0.0	10.2	10.6	0.0	14.9	0.0
Prop In Lane		0.89	0.26		0.91	0.08
Lane Grp Cap(c), veh/h	0	216	188	0	1244	0
V/C Ratio(X)	0.00	0.83	0.50	0.00	0.53	0.00
Avail Cap(c_a), veh/h	0	321	296	0	1244	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	0.00	0.84	0.00
Uniform Delay (d), s/veh	0.0	37.5	35.2	0.0	4.8	0.0
Incr Delay (d2), s/veh	0.0	10.5	2.0	0.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	2.0	0.0	3.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	48.0	37.2	0.0	6.1	0.0
LnGrp LOS	A	D	D	A	A	A
Approach Vol, veh/h	178			94	659	
Approach Delay, s/veh	48.0			37.2	6.1	
Approach LOS	D			D	A	
Timer - Assigned Phs		2		4		8
Phs Duration (G+Y+Rc), s		72.2		17.8		17.8
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		61.0		19.0		19.0
Max Q Clear Time (g_c+I1), s		16.9		12.2		12.6
Green Ext Time (p_c), s		2.3		0.5		0.2
Intersection Summary						
HCM 6th Ctrl Delay			17.3			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 3A With Slip Ramp - 2050 AM
 SH 74 & I-35 Interchange Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	32	5	32	17	28	6	679	147	42	5	63	26
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	2	2	2	9	9	9	9	9	9
Cap, veh/h	219	29	187	72	49	9	1039	514	147	942	426	176
Arrive On Green	0.03	0.14	0.14	0.06	0.06	0.06	0.33	0.39	0.39	0.30	0.36	0.36
Sat Flow, veh/h	1682	207	1322	336	885	163	1682	1321	377	1682	1188	490
Grp Volume(v), veh/h	32	0	37	51	0	0	679	0	189	5	0	89
Grp Sat Flow(s),veh/h/ln	1682	0	1529	1384	0	0	1682	0	1699	1682	0	1678
Q Serve(g_s), s	0.0	0.0	1.9	1.6	0.0	0.0	18.8	0.0	6.9	0.0	0.0	3.2
Cycle Q Clear(g_c), s	0.0	0.0	1.9	3.5	0.0	0.0	18.8	0.0	6.9	0.0	0.0	3.2
Prop In Lane	1.00		0.86	0.33		0.12	1.00		0.22	1.00		0.29
Lane Grp Cap(c), veh/h	219	0	217	130	0	0	1039	0	661	942	0	601
V/C Ratio(X)	0.15	0.00	0.17	0.39	0.00	0.00	0.65	0.00	0.29	0.01	0.00	0.15
Avail Cap(c_a), veh/h	354	0	510	312	0	0	1039	0	661	942	0	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.74	0.00	0.74	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	34.0	41.9	0.0	0.0	7.3	0.0	18.9	6.7	0.0	19.6
Incr Delay (d2), s/veh	0.3	0.0	0.4	1.9	0.0	0.0	2.4	0.0	0.8	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.7	1.1	0.0	0.0	5.4	0.0	2.6	0.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	0.0	34.3	43.8	0.0	0.0	9.7	0.0	19.7	6.7	0.0	20.1
LnGrp LOS	D	A	C	D	A	A	A	A	B	A	A	C
Approach Vol, veh/h		69			51			868				94
Approach Delay, s/veh		36.3			43.8			11.9				19.4
Approach LOS		D			D			B				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.3	40.0		17.7	35.0	37.3	7.8	10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		30.0	30.0	15.0	10.0	15.0				
Max Q Clear Time (g_c+I1), s	2.0	8.9		3.9	20.8	5.2	2.0	5.5				
Green Ext Time (p_c), s	0.0	1.0		0.1	1.7	0.2	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 3A With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1767	1767	1767	1767	1870	1767	1870	1767	1870	1870	1870
Adj Flow Rate, veh/h	16	6	44	28	44	27	447	158	58	16	109	43
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	9	9	9	9	2	9	2	9	2	2	2
Cap, veh/h	195	28	202	67	67	35	921	629	231	956	739	291
Arrive On Green	0.02	0.15	0.15	0.09	0.09	0.09	0.13	0.48	0.48	0.23	0.58	0.58
Sat Flow, veh/h	1781	183	1342	290	762	395	1682	1305	479	1781	1276	503
Grp Volume(v), veh/h	16	0	50	99	0	0	447	0	216	16	0	152
Grp Sat Flow(s),veh/h/ln	1781	0	1525	1447	0	0	1682	0	1784	1781	0	1780
Q Serve(g_s), s	0.0	0.0	3.2	4.3	0.0	0.0	11.4	0.0	7.9	0.0	0.0	4.3
Cycle Q Clear(g_c), s	0.0	0.0	3.2	7.5	0.0	0.0	11.4	0.0	7.9	0.0	0.0	4.3
Prop In Lane	1.00		0.88	0.28		0.27	1.00		0.27	1.00		0.28
Lane Grp Cap(c), veh/h	195	0	230	169	0	0	921	0	860	956	0	1030
V/C Ratio(X)	0.08	0.00	0.22	0.59	0.00	0.00	0.49	0.00	0.25	0.02	0.00	0.15
Avail Cap(c_a), veh/h	325	0	444	271	0	0	1307	0	860	956	0	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.82	0.00	0.82	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	0.0	41.0	49.2	0.0	0.0	6.3	0.0	16.8	7.2	0.0	10.7
Incr Delay (d2), s/veh	0.2	0.0	0.5	3.2	0.0	0.0	0.3	0.0	0.6	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	2.8	0.0	0.0	3.2	0.0	3.1	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	0.0	41.5	52.5	0.0	0.0	6.6	0.0	17.4	7.2	0.0	11.0
LnGrp LOS	D	A	D	D	A	A	A	A	B	A	A	B
Approach Vol, veh/h		66			99			663				168
Approach Delay, s/veh		42.3			52.5			10.1				10.6
Approach LOS		D			D			B				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.4	58.0		21.6	19.8	68.7	6.9	14.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	53.0		32.0	40.0	23.0	10.0	17.0				
Max Q Clear Time (g_c+I1), s	2.0	9.9		5.2	13.4	6.3	2.0	9.5				
Green Ext Time (p_c), s	0.0	1.2		0.2	1.4	0.7	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 3A - 2050 AM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	30	165	125	0	140	95	655	15	25	50	30
Future Volume (vph)	25	30	165	125	0	140	95	655	15	25	50	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		175	200		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899				0.850			0.850		0.944	
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1558	0	1656	1743	1482	1656	1743	1482	1656	1646	0
Flt Permitted		0.961		0.342			0.702			0.218		
Satd. Flow (perm)	0	1506	0	596	1743	1482	1224	1743	1482	380	1646	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		135				340			138			32
Link Speed (mph)		30			30			45				45
Link Distance (ft)		701			559			1050				2429
Travel Time (s)		15.9			12.7			15.9				36.8
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	28	33	183	132	0	147	100	689	16	26	53	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	244	0	132	0	147	100	689	16	26	85	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		D,P+P		Perm	D,P+P	NA	Perm	D,P+P		NA
Protected Phases		4		3	8		5	2		1		6

03/27/2023

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

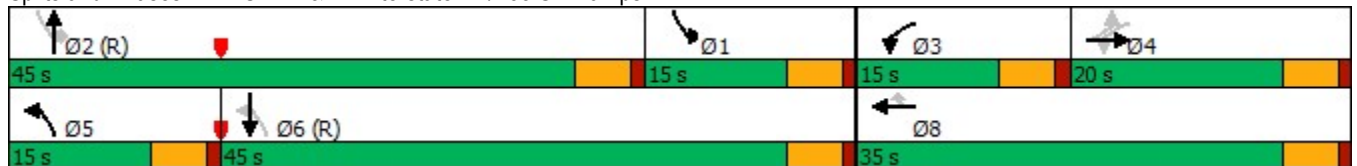
Alternative 3A - 2050 AM
SH 74 & I-35 Interchange Study

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4		8	6		2	2		
Detector Phase	4	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	20.0		15.0	20.0	20.0	15.0	20.0	20.0	15.0	20.0	
Total Split (s)	20.0	20.0		15.0	35.0	35.0	15.0	45.0	45.0	15.0	45.0	
Total Split (%)	21.1%	21.1%		15.8%	36.8%	36.8%	15.8%	47.4%	47.4%	15.8%	47.4%	
Maximum Green (s)	15.0	15.0		10.0	30.0	30.0	10.0	40.0	40.0	10.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		11.7		21.1		26.1	54.9	52.9	52.9	56.9	48.1	
Actuated g/C Ratio		0.12		0.22		0.27	0.58	0.56	0.56	0.60	0.51	
v/c Ratio		0.81		0.56		0.23	0.13	0.71	0.02	0.08	0.10	
Control Delay		38.2		35.4		0.8	9.0	24.6	0.1	3.5	0.6	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		38.2		35.4		0.8	9.0	24.6	0.1	3.5	0.6	
LOS		D		D		A	A	C	A	A	A	
Approach Delay		38.2			17.2			22.2			1.3	
Approach LOS		D			B			C			A	

Intersection Summary























Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 95
 Offset: 55 (58%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 22.3
 Intersection LOS: C
 Intersection Capacity Utilization 68.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: SH 74 & W. Interstate Dr./I-35 SB Ramps



HCM 6th Signalized Intersection Summary
 1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 3A - 2050 AM
 SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	30	165	125	0	140	95	655	15	25	50	30
Future Volume (veh/h)	25	30	165	125	0	140	95	655	15	25	50	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	28	33	183	132	0	147	100	689	16	26	53	32
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	59	42	179	297	520	440	743	744	630	325	515	311
Arrive On Green	0.16	0.16	0.16	0.08	0.00	0.29	0.05	0.42	0.42	0.13	0.50	0.50
Sat Flow, veh/h	109	268	1131	1682	1767	1497	1682	1767	1497	1682	1032	623
Grp Volume(v), veh/h	244	0	0	132	0	147	100	689	16	26	0	85
Grp Sat Flow(s),veh/h/ln	1508	0	0	1682	1767	1497	1682	1767	1497	1682	0	1655
Q Serve(g_s), s	9.6	0.0	0.0	6.1	0.0	7.3	2.7	35.2	0.4	0.0	0.0	2.6
Cycle Q Clear(g_c), s	15.0	0.0	0.0	6.1	0.0	7.3	2.7	35.2	0.4	0.0	0.0	2.6
Prop In Lane	0.11		0.75	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	280	0	0	297	520	440	743	744	630	325	0	826
V/C Ratio(X)	0.87	0.00	0.00	0.44	0.00	0.33	0.13	0.93	0.03	0.08	0.00	0.10
Avail Cap(c_a), veh/h	280	0	0	333	558	473	838	744	630	325	0	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.96	0.00	0.96
Uniform Delay (d), s/veh	40.1	0.0	0.0	29.7	0.0	26.2	10.4	26.1	7.3	33.3	0.0	12.6
Incr Delay (d2), s/veh	24.3	0.0	0.0	1.0	0.0	0.4	0.1	19.2	0.1	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.0	2.5	0.0	2.6	0.9	17.2	0.2	0.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	0.0	30.7	0.0	26.7	10.4	45.3	7.4	33.4	0.0	12.8
LnGrp LOS	E	A	A	C	A	C	B	D	A	C	A	B
Approach Vol, veh/h		244			279			805				111
Approach Delay, s/veh		64.4			28.6			40.3				17.6
Approach LOS		E			C			D				B
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	17.1	45.0	12.9	20.0	9.6	52.4		32.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0	10.0	15.0	10.0	40.0		30.0				
Max Q Clear Time (g_c+I1), s	2.0	37.2	8.1	17.0	4.7	4.6		9.3				
Green Ext Time (p_c), s	0.0	1.2	0.1	0.0	0.1	0.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			40.3									
HCM 6th LOS			D									

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 3A - 2050 AM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (vph)	30	5	30	15	25	5	645	140	40	5	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	200		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.870			0.984			0.967			0.956	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1656	1517	0	0	1804	0	1656	1686	0	1656	1666	0
Flt Permitted	0.902				0.874		0.699			0.639		
Satd. Flow (perm)	1572	1517	0	0	1602	0	1218	1686	0	1114	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			6			19				19
Link Speed (mph)		45			45			45				45
Link Distance (ft)		701			375			2429				1022
Travel Time (s)		10.6			5.7			36.8				15.5
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	2%	2%	2%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	32	5	32	17	28	6	679	147	42	5	63	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	37	0	0	51	0	679	189	0	5	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 3A - 2050 AM
SH 74 & I-35 Interchange Study

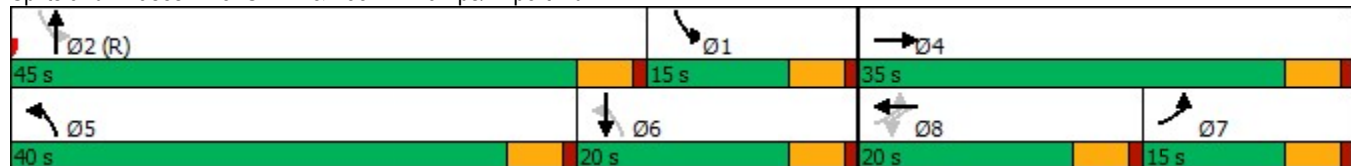


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Permitted Phases	8			8			6			2			
Detector Phase	7	4		8	8		5	2		1	6		
Switch Phase													
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	15.0	20.0		20.0	20.0		15.0	20.0		15.0	20.0		
Total Split (s)	15.0	35.0		20.0	20.0		40.0	45.0		15.0	20.0		
Total Split (%)	15.8%	36.8%		21.1%	21.1%		42.1%	47.4%		15.8%	21.1%		
Maximum Green (s)	10.0	30.0		15.0	15.0		35.0	40.0		10.0	15.0		
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0		
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lag			Lead		Lead		Lead		Lead		Lag	
Lead-Lag Optimize?	Yes			Yes		Yes		Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	None		None	None		Max	C-Max		None	Max		
Act Effct Green (s)	12.6	14.5			8.1		67.6	70.6		72.6	15.0		
Actuated g/C Ratio	0.13	0.15			0.09		0.71	0.74		0.76	0.16		
v/c Ratio	0.15	0.14			0.36		0.61	0.15		0.01	0.32		
Control Delay	32.1	13.7			43.5		3.8	1.0		5.2	31.6		
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Delay	32.1	13.7			43.5		3.8	1.0		5.2	31.6		
LOS	C	B			D		A	A		A	C		
Approach Delay		22.2			43.5			3.2			30.2		
Approach LOS		C			D			A			C		

Intersection Summary

Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 95
 Offset: 80 (84%), Referenced to phase 2:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 8.6
 Intersection Capacity Utilization 59.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 3: SH 74 & I-35 NB Ramps/Airport Rd.



HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 3A - 2050 AM
 SH 74 & I-35 Interchange Study

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	32	5	32	17	28	6	679	147	42	5	63	26
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	2	2	2	9	9	9	9	9	9
Cap, veh/h	213	28	182	69	49	9	1065	556	159	982	399	165
Arrive On Green	0.03	0.14	0.14	0.05	0.05	0.05	0.62	0.70	0.70	0.28	0.34	0.34
Sat Flow, veh/h	1682	207	1322	333	892	163	1682	1321	377	1682	1188	490
Grp Volume(v), veh/h	32	0	37	51	0	0	679	0	189	5	0	89
Grp Sat Flow(s),veh/h/ln	1682	0	1529	1388	0	0	1682	0	1699	1682	0	1678
Q Serve(g_s), s	0.0	0.0	2.0	1.7	0.0	0.0	21.2	0.0	3.9	0.0	0.0	3.5
Cycle Q Clear(g_c), s	0.0	0.0	2.0	3.7	0.0	0.0	21.2	0.0	3.9	0.0	0.0	3.5
Prop In Lane	1.00		0.86	0.33		0.12	1.00		0.22	1.00		0.29
Lane Grp Cap(c), veh/h	213	0	210	127	0	0	1065	0	715	982	0	564
V/C Ratio(X)	0.15	0.00	0.18	0.40	0.00	0.00	0.64	0.00	0.26	0.01	0.00	0.16
Avail Cap(c_a), veh/h	339	0	483	295	0	0	1065	0	715	982	0	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.74	0.00	0.74	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.5	0.0	36.2	44.2	0.0	0.0	4.5	0.0	8.7	5.4	0.0	22.1
Incr Delay (d2), s/veh	0.3	0.0	0.4	2.0	0.0	0.0	2.2	0.0	0.7	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.8	1.2	0.0	0.0	2.9	0.0	1.3	0.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	0.0	36.6	46.2	0.0	0.0	6.7	0.0	9.4	5.4	0.0	22.7
LnGrp LOS	D	A	D	D	A	A	A	A	A	A	A	C
Approach Vol, veh/h		69			51			868				94
Approach Delay, s/veh		38.6			46.2			7.3				21.8
Approach LOS		D			D			A				C
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.9	45.0		18.1	40.0	36.9	7.9	10.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	40.0		30.0	35.0	15.0	10.0	15.0				
Max Q Clear Time (g_c+l1), s	2.0	5.9		4.0	23.2	5.5	2.0	5.7				
Green Ext Time (p_c), s	0.0	1.0		0.1	1.9	0.2	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 3A - 2050 PM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	45	410	360	0	200	60	400	5	30	95	40
Future Volume (vph)	25	45	410	360	0	200	60	400	5	30	95	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		175	200		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.885				0.850			0.850		0.956	
Flt Protected		0.997		0.950			0.950			0.950		
Satd. Flow (prot)	0	1538	0	1656	1743	1482	1656	1743	1482	1656	1666	0
Flt Permitted		0.985		0.238			0.666			0.276		
Satd. Flow (perm)	0	1520	0	415	1743	1482	1161	1743	1482	481	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		310				480			154		24	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		701			559			1050			2429	
Travel Time (s)		15.9			12.7			15.9			36.8	
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	28	50	456	379	0	211	63	421	5	32	100	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	534	0	379	0	211	63	421	5	32	142	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	60		60	15		60	60		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		D,P+P		Perm	D,P+P	NA	Perm	D,P+P	NA	
Protected Phases		4		3	8		5	2		1	6	

03/27/2023

Lanes, Volumes, Timings
 1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 3A - 2050 PM
 SH 74 & I-35 Interchange Study

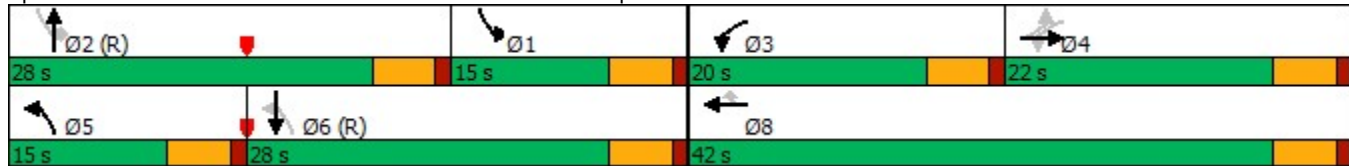


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4		8	6		2	2		
Detector Phase	4	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0		15.0	15.0	15.0	15.0	20.0	20.0	15.0	20.0	
Total Split (s)	22.0	22.0		20.0	42.0	42.0	15.0	28.0	28.0	15.0	28.0	
Total Split (%)	25.9%	25.9%		23.5%	49.4%	49.4%	17.6%	32.9%	32.9%	17.6%	32.9%	
Maximum Green (s)	17.0	17.0		15.0	37.0	37.0	10.0	23.0	23.0	10.0	23.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		16.8		31.8		36.8	34.2	29.2	29.2	35.2	27.9	
Actuated g/C Ratio		0.20		0.37		0.43	0.40	0.34	0.34	0.41	0.33	
v/c Ratio		0.97		1.01		0.23	0.12	0.70	0.01	0.10	0.25	
Control Delay		48.3		74.3		0.6	14.4	35.1	0.0	8.9	12.9	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		48.3		74.3		0.6	14.4	35.1	0.0	8.9	12.9	
LOS		D		E		A	B	D	A	A	B	
Approach Delay		48.3			48.0			32.1			12.1	
Approach LOS		D			D			C			B	

Intersection Summary























Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 55 (65%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 40.2
 Intersection LOS: D
 Intersection Capacity Utilization 90.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: SH 74 & W. Interstate Dr./I-35 SB Ramps



HCM 6th Signalized Intersection Summary
 1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 3A - 2050 PM
 SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	45	410	360	0	200	60	400	5	30	95	40
Future Volume (veh/h)	25	45	410	360	0	200	60	400	5	30	95	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	28	50	456	379	0	211	63	421	5	32	100	42
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	54	35	257	464	769	652	493	478	405	321	405	170
Arrive On Green	0.20	0.20	0.20	0.18	0.00	0.44	0.05	0.27	0.27	0.12	0.34	0.34
Sat Flow, veh/h	47	173	1287	1682	1767	1497	1682	1767	1497	1682	1181	496
Grp Volume(v), veh/h	534	0	0	379	0	211	63	421	5	32	0	142
Grp Sat Flow(s),veh/h/ln	1507	0	0	1682	1767	1497	1682	1767	1497	1682	0	1677
Q Serve(g_s), s	10.2	0.0	0.0	15.0	0.0	7.9	2.0	19.4	0.1	0.0	0.0	5.2
Cycle Q Clear(g_c), s	17.0	0.0	0.0	15.0	0.0	7.9	2.0	19.4	0.1	0.0	0.0	5.2
Prop In Lane	0.05		0.85	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	346	0	0	464	769	652	493	478	405	321	0	575
V/C Ratio(X)	1.54	0.00	0.00	0.82	0.00	0.32	0.13	0.88	0.01	0.10	0.00	0.25
Avail Cap(c_a), veh/h	346	0	0	464	769	652	615	478	405	321	0	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	35.0	0.0	0.0	21.5	0.0	15.8	16.7	29.7	8.1	31.1	0.0	20.1
Incr Delay (d2), s/veh	258.6	0.0	0.0	10.9	0.0	0.3	0.1	20.2	0.1	0.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	32.0	0.0	0.0	7.2	0.0	2.6	0.7	10.2	0.1	0.6	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	293.6	0.0	0.0	32.3	0.0	16.1	16.8	49.9	8.1	31.2	0.0	21.1
LnGrp LOS	F	A	A	C	A	B	B	D	A	C	A	C
Approach Vol, veh/h		534			590			489				174
Approach Delay, s/veh		293.6			26.5			45.2				22.9
Approach LOS		F			C			D				C
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	28.0	20.0	22.0	8.9	34.1		42.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	23.0	15.0	17.0	10.0	23.0		37.0				
Max Q Clear Time (g_c+I1), s	2.0	21.4	17.0	19.0	4.0	7.2		9.9				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	0.0	0.5		0.7				
Intersection Summary												
HCM 6th Ctrl Delay	111.1											
HCM 6th LOS	F											

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 3A - 2050 PM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (vph)	15	5	40	25	40	25	425	145	55	15	100	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	200		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.868			0.963			0.960			0.958	
Flt Protected	0.950				0.986		0.950			0.950		
Satd. Flow (prot)	1770	1513	0	0	1685	0	1656	1756	0	1770	1785	0
Flt Permitted	0.677				0.887		0.660			0.623		
Satd. Flow (perm)	1261	1513	0	0	1515	0	1150	1756	0	1160	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			19			24			20	
Link Speed (mph)		30			30			45			30	
Link Distance (ft)		701			375			2429			1022	
Travel Time (s)		15.9			8.5			36.8			23.2	
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	9%	9%	9%	2%	9%	2%	9%	2%	2%	2%
Adj. Flow (vph)	16	6	44	28	44	27	447	158	58	16	109	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	50	0	0	99	0	447	216	0	16	152	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		9	15		60	15		9	60		60
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	

03/27/2023

Lanes, Volumes, Timings
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 3A - 2050 PM
 SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Permitted Phases	8			8			6			2			
Detector Phase	7	4		8	8		5	2		1	6		
Switch Phase													
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	15.0	20.0		20.0	20.0		15.0	20.0		15.0	20.0		
Total Split (s)	15.0	35.0		20.0	20.0		30.0	35.0		15.0	20.0		
Total Split (%)	17.6%	41.2%		23.5%	23.5%		35.3%	41.2%		17.6%	23.5%		
Maximum Green (s)	10.0	30.0		15.0	15.0		25.0	30.0		10.0	15.0		
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0		
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lag			Lead		Lead		Lead		Lead		Lag	
Lead-Lag Optimize?	Yes			Yes		Yes		Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	None		None	None		None	C-Max		None	Max		
Act Effct Green (s)	14.2	11.9			9.8		60.2	63.2		65.2	41.5		
Actuated g/C Ratio	0.17	0.14			0.12		0.71	0.74		0.77	0.49		
v/c Ratio	0.07	0.20			0.52		0.48	0.16		0.02	0.17		
Control Delay	23.9	11.9			37.5		4.9	2.0		5.1	16.5		
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Delay	23.9	11.9			37.5		4.9	2.0		5.1	16.5		
LOS	C	B			D		A	A		A	B		
Approach Delay		14.8			37.5			4.0			15.4		
Approach LOS		B			D			A			B		

Intersection Summary

Area Type: Other
 Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 72 (85%), Referenced to phase 2:NBSB, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 10.0
 Intersection LOS: A
 Intersection Capacity Utilization 55.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: SH 74 & I-35 NB Ramps/Airport Rd.



HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 3A - 2050 PM
 SH 74 & I-35 Interchange Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1767	1767	1767	1767	1870	1767	1870	1767	1870	1870	1870
Adj Flow Rate, veh/h	16	6	44	28	44	27	447	158	58	16	109	43
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	9	9	9	9	2	9	2	9	2	2	2
Cap, veh/h	235	31	224	81	70	36	885	461	169	964	612	241
Arrive On Green	0.02	0.17	0.17	0.09	0.09	0.09	0.30	0.59	0.59	0.30	0.48	0.48
Sat Flow, veh/h	1781	183	1342	296	776	402	1682	1305	479	1781	1276	503
Grp Volume(v), veh/h	16	0	50	99	0	0	447	0	216	16	0	152
Grp Sat Flow(s),veh/h/ln	1781	0	1525	1474	0	0	1682	0	1784	1781	0	1780
Q Serve(g_s), s	0.0	0.0	2.4	3.2	0.0	0.0	11.9	0.0	5.3	0.0	0.0	4.1
Cycle Q Clear(g_c), s	0.0	0.0	2.4	5.6	0.0	0.0	11.9	0.0	5.3	0.0	0.0	4.1
Prop In Lane	1.00		0.88	0.28		0.27	1.00		0.27	1.00		0.28
Lane Grp Cap(c), veh/h	235	0	255	187	0	0	885	0	630	964	0	853
V/C Ratio(X)	0.07	0.00	0.20	0.53	0.00	0.00	0.51	0.00	0.34	0.02	0.00	0.18
Avail Cap(c_a), veh/h	412	0	538	319	0	0	1082	0	630	964	0	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.82	0.00	0.82	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	30.5	37.8	0.0	0.0	6.2	0.0	12.4	7.1	0.0	12.6
Incr Delay (d2), s/veh	0.1	0.0	0.4	2.3	0.0	0.0	0.4	0.0	1.2	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.9	2.1	0.0	0.0	2.3	0.0	1.9	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	0.0	30.8	40.1	0.0	0.0	6.5	0.0	13.6	7.1	0.0	13.0
LnGrp LOS	C	A	C	D	A	A	A	A	B	A	A	B
Approach Vol, veh/h		66			99			663				168
Approach Delay, s/veh		31.7			40.1			8.8				12.5
Approach LOS		C			D			A				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.8	35.0		19.2	20.0	45.8	6.6	12.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	30.0		30.0	25.0	15.0	10.0	15.0				
Max Q Clear Time (g_c+I1), s	2.0	7.3		4.4	13.9	6.1	2.0	7.6				
Green Ext Time (p_c), s	0.0	1.1		0.2	1.1	0.5	0.0	0.2				

Intersection Summary												
HCM 6th Ctrl Delay				14.1								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 4A With Slip Ramp - 2050 AM
 SH 74 & I-35 Interchange Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	32	5	32	17	28	6	679	147	42	5	63	26
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	2	2	2	9	9	9	9	9	9
Cap, veh/h	219	29	187	72	49	9	1039	514	147	942	426	176
Arrive On Green	0.03	0.14	0.14	0.06	0.06	0.06	0.33	0.39	0.39	0.30	0.36	0.36
Sat Flow, veh/h	1682	207	1322	336	885	163	1682	1321	377	1682	1188	490
Grp Volume(v), veh/h	32	0	37	51	0	0	679	0	189	5	0	89
Grp Sat Flow(s),veh/h/ln	1682	0	1529	1384	0	0	1682	0	1699	1682	0	1678
Q Serve(g_s), s	0.0	0.0	1.9	1.6	0.0	0.0	18.8	0.0	6.9	0.0	0.0	3.2
Cycle Q Clear(g_c), s	0.0	0.0	1.9	3.5	0.0	0.0	18.8	0.0	6.9	0.0	0.0	3.2
Prop In Lane	1.00		0.86	0.33		0.12	1.00		0.22	1.00		0.29
Lane Grp Cap(c), veh/h	219	0	217	130	0	0	1039	0	661	942	0	601
V/C Ratio(X)	0.15	0.00	0.17	0.39	0.00	0.00	0.65	0.00	0.29	0.01	0.00	0.15
Avail Cap(c_a), veh/h	354	0	510	312	0	0	1039	0	661	942	0	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.74	0.00	0.74	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	34.0	41.9	0.0	0.0	7.3	0.0	18.9	6.7	0.0	19.6
Incr Delay (d2), s/veh	0.3	0.0	0.4	1.9	0.0	0.0	2.4	0.0	0.8	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.7	1.1	0.0	0.0	5.4	0.0	2.6	0.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	0.0	34.3	43.8	0.0	0.0	9.7	0.0	19.7	6.7	0.0	20.1
LnGrp LOS	D	A	C	D	A	A	A	A	B	A	A	C
Approach Vol, veh/h		69			51			868				94
Approach Delay, s/veh		36.3			43.8			11.9				19.4
Approach LOS		D			D			B				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.3	40.0		17.7	35.0	37.3	7.8	10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		30.0	30.0	15.0	10.0	15.0				
Max Q Clear Time (g_c+I1), s	2.0	8.9		3.9	20.8	5.2	2.0	5.5				
Green Ext Time (p_c), s	0.0	1.0		0.1	1.7	0.2	0.0	0.1				

Intersection Summary		
HCM 6th Ctrl Delay		15.6
HCM 6th LOS		B

HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 4A With Slip Ramp - 2050 PM
 SH 74 & I-35 Interchange Study

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1767	1767	1767	1767	1870	1767	1870	1767	1870	1870	1870
Adj Flow Rate, veh/h	16	6	44	28	44	27	447	158	58	16	109	43
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	9	9	9	9	2	9	2	9	2	2	2
Cap, veh/h	195	28	202	67	67	35	921	629	231	956	739	291
Arrive On Green	0.02	0.15	0.15	0.09	0.09	0.09	0.13	0.48	0.48	0.23	0.58	0.58
Sat Flow, veh/h	1781	183	1342	290	762	395	1682	1305	479	1781	1276	503
Grp Volume(v), veh/h	16	0	50	99	0	0	447	0	216	16	0	152
Grp Sat Flow(s),veh/h/ln	1781	0	1525	1447	0	0	1682	0	1784	1781	0	1780
Q Serve(g_s), s	0.0	0.0	3.2	4.3	0.0	0.0	11.4	0.0	7.9	0.0	0.0	4.3
Cycle Q Clear(g_c), s	0.0	0.0	3.2	7.5	0.0	0.0	11.4	0.0	7.9	0.0	0.0	4.3
Prop In Lane	1.00		0.88	0.28		0.27	1.00		0.27	1.00		0.28
Lane Grp Cap(c), veh/h	195	0	230	169	0	0	921	0	860	956	0	1030
V/C Ratio(X)	0.08	0.00	0.22	0.59	0.00	0.00	0.49	0.00	0.25	0.02	0.00	0.15
Avail Cap(c_a), veh/h	325	0	444	271	0	0	1307	0	860	956	0	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.83	0.00	0.83	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	0.0	41.0	49.2	0.0	0.0	6.3	0.0	16.8	7.2	0.0	10.7
Incr Delay (d2), s/veh	0.2	0.0	0.5	3.2	0.0	0.0	0.3	0.0	0.6	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	2.8	0.0	0.0	3.2	0.0	3.2	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	0.0	41.5	52.5	0.0	0.0	6.6	0.0	17.4	7.2	0.0	11.0
LnGrp LOS	D	A	D	D	A	A	A	A	B	A	A	B
Approach Vol, veh/h		66			99			663				168
Approach Delay, s/veh		42.3			52.5			10.1				10.6
Approach LOS		D			D			B				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.4	58.0		21.6	19.8	68.7	6.9	14.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	53.0		32.0	40.0	23.0	10.0	17.0				
Max Q Clear Time (g_c+I1), s	2.0	9.9		5.2	13.4	6.3	2.0	9.5				
Green Ext Time (p_c), s	0.0	1.2		0.2	1.4	0.7	0.0	0.2				

Intersection Summary												
HCM 6th Ctrl Delay				16.6								
HCM 6th LOS				B								

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 4A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	30	165	125	0	140	95	655	15	25	50	30
Future Volume (vph)	25	30	165	125	0	140	95	655	15	25	50	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		175	200		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899				0.850			0.850		0.944	
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1558	0	1656	1743	1482	1656	1743	1482	1656	1646	0
Flt Permitted		0.961		0.342			0.702			0.218		
Satd. Flow (perm)	0	1506	0	596	1743	1482	1224	1743	1482	380	1646	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		135				340			138			32
Link Speed (mph)		30			30			45				45
Link Distance (ft)		701			559			1050				2429
Travel Time (s)		15.9			12.7			15.9				36.8
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	28	33	183	132	0	147	100	689	16	26	53	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	244	0	132	0	147	100	689	16	26	85	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		D,P+P		Perm	D,P+P	NA	Perm	D,P+P		NA
Protected Phases		4		3	8		5	2		1		6

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

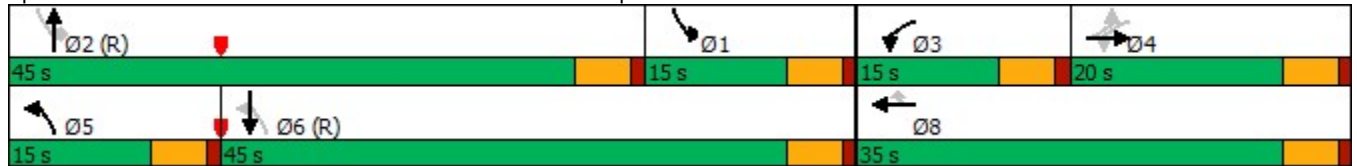
Alternative 4A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4		8	6		2	2		
Detector Phase	4	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0		15.0	20.0	20.0	15.0	20.0	20.0	15.0	20.0	
Total Split (s)	20.0	20.0		15.0	35.0	35.0	15.0	45.0	45.0	15.0	45.0	
Total Split (%)	21.1%	21.1%		15.8%	36.8%	36.8%	15.8%	47.4%	47.4%	15.8%	47.4%	
Maximum Green (s)	15.0	15.0		10.0	30.0	30.0	10.0	40.0	40.0	10.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		11.7		21.1		26.1	54.9	52.9	52.9	56.9	48.1	
Actuated g/C Ratio		0.12		0.22		0.27	0.58	0.56	0.56	0.60	0.51	
v/c Ratio		0.81		0.56		0.23	0.13	0.71	0.02	0.08	0.10	
Control Delay		38.2		35.4		0.8	9.0	24.6	0.1	3.5	0.6	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		38.2		35.4		0.8	9.0	24.6	0.1	3.5	0.6	
LOS		D		D		A	A	C	A	A	A	
Approach Delay		38.2			17.2			22.2			1.3	
Approach LOS		D			B			C			A	

Intersection Summary























Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 95
 Offset: 55 (58%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 22.3
 Intersection LOS: C
 Intersection Capacity Utilization 68.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: SH 74 & W. Interstate Dr./I-35 SB Ramps



HCM 6th Signalized Intersection Summary
 1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 4A With Slip Ramp - 2050 AM
 SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	30	165	125	0	140	95	655	15	25	50	30
Future Volume (veh/h)	25	30	165	125	0	140	95	655	15	25	50	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	28	33	183	132	0	147	100	689	16	26	53	32
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	59	42	179	297	520	440	743	744	630	325	515	311
Arrive On Green	0.16	0.16	0.16	0.08	0.00	0.29	0.05	0.42	0.42	0.13	0.50	0.50
Sat Flow, veh/h	109	268	1131	1682	1767	1497	1682	1767	1497	1682	1032	623
Grp Volume(v), veh/h	244	0	0	132	0	147	100	689	16	26	0	85
Grp Sat Flow(s),veh/h/ln	1508	0	0	1682	1767	1497	1682	1767	1497	1682	0	1655
Q Serve(g_s), s	9.6	0.0	0.0	6.1	0.0	7.3	2.7	35.2	0.4	0.0	0.0	2.6
Cycle Q Clear(g_c), s	15.0	0.0	0.0	6.1	0.0	7.3	2.7	35.2	0.4	0.0	0.0	2.6
Prop In Lane	0.11		0.75	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	280	0	0	297	520	440	743	744	630	325	0	826
V/C Ratio(X)	0.87	0.00	0.00	0.44	0.00	0.33	0.13	0.93	0.03	0.08	0.00	0.10
Avail Cap(c_a), veh/h	280	0	0	333	558	473	838	744	630	325	0	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.96	0.00	0.96
Uniform Delay (d), s/veh	40.1	0.0	0.0	29.7	0.0	26.2	10.4	26.1	7.3	33.3	0.0	12.6
Incr Delay (d2), s/veh	24.3	0.0	0.0	1.0	0.0	0.4	0.1	19.2	0.1	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	0.0	2.5	0.0	2.6	0.9	17.2	0.2	0.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.4	0.0	0.0	30.7	0.0	26.7	10.4	45.3	7.4	33.4	0.0	12.8
LnGrp LOS	E	A	A	C	A	C	B	D	A	C	A	B
Approach Vol, veh/h		244			279			805				111
Approach Delay, s/veh		64.4			28.6			40.3				17.6
Approach LOS		E			C			D				B
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	17.1	45.0	12.9	20.0	9.6	52.4		32.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	40.0	10.0	15.0	10.0	40.0		30.0				
Max Q Clear Time (g_c+I1), s	2.0	37.2	8.1	17.0	4.7	4.6		9.3				
Green Ext Time (p_c), s	0.0	1.2	0.1	0.0	0.1	0.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				40.3								
HCM 6th LOS				D								

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 4A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (vph)	30	5	30	15	25	5	645	140	40	5	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	200		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.870			0.984			0.967			0.956	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1656	1517	0	0	1804	0	1656	1686	0	1656	1666	0
Flt Permitted	0.902				0.874		0.699			0.639		
Satd. Flow (perm)	1572	1517	0	0	1602	0	1218	1686	0	1114	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			6			19			19	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		701			375			2429			1022	
Travel Time (s)		10.6			5.7			36.8			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	2%	2%	2%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	32	5	32	17	28	6	679	147	42	5	63	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	37	0	0	51	0	679	189	0	5	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 4A With Slip Ramp - 2050 AM
SH 74 & I-35 Interchange Study

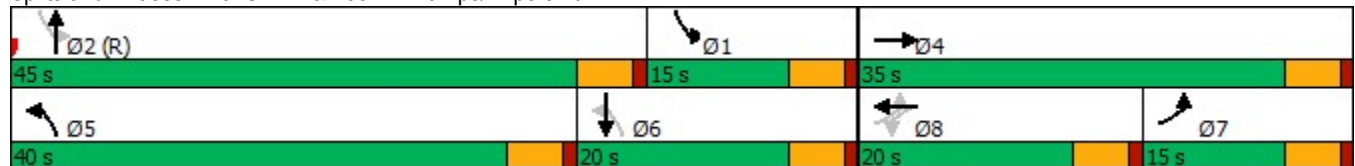


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	8			8			6			2		
Detector Phase	7	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	15.0	20.0		20.0	20.0		15.0	20.0		15.0	20.0	
Total Split (s)	15.0	35.0		20.0	20.0		40.0	45.0		15.0	20.0	
Total Split (%)	15.8%	36.8%		21.1%	21.1%		42.1%	47.4%		15.8%	21.1%	
Maximum Green (s)	10.0	30.0		15.0	15.0		35.0	40.0		10.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag			Lead	Lead		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	C-Max		None	Max	
Act Effct Green (s)	12.6	14.5			8.1		67.6	70.6		72.6	15.0	
Actuated g/C Ratio	0.13	0.15			0.09		0.71	0.74		0.76	0.16	
v/c Ratio	0.15	0.14			0.36		0.61	0.15		0.01	0.32	
Control Delay	32.1	13.7			43.5		3.8	1.0		5.2	31.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	32.1	13.7			43.5		3.8	1.0		5.2	31.6	
LOS	C	B			D		A	A		A	C	
Approach Delay		22.2			43.5			3.2			30.2	
Approach LOS		C			D			A			C	

Intersection Summary

Area Type: Other
 Cycle Length: 95
 Actuated Cycle Length: 95
 Offset: 80 (84%), Referenced to phase 2:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 8.6
 Intersection LOS: A
 Intersection Capacity Utilization 59.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: SH 74 & I-35 NB Ramps/Airport Rd.



HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 4A With Slip Ramp - 2050 AM
 SH 74 & I-35 Interchange Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	32	5	32	17	28	6	679	147	42	5	63	26
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	2	2	2	9	9	9	9	9	9
Cap, veh/h	213	28	182	69	49	9	1065	556	159	982	399	165
Arrive On Green	0.03	0.14	0.14	0.05	0.05	0.05	0.62	0.70	0.70	0.28	0.34	0.34
Sat Flow, veh/h	1682	207	1322	333	892	163	1682	1321	377	1682	1188	490
Grp Volume(v), veh/h	32	0	37	51	0	0	679	0	189	5	0	89
Grp Sat Flow(s),veh/h/ln	1682	0	1529	1388	0	0	1682	0	1699	1682	0	1678
Q Serve(g_s), s	0.0	0.0	2.0	1.7	0.0	0.0	21.2	0.0	3.9	0.0	0.0	3.5
Cycle Q Clear(g_c), s	0.0	0.0	2.0	3.7	0.0	0.0	21.2	0.0	3.9	0.0	0.0	3.5
Prop In Lane	1.00		0.86	0.33		0.12	1.00		0.22	1.00		0.29
Lane Grp Cap(c), veh/h	213	0	210	127	0	0	1065	0	715	982	0	564
V/C Ratio(X)	0.15	0.00	0.18	0.40	0.00	0.00	0.64	0.00	0.26	0.01	0.00	0.16
Avail Cap(c_a), veh/h	339	0	483	295	0	0	1065	0	715	982	0	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.74	0.00	0.74	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.5	0.0	36.2	44.2	0.0	0.0	4.5	0.0	8.7	5.4	0.0	22.1
Incr Delay (d2), s/veh	0.3	0.0	0.4	2.0	0.0	0.0	2.2	0.0	0.7	0.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.8	1.2	0.0	0.0	2.9	0.0	1.3	0.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	0.0	36.6	46.2	0.0	0.0	6.7	0.0	9.4	5.4	0.0	22.7
LnGrp LOS	D	A	D	D	A	A	A	A	A	A	A	C
Approach Vol, veh/h		69			51			868				94
Approach Delay, s/veh		38.6			46.2			7.3				21.8
Approach LOS		D			D			A				C
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.9	45.0		18.1	40.0	36.9	7.9	10.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	40.0		30.0	35.0	15.0	10.0	15.0				
Max Q Clear Time (g_c+I1), s	2.0	5.9		4.0	23.2	5.5	2.0	5.7				
Green Ext Time (p_c), s	0.0	1.0		0.1	1.9	0.2	0.0	0.1				

Intersection Summary												
HCM 6th Ctrl Delay				12.4								
HCM 6th LOS				B								

Lanes, Volumes, Timings
 1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 4A With Slip Ramp - 2050 PM
 SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↖	↗	↗	↖	↗	↖	↖	↗	↖
Traffic Volume (vph)	25	45	410	360	0	200	60	400	5	30	95	40
Future Volume (vph)	25	45	410	360	0	200	60	400	5	30	95	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		175	200		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.885				0.850			0.850		0.956	
Flt Protected		0.997		0.950			0.950			0.950		
Satd. Flow (prot)	0	1538	0	1656	1743	1482	1656	1743	1482	1656	1666	0
Flt Permitted		0.985		0.215			0.661			0.279		
Satd. Flow (perm)	0	1520	0	375	1743	1482	1152	1743	1482	486	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		296				463			145		23	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		701			559			1050			2429	
Travel Time (s)		15.9			12.7			15.9			36.8	
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	28	50	456	379	0	211	63	421	5	32	100	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	534	0	379	0	211	63	421	5	32	142	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	60		60	15		60	60		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		D,P+P		Perm	D,P+P	NA	Perm	D,P+P	NA	
Protected Phases		4		3	8		5	2		1	6	

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

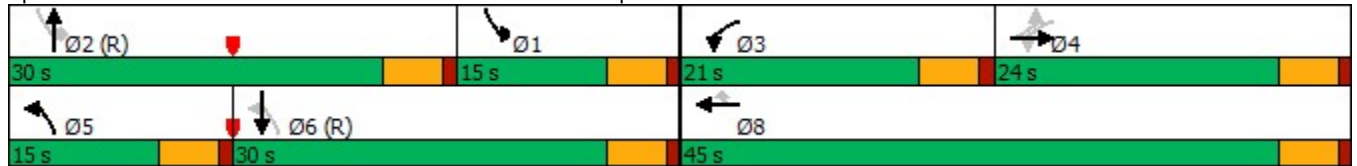
Alternative 4A With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4		8	6		2	2		
Detector Phase	4	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0		15.0	15.0	15.0	15.0	20.0	20.0	15.0	20.0	
Total Split (s)	24.0	24.0		21.0	45.0	45.0	15.0	30.0	30.0	15.0	30.0	
Total Split (%)	26.7%	26.7%		23.3%	50.0%	50.0%	16.7%	33.3%	33.3%	16.7%	33.3%	
Maximum Green (s)	19.0	19.0		16.0	40.0	40.0	10.0	25.0	25.0	10.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)		18.6		34.6		39.6	36.4	31.4	31.4	37.4	30.0	
Actuated g/C Ratio		0.21		0.38		0.44	0.40	0.35	0.35	0.42	0.33	
v/c Ratio		0.97		1.02		0.23	0.12	0.69	0.01	0.10	0.25	
Control Delay		50.1		77.8		0.6	15.3	35.3	0.0	9.1	13.9	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		50.1		77.8		0.6	15.3	35.3	0.0	9.1	13.9	
LOS		D		E		A	B	D	A	A	B	
Approach Delay		50.1			50.2			32.3			13.0	
Approach LOS		D			D			C			B	

Intersection Summary























Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 55 (61%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 41.7
 Intersection LOS: D
 Intersection Capacity Utilization 90.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: SH 74 & W. Interstate Dr./I-35 SB Ramps



HCM 6th Signalized Intersection Summary
 1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 4A With Slip Ramp - 2050 PM
 SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	45	410	360	0	200	60	400	5	30	95	40
Future Volume (veh/h)	25	45	410	360	0	200	60	400	5	30	95	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	28	50	456	379	0	211	63	421	5	32	100	42
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	52	37	272	458	785	665	489	491	416	314	407	171
Arrive On Green	0.21	0.21	0.21	0.18	0.00	0.44	0.04	0.28	0.28	0.11	0.34	0.34
Sat Flow, veh/h	47	173	1287	1682	1767	1497	1682	1767	1497	1682	1181	496
Grp Volume(v), veh/h	534	0	0	379	0	211	63	421	5	32	0	142
Grp Sat Flow(s),veh/h/ln	1507	0	0	1682	1767	1497	1682	1767	1497	1682	0	1677
Q Serve(g_s), s	11.4	0.0	0.0	16.0	0.0	8.2	2.1	20.3	0.1	0.0	0.0	5.5
Cycle Q Clear(g_c), s	19.0	0.0	0.0	16.0	0.0	8.2	2.1	20.3	0.1	0.0	0.0	5.5
Prop In Lane	0.05		0.85	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	360	0	0	458	785	665	489	491	416	314	0	578
V/C Ratio(X)	1.48	0.00	0.00	0.83	0.00	0.32	0.13	0.86	0.01	0.10	0.00	0.25
Avail Cap(c_a), veh/h	360	0	0	458	785	665	602	491	416	314	0	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	36.6	0.0	0.0	21.7	0.0	16.2	17.6	30.8	8.5	32.7	0.0	21.1
Incr Delay (d2), s/veh	231.5	0.0	0.0	11.9	0.0	0.3	0.1	17.4	0.1	0.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.1	0.0	0.0	7.6	0.0	2.7	0.8	10.4	0.1	0.6	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	268.1	0.0	0.0	33.6	0.0	16.4	17.8	48.2	8.5	32.8	0.0	22.1
LnGrp LOS	F	A	A	C	A	B	B	D	A	C	A	C
Approach Vol, veh/h		534			590			489				174
Approach Delay, s/veh		268.1			27.5			43.9				24.1
Approach LOS		F			C			D				C
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	30.0	21.0	24.0	9.0	36.0		45.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	25.0	16.0	19.0	10.0	25.0		40.0				
Max Q Clear Time (g_c+I1), s	2.0	22.3	18.0	21.0	4.1	7.5		10.2				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.6		0.7				
Intersection Summary												
HCM 6th Ctrl Delay	103.5											
HCM 6th LOS	F											

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 4A With Slip Ramp - 2050 PM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (vph)	15	5	40	25	40	25	425	145	55	15	100	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	200		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.868			0.963			0.960			0.958	
Flt Protected	0.950				0.986		0.950			0.950		
Satd. Flow (prot)	1770	1513	0	0	1685	0	1656	1756	0	1770	1785	0
Flt Permitted	0.654				0.887		0.660			0.623		
Satd. Flow (perm)	1218	1513	0	0	1515	0	1150	1756	0	1160	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			18			24			20	
Link Speed (mph)		30			30			45			30	
Link Distance (ft)		701			375			2429			1022	
Travel Time (s)		15.9			8.5			36.8			23.2	
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	9%	9%	9%	2%	9%	2%	9%	2%	2%	2%
Adj. Flow (vph)	16	6	44	28	44	27	447	158	58	16	109	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	50	0	0	99	0	447	216	0	16	152	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		9	15		60	15		9	60		60
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	

Lanes, Volumes, Timings
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 4A With Slip Ramp - 2050 PM
 SH 74 & I-35 Interchange Study

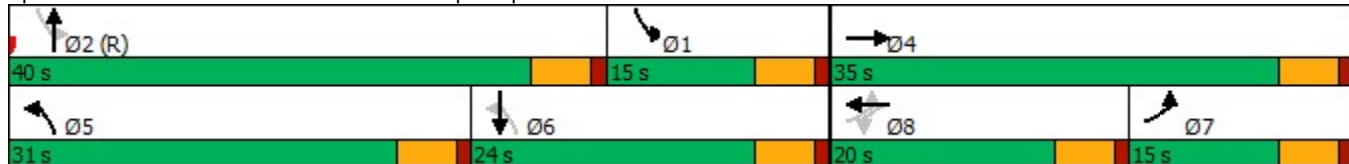


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Permitted Phases	8			8			6			2			
Detector Phase	7	4		8	8		5	2		1	6		
Switch Phase													
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	15.0	20.0		20.0	20.0		15.0	20.0		15.0	20.0		
Total Split (s)	15.0	35.0		20.0	20.0		31.0	40.0		15.0	24.0		
Total Split (%)	16.7%	38.9%		22.2%	22.2%		34.4%	44.4%		16.7%	26.7%		
Maximum Green (s)	10.0	30.0		15.0	15.0		26.0	35.0		10.0	19.0		
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0		
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lag			Lead		Lead		Lead		Lead		Lag	
Lead-Lag Optimize?	Yes			Yes		Yes		Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	None		None	None		None	C-Max		None	Max		
Act Effct Green (s)	14.5	12.2			10.1		64.9	67.9		69.9	47.3		
Actuated g/C Ratio	0.16	0.14			0.11		0.72	0.75		0.78	0.53		
v/c Ratio	0.07	0.21			0.54		0.48	0.16		0.02	0.16		
Control Delay	26.1	12.6			40.4		4.8	1.9		5.0	15.4		
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Delay	26.1	12.6			40.4		4.8	1.9		5.0	15.4		
LOS	C	B			D		A	A		A	B		
Approach Delay		15.8			40.4			3.9			14.4		
Approach LOS		B			D			A			B		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 72 (80%), Referenced to phase 2:NBSB, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 10.1
 Intersection LOS: B
 Intersection Capacity Utilization 55.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: SH 74 & I-35 NB Ramps/Airport Rd.



HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 4A With Slip Ramp - 2050 PM
 SH 74 & I-35 Interchange Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1767	1767	1767	1767	1870	1767	1870	1767	1870	1870	1870
Adj Flow Rate, veh/h	16	6	44	28	44	27	447	158	58	16	109	43
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.95	0.92	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	9	9	9	9	2	9	2	9	2	2	2
Cap, veh/h	225	30	219	78	69	36	895	508	186	972	638	252
Arrive On Green	0.02	0.16	0.16	0.09	0.09	0.09	0.28	0.65	0.65	0.28	0.50	0.50
Sat Flow, veh/h	1781	183	1342	295	774	401	1682	1305	479	1781	1276	503
Grp Volume(v), veh/h	16	0	50	99	0	0	447	0	216	16	0	152
Grp Sat Flow(s),veh/h/ln	1781	0	1525	1469	0	0	1682	0	1784	1781	0	1780
Q Serve(g_s), s	0.0	0.0	2.6	3.5	0.0	0.0	12.2	0.0	4.8	0.0	0.0	4.2
Cycle Q Clear(g_c), s	0.0	0.0	2.6	6.0	0.0	0.0	12.2	0.0	4.8	0.0	0.0	4.2
Prop In Lane	1.00		0.88	0.28		0.27	1.00		0.27	1.00		0.28
Lane Grp Cap(c), veh/h	225	0	249	182	0	0	895	0	694	972	0	890
V/C Ratio(X)	0.07	0.00	0.20	0.54	0.00	0.00	0.50	0.00	0.31	0.02	0.00	0.17
Avail Cap(c_a), veh/h	391	0	508	301	0	0	1095	0	694	972	0	890
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.83	0.00	0.83	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	32.6	40.1	0.0	0.0	6.1	0.0	10.5	6.7	0.0	12.3
Incr Delay (d2), s/veh	0.1	0.0	0.4	2.5	0.0	0.0	0.4	0.0	1.0	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.0	2.2	0.0	0.0	2.4	0.0	1.7	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	0.0	33.0	42.6	0.0	0.0	6.4	0.0	11.4	6.7	0.0	12.7
LnGrp LOS	D	A	C	D	A	A	A	A	B	A	A	B
Approach Vol, veh/h		66			99			663				168
Approach Delay, s/veh		33.8			42.6			8.1				12.2
Approach LOS		C			D			A				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.3	40.0		19.7	20.3	50.0	6.6	13.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		30.0	26.0	19.0	10.0	15.0				
Max Q Clear Time (g_c+I1), s	2.0	6.8		4.6	14.2	6.2	2.0	8.0				
Green Ext Time (p_c), s	0.0	1.1		0.2	1.1	0.6	0.0	0.2				

Intersection Summary												
HCM 6th Ctrl Delay				13.9								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 5A - 2050 AM
 SH 74 & I-35 Interchange Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	32	5	32	17	28	6	679	147	42	5	63	26
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	2	2	2	9	9	9	9	9	9
Cap, veh/h	219	29	187	72	49	9	1028	514	147	974	461	190
Arrive On Green	0.03	0.14	0.14	0.06	0.06	0.06	0.51	0.65	0.65	0.30	0.39	0.39
Sat Flow, veh/h	1682	207	1322	337	886	163	1682	1321	377	1682	1188	490
Grp Volume(v), veh/h	32	0	37	51	0	0	679	0	189	5	0	89
Grp Sat Flow(s),veh/h/ln	1682	0	1529	1386	0	0	1682	0	1699	1682	0	1678
Q Serve(g_s), s	0.0	0.0	1.9	1.6	0.0	0.0	24.3	0.0	4.3	0.0	0.0	3.1
Cycle Q Clear(g_c), s	0.0	0.0	1.9	3.5	0.0	0.0	24.3	0.0	4.3	0.0	0.0	3.1
Prop In Lane	1.00		0.86	0.33		0.12	1.00		0.22	1.00		0.29
Lane Grp Cap(c), veh/h	219	0	217	130	0	0	1028	0	661	974	0	652
V/C Ratio(X)	0.15	0.00	0.17	0.39	0.00	0.00	0.66	0.00	0.29	0.01	0.00	0.14
Avail Cap(c_a), veh/h	354	0	510	312	0	0	1078	0	661	974	0	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.72	0.00	0.72	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	34.0	41.8	0.0	0.0	5.8	0.0	10.4	5.7	0.0	17.8
Incr Delay (d2), s/veh	0.3	0.0	0.4	1.9	0.0	0.0	1.0	0.0	0.8	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.7	1.2	0.0	0.0	3.1	0.0	1.5	0.0	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	0.0	34.3	43.7	0.0	0.0	6.8	0.0	11.2	5.7	0.0	18.2
LnGrp LOS	D	A	C	D	A	A	A	A	B	A	A	B
Approach Vol, veh/h		69			51			868				94
Approach Delay, s/veh		36.3			43.7			7.7				17.5
Approach LOS		D			D			A				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.2	40.0		17.8	32.3	40.0	7.8	10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		30.0	30.0	15.0	10.0	15.0				
Max Q Clear Time (g_c+I1), s	2.0	6.3		3.9	26.3	5.1	2.0	5.5				
Green Ext Time (p_c), s	0.0	1.0		0.1	1.0	0.2	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 5A - 2050 PM
 SH 74 & I-35 Interchange Study

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	16	5	42	28	44	28	447	153	58	16	105	42
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	2	2	2	9	9	9	9	9	9
Cap, veh/h	186	24	200	68	67	36	926	588	223	911	700	280
Arrive On Green	0.02	0.15	0.15	0.08	0.08	0.08	0.13	0.48	0.48	0.23	0.58	0.58
Sat Flow, veh/h	1682	162	1360	307	794	428	1682	1221	463	1682	1200	480
Grp Volume(v), veh/h	16	0	47	100	0	0	447	0	211	16	0	147
Grp Sat Flow(s),veh/h/ln	1682	0	1522	1530	0	0	1682	0	1683	1682	0	1680
Q Serve(g_s), s	0.0	0.0	3.0	4.2	0.0	0.0	11.3	0.0	8.2	0.0	0.0	4.4
Cycle Q Clear(g_c), s	0.0	0.0	3.0	7.2	0.0	0.0	11.3	0.0	8.2	0.0	0.0	4.4
Prop In Lane	1.00		0.89	0.28		0.28	1.00		0.27	1.00		0.29
Lane Grp Cap(c), veh/h	186	0	224	171	0	0	926	0	811	911	0	980
V/C Ratio(X)	0.09	0.00	0.21	0.59	0.00	0.00	0.48	0.00	0.26	0.02	0.00	0.15
Avail Cap(c_a), veh/h	310	0	443	285	0	0	1298	0	811	911	0	980
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.83	0.00	0.83	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.1	0.0	41.3	49.4	0.0	0.0	6.2	0.0	16.9	7.2	0.0	10.5
Incr Delay (d2), s/veh	0.2	0.0	0.5	3.2	0.0	0.0	0.3	0.0	0.6	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.1	2.8	0.0	0.0	3.2	0.0	3.1	0.1	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.0	41.7	52.6	0.0	0.0	6.5	0.0	17.5	7.2	0.0	10.8
LnGrp LOS	D	A	D	D	A	A	A	A	B	A	A	B
Approach Vol, veh/h		63			100			658				163
Approach Delay, s/veh		42.6			52.6			10.0				10.4
Approach LOS		D			D			B				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.8	58.0		21.2	19.7	69.1	6.9	14.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	53.0		32.0	39.0	24.0	10.0	17.0				
Max Q Clear Time (g_c+I1), s	2.0	10.2		5.0	13.3	6.4	2.0	9.2				
Green Ext Time (p_c), s	0.0	1.2		0.2	1.4	0.7	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 5A - 2050 AM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	30	165	125	0	140	95	655	15	25	50	30
Future Volume (vph)	25	30	165	125	0	140	95	655	15	25	50	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		175	200		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899				0.850			0.850		0.944	
Flt Protected		0.994		0.950			0.950			0.950		
Satd. Flow (prot)	0	1558	0	1656	1743	1482	1656	1743	1482	1656	1646	0
Flt Permitted		0.961		0.357			0.702			0.203		
Satd. Flow (perm)	0	1506	0	622	1743	1482	1224	1743	1482	354	1646	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		144				351			145		32	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		701			559			1050			2429	
Travel Time (s)		15.9			12.7			15.9			36.8	
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	28	33	183	132	0	147	100	689	16	26	53	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	244	0	132	0	147	100	689	16	26	85	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		D,P+P		Perm	D,P+P	NA	Perm	D,P+P	NA	
Protected Phases		4		3	8		5	2		1	6	

03/27/2023

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 5A - 2050 AM
SH 74 & I-35 Interchange Study

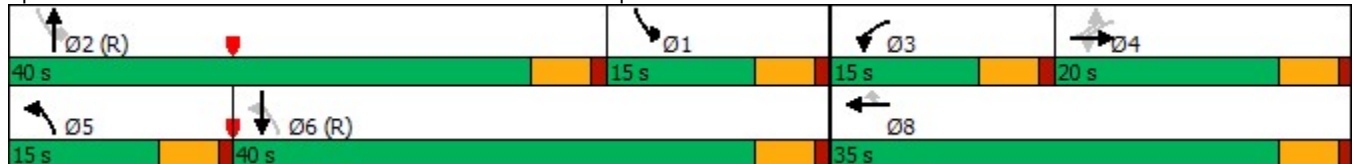


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4		8	6		2	2		
Detector Phase	4	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0		15.0	20.0	20.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (s)	20.0	20.0		15.0	35.0	35.0	15.0	40.0	40.0	15.0	40.0	40.0
Total Split (%)	22.2%	22.2%		16.7%	38.9%	38.9%	16.7%	44.4%	44.4%	16.7%	44.4%	44.4%
Maximum Green (s)	15.0	15.0		10.0	30.0	30.0	10.0	35.0	35.0	10.0	35.0	35.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag		Lead			Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)		11.2		20.5		25.5	50.5	48.5	48.5	52.5	43.8	43.8
Actuated g/C Ratio		0.12		0.23		0.28	0.56	0.54	0.54	0.58	0.49	0.49
v/c Ratio		0.78		0.53		0.22	0.14	0.73	0.02	0.08	0.10	0.10
Control Delay		33.3		32.1		0.8	9.3	26.4	0.1	3.9	1.5	1.5
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		33.3		32.1		0.8	9.3	26.4	0.1	3.9	1.5	1.5
LOS		C		C		A	A	C	A	A	A	A
Approach Delay		33.3			15.6			23.8				2.1
Approach LOS		C			B			C				A

Intersection Summary























Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 55 (61%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 22.1
 Intersection LOS: C
 Intersection Capacity Utilization 68.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: SH 74 & W. Interstate Dr./I-35 SB Ramps



HCM 6th Signalized Intersection Summary
 1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 5A - 2050 AM
 SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	30	165	125	0	140	95	655	15	25	50	30
Future Volume (veh/h)	25	30	165	125	0	140	95	655	15	25	50	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	28	33	183	132	0	147	100	689	16	26	53	32
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	62	45	189	311	540	458	721	687	582	313	492	297
Arrive On Green	0.17	0.17	0.17	0.08	0.00	0.31	0.05	0.39	0.39	0.14	0.48	0.48
Sat Flow, veh/h	107	270	1131	1682	1767	1497	1682	1767	1497	1682	1032	623
Grp Volume(v), veh/h	244	0	0	132	0	147	100	689	16	26	0	85
Grp Sat Flow(s),veh/h/ln	1509	0	0	1682	1767	1497	1682	1767	1497	1682	0	1655
Q Serve(g_s), s	8.9	0.0	0.0	5.7	0.0	6.8	2.7	35.0	0.4	0.0	0.0	2.6
Cycle Q Clear(g_c), s	14.5	0.0	0.0	5.7	0.0	6.8	2.7	35.0	0.4	0.0	0.0	2.6
Prop In Lane	0.11		0.75	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	296	0	0	311	540	458	721	687	582	313	0	788
V/C Ratio(X)	0.82	0.00	0.00	0.42	0.00	0.32	0.14	1.00	0.03	0.08	0.00	0.11
Avail Cap(c_a), veh/h	296	0	0	358	589	499	823	687	582	313	0	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.2	0.0	0.0	27.4	0.0	24.0	10.7	27.5	7.9	33.4	0.0	13.0
Incr Delay (d2), s/veh	17.0	0.0	0.0	0.9	0.0	0.4	0.1	35.0	0.1	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	0.0	2.3	0.0	2.4	0.9	19.9	0.2	0.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	0.0	0.0	28.4	0.0	24.4	10.8	62.5	8.0	33.5	0.0	13.3
LnGrp LOS	D	A	A	C	A	C	B	F	A	C	A	B
Approach Vol, veh/h		244			279			805				111
Approach Delay, s/veh		54.2			26.3			55.0				18.0
Approach LOS		D			C			E				B
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	17.5	40.0	12.5	20.0	9.6	47.9		32.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	35.0	10.0	15.0	10.0	35.0		30.0				
Max Q Clear Time (g_c+I1), s	2.0	37.0	7.7	16.5	4.7	4.6		8.8				
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.1	0.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			46.5									
HCM 6th LOS			D									

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

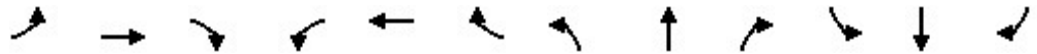
Alternative 5A - 2050 AM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (vph)	30	5	30	15	25	5	645	140	40	5	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	200		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.870			0.984			0.967			0.956	
Flt Protected	0.950				0.984		0.950			0.950		
Satd. Flow (prot)	1656	1517	0	0	1804	0	1656	1686	0	1656	1666	0
Flt Permitted	0.962				0.874		0.699			0.639		
Satd. Flow (perm)	1677	1517	0	0	1602	0	1218	1686	0	1114	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			6			19			20	
Link Speed (mph)		30			30			45			45	
Link Distance (ft)		701			375			2429			1022	
Travel Time (s)		15.9			8.5			36.8			15.5	
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	2%	2%	2%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	32	5	32	17	28	6	679	147	42	5	63	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	37	0	0	51	0	679	189	0	5	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 5A - 2050 AM
SH 74 & I-35 Interchange Study

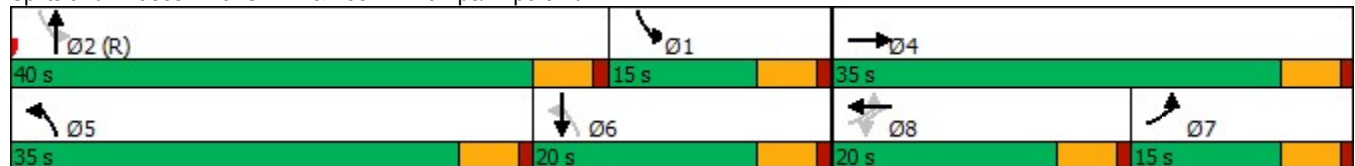


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Permitted Phases	8			8			6			2			
Detector Phase	7	4		8	8		5	2		1	6		
Switch Phase													
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	15.0	20.0		20.0	20.0		15.0	20.0		15.0	20.0		
Total Split (s)	15.0	35.0		20.0	20.0		35.0	40.0		15.0	20.0		
Total Split (%)	16.7%	38.9%		22.2%	22.2%		38.9%	44.4%		16.7%	22.2%		
Maximum Green (s)	10.0	30.0		15.0	15.0		30.0	35.0		10.0	15.0		
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0		
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lag			Lead		Lead		Lead		Lead		Lag	
Lead-Lag Optimize?	Yes			Yes		Yes		Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	None		None	None		None	C-Max		None	Max		
Act Effct Green (s)	11.2	14.1			8.0		65.1	69.1		71.1	33.7		
Actuated g/C Ratio	0.12	0.16			0.09		0.72	0.77		0.79	0.37		
v/c Ratio	0.15	0.14			0.35		0.66	0.15		0.01	0.14		
Control Delay	30.5	12.8			40.7		5.8	1.0		5.4	22.6		
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Delay	30.5	12.8			40.7		5.8	1.0		5.4	22.6		
LOS	C	B			D		A	A		A	C		
Approach Delay		21.0			40.7			4.7			21.7		
Approach LOS		C			D			A			C		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 80 (89%), Referenced to phase 2:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 9.0
 Intersection LOS: A
 Intersection Capacity Utilization 59.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: SH 74 & I-35 NB Ramps/Airport Rd.



HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 5A - 2050 AM
 SH 74 & I-35 Interchange Study

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Future Volume (veh/h)	30	5	30	15	25	5	645	140	40	5	60	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	32	5	32	17	28	6	679	147	42	5	63	26
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	2	2	2	9	9	9	9	9	9
Cap, veh/h	219	29	187	72	49	9	1028	514	147	974	461	190
Arrive On Green	0.03	0.14	0.14	0.06	0.06	0.06	0.51	0.65	0.65	0.30	0.39	0.39
Sat Flow, veh/h	1682	207	1322	337	886	163	1682	1321	377	1682	1188	490
Grp Volume(v), veh/h	32	0	37	51	0	0	679	0	189	5	0	89
Grp Sat Flow(s),veh/h/ln	1682	0	1529	1386	0	0	1682	0	1699	1682	0	1678
Q Serve(g_s), s	0.0	0.0	1.9	1.6	0.0	0.0	24.3	0.0	4.3	0.0	0.0	3.1
Cycle Q Clear(g_c), s	0.0	0.0	1.9	3.5	0.0	0.0	24.3	0.0	4.3	0.0	0.0	3.1
Prop In Lane	1.00		0.86	0.33		0.12	1.00		0.22	1.00		0.29
Lane Grp Cap(c), veh/h	219	0	217	130	0	0	1028	0	661	974	0	652
V/C Ratio(X)	0.15	0.00	0.17	0.39	0.00	0.00	0.66	0.00	0.29	0.01	0.00	0.14
Avail Cap(c_a), veh/h	354	0	510	312	0	0	1078	0	661	974	0	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.72	0.00	0.72	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	0.0	34.0	41.8	0.0	0.0	5.8	0.0	10.4	5.7	0.0	17.8
Incr Delay (d2), s/veh	0.3	0.0	0.4	1.9	0.0	0.0	1.0	0.0	0.8	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.7	1.2	0.0	0.0	3.1	0.0	1.5	0.0	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.6	0.0	34.3	43.7	0.0	0.0	6.8	0.0	11.2	5.7	0.0	18.2
LnGrp LOS	D	A	C	D	A	A	A	A	B	A	A	B
Approach Vol, veh/h		69			51			868				94
Approach Delay, s/veh		36.3			43.7			7.7				17.5
Approach LOS		D			D			A				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.2	40.0		17.8	32.3	40.0	7.8	10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		30.0	30.0	15.0	10.0	15.0				
Max Q Clear Time (g_c+I1), s	2.0	6.3		3.9	26.3	5.1	2.0	5.5				
Green Ext Time (p_c), s	0.0	1.0		0.1	1.0	0.2	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 5A - 2050 PM
SH 74 & I-35 Interchange Study

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	45	410	360	0	200	60	400	5	30	95	40
Future Volume (vph)	25	45	410	360	0	200	60	400	5	30	95	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	250		175	200		0
Storage Lanes	0		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.885				0.850			0.850		0.956	
Flt Protected		0.997		0.950			0.950			0.950		
Satd. Flow (prot)	0	1538	0	1656	1743	1482	1656	1743	1482	1656	1666	0
Flt Permitted		0.985		0.215			0.661			0.279		
Satd. Flow (perm)	0	1520	0	375	1743	1482	1152	1743	1482	486	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		296				463			145			23
Link Speed (mph)		30			30			45				45
Link Distance (ft)		701			559			1050				2429
Travel Time (s)		15.9			12.7			15.9				36.8
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	28	50	456	379	0	211	63	421	5	32	100	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	534	0	379	0	211	63	421	5	32	142	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	60		60	15		60	60		9
Number of Detectors	1	2		1	2	1	1	2	1	1		2
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA		D,P+P		Perm	D,P+P	NA	Perm	D,P+P		NA
Protected Phases		4		3	8		5	2		1		6

03/27/2023

Lanes, Volumes, Timings
1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 5A - 2050 PM
SH 74 & I-35 Interchange Study

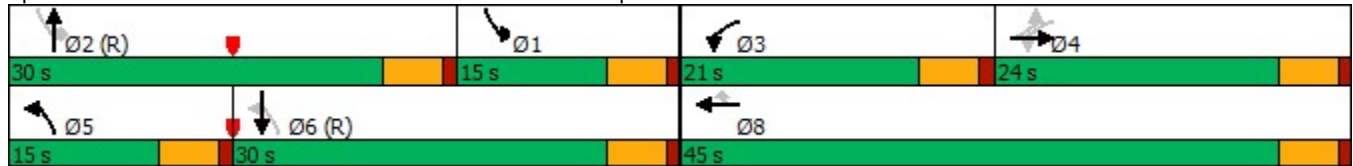


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			4		8	6		2	2		
Detector Phase	4	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0		15.0	15.0	15.0	15.0	20.0	20.0	15.0	20.0	
Total Split (s)	24.0	24.0		21.0	45.0	45.0	15.0	30.0	30.0	15.0	30.0	
Total Split (%)	26.7%	26.7%		23.3%	50.0%	50.0%	16.7%	33.3%	33.3%	16.7%	33.3%	
Maximum Green (s)	19.0	19.0		16.0	40.0	40.0	10.0	25.0	25.0	10.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effect Green (s)		18.6		34.6		39.6	36.4	31.4	31.4	37.4	30.0	
Actuated g/C Ratio		0.21		0.38		0.44	0.40	0.35	0.35	0.42	0.33	
v/c Ratio		0.97		1.02		0.23	0.12	0.69	0.01	0.10	0.25	
Control Delay		50.1		77.8		0.6	15.3	35.3	0.0	9.4	14.2	
Queue Delay		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		50.1		77.8		0.6	15.3	35.3	0.0	9.4	14.2	
LOS		D		E		A	B	D	A	A	B	
Approach Delay		50.1			50.2			32.3			13.3	
Approach LOS		D			D			C			B	

Intersection Summary





















Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 54 (60%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 41.7
 Intersection LOS: D
 Intersection Capacity Utilization 90.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: SH 74 & W. Interstate Dr./I-35 SB Ramps



HCM 6th Signalized Intersection Summary
 1: SH 74 & W. Interstate Dr./I-35 SB Ramps

Alternative 5A - 2050 PM
 SH 74 & I-35 Interchange Study

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	45	410	360	0	200	60	400	5	30	95	40
Future Volume (veh/h)	25	45	410	360	0	200	60	400	5	30	95	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	28	50	456	379	0	211	63	421	5	32	100	42
Peak Hour Factor	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	9	9	9	9	9	9	9	9	9
Cap, veh/h	52	37	272	458	785	665	489	491	416	314	407	171
Arrive On Green	0.21	0.21	0.21	0.18	0.00	0.44	0.04	0.28	0.28	0.11	0.34	0.34
Sat Flow, veh/h	47	173	1287	1682	1767	1497	1682	1767	1497	1682	1181	496
Grp Volume(v), veh/h	534	0	0	379	0	211	63	421	5	32	0	142
Grp Sat Flow(s),veh/h/ln	1507	0	0	1682	1767	1497	1682	1767	1497	1682	0	1677
Q Serve(g_s), s	11.4	0.0	0.0	16.0	0.0	8.2	2.1	20.3	0.1	0.0	0.0	5.5
Cycle Q Clear(g_c), s	19.0	0.0	0.0	16.0	0.0	8.2	2.1	20.3	0.1	0.0	0.0	5.5
Prop In Lane	0.05		0.85	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	360	0	0	458	785	665	489	491	416	314	0	578
V/C Ratio(X)	1.48	0.00	0.00	0.83	0.00	0.32	0.13	0.86	0.01	0.10	0.00	0.25
Avail Cap(c_a), veh/h	360	0	0	458	785	665	602	491	416	314	0	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.99	0.00	0.99
Uniform Delay (d), s/veh	36.6	0.0	0.0	21.7	0.0	16.2	17.6	30.8	8.5	32.7	0.0	21.1
Incr Delay (d2), s/veh	231.5	0.0	0.0	11.9	0.0	0.3	0.1	17.4	0.1	0.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.1	0.0	0.0	7.6	0.0	2.7	0.8	10.4	0.1	0.6	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	268.1	0.0	0.0	33.6	0.0	16.4	17.8	48.2	8.5	32.8	0.0	22.1
LnGrp LOS	F	A	A	C	A	B	B	D	A	C	A	C
Approach Vol, veh/h		534			590			489				174
Approach Delay, s/veh		268.1			27.5			43.9				24.1
Approach LOS		F			C			D				C
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	30.0	21.0	24.0	9.0	36.0		45.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	10.0	25.0	16.0	19.0	10.0	25.0		40.0				
Max Q Clear Time (g_c+I1), s	2.0	22.3	18.0	21.0	4.1	7.5		10.2				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	0.0	0.6		0.7				
Intersection Summary												
HCM 6th Ctrl Delay	103.5											
HCM 6th LOS	F											

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 5A - 2050 PM
SH 74 & I-35 Interchange Study



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (vph)	15	5	40	25	40	25	425	145	55	15	100	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	200		0	200		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.866			0.962			0.959			0.957	
Flt Protected	0.950				0.986		0.950			0.950		
Satd. Flow (prot)	1656	1510	0	0	1767	0	1656	1672	0	1656	1668	0
Flt Permitted	0.646				0.889		0.663			0.626		
Satd. Flow (perm)	1126	1510	0	0	1593	0	1156	1672	0	1091	1668	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			19			25			20	
Link Speed (mph)		45			45			45			30	
Link Distance (ft)		701			375			2429			1022	
Travel Time (s)		10.6			5.7			36.8			23.2	
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	9%	9%	9%	2%	2%	2%	9%	9%	9%	9%	9%	9%
Adj. Flow (vph)	16	5	42	28	44	28	447	153	58	16	105	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	47	0	0	100	0	447	211	0	16	147	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		9	15		60	15		9	60		60
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	D.P+P	NA		Perm	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4			8		5	2		1	6	

Lanes, Volumes, Timings
3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 5A - 2050 PM
SH 74 & I-35 Interchange Study

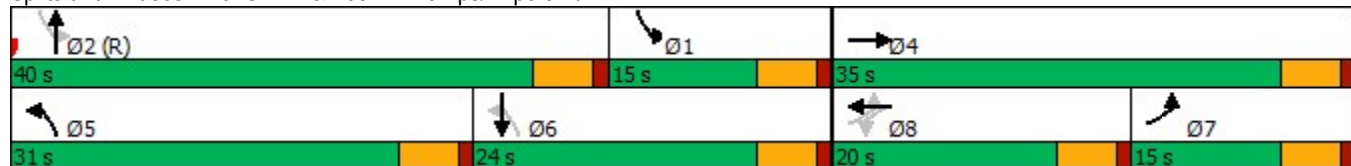


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Permitted Phases	8			8			6			2			
Detector Phase	7	4		8	8		5	2		1	6		
Switch Phase													
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0		
Minimum Split (s)	15.0	20.0		20.0	20.0		15.0	20.0		15.0	20.0		
Total Split (s)	15.0	35.0		20.0	20.0		31.0	40.0		15.0	24.0		
Total Split (%)	16.7%	38.9%		22.2%	22.2%		34.4%	44.4%		16.7%	26.7%		
Maximum Green (s)	10.0	30.0		15.0	15.0		26.0	35.0		10.0	19.0		
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0		
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0		
Lead/Lag	Lag			Lead		Lead		Lead		Lead		Lag	
Lead-Lag Optimize?	Yes			Yes		Yes		Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		
Recall Mode	None	None		None	None		None	C-Max		None	Max		
Act Effct Green (s)	14.3	12.0			9.8		65.1	68.1		70.1	47.8		
Actuated g/C Ratio	0.16	0.13			0.11		0.72	0.76		0.78	0.53		
v/c Ratio	0.08	0.20			0.52		0.48	0.17		0.02	0.16		
Control Delay	26.5	12.8			39.7		4.8	1.8		4.9	15.1		
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0		
Total Delay	26.5	12.8			39.7		4.8	1.8		4.9	15.1		
LOS	C	B			D		A	A		A	B		
Approach Delay		16.3			39.7			3.8			14.1		
Approach LOS		B			D			A			B		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 72 (80%), Referenced to phase 2:NBSB, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 10.0
 Intersection LOS: A
 Intersection Capacity Utilization 55.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: SH 74 & I-35 NB Ramps/Airport Rd.



HCM 6th Signalized Intersection Summary
 3: SH 74 & I-35 NB Ramps/Airport Rd.

Alternative 5A - 2050 PM
 SH 74 & I-35 Interchange Study



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Future Volume (veh/h)	15	5	40	25	40	25	425	145	55	15	100	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1870	1870	1870	1767	1767	1767	1767	1767	1767
Adj Flow Rate, veh/h	16	5	42	28	44	28	447	153	58	16	105	42
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	9	9	9	2	2	2	9	9	9	9	9	9
Cap, veh/h	216	26	218	78	69	37	900	475	180	927	605	242
Arrive On Green	0.02	0.16	0.16	0.09	0.09	0.09	0.28	0.65	0.65	0.28	0.50	0.50
Sat Flow, veh/h	1682	162	1360	312	805	434	1682	1221	463	1682	1200	480
Grp Volume(v), veh/h	16	0	47	100	0	0	447	0	211	16	0	147
Grp Sat Flow(s),veh/h/ln	1682	0	1522	1552	0	0	1682	0	1683	1682	0	1680
Q Serve(g_s), s	0.0	0.0	2.4	3.3	0.0	0.0	12.1	0.0	5.0	0.0	0.0	4.3
Cycle Q Clear(g_c), s	0.0	0.0	2.4	5.8	0.0	0.0	12.1	0.0	5.0	0.0	0.0	4.3
Prop In Lane	1.00		0.89	0.28		0.28	1.00		0.27	1.00		0.29
Lane Grp Cap(c), veh/h	216	0	244	185	0	0	900	0	655	927	0	847
V/C Ratio(X)	0.07	0.00	0.19	0.54	0.00	0.00	0.50	0.00	0.32	0.02	0.00	0.17
Avail Cap(c_a), veh/h	372	0	507	315	0	0	1101	0	655	927	0	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	0.00	0.83	0.00	0.83	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.6	0.0	32.8	40.2	0.0	0.0	6.0	0.0	10.5	6.7	0.0	12.1
Incr Delay (d2), s/veh	0.1	0.0	0.4	2.5	0.0	0.0	0.4	0.0	1.1	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.9	2.2	0.0	0.0	2.4	0.0	1.7	0.1	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	0.0	33.1	42.7	0.0	0.0	6.3	0.0	11.6	6.7	0.0	12.6
LnGrp LOS	D	A	C	D	A	A	A	A	B	A	A	B
Approach Vol, veh/h		63			100			658				163
Approach Delay, s/veh		34.1			42.7			8.0				12.0
Approach LOS		C			D			A				B
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.6	40.0		19.4	20.2	50.4	6.6	12.8				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	35.0		30.0	26.0	19.0	10.0	15.0				
Max Q Clear Time (g_c+I1), s	2.0	7.0		4.4	14.1	6.3	2.0	7.8				
Green Ext Time (p_c), s	0.0	1.1		0.2	1.1	0.6	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	13.9
HCM 6th LOS	B



APPENDIX N

DESIGN TRAFFIC DATA LAYOUT MAP

Intersection Delay: 2021 AM Peak			
Intersections	Existing Geometry		
	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	7	A	1.3
I-35 SB Ramps & SH-74 & W. Frontage	16	C	3.9
Total Delay (veh-hr)			5

Intersection Delay: 2021 PM Peak			
Intersections	Existing Geometry		
	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	6	A	1.0
I-35 SB Ramps & SH-74 & W. Frontage	18	C	5.3
Total Delay (veh-hr)			6

Intersection Delay: 2050 AM Peak																		
Two-Way Stop																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	1089	F	310.0	133	F	35.8	154	F	41.8	1089	F	310.1	1089	F	310.1	1089	F	310.1
Airport Road & SH-74	Does Not Exist			1915	F	513.3	1915	F	513.3	Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74	Does Not Exist			25	C	8.5	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74 & W. Frontage	89	F	33.7	Does Not Exist			297	F	112.7	297	F	112.7	297	F	112.7	297	F	112.7
SH-74 & W. Frontage Road	Does Not Exist			16	C	5.7	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
Total Delay (veh-hr)	343.8			563.4			667.8			422.7			422.7			422.7		

Intersection Delay: 2050 AM Peak																		
All-Way Stop																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	89	F	25.4	78	F	21.1	78	F	21.1	89	F	25.4	89	F	25.4	89	F	25.4
Airport Road & SH-74	Does Not Exist			82	F	22.0	92	F	24.6	Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74	Does Not Exist			91	F	31.0	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74 & W. Frontage	113	F	42.7	Does Not Exist			129	F	48.7	129	F	48.7	129	F	48.7	129	F	48.7
SH-74 & W. Frontage Road	Does Not Exist			16	C	5.3	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
Total Delay (veh-hr)	68.1			79.3			94.4			74.1			74.1			74.1		

Intersection Delay: 2050 AM Peak																		
Roundabout																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	13	B	3.7	13	B	3.5	13	B	3.5	13	B	3.7	13	B	3.7	13	B	3.7
I-35 SB Ramps & SH-74 & W. Frontage	15	C	5.7	Does Not Exist			15	C	5.7	15	C	5.7	15	C	5.7	15	C	5.7
Total Delay (veh-hr)	9.4			3.5			9.2			9.4			9.4			9.4		

Intersection Delay: 2050 AM Peak																		
Signalized																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	Not Analyzed			Not Analyzed			Not Analyzed			12	B	3.5	12	B	3.5	12	B	3.4
Airport Road & SH-74	Not Analyzed			11	B	2.8	11	B	2.9	Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74	Not Analyzed			9	A	3.1	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74 & W. Frontage	Not Analyzed			Does Not Exist			32	C	12.0	40	D	15.3	40	D	15.3	40	D	15.3
SH-74 & W. Frontage Road	Not Analyzed			Not Analyzed			Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
Total Delay (veh-hr)	0.0			5.9			14.9			18.8			18.8			18.7		

Intersection Delay: 2050 PM Peak																		
Two-Way Stop																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	144	F	37.2	36	E	8.4	36	E	8.4	144	F	37.2	144	F	37.2	144	F	37.2
Airport Road & SH-74	Does Not Exist			740	F	178.9	740	F	178.9	Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74	Does Not Exist			34	D	14.7	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74 & W. Frontage	176	F	81.7	Does Not Exist			419	F	194.3	419	F	194.3	419	F	194.3	419	F	194.3
SH-74 & W. Frontage Road	Does Not Exist			71	F	28.5	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
Total Delay (veh-hr)	118.9			230.6			381.6			231.5			231.5			231.5		

Intersection Delay: 2050 PM Peak																		
All-Way Stop																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Z (veh-hr)
I-35 NB Ramps and SH-74	30	D	7.7	26	D	6.1	26	D	6.1	30	D	7.7	30	D	7.7	30	D	7.7
Airport Road & SH-74	Does Not Exist			33	D	8.0	33	D	8.1	Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74	Does Not Exist			105	F	45.5	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74 & W. Frontage	236	F	109.6	Does Not Exist			305	F	141.5	156	F	72.2	305	F	141.5	305	F	141.5
SH-74 & W. Frontage Road	Does Not Exist			20	C	7.8	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
Total Delay (veh-hr)	117.3			61.3			155.7			79.9			149.2			149.2		

Intersection Delay: 2050 PM Peak																		
Roundabout																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	9	A	2.3	9	A	2.1	9	A	2.1	9	A	2.3	9	A	2.3	9	A	2.3
I-35 SB Ramps & SH-74 & W. Frontage	27	D	12.6	Does Not Exist			27	D	12.6	27	D	12.6	27	D	12.6	27	D	12.6
Total Delay (veh-hr)	14.9			2.1			14.8			14.9			14.9			14.9		

Intersection Delay: 2050 PM Peak																		
Signalized																		
Intersection	Existing			Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)
I-35 NB Ramps and SH-74	Not Analyzed			Not Analyzed			Not Analyzed			14	B	3.6	14	B	3.6	14	B	3.6
Airport Road & SH-74	Not Analyzed			12	B	2.9	17	B	4.2	Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74	Not Analyzed			10	A	4.2	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
I-35 SB Ramps & SH-74 & W. Frontage	Not Analyzed			Does Not Exist			99	F	45.8	104	F	48.0	104	F	48.0	104	F	48.0
SH-74 & W. Frontage Road	Not Analyzed			Not Analyzed			Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist		
Total Delay (veh-hr)	0.0			7.1			50.0			51.7			51.6			51.6		

Freeway Facilities: 2021 AM Peak - Northbound		
Existing Configuration		
Segment	Type	LOS
Study Limit to SH74 Exit	Basic	C
SH74 Exit Ramp	Diverge	C
Between SH74 Ramps	Basic	C
SH74 Entrance Ramp	Merge	C
SH74 Entrance to Study Limit	Basic	D

Freeway Facilities: 2021 PM Peak - Northbound		
Existing Configuration		
Segment	Type	LOS
Study Limit to SH74 Exit	Basic	B
SH74 Exit Ramp	Diverge	B
Between SH74 Ramps	Basic	B
SH74 Entrance Ramp	Merge	B
SH74 Entrance to Study Limit	Basic	C

Freeway Facilities: 2021 AM Peak - Southbound		
Existing Configuration		
Segment	Type	LOS
Study Limit to SH74 Exit	Basic	A
Slip Ramp	Diverge	B
SH74 Underpass	Basic	A
SH74 Exit Ramp	Diverge	A
Between SH74 Ramps	Basic	A
SH74 Entrance Ramp	Merge	A
SH74 Entrance to Study Limit	Basic	A

Freeway Facilities: 2021 PM Peak - Southbound		
Existing Configuration		
Segment	Type	LOS
Study Limit to SH74 Exit	Basic	C
Slip Ramp	Diverge	D
SH74 Underpass	Basic	C
SH74 Exit Ramp	Diverge	C
Between SH74 Ramps	Basic	C
SH74 Entrance Ramp	Merge	C
SH74 Entrance to Study Limit	Basic	C

Freeway Facilities: 2050 AM Peak - Northbound			
Segment	Type	LOS	
		Existing	Alt. 1-5
Study Limit to SH74 Exit	Basic	C	C
SH74 Exit Ramp	Diverge	C	C
Between SH74 Ramps	Basic	C	C
SH74 Entrance Ramp	Merge	C	C
SH74 Entrance to Study Limit	Basic	D	D

Freeway Facilities: 2050 PM Peak - Northbound			
Segment	Type	LOS	
		Existing	Alt. 1-5
Study Limit to SH74 Exit	Basic	B	B
SH74 Exit Ramp	Diverge	B	B
Between SH74 Ramps	Basic	B	B
SH74 Entrance Ramp	Merge	B	B
SH74 Entrance to Study Limit	Basic	C	C

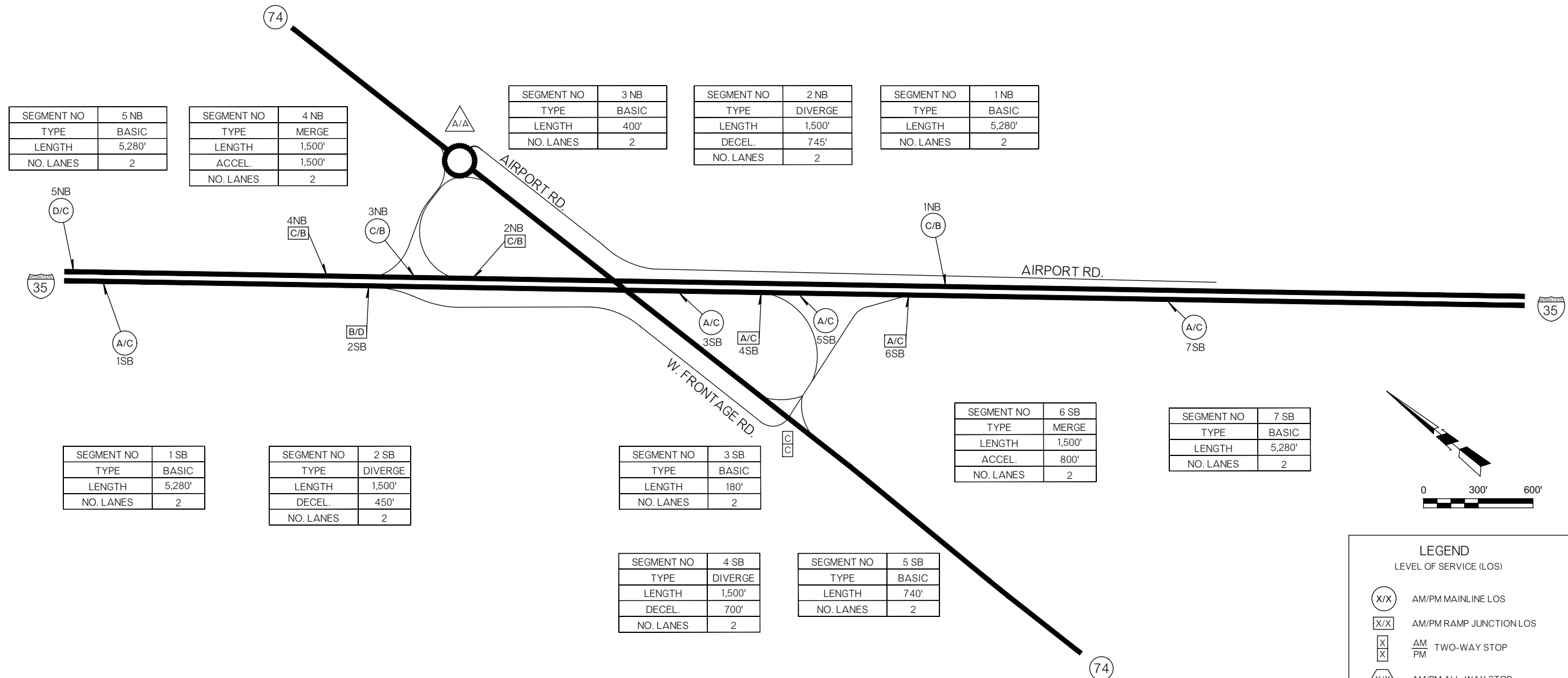
Freeway Facilities: 2050 AM Peak - Southbound				
Segment	Type	LOS		
		Existing	Alt. 1	Alt. 2-5
Study Limit to SH74 Exit	Basic	A	A	A
Slip Ramp	Diverge	B	B	B
SH74 Underpass	Basic	A	A	A
SH74 Exit Ramp	Diverge	A	A	A
Between SH74 Ramps	Basic	A	A	A
SH74 Entrance Ramp	Merge	A	A	A
SH74 Entrance to Study Limit	Basic	A	A	A

Freeway Facilities: 2050 PM Peak - Southbound				
Segment	Type	LOS		
		Existing	Alt. 1	Alt. 2-5
Study Limit to SH74 Exit	Basic	D	D	D
Slip Ramp	Diverge	D	D	D
SH74 Underpass	Basic	C	C	C
SH74 Exit Ramp	Diverge	C	B	B
Between SH74 Ramps	Basic	C	C	C
SH74 Entrance Ramp	Merge	C	B	B
SH74 Entrance to Study Limit	Basic	C	C	C

Intersection Delay: 2050 AM Peak																
Intersection Name																
Design Name	Airport Road & SH-74			I-35 SB Ramps & SH-74			I-35 SB Ramps & SH-74 & W. Frontage			SH-74 & W. Frontage Road			I-35 NB Ramps and SH-74			Total Delay (veh-hr)
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	
Two Way Stop																
Existing Geometry	Does Not Exist			Does Not Exist			112	F	42.4	Does Not Exist			Does Not Exist			42.4
Alternative 1	27	D	7.2	25	C	8.5	Does Not Exist			22	C	7.3	Does Not Exist			23.0
Alternative 2	27	D	7.2	Does Not Exist			364	F	137.4	Does Not Exist			Does Not Exist			144.6
Alternative 3	Does Not Exist			Does Not Exist			364	F	137.4	Does Not Exist			Does Not Exist			137.4
Alternative 4	Does Not Exist			Does Not Exist			364	F	137.4	Does Not Exist			Does Not Exist			137.4
Alternative 5	Does Not Exist			Does Not Exist			364	F	137.4	Does Not Exist			Does Not Exist			137.4
All Way Stop																
Existing Geometry	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist			0.0
Alternative 1	147	F	39.3	91	F	31.0	Does Not Exist			16	C	5.2	Does Not Exist			75.5
Alternative 2	147	F	39.3	Does Not Exist			110	F	41.6	Does Not Exist			Does Not Exist			80.9
Alternative 3	Does Not Exist			Does Not Exist			110	F	41.6	Does Not Exist			Does Not Exist			41.6
Alternative 4	Does Not Exist			Does Not Exist			110	F	41.6	Does Not Exist			Does Not Exist			41.6
Alternative 5	Does Not Exist			Does Not Exist			110	F	41.6	Does Not Exist			Does Not Exist			41.6
Roundabout																
Existing Geometry	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist			13	B	3.8	3.8
Alternative 1	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist			13	B	3.5	3.5
Alternative 2	Does Not Exist			Does Not Exist			21	C	8.0	Does Not Exist			13	B	3.5	11.5
Alternative 3	Does Not Exist			Does Not Exist			21	C	8.0	Does Not Exist			13	B	3.8	11.8
Alternative 4	Does Not Exist			Does Not Exist			21	C	8.0	Does Not Exist			13	B	3.8	11.8
Alternative 5	Does Not Exist			Does Not Exist			21	C	8.0	Does Not Exist			13	B	3.8	11.8

Intersection Delay: 2050 PM Peak																
Intersection Name																
Design Name	Airport Road & SH-74			I-35 SB Ramps & SH-74			I-35 SB Ramps & SH-74 & W. Frontage			SH-74 & W. Frontage Road			I-35 NB Ramps and SH-74			Total Delay (veh-hr)
	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	Delay (sec/veh)	LOS	Delay (veh-hr)	
Two Way Stop																
Existing Geometry	Does Not Exist			Does Not Exist			48	F	22.3	Does Not Exist			Does Not Exist			22.3
Alternative 1	20	C	4.8	34	D	14.8	Does Not Exist			52	F	20.8	Does Not Exist			40.3
Alternative 2	20	C	4.8	Does Not Exist			851	F	394.9	Does Not Exist			Does Not Exist			399.7
Alternative 3	Does Not Exist			Does Not Exist			851	F	394.9	Does Not Exist			Does Not Exist			394.9
Alternative 4	Does Not Exist			Does Not Exist			851	F	394.9	Does Not Exist			Does Not Exist			394.9
Alternative 5	Does Not Exist			Does Not Exist			851	F	394.9	Does Not Exist			Does Not Exist			394.9
All Way Stop																
Existing Geometry	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist			0.0
Alternative 1	48	E	11.6	105	F	45.4	Does Not Exist			20	C	8.0	Does Not Exist			65.0
Alternative 2	48	E	11.6	Does Not Exist			182	F	84.2	Does Not Exist			Does Not Exist			95.8
Alternative 3	Does Not Exist			Does Not Exist			182	F	84.2	Does Not Exist			Does Not Exist			84.2
Alternative 4	Does Not Exist			Does Not Exist			182	F	84.2	Does Not Exist			Does Not Exist			84.2
Alternative 5	Does Not Exist			Does Not Exist			182	F	84.2	Does Not Exist			Does Not Exist			84.2
Roundabout																
Existing Geometry	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist			9	A	2.2	2.2
Alternative 1	Does Not Exist			Does Not Exist			Does Not Exist			Does Not Exist			9	A	2.0	2.0
Alternative 2	Does Not Exist			Does Not Exist			123	F	57.0	Does Not Exist			9	A	2.0	59.1
Alternative 3	Does Not Exist			Does Not Exist			123	F	57.0	Does Not Exist			9	A	2.2	59.3
Alternative 4	Does Not Exist			Does Not Exist			123	F	57.0	Does Not Exist			9	A	2.2	59.3
Alternative 5	Does Not Exist			Does Not Exist			123	F	57.0	Does Not Exist			9	A	2.2	59.3

LOS EXHIBIT WITH SLIP RAMP TRAFFIC ADDED



SEGMENT NO	5 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	2

SEGMENT NO	4 NB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,500'
NO. LANES	2

SEGMENT NO	3 NB
TYPE	BASIC
LENGTH	400'
NO. LANES	2

SEGMENT NO	2 NB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	745'
NO. LANES	2

SEGMENT NO	1 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	2

SEGMENT NO	1 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	2

SEGMENT NO	2 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	450'
NO. LANES	2

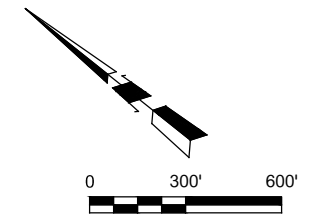
SEGMENT NO	3 SB
TYPE	BASIC
LENGTH	180'
NO. LANES	2

SEGMENT NO	4 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	700'
NO. LANES	2

SEGMENT NO	5 SB
TYPE	BASIC
LENGTH	740'
NO. LANES	2

SEGMENT NO	6 SB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	800'
NO. LANES	2

SEGMENT NO	7 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	2



LEGEND

LEVEL OF SERVICE (LOS)

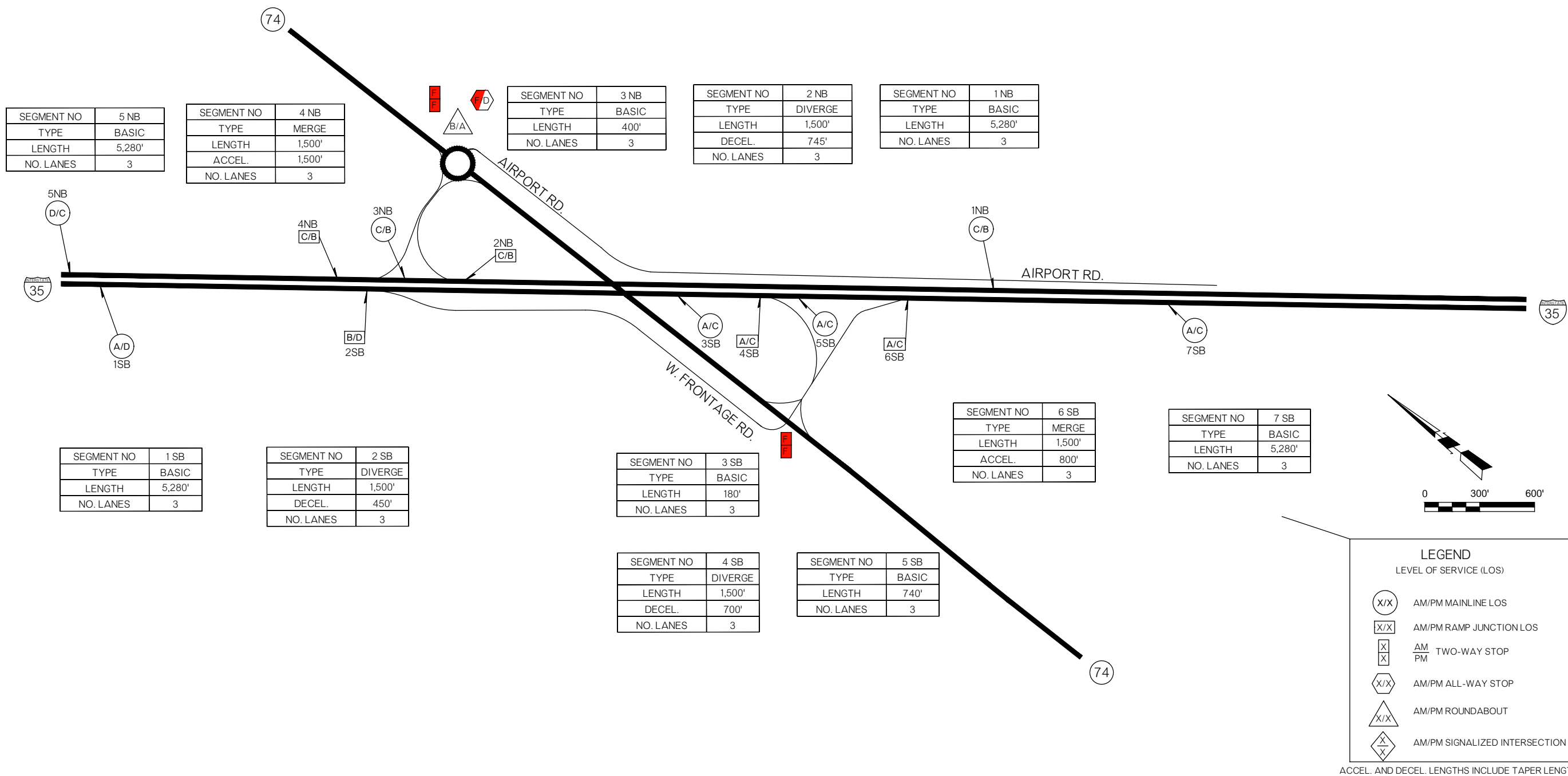
- (X/X) AM/PM MAINLINE LOS
- [X/X] AM/PM RAMP JUNCTION LOS
- [X] AM TWO-WAY STOP
- [X] PM TWO-WAY STOP
- (X/X) AM/PM ALL-WAY STOP
- (X/X) AM/PM ROUNDABOUT
- (X/X) AM/PM SIGNALIZED INTERSECTION

ACCEL. AND DECEL. LENGTHS INCLUDE TAPER LENGTH

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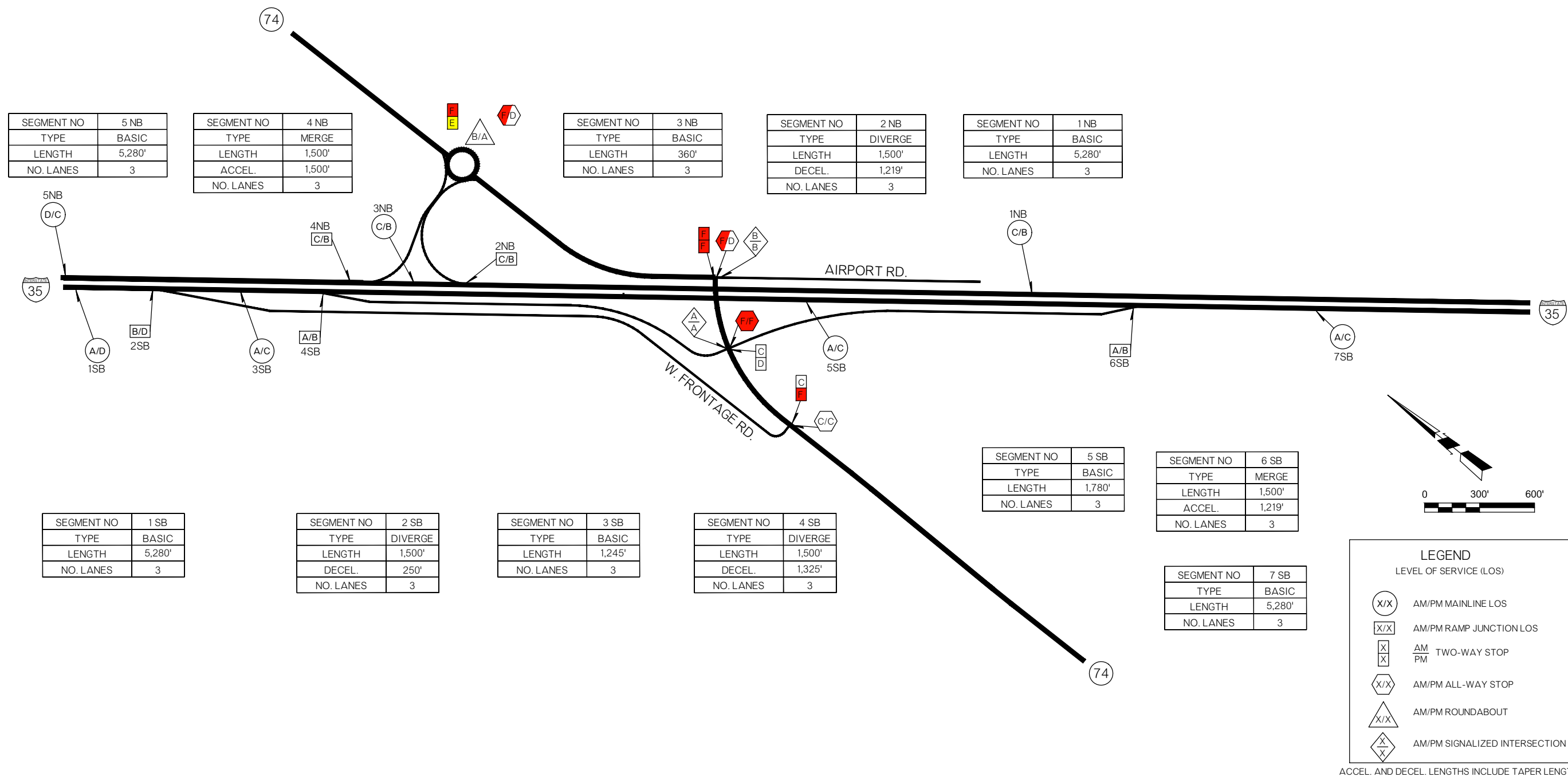
**2021 DESIGN TRAFFIC DATA
EXISTING CONFIGURATION**

Sheet No. _____



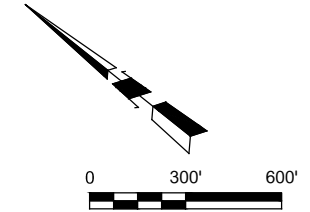
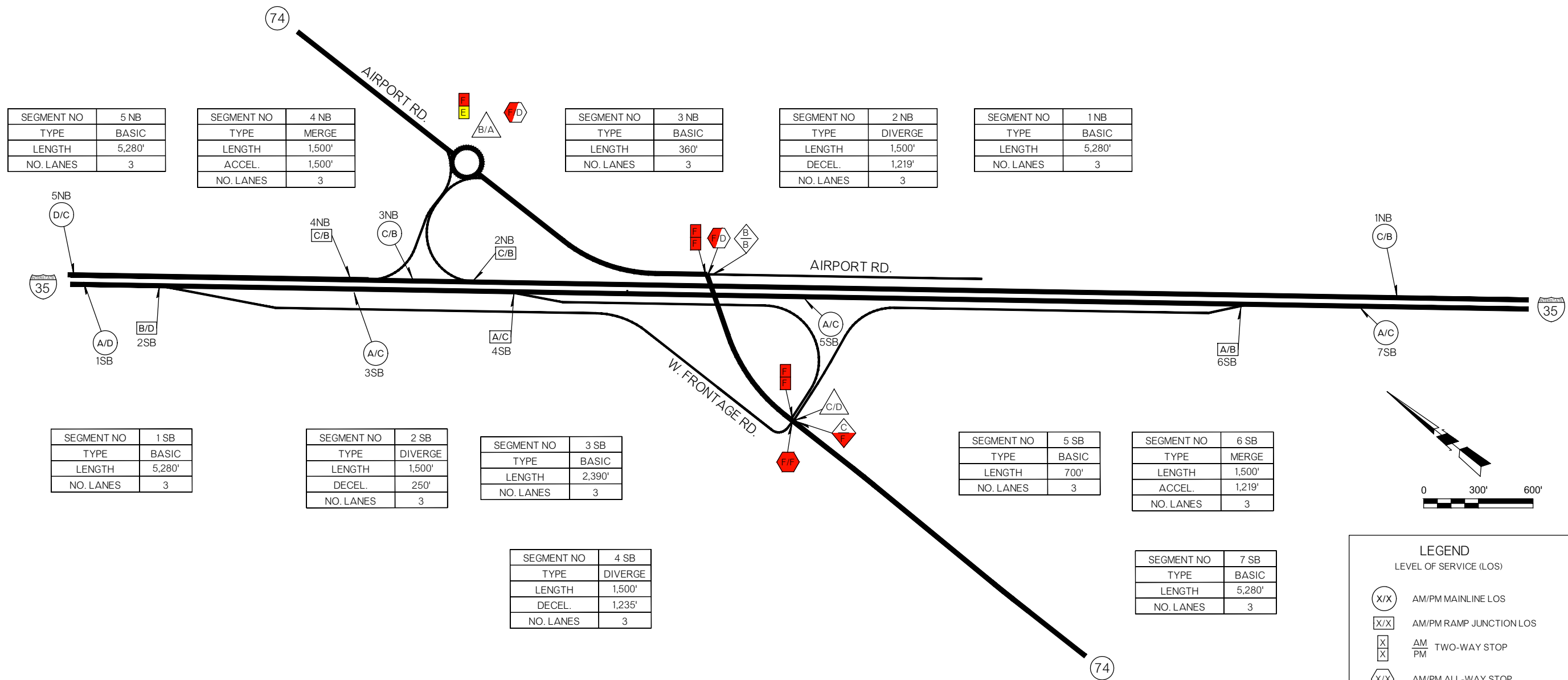
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2050 DESIGN TRAFFIC DATA EXISTING CONFIGURATION



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**ALTERNATIVE 1
2050 DESIGN TRAFFIC DATA**



LEGEND

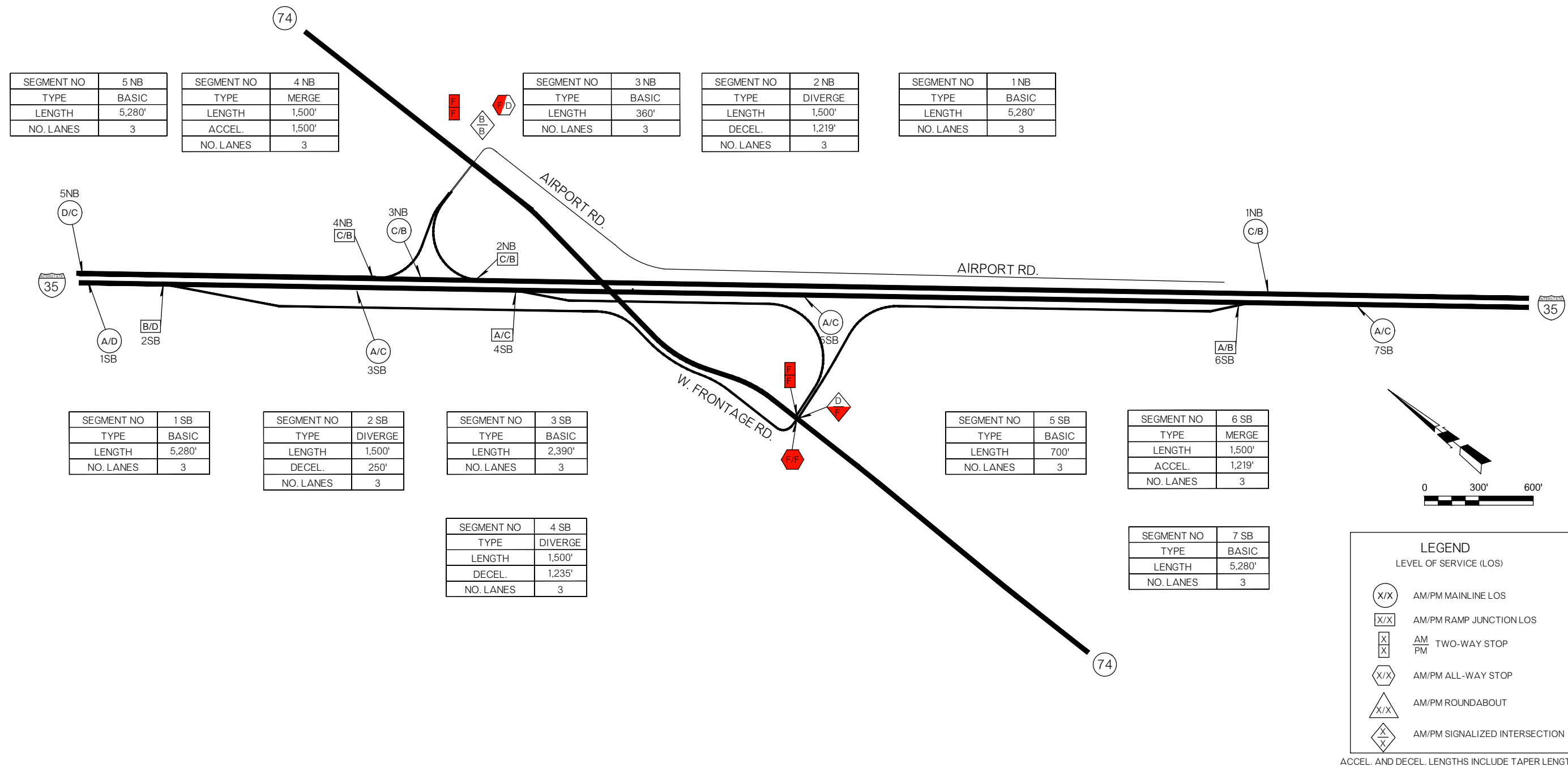
LEVEL OF SERVICE (LOS)

- (X/X) AM/PM MAINLINE LOS
- [X/X] AM/PM RAMP JUNCTION LOS
- [X] AM TWO-WAY STOP
- [X] PM TWO-WAY STOP
- (X/X) AM/PM ALL-WAY STOP
- (X/X) AM/PM ROUNDABOUT
- (X/X) AM/PM SIGNALIZED INTERSECTION

ACCEL. AND DECEL. LENGTHS INCLUDE TAPER LENGTH

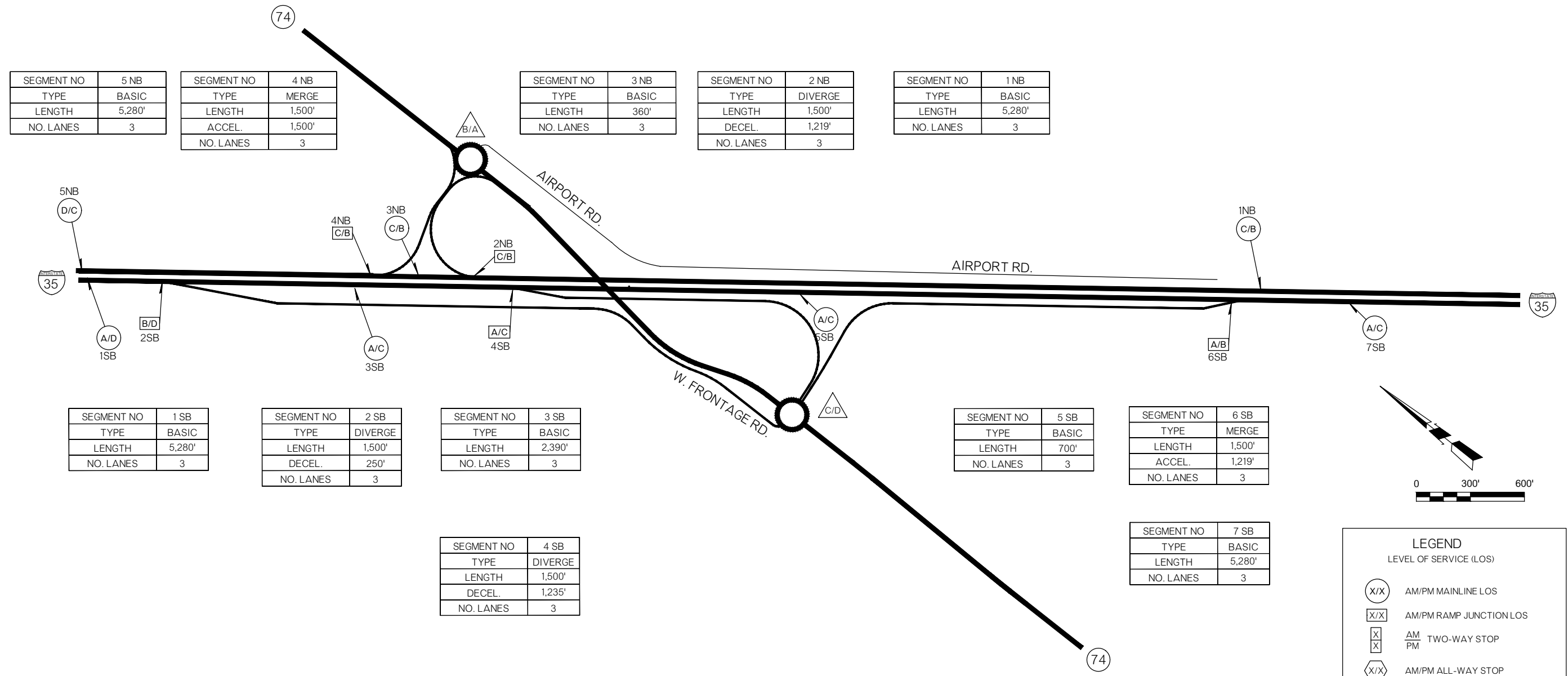
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

**ALTERNATIVE 2
2050 DESIGN TRAFFIC DATA**



THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

**ALTERNATIVE 3A
2050 DESIGN TRAFFIC DATA**



SEGMENT NO	5 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	4 NB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,500'
NO. LANES	3

SEGMENT NO	3 NB
TYPE	BASIC
LENGTH	360'
NO. LANES	3

SEGMENT NO	2 NB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	1,219'
NO. LANES	3

SEGMENT NO	1 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	1 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	2 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	250'
NO. LANES	3

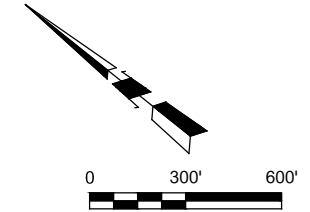
SEGMENT NO	3 SB
TYPE	BASIC
LENGTH	2,390'
NO. LANES	3

SEGMENT NO	4 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	1,235'
NO. LANES	3

SEGMENT NO	5 SB
TYPE	BASIC
LENGTH	700'
NO. LANES	3

SEGMENT NO	6 SB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,219'
NO. LANES	3

SEGMENT NO	7 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3



LEGEND

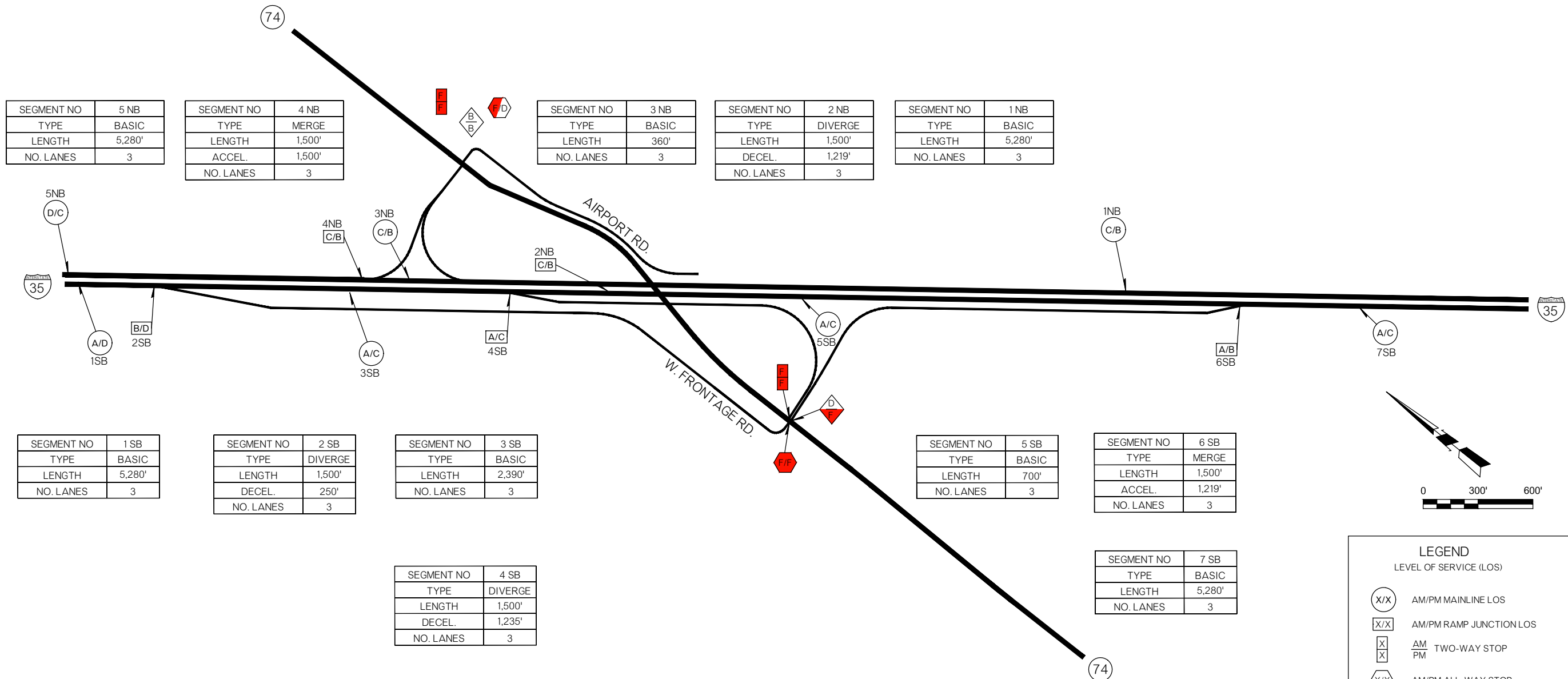
LEVEL OF SERVICE (LOS)

- (X/X) AM/PM MAINLINE LOS
- [X/X] AM/PM RAMP JUNCTION LOS
- [X] AM TWO-WAY STOP
- [X] PM TWO-WAY STOP
- (X/X) AM/PM ALL-WAY STOP
- (X/X) AM/PM ROUNDABOUT
- (X/X) AM/PM SIGNALIZED INTERSECTION

ACCEL. AND DECEL. LENGTHS INCLUDE TAPER LENGTH

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**ALTERNATIVE 3B
2050 DESIGN TRAFFIC DATA**



SEGMENT NO	5 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	4 NB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,500'
NO. LANES	3

SEGMENT NO	3 NB
TYPE	BASIC
LENGTH	360'
NO. LANES	3

SEGMENT NO	2 NB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	1,219'
NO. LANES	3

SEGMENT NO	1 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	1 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	2 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	250'
NO. LANES	3

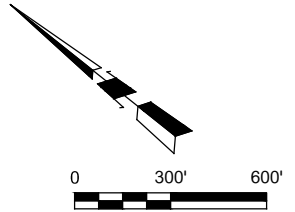
SEGMENT NO	3 SB
TYPE	BASIC
LENGTH	2,390'
NO. LANES	3

SEGMENT NO	4 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	1,235'
NO. LANES	3

SEGMENT NO	5 SB
TYPE	BASIC
LENGTH	700'
NO. LANES	3

SEGMENT NO	6 SB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,219'
NO. LANES	3

SEGMENT NO	7 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3



LEGEND

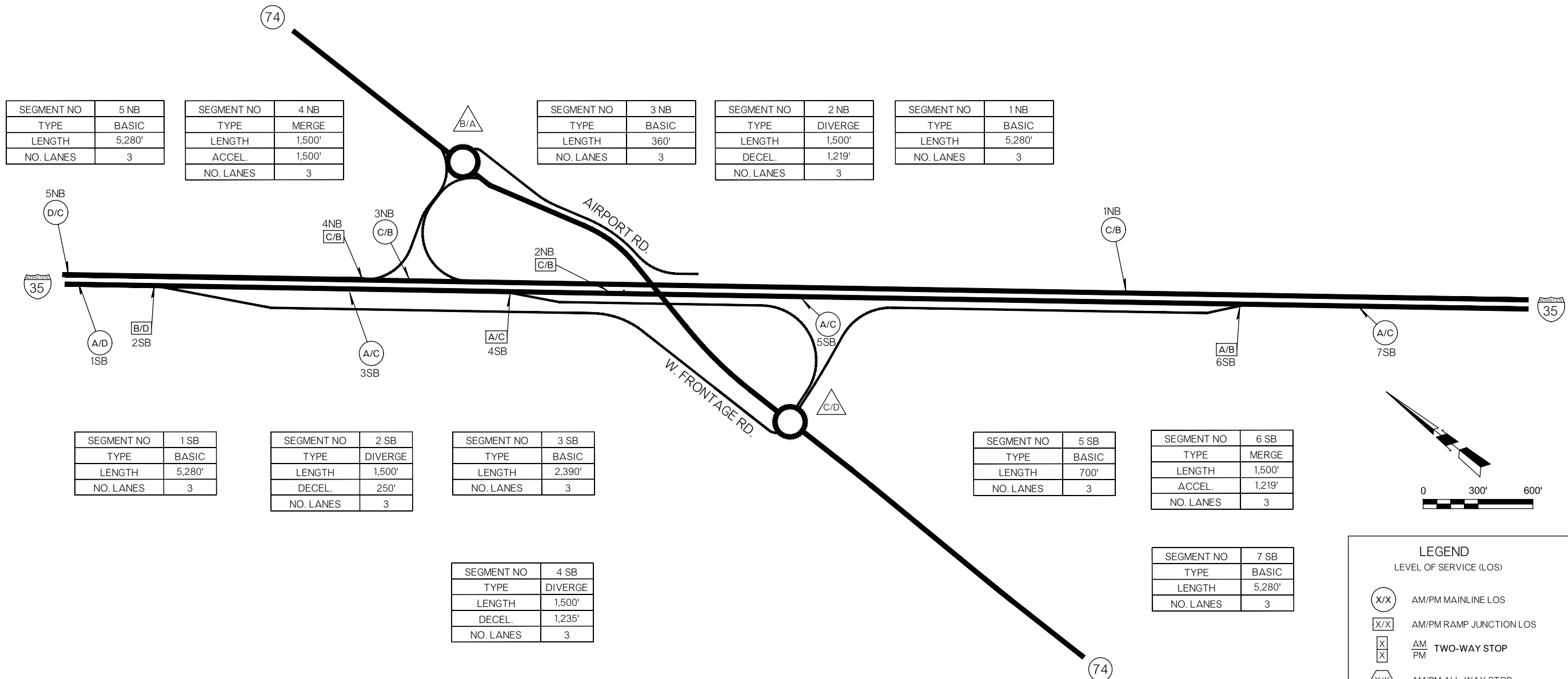
LEVEL OF SERVICE (LOS)

- (X/X) AM/PM MAINLINE LOS
- [X/X] AM/PM RAMP JUNCTION LOS
- [X] AM TWO-WAY STOP
- [X] PM TWO-WAY STOP
- (X/X) AM/PM ALL-WAY STOP
- (X/X) AM/PM ROUNDABOUT
- (X/X) AM/PM SIGNALIZED INTERSECTION

ACCEL. AND DECEL. LENGTHS INCLUDE TAPER LENGTH

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**ALTERNATIVE 4A
2050 DESIGN TRAFFIC DATA**



SEGMENT NO	5 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	4 NB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,500'
NO. LANES	3

SEGMENT NO	3 NB
TYPE	BASIC
LENGTH	360'
NO. LANES	3

SEGMENT NO	2 NB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	1,219'
NO. LANES	3

SEGMENT NO	1 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	1 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	2 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	250'
NO. LANES	3

SEGMENT NO	3 SB
TYPE	BASIC
LENGTH	2,390'
NO. LANES	3

SEGMENT NO	4 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	1,235'
NO. LANES	3

SEGMENT NO	5 SB
TYPE	BASIC
LENGTH	700'
NO. LANES	3

SEGMENT NO	6 SB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,219'
NO. LANES	3

SEGMENT NO	7 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

LEGEND

LEVEL OF SERVICE (LOS)

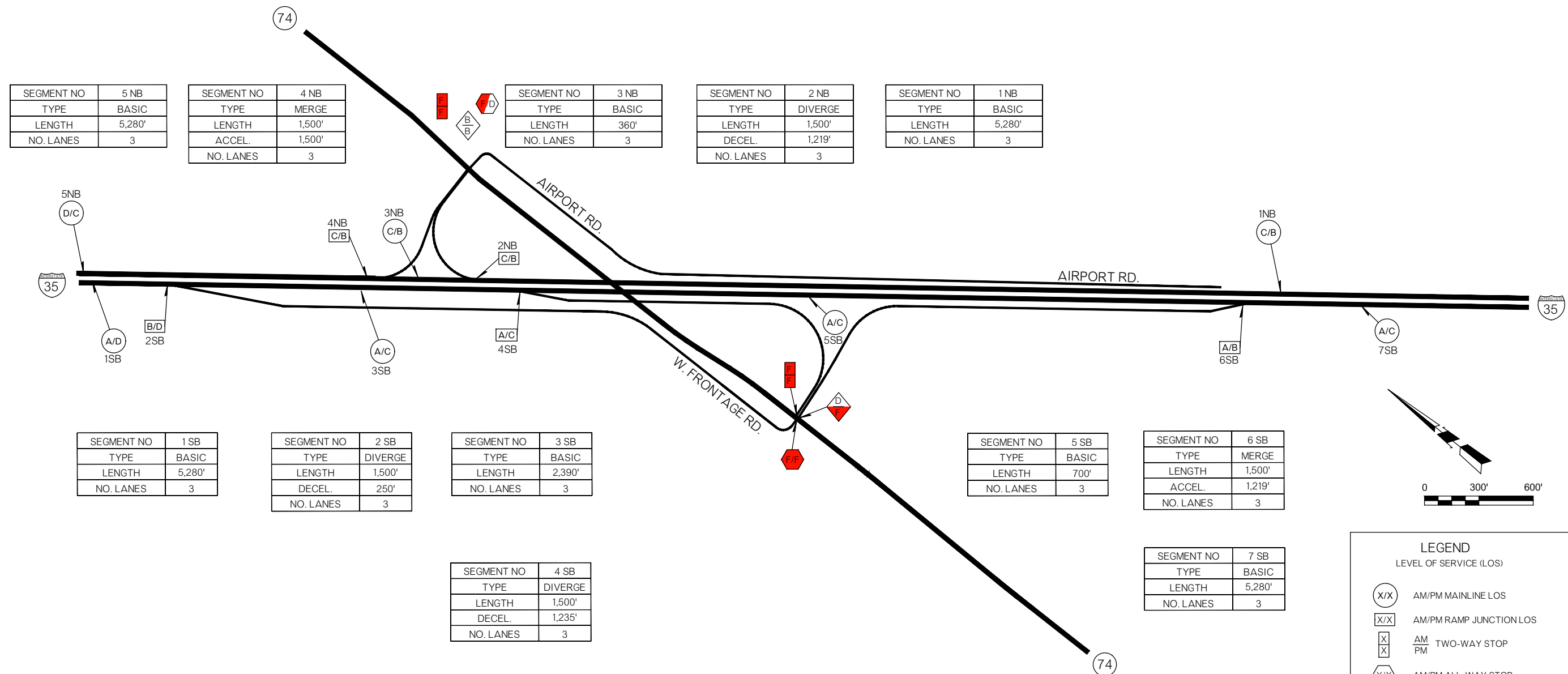
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- [X/X] AM/PM RAMP JUNCTION LOS
- [X] AM
- [X] PM
- [X/X] AM/PM TWO-WAY STOP
- [X/X] AM/PM ALL-WAY STOP
- [X/X] AM/PM ROUNDABOUT
- [X/X] AM/PM SIGNALIZED INTERSECTION

ACCEL. AND DECEL. LENGTHS INCLUDE TAPER LENGTH

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**ALTERNATIVE 4B
2050 DESIGN TRAFFIC DATA**

Sheet No. _____



SEGMENT NO	5 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	4 NB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,500'
NO. LANES	3

SEGMENT NO	3 NB
TYPE	BASIC
LENGTH	360'
NO. LANES	3

SEGMENT NO	2 NB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	1,219'
NO. LANES	3

SEGMENT NO	1 NB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	1 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3

SEGMENT NO	2 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	250'
NO. LANES	3

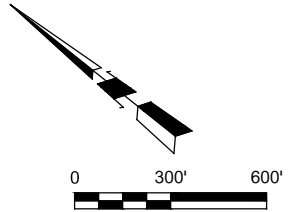
SEGMENT NO	3 SB
TYPE	BASIC
LENGTH	2,390'
NO. LANES	3

SEGMENT NO	4 SB
TYPE	DIVERGE
LENGTH	1,500'
DECEL.	1,235'
NO. LANES	3

SEGMENT NO	5 SB
TYPE	BASIC
LENGTH	700'
NO. LANES	3

SEGMENT NO	6 SB
TYPE	MERGE
LENGTH	1,500'
ACCEL.	1,219'
NO. LANES	3

SEGMENT NO	7 SB
TYPE	BASIC
LENGTH	5,280'
NO. LANES	3



LEGEND

LEVEL OF SERVICE (LOS)

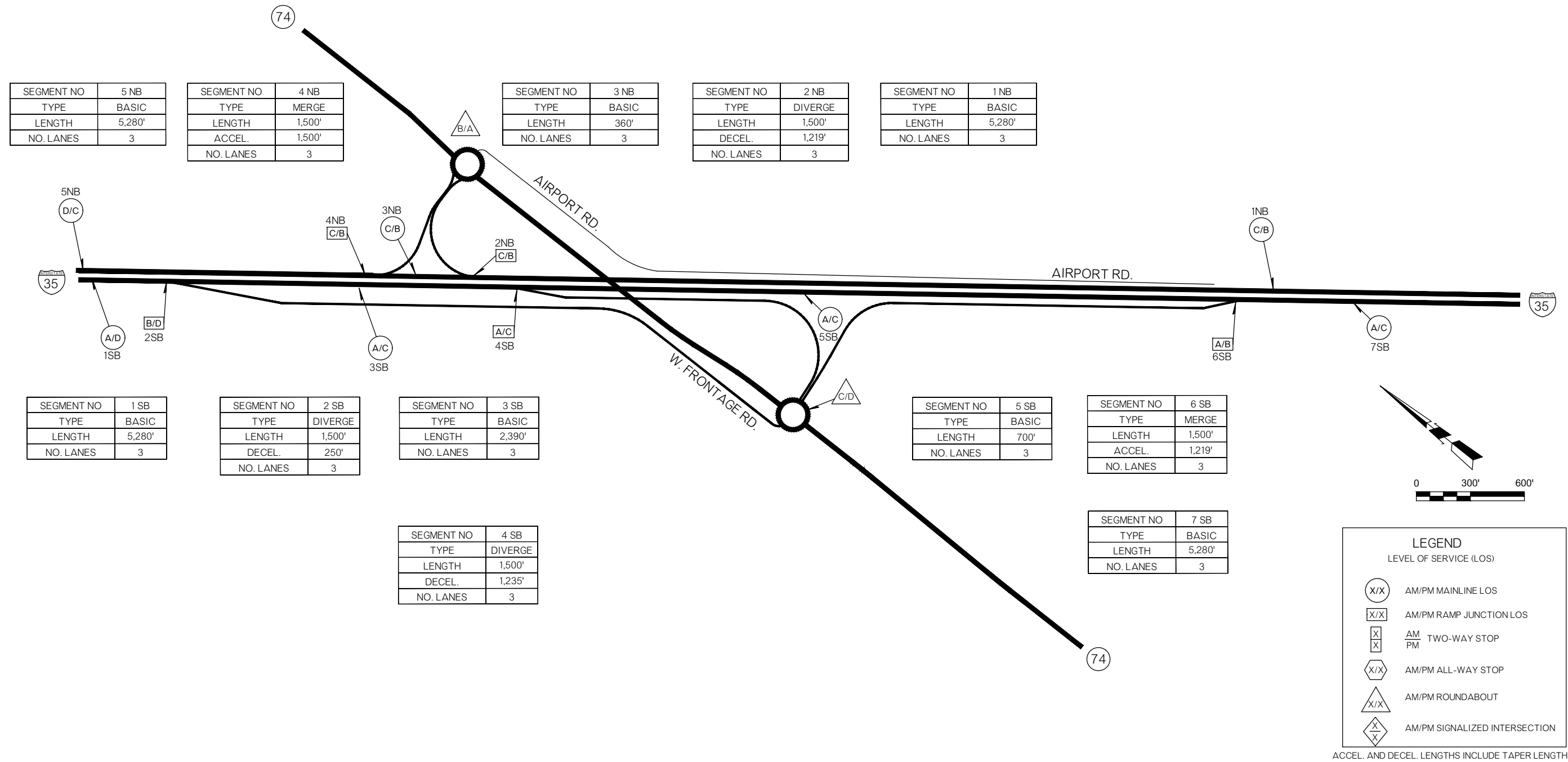
- (X/X) AM/PM MAINLINE LOS
- [X/X] AM/PM RAMP JUNCTION LOS
- [X] AM TWO-WAY STOP
- [X] PM TWO-WAY STOP
- (X/X) AM/PM ALL-WAY STOP
- (X/X) AM/PM ROUNDABOUT
- (X/X) AM/PM SIGNALIZED INTERSECTION

ACCEL. AND DECEL. LENGTHS INCLUDE TAPER LENGTH

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**ALTERNATIVE 5A
2050 DESIGN TRAFFIC DATA**

Sheet No. _____



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**ALTERNATIVE 5B
2050 DESIGN TRAFFIC DATA**



APPENDIX O

UTILITY RELOCATION COSTS

**PRELIMINARY UTILITIES RELOCATION COSTS
SH 74 AT I-35 BRIDGE REPLACEMENT / INTERCHANGE**

UTILITIES	ALT 1	ALT 2A	ALT 2B (ROUNDAABOUT)	ALT 3A	ALT 3B (ROUNDAABOUT)	ALT 4A	ALT 4B (ROUNDAABOUT)	ALT 5A	ALT 5B (ROUNDAABOUT)
ODOT UTILITY RELOCATION COSTS	\$ 1,060,000	\$ 837,100	\$ 773,700	\$ 1,584,000	\$ 1,043,900	\$ 1,597,900	\$ 1,423,600	\$ 1,320,700	\$ 839,900
SERVICE PROVIDER COSTS TASK 4	\$ 15,764	\$ 15,764	\$ 15,764	\$ 15,764	\$ 15,764	\$ 15,764	\$ 15,764	\$ 15,764	\$ 15,764
TOTAL UTILITY COSTS	\$ 1,075,800	\$ 852,900	\$ 789,500	\$ 1,599,800	\$ 1,059,700	\$ 1,613,700	\$ 1,439,400	\$ 1,336,500	\$ 855,700

ALTERNATIVE 1 - 0° SKEW								
FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 812+60 LT.	3,614	L.F.	\$ 100.00	\$ 361,400.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	CAP-ROCK COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 805+55 LT.	1,534	L.F.	\$ 100.00	\$ 153,400.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY I-35 STA. 851+14 TO STA. 866+50 LT.	1,538	L.F.	\$ 100.00	\$ 153,800.00	0%	\$ -
	CAP-ROCK COMMUNICATIONS	CL SURVEY I-35 STA. 864+05 TO STA. 878+00 RT.	1,403	L.F.	\$ 100.00	\$ 140,300.00	0%	\$ -
TELEPHONE	AT&T	CL SURVEY SH 74 STA. 803+50 TO STA. 806+50 RT.	302	L.F.	\$ 100.00	\$ 30,200.00	0%	\$ -
	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 812+60 LT.	3,614	L.F.	\$ 100.00	\$ 361,400.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,965	L.F.	\$ 100.00	\$ 196,500.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 797+50 LT.	1,261	L.F.	\$ 300.00	\$ 378,300.00	100%	\$ 378,300.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+44 RT.	385	L.F.	\$ 300.00	\$ 115,500.00	0%	\$ -
		CL SURVEY I-35 STA. 862+50 TO STA. 865+52 LT.	318	L.F.	\$ 300.00	\$ 95,400.00	0%	\$ -
		CL SURVEY I-35 STA. 864+36 TO STA. 865+52 RT.	111	L.F.	\$ 300.00	\$ 33,300.00	100%	\$ 33,300.00
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY I-35 STA. 865+52 X-ING	232	L.F.	\$ 300.00	\$ 69,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+89 TO STA. 808+75 LT.	26	POLES	\$ 3,000.00	\$ 78,000.00	70%	\$ 54,600.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
		CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	2	POLES	\$ 3,000.00	\$ 6,000.00	100%	\$ 6,000.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY I-35 STA. 864+58 TO STA. 870+18 RT.	6	POLES	\$ 3,000.00	\$ 18,000.00	100%	\$ 18,000.00
		CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%	\$ 5,600.00
		CL SURVEY SH 74 STA. 780+00 RT.	35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
		CL SURVEY SH 74 STA. 782+66 RT.	33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
		CL SURVEY SH 74 STA. 786+06 LT.	69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 787+43 LT.	62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
		CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 790+34 RT.	1,469	L.F.	\$ 80.00	\$ 117,520.00	100%	\$ 117,520.00
		CL SURVEY SH 74 STA. 785+00 TO STA. 805+65 LT.	2,916	L.F.	\$ 80.00	\$ 233,280.00	100%	\$ 233,280.00
		CL SURVEY SH 74 STA. 786+23 X-ING	247	L.F.	\$ 80.00	\$ 19,760.00	100%	\$ 19,760.00
		CL SURVEY SH 74 STA. 795+39 TO STA. 803+86 RT.	750	L.F.	\$ 80.00	\$ 60,000.00	100%	\$ 60,000.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 1,060,000.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.

ALTERNATIVE 2A - 20° SKEW W/O ROUNDABOUT								
FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	CAP-ROCK COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 795+00 LT.	379	L.F.	\$ 100.00	\$ 37,900.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY I-35 STA. 851+00 TO STA. 865+68 LT.	1,472	L.F.	\$ 100.00	\$ 147,200.00	0%	\$ -
TELEPHONE	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,043	L.F.	\$ 100.00	\$ 104,300.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 795+00 LT.	882	L.F.	\$ 300.00	\$ 264,600.00	100%	\$ 264,600.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+56 RT.	403	L.F.	\$ 300.00	\$ 120,900.00	0%	\$ -
		CL SURVEY I-35 STA. 862+50 TO STA. 865+52 LT.	318	L.F.	\$ 300.00	\$ 95,400.00	0%	\$ -
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY I-35 STA. 863+40 TO STA. 865+52 RT.	248	L.F.	\$ 300.00	\$ 74,400.00	100%	\$ 74,400.00
		CL SURVEY I-35 STA. 865+52 X-ING	232	L.F.	\$ 300.00	\$ 69,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+89 TO STA. 795+35 LT.	13	POLES	\$ 3,000.00	\$ 39,000.00	80%	\$ 31,200.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
		CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	3	POLES	\$ 3,000.00	\$ 9,000.00	100%	\$ 9,000.00
POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
		CL SURVEY I-35 STA. 864+00 TO STA. 870+18 RT.	7	POLES	\$ 3,000.00	\$ 21,000.00	100%	\$ 21,000.00
		CL SURVEY I-35 STA. 876+29 TO STA. 882+36 RT.	5	POLES	\$ 3,000.00	\$ 15,000.00	100%	\$ 15,000.00
		CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%	\$ 5,600.00
		CL SURVEY SH 74 STA. 780+00 RT.	35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 782+66 RT.	33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
		CL SURVEY SH 74 STA. 786+06 LT.	69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
		CL SURVEY SH 74 STA. 787+43 LT.	62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
		CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 790+42 RT.	1,481	L.F.	\$ 80.00	\$ 118,480.00	100%	\$ 118,480.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 837,100.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.

ALTERNATIVE 2B - 20° SKEW W/ ROUNDABOUT

FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	CAP-ROCK COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 795+50 LT.	549	L.F.	\$ 100.00	\$ 54,900.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY I-35 STA. 851+00 TO STA. 865+68 LT.	1,472	L.F.	\$ 100.00	\$ 147,200.00	0%	\$ -
TELEPHONE	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,043	L.F.	\$ 100.00	\$ 104,300.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 795+50 LT.	1,042	L.F.	\$ 300.00	\$ 312,600.00	60%	\$ 187,560.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+56 RT.	403	L.F.	\$ 300.00	\$ 120,900.00	0%	\$ -
		CL SURVEY I-35 STA. 862+50 TO STA. 865+52 LT.	318	L.F.	\$ 300.00	\$ 95,400.00	0%	\$ -
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY I-35 STA. 863+40 TO STA. 865+52 RT.	248	L.F.	\$ 300.00	\$ 74,400.00	100%	\$ 74,400.00
		CL SURVEY I-35 STA. 865+52 X-ING	232	L.F.	\$ 300.00	\$ 69,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+89 TO STA. 795+35 LT.	13	POLES	\$ 3,000.00	\$ 39,000.00	80%	\$ 31,200.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
		CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	3	POLES	\$ 3,000.00	\$ 9,000.00	100%	\$ 9,000.00
POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
		CL SURVEY I-35 STA. 864+00 TO STA. 870+18 RT.	7	POLES	\$ 3,000.00	\$ 21,000.00	100%	\$ 21,000.00
		CL SURVEY I-35 STA. 876+29 TO STA. 882+36 RT.	5	POLES	\$ 3,000.00	\$ 15,000.00	100%	\$ 15,000.00
		CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%	\$ 5,600.00
		CL SURVEY SH 74 STA. 780+00 RT.	35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 782+66 RT.	33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
		CL SURVEY SH 74 STA. 786+06 LT.	69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
		CL SURVEY SH 74 STA. 787+43 LT.	62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
		CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 790+42 RT.	1,481	L.F.	\$ 80.00	\$ 118,480.00	100%	\$ 118,480.00
		CL SURVEY SH 74 STA. 785+00 TO STA. 795+00 LT.	1,225	L.F.	\$ 80.00	\$ 98,000.00	100%	\$ 98,000.00
		CL SURVEY SH 74 STA. 786+23 X-ING	247	L.F.	\$ 80.00	\$ 19,760.00	100%	\$ 19,760.00
		CL SURVEY SH 74 STA. 795+39 TO STA. 803+86 RT.	750	L.F.	\$ 80.00	\$ 60,000.00	100%	\$ 60,000.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 773,700.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.

ALTERNATIVE 3A - 45° SKEW W/O ROUNDABOUT								
FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 816+00 LT.	3,954	L.F.	\$ 100.00	\$ 395,400.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	CAP-ROCK COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 805+35 LT.	1,379	L.F.	\$ 100.00	\$ 137,900.00	0%	\$ -
	TRACE FIBER	CL SURVEY SH 74 STA. 804+77 TO STA. 814+70 RT.	993	L.F.	\$ 100.00	\$ 99,300.00	0%	\$ -
		CL SURVEY SH 74 STA. 806+23 TO STA. 816+00 RT.	977	L.F.	\$ 100.00	\$ 97,700.00	100%	\$ 97,700.00
		CL SURVEY SH 74 STA. 818+22 X-ING	72	L.F.	\$ 100.00	\$ 7,200.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 818+24 TO STA. 820+81 LT.	257	L.F.	\$ 100.00	\$ 25,700.00	0%	\$ -
TELEPHONE	AT&T	CL SURVEY I-35 STA. 863+17 TO STA. 882+42 RT.	1,980	L.F.	\$ 100.00	\$ 198,000.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+46 TO STA. 816+00 LT.	3,954	L.F.	\$ 100.00	\$ 395,400.00	0%	\$ -
		CL SURVEY SH 74 STA. 816+55 TO STA. 820+81 LT.	426	L.F.	\$ 100.00	\$ 42,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 816+57 X-ING	105	L.F.	\$ 100.00	\$ 10,500.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 812+60 TO STA. 815+89 RT.	329	L.F.	\$ 100.00	\$ 32,900.00	100%	\$ 32,900.00
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,970	L.F.	\$ 100.00	\$ 197,000.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 797+50 LT.	1,261	L.F.	\$ 300.00	\$ 378,300.00	100%	\$ 378,300.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+57 RT.	403	L.F.	\$ 300.00	\$ 120,900.00	0%	\$ -
		CL SURVEY SH 74 STA. 804+75 TO STA. 816+00 RT.	1,125	L.F.	\$ 300.00	\$ 337,500.00	100%	\$ 337,500.00
		CL SURVEY I-35 STA. 863+40 TO STA. 865+52 RT.	248	L.F.	\$ 300.00	\$ 74,400.00	100%	\$ 74,400.00
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 776+89 TO STA. 824+50 LT.	32	POLES	\$ 3,000.00	\$ 96,000.00	50%	\$ 48,000.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
		CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	3	POLES	\$ 3,000.00	\$ 9,000.00	70%	\$ 6,300.00
		CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY I-35 STA. 864+00 TO STA. 870+18 RT.	7	POLES	\$ 3,000.00	\$ 21,000.00	100%	\$ 21,000.00
		CL SURVEY I-35 STA. 876+29 TO STA. 882+36 RT.	5	POLES	\$ 3,000.00	\$ 15,000.00	100%	\$ 15,000.00
		CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%	\$ 5,600.00
POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 780+00 RT.	35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
		CL SURVEY SH 74 STA. 782+66 RT.	33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
		CL SURVEY SH 74 STA. 786+06 LT.	69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
		CL SURVEY SH 74 STA. 787+43 LT.	62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
		CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 776+89 TO STA. 790+42 RT.	1,481	L.F.	\$ 80.00	\$ 118,480.00	100%	\$ 118,480.00
		CL SURVEY SH 74 STA. 785+00 TO STA. 804+42 LT.	2,762	L.F.	\$ 80.00	\$ 220,960.00	100%	\$ 220,960.00
		CL SURVEY SH 74 STA. 806+40 TO STA. 815+71 RT.	931	L.F.	\$ 80.00	\$ 74,480.00	100%	\$ 74,480.00
		CL SURVEY SH 74 STA. 786+23 X-ING	247	L.F.	\$ 80.00	\$ 19,760.00	100%	\$ 19,760.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 1,584,000.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.

ALTERNATIVE 3B - 45° SKEW W/ ROUNDABOUT								
FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 816+00 LT.	3,954	L.F.	\$ 100.00	\$ 395,400.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 805+35 LT.	1,379	L.F.	\$ 100.00	\$ 137,900.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY I-35 STA. 863+17 TO STA. 882+42 RT.	1,980	L.F.	\$ 100.00	\$ 198,000.00	0%	\$ -
TELEPHONE	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 816+00 LT.	3,954	L.F.	\$ 100.00	\$ 395,400.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,970	L.F.	\$ 100.00	\$ 197,000.00	0%	\$ -
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 797+50 LT.	1,261	L.F.	\$ 300.00	\$ 378,300.00	100%	\$ 378,300.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+57 RT.	403	L.F.	\$ 300.00	\$ 120,900.00	0%	\$ -
		CL SURVEY I-35 STA. 863+40 TO STA. 865+52 RT.	248	L.F.	\$ 300.00	\$ 74,400.00	100%	\$ 74,400.00
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 776+89 TO STA. 816+00 LT.	28	POLES	\$ 3,000.00	\$ 84,000.00	60%	\$ 50,400.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
		CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	3	POLES	\$ 3,000.00	\$ 9,000.00	70%	\$ 6,300.00
		CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY I-35 STA. 864+00 TO STA. 870+18 RT.	7	POLES	\$ 3,000.00	\$ 21,000.00	100%	\$ 21,000.00
		CL SURVEY I-35 STA. 876+29 TO STA. 882+36 RT.	5	POLES	\$ 3,000.00	\$ 15,000.00	100%	\$ 15,000.00
POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%	\$ 5,600.00
		CL SURVEY SH 74 STA. 780+00 RT.	35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
		CL SURVEY SH 74 STA. 782+66 RT.	33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
		CL SURVEY SH 74 STA. 786+06 LT.	69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
		CL SURVEY SH 74 STA. 787+43 LT.	62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 790+42 RT.	1,481	L.F.	\$ 80.00	\$ 118,480.00	100%	\$ 118,480.00
		CL SURVEY SH 74 STA. 785+00 TO STA. 804+42 LT.	2,762	L.F.	\$ 80.00	\$ 220,960.00	100%	\$ 220,960.00
		CL SURVEY SH 74 STA. 786+23 X-ING	247	L.F.	\$ 80.00	\$ 19,760.00	100%	\$ 19,760.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 1,043,900.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.

ALTERNATIVE 4A - 40° SKEW W/O ROUNDABOUT								
FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	CAP-ROCK COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 795+00 LT.	379	L.F.	\$ 100.00	\$ 37,900.00	0%	\$ -
	TRACE FIBER	CL SURVEY SH 74 STA. 799+70 TO STA. 814+70 RT.	1,500	L.F.	\$ 100.00	\$ 150,000.00	0%	\$ -
		CL SURVEY SH 74 STA. 799+70 TO STA. 816+00 RT.	1,630	L.F.	\$ 100.00	\$ 163,000.00	100%	\$ 163,000.00
		CL SURVEY SH 74 STA. 818+22 X-ING	72	L.F.	\$ 100.00	\$ 7,200.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 818+24 TO STA. 820+81 LT.	257	L.F.	\$ 100.00	\$ 25,700.00	0%	\$ -
TELEPHONE	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
		CL SURVEY SH 74 STA. 816+55 TO STA. 820+81 LT.	426	L.F.	\$ 100.00	\$ 42,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 816+57 X-ING	105	L.F.	\$ 100.00	\$ 10,500.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 812+60 TO STA. 815+89 RT.	329	L.F.	\$ 100.00	\$ 32,900.00	100%	\$ 32,900.00
		CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,043	L.F.	\$ 100.00	\$ 104,300.00	0%	\$ -
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 795+00 LT.	882	L.F.	\$ 300.00	\$ 264,600.00	100%	\$ 264,600.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+56 RT.	403	L.F.	\$ 300.00	\$ 120,900.00	0%	\$ -
		CL SURVEY SH 74 STA. 799+70 TO STA. 816+00 RT.	1,630	L.F.	\$ 300.00	\$ 489,000.00	100%	\$ 489,000.00
		CL SURVEY I-35 STA. 863+40 TO STA. 865+52 RT.	248	L.F.	\$ 300.00	\$ 74,400.00	100%	\$ 74,400.00
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 776+89 TO STA. 824+54 LT.	17	POLES	\$ 3,000.00	\$ 51,000.00	60%	\$ 30,600.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
		CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	3	POLES	\$ 3,000.00	\$ 9,000.00	100%	\$ 9,000.00
		CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY I-35 STA. 864+00 TO STA. 870+18 RT.	7	POLES	\$ 3,000.00	\$ 21,000.00	100%	\$ 21,000.00
		CL SURVEY I-35 STA. 876+29 TO STA. 882+36 RT.	5	POLES	\$ 3,000.00	\$ 15,000.00	100%	\$ 15,000.00
		CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%	\$ 5,600.00
POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 780+00 RT.	35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
		CL SURVEY SH 74 STA. 782+66 RT.	33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
		CL SURVEY SH 74 STA. 786+06 LT.	69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
		CL SURVEY SH 74 STA. 787+43 LT.	62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
		CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 776+89 TO STA. 790+42 RT.	1,481	L.F.	\$ 80.00	\$ 118,480.00	100%	\$ 118,480.00
		CL SURVEY SH 74 STA. 785+00 TO STA. 795+00 LT.	1,055	L.F.	\$ 80.00	\$ 84,400.00	100%	\$ 84,400.00
		CL SURVEY SH 74 STA. 786+23 X-ING	247	L.F.	\$ 80.00	\$ 19,760.00	100%	\$ 19,760.00
		CL SURVEY SH 74 STA. 798+65 TO STA. 815+71 RT.	1,706	L.F.	\$ 80.00	\$ 136,480.00	100%	\$ 136,480.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 1,597,900.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.

ALTERNATIVE 4B - 40° SKEW W/ ROUNDABOUT								
FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	CAP-ROCK COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 796+50 LT.	550	L.F.	\$ 100.00	\$ 55,000.00	0%	\$ -
	TRACE FIBER	CL SURVEY SH 74 STA. 799+70 TO STA. 812+00 RT.	1,265	L.F.	\$ 100.00	\$ 126,500.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 799+70 TO STA. 812+00 RT.	1,156	L.F.	\$ 100.00	\$ 115,600.00	100%	\$ 115,600.00
TELEPHONE	AT&T	CL SURVEY I-35 STA. 863+17 TO STA. 882+42 RT.	1,980	L.F.	\$ 100.00	\$ 198,000.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,043	L.F.	\$ 100.00	\$ 104,300.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 796+50 LT.	1,062	L.F.	\$ 300.00	\$ 318,600.00	100%	\$ 318,600.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+56 RT.	403	L.F.	\$ 300.00	\$ 120,900.00	0%	\$ -
		CL SURVEY SH 74 STA. 799+70 TO STA. 812+00 RT.	1,216	L.F.	\$ 300.00	\$ 364,800.00	100%	\$ 364,800.00
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY I-35 STA. 863+40 TO STA. 865+52 RT.	248	L.F.	\$ 300.00	\$ 74,400.00	100%	\$ 74,400.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 795+35 LT.	13	POLES	\$ 3,000.00	\$ 39,000.00	80%	\$ 31,200.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	3	POLES	\$ 3,000.00	\$ 9,000.00	100%	\$ 9,000.00
		CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
		CL SURVEY I-35 STA. 864+00 TO STA. 870+18 RT.	7	POLES	\$ 3,000.00	\$ 21,000.00	100%	\$ 21,000.00
POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY I-35 STA. 876+29 TO STA. 882+36 RT.	5	POLES	\$ 3,000.00	\$ 15,000.00	100%	\$ 15,000.00
		CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%	\$ 5,600.00
		CL SURVEY SH 74 STA. 780+00 RT.	35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
		CL SURVEY SH 74 STA. 782+66 RT.	33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
		CL SURVEY SH 74 STA. 786+06 LT.	69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 787+43 LT.	62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
		CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 790+42 RT.	1,481	L.F.	\$ 80.00	\$ 118,480.00	100%	\$ 118,480.00
		CL SURVEY SH 74 STA. 785+00 TO STA. 796+50 LT.	1,226	L.F.	\$ 80.00	\$ 98,080.00	100%	\$ 98,080.00
		CL SURVEY SH 74 STA. 786+23 X-ING	247	L.F.	\$ 80.00	\$ 19,760.00	100%	\$ 19,760.00
		CL SURVEY SH 74 STA. 798+65 TO STA. 812+00 RT.	1,230	L.F.	\$ 80.00	\$ 98,400.00	100%	\$ 98,400.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 1,423,600.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.

ALTERNATIVE 5A - 53° SKEW W/O ROUNDABOUT								
FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	CAP-ROCK COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 795+00 LT.	399	L.F.	\$ 100.00	\$ 39,900.00	0%	\$ -
	TRACE FIBER	CL SURVEY SH 74 STA. 804+77 TO STA. 814+70 RT.	993	L.F.	\$ 100.00	\$ 99,300.00	0%	\$ -
		CL SURVEY SH 74 STA. 806+23 TO STA. 816+00 RT.	977	L.F.	\$ 100.00	\$ 97,700.00	100%	\$ 97,700.00
		CL SURVEY SH 74 STA. 818+22 X-ING	72	L.F.	\$ 100.00	\$ 7,200.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 818+24 TO STA. 820+81 LT.	257	L.F.	\$ 100.00	\$ 25,700.00	0%	\$ -
TELEPHONE	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
		CL SURVEY SH 74 STA. 816+55 TO STA. 820+81 LT.	426	L.F.	\$ 100.00	\$ 42,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 816+57 X-ING	105	L.F.	\$ 100.00	\$ 10,500.00	0%	\$ -
		CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 812+60 TO STA. 815+89 RT.	329	L.F.	\$ 100.00	\$ 32,900.00	100%	\$ 32,900.00
	CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,043	L.F.	\$ 100.00	\$ 104,300.00	0%	\$ -	
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 795+00 LT.	882	L.F.	\$ 300.00	\$ 264,600.00	100%	\$ 264,600.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+56 RT.	403	L.F.	\$ 300.00	\$ 120,900.00	0%	\$ -
		CL SURVEY SH 74 STA. 804+75 TO STA. 816+00 RT.	1,125	L.F.	\$ 300.00	\$ 337,500.00	100%	\$ 337,500.00
		CL SURVEY I-35 STA. 863+40 TO STA. 865+52 RT.	248	L.F.	\$ 300.00	\$ 74,400.00	100%	\$ 74,400.00
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 776+89 TO STA. 824+50 LT.	17	POLES	\$ 3,000.00	\$ 51,000.00	60%	\$ 30,600.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
		CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	3	POLES	\$ 3,000.00	\$ 9,000.00	100%	\$ 9,000.00
		CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY I-35 STA. 864+00 TO STA. 870+18 RT.	7	POLES	\$ 3,000.00	\$ 21,000.00	100%	\$ 21,000.00
	CL SURVEY I-35 STA. 876+29 TO STA. 882+36 RT.	5	POLES	\$ 3,000.00	\$ 15,000.00	100%	\$ 15,000.00	
	POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%
CL SURVEY SH 74 STA. 780+00 RT.			35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
CL SURVEY SH 74 STA. 782+66 RT.			33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
CL SURVEY SH 74 STA. 786+06 LT.			69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
CL SURVEY SH 74 STA. 787+43 LT.			62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 790+42 RT.	1,481	L.F.	\$ 80.00	\$ 118,480.00	100%	\$ 118,480.00
		CL SURVEY SH 74 STA. 785+00 TO STA. 795+00 LT.	1,075	L.F.	\$ 80.00	\$ 86,000.00	100%	\$ 86,000.00
		CL SURVEY SH 74 STA. 806+40 TO STA. 815+71 RT.	931	L.F.	\$ 80.00	\$ 74,480.00	100%	\$ 74,480.00
		CL SURVEY SH 74 STA. 786+23 X-ING	247	L.F.	\$ 80.00	\$ 19,760.00	100%	\$ 19,760.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 1,320,700.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.

ALTERNATIVE 5B - 53° SKEW W/ ROUNDABOUT								
FACILITY	COMPANY	LOCATION	QUANTITY	UNIT	UNIT COST	TOTAL COST	ODOT PERCENTAGE*	ODOT COST
FIBER OPTIC	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 776+89 TO STA. 784+92 LT.	855	L.F.	\$ 100.00	\$ 85,500.00	10%	\$ 8,550.00
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 X-ING	232	L.F.	\$ 100.00	\$ 23,200.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY SH 74 STA. 790+87 TO STA. 795+50 LT.	549	L.F.	\$ 100.00	\$ 54,900.00	0%	\$ -
	LEVEL 3 COMMUNICATIONS	CL SURVEY I-35 STA. 863+17 TO STA. 882+42 RT.	1,980	L.F.	\$ 100.00	\$ 198,000.00	0%	\$ -
TELEPHONE	AT&T	CL SURVEY SH 74 STA. 776+46 TO STA. 795+35 LT.	1,889	L.F.	\$ 100.00	\$ 188,900.00	0%	\$ -
	AT&T	CL SURVEY SH 74 STA. 776+50 TO STA. 782+66 RT.	616	L.F.	\$ 100.00	\$ 61,600.00	0%	\$ -
	WINDSTREAM	CL SURVEY SH 74 STA. 784+92 TO STA. 803+21 LT.	1,043	L.F.	\$ 100.00	\$ 104,300.00	0%	\$ -
GAS	OKLAHOMA NATURAL GAS	CL SURVEY SH 74 STA. 776+89 TO STA. 777+09 LT.	76	L.F.	\$ 300.00	\$ 22,800.00	70%	\$ 15,960.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 785+98 RT.	902	L.F.	\$ 300.00	\$ 270,600.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 X-ING	96	L.F.	\$ 300.00	\$ 28,800.00	0%	\$ -
		CL SURVEY SH 74 STA. 785+98 TO STA. 795+50 LT.	1,046	L.F.	\$ 300.00	\$ 313,800.00	100%	\$ 313,800.00
		CL SURVEY SH 74 STA. 786+66 TO STA. 790+56 RT.	403	L.F.	\$ 300.00	\$ 120,900.00	0%	\$ -
		CL SURVEY I-35 STA. 863+40 TO STA. 865+52 RT.	248	L.F.	\$ 300.00	\$ 74,400.00	100%	\$ 74,400.00
OVERHEAD ELECTRIC	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 776+89 TO STA. 795+35 LT.	13	POLES	\$ 3,000.00	\$ 39,000.00	80%	\$ 31,200.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 782+66 RT.	4	POLES	\$ 3,000.00	\$ 12,000.00	100%	\$ 12,000.00
		CL SURVEY SH 74 STA. 789+75 TO STA. 790+10 RT.	3	POLES	\$ 3,000.00	\$ 9,000.00	100%	\$ 9,000.00
		CL SURVEY I-35 STA. 819+85 TO STA. 838+00 LT.	16	POLES	\$ 3,000.00	\$ 48,000.00	100%	\$ 48,000.00
	OKLAHOMA ELECTRIC COOPERATIVE	CL SURVEY I-35 STA. 864+00 TO STA. 870+18 RT.	7	POLES	\$ 3,000.00	\$ 21,000.00	100%	\$ 21,000.00
		CL SURVEY I-35 STA. 876+29 TO STA. 882+36 RT.	5	POLES	\$ 3,000.00	\$ 15,000.00	100%	\$ 15,000.00
POWER UNDERGROUND	OKLAHOMA GAS & ELECTRIC	CL SURVEY SH 74 STA. 777+96 LT.	56	L.F.	\$ 100.00	\$ 5,600.00	100%	\$ 5,600.00
		CL SURVEY SH 74 STA. 780+00 RT.	35	L.F.	\$ 100.00	\$ 3,500.00	100%	\$ 3,500.00
		CL SURVEY SH 74 STA. 782+66 RT.	33	L.F.	\$ 100.00	\$ 3,300.00	100%	\$ 3,300.00
		CL SURVEY SH 74 STA. 786+06 LT.	69	L.F.	\$ 100.00	\$ 6,900.00	100%	\$ 6,900.00
		CL SURVEY SH 74 STA. 787+43 LT.	62	L.F.	\$ 100.00	\$ 6,200.00	100%	\$ 6,200.00
WATERLINE	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 776+89 X-ING	168	L.F.	\$ 80.00	\$ 13,440.00	100%	\$ 13,440.00
		CL SURVEY SH 74 STA. 776+89 TO STA. 790+42 RT.	1,481	L.F.	\$ 80.00	\$ 118,480.00	100%	\$ 118,480.00
		CL SURVEY SH 74 STA. 785+00 TO STA. 795+00 LT.	1,225	L.F.	\$ 80.00	\$ 98,000.00	100%	\$ 98,000.00
		CL SURVEY SH 74 STA. 786+23 X-ING	247	L.F.	\$ 80.00	\$ 19,760.00	100%	\$ 19,760.00
SERVICE PROVIDER COST TASK 4								\$ 15,764.00
TOTAL UTILITY COST (ROUNDED)								\$ 839,900.00

*COST OF RELOCATION IS FUNDED BY ODOT IF ORIGINALLY LOCATED WITHIN PRIVATE RIGHT-OF-WAY.



APPENDIX P RIGHT-OF-WAY COSTS

**PRELIMINARY RIGHT-OF-WAY COSTS
SH 74 AT I-35 BRIDGE REPLACEMENT / INTERCHANGE**

RIGHT-OF-WAY	ALT 1	ALT 2A	ALT 2B (ROUNDBOUT)	ALT 3A	ALT 3B (ROUNDBOUT)	ALT 4A	ALT 4B (ROUNDBOUT)	ALT 5A	ALT 5B (ROUNDBOUT)
R/W AREAS (ACRES)	5.63	5.61	5.53	9.96	7.06	10.33	7.55	8.51	5.57
R/W COSTS (LAND+IMPROVEMENTS)	\$ 595,716	\$ 595,394	\$ 593,961	\$ 626,276	\$ 620,071	\$ 797,351	\$ 683,849	\$ 601,601	\$ 594,767
ADMIN. SETTLEMENT / CONDEMNATION COSTS (30% R/W Costs)	\$ 178,715	\$ 178,618	\$ 178,188	\$ 187,883	\$ 186,021	\$ 239,205	\$ 205,155	\$ 180,480	\$ 178,430
TITLE REPORTS @ \$225 EA.	\$ 2,925	\$ 2,250	\$ 2,250	\$ 2,925	\$ 2,925	\$ 2,475	\$ 2,475	\$ 2,250	\$ 2,250
R/W PLANS @ \$2,000 EA.	\$ 26,000	\$ 20,000	\$ 20,000	\$ 26,000	\$ 26,000	\$ 22,000	\$ 22,000	\$ 20,000	\$ 20,000
APPRAISALS & REVIEW @ \$5,500 EA.	\$ 71,500	\$ 55,000	\$ 55,000	\$ 71,500	\$ 71,500	\$ 60,500	\$ 60,500	\$ 55,000	\$ 55,000
ACQUISITION @ \$2,000 EA.	\$ 26,000	\$ 20,000	\$ 20,000	\$ 26,000	\$ 26,000	\$ 22,000	\$ 22,000	\$ 20,000	\$ 20,000
STAKING	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000
SUBTOTALS	\$ 905,855	\$ 876,263	\$ 874,399	\$ 945,584	\$ 937,517	\$ 1,148,531	\$ 1,000,979	\$ 884,331	\$ 875,447
Administrative & Contingency Costs (20% Subtotal)	\$ 181,171	\$ 175,253	\$ 174,880	\$ 189,117	\$ 187,503	\$ 229,706	\$ 200,196	\$ 176,866	\$ 175,089
TOTAL RIGHT-OF-WAY COSTS	\$ 1,087,100	\$ 1,051,600	\$ 1,049,300	\$ 1,134,800	\$ 1,125,100	\$ 1,378,300	\$ 1,201,200	\$ 1,061,200	\$ 1,050,600

ALTERNATIVE 1 - 0° SKEW

SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,959.88	\$ -
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,791.77	\$ -
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,062.14	\$ -
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+12 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -
		CL SURVEY SH 74 STA. 790+00 TO STA. 791+02 LT.	0.02	\$ 17,000.00	\$ 267.62	\$ -
	SABARMATI, INC.	CL SURVEY SH 74 STA. 791+02 TO STA. 792+89 LT.	0.17	\$ 17,000.00	\$ 2,879.16	\$ 500,000.00
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.08	\$ 17,000.00	\$ 1,357.00	\$ -
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+04 LT.	0.14	\$ 17,000.00	\$ 2,431.20	\$ -
		CL SURVEY SH 74 STA. 795+04 TO STA. 797+07 LT.	0.21	\$ 17,000.00	\$ 3,566.49	\$ -
	JAMES DEAN HOLDINGS, LLC	CL SURVEY SH 74 STA. 797+07 TO STA. 801+14 LT.	0.42	\$ 17,000.00	\$ 7,134.43	\$ -
	MITCHELL E. NEWTON	CL SURVEY SH 74 STA. 801+14 TO STA. 803+19 LT.	0.10	\$ 17,000.00	\$ 1,674.89	\$ -
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -
	OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -
CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.		0.51	\$ 17,000.00	\$ 8,686.39	\$ -	
GOLDSBY PROPERTY, LLC	CL SURVEY I-35 STA. 846+25 TO STA. 849+05 RT.	0.05	\$ 17,000.00	\$ 883.15	\$ -	
SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
	MARCUM NURSERY, INC.	CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
		CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY SH 74 STA. 785+31 TO STA. 790+41 RT.	0.34	\$ 17,000.00	\$ 5,851.60	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY I-35 STA. 864+16 TO STA. 872+02 RT.	0.58	\$ 17,000.00	\$ 9,874.83	\$ -
		CL SURVEY I-35 STA. 872+02 TO STA. 878+00 RT.	0.27	\$ 17,000.00	\$ 4,524.37	\$ -
TOTAL LAND VALUE AND IMPROVEMENT COST			5.63		\$ 95,715.66	\$ 500,000.00

ALTERNATIVE 2A - 20° SKEW W/O ROUNDABOUT						
SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,979.39	\$ -
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,798.02	\$ -
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,058.63	\$ -
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+27 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -
		CL SURVEY SH 74 STA. 790+00 TO STA. 791+02 LT.	0.02	\$ 17,000.00	\$ 269.03	\$ -
	SABARMATI, INC.	CL SURVEY SH 74 STA. 791+02 TO STA. 792+89 LT.	0.16	\$ 17,000.00	\$ 2,653.32	\$ 500,000.00
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.07	\$ 17,000.00	\$ 1,138.97	\$ -
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+00 LT.	0.04	\$ 17,000.00	\$ 675.48	\$ -
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -
OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -	
	CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.	0.51	\$ 17,000.00	\$ 8,686.39	\$ -	
SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
	MARCUM NURSERY, INC.	CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
		CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY SH 74 STA. 785+31 TO STA. 790+53 RT.	0.38	\$ 17,000.00	\$ 6,522.60	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY I-35 STA. 863+25 TO STA. 871+94 RT.	0.78	\$ 17,000.00	\$ 13,223.22	\$ -
		CL SURVEY I-35 STA. 871+94 TO STA. 882+32 RT.	0.92	\$ 17,000.00	\$ 15,618.46	\$ -
TOTAL LAND VALUE AND IMPROVEMENT COST			5.61		\$ 95,394.26	\$ 500,000.00

ALTERNATIVE 2B - 20° SKEW W/ ROUNDABOUT						
SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,979.39	\$ -
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,798.02	\$ -
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,058.63	\$ -
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+27 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -
		CL SURVEY SH 74 STA. 791+50 TO STA. 792+89 LT.	0.04	\$ 17,000.00	\$ 751.87	\$ 500,000.00
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.05	\$ 17,000.00	\$ 899.69	\$ -
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+04 LT.	0.10	\$ 17,000.00	\$ 1,620.03	\$ -
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY SH 74 STA. 795+04 TO STA. 796+50 LT.	0.05	\$ 17,000.00	\$ 826.14	\$ -
		CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -
OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -	
	CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.	0.51	\$ 17,000.00	\$ 8,686.39	\$ -	
SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
	MARCUM NURSERY, INC.	CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
		CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY SH 74 STA. 785+31 TO STA. 790+34 RT.	0.34	\$ 17,000.00	\$ 5,728.32	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY I-35 STA. 863+25 TO STA. 871+94 RT.	0.78	\$ 17,000.00	\$ 13,223.22	\$ -
CL SURVEY I-35 STA. 871+94 TO STA. 882+32 RT.		0.92	\$ 17,000.00	\$ 15,618.46	\$ -	
TOTAL LAND VALUE AND IMPROVEMENT COST			5.53		\$ 93,960.89	\$ 500,000.00

ALTERNATIVE 3A - 45° SKEW W/O ROUNDABOUT						
SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,979.39	\$ -
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,798.02	\$ -
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,058.63	\$ -
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+27 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -
		CL SURVEY SH 74 STA. 790+50 TO STA. 791+02 LT.	0.01	\$ 17,000.00	\$ 101.01	\$ -
	SABARMATI, INC.	CL SURVEY SH 74 STA. 791+02 TO STA. 792+89 LT.	0.14	\$ 17,000.00	\$ 2,365.09	\$ 500,000.00
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.07	\$ 17,000.00	\$ 1,206.22	\$ -
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+04 LT.	0.13	\$ 17,000.00	\$ 2,161.06	\$ -
		CL SURVEY SH 74 STA. 795+04 TO STA. 797+07 LT.	0.22	\$ 17,000.00	\$ 3,710.09	\$ -
	JAMES DEAN HOLDINGS, LLC	CL SURVEY SH 74 STA. 797+07 TO STA. 801+14 LT.	0.88	\$ 17,000.00	\$ 14,907.14	\$ -
	MITCHELL E. NEWTON	CL SURVEY SH 74 STA. 801+14 TO STA. 803+19 LT.	0.29	\$ 17,000.00	\$ 4,947.07	\$ -
	GOLDSBY PROPERTY, LLC	CL SURVEY SH 74 STA. 803+19 TO STA. 803+32 LT.	0.00	\$ 17,000.00	\$ 15.70	\$ -
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -
	THE FLOYD FAMILY LLC C/O CAROL BEHRENS	CL SURVEY SH 74 STA. 816+10 TO STA. 819+81 LT.	0.20	\$ 17,000.00	\$ 3,435.64	\$ -
		CL SURVEY SH 74 STA. 819+81 TO STA. 823+36 LT.	0.15	\$ 17,000.00	\$ 2,598.83	\$ -
CHASTAIN DAVID A & CONNIE	CL SURVEY SH 74 STA. 823+36 TO STA. 824+50 LT.	0.01	\$ 17,000.00	\$ 170.85	\$ -	
OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -	
	CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.	0.51	\$ 17,000.00	\$ 8,686.39	\$ -	
SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
	MARCUM NURSERY, INC.	CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
		CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY SH 74 STA. 785+31 TO STA. 790+53 RT.	0.38	\$ 17,000.00	\$ 6,522.60	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY I-35 STA. 863+25 TO STA. 871+94 RT.	0.78	\$ 17,000.00	\$ 13,223.22	\$ -
		CL SURVEY I-35 STA. 871+94 TO STA. 882+32 RT.	0.92	\$ 17,000.00	\$ 15,618.46	\$ -
	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 804+77 TO STA. 816+00 RT.	2.53	\$ 45,000.00	\$ 113,850.00	\$ -
TOTAL LAND VALUE AND IMPROVEMENT COST			9.96		\$ 126,276.15	\$ 500,000.00

ALTERNATIVE 3B - 45° SKEW W/ ROUNDABOUT						
SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,979.39	\$ -
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,798.02	\$ -
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,058.63	\$ -
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+27 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -
		CL SURVEY SH 74 STA. 790+50 TO STA. 791+02 LT.	0.01	\$ 17,000.00	\$ 101.01	\$ -
	SABARMATI, INC.	CL SURVEY SH 74 STA. 791+02 TO STA. 792+89 LT.	0.14	\$ 17,000.00	\$ 2,365.09	\$ 500,000.00
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.07	\$ 17,000.00	\$ 1,206.22	\$ -
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+04 LT.	0.13	\$ 17,000.00	\$ 2,161.06	\$ -
		CL SURVEY SH 74 STA. 795+04 TO STA. 797+07 LT.	0.22	\$ 17,000.00	\$ 3,710.09	\$ -
	JAMES DEAN HOLDINGS, LLC	CL SURVEY SH 74 STA. 797+07 TO STA. 801+14 LT.	0.88	\$ 17,000.00	\$ 14,907.14	\$ -
	MITCHELL E. NEWTON	CL SURVEY SH 74 STA. 801+14 TO STA. 803+19 LT.	0.29	\$ 17,000.00	\$ 4,947.07	\$ -
	GOLDSBY PROPERTY, LLC	CL SURVEY SH 74 STA. 803+19 TO STA. 803+32 LT.	0.00	\$ 17,000.00	\$ 15.70	\$ -
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -
	OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -
		CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.	0.51	\$ 17,000.00	\$ 8,686.39	\$ -
SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
	MARCUM NURSERY, INC.	CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
		CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY SH 74 STA. 785+31 TO STA. 790+53 RT.	0.38	\$ 17,000.00	\$ 6,522.60	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY I-35 STA. 863+25 TO STA. 871+94 RT.	0.78	\$ 17,000.00	\$ 13,223.22	\$ -
		CL SURVEY I-35 STA. 871+94 TO STA. 882+32 RT.	0.92	\$ 17,000.00	\$ 15,618.46	\$ -
	TOTAL LAND VALUE AND IMPROVEMENT COST			7.06		\$ 120,070.82

ALTERNATIVE 4A - 40° SKEW W/O ROUNDABOUT						
SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,979.39	\$ -
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,798.02	\$ -
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,058.63	\$ -
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+27 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -
		CL SURVEY SH 74 STA. 790+00 TO STA. 791+02 LT.	0.02	\$ 17,000.00	\$ 269.71	\$ -
	SABARMATI, INC.	CL SURVEY SH 74 STA. 791+02 TO STA. 792+89 LT.	0.16	\$ 17,000.00	\$ 2,653.73	\$ 500,000.00
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.07	\$ 17,000.00	\$ 1,138.97	\$ -
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+00 LT.	0.04	\$ 17,000.00	\$ 675.48	\$ -
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -
	THE FLOYD FAMILY LLC C/O CAROL BEHRENS	CL SURVEY SH 74 STA. 816+10 TO STA. 819+81 LT.	0.20	\$ 17,000.00	\$ 3,435.64	\$ -
		CL SURVEY SH 74 STA. 819+81 TO STA. 823+36 LT.	0.15	\$ 17,000.00	\$ 2,598.83	\$ -
	CHASTAIN DAVID A & CONNIE	CL SURVEY SH 74 STA. 823+36 TO STA. 824+50 LT.	0.01	\$ 17,000.00	\$ 170.85	\$ -
	OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -
CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.		0.51	\$ 17,000.00	\$ 8,686.39	\$ -	
SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
		CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
	MARCUM NURSERY, INC.	CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -
		CL SURVEY SH 74 STA. 785+31 TO STA. 790+53 RT.	0.38	\$ 17,000.00	\$ 6,522.60	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY I-35 STA. 863+25 TO STA. 871+94 RT.	0.78	\$ 17,000.00	\$ 13,223.22	\$ -
		CL SURVEY I-35 STA. 871+94 TO STA. 882+32 RT.	0.92	\$ 17,000.00	\$ 15,618.46	\$ -
	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 799+83 TO STA. 816+00 RT.	4.35	\$ 45,000.00	\$ 195,750.00	\$ -
TOTAL LAND VALUE AND IMPROVEMENT COST			10.33		\$ 297,350.68	\$ 500,000.00

ALTERNATIVE 4B - 40° SKEW W/ ROUNDABOUT							
SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST	
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -	
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,979.39	\$ -	
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,798.02	\$ -	
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,058.63	\$ -	
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+27 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -	
		CL SURVEY SH 74 STA. 791+50 TO STA. 792+89 LT.	0.05	\$ 17,000.00	\$ 877.02	\$ 500,000.00	
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.06	\$ 17,000.00	\$ 1,049.81	\$ -	
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+04 LT.	0.11	\$ 17,000.00	\$ 1,889.85	\$ -	
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY SH 74 STA. 795+04 TO STA. 796+50 LT.	0.06	\$ 17,000.00	\$ 964.01	\$ -	
		CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -	
	OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -	
		CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.	0.51	\$ 17,000.00	\$ 8,686.39	\$ -	
	SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
			CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
MARCUM NURSERY, INC.		CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -	
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -	
		CL SURVEY SH 74 STA. 785+31 TO STA. 790+41 RT.	0.34	\$ 17,000.00	\$ 5,851.60	\$ -	
ARBORETUM DEVELOPMENT, LLC		CL SURVEY I-35 STA. 863+25 TO STA. 871+94 RT.	0.78	\$ 17,000.00	\$ 13,223.22	\$ -	
		CL SURVEY I-35 STA. 871+94 TO STA. 882+32 RT.	0.92	\$ 17,000.00	\$ 15,618.46	\$ -	
TOWN OF GOLDSBY		CL SURVEY SH 74 STA. 799+83 TO STA. 812+00 RT.	1.98	\$ 45,000.00	\$ 89,082.36	\$ -	
TOTAL LAND VALUE AND IMPROVEMENT COST			7.55		\$ 183,849.50	\$ 500,000.00	

ALTERNATIVE 5A - 53° SKEW W/O ROUNDABOUT						
SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,979.39	\$ -
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,798.02	\$ -
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,058.63	\$ -
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+27 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -
		CL SURVEY SH 74 STA. 790+00 TO STA. 791+02 LT.	0.02	\$ 17,000.00	\$ 269.71	\$ -
	SABARMATI, INC.	CL SURVEY SH 74 STA. 791+02 TO STA. 792+89 LT.	0.16	\$ 17,000.00	\$ 2,653.73	\$ 500,000.00
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.07	\$ 17,000.00	\$ 1,138.97	\$ -
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+00 LT.	0.04	\$ 17,000.00	\$ 675.48	\$ -
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -
	THE FLOYD FAMILY LLC C/O CAROL BEHRENS	CL SURVEY SH 74 STA. 816+10 TO STA. 819+81 LT.	0.20	\$ 17,000.00	\$ 3,435.64	\$ -
		CL SURVEY SH 74 STA. 819+81 TO STA. 823+36 LT.	0.15	\$ 17,000.00	\$ 2,598.83	\$ -
	CHASTAIN DAVID A & CONNIE	CL SURVEY SH 74 STA. 823+36 TO STA. 824+50 LT.	0.01	\$ 17,000.00	\$ 170.85	\$ -
	OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -
CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.		0.51	\$ 17,000.00	\$ 8,686.39	\$ -	
SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
		CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
	MARCUM NURSERY, INC.	CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -
		CL SURVEY SH 74 STA. 785+31 TO STA. 790+53 RT.	0.38	\$ 17,000.00	\$ 6,522.60	\$ -
	ARBORETUM DEVELOPMENT, LLC	CL SURVEY I-35 STA. 863+25 TO STA. 871+94 RT.	0.78	\$ 17,000.00	\$ 13,223.22	\$ -
		CL SURVEY I-35 STA. 871+94 TO STA. 882+32 RT.	0.92	\$ 17,000.00	\$ 15,618.46	\$ -
	TOWN OF GOLDSBY	CL SURVEY SH 74 STA. 804+77 TO STA. 816+00 RT.	2.53	\$ 45,000.00	\$ 113,850.00	\$ -
TOTAL LAND VALUE AND IMPROVEMENT COST			8.51		\$ 101,600.68	\$ 500,000.00

ALTERNATIVE 5B - 53° SKEW W/ ROUNDABOUT							
SECTION, TOWNSHIP, RANGE	OWNER	LOCATION	ACRES	COST PER ACRE	LAND VALUE	IMPROVEMENT COST	
SEC. 23, T8N, R3W	GOLDSBY BAPTIST CHURCH	CL SURVEY SH 74 STA. 776+89 TO STA. 780+73 LT.	0.44	\$ 17,000.00	\$ 7,505.06	\$ -	
		CL SURVEY SH 74 STA. 780+73 TO STA. 784+31 LT.	0.41	\$ 17,000.00	\$ 6,979.39	\$ -	
	GOLDSBY OLD TOWN SQUARE, LLC	CL SURVEY SH 74 STA. 784+31 TO STA. 786+95 LT.	0.34	\$ 17,000.00	\$ 5,798.02	\$ -	
		CL SURVEY SH 74 STA. 786+95 TO STA. 788+66 LT.	0.18	\$ 17,000.00	\$ 3,058.63	\$ -	
		CL SURVEY SH 74 STA. 788+66 TO STA. 789+27 LT.	0.01	\$ 17,000.00	\$ 236.10	\$ -	
		CL SURVEY SH 74 STA. 791+50 TO STA. 792+89 LT.	0.05	\$ 17,000.00	\$ 877.02	\$ 500,000.00	
	BELLER CALVIN REV. TRUST	CL SURVEY SH 74 STA. 792+89 TO STA. 793+66 LT.	0.06	\$ 17,000.00	\$ 1,049.81	\$ -	
		CL SURVEY SH 74 STA. 793+66 TO STA. 795+04 LT.	0.11	\$ 17,000.00	\$ 1,889.85	\$ -	
	HOLLAND JEAN C. REVOCABLE TRUST	CL SURVEY SH 74 STA. 795+04 TO STA. 796+50 LT.	0.06	\$ 17,000.00	\$ 964.01	\$ -	
		CL SURVEY I-35 STA. 820+00 TO STA. 826+08 LT.	0.42	\$ 17,000.00	\$ 7,091.94	\$ -	
	OKLAHOMA LAND DEVELOPMENT & PROPERTY MANAGEMENT	CL SURVEY I-35 STA. 826+08 TO STA. 830+55 LT.	0.36	\$ 17,000.00	\$ 6,111.85	\$ -	
		CL SURVEY I-35 STA. 830+55 TO STA. 837+18 LT.	0.51	\$ 17,000.00	\$ 8,686.39	\$ -	
	SEC. 24, T8N, R3W	LIBBY'S CAFÉ, LLC	CL SURVEY SH 74 STA. 776+91 TO STA. 778+68 RT.	0.12	\$ 17,000.00	\$ 2,070.46	\$ -
			CL SURVEY SH 74 STA. 778+68 TO STA. 778+95 RT.	0.02	\$ 17,000.00	\$ 312.32	\$ -
MARCUM NURSERY, INC.		CL SURVEY SH 74 STA. 778+95 TO STA. 783+74 RT.	0.33	\$ 17,000.00	\$ 5,612.40	\$ -	
		CL SURVEY SH 74 STA. 783+74 TO STA. 785+31 RT.	0.11	\$ 17,000.00	\$ 1,830.62	\$ -	
		CL SURVEY SH 74 STA. 785+31 TO STA. 790+41 RT.	0.34	\$ 17,000.00	\$ 5,851.60	\$ -	
ARBORETUM DEVELOPMENT, LLC		CL SURVEY I-35 STA. 863+25 TO STA. 871+94 RT.	0.78	\$ 17,000.00	\$ 13,223.22	\$ -	
		CL SURVEY I-35 STA. 871+94 TO STA. 882+32 RT.	0.92	\$ 17,000.00	\$ 15,618.46	\$ -	
TOTAL LAND VALUE AND IMPROVEMENT COST			5.57		\$ 94,767.14	\$ 500,000.00	



APPENDIX Q

CONSTRUCTION COST OPINIONS

**PRELIMINARY COMPARATIVE COST OPINION
SH 74 AT I-35 BRIDGE REPLACEMENT / INTERCHANGE**

PROJECT COMPONENT	ALTERNATIVE 1: 0° SKEW	ALTERNATIVE 2: 20° SKEW		ALTERNATIVE 3: 45° SKEW		ALTERNATIVE 4: 40° SKEW		ALTERNATIVE 5: 53° SKEW	
		OPTION A (W/O ROUNDABOUT)	OPTION B (ROUNDABOUT)	OPTION A (SIGNALIZED)	OPTION B (W/ ROUNDABOUT)	OPTION A (SIGNALIZED)	OPTION B (W/ ROUNDABOUT)	OPTION A (SIGNALIZED)	OPTION B (W/ ROUNDABOUT)
ROADWAY CONST.	\$ 12,295,000	\$ 11,270,000	\$ 11,143,000	\$ 8,633,000	\$ 6,609,000	\$ 7,803,000	\$ 6,749,000	\$ 7,361,000	\$ 5,373,000
BRIDGE CONST.	\$ 4,800,000	\$ 5,600,000	\$ 5,600,000	\$ 4,400,000	\$ 4,400,000	\$ 4,100,000	\$ 4,100,000	\$ 5,000,000	\$ 5,000,000
TRAFFIC CONST.	\$ 770,000	\$ 770,000	\$ 770,000	\$ 1,120,000	\$ 770,000	\$ 1,120,000	\$ 770,000	\$ 1,120,000	\$ 770,000
MISC. CONST.	\$ 587,800	\$ 546,800	\$ 541,700	\$ 435,200	\$ 360,400	\$ 408,100	\$ 366,000	\$ 390,500	\$ 311,000
20% CONTINGENCY	\$ 3,690,560	\$ 3,637,360	\$ 3,610,940	\$ 2,917,640	\$ 2,427,880	\$ 2,686,220	\$ 2,397,000	\$ 2,774,300	\$ 2,290,800
CONST. TOTALS	\$ 22,143,360	\$ 21,824,160	\$ 21,665,640	\$ 17,505,840	\$ 14,567,280	\$ 16,117,320	\$ 14,382,000	\$ 16,645,800	\$ 13,744,800
RIGHT-OF-WAY	\$ 1,087,100	\$ 1,051,600	\$ 1,049,300	\$ 1,134,800	\$ 1,125,100	\$ 1,378,300	\$ 1,201,200	\$ 1,061,200	\$ 1,050,600
UTILITY RELOCATIONS	\$ 1,075,800	\$ 852,900	\$ 789,500	\$ 1,599,800	\$ 1,059,700	\$ 1,613,700	\$ 1,439,400	\$ 1,336,500	\$ 855,700
TOTAL COST	\$ 24,306,260	\$ 23,728,660	\$ 23,504,440	\$ 20,240,440	\$ 16,752,080	\$ 19,109,320	\$ 17,022,600	\$ 19,043,500	\$ 15,651,100

*BRIDGE CONSTION ACCOUNTS FOR P.C. BEAM BRIDGE, CONSULT APPENDIX F FOR STEEL I BEAM OR STEEL PLATE GIRDER OPTIONS.



APPENDIX R

PUBLIC INVOLVEMENT SUMMRY



PUBLIC INVOLVEMENT SUMMARY

**SH-74 Bridge over I-35
Replacement/Interchange
McClain County, Oklahoma
JP 29571(04)**

Prepared for:



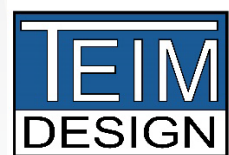
**OKLAHOMA
Transportation**

**Oklahoma Department of Transportation
200 N.E. 21st Street
Oklahoma City, OK 73105**

Prepared by:

**TEIM Design
3020 Northwest 149th Street
Oklahoma City, OK 73134
405-752-1122**

March 2023



PUBLIC INVOLVEMENT SUMMARY

**SH-74 Bridge over I-35
Replacement/Interchange
McClain County, Oklahoma
JP 29571(04)**

Prepared for:



**Oklahoma Department of Transportation
200 N.E. 21st Street
Oklahoma City, OK 73105**

Prepared by:

**TEIM Design
3020 Northwest 149th Street
Oklahoma City, OK 73134
405-752-1122**

March 2023

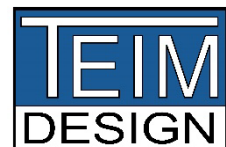


TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	ES 1
1 PROJECT INTRODUCTION	1
2 AGENCY SOLICITATION	1
3 VIRTUAL PUBLIC OPEN HOUSE.....	1
3.1 OPEN HOUSE NOTIFICATIONS.....	1
3.2 VIRTUAL PUBLIC OPEN HOUSE	1
3.3 SUMMARY OF OPEN HOUSE COMMENTS	2
3.3.1 AGENCY COMMENTS	2
3.3.2 OPEN HOUSE COMMENTS	2
3.3.3 METROQUEST SURVEY RESULTS	5
3.4 COMMENT RESPONSES	9
4 DESIGN ALTERNATIVE DETERMINATION AND ADDITIONAL ANALYSIS	10

LIST OF TABLES

TABLE ES.1: PUBLIC COMMENT SUMMARY BY CATEGORY

TABLE 3.3.1: AGENCY COMMENT SUMMARY

TABLE 3.3.2: PUBLIC COMMENT SUMMARY

TABLE 3.3.3: PUBLIC COMMENT SUMMARY BY CATEGORY

LIST OF FIGURES

FIGURE ES.1: SH-74 BRIDGE SKEW OVER I-35

FIGURE ES.2: SH-74/I-35 SOUTHBOUND RAMPS/WEST FRONTAGE RD. INTERSECTION(S)

FIGURE ES.3: DESIGN OF SINGLE INTERSECTION OF SH-74/I-35 SOUTHBOUND
RAMPS/WEST FRONTAGE ROAD

FIGURE ES.4: INTERSECTION OF SH-74/I-35 NORTHBOUND RAMPS/AIRPORT ROAD

FIGURE ES.5: AIRPORT ROAD

FIGURE ES.6: I-35 SLIP RAMP RELOCATION OPTIONS

FIGURE ES.7: RATE THE ALTERNATIVES

FIGURE 3.1: SH-74 BRIDGE SKEW OVER I-35

FIGURE 3.2: SH-74/I-35 SOUTHBOUND RAMPS/WEST FRONTAGE RD. INTERSECTION(S)

FIGURE 3.3: DESIGN OF SINGLE INTERSECTION OF SH-74/I-35 SOUTHBOUND
RAMPS/WEST FRONTAGE ROAD

FIGURE 3.4: INTERSECTION OF SH-74/I-35 NORTHBOUND RAMPS/AIRPORT ROAD

FIGURE 3.5: AIRPORT ROAD

FIGURE 3.6: I-35 SLIP RAMP RELOCATION OPTIONS

FIGURE 3.7: RATE THE ALTERNATIVES

LIST OF APPENDICES

APPENDIX A: VIRTUAL OPEN HOUSE NOTICE LETTERS AND MAILING LISTS

APPENDIX B: VIRTUAL OPEN HOUSE MATERIALS

APPENDIX C: VIRTUAL OPEN HOUSE COMMENTS

EXECUTIVE SUMMARY

This document summarizes the public involvement program associated with the project to replace the SH-74 bridge over I-35. A virtual open house was held to obtain public input on the five (5) design alternatives. These alternatives included the following:

- Alternative 1 – 0° Bridge Skew
- Alternative 2A & 2B – 20° Bridge Skew, signalized south intersection or roundabout south intersection, respectively
- Alternative 3A & 3B – 45° Bridge Skew, signalized intersections or roundabout intersections, respectively
- Alternative 4A & 4B – 40° Bridge Skew, signalized intersections or roundabout intersections, respectively
- Alternative 5A & 5B – 53° Bridge Skew, signalized intersections or roundabout intersections, respectively

After the public meeting, comments were received from three (3) agencies, the Town of Goldsby, and twenty-five (25) members of the public. These comments were categorized into six (6) broad comment categories, as seen in **Table ES.1**, with ODOT providing responses to these comments.

TABLE ES.1: PUBLIC COMMENT SUMMARY BY CATEGORY

Comment Category #	Comment Description	# of Comments
1	Comments regarding roundabouts	25
2	Support for/opposition to specific options	9
3	Concerns about existing or future traffic congestion	7
4	Requests to minimize disturbance	7
5	Comments about Goldsby development	2
6	Concerns about existing/worsening congestion at SH-74/Center Road	2

Ninety (90) participants also provided input through the MetroQuest survey. The results of this survey indicated:

- A preference for the 0° bridge skew (29% majority), as seen in **Figure ES.1**.

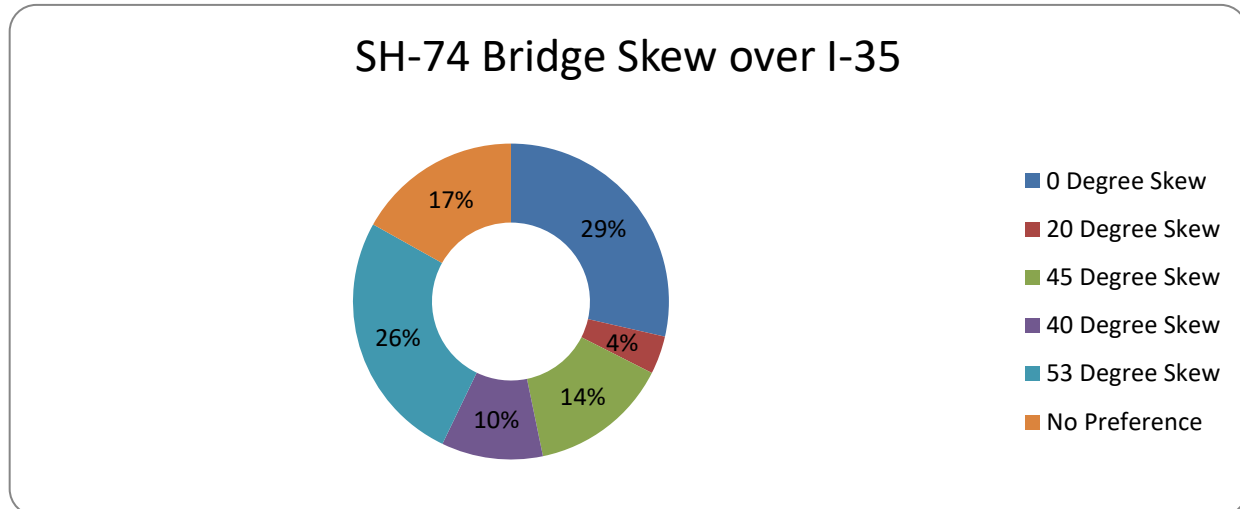


FIGURE ES.1: SH-74 BRIDGE SKEW OVER I-35

- A preference for a single intersection south of the bridge (53% majority), as seen in **Figure ES.2**.

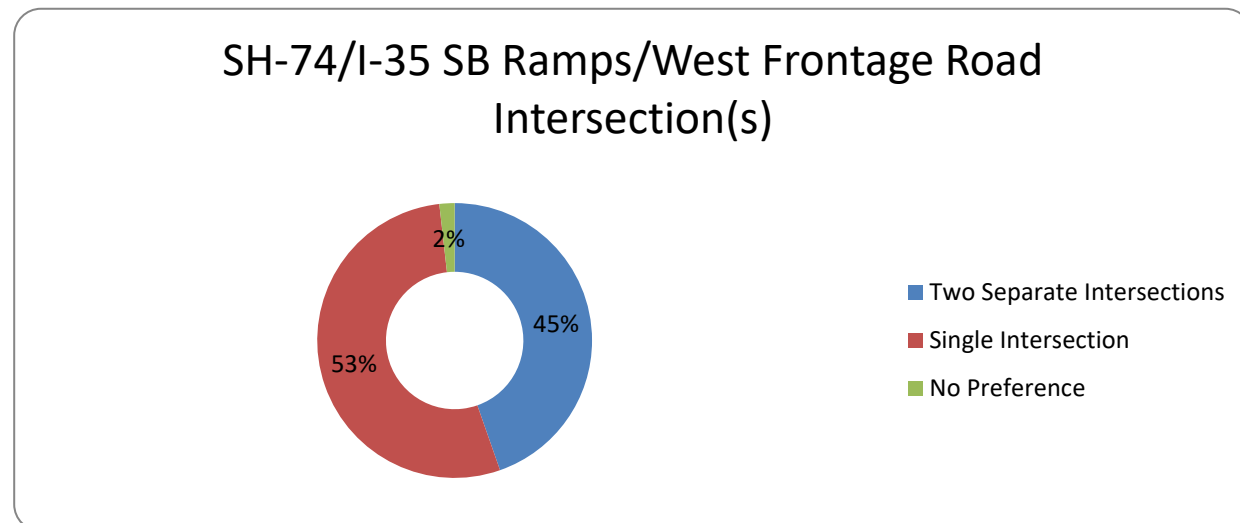


FIGURE ES.2: SH-74/I-35 SOUTHBOUND RAMPS/WEST FRONTAGE RD. INTERSECTION(S)

- A preference for a signalized intersection south of the bridge (56% majority), as seen in Figure ES.3.

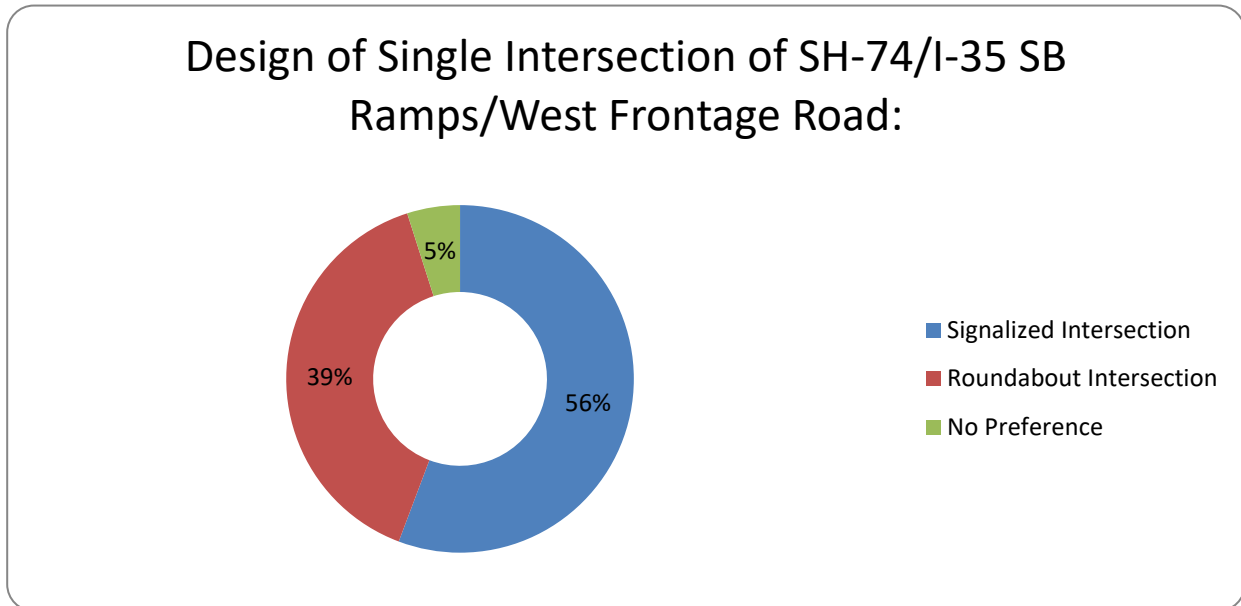


FIGURE ES.3: DESIGN OF SINGLE INTERSECTION OF SH-74/I-35 SOUTHBOUND RAMPS/WEST FRONTAGE ROAD

- A preference for a signalized intersection north of the bridge (48% majority), as seen in Figure ES.4.

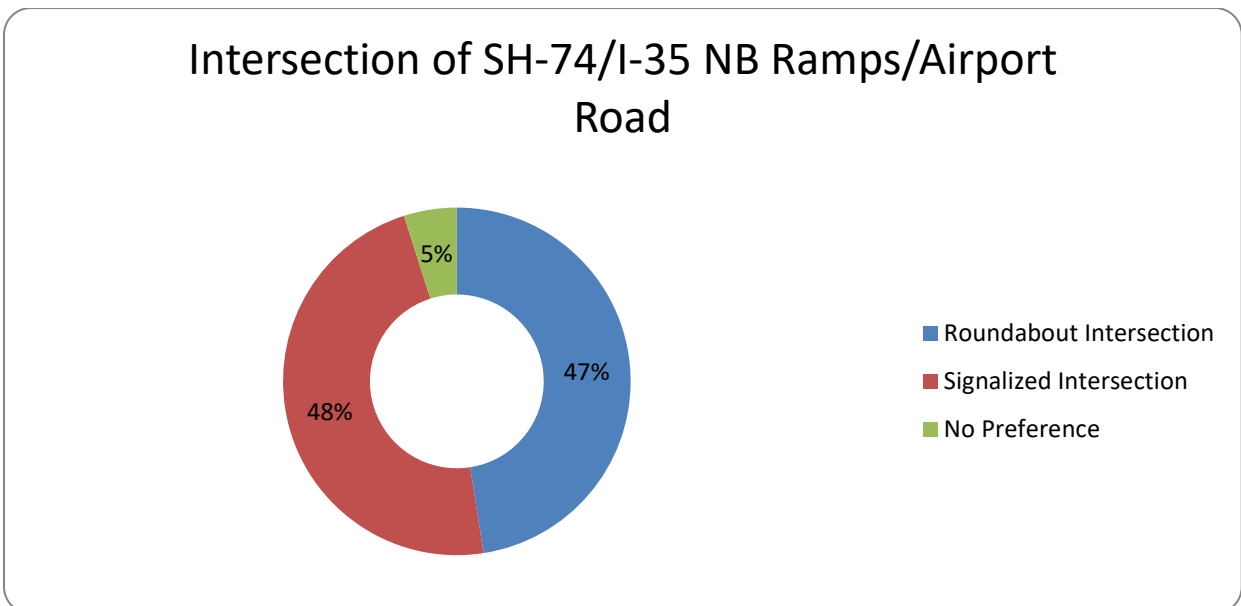


FIGURE ES.4: INTERSECTION OF SH-74/I-35 NORTHBOUND RAMPS/AIRPORT ROAD

- A preference for Airport Road to remain at its existing alignment (47% majority), as seen in **Figure ES.5**.

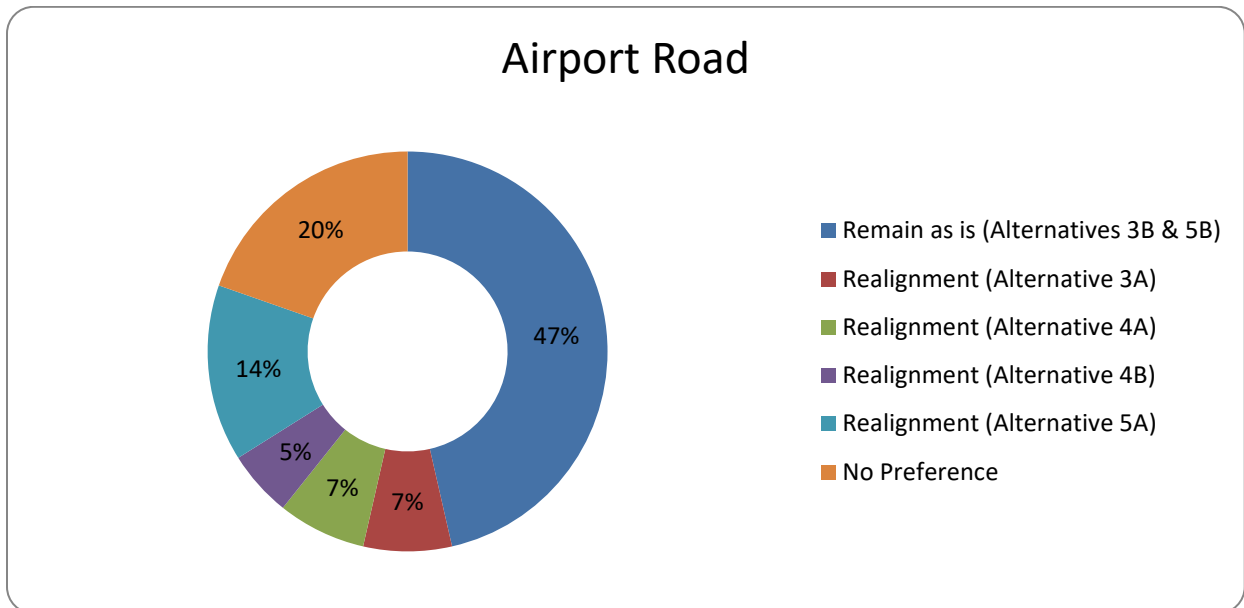


FIGURE ES.5: AIRPORT ROAD

- A preference for the I-35 southbound slip ramp to be tapered (76% majority), as seen in **Figure ES.6**.

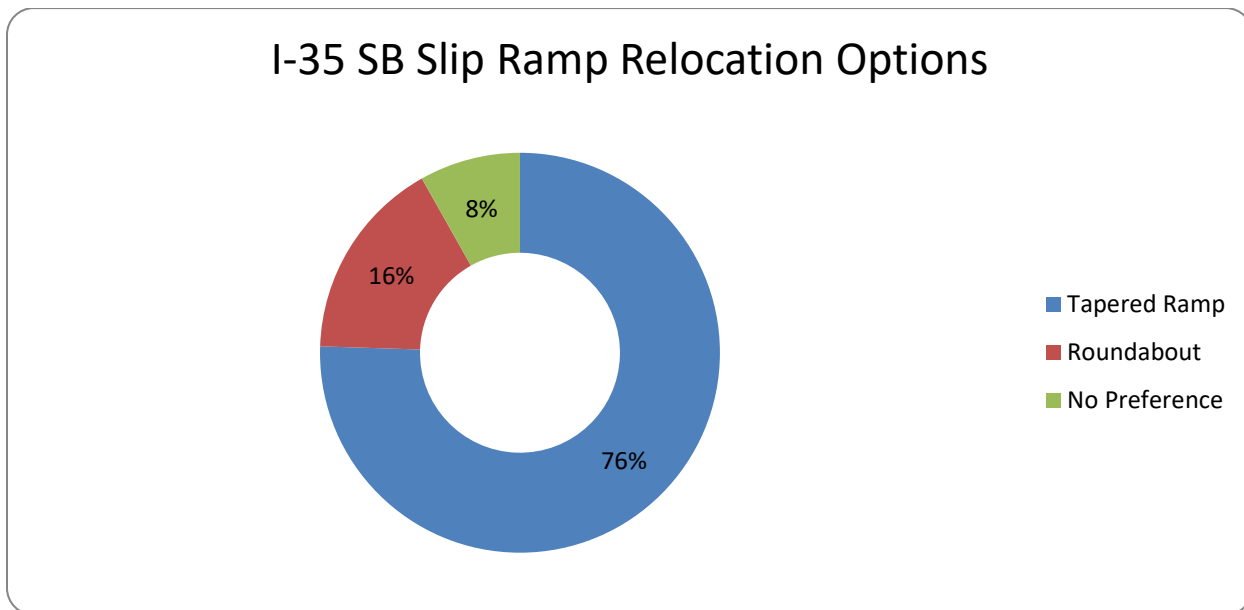


FIGURE ES.6: I-35 SLIP RAMP RELOCATION OPTIONS

- A preference for Alternative 5 (rating of 4.05 out of 5 stars), as seen in **Figure ES.7**.

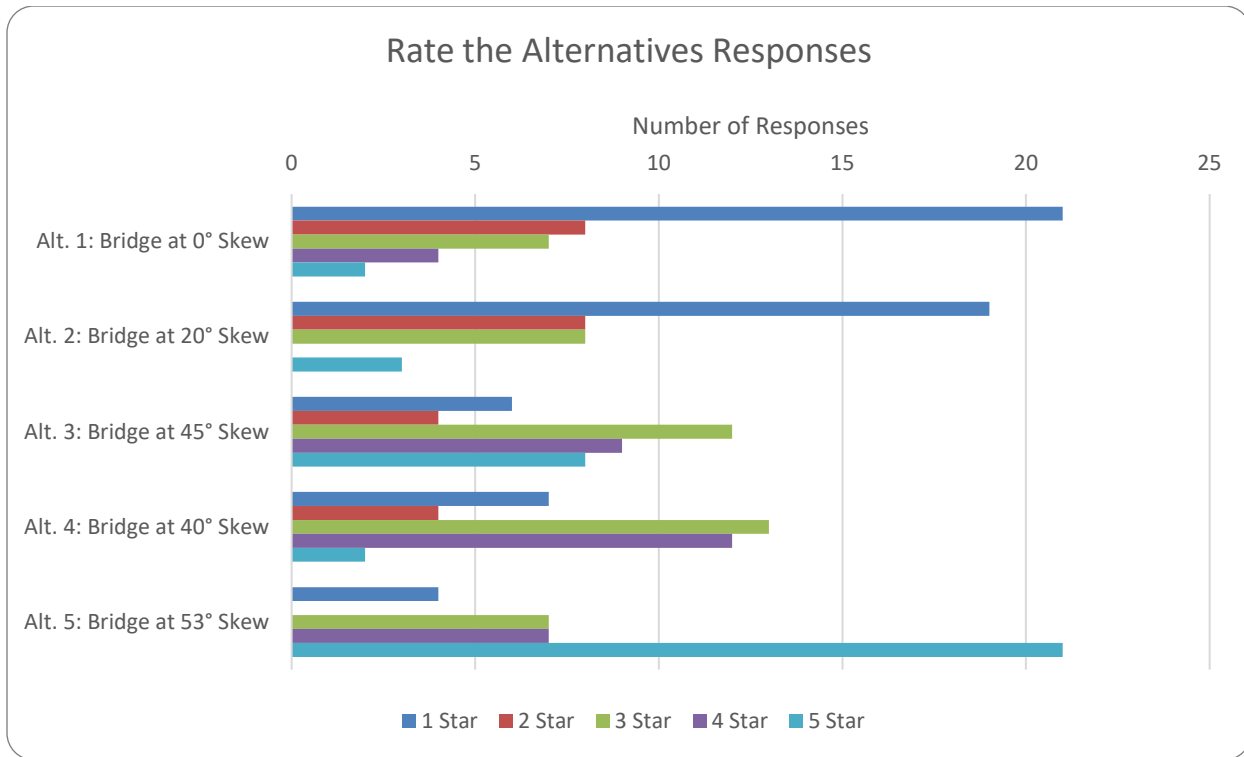


FIGURE ES.7: RATE THE ALTERNATIVES

Responses to Comments

Comment Category #1

Comments regarding roundabouts.

ODOT Response: Thank you for your comment. ODOT values your participation in this process and your comment has been included in the project record. Please refer to **Figures ES.3** and **ES.4** above to see the results of the public participation survey.

Comment Category #2

Support for/opposition to specific options.

ODOT Response: Thank you for your comment. ODOT values your participation in this process and your comment has been included in the project record. Please refer to **Figures ES.1, ES.2, ES.5, and ES.6** above to see the results of the public participation survey.

Comment Category #3

Concerns about existing or future traffic congestion.

ODOT Response: ODOT has performed traffic studies in the project area and all the Alternatives presented in this Virtual Open House are anticipated to improve the existing traffic and accommodate the projected traffic in the project area. Additionally, all the alternatives that include a signal or a roundabout predict less traffic congestion as compared to the existing condition.

Comment Category #4

Requests to minimize disturbance.

ODOT Response: The SH-74 bridge is anticipated to remain open to through traffic during construction. All traffic movements, drives, and access to businesses and residences will be maintained throughout construction; however, traffic and drive locations may change during construction.

ODOT has considered the environmental impacts as described in the Virtual Open House, including the potential impacts to the airport and residential and commercial buildings and property. The use of retaining walls near Airport Road on some alternatives makes increasing access to the airport more difficult; however, existing accessibility to the airport will be maintained with all the Alternative options. And potential right-of-way acquisition will be the minimal necessary. ODOT will obtain an independent appraisal and present a fair market value offer for the necessary property. Owners of any affected homes or businesses will be provided with additional relocation assistance. Full environmental studies will be completed during the design phase of the project.

ODOT has also considered potential impacts. This project does not expand I-35, add another through lane of traffic, or offset the I-35 alignment, so no noise increase is expected from any of the Alternative improvements. However, when the future expansion of I-35 to a 6-lane facility is being designed, a noise study will be conducted, and the feasibility and reasonableness of noise abatement will be determined.

Elected and non-elected Town of Goldsby officials have communicated with ODOT their development goals and have had input on what would be ideal for the Town of Goldsby's economic status.

Comment Category #5

Comments about Goldsby development.

ODOT Response: During the public involvement period, ODOT was available to meet with the Town of Goldsby and provide the additional information requested. Elected and non-elected Town of Goldsby officials have communicated with ODOT their development goals and have had input on what would be ideal for the Town of Goldsby's economic status.

Comment Category #6

Concerns about existing/worsening congestion at SH-74/Center Road.

ODOT Response: The SH-74 and Center Rd. intersection will be addressed in the design phase of this project based on projected Average Annual Daily Traffic (AADT) and turning movements.

ODOT reviewed the operations, impacts, comments from the public, and the overall bridge & interchange analysis. The decision was made to move forward with Alternative 5 – 53° bridge skew. The final decision regarding whether the two intersection locations (north and south of the SH-74 bridge over I-35) should be signalized or roundabout configurations is still under consideration. From the alternatives matrix overall, Alternative 5 (both A and B options) has the best combination of geometric design improvements, intersection capacity, and least environmental impacts. It also has comparable utility relocation impacts, right-of-way acquisition impacts, and overall costs to the other alternatives. The bridge skew of 53° and minimal impact to Airport Road has strong support from the public and from the Town of Goldsby, supporting the features in Alternative 5.

ODOT has decided to replace the southbound slip ramp and considered several factors regarding slip ramp configuration and location. The roundabout option provides safer travel when associated with regards to the two-way frontage road. The tapered option requires less right-of-way and better meets current driver expectation. Additionally, the tapered option was preferred by public comment. The decision was made to move forward with the tapered option.

These determinations will be carried forward into the final design phase as a revised alternative. During the design phase, further traffic studies will be conducted, specific impacts will be evaluated, and another public involvement event will be held to obtain further input on this revised alternative.

1 PROJECT INTRODUCTION

This summary documents the virtual public involvement program implemented for the proposed SH-74 bridge over I-35 replacement/interchange improvement project in McClain County, JP 29571(04). The public involvement program consisted of a 2022 virtual open house to present the five (5) design alternatives and solicit public input.

2 AGENCY SOLICITATION

Agency solicitation letters were sent October 11, 2022 to federal and state resource agencies. These letters provided notification of the virtual open house and a project location map and requested input on the design options and features. Copies of the letter and mailing list are included in **Appendix A**.

3 VIRTUAL PUBLIC OPEN HOUSE

3.1 OPEN HOUSE NOTIFICATIONS

The public open house was held in a virtual format, using the publicinput.com platform. The purpose of the virtual open house was to present five (5) design alternatives and two (2) slip ramp relocation options under consideration and to obtain public input on the designs. Letter notifications of the virtual open house were sent October 11, 2022 to Federal and state elected officials (with a location map, pamphlet explaining the purpose and need for the project, and a comment form with a postage-paid ODOT return envelope).

Letter notification was also sent to landowners and utilities in the study area (with a location map and a comment form with a postage-paid ODOT return envelope).

Lastly, to notify as many of the surrounding public as possible, 1,638 postcard notifications of the virtual open house were mailed to the mailing routes in the project area through Every Door Direct Mail service.

Copies of these notices and mailing lists are included in **Appendix A**.

3.2 VIRTUAL PUBLIC OPEN HOUSE

The virtual open house website was made available for the public's review and input for three weeks (October 10 – 31, 2022), and comments were requested by October 31, 2022. In addition to the virtual open house website, an online survey was created and made available for the public to provide input on specific design features of the alternatives utilizing the MetroQuest platform. The virtual open house website was viewed 1,642 times with five (5) website commentators and the MetroQuest survey was viewed 200 times with 90 of those visitors providing input. The virtual open house included:

- project information in text format
- explanatory videos for each of the five (5) design alternatives (4 of which had "A" and "B" options), and the two (2) slip ramp relocation designs
- a MetroQuest survey asking for input from the public on specific design features of the project
- summary of environmental constraints and impacts on each alternative
- an alternatives comparison matrix

- a list of frequently-asked questions
- right-of-way information including copies of ODOT’s property rights and relocation brochures

After the public comment period ended, the website was closed to the public and all materials moved to the ODOT website. A summary of the virtual open house website materials are included in **Appendix B**.

3.3 SUMMARY OF OPEN HOUSE COMMENTS

3.3.1 AGENCY COMMENTS

Three (3) written agency comments were received and are summarized in **Table 3.3.1**. Copies of the agency responses are included in **Appendix C**.

TABLE 3.3.1: AGENCY COMMENT SUMMARY

Agency	Comment
Oklahoma Department of Environmental Quality (ODEQ)	<ul style="list-style-type: none">• Noted that construction projects disturbing greater than 1 acre require storm water permitting
Oklahoma Corporation Commission (OCC)	<ul style="list-style-type: none">• Stated that the solicitation letter was forwarded to the Duncan District 3 Office• No further comment was received from the District 3 office.
Oklahoma Tourism and Recreation Department	<ul style="list-style-type: none">• Noted little impact to the LWCF park on the SE corner of E. Center Road and SH-74.• Suggests the state highway be moved west to allow Goldsby to develop a cohesive, pedestrian friendly town center.

3.3.2 OPEN HOUSE COMMENTS

Public comments were received from 26 entities during the open house public comment period, and the various comment topics were summarized in **Table 3.3.2**. Upon review of the comment topics, it was determined the comments could be grouped into six (6) broad comment categories, as summarized in **Table 3.3.3**. A detailed analysis of open house participation and copies of the public comments received are included in **Appendix C**.

TABLE 3.3.2: PUBLIC COMMENT SUMMARY

Comment #	Comment Description	# of Comments
1	Dislikes North and South Roundabouts (anywhere).	5
2	Prefers 5A	1
3	Slip ramp should be tapered.	1
4	Asked for graphics and meeting	1
5	Wants no south stop signs or signals , due to Goldsby congestion.	2
6	Asks for bridge to remain in place during construction	2
7	Notes congestion at SH-74/Center Road, concerned improvements will worsen it	2
8	Concerned about increased commercial truck/trailer traffic, as well as residential	1
9	Prefers south roundabout over signal	6
10	Keep North roundabout	6
11	Drivers struggle with north roundabout. Thinks signage could help drivers understand roundabout function	2
12	Notes congestion at Valero Station	2
13	Prefers south signal over roundabout	2
14	Dislikes SH-74/Airport Road T-intersection (Alt 1, 2A, 2B)	1
15	Dislikes two south intersections (Alt 1)	1
16	Likes the replacement bridge to be south of existing (Alt 4)	1
17	Prefers 4B or 5B , but keep north roundabout and no intersection improvement on south	1
18	Requests no impacts to the Airport and increase its accessibility	1
19	Keep the I-35 SB exit north of the bridge	1
20	Likes the 53° bridge skew, Alt 5	4
21	Requests noise walls for expansion of I-35, specifically Martingale Estates east of I-35	1
22	Supports the improvement with the least impacts to land and people	1
23	Believes design should be based on a future 8-lanes on I-35	1
24	Change existing north roundabout to signal.	2
25	Asks for least disturbance to Airport Road traffic	1
26	Asks to retain the small town feel of Goldsby	1
27	Prefers roundabout slip ramp design	1
28	Questions if the bridge design is sufficient for the anticipated traffic increases	1
29	Notes an LWCF park on east side of SH-74, suggests shifting the highway west for Goldsby to develop a town center	1

TABLE 3.3.3: PUBLIC COMMENT SUMMARY BY CATEGORY

Comment Category	Total Comments in Category	Comment #	# of Times Comment Made
Comments regarding roundabouts	25	1	5
		3	1
		9	5
		10	6
		11	2
		13	3
		24	2
		27	1
Support for/opposition to specific options	9	2	1
		14	1
		15	1
		16	1
		17	1
		20	4
Concerns about existing or future traffic congestion	7	5	2
		8	1
		12	2
		23	1
		28	1
Requests to minimize disturbance	7	6	2
		18	1
		19	1
		21	1
		22	1
		25	1
Comments about Goldsby development	2	26	1
		29	1
Concerns about existing/worsening congestion at SH-74/Center Road	2	7	2

3.3.3 METROQUEST SURVEY RESULTS

Ninety (90) participants provided input through the MetroQuest survey. The results of this survey can be seen below in **Figures 3.1 – 3.7**. A detailed analysis of open house participation and copies of the survey results are included in **Appendix C**.

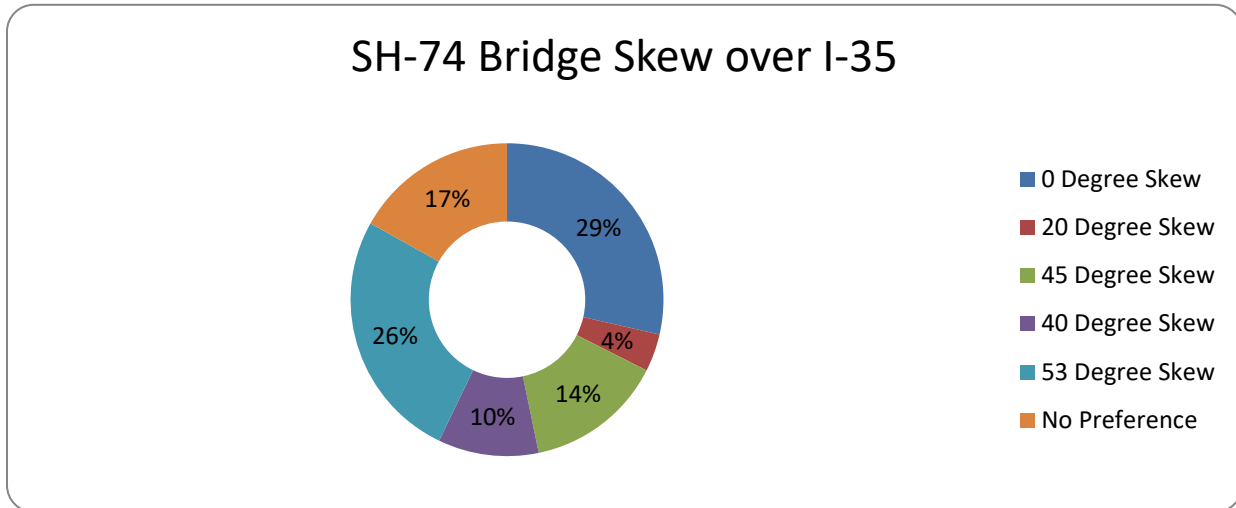


FIGURE 3.1: SH-74 BRIDGE SKEW OVER I-35

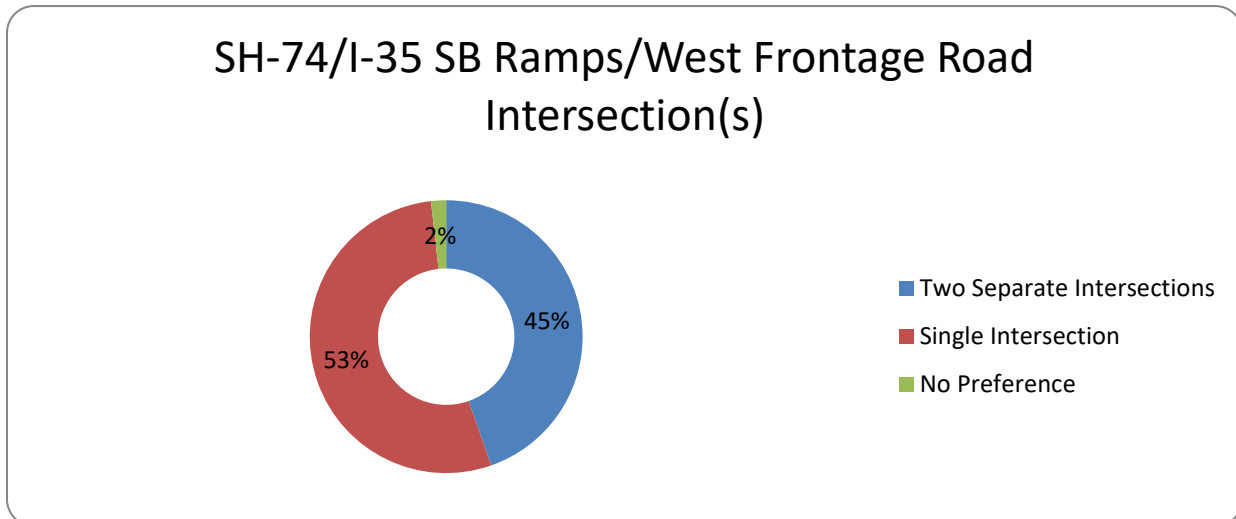


FIGURE 3.2: SH-74/I-35 SOUTHBOUND RAMPS/WEST FRONTAGE RD. INTERSECTION(S)

Design of Single Intersection of SH-74/I-35 SB Ramps/West Frontage Road:

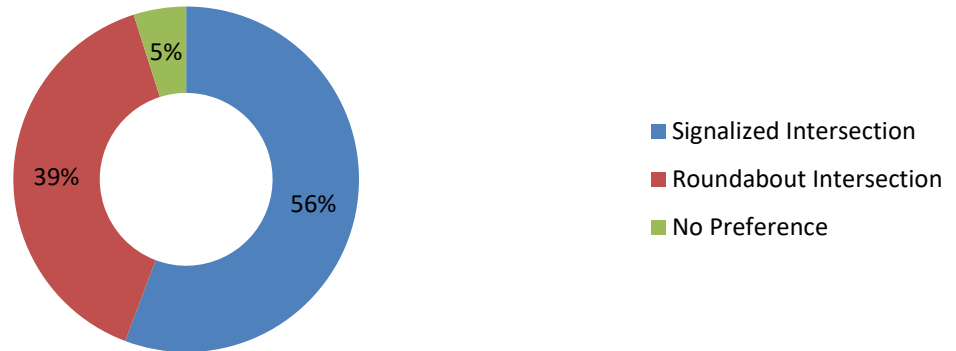


FIGURE 3.3: DESIGN OF SINGLE INTERSECTION OF SH-74/I-35 SOUTHBOUND RAMPS/WEST FRONTAGE ROAD

Intersection of SH-74/I-35 NB Ramps/Airport Road

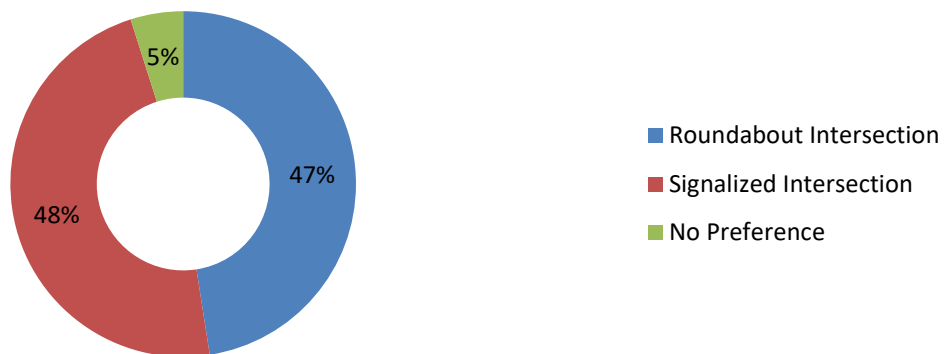


FIGURE 3.4: INTERSECTION OF SH-74/I-35 NORTHBOUND RAMPS/AIRPORT ROAD

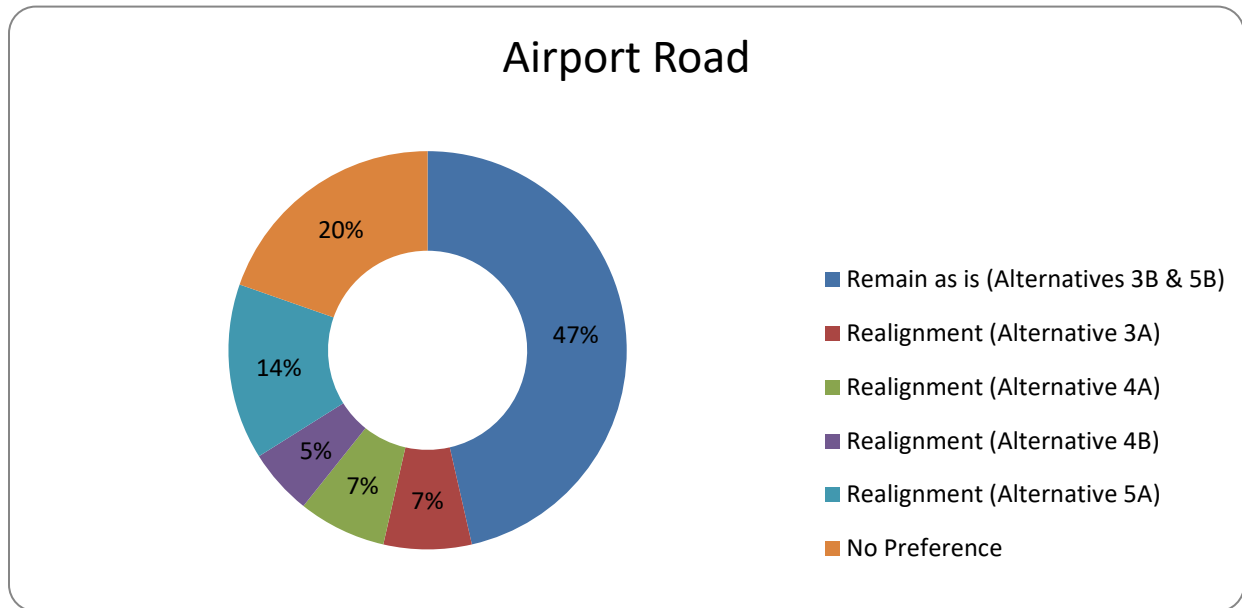


FIGURE 3.5: AIRPORT ROAD

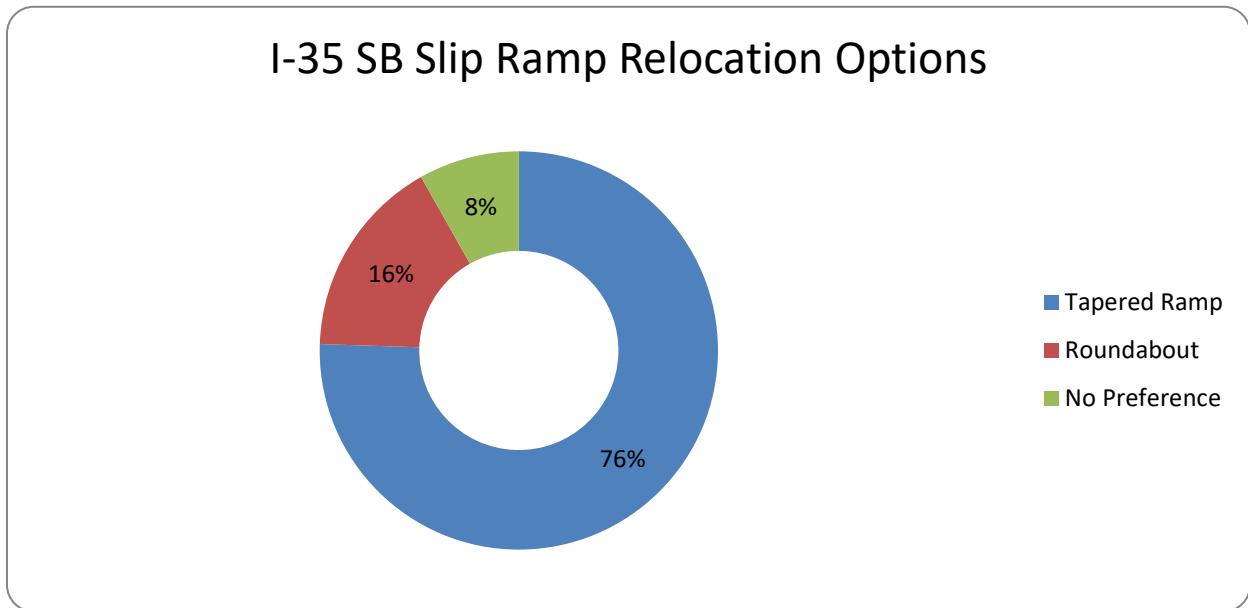


FIGURE 3.6: I-35 SLIP RAMP RELOCATION OPTIONS

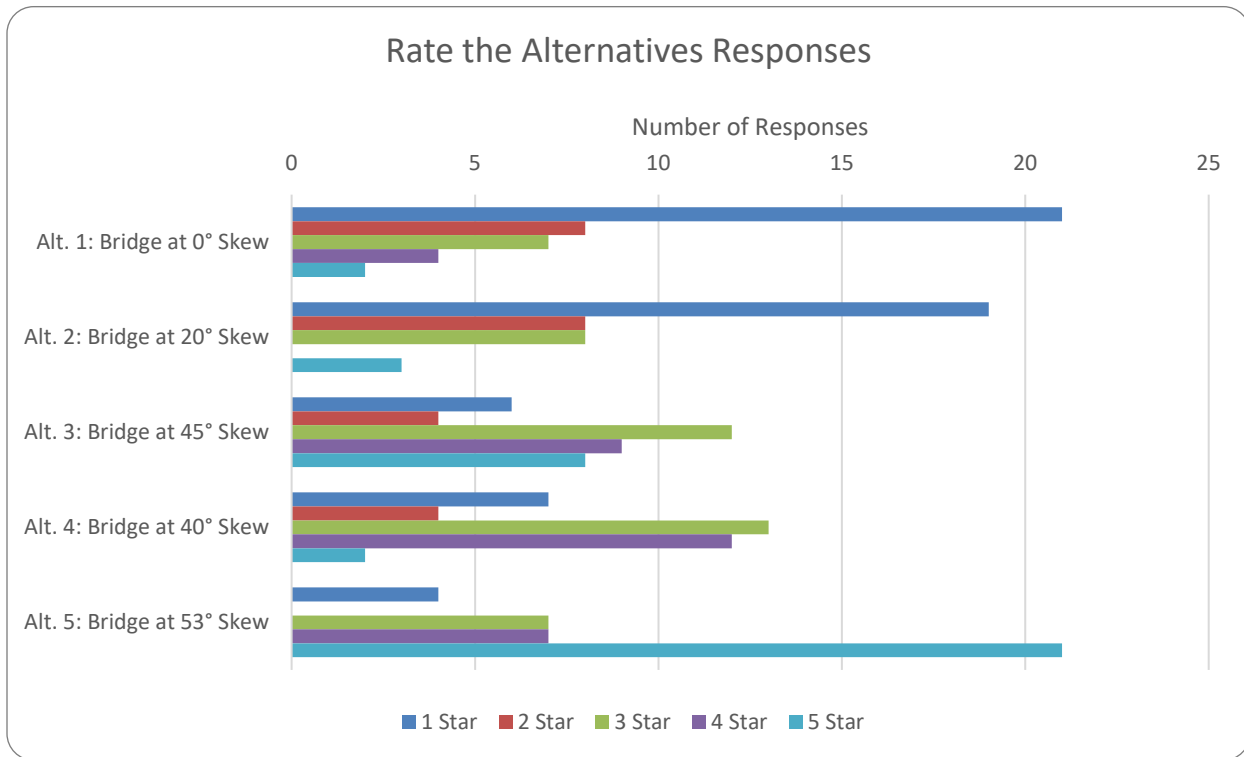


FIGURE 3.7: RATE THE ALTERNATIVES

3.4 COMMENT RESPONSES

ODOT has prepared responses to each of the six (6) comment categories, as follow:

Comment Category: Comments regarding roundabouts

ODOT Response: Thank you for your comment. ODOT values your participation in this process and your comment has been included in the project record. Please refer to **Figures 3.3** and **3.4** above to see the results of the public participation survey.

Comment Category: Support for/opposition to specific options

ODOT Response: Thank you for your comment. ODOT values your participation in this process and your comment has been included in the project record. Please refer to **Figures 3.1, 3.2, 3.5,** and **3.6** above to see the results of the public participation survey.

Comment Category: Concerns about existing or future traffic congestion

ODOT Response: ODOT has performed traffic studies in the project area and all the Alternatives presented in this Virtual Open House are anticipated to improve the existing traffic and accommodate the projected traffic in the project area. Additionally, all the alternatives that include a signal or a roundabout predict less traffic congestion as compared to the existing condition.

Comment Category: Requests to minimize disturbance

ODOT Response: The SH-74 bridge is anticipated to remain open to through traffic during construction. All traffic movements, drives, and access to businesses and residences will be maintained throughout construction; however, traffic and drive locations may change during construction.

ODOT has considered the environmental impacts as described in the Virtual Open House, including the potential impacts to the airport and residential and commercial buildings and property. The use of retaining walls near Airport Road on some alternatives makes increasing access to the airport more difficult; however, existing accessibility to the airport will be maintained with all the Alternative options. Potential right-of-way acquisition will be the minimal necessary. ODOT will obtain an independent appraisal and present a fair market value offer for the necessary property. Owners of any affected homes or businesses will be provided with additional relocation assistance. Full environmental studies will be completed during the design phase of the project.

Regarding noise impacts, this project does not expand I-35, add another through lane of traffic, or offset the I-35 alignment, so no noise increase is expected from any of the Alternative improvements. However, when the future expansion of I-35 to a 6-lane facility is being designed, a noise study will be conducted, and the feasibility and reasonableness of noise abatement will be determined at that time.

Comment Category: Comments about Goldsby development

ODOT Response: During the public involvement period, ODOT was available to meet with the Town of Goldsby and provide the additional information requested. Elected and non-elected Town of Goldsby officials have communicated with ODOT their development goals and provided input regarding what they believe would enhance the Town of Goldsby's economic status.

Comment Category: Concerns about existing/worsening congestion at SH-74/Center Road

ODOT Response: The SH-74 and Center Rd. intersection will be addressed in the design phase of this project based on projected Average Annual Daily Traffic (AADT) and turning movements.

These comment responses will be posted on the ODOT project website for the public's review.

4 DESIGN ALTERNATIVE DETERMINATION AND ADDITIONAL ANALYSIS

ODOT reviewed the operations, impacts, comments from the public, and the overall bridge & interchange analysis. The decision was made to move forward with Alternative 5 – 53° bridge skew. The final decision regarding whether the two intersection locations (north and south of the SH-74 bridge over I-35) should be signalized or roundabout configurations is still under consideration. From the alternatives matrix overall, Alternative 5 (both A and B options) has the best combination of geometric design improvements, intersection capacity, and least environmental impacts. It also has comparable utility relocation impacts, right-of-way acquisition impacts, and overall costs to the other alternatives. The bridge skew of 53° and minimal impact to Airport Road has strong support from the public and from the Town of Goldsby, supporting the features in Alternative 5.

ODOT has decided to replace the southbound slip ramp and considered several factors regarding slip ramp configuration and location. The roundabout option provides safer travel when associated with regards to the two-way frontage road. The tapered option requires less right-of-way and better meets current driver expectation. Additionally, the tapered option was preferred by public comment. The decision was made to move forward with the tapered option.

These determinations will be carried forward into the final design phase as a revised alternative. During the design phase, further traffic studies will be conducted, specific impacts will be evaluated, and another public involvement event will be held to obtain further input on this revised alternative.

**APPENDIX A
VIRTUAL OPEN HOUSE
NOTICE LETTERS AND MAILING LISTS**



APPENDIX B
VIRTUAL OPEN HOUSE MATERIALS



APPENDIX C
VIRTUAL OPEN HOUSE COMMENTS

