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STH 65 Highway Safety Manual Analysis

County Line Road – USH 8
Polk County
WisDOT Project ID 0695-21-50
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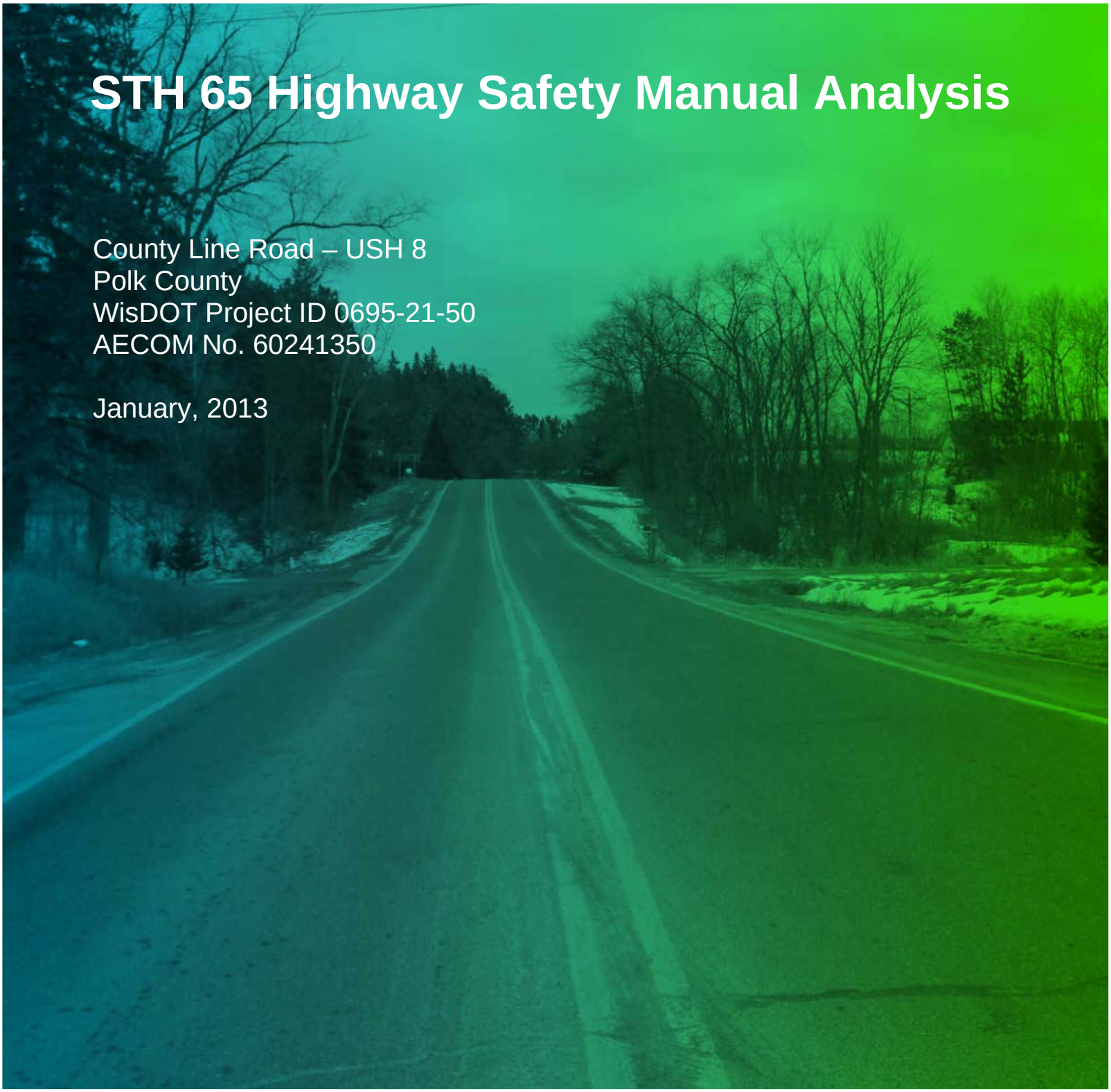

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EXECUTIVE SUMMARY

AECOM completed a safety analysis for 14.1 miles of STH 65 between the St. Croix County Line and USH 8 in Polk County, WI for the Wisconsin Department of Transportation Northwest Region. The objective of this project was to prepare a prioritized list of roadway improvements on STH 65 by applying Highway Safety Manual (HSM) procedures to the corridor.

Applying the HSM involves five major steps: segmentation, diagnosis, selection of countermeasures, economic appraisal, and prioritization of projects.

The STH 65 corridor was divided into 9 large segments for analysis. 27 horizontal curves were analyzed individually. Crash data, crash reports, and crash diagrams were analyzed to identify crash patterns throughout the corridor. Some emerging trends included a high proportion of lane departure crashes (80.8%), speed related crashes (45.2%), weather related crashes (34.2%), and negotiating-a-curve related crashes (39.7%). A majority of the crash rates calculated for the 9 segments of STH 65 were greater than the state average crash rates for similar roadway type.

Roadway deficiencies were identified from these crash trends. Sources of safety concerns include horizontal and vertical curves, backslopes and foreslopes, shoulder width, signing, pavement condition and friction, and speeding. In order to mitigate these deficiencies, the following countermeasures were considered:

- Centerline rumble stripEs
- Update signing to MUTCD standards
- Shoulder rumble strips
- Edgeline rumble stripEs
- Widen shoulder width to 6 feet
- Modifying the vertical alignment
- Chevrons
- Speed reducing pavement markings
- Flashing beacons on wooden posts
- Guardrail
- Skid resistant pavement
- Flattening horizontal curves

HSM procedures were applied to determine potential crash reductions for each countermeasure. Crash reductions were converted to a monetary value by multiplying the reduction by comprehensive societal crash costs. The cost to construct each improvement was calculated and a benefit cost ratio (BCR) was determined.

Finally, countermeasures were ranked using the incremental BCR analysis procedure in the HSM. All safety improvements with a BCR greater than 1 were included in an incremental BCR analysis to prioritize the projects. The results of this analysis are in Exhibit 10, Prioritized Improvements.

This analysis has identified a series of safety improvements that are expected to provide the region the most safety benefit per dollar for the STH 65 corridor. We recommend projects be considered that implement the safety improvements listed in Exhibit 10 with the exceptions and refinements documented in the report recommendation.

STH 65 HIGHWAY SAFETY MANUAL ANALYSIS

AECOM completed a safety analysis of the STH 65 corridor between the St. Croix County Line and USH 8 in Polk County, WI for the Wisconsin Department of Transportation Northwest Region. The project corridor is 14.1 miles in length. A project location map is in Exhibit 1, Project Location Map.

The objective of this project was to prepare a prioritized list of roadway improvements on STH 65 by applying Highway Safety Manual (HSM) procedures to the corridor.

Existing Conditions

STH 65 is a rural two lane undivided roadway with a posted speed limit of 55 mph (60 mph design speed) and rolling terrain. The roadway typical section includes 12 foot lanes and paved or gravel shoulders with a width of between one and two feet. STH 65 is functionally classified as a minor arterial. There are an average of six driveways per mile and a total of 21 intersections throughout the project length. The surrounding land use is predominantly farmland and forest with some wetland areas.

The intersection of STH 65 and CTH K was recently reconstructed and was not included in this analysis. Additionally, a Highway Safety Improvement Program (HSIP) project was recently programmed for a 0.6 mile section of STH 65 from 40th Avenue to the north through a series of sharp curves. This section of STH 65 was also not included in our analysis.

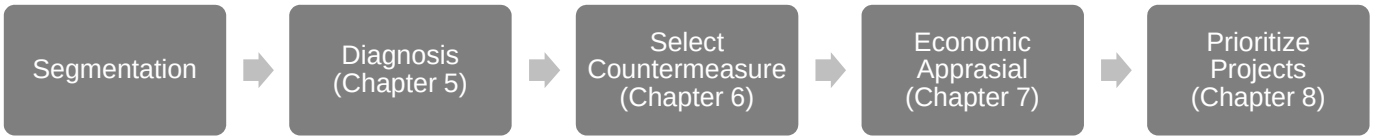
Data

Data was collected from the Wisconsin Department of Transportation Northwest Region for use in this safety analysis. This data includes:

- AADT Traffic Counts (2009)
- AADT Traffic Forecast (2018, 2028, & 2038)
- Crash Data: January 2005 - June 2011 (6.5 years)
- Crash Reports
- Crash Diagrams
- As-Built Construction Drawings
- R/W Plats
- Photo log
- Topographic Map
- Functional Classification Map from 2009
- Meta-Manager data was used to aid in the segmentation process and to determine shoulder widths.

Application of the Highway Safety Manual

The HSM, developed by the American Association of State Highway and Transportation Officials (AASHTO), provides users with quantitative information for decision making by using a predictive approach to safety. Historically, safety analysis has been completed using a reactive approach based on existing crash trends. HSM procedures produce an expected average crash frequency as a function of historical crash data, geometric features of the road, length of road, and AADT of the roadway. Chapters 4-9 of the HSM describe the roadway safety management process. For this analysis, the procedures in chapters 5-8 were completed. Chapter 4 is the network screening procedure and wasn't needed since the project location was already selected. Chapter 9 is the Safety Effectiveness Evaluation procedure. This procedure should be completed once the project is complete to measure its effectiveness. The remaining HSM procedures were completed in the following steps.



Segmentation

The first step in applying HSM procedures is to divide the project corridor into homogenous segments. WisDOT's Meta-Manager database was used to develop initial segmentation. Meta-Manager segmentation is created from the following sources. Figure 1 shows a sample segmentation.

1. *Traffic segments*; traffic segments are roadway divisions based on traffic volumes.
2. *Pavement Information File (PIF) Data*; PIF data divides roadways into sections based on pavement ride and distress.

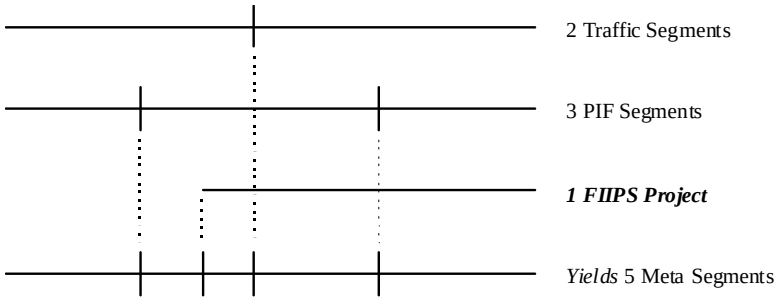


Figure 1. Meta-Manager Segmentation

3. *FIIPS Projects,* Roadways included in FIIPS improvement projects are their own segment.

To segment the STH 65 corridor, Meta-Manager segments were combined and segment divisions were adjusted to create nine segments with similar crash trends, roadway geometrics and roadway features. The STH 65 corridor segmentation is in Exhibit 2, Curve Advisory Speeds & Corridor Segmentation.

Horizontal curves with a radius less than 10,000 feet were also identified. University of Wisconsin-Madison Traffic Operations & Safety Laboratory (TOPS Lab) recently completed a study that found that curves with a radius greater than 10,000 feet didn't exhibit the same safety concerns as smaller radius curves. Horizontal curves are in Exhibit 2, Curve Advisory Speeds & Corridor Segmentation and labeled by station number of the PI of the curve.

Diagnosis

Descriptive Crash Statistics

The next step involved analyzing crash data, crash reports, and crash diagrams to identify trends. There were 84 crashes within the project limits during the analysis period, not including deer crashes. The crashes located within the HSIP project limits were included in the corridor crash analysis. The eleven crashes that occurred at the STH 65 & CTH K intersection were removed for the corridor crash analysis because of the recent improvement project at this location. The remaining 73 crashes were used in trend identification for the corridor. Crash severity was analyzed where:

- K = fatality
- A = incapacitating injury
- B = non-incapacitating injury
- C = possible injury
- PDO = property damage

A summary table of crash statistics and crash diagrams are in Exhibit 3-1, Descriptive Crash Statistics and Exhibit 3-2, Crash Diagrams. Significant corridor crash trends included:

- 15.1% K+A crashes
- 65.8% Injury crashes
- 80.8% Lane departure crashes
- 79.5% Single vehicle run-off-road crashes
- 39.7% Negotiating a curve
- 30.1% Night crashes
- 45.2% Speeding / too fast for conditions
- 34.2% Weather related crashes
- 21.9% Motorcycle crashes
- 13.7% Alcohol Related

Crash Rate

State trunk highway crash rates are reported for the 12 functional peer groups used by Meta-Manager. STH 65 is included in peer group 5, classified as “Rural STN ADT between 750 and 2000 ADT”. These crash rates do not include deer crashes. A comparison of crash rates for peer group 5 and the calculated crash rates per segment on STH 65 are in Table 1 below. A rate flag has also been identified for each segment; those highlighted in red indicate segments with crash rates higher than one standard deviation above the state trunk highway crash rates. The rate flag was calculated using the same method as Meta-Manager.

	Segment Crash Rates									Peer Group 5 Crash Rate
Crash Severity	1	2	3	4	5	6	7	8	9	Average
Total	140	154	399	123	51	270	0	77	189	**105**
K+A	20	0	116	0	17	162	0	0	27	**10**
Injury (K, A , B, C)	70	108	270	86	34	216	0	58	135	**42**
PDO	70	46	129	37	17	54	0	19	54	**63**
Rate Flag	1.02	1.06	2.81	0.88	0.35	1.50	0.00	0.51	1.19	

Table 1. Segment crash rates (crashes per 100 million vehicle miles traveled) and rate flags.

Identifying Deficiencies

The observed crash trends were used in identifying roadway deficiencies that may have contributed to these trends. A variety of resources were used to identify deficiencies including historical crash data, field observations, photo log, as-built plans, and input from WisDOT staff. Deficiencies related to the following roadway attributes were identified:

- Stopping sight distance on vertical curves
- Stopping sight distance on horizontal curves
- Superelevations
- Curve advisory speeds
- Foreslopes and backslopes
- Signing
- Warning sign distance in advance of curves

The following roadway attributes are not deficient, but may lead to safety concerns:

- Horizontal curve radii
- Shoulder width (paved and gravel)
- Poor pavement condition – structural distress and aging
- Inadequate pavement friction
- Driver behavior was a contributing factor in a number of crashes. Due to the rolling terrain and high number of curves, STH 65 is a popular “racing” route for motorcyclists and sports car drivers.

Intersections were also analyzed for deficiencies. There were few crashes that occurred at intersections within the project limits - only four intersections had more than one crash during the analysis period: CTH C, CTH F, Kennedy Mill Ave, and USH 8. The crashes that occurred at the CTH C intersection were due to the presence of a horizontal curve and crashes at the intersection of CTH F were due to a vertical curve north of the intersection. These vertical and horizontal curve deficiencies are part of the segment analysis. The USH 8 intersection had acceptable sight distance, sight triangles, signage, and an average annual crash rate of 0.24.

Based on these factors, these three intersections were not included in the HSM predictive analysis.

The Kennedy Mill Ave intersection is a T intersection where the north and west legs are STH 65 and the east leg is Kennedy Mill Ave. Since STH 65 "turns" at the intersection, STH 65 is not controlled and has a short turn radius, while Kennedy Mill Ave is stop controlled. An HSM analysis was completed to determine if this intersection could benefit from intersection reconfiguration.

STH 65 & Kennedy Mill Road Intersection

Countermeasures

Identifying Countermeasures

Countermeasures were identified to address the observed deficiencies. Resources used to develop the list of countermeasures include the HSM, NCHRP 500 series, FHWA speed management program, and FHWA Low Cost Treatments for Horizontal Curves. The following list of countermeasures was developed and refined with input from WisDOT staff:

Corridor segment applications:

- Install centerline rumble stripEs
- Update signing to MUTCD standards
- Install shoulder rumble strips (would require construction of a paved shoulder)
- Install edgeline rumble stripEs
- Widen shoulder width to 6 feet (3 feet paved, 3 feet gravel)
- Modify vertical alignment to flatten vertical curves with insufficient stopping sight distance

Horizontal curve applications:

- Install Chevrons
- Install speed reducing pavement markings (pavement markings in the traveled lane with variable spacing that cause drivers to slow based on their perception of speed)
- Install Solar powered flashing beacons to supplement advance curve signs
- Install Guardrail
- Install skid resistant pavement overlay (0.5 inch asphaltic overlay)
- Flatten horizontal curves

Expected Crash Frequency

The first step in applying countermeasures is to establish a baseline crash frequency for the existing road. This was completed using a safety performance function (SPF) per HSM procedures. The SPF for rural two-lane two-way roads was used for this project. The SPF is a regression equation that calculates the predicted average crash frequency based on AADT and segment length and modified for specific site conditions through the use of crash modification factors (CMFs). CMFs may be used to account for lane widths, shoulder widths, lighting presence, access density, etc.

A calibration factor should be applied to the SPF in order to adjust the SPF for local conditions and factors, such as climate, driver population, crash reporting thresholds, and crash reporting system procedures. Calibration factors should be developed based on crash data from a minimum of 30-50 sites with similar attributes. The UW TOPS Laboratory is in the process of developing calibration factors, but they are not yet complete. As a result, a calibration factor of 1 was used for this analysis. Without calibration, the calculated crash frequency will not be adjusted for local conditions, but the prioritization of improvements will not be affected.

The accuracy of the predicted average crash frequency for each segment of STH 65 can be improved by using observed crash data to modify the predicted crash frequency using the Empirical Bayes (EB) method. By using the EB method, the predicted average crash frequency and observed crash frequency are combined and weighted based on the variance of the SPF to produce the expected crash frequency.

$$N_{expected} = w * N_{predicted} + (1 - w) * N_{observed} \quad \text{(HSM C-8)}$$

$N_{expected} = estimate\ of\ expected\ average\ crash\ frequency\ for\ study\ period$
$N_{predicted}$
$= predictive\ model\ estimate\ of\ predicted\ average\ crash\ frequency\ for\ the\ study\ period$
$N_{observed} = observed\ crash\ frequency\ at\ the\ site\ over\ the\ study\ period$
$w = weighted\ adjustment\ to\ be\ placed\ on\ the\ SPF\ prediction$

For this analysis, the expected average crash frequency was divided into severity levels K, A, B, C, and PD, whereas the HSM divides crash frequency into fatal/injury and PDO. The HSM provides a default distribution for crash severity based on national research, but encourages the use of a crash severity distribution based on crash history for the project corridor. A crash severity distribution specific to the STH 65 corridor was developed and is in Table 2 below.

Crash Type	Total Crashes	Crash Severity				
		K	A	B	C	PDO
Angle	11.0%	0%	0%	6.9%	0%	4.1%
Rear	1.4%	0%	0%	0%	0%	1.4%
Sideswipe/Opposite Direction	6.8%	1.4%	2.7%	0%	2.7%	0%
Ran off Road	80.8%	4.1%	6.9%	20.5%	20.5%	28.8%

Table 2. Crash severity distribution

Expected crash frequency was calculated for existing conditions and for a no-build condition with future traffic. The existing conditions model uses 2009 AADT traffic volumes, and the no-build model with future traffic uses interpolated 2023 forecasted traffic volumes. 2023 was selected as the analysis year for the no-build condition because it's the median year in the 10-year timeframe used in the economic appraisal. More information on the economic appraisal is included later in this report. A summary of predicted, observed, and expected average crash frequencies are in Exhibit 4-1, Segment Crash Frequencies Under Existing Conditions – 2009 & 2023 and Exhibit 4-2, Curve Crash Frequencies Under Existing Conditions – 2009 & 2023

Crash Modification Factors

The crash benefit of each countermeasure is determined by modifying the SPF to account for the changes that result from implementing the countermeasure. If the effects of the countermeasure are not quantifiable within the SPF, the crash benefit of the countermeasure is determined by multiplying the expected number of crashes by a CMF found in Part D of the

HSM or from other resources such as the online CMF clearing house website. The crash benefit of the following countermeasures was determined through modification of the SPF:

- Install centerline rumble stripEs
- Widen shoulder width to 6 feet
- Flatten horizontal curves
- Repave with proper superelevation rates

The crash benefit of the remaining countermeasures is in Table 3 below:

Countermeasure	CMF				
	All	Injury	PDO	Source*	Application
Update signing to MUTCD standards	-	0.85	0.93	CH	All Crashes
Install shoulder rumble strips/ Edgeline rumble stripEs	0.87	0.82	-	CH	Run-Off-Road Crashes
Modify vertical alignment	0.80	0.49	-	CH	All Crashes
Install chevrons	0.96	0.84	-	CH	All Crashes on Curve
Install speed reducing pavement marking	0.68	-	-	CH	All Crashes on Curve
Install solar powered flashing beacon to supplement advance curve signing	0.929	-	-	CH	All Crashes on Curve
Install guardrail	0.93	0.56 (K) / 0.53 (ABC)	-	CH	Run-Off-Road Crashes on Curve
Install skid resistant pavement overlay (0.5 inches)	0.684	-	-	CH	All Crashes on Curve
Construct safety edge	0.943	-	-	FHWA	All Crashes

* CH: CMF Clearing House; FHWA: Safety Evaluation of the Safety Edge Treatment (FHWA-HRT-11-025)

Table 3. Countermeasure part D CMFs

CMFs from Part D of the HSM, the CMF Clearinghouse, or other resources are meant to be applied independently of other CMFs. The HSM suggests the use of engineering judgment to determine if applying more than one CMF to a SPF will overestimate crash reduction. In general, no more than three CMFs should be applied to a SPF.

Expected Crash Reduction

The expected crash reduction is the difference in the expected crash frequency between the no-build condition and the improved condition with countermeasure. This was calculated for each countermeasure independently of other countermeasures for each segment and curve within the project corridor. The expected crash reduction was calculated for all crashes and divided

into reductions for each crash severity. The predicted, observed, and expected average crash frequencies for flattening horizontal curves are in Exhibit 5-1, Crash Frequency- Flattening Horizontal curves. Expected crash reductions are in Exhibit 5-2, Crash Frequency Reductions – Horizontal Curve Segments and Exhibit 5-3, Crash Frequency Reductions – Corridor Segments. The following methodology was used in these calculations:

- It was not possible to analyze the crash reduction of flattening horizontal curves independently when they were closely spaced. These curves were grouped together into horizontal curve realignment areas.
- There were many vertical curves with deficient stopping sight distance (based on a 60 mph design speed) throughout the project corridor. The percentage of each segment length with deficient vertical curvature was estimated and used to calculate the benefit of flattening deficient vertical curves.
- The following countermeasures included the crash reduction of more than one countermeasure:
    - Widen shoulder width to 6 feet: Includes crash reduction of the safety edge.
    - Shoulder rumble strips: Includes crash reduction of widening shoulder widths to 6 feet.
    - Install Guardrail: Includes crash reduction of widening one shoulder width to 12 feet.
    - Modify vertical alignment: Includes the crash reduction of widening shoulders to 6 feet and of applying a safety edge.
    - Flattening horizontal curves: Includes the crash reduction of widening shoulders to 6 feet, safety edge, and proper superelevation rates.
- Any vertical alignment modification that fell within the limits of a horizontal curve realignment was attributed to flattening horizontal curves.

HSM Analysis results for the STH 65 & Kennedy Mill Avenue intersection are in Exhibit 6, STH 65 & Kennedy Mill Avenue

Economic Appraisal

An economic appraisal of each countermeasure was completed per HSM procedures to assess the viability of the countermeasure and prioritize the countermeasures that are viable. The economic appraisal focused on a 10 year service period from 2018 (design year) to 2028.

Crash Benefit

The crash reduction of each countermeasure was converted to a crash benefit – the monetary value assigned to a reduction in crashes. This is done by applying the societal crash costs in Table 7-1 of the HSM to the expected crash reduction. The average annual inflation rate between 2002 and 2012 was calculated using data from the Consumer Price Index. This rate was used to project 2018 societal crash costs from the 2005 societal crash costs in the HSM. The societal crash costs are below, listed as 2018 values (2005 values).

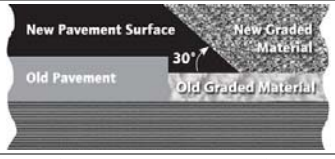
- Fatal/Injury (K+A+B) - $210,200 ($158,200)
- Possible Injury (C) - $59,700 ($44,900)
- PDO (O) - $9,800 (7,800)

The following factors were considered in the determination of societal crash costs:

- Societal crash costs from the National Safety Council (NSC), USDOT, and WisDOT HSIP project evaluation factor calculations were considered for use in this analysis. The WisDOT HSIP costs were quite a bit lower that the other three resources, and the HSM, NSC, and USDOT costs were all similar. The HSM societal crash costs were used to remain consistent with HSM methodology.
- A combined KAB cost was used in place of a separate cost for each severity. Fatal and high severity crashes often have similar crash characteristics and the differences are frequently arbitrary factors like age or seatbelt use. Using a combined KAB cost allows us to account for high severity crashes without skewing the data towards fatal crashes.

Countermeasure Implementation Cost

Unit costs for each countermeasure are in Table 4 below. Costs in this table reflect the cost to apply the given countermeasure independently and don't include incidental costs (earthwork, R/W, etc.) needed to implement the countermeasure. Countermeasure costs for pavement treatments that could be applied to new or existing pavements (centerline / edgeline rumble stripEs, safety edge, skid resistant pavement) are for implementation in conjunction with a pavement project; implementation of these countermeasures as a retrofit would be more expensive. Countermeasure costs are in 2012 dollars.

Countermeasure	Example	Cost	Source	Service Life
Centerline Rumble StripEs		$0.45 / ft	FHWA	20
Edgeline Rumble StripEs		$0.90 / ft	FHWA	20
Safety Edge		$0.41 / ft	FHWA	20
Update Signing to MUTCD Standards		$0.47 / ft	Recent previous project bid tabs	10
Shoulder Rumble Strips		$0.64 / ft centerline	New York State DOT	20

Chevrons		$565 / curve	FHWA	10
Speed Reducing Pavement Markings		$2260 / curve	FHWA	2
Solar Powered Flashing Beacon to Supplement Advance Curve Signing		$3500 /curve	Tapco	10
Guardrail		End area treatment (first 50 ft on both ends) - $250 ea $20 / ft	Recent previous project bid tabs	10
Skid Resistant Pavement Overlay (0.5 inches)		$0.25 / sq ft	Published references	5

Table 4, Countermeasure Unit Costs

Countermeasures that have combined crash reductions also have combined costs. See the *Expected Crash Reduction* section for a list of these countermeasures.

Plan & profile sheets were created to assess countermeasures that require reconstruction. These sheets include realignment of horizontal curves, realignment of vertical curves, and widening the existing shoulders. The purpose of this exercise was to provide costs for each individual vertical or horizontal realignment and segment-wide costs for widening shoulders. However, the majority of the project corridor was in a location of either a vertical or horizontal realignment and it was difficult to separate these realignments and find tie-in points to the existing alignment. As a result, a new vertical alignment was created for the entire project length, and divisions between horizontal and vertical realignment areas were approximated. Plan & Profile sheets for the corridor are in Exhibit 7, Proposed Plan and Profile. Also included in Exhibit 7 is a conceptual layout of the intersection modifications at the STH 65 & Kennedy Mill Avenue intersection. Cost Estimates for horizontal realignments, vertical realignments, shoulder widening, and intersection modifications are in Exhibit 8, Cost Estimates.

Benefit-Cost Analysis

A benefit-cost ratio (BCR) was calculated for each countermeasure applied to a corridor segment, horizontal curve, or group of horizontal curves. Curve groups are series of closely spaced curves that were combined for the application of specific countermeasures. Curve Groups are in Exhibit 2. The crash benefit for the BCR was calculated for a 10-year period (2018-2028) by converting the uniform annual benefit for the 10-year period to a 2018 value. The 2023 crash benefit was used as the uniform annual benefit to account for an increase in traffic volumes during the 10-year period. This 10-year crash benefit was converted to 2012 dollars using a 4% discount rate. A discount rate of 4% is used by the Highway Safety Information System, whose research is used by the FHWA. Countermeasure BCRs are in Exhibit 9-1, Benefit Cost Ratios – Corridor Segments, Exhibit 9-2, Benefit Cost Ratios - Horizontal Curve Segments, and Exhibit 9-3, Benefit Cost Ratios – Curve Groups.

Prioritize Projects

Countermeasures were filtered and prioritized using the Incremental BCR analysis procedures in HSM 8.2.1. This procedure involves completing a BCR analysis for each of the 182 potential safety improvements, removing any improvements with a BCR less than 1, and ranking the remaining improvements based on the ratio between the difference in crash benefit and the difference in cost. Of 183 potential safety improvements analyzed, 75 had a BCR of 1 or greater. A prioritized list of these countermeasures is in Exhibit 10, Prioritized Improvements.

Recommendations

This analysis has identified a series of safety improvements that are expected to provide the region the most safety benefit per dollar spent for the STH 65 corridor. We recommend projects be considered that implement the safety improvements listed in Exhibit 10. Our recommended corridor segment and horizontal curve locations for countermeasure implementation are in Table 5 below. The total costs in Exhibit 10 and Table 5 are not equal because Table 5 doesn't include Exhibit 10 countermeasures that are redundant or superseded by higher benefit countermeasures. Additional sources of differentiation between Exhibit 10 and Table 5 are asterisked in Table 5. A map showing the countermeasures to be considered for implementation on horizontal curves listed below in Table 5 is in Exhibit 11.

Corridor Segment			Horizontal Curve		
Corridor Segment Countermeasure	Locations for Implementation*	Cost	Horizontal Curve Countermeasure	Locations for Implementation*	Cost
Centerline Rumble StripEs**	All Segments***	$31,900	Chevrons	STA 40, 98, 111, 141, 149, 203, 218, 348, 670	$5,400
Edgeline Rumble StripEs**	All Segments	$63,800	Speed Reducing Pavement Markings	STA 40-50, 73, 98, 111, 136-149, 218, 268, 338-363, 670	$101,700
Safety Edge	All Segments***	$28,500	Solar Powered Flashing Beacon to Supplement Advance Curve Signing	STA 338-363	$7,000
Update Signing to MUTCD Standards	All Segments	$33,600	Guardrail	STA 40, 218	$75,300
Shoulder Rumble Strips	None	$0	Skid Resistant Pavement Overlay (0.5 inches)	STA 40, 45, 50, 73, 98, 111, 141, 149, 203, 218, 268, 348, 358, 363, 670	$69,700
Widen Shoulder Width to 6 feet	None	$0	Flatten Horizontal Curves	STA 692	$843,000
	Subtotal	$157,800		Subtotal	$1,102,100
				Total Cost	**$1,259,900**

* The intersection of STH 65 and CTH K and the 0.6 mile segment of STH 65 from 40th Avenue to the north (future HSIP project location) were excluded from the analysis.

** Installing edgeline rumble StripEs and centerline rumble stripEs will effectively narrow the travel lane by one foot to a 10 or 11 foot lane width. This would be problematic unless widening of the travel lanes occurred.

*** Centerline rumble stripEs and safety edge had a BCR less than 1 for segments 6 and 7. If centerline rumble stripes and safety edge will be installed along the rest of the corridor, the cost to install them in segments 6 and 7 will be minimal.

Table 5, Countermeasure Implementation Locations

The following factors were not fully reflected in the safety improvement ranking and should be given additional consideration:

- To discourage recreational drivers from "racing," improvements such as flattening horizontal and vertical curves and installing speed reducing pavement markings, centerline rumble stripes, and edgeline rumble StripEs or shoulder rumble strips may be more effective than the prioritized ranking shows.

- We expect that improving pavement condition has a safety benefit, but the data to support this is unreliable. Any safety benefit from resurfacing or reconstructing STH 65 is not included in this analysis.

These countermeasures would most likely be implemented in conjunction with a resurfacing project. To provide an estimate of the total cost of a resurfacing / safety countermeasure implementation project, cost estimates were developed for resurfacing STH 65 for the following alternatives:

- Alternative 1: Mill 2" from existing asphalt (24' width), remove existing coarse aggregate base course (CABC) shoulders (1' width) to 6" depth, place cold in-place recycled asphalt shoulders (1' width, 6" depth), and place 2" HMA pavement (26' width).

- Alternative 2: Mill 2" from existing asphalt (24' width) and replace with 2" HMA pavement.

Cost estimates excluded the area recently improved near the CTH K intersection, the future HSIP project north of 40th Avenue, and the recommended horizontal curve flattening near STA 692. The resurfacing cost estimates are in Exhibit 8 and the results are in Table 6.

Segment	Cost Estimate	
	Alternative 1	Alternative 2
1	$714,000	$667,000
2	$593,000	$553,000
3	$492,000	$460,000
4	$714,000	$667,000
5	$426,000	$399,000
6	$162,000	$151,000
7	$159,000	$147,000
8	$255,000	$240,000
9	$291,000	$271,000
Total	$3,806,000	$3,555,000

Table 6. Resurfacing Cost Estimates

Conclusions

The predictive safety analysis method in the HSM provides an effective quantitative method for prioritizing safety improvements. Application of this method to the STH 65 corridor has resulted in a list of prioritized safety improvements that allow the most effective use of road improvement funds. Not surprisingly, this analysis has shown that, with a few exceptions, improvements widely considered low-cost, high-benefit treatments are the most cost effective treatments for this corridor.

Exhibit 1
Project Location Map

PROJECT LOCATION MAP

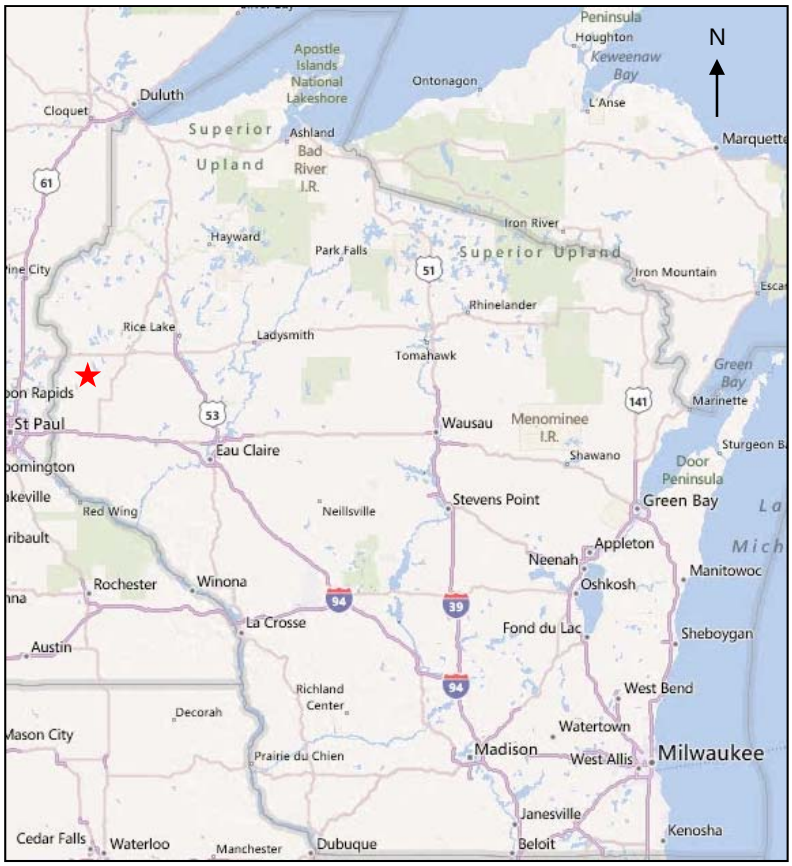


Exhibit 2
Curve Advisory Speeds & Corridor Segmentation

START PROJECT
COUNTY LINE AVE.

SEGMENT 1

CURVE GROUP
STA 40
STA 42
STA 45

STA 50
STA 73
65
STA 98
STA 111
W CHURCH RD.

CURVE GROUP
STA 136
STA 141
STA 149

SEGMENT 1 → SEGMENT 2

CTH C
STA 188
STA 203
28TH AVE.
STA 218
65
STA 268
38TH AVE.
RANDOM DR.
STA 294
40TH AVE.

SEGMENT 2 → SEGMENT 3

N
W
S
E

ADVISORY SPEED

- 50 MPH
- 45 MPH
- 40 MPH
- 35 MPH
- 30 MPH
- 25 MPH
- 20 MPH
- 15 MPH
- 10 MPH
- CURVE WITH NO ADVISORY SPEED
- WISDOT HSIP PROJECT

STA # REPRESENTS THE PI OF A HORIZONTAL CURVE

WISCONSIN DEPARTMENT OF TRANSPORTATION

AECOM

JUNE 2012
WISDOT PROJECT ID 0695-21-50
AECOM No. 60241350

EXHIBIT 2
CURVE ADVISORY SPEEDS & CORRIDOR SEGMENTATION

STH 65
SAFETY ANALYSIS
POLK COUNTY, WI

NOT TO SCALE

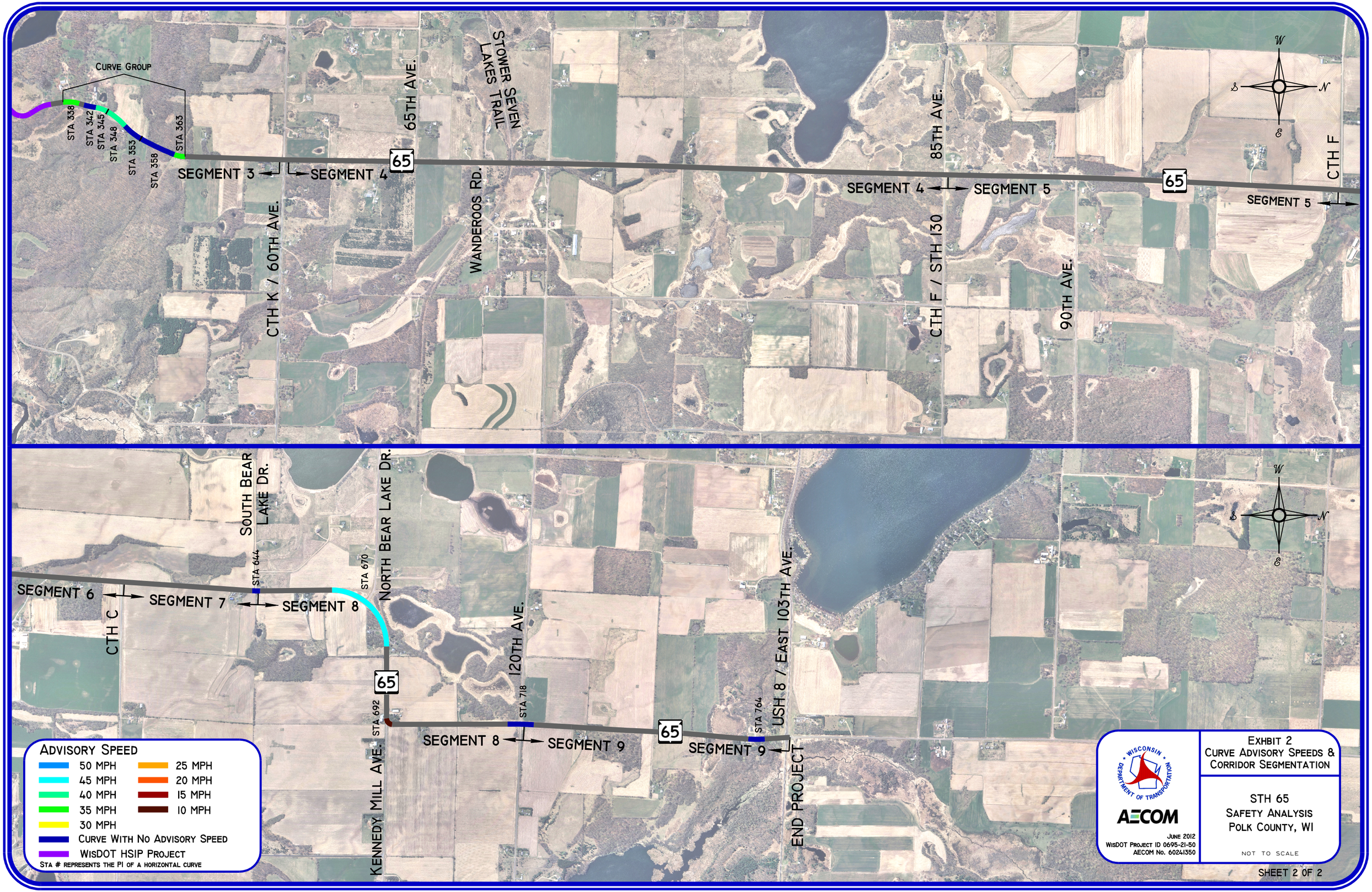

CURVE GROUP
STA 338
STA 342
STA 345
STA 348
STA 353
STA 358
STA 363
SEGMENT 3
SEGMENT 4
65
65TH AVE.
STOWER SEVEN LAKES TRAIL
WANDEROOS RD.
CTH K / 60TH AVE.
85TH AVE.
SEGMENT 4
SEGMENT 5
65
CTH F / STH 130
90TH AVE.
CTH F
SEGMENT 5
W
S
N
E
SOUTH BEAR LAKE DR.
NORTH BEAR LAKE DR.
STA 644
STA 670
SEGMENT 6
SEGMENT 7
SEGMENT 8
CTH C
65
120TH AVE.
STA 718
STA 692
KENNEDY MILL AVE.
SEGMENT 8
SEGMENT 9
65
STA 764
USH 8 / EAST 103TH AVE.
SEGMENT 9
END PROJECT
W
S
N
E
ADVISORY SPEED
50 MPH
45 MPH
40 MPH
35 MPH
30 MPH
25 MPH
20 MPH
15 MPH
10 MPH
CURVE WITH NO ADVISORY SPEED
WISDOT HSIP PROJECT
STA # REPRESENTS THE PI OF A HORIZONTAL CURVE
WISCONSIN DEPARTMENT OF TRANSPORTATION
AECOM
JUNE 2012
WISDOT PROJECT ID 0695-21-50
AECOM No. 60241350
EXHIBIT 2
CURVE ADVISORY SPEEDS & CORRIDOR SEGMENTATION
STH 65
SAFETY ANALYSIS
POLK COUNTY, WI
NOT TO SCALE
SHEET 2 OF 2

Exhibit 3
Crash Analysis

	Crash Severity																			
	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Segment 8		Segment 9		Total	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
K					1	5%					2	40%					1	14%	4	5.5%
A	2	14%			3	15%			1	33%	1	20%							7	9.6%
B	2	14%	2	20%	6	30%	5	50%	1	33%					2	50%	2	29%	20	27.4%
C	3	21%	5	50%	3	15%	2	20%			1	20%			1	25%	2	29%	17	23.3%
PD	7	50%	3	30%	7	35%	3	30%	1	33%	1	20%			1	25%	2	29%	25	34.2%

	Crash Type																			
	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Segment 8		Segment 9		Total	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
Angle					1	5%	2	20%	1	33%							4	57%	8	11.0%
Rear			1	10%															1	1.4%
Sideswipe/ Opposite Direction			1	10%	2	10%					2	40%							5	6.8%
Overturn	4	29%	3	30%	4	20%	2	20%	2	67%	1	20%			1	25%			17	23.3%
Ditch	2	14%	2	20%	9	45%	3	30%							2	50%			18	24.7%
Embankment	1	7%	1	10%	2	10%	1	10%											5	6.8%
Utility Pole	2	14%					1	10%			1	20%							4	5.5%
Traffic Signal	1	7%									1	20%							2	2.7%
Tree	2	14%	2	20%	2	10%	1	10%									1	14%	8	11.0%
Fence	2	14%																	2	2.7%
Other Post															1	25%	1	14%	2	2.7%
Other Noncontact																	1	14%	1	1.4%

	Driver Direction																			
	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Segment 8		Segment 9		Total	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
Left Turn					1	5%					2	40%			2	50%	1	14%	6	8.2%
Going Straight	5	36%	8	80%	2	10%	9	90%	1	33%	2	40%			1	25%	4	57%	32	43.8%
Right Turn					1	5%			1	33%							1	14%	3	4.1%
Negotiating Curve	9	64%	2	20%	16	80%									1	25%	1	14%	29	39.7%
Overtaking on the Left									1	33%									1	1.4%
Backing							1	10%											1	1.4%
Slowing/Stopping											1	20%							1	1.4%

	Contributing Circumstances																			
	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Segment 8		Segment 9		Total	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
Dark	4	29%			6	30%	5	50%	1	33%	1	20%			3	75%	2	29%	22	30.1%
Construction Zone											1	20%							1	1.4%
Motorcycle	3	21%	1	10%	6	30%	2	20%	1	33%	1	20%			1	25%	1	14%	16	21.9%
Speeding/ Too fast for conditions	8	57%	6	60%	7	35%	5	50%	1	33%	1	20%			2	50%	3	43%	33	45.2%
Use of Alcohol	2	14%			2	10%	2	20%			1	20%			2	50%	1	14%	10	13.7%
Single Vehicle Run-Off-Road	13	93%	8		17	85%	8	80%	2		3	60%			4	100%	3	43%	58	79.5%
Use of Drugs			1	10%							1	20%							2	2.7%
Involving Deer	2	14%	1	10%			2	20%	1	33%									6	8.2%
Weather Related	5	36%	3	30%	10	50%	3	30%							2	50%	2	29%	25	34.2%
Opposing Vehicle crossed CL	1	7%	1	10%	2	10%													4	5.5%

	# of Vehicles involved in collision																			
	Segment 1		Segment 2		Segment 3		Segment 4		Segment 5		Segment 6		Segment 7		Segment 8		Segment 9		Total	
	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent	Value	Percent
One	13	93%	8	80%	17	85%	8	80%	2	67%	3	60%			4	100%	3	43%	58	79.5%
Two	1	7%	2	20%	3	15%	2	20%	1	33%	2	40%					4	57%	15	20.5%

AECOM

WisDOT Project ID: 0692-21-50
AECOM No. 60241350

August 2012

STH 65 Safety Analysis
Polk County

Exhibit 3-1

Descriptive Crash Statistics

2 DATE, TIME OF ACCIDENT, SEVERITY, # OF VEHICLES, MANNER OF COLLISION, ROAD SURFACE CONDITION, CITATION ISSUED 2

FAT = FATAL INJ = INJURY PD = PROPERTY DAMAGE

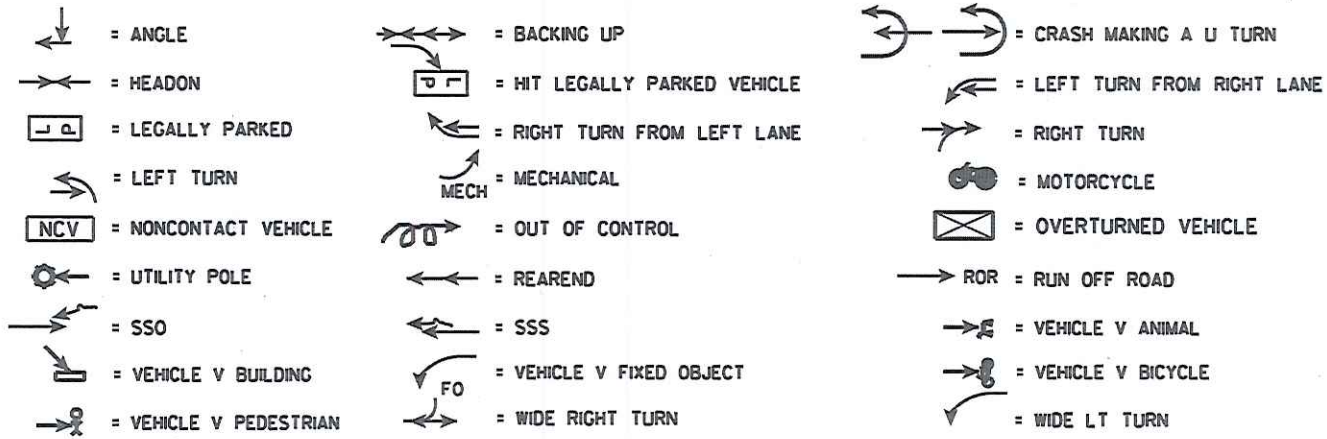
K = FATAL INJURY ANY INJURY RECEIVED IN A TRAFFIC ACCIDENT WHICH RESULTS IN DEATH WITHIN THIRTY (30) DAYS OF THE ACCIDENT.

A = INCAPACITATING INJURY ANY INJURY OTHER THAN A FATAL INJURY WHICH PREVENTS THE INJURED PERSON FROM WALKING, DRIVING, OR FROM PERFORMING OTHER ACTIVITIES WHICH HE/SHE PERFORMED BEFORE THE ACCIDENT.

B = NONINCAPACITATING INJURY ANY INJURY, OTHER THAN FATAL OR INCAPACITATING, WHICH IS EVIDENT AT THE SCENE. EVIDENCE OF INJURY MAY INCLUDE KNOWN SYMPTOMS OF AN INJURY WHICH ARE NOT DIRECTLY OBSERVABLE.

C = POSSIBLE INJURY ANY INJURY WHICH IS NOT OBSERVABLE OR EVIDENT AT THE SCENE BUT IS CLAMED BY THE INDIVIDUAL OR SUSPECTED BYTHE LAW ENFORCEMENT OFFICER.

ANGL = ANGLE
HEAD = HEAD ON COLLISION
H & R = HIT AND RUN
NO C = NO COLLISION WITH ANOTHER VEHICLE
REAR = REAR END
RTR = REAR TO REAR
SSO = SIDESWIPE OPPOSITE DIRECTION
SSS = SIDESWIPE SAME DIRECTION
UNKN = UNKNOWEN



PROJECT NO:	HWY: STH 65	COUNTY: POLK	CRASH PLOT, SOUTH COUNTY LINE TO USH 8	SHEET 1 OF 28	E

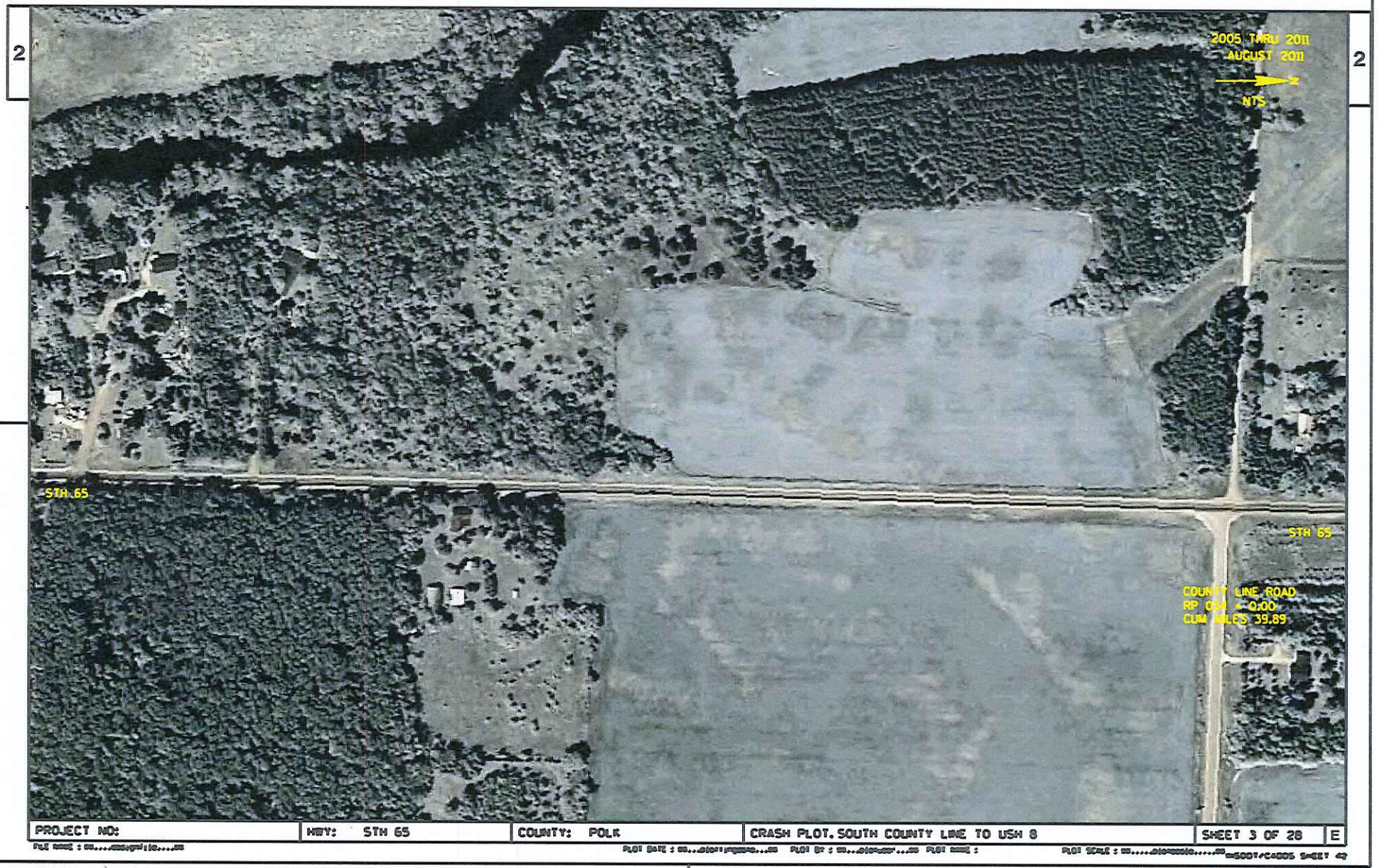
FILE NAME : ss....designfile....ss PLOT DATE : ss...plottingdate...ss PLOT BY : ss...plotuser...ss PLOT NAME : PLOT SCALE : ss.....plotscale.....ss =600'/C4005 SHEET 42

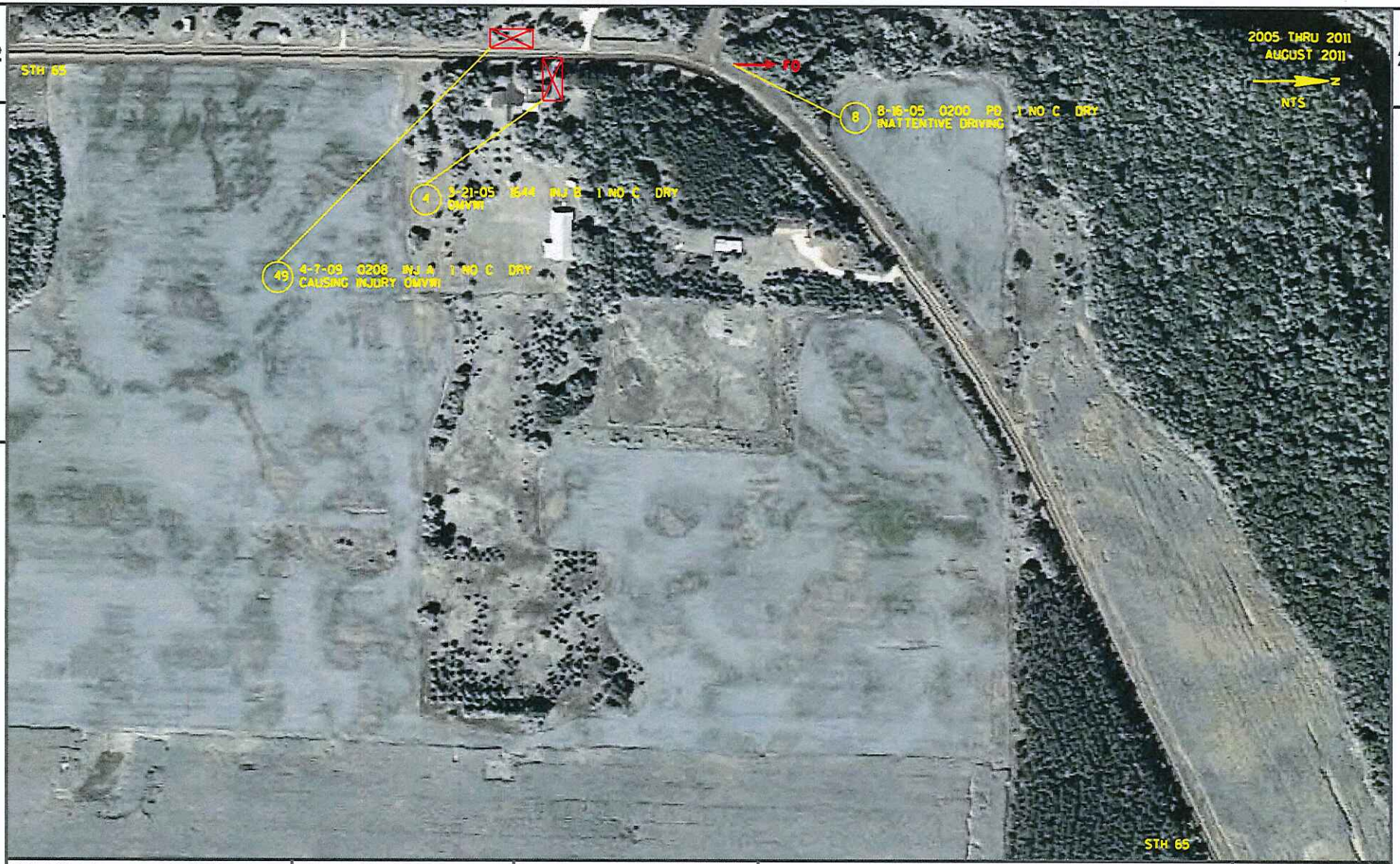
MANNER COLLIDED										SEVERITY					
YEAR	ANGL	HEAD	NO C	REAR	SSOP	SSS	BLNK	TOTAL		FAT	A	B	C	PD	TOTAL
2005			10		1			11			1	3	3	4	11
2006	3		10					13		1	1	4		7	13
2007	2		12					14			1	5	4	4	14
2008	1		8	1				10		1		2	2	5	10
2009			8		2			10		1	2	4	2	1	10
2010			6		1			7			1		3	3	7
2011	2		5		1			8		1	1	2	3	1	8
TOTAL	8		59		5			73		4	7	20	17	25	73

SHEET NUMBER	FEATURE			ACCIDENT REPORT NUMBER											TOTALS
SHEET 3	COUNTY LINE ROAD														0
SHEET 4				4	8	49									3
SHEET 5															0
SHEET 6				1	26	27	56	58	62	65					7
SHEET 7	CHURCH ROAD			15											1
SHEET 8	CTH C			23	32	40									3
SHEET 9	28TH AVENUE			44	57	60	67								4
SHEET 10				7	28	29	31	36	61						6
SHEET 11	38TH AVENUE			12											1
SHEET 12	APPLE RIVER	RANDOM DRIVE		2	25	30	48	71							5
SHEET 13	40TH AVENUE			3	6	10	11	24	42	50	53	55	63	73	11
SHEET 14				5	16	21									3
SHEET 15	CTH K														0
SHEET 16	65TH AVENUE	WANDEROOS ROAD	SOO LINE UNDER	39											1
SHEET 17	70TH AVENUE			13	43	68									3
SHEET 18				46	51	52	70								4
SHEET 19	CTH F	85TH AVENUE		34	38										2
SHEET 20	90TH AVENUE			20	33										2
SHEET 21				18											1
SHEET 22	CTH F	CTH C		22	54	59	64	69							5
SHEET 23	SOUTH BEAR LAKE DRIVE														0
SHEET 24	NORTH BEAR LAKE ROAD														0
SHEET 25	KENNEDY MILL ROAD			19	35	37	72								4
SHEET 26	120TH AVENUE														0
SHEET 27				47											1
SHEET 28	USH 8			9	14	17	41	45	66						6
															73

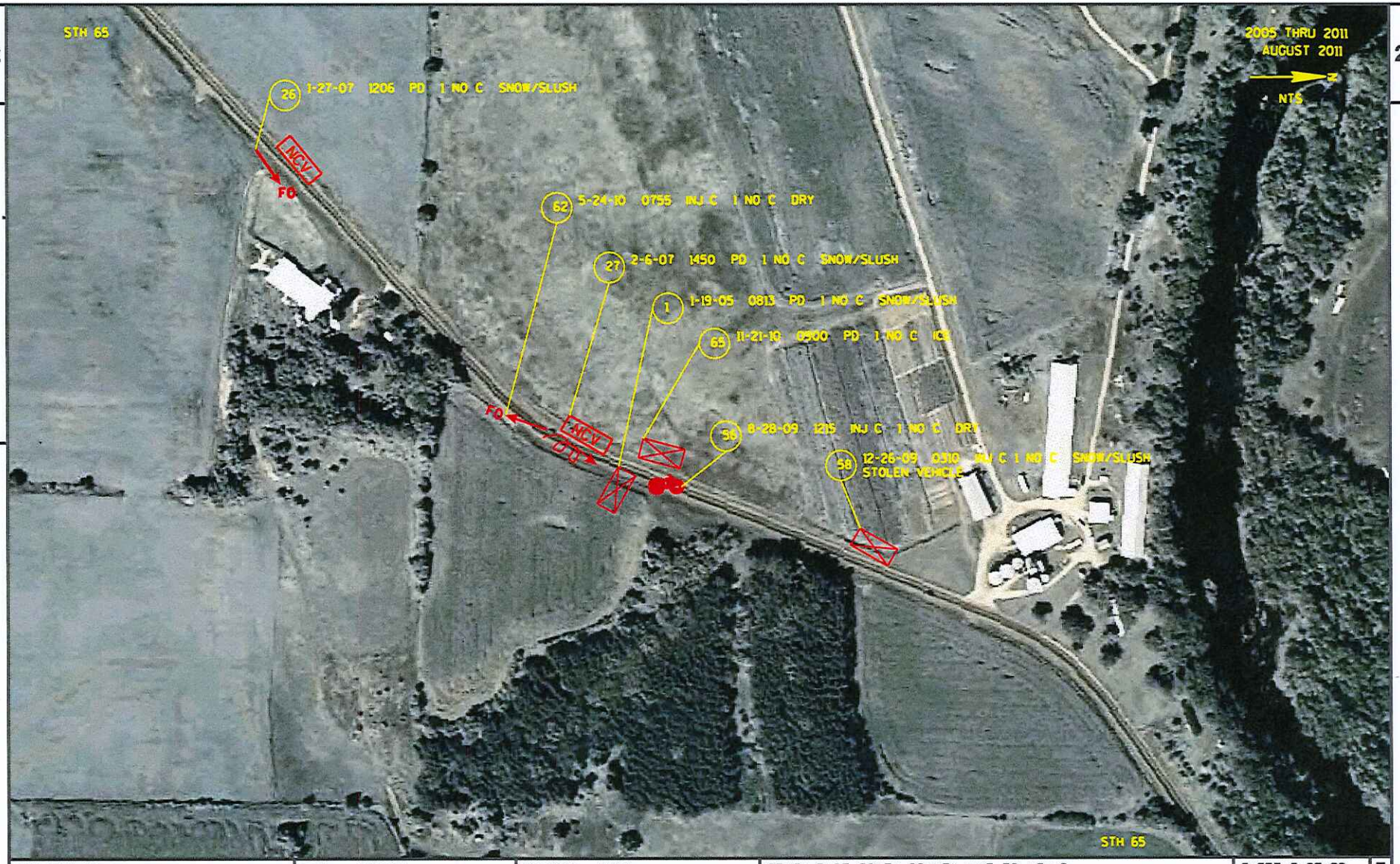
PROJECT NO: | HWY: STH 65 | COUNTY: POLK | CRASH PLOT, SOUTH COUNTY LINE TO USH 8 | SHEET 2 OF 28 | E

FILE NAME : ss....designfile....ss PLOT DATE : ss...plottingdate...ss PLOT BY : ss...plotuser...ss PLOT NAME : PLOT SCALE : ss.....plotscale.....ss WISDOT/CADDS SHEET 42

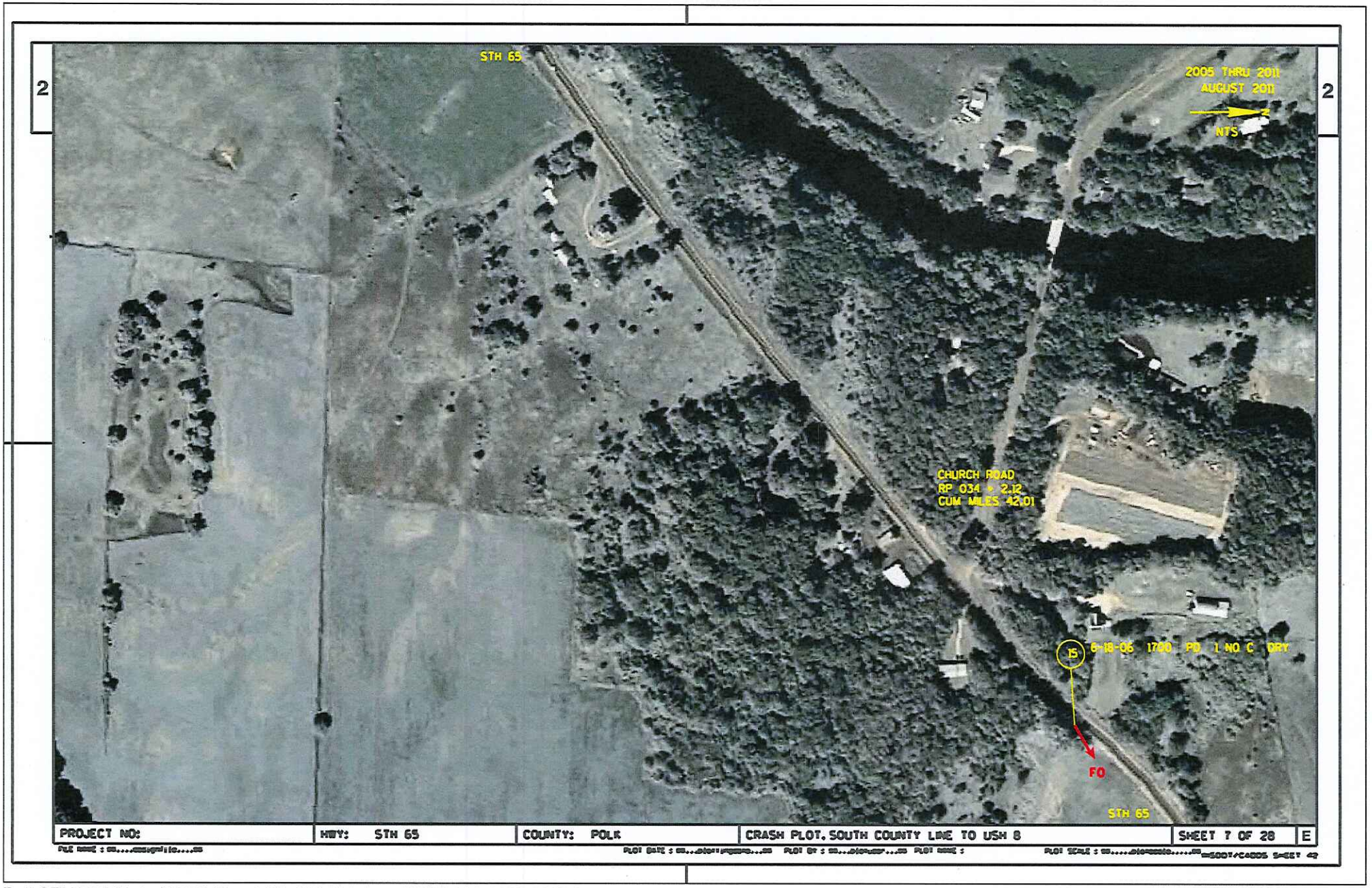





STH 65
2005 THRU 2011
AUGUST 2011
N
NTS
STH 65
2
2
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 5 OF 28
E



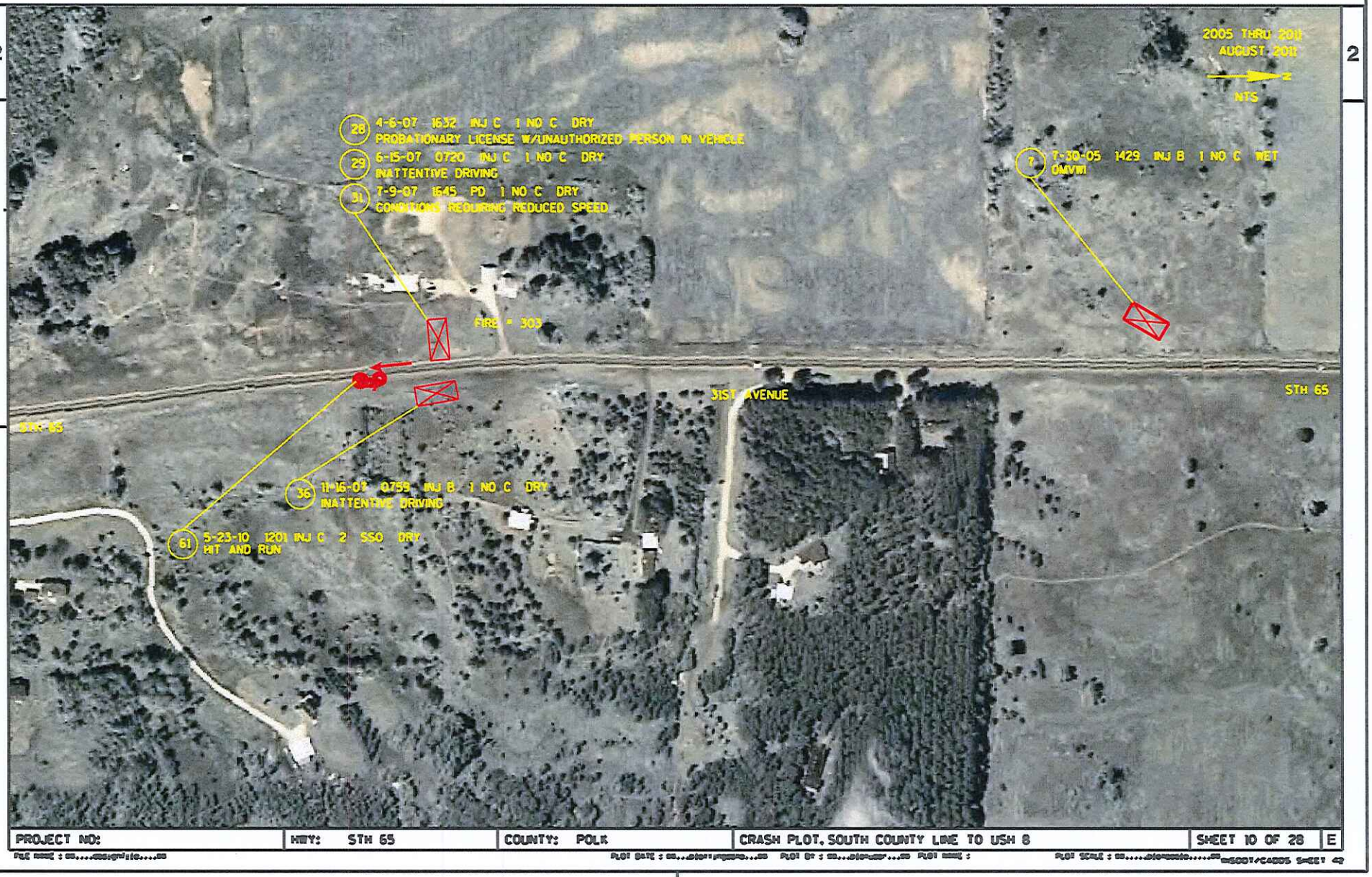
PROJECT NO:	HWY: STH 65	COUNTY: POLK	CRASH PLOT, SOUTH COUNTY LINE TO USH 8	SHEET 6 OF 28	E



PROJECT NO:	HWY: STH 65	COUNTY: POLK	CRASH PLOT, SOUTH COUNTY LINE TO USH 8	SHEET 7 OF 28	E

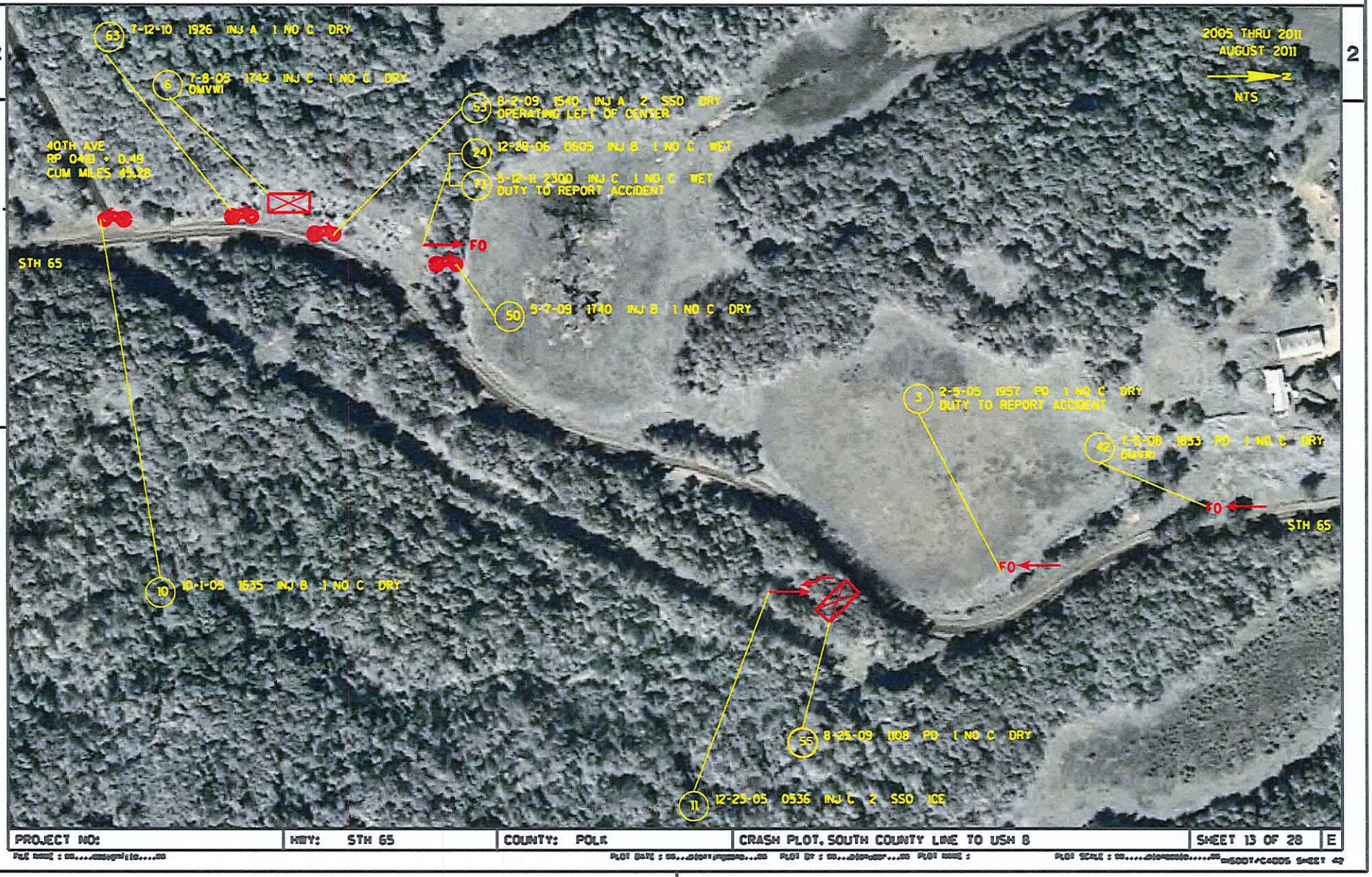
PolkSTH65 SCL to USH8 Sheet 08 082511.dgn 8/25/2011 3:18:40 PM

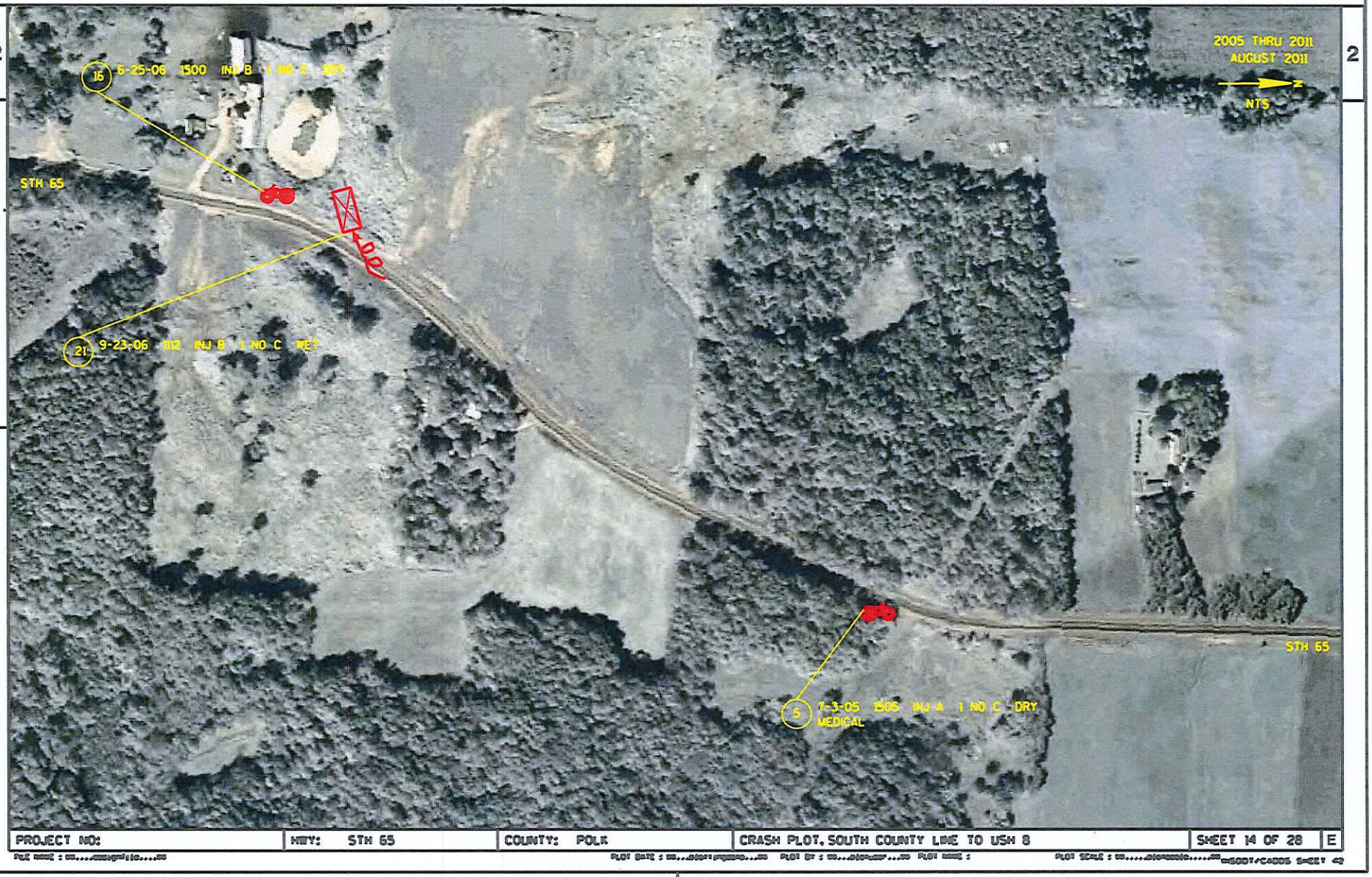

2005 THRU 2011
AUGUST 2011
N
NTS
44 10-17-08 0637 PD 2 REAR WET
57 12-08-09 2045 INJ C 1 NO C SNOW/SLUSH
STH 65
STH 88
28TH AVENUE
RP 038 + 0.00
CUM MILES 43.37
57 1-17-11 1046 INJ C 1 NO C SNOW/SLUSH
60 1-21-10 1130 PD 1 NO C ICE
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 9 OF 28
E


2005 THRU 2011
AUGUST 2011
NTS
28 4-6-07 1632 INJ C 1 NO C DRY
PROBATIONARY LICENSE W/UNAUTHORIZED PERSON IN VEHICLE
29 6-15-07 0720 INJ C 1 NO C DRY
INATTENTIVE DRIVING
31 7-9-07 1645 PD 1 NO C DRY
CONDITIONS REQUIRING REDUCED SPEED
7 7-30-05 1429 INJ B 1 NO C WET
OMVWI
FIRE # 303
31ST AVENUE
STH 65
STH 65
36 11-16-07 0759 INJ B 1 NO C DRY
INATTENTIVE DRIVING
61 5-23-10 1201 INJ C 2 SSO DRY
HIT AND RUN
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 10 OF 28
E


2
2
2005 THRU 2011
AUGUST 2011
NTS
STH 65
38TH AVENUE
RP 040 + 0.00
CUM MILES 44.32
EO
STH 65
12
1-29-06 1000 PD 1 NO C SNOW/SLUSH
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 11 OF 28
E

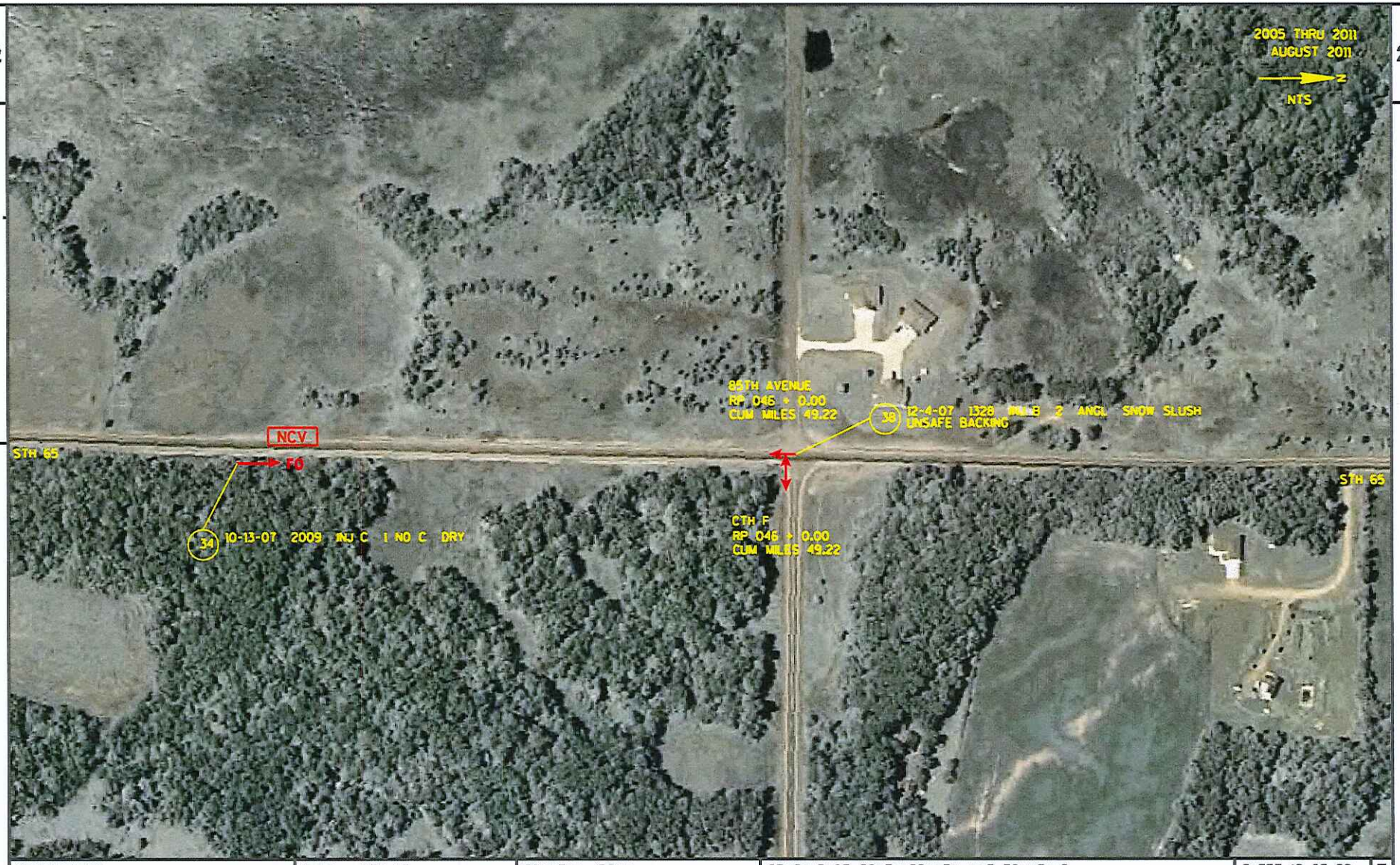

2005 THRU 2011
AUGUST 2011
N
NTS
71 4-16-11 2037 FAT K 1 NO C DRY
STH 65
48 12-6-08 2150 PD 1 NO C SNOW/SLUSH
25 1-19-07 0740 PD 1 NO C SNOW/SLUSH
APPLE RIVER
RP 041D + 0.00
CUM MILES 44.79
2 1-20-05 1250 PD 1 NO C SNOW/SLUSH
39 6-24-07 1720 INJ B 2 ANGL DRY
FRY FROM STOP SIGN
RANDOM DR
RP 041D + 0.03
CUM MILES 44.82
STH 65
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 12 OF 28
E


2005 THRU 2011
AUGUST 2011
NTS
63 7-12-10 1926 INJ A 1 NO C DRY
6 7-8-05 1742 INJ C 1 NO C DRY OMVWI
53 8-2-09 1540 INJ A 2 SSO DRY OPERATING LEFT OF CENTER
24 12-28-06 0605 INJ B 1 NO C WET
73 5-12-11 2300 INJ C 1 NO C WET DUTY TO REPORT ACCIDENT
40TH AVE
RP 040 + 0.49
CUM MILES 43.28
STH 65
FO
50 5-7-09 1740 INJ B 1 NO C DRY
3 2-5-05 1957 PD 1 NO C DRY DUTY TO REPORT ACCIDENT
42 7-9-08 1853 PD 1 NO C DRY OMVWI
FO
STH 65
FO
10 10-1-05 1635 INJ B 1 NO C DRY
55 8-25-09 1108 PD 1 NO C DRY
11 12-23-05 0536 INJ C 2 SSO ICE
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 13 OF 28
E


2
2
2005 THRU 2011
AUGUST 2011
NTS
15 6-25-06 1500 INJ B 1 NO C DRY
STH 65
21 9-23-06 1112 INJ B 1 NO C WET
5 7-3-05 1505 INJ A 1 NO C DRY
MEDICAL
STH 65
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 14 OF 28
E


2
2
2005 THRU 2011
AUGUST 2011
NTS
68 2-5-11 1202 INJ B 2 ANGL DRY
UNIT 2 WAS A SNOWMOBILE
70TH AVENUE
RP 044 + 0.00
CUM MILES 47.74
STH 65
STH 65
FD
13 2-4-06 2105 PD 1 NO C SNOW/SLUSH
OMVWI
43 8-10-08 1028 INJ B 1 NO C DRY
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 17 OF 28
E


2
2
2005 THRU 2011
AUGUST 2011
N
NTS
70 4-8-11 0823 INJ C 1 NO C DRY
51 5-29-09 0448 INJ B 1 NO C DRY
REASONABLE AND PRUDENT SPEED
46 11-9-08 2342 PD 1 NO C DRY
REASONABLE AND PRUDENT SPEED
STH 65
STH 65
52 7-13-09 1350 INJ B 1 NO C DRY
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 18 OF 28
E


2
2
2005 THRU 2011
AUGUST 2011
NTS
85TH AVENUE
RP 046 + 0.00
CUM MILES 49.22
38
12-4-07 1328 INJ B 2 ANGL SNOW SLUSH
UNSAFE BACKING
NCV
FO
STH 65
34
10-13-07 2009 INJ C 1 NO C DRY
CTH F
RP 046 + 0.00
CUM MILES 49.22
STH 65
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 19 OF 28
E

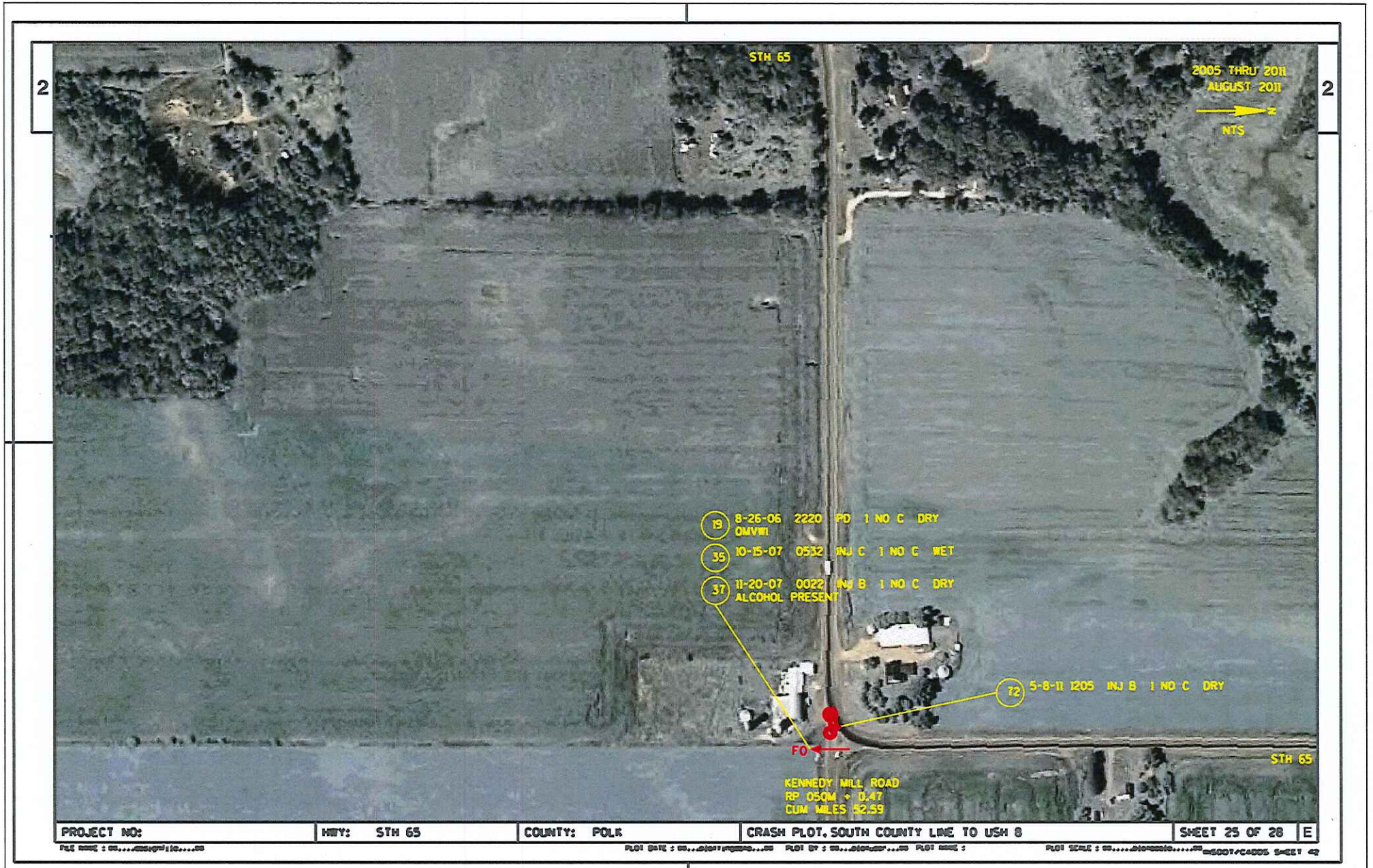

2
2
2005 THRU 2011
AUGUST 2011
N
NTS
20
9-4-06 1805 INJ A 1 NO C DRY
REASONABLE AND PRUDENT SPEED
STH 65
90TH AVENUE
RP 047 + 0.00
CUM MILES 49.71
STH 65
33
10-13-07 2035 INJ B 1 NO C DRY
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 20 OF 28
E


2
2005 THRU 2011
AUGUST 2011
N
NTS
STH 65
NCV
STH 65
18
8-22-06 1710 PD 2 ANGL DRY
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 21 OF 28
E


2005 THRU 2011
AUGUST 2011
N
NTS
69 4-2-11 1002 INJ A 2 SSO WET
FYR LEFT TURN
54 8-9-09 1606 FAT K 2 SSS DRY
CAUSE DEATH OF ANOTHER OPERATING
A VEHICLE WHILE UNDER THE INFLUENCE
OF AN INTOXICANT
22 10-9-06 1750 FAT K 1 NO C DRY
64 9-11-10 1855 PD 1 NO C DRY
IMPROPER STOP AT STOP SIGN
CTH F
RP 048 + 0.00
CUM MILES 50.70
STH 65
FO
59 1-11-10 1824 PD 1 NO C DRY
BRAKE FAILURE
FO
STH 65
CTH C
RP 049M + 0.00
CUM MILES 51.20
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 22 OF 28
E


2
2
2005 THRU 2011
AUGUST 2011
N
NTS
SOUTH BEAR LAKE ROAD
RP 049M + 0.49
CUM MILES 51.69
STH 65
STH 65
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 23 OF 28
E

PolkSTH65 SCL to USH8 Sheet 24 082511.dgn 8/26/2011 1:52:29 PM



PolkSTH65 SCL to USH8 Sheet 25 082511.dgn 8/26/2011 2:00:49 PM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2
2005 THRU 2011
AUGUST 2011
N
NTS
STH 65
120TH AVENUE
RP 051M + 0.00
CUM MILES 53.09
STH 65
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 26 OF 28
E


2
2005 THRU 2011
AUGUST 2011
N
NTS
STH 65
FO
47
11-28-08 0005 INJ C 1 NO C DRY
STH 65
PROJECT NO:
HWY: STH 65
COUNTY: POLK
CRASH PLOT, SOUTH COUNTY LINE TO USH 8
SHEET 27 OF 28
E

2005 THRU 2011
AUGUST 2011

N

NTS

PROJECT NO:	HWY: STH 65	COUNTY: POLK	CRASH PLOT, SOUTH COUNTY LINE TO USH 8	SHEET 28 OF 28	E

Exhibit 4
Crash Frequencies

CORRIDOR SEGMENTS

Segment	AADT	Length of Segment	Shoulder width	Shoulder type	CMF_{wra}	CMF_{tra}	CMF_{2r}	Length of horizontal curve (ft)	Radius of Curvature (ft)	Spiral transistion (1=present, 0=not present)	CMF_{3r}	Superelevation variance	CMF_{4r}	Driveway Density	CMF_{6r}	Centerline Rumble Strips	CMF_{7r}	Roadside Hazard Rating	CMF_{10r}	Combined CMF	N spf rs	Calibration Factor	N predicted (entire study period)						N observed (entire study period)						N expected (entire study period)						N expected (crashes/year)					
																							Total	K	A	B	C	PDO	Total	K	A	B	C	PDO	Total	K	A	B	C	PDO	Total	K	A	B	C	PDO
2009																																												
1	1800	2.4	1	GRAVEL	1.36	1.00	1.32	-	-	0	1.00	0.00	1.00	7	1.07	no	1.00	3	1.00	1.40	1.15	1.00	10.52	0.58	1.01	2.88	2.44	3.61	14.00	0.00	2.00	2.00	3.00	7.00	12.29	0.55	1.10	2.69	2.55	4.50	1.89	0.08	0.17	0.41	0.39	0.69
2	1400	2	1	GRAVEL	1.28	1.00	1.25	-	-	0	1.00	0.00	1.00	5	1.00	no	1.00	3	1.00	1.25	0.75	1.00	6.07	0.33	0.58	1.66	1.41	2.08	10.00	0.00	0.00	2.00	5.00	3.00	7.71	0.32	0.55	1.72	1.92	2.26	1.19	0.05	0.08	0.26	0.30	0.35
3	1400	1.7	2	GRAVEL	1.21	1.01	1.20	-	-	0	1.00	0.00	1.00	4	1.00	no	1.00	3	1.00	1.20	0.64	1.00	4.95	0.27	0.48	1.36	1.15	1.70	8.00	1.00	0.00	3.00	1.00	3.00	6.19	0.30	0.45	1.62	1.13	1.95	0.95	0.05	0.07	0.25	0.17	0.30
4	1400	2.4	1	GRAVEL	1.28	1.00	1.25	-	-	0	1.00	0.00	1.00	4	1.00	no	1.00	3	1.00	1.25	0.90	1.00	7.29	0.40	0.70	2.00	1.69	2.50	9.00	0.00	0.00	5.00	2.00	2.00	8.00	0.39	0.65	2.49	1.73	2.40	1.23	0.06	0.10	0.38	0.27	0.37
5	1700	1.5	1	PAVED	1.34	1.00	1.30	-	-	0	1.00	0.00	1.00	5	1.00	no	1.00	3	1.00	1.30	0.68	1.00	5.75	0.32	0.55	1.58	1.34	1.97	3.00	0.00	1.00	1.00	0.00	1.00	4.45	0.30	0.59	1.46	1.10	1.74	0.68	0.05	0.09	0.22	0.17	0.27
6	1600	0.5	1	PAVED	1.32	1.00	1.28	-	-	0	1.00	0.00	1.00	8	1.10	no	1.00	3	1.00	1.41	0.21	1.00	1.96	0.11	0.19	0.54	0.46	0.67	3.00	2.00	1.00	0.00	0.00	0.00	2.46	0.20	0.25	0.43	0.37	0.51	0.38	0.03	0.04	0.07	0.06	0.08
7	1600	0.5	1	PAVED	1.32	1.00	1.28	-	-	0	1.00	0.00	1.00	2	1.00	no	1.00	3	1.00	1.28	0.21	1.00	1.78	0.10	0.17	0.49	0.41	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.09	0.16	0.40	0.35	0.47	0.15	0.01	0.02	0.06	0.05	0.07
8	1600	1.4	1	GRAVEL	1.32	1.00	1.28	-	-	0	1.00	0.00	1.00	6	1.03	no	1.00	3	1.00	1.33	0.60	1.00	5.16	0.28	0.50	1.41	1.20	1.77	4.00	0.00	0.00	2.00	1.00	1.00	4.62	0.27	0.46	1.53	1.16	1.59	0.71	0.04	0.07	0.23	0.18	0.24
9	1600	1	1	GRAVEL	1.32	1.00	1.28	-	-	0	1.00	0.00	1.00	9	1.14	no	1.00	3	1.00	1.46	0.43	1.00	4.05	0.22	0.39	1.11	0.94	1.39	4.00	1.00	0.00	1.00	1.00	1.00	4.02	0.26	0.36	1.09	0.95	1.29	0.62	0.04	0.05	0.17	0.15	0.20
2023																																												
1	2100	2.4	1	GRAVEL	1.40	1.00	1.35	-	-	0	1.00	0.00	1.00	7	1.06	no	1.00	3	1.00	1.43	1.35	1.00	12.55	0.69	1.20	3.44	2.91	4.30	14.00	0.00	2.00	2.00	3.00	7.00	13.35	0.65	1.29	3.07	2.93	5.11	2.05	0.10	0.20	0.47	0.45	0.79
2	1600	2	1	GRAVEL	1.32	1.00	1.28	-	-	0	1.00	0.00	1.00	5	1.00	no	1.00	3	1.00	1.28	0.85	1.00	7.13	0.39	0.68	1.95	1.65	2.44	10.00	0.00	0.00	2.00	5.00	3.00	8.44	0.37	0.63	1.96	2.20	2.57	1.30	0.06	0.10	0.30	0.34	0.40
3	1600	1.7	2	GRAVEL	1.24	1.01	1.22	-	-	0	1.00	0.00	1.00	4	1.00	no	1.00	3	1.00	1.22	0.73	1.00	5.77	0.32	0.55	1.58	1.34	1.98	8.00	1.00	0.00	3.00	1.00	3.00	6.76	0.35	0.51	1.84	1.29	2.20	1.04	0.05	0.08	0.28	0.20	0.34
4	1650	2.4	1	GRAVEL	1.33	1.00	1.29	-	-	0	1.00	0.00	1.00	4	1.00	no	1.00	3	1.00	1.29	1.06	1.00	8.88	0.49	0.85	2.43	2.06	3.05	9.00	0.00	0.00	5.00	2.00	2.00	8.93	0.47	0.79	2.93	2.05	2.80	1.37	0.07	0.12	0.45	0.32	0.43
5	2000	1.5	1	PAVED	1.40	1.00	1.35	-	-	0	1.00	0.00	1.00	5	1.00	no	1.00	3	1.00	1.35	0.80	1.00	7.04	0.39	0.68	1.93	1.63	2.41	3.00	0.00	1.00	1.00	0.00	1.00	4.92	0.36	0.71	1.71	1.30	2.02	0.76	0.06	0.11	0.26	0.20	0.31
6	1850	0.5	1	PAVED	1.37	1.00	1.32	-	-	0	1.00	0.00	1.00	8	1.10	no	1.00	3	1.00	1.45	0.25	1.00	2.33	0.13	0.22	0.64	0.54	0.80	3.00	2.00	1.00	0.00	0.00	0.00	2.68	0.24	0.30	0.49	0.43	0.58	0.41	0.04	0.05	0.08	0.07	0.09
7	1850	0.5	1	PAVED	1.37	1.00	1.32	-	-	0	1.00	0.00	1.00	2	1.00	no	1.00	3	1.00	1.32	0.25	1.00	2.13	0.12	0.20	0.58	0.49	0.73	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.11	0.19	0.46	0.40	0.54	0.16	0.02	0.03	0.07	0.06	0.08
8	1900	1.4	1	GRAVEL	1.38	1.00	1.33	-	-	0	1.00	0.00	1.00	6	1.03	no	1.00	3	1.00	1.38	0.71	1.00	6.36	0.35	0.61	1.74	1.47	2.18	4.00	0.00	0.00	2.00	1.00	1.00	5.14	0.33	0.55	1.80	1.38	1.86	0.79	0.05	0.09	0.28	0.21	0.29
9	1900	1	1	GRAVEL	1.38	1.00	1.33	-	-	0	1.00	0.00	1.00	9	1.13	no	1.00	3	1.00	1.50	0.51	1.00	4.96	0.27	0.48	1.36	1.15	1.70	4.00	1.00	0.00	1.00	1.00	1.00	4.44	0.32	0.43	1.27	1.12	1.50	0.68	0.05	0.07	0.20	0.17	0.23

AECOM

WisDOT Project ID: 0695-21-50

AECOM No. 60241350 June 2012

STH 65 Safety Analysis

Polk County

Exhibit 4-1

Segment Crash Frequencies Under Existing Conditions - 2009 & 2023

HORIZONTAL CURVE SEGMENTS

Horizontal curve PI	AADT	Length of Segment	Shoulder width	Shoulder type	CMF_{wra}	CMF_{tra}	CMF_{2r}	Length of horizontal curve (mi)	Radius of Curvature (ft)	Spiral transistion (1=present, 0=not present)	CMF_{3r}	Superelevation variance	CMF_{4r}	Driveway Density	CMF_{6r}	Centerline Rumble Strips	CMF_{7r}	Roadside Hazard Rating	CMF_{10r}	Combined CMF	N spf rs	Calibration Factor	N predicted (entire study period)						N observed (entire study period)						N expected (entire study period)						N expected (crashes/year)					
																							Total	K	A	B	C	PDO	Total	K	A	B	C	PDO	Total	K	A	B	C	PDO	Total	K	A	B	C	PDO
2009																																															
STA 40	1800	0.043	1	GRAVEL	1.36	1	1.32	0.163	370	0	1.86	0.006	1.00	1.00			1.00	3	1.00	2.45	0.02	1.00	0.33	0.02	0.03	0.09	0.08	0.11	3.00	0.00	1.00	1.00	0.00	1.00	2.05	0.02	0.17	0.39	0.05	0.45	0.32	0.00	0.03	0.06	0.01	0.07
STA 42	1800	0.040	1	GRAVEL	1.36	1	1.32	0.163	1200	0	1.26	0.080	1.24	1.00			1.00	3	1.00	2.06	0.02	1.00	0.26	0.01	0.03	0.07	0.06	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.02	0.05	0.04	0.06	0.02	0.00	0.00	0.01	0.01	0.01
STA 45	1800	0.079	1	GRAVEL	1.36	1	1.32	0.163	2590	0	1.12	0.086	1.26	1.00			1.00	3	1.00	1.86	0.04	1.00	0.46	0.03	0.04	0.13	0.11	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.02	0.04	0.09	0.08	0.11	0.03	0.00	0.01	0.01	0.01	0.02
STA 50	1800	0.100	1	GRAVEL	1.36	1	1.32	0.100	2900	0	1.18	0.062	1.19	1.00			1.00	3	1.00	1.84	0.05	1.00	0.58	0.03	0.06	0.16	0.13	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.03	0.05	0.11	0.10	0.13	0.04	0.00	0.01	0.02	0.02	0.02
STA 73	1800	0.073	1	GRAVEL	1.36	1	1.32	0.073	1300	0	1.55	0.052	1.16	1.00			1.00	3	1.00	2.35	0.03	1.00	0.53	0.03	0.05	0.15	0.12	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.03	0.04	0.10	0.09	0.11	0.03	0.00	0.01	0.02	0.01	0.02
STA 98	1800	0.050	1	GRAVEL	1.36	1	1.32	0.050	600	0	2.71	0.025	1.07	1.00			1.00	3	1.00	3.83	0.02	1.00	0.60	0.03	0.06	0.17	0.14	0.21	5.00	0.00	0.00	0.00	2.00	3.00	3.85	0.03	0.05	0.09	0.88	1.58	0.59	0.00	0.01	0.01	0.13	0.24
STA 111	1800	0.063	1	GRAVEL	1.36	1	1.32	0.063	575	0	2.43	0.024	1.07	1.00			1.00	3	1.00	3.43	0.03	1.00	0.67	0.04	0.06	0.18	0.16	0.23	1.00	0.00	0.00	0.00	1.00	0.00	0.91	0.03	0.05	0.11	0.47	0.12	0.14	0.00	0.01	0.02	0.07	0.02
STA 136	1800	0.050	1	GRAVEL	1.36	1	1.32	0.050	1600	0	1.64	0.058	1.17	1.00			1.00	3	1.00	2.53	0.02	1.00	0.40	0.02	0.04	0.11	0.09	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.02	0.03	0.07	0.06	0.08	0.02	0.00	0.01	0.01	0.01	0.01
STA 141	1800	0.085	1	GRAVEL	1.36	1	1.32	0.085	950	0	1.64	0.072	1.22	1.00			1.00	3	1.00	2.62	0.04	1.00	0.70	0.04	0.07	0.19	0.16	0.24	1.00	0.00	0.00	0.00	1.00	0.00	0.90	0.03	0.06	0.13	0.42	0.14	0.14	0.01	0.01	0.02	0.06	0.02
STA 149	1800	0.095	1	GRAVEL	1.36	1	1.32	0.095	425	0	2.29	0.000	1.00	1.00			1.00	3	1.00	3.01	0.05	1.00	0.89	0.05	0.09	0.24	0.21	0.31	3.00	0.00	1.00	0.00	1.00	1.00	2.35	0.04	0.25	0.15	0.48	0.61	0.36	0.01	0.04	0.02	0.07	0.09
STA 188	1400	0.054	1	GRAVEL	1.28	1	1.25	0.054	2000	0	1.48	0.081	1.24	1.00			1.00	3	1.00	2.29	0.02	1.00	0.30	0.02	0.03	0.08	0.07	0.10	1.00	0.00	0.00	0.00	0.00	1.00	0.70	0.02	0.03	0.06	0.05	0.38	0.11	0.00	0.00	0.01	0.01	0.06
STA 203	1400	0.071	1	GRAVEL	1.28	1	1.25	0.071	1400	0	1.52	0.072	1.22	1.00			1.00	3	1.00	2.30	0.03	1.00	0.40	0.02	0.04	0.11	0.09	0.14	1.00	0.00	0.00	0.00	1.00	0.00	0.74	0.02	0.03	0.08	0.31	0.09	0.11	0.00	0.01	0.01	0.05	0.01
STA 218	1400	0.045	1	GRAVEL	1.28	1	1.25	0.045	1800	0	1.64	0.070	1.21	1.00			1.00	3	1.00	2.47	0.02	1.00	0.27	0.01	0.03	0.07	0.06	0.09	5.00	0.00	0.00	1.00	3.00	1.00	3.04	0.01	0.02	0.33	0.79	0.39	0.47	0.00	0.00	0.05	0.12	0.06
STA 268	1400	0.099	2	GRAVEL	1.21	1.01	1.20	0.099	1000	0	1.52	0.039	1.12	1.00			1.00	3	1.00	2.04	0.04	1.00	0.49	0.03	0.05	0.13	0.11	0.17	2.00	0.00	0.00	0.00	0.00	2.00	1.30	0.03	0.04	0.10	0.09	0.69	0.20	0.00	0.01	0.02	0.01	0.11
STA 294	1400	0.047	2	GRAVEL	1.21	1.01	1.20	0.047	2000	0	1.55	0.029	1.09	1.00			1.00	3	1.00	2.02	0.02	1.00	0.23	0.01	0.02	0.06	0.05	0.08	1.00	1.00	0.00	0.00	0.00	0.00	0.64	0.07	0.02	0.05	0.04	0.06	0.10	0.01	0.00	0.01	0.01	0.01
STA 338	1400	0.061	2	GRAVEL	1.21	1.01	1.20	0.061	750	0	2.12	0.050	1.15	1.00			1.00	3	1.00	2.92	0.02	1.00	0.44	0.02	0.04	0.12	0.10	0.15	1.00	0.00	0.00	0.00	0.00	1.00	0.79	0.02	0.04	0.08	0.07	0.46	0.12	0.00	0.01	0.01	0.01	0.07
STA 342	1400	0.046	2	GRAVEL	1.21	1.01	1.20	0.046	2000	0	1.57	0.078	1.23	1.00			1.00	3	1.00	2.31	0.02	1.00	0.26	0.01	0.02	0.07	0.06	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01	0.02	0.05	0.05	0.06	0.02	0.00	0.00	0.01	0.01	0.01
STA 345	1400	0.045	2	GRAVEL	1.21	1.01	1.20	0.131	650	0	1.61	0.065	1.20	1.00			1.00	3	1.00	2.30	0.02	1.00	0.25	0.01	0.02	0.07	0.06	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01	0.02	0.05	0.04	0.06	0.02	0.00	0.00	0.01	0.01	0.01
STA 348	1400	0.086	2	GRAVEL	1.21	1.01	1.20	0.131	1400	0	1.28	0.081	1.24	1.00			1.00	3	1.00	1.91	0.03	1.00	0.40	0.02	0.04	0.11	0.09	0.14	2.00	0.00	0.00	2.00	0.00	0.00	1.24	0.02	0.03	0.55	0.07	0.10	0.19	0.00	0.01	0.08	0.01	0.02
STA 353	1400	0.076	2	GRAVEL	1.21	1.01	1.20	0.255	1200	0	1.17	0.083	1.25	1.00			1.00	3	1.00	1.75	0.03	1.00	0.32	0.02	0.03	0.09	0.07	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.02	0.03	0.07	0.06	0.08	0.02	0.00	0.00	0.01	0.01	0.01
STA 358	1400	0.139	2	GRAVEL	1.21	1.01	1.20	0.255	5300	0	1.04	0.051	1.15	1.00			1.00	3	1.00	1.43	0.05	1.00	0.48	0.03	0.05	0.13	0.11	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.03	0.04	0.11	0.09	0.13	0.04	0.00	0.01	0.02	0.01	0.02
STA 363	1400	0.040	2	GRAVEL	1.21	1.01	1.20	0.255	600	0	1.34	0.075	1.23	1.00			1.00	3	1.00	1.96	0.02	1.00	0.19	0.01	0.02	0.05	0.04	0.07	1.00	0.00	1.00	0.00	0.00	0.00	0.62	0.01	0.11	0.04	0.04	0.05	0.10	0.00	0.02	0.01	0.01	0.01
STA 644	1600	0.030	1	GRAVEL	1.32	1	1.28	0.030	2000	0	1.86	0.125	1.38	1.00			1.00	3	1.00	3.29	0.01	1.00	0.27	0.02	0.03	0.07	0.06	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01	0.02	0.05	0.04	0.05	0.01	0.00	0.00	0.00	0.01	0.01
STA 670	1600	0.326	1	GRAVEL	1.32	1	1.28	0.326	1090	0	1.15	0.011	1.01	1.00			1.00	3	1.00	1.48	0.14	1.00	1.34	0.07	0.13	0.37	0.31	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.07	0.12	0.29	0.25	0.34	0.10	0.01	0.02	0.04	0.04	0.05
STA 692	1600	0.034	1	GRAVEL	1.32	1	1.28	0.034	115	0	14.07	0.000	1.00	1.00			1.00	3	1.00	18.04	0.01	1.00	1.73	0.09	0.17	0.47	0.40	0.59	4.00	0.00	0.00	2.00	1.00	1.00	3.82	0.06	0.08	1.64	0.84	0.92	0.59	0.01	0.01	0.25	0.13	0.14
STA 718	1600	0.024	1	GRAVEL	1.32	1	1.28	0.024	2000	0	2.06	0.060	1.18	1.00			1.00	3	1.00	3.12	0.01	1.00	0.21	0.01	0.02	0.06	0.05	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.02	0.04	0.03	0.04	0.01	0.00	0.00	0.01	0.01	0.01
STA 764	1600	0.065	1	GRAVEL	1.32	1	1.28	0.065	2500	0	1.32	0.067	1.20	1.00			1.00	3	1.00	2.03	0.03	1.00	0.37	0.02	0.04	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.02	0.03	0.07	0.07	0.09	0.02	0.00	0.00	0.01	0.01	0.01
2023																																														
STA 40	2100	0.043	1	GRAVEL	1.40	1	1.35	0.163	370	0	1.86	0.006	1.00	1.00			1.00	3	1.00	2.51	0.02	1.00	0.39	0.02	0.04	0.11	0.09	0.13	3.00	0.00	1.00	1.00	0.00	1.00	2.18	0.02	0.20	0.44	0.06	0.50	0.33	0.00	0.03	0.07	0.01	0.08
STA 42	2100	0.040	1	GRAVEL	1.40	1	1.35	0.163	1200	0	1.26	0.080	1.24	1.00			1.00	3	1.00	2.12	0.02	1.00	0.31	0.02	0.03	0.09	0.07	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.02	0.03	0.06	0.05	0.07	0.02	0.00	0.00	0.01	0.01	0.01
STA 45	2100	0.079	1	GRAVEL	1.40	1	1.35	0.163	2590	0	1.12	0.086	1.26	1.00			1.00	3	1.00	1.91	0.04	1.00	0.55	0.03	0.05	0.15	0.13	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03	0.05	0.10	0.09	0.12	0.03	0.00	0.01	0.02	0.01	0.02
STA 50	2100	0.100	1	GRAVEL	1.40	1	1.35	0.100	2600	0	1.20	0.062	1.19	1.00			1.00	3	1.00	1.92	0.06	1.00	0.70	0.04	0.07	0.19	0.16	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.04	0.06	0.13	0.12	0.15	0.04	0.01	0.01	0.02	0.02	0.02
STA 73	2100	0.073	1	GRAVEL	1.40	1	1.35	0.073	1300	0	1.55	0.052	1.16	1.00			1.00	3	1.00	2.42	0.04	1.00	0.64	0.04	0.06	0.18	0.15	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03	0.05	0.11	0.10	0.13	0.03	0.00	0.01	0.02	0.02	0.02
STA 98	2100	0.050	1	GRAVEL	1.40	1	1.35	0.050	600	0	2.71	0.025	1.07	1.00			1.00	3	1.00	3.93	0.03	1.00	0.72	0.04	0.07	0.20	0.17	0.25	5.00	0.00	0.00	0.00	2.00	3.00	4.02	0.03	0.05	0.10	0.97	1.73	0.62	0.01	0.01	0.02	0.15	0.27
STA 111	2100	0.063	1	GRAVEL	1.40	1	1.35	0.063	575	0	2.43	0.024	1.07	1.00			1.00	3	1.00	3.52	0.04	1.00	0.81	0.04	0.08	0.22	0.19	0.28	1.00	0.00	0.00	0.00	1.00	0.00	0.95	0.04	0.06	0.12	0.52	0.14	0.15	0.01	0.01	0.02	0.08	0.02
STA 136	2100	0.050	1	GRAVEL	1.40	1	1.35	0.050	1600	0	1.64	0.058	1.17	1.00			1.00	3	1.00	2.60	0.03	1.00	0.48	0.03	0.05	0.13	0.11	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.02	0.04	0.08	0.07	0.09	0.02	0.00	0.01	0.01	0.01	0.01
STA 141	2100	0.085	1	GRAVEL	1.40	1	1.35	0.085	950	0	1.64	0.072	1.22	1.00			1.00	3	1.00	2.69	0.05	1.00	0.84	0.05	0.08	0.23	0.19	0.29	1.00	0.00	0.00	0.00	1.00	0.00	0.95	0.04	0.07	0.14	0.48	0.16	0.15	0.01	0.01	0.02	0.07	0.02
STA 149	2100	0.095	1	GRAVEL	1.40	1	1.35	0.095	1330	0	1.41	0.000	1.00	1.00			1.00	3	1.00	1.91	0.05	1.00	0.66	0.04	0.06	0.18	0.15	0.23	3.00	0.00	1.00	0.00	1.00	1.00	2.11	0.03	0.19	0.12	0.39	0.50	0.33	0.01	0.03	0.02	0.06	0.08
STA 188	1600	0.054	1	GRAVEL	1.32	1	1.28	0.054	2000	0	1.48	0.081	1.24	1.00			1.00	3	1.00	2.35	0.02	1.00	0.35	0.02	0.03	0.10	0.08	0.12	1.00	0.00	0.00	0.00	0.00	1.00	0.75	0.02	0.03	0.07	0.06	0.43	0.11	0.00	0.00	0.01	0.01	0.07
STA 203	1600	0.071	1	GRAVEL	1.32	1	1.28	0.071	1400	0	1.52	0.072	1.22	1.00			1.00	3	1.00	2.37	0.03	1.00	0.47	0.03	0.05	0.13	0.11	0.16	1.00	0.00	0.00	0.00	1.00	0.00	0.79	0.02	0.04	0.09	0.34	0.11	0.12	0.00	0.01	0.01	0.05	0.02
STA 218	1600	0.045	1	GRAVEL	1.32	1	1.28	0.045	1800	0	1.64	0.070	1.21	1.00			1.00	3	1.00	2.54	0.02	1.00	0.32	0.02	0.03	0.09	0.07	0.11	5.00	0.00	0.00	1.00	3.00	1.00	3.24	0.02	0.03	0.37	0.89	0.43	0.50	0.00	0.00	0.06	0.14	0.07
STA 268	1600	0.099	2	GRAVEL	1.24	1.01	1.22	0.099	1000	0	1.52	0.039	1.12	1.00			1.00	3	1.00	2.08	0.04	1.00	0.57	0.03	0.05	0.16	0.13	0.20	2.00	0.00	0.00	0.00	0.00	2.00	1.40	0.03	0.05	0.11	0.10	0.77	0.21	0.00	0.01	0.02	0.02	0.12
STA 294	1600	0.047	2	GRAVEL	1.24	1.01	1.22	0.047	2000	0	1.55	0.029	1.09	1.00			1.00	3	1.00	2.06	0.02	1.00	0.27	0.01	0.03	0.07	0.06	0.09	1.00	1.00	0.00	0.00	0.00	0.00	0.69	0.08	0.02	0.05	0.05	0.06	0.11	0.01	0.00	0.01	0.01	0.01
STA 338	1600	0.061	2	GRAVEL	1.24	1.01	1.22	0.061	750	0	2.12	0.050	1.15	1.00			1.00	3	1.00	2.99	0.03	1.00	0.51	0.03	0.05	0.14	0.12	0.17	1.00	0.00	0.00	0.00	0.00	1.00	0.83	0.03	0.04	0.09	0.08	0.51	0.13	0.00	0.01	0.01	0.01	0.08
STA 342	1600	0.046	2	GRAVEL	1.24	1.01	1.22	0.046	2000	0	1.57	0.078	1.23	1.00			1.00	3	1.00	2.36	0.02	1.00	0.30	0.02	0.03	0.08	0.07	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.02	0.03	0.06	0.05	0.07	0.02	0.00	0.00	0.01	0.01	0.01
STA 345	1600	0.045	2	GRAVEL	1.24	1.01	1.22	0.131	650	0	1.61	0.065	1.20	1.00			1.00	3	1.00	2.35	0.02	1.00	0.29	0.02	0.03	0.08	0.07	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.01	0.02	0.06	0.05	0.07	0.02	0.00	0.00	0.01	0.01	0.01
STA 348	1600	0.086	2	GRAVEL	1.24	1.01	1.22	0.131	1400	0	1.28	0.081	1.24	1.00			1.00	3	1.00	1.95	0.04	1.00	0.47	0.03	0.04	0.13	0.11	0.16	2.00	0.00	0.00	2.00	0.00	0.00	1.33	0.02	0.04	0.61	0.08	0.11	0.20	0.00	0.01	0.09	0.01	0.02
STA 353	1600	0.076	2	GRAVEL	1.24	1.01	1.22	0.255	1200	0	1.17	0.083	1.25	1.00			1.00	3	1.00	1.78	0.03	1.00	0.38	0.02	0.04	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.02	0.03	0.08	0.07	0.09	0.03	0.00	0.00	0.01	0.01	0.01
STA 358	1600	0.139	2	GRAVEL	1.24	1.01	1.22	0.255	5300	0	1.04	0.051	1.15	1.00			1.00	3	1.00	1.46	0.06	1.00	0.57	0.03	0.05	0.15	0.13	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.03	0.05	0.12	0.11	0.15	0.04	0.00	0.01	0.02	0.02	0.02
STA 363	1600	0.040	2	GRAVEL	1.24	1.01	1.22	0.255	1200	0	1.17	0.075	1.23	1.00			1.00	3	1.00	1.75	0.02	1.00	0.20	0.01	0.02	0.05	0.05	0.07	1.00	0.00	1.00	0.00	0.00	0.00	0.63	0.01	0.12	0.04	0.04	0.05	0.10	0.00	0.02	0.01	0.01	0.01
STA 644	1900	0.030	1	GRAVEL	1.38	1	1.33	0.030	2000	0	1.86	0.125	1.38	1.00			1.00	3	1.00	3.42	0.02	1.00	0.34	0.02	0.03	0.09	0.08	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.02	0.03	0.05	0.05	0.06	0.01	0.00	0.00	0.01	0.01	0.01
STA 670	1900	0.326	1	GRAVEL	1.38	1	1.33	0.326	1090	0	1.15	0.011	1.01	1.00			1.00	3	1.00	1.54	0.17	1.00	1.65	0.09	0.16	0.45	0.38	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.09	0.14	0.34	0.30	0.40	0.12	0.01	0.02	0.05	0.05	0.06
STA 692	1900	0.034	1	GRAVEL	1.38	1	1.33	0.034	115	0	14.07	0.000	1.00	1.00			1.00	3	1.00	18.76	0.02	1.00	2.13	0.12	0.20	0.58	0.49	0.73	4.00	0.00	0.00	2.00	1.00	1.00	3.88	0.06	0.09	1.72	0.88	0.96	0.60	0.01	0.01	0.26	0.14	0.15
STA 718	1900	0.024	1	GRAVEL	1.38	1	1.33	0.024	2000	0	2.06	0.060	1.18	1.00			1.00	3	1.00	3.24	0.01	1.00	0.26	0.01	0.03	0.07	0.06	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.02	0.04	0.04	0.05	0.01	0.00	0.00	0.01	0.01	0.01
STA 764	1900	0.065	1	GRAVEL	1.38	1	1.33	0.065	2500	0	1.32	0.067	1.20	1.00			1.00	3	1.00	2.11	0.03	1.00	0.45	0.02	0.04	0.12	0.11	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.02	0.04	0.09	0.08	0.10	0.03	0.00	0.01	0.01	0.01	0.02

AECOM

WisDOT Project ID: 0695-21-50

AECOM No. 60241350 June 2012

STH 65 Safety Analysis

Polk County

Exhibit 4-2

Curve Crash Frequencies Under Existing Conditions - 2009 & 2023

Exhibit 5
Crash Frequency Reductions

FLATTEN HORIZONTAL CURVE SEGMENTS

Segments	AADT	Length of Segment (mi)	Shoulder width	Shoulder type	CMF_{wra}	CMF_{tra}	CMF2r	Length of horizontal curve (mi)	Radius of Curvature (ft)	Spiral transistion (1=present, 0=not	CMF_{3r}	Superelevation variance	CMF_{4r}	Driveway Density	CMF_{6r}	Centerline Rumble Strips	CMF_{7r}	Roadside Hazard Rating	CMF_{10r}	Combined CMF	N spf rs	Calibration Factor	N predicted (entire study period)						N observed (entire study period)						N expected (entire study period)						N expected (crashes/year)					
																							Total	K	A	B	C	PDO	Total	K	A	B	C	PDO	Total	K	A	B	C	PDO	Total	K	A	B	C	PDO
Horizontal Curve Realignment No. 1, STA 40- STA 50																																											
STA 40	2100	0.31	1	GRAVEL	1.40	1	1.35	0.16	370	0	1.86	0.006	1.00		1.00		1.00	3	1.00	2.51	0.18	1.00	2.88	0.16	0.28	0.79	0.67	0.99	3.00	0.00	1.00	1.00	0.00	1.00	2.96	0.14	0.40	0.87	0.45	0.99	0.46	0.02	0.06	0.13	0.07	0.15
STA 42	2100	0.04	1	GRAVEL	1.40	1	1.35	0.16	1200	0	1.26	0.080	1.24		1.00		1.00	3	1.00	2.12	0.02	1.00	0.31	0.02	0.03	0.09	0.07	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.02	0.03	0.06	0.05	0.07	0.02	0.00	0.00	0.01	0.01	0.01
STA 45	2100	0.08	1	GRAVEL	1.40	1	1.35	0.16	2590	0	1.12	0.086	1.26		1.00		1.00	3	1.00	1.91	0.04	1.00	0.55	0.03	0.05	0.15	0.13	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03	0.05	0.10	0.09	0.12	0.03	0.00	0.01	0.02	0.01	0.02
STA 50	2100	0.17	1	GRAVEL	1.40	1	1.35	0.10	2600	0	1.20	0.062	1.19		1.00		1.00	3	1.00	1.92	0.09	1.00	1.18	0.06	0.11	0.32	0.27	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.06	0.10	0.22	0.20	0.26	0.07	0.01	0.02	0.03	0.03	0.04
PROPOSED	2100	0.60	6	PAVED	1.00	1	1.00	0.29	1330	0	1.14	0	1.00		1.00		1.00	2	0.94	1.06	0.33	1.00	2.31	0.13	0.22	0.63	0.54	0.79	3.00	0.00	1.00	1.00	0.00	1.00	2.31	0.13	0.22	0.63	0.54	0.79	0.36	0.02	0.03	0.10	0.08	0.12
Horizontal Curve Realignment No. 2, STA 98																																											
STA 98	2100	0.23	1	GRAVEL	1.40	1	1.35	0.05	600	0	2.71	0.025	1.07		1.00		1.00	3	1.00	3.93	0.13	1.00	3.27	0.18	0.31	0.90	0.76	1.12	5.00	0.00	0.00	0.00	2.00	3.00	4.61	0.15	0.24	0.47	1.31	2.13	0.71	0.02	0.04	0.07	0.20	0.33
PROPOSED	2100	0.23	6	PAVED	1.00	1	1.00	0.11	1330	0	1.35	0	1.00		1.00		1.00	2	0.94	1.26	0.13	1.00	1.05	0.06	0.10	0.29	0.24	0.36	5.00	0.00	0.00	0.00	2.00	3.00	3.10	0.05	0.09	0.22	0.60	1.08	0.48	0.01	0.01	0.03	0.09	0.17
Horizontal Curve Realignment No. 3, STA 111																																											
STA 111	2100	0.27	1	GRAVEL	1.40	1	1.35	0.06	575	0	2.43	0.024	1.07		1.00		1.00	3	1.00	3.52	0.15	1.00	3.43	0.19	0.33	0.94	0.80	1.18	1.00	0.00	0.00	0.00	1.00	0.00	1.60	0.16	0.26	0.51	0.88	0.58	0.25	0.02	0.04	0.08	0.14	0.09
PROPOSED	2100	0.27	6	PAVED	1.00	1	1.00	0.15	1330	0	1.27	0	1.00		1.00		1.00	2	0.94	1.19	0.15	1.00	1.15	0.06	0.11	0.31	0.27	0.39	1.00	0.00	0.00	0.00	1.00	0.00	1.07	0.06	0.10	0.25	0.41	0.29	0.17	0.01	0.02	0.04	0.06	0.04
Horizontal Curve Realignment No. 4, STA 136 - STA 149																																											
STA 136	2100	0.11	1	GRAVEL	1.40	1	1.35	0.05	1600	0	1.64	0.058	1.17		1.00		1.00	3	1.00	2.60	0.06	1.00	1.00	0.06	0.10	0.27	0.23	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.05	0.08	0.17	0.15	0.19	0.05	0.01	0.01	0.03	0.02	0.03
STA 141	2100	0.11	1	GRAVEL	1.40	1	1.35	0.09	950	0	1.64	0.072	1.22		1.00		1.00	3	1.00	2.69	0.06	1.00	1.06	0.06	0.10	0.29	0.25	0.36	1.00	0.00	0.00	0.00	1.00	0.00	1.02	0.05	0.08	0.18	0.51	0.20	0.16	0.01	0.01	0.03	0.08	0.03
STA 149	2100	0.30	1	GRAVEL	1.40	1	1.35	0.09	425	0	2.29	0.000	1.00		1.00		1.00	3	1.00	3.09	0.17	1.00	3.38	0.19	0.32	0.93	0.78	1.16	3.00	0.00	1.00	0.00	1.00	1.00	3.10	0.16	0.46	0.54	0.87	1.08	0.48	0.02	0.07	0.08	0.13	0.17
PROPOSED	2100	0.49	6	PAVED	1.00	1	1.00	0.22	1330	0	1.18	0	1.00		1.00		1.00	2	0.94	1.10	0.28	1.00	1.98	0.11	0.19	0.54	0.46	0.68	4.00	0.00	1.00	0.00	2.00	1.00	2.96	0.10	0.26	0.43	0.74	0.76	0.46	0.02	0.04	0.07	0.11	0.12
Horizontal Curve Realignment No. 5, STA 268																																											
STA 268	1600	0.24	1	GRAVEL	1.32	1	1.28	0.10	1000	0	1.52	0.039	1.12		1.00		1.00	3	1.00	2.18	0.10	1.00	1.44	0.08	0.14	0.39	0.33	0.49	2.00	0.00	0.00	0.00	0.00	2.00	1.77	0.07	0.12	0.28	0.25	0.99	0.27	0.01	0.02	0.04	0.04	0.15
PROPOSED	1600	0.24	6	PAVED	1.00	1	1.00	0.13	1330	0	1.30	0	1.00		1.00		1.00	2	0.94	1.21	0.10	1.00	0.80	0.04	0.08	0.22	0.19	0.27	2.00	0.00	0.00	0.00	0.00	2.00	1.33	0.04	0.07	0.18	0.16	0.64	0.20	0.01	0.01	0.03	0.02	0.10
Horizontal Curve Realignment No. 6, STA 338- STA 363																																											
STA 338	1600	0.10	2	GRAVEL	1.24	1.01	1.22	0.06	750	0	2.12	0.050	1.15		1.00		1.00	3	1.00	2.99	0.04	1.00	0.81	0.04	0.08	0.22	0.19	0.28	1.00	0.00	0.00	0.00	0.00	1.00	0.94	0.04	0.07	0.14	0.13	0.57	0.14	0.01	0.01	0.02	0.02	0.09
STA 342	1600	0.07	2	GRAVEL	1.24	1.01	1.22	0.05	2000	0	1.57	0.078	1.23		1.00		1.00	3	1.00	2.36	0.03	1.00	0.43	0.02	0.04	0.12	0.10	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.02	0.04	0.08	0.07	0.10	0.03	0.00	0.01	0.01	0.01	0.01
STA 345	1600	0.05	2	GRAVEL	1.24	1.01	1.22	0.13	650	0	1.61	0.065	1.20		1.00		1.00	3	1.00	2.35	0.02	1.00	0.29	0.02	0.03	0.08	0.07	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.01	0.02	0.06	0.05	0.07	0.02	0.00	0.00	0.01	0.01	0.01
STA 348	1600	0.09	2	GRAVEL	1.24	1.01	1.22	0.13	1400	0	1.28	0.081	1.24		1.00		1.00	3	1.00	1.95	0.04	1.00	0.47	0.03	0.04	0.13	0.11	0.16	2.00	0.00	0.00	2.00	0.00	0.00	1.33	0.02	0.04	0.61	0.08	0.11	0.20	0.00	0.01	0.09	0.01	0.02
STA 353	1600	0.08	2	GRAVEL	1.24	1.01	1.22	0.26	1200	0	1.17	0.083	1.25		1.00		1.00	3	1.00	1.78	0.03	1.00	0.38	0.02	0.04	0.10	0.09	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.02	0.03	0.08	0.07	0.09	0.03	0.00	0.00	0.01	0.01	0.01
STA 358	1600	0.14	2	GRAVEL	1.24	1.01	1.22	0.26	5300	0	1.04	0.051	1.15		1.00		1.00	3	1.00	1.46	0.06	1.00	0.57	0.03	0.05	0.15	0.13	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.03	0.05	0.12	0.11	0.15	0.04	0.00	0.01	0.02	0.02	0.02
STA 363	1600	0.16	2	GRAVEL	1.24	1.01	1.22	0.26	1200	0	1.17	0.075	1.23		1.00		1.00	3	1.00	1.75	0.07	1.00	0.76	0.04	0.07	0.21	0.18	0.26	1.00	0.00	1.00	0.00	0.00	0.00	0.89	0.04	0.16	0.16	0.14	0.19	0.14	0.01	0.03	0.02	0.02	0.03
PROPOSED	1600	0.27	6	PAVED	1.00	1	1.00	0.25	1530	0	1.13	0	1.00		1.00		1.00	2	0.94	1.06	0.11	1.00	0.79	0.04	0.08	0.22	0.18	0.27	3.00	0.00	0.00	2.00	0.00	1.00	1.69	0.04	0.07	0.50	0.16	0.41	0.26	0.01	0.01	0.08	0.02	0.06
PROPOSED	1600	0.40	6	PAVED	1.00	1	1.00	0.26	1990	0	1.10	0	1.00		1.00		1.00	2	0.94	1.03	0.17	1.00	1.13	0.06	0.11	0.31	0.26	0.39	1.00	0.00	1.00	0.00	0.00	0.00	1.08	0.06	0.16	0.26	0.23	0.32	0.17	0.01	0.03	0.04	0.03	0.05
Horizontal Curve Realignment No. 7, STA 670																																											
STA 670	1900	0.51	1	GRAVEL	1.38	1	1.33	0.33	1090	0	1.15	0.011	1.01		1.00		1.00	3	1.00	1.54	0.26	1.00	2.59	0.14	0.25	0.71	0.60	0.89	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.13	0.22	0.53	0.47	0.63	0.18	0.02	0.03	0.08	0.07	0.10
PROPOSED	1900	0.49	6	PAVED	1.00	1	1.00	0.37	1330	0	1.11	0	1.00		1.00		1.00	2	0.94	1.03	0.25	1.00	1.68	0.09	0.16	0.46	0.39	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.09	0.15	0.38	0.33	0.45	0.14	0.01	0.02	0.06	0.05	0.07
Horizontal Curve Realignment No. 8, STA 692																																											
STA 692	1900	0.54	1	GRAVEL	1.38	1	1.33	0.03	115	0	14.07	0	1.00		1.00		1.00	3	1.00	18.76	0.27	1.00	33.39	1.84	3.21	9.15	7.75	11.45	4.00	0.00	0.00	2.00	1.00	1.00	5.88	1.02	1.33	3.43	2.54	2.74	0.91	0.16	0.21	0.53	0.39	0.42
PROPOSED	1900	0.44	6	PAVED	1.00	1	1.00	0.37	1330	0	1.11	0	1.00		1.00		1.00	2	0.94	1.03	0.22	1.00	1.49	0.08	0.14	0.41	0.34	0.51	4.00	0.00	0.00	2.00	1.00	1.00	2.61	0.08	0.13	0.70	0.45	0.62	0.40	0.01	0.02	0.11	0.07	0.09

AECOM

WisDOT Project ID: 0695-21-50

AECOM No. 60241350 June2012

STH 65 Safety Analysis

Polk County

Exhibit 5-1

Crash Frequency - Flattening Horizontal Curves

Total expected crashes (crashes/yr) with safety improvements, 2023

Segment	Curve PI STA.	Chevrons Total	Chevrons Severity K	A	B	C	PD	Speed Reducing Pavement Markings Total	Speed Reducing Pavement Markings Severity K	A	B	C	PD	Flashing Beacon Total	Flashing Beacon Severity K	A	B	C	PD	Install Guardrail Total	Install Guardrail Severity K	A	B	C	PD	Skid Resistant Pavement Total	Skid Resistant Pavement Severity K	A	B	C	PD	Horizontal Curve Realignment Groups	Flatten Horizontal Curve Existing Total	Severity K	A	B	C	PD	Proposed Total	Severity K	A	B	C	PD
1	STA 40	0.32	0.00	0.03	0.06	0.01	0.07	0.23	0.00	0.02	0.05	0.01	0.05	0.31	0.00	0.03	0.06	0.01	0.07	0.30	0.00	0.02	0.04	0.00	0.07	0.23	0.00	0.02	0.05	0.01	0.05		0.46	0.02	0.06	0.13	0.07	0.15	0.30	0.01	0.02	0.07	0.06	0.10
1	STA 42	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.01	0.02	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	Horizontal Curve Realignment No. 1, STA 40- STA 50	0.02	0.00	0.00	0.01	0.01	0.01						
1	STA 45	0.03	0.00	0.01	0.01	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.01	0.03	0.00	0.01	0.01	0.01	0.02	0.03	0.00	0.00	0.01	0.01	0.02	0.02	0.00	0.00	0.01	0.01	0.01		0.03	0.00	0.01	0.02	0.01	0.02						
1	STA 50	0.04	0.00	0.01	0.02	0.02	0.02	0.03	0.00	0.01	0.01	0.01	0.02	0.04	0.01	0.01	0.02	0.02	0.02	0.04	0.00	0.01	0.01	0.01	0.02	0.03	0.00	0.01	0.01	0.01	0.02		0.07	0.01	0.02	0.03	0.03	0.04						
1	STA 73	0.03	0.00	0.01	0.01	0.01	0.02	0.02	0.00	0.01	0.01	0.01	0.01	0.03	0.00	0.01	0.02	0.01	0.02	0.03	0.00	0.00	0.01	0.01	0.02	0.02	0.00	0.01	0.01	0.01	0.01	-												
1	STA 98	0.59	0.00	0.01	0.01	0.13	0.25	0.42	0.00	0.01	0.01	0.10	0.18	0.58	0.00	0.01	0.01	0.14	0.25	0.56	0.00	0.00	0.01	0.08	0.23	0.42	0.00	0.01	0.01	0.10	0.18	Horizontal Curve Realignment No. 2, STA 98	0.71	0.02	0.04	0.07	0.20	0.33	0.41	0.01	0.01	0.03	0.07	0.14
1	STA 111	0.14	0.00	0.01	0.02	0.07	0.02	0.10	0.00	0.01	0.01	0.05	0.01	0.14	0.01	0.01	0.02	0.07	0.02	0.13	0.00	0.01	0.01	0.04	0.02	0.10	0.00	0.01	0.01	0.05	0.01	Horizontal Curve Realignment No. 3, STA 111	0.25	0.02	0.04	0.08	0.14	0.09	0.15	0.01	0.01	0.03	0.06	0.04
1	STA 136	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.01	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01		0.05	0.01	0.01	0.03	0.02	0.03	0.39	0.01	0.03	0.05	0.08	0.10
1	STA 141	0.14	0.01	0.01	0.02	0.06	0.02	0.10	0.00	0.01	0.01	0.05	0.02	0.14	0.01	0.01	0.02	0.07	0.02	0.13	0.00	0.01	0.01	0.04	0.02	0.10	0.00	0.01	0.01	0.05	0.02	Horizontal Curve Realignment No. 4, STA 136 - STA 149	0.16	0.01	0.01	0.03	0.08	0.03						
1	STA 149	0.31	0.00	0.02	0.02	0.05	0.07	0.22	0.00	0.02	0.01	0.04	0.05	0.30	0.00	0.03	0.02	0.06	0.07	0.29	0.00	0.02	0.01	0.03	0.07	0.22	0.00	0.02	0.01	0.04	0.05		0.48	0.02	0.07	0.08	0.13	0.17						
2	STA 188	0.11	0.00	0.00	0.01	0.01	0.06	0.08	0.00	0.00	0.01	0.01	0.04	0.11	0.00	0.00	0.01	0.01	0.06	0.10	0.00	0.00	0.01	0.00	0.06	0.08	0.00	0.00	0.01	0.01	0.04	-												
2	STA 203	0.12	0.00	0.01	0.01	0.04	0.02	0.08	0.00	0.00	0.01	0.04	0.01	0.11	0.00	0.01	0.01	0.05	0.02	0.11	0.00	0.00	0.01	0.03	0.01	0.08	0.00	0.00	0.01	0.04	0.01	-												
2	STA 218	0.48	0.00	0.00	0.05	0.11	0.06	0.34	0.00	0.00	0.04	0.09	0.05	0.46	0.00	0.00	0.05	0.13	0.06	0.45	0.00	0.00	0.03	0.07	0.06	0.34	0.00	0.00	0.04	0.09	0.05	-												
3	STA 268	0.21	0.00	0.01	0.01	0.01	0.11	0.15	0.00	0.01	0.01	0.01	0.08	0.20	0.00	0.01	0.02	0.01	0.11	0.19	0.00	0.00	0.01	0.01	0.10	0.15	0.00	0.01	0.01	0.01	0.08	Horizontal Curve Realignment No. 5, STA 268	0.27	0.01	0.02	0.04	0.04	0.15	0.19	0.01	0.01	0.03	0.02	0.09
3	STA 294	0.10	0.01	0.00	0.01	0.01	0.01	0.07	0.01	0.00	0.01	0.00	0.01	0.10	0.01	0.00	0.01	0.01	0.01	0.10	0.01	0.00	0.01	0.00	0.01	0.07	0.01	0.00	0.01	0.01	0.01	-												
3	STA 338	0.12	0.00	0.01	0.01	0.01	0.07	0.09	0.00	0.00	0.01	0.01	0.05	0.12	0.00	0.01	0.01	0.01	0.07	0.12	0.00	0.00	0.01	0.01	0.07	0.09	0.00	0.00	0.01	0.01	0.05		0.14	0.01	0.01	0.02	0.02	0.09	0.22	0.00	0.01	0.05	0.02	0.05
3	STA 342	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01		0.03	0.00	0.01	0.01	0.01	0.01						
3	STA 345	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	Horizontal Curve Realignment No. 6, STA 338- STA 363	0.02	0.00	0.00	0.01	0.01	0.01						
3	STA 348	0.20	0.00	0.01	0.08	0.01	0.02	0.14	0.00	0.00	0.06	0.01	0.01	0.19	0.00	0.01	0.09	0.01	0.02	0.18	0.00	0.00	0.06	0.01	0.02	0.14	0.00	0.00	0.06	0.01	0.01		0.20	0.00	0.01	0.09	0.01	0.02						
3	STA 353	0.03	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01		0.03	0.00	0.00	0.01	0.01	0.01	0.13	0.00	0.01	0.02	0.02	0.04
3	STA 358	0.04	0.00	0.01	0.02	0.01	0.02	0.03	0.00	0.01	0.01	0.01	0.02	0.04	0.00	0.01	0.02	0.02	0.02	0.04	0.00	0.00	0.01	0.01	0.02	0.03	0.00	0.01	0.01	0.01	0.02		0.04	0.00	0.01	0.02	0.02	0.02						
3	STA 363	0.09	0.00	0.02	0.01	0.00	0.01	0.07	0.00	0.01	0.00	0.00	0.01	0.09	0.00	0.02	0.01	0.01	0.01	0.09	0.00	0.01	0.00	0.00	0.01	0.07	0.00	0.01	0.00	0.00	0.01		0.14	0.01	0.03	0.02	0.02	0.03						
8	STA 644	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	-												
8	STA 670	0.11	0.01	0.02	0.04	0.04	0.06	0.08	0.01	0.01	0.04	0.03	0.04	0.11	0.01	0.02	0.05	0.04	0.06							0.08	0.01	0.01	0.04	0.03	0.04	Horizontal Curve Realignment No. 7, STA 670	0.18	0.02	0.03	0.08	0.07	0.10	0.13	0.01	0.02	0.05	0.04	0.06
8	STA 692	0.57	0.01	0.01	0.22	0.11	0.14	0.41	0.01	0.01	0.18	0.09	0.10	0.55	0.01	0.01	0.25	0.13	0.14	0.56	0.01	0.01	0.17	0.08	0.14	0.41	0.01	0.01	0.18	0.09	0.10	Horizontal Curve Realignment No. 8, STA 692	0.91	0.16	0.21	0.53	0.39	0.42	0.36	0.01	0.02	0.09	0.06	0.08
8	STA 718	0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.01	-												
9	STA 764	0.03	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.01	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	-												

Crash frequency reduction (crashes/yr) for safety improvements

Segment	Curve PI STA.	Chevrons Total	Chevrons Severity K	A	B	C	PD	Speed Reducing Pavement Markings Total	Speed Reducing Pavement Markings Severity K	A	B	C	PD	Flashing Beacon Total	Flashing Beacon Severity K	A	B	C	PD	Install Guardrail Total	Install Guardrail Severity K	A	B	C	PD	Skid Resistant Pavement Total	Skid Resistant Pavement Severity K	A	B	C	PD	Horizontal Curve Realignment Groups	Flatten Horizontal Curve Total	Severity K	A	B	C	PD
1	STA 40	0.01	0.00	0.00	0.01	0.00	0.00	0.11	0.00	0.01	0.02	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.01	0.03	0.00	0.01	0.11	0.00	0.01	0.02	0.00	0.02		0.27	0.02	0.06	0.12	0.06	0.12
1	STA 42	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	Horizontal Curve Realignment No. 1, STA 40- STA 50												
1	STA 45	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01													
1	STA 50	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01													
1	STA 73	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01	-												
1	STA 98	0.02	0.00	0.00	0.00	0.02	0.01	0.20	0.00	0.00	0.01	0.05	0.08	0.04	0.00	0.00	0.00	0.01	0.02	0.05	0.00	0.00	0.01	0.07	0.03	0.20	0.00	0.00	0.00	0.05	0.08	Horizontal Curve Realignment No. 2, STA 98	0.30	0.02	0.03	0.05	0.13	0.19						
1	STA 111	0.01	0.00	0.00	0.00	0.01	0.00	0.05	0.00	0.00	0.01	0.03	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.04	0.00	0.05	0.00	0.00	0.01	0.03	0.01	Horizontal Curve Realignment No. 3, STA 111	0.09	0.02	0.03	0.04	0.08	0.05						
1	STA 136	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00													
1	STA 141	0.01	0.00	0.00	0.00	0.01	0.00	0.05	0.00	0.00	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.03	0.00	0.05	0.00	0.00	0.01	0.02	0.01	Horizontal Curve Realignment No. 4, STA 136 - STA 149	0.30	0.03	0.07	0.09	0.16	0.13						
1	STA 149	0.01	0.00	0.00	0.00	0.01	0.00	0.10	0.00	0.01	0.01	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.01	0.01	0.03	0.01	0.10	0.00	0.01	0.01	0.02	0.02													
2	STA 188	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.00	0.02	-												
2	STA 203	0.00	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.00	0.00	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.02	0.00	0.04	0.00	0.00	0.00	0.02	0.01	-												
2	STA 218	0.02	0.00	0.00	0.01	0.02	0.00	0.16	0.00	0.00	0.02	0.04	0.02	0.04	0.00	0.00	0.00	0.01	0.00	0.05	0.00	0.00	0.02	0.06	0.01	0.16	0.00	0.00	0.02	0.04	0.02	-												
3	STA 268	0.01	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.01	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.00	0.04	Horizontal Curve Realignment No. 5, STA 268	0.08	0.01	0.01	0.02	0.02	0.06						
3	STA 294	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	-												
3	STA 338	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.01	0.04	0.00	0.00	0.00	0.00	0.02		0.26	0.02	0.04	0.12	0.07	0.11						
3	STA 342	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00													
3	STA 345	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	Horizontal Curve Realignment No. 6, STA 338- STA 363												
3	STA 348	0.01	0.00	0.00	0.02	0.00	0.00	0.07	0.00	0.00	0.03	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00	0.04	0.01	0.00	0.06	0.00	0.00	0.03	0.00	0.01													
3	STA 353	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00													
3	STA 358	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01													
3	STA 363	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.00	0.00													
8	STA 644	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-												
8	STA 670	0.00	0.00	0.00	0.01	0.01	0.00	0.04	0.00	0.01	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.04	0.00	0.01	0.02	0.01	0.02	Horizontal Curve Realignment No. 7, STA 670	0.05	0.01	0.01	0.03	0.03	0.03						
8	STA 692	0.02	0.00	0.00	0.04	0.02	0.01	0.19	0.00	0.00	0.08	0.04	0.05	0.04	0.00	0.00	0.02	0.01	0.01	0.04	0.00	0.00	0.10	0.06	0.01	0.19	0.00	0.00	0.08	0.04	0.05	Horizontal Curve Realignment No. 8, STA 692	0.55	0.15	0.19	0.44	0.33	0.34						
8	STA 718	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-												
9	STA 764	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.010	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	-												

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WisDOT Project ID: 0695-21-50
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STH 65 Safety Analysis
Polk County

Exhibit 5-2

Crash Frequency Reductions - Horizontal Curve Segments

Expected crashes (crashes/yr) with safety improvements, 2023

Segment	Centerline Rumble StripEs						Edgeline Rumble StripEs						Update signing to MUTCD standards						Safety Edge						Shoulder Rumble Strips						Construct 6' Shoulder						Modify Vertical Alignment					
	Total	Severity					Total	Severity					Total	Severity					Total	Severity					Total	Severity					Total	Severity					Total	Severity				
		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD
1	2.00	0.09	0.19	0.45	0.43	0.75	1.84	0.09	0.17	0.41	0.38	0.70	1.80	0.08	0.17	0.40	0.38	0.73	1.94	0.09	0.19	0.45	0.43	0.74	1.45	0.06	0.12	0.29	0.27	0.50	1.62	0.07	0.13	0.34	0.32	0.56	1.57	0.06	0.12	0.31	0.29	0.55
2	1.25	0.05	0.09	0.29	0.32	0.38	1.16	0.05	0.08	0.26	0.28	0.35	1.14	0.05	0.08	0.26	0.29	0.37	1.22	0.05	0.09	0.28	0.32	0.37	0.91	0.03	0.06	0.19	0.20	0.26	1.02	0.04	0.07	0.22	0.24	0.29	0.90	0.03	0.05	0.16	0.17	0.26
3	1.01	0.05	0.07	0.27	0.19	0.32	0.93	0.05	0.07	0.24	0.17	0.30	0.91	0.05	0.07	0.24	0.17	0.31	0.98	0.05	0.07	0.27	0.19	0.32	0.90	0.05	0.07	0.24	0.17	0.30	1.00	0.05	0.08	0.27	0.20	0.33	0.95	0.05	0.07	0.24	0.18	0.32
4	1.33	0.07	0.11	0.43	0.30	0.41	1.23	0.06	0.11	0.39	0.27	0.38	1.21	0.06	0.10	0.38	0.27	0.40	1.30	0.07	0.11	0.42	0.30	0.41	0.96	0.04	0.07	0.28	0.19	0.28	1.08	0.05	0.08	0.33	0.23	0.31	1.04	0.05	0.08	0.30	0.21	0.30
5	0.73	0.05	0.10	0.25	0.19	0.30	0.68	0.05	0.09	0.23	0.17	0.28	0.66	0.05	0.09	0.22	0.17	0.29	0.71	0.05	0.10	0.25	0.19	0.29	0.53	0.03	0.06	0.16	0.12	0.20	0.59	0.04	0.07	0.19	0.14	0.22	0.55	0.03	0.06	0.15	0.12	0.21
6	0.40	0.03	0.04	0.07	0.06	0.09	0.37	0.03	0.04	0.07	0.06	0.08	0.36	0.03	0.04	0.06	0.06	0.08	0.39	0.03	0.04	0.07	0.06	0.08	0.29	0.02	0.03	0.05	0.04	0.06	0.32	0.02	0.03	0.05	0.05	0.06	0.29	0.02	0.02	0.04	0.03	0.06
7	0.16	0.02	0.03	0.07	0.06	0.08	0.15	0.01	0.02	0.06	0.05	0.07	0.14	0.01	0.02	0.06	0.05	0.08	0.15	0.02	0.03	0.07	0.06	0.08	0.11	0.01	0.02	0.04	0.04	0.05	0.13	0.01	0.02	0.05	0.04	0.06	-	-	-	-	-	-
8	0.77	0.05	0.08	0.26	0.20	0.27	0.71	0.04	0.07	0.24	0.18	0.26	0.69	0.04	0.07	0.24	0.18	0.27	0.75	0.05	0.08	0.26	0.20	0.27	0.55	0.03	0.05	0.17	0.13	0.18	0.62	0.03	0.06	0.20	0.15	0.21	0.61	0.03	0.06	0.19	0.15	0.20
9	0.66	0.05	0.06	0.19	0.16	0.22	0.61	0.04	0.06	0.17	0.14	0.21	0.60	0.04	0.06	0.17	0.15	0.21	0.64	0.05	0.06	0.18	0.16	0.22	0.48	0.03	0.04	0.12	0.10	0.15	0.54	0.03	0.04	0.14	0.12	0.17	0.50	0.03	0.04	0.12	0.10	0.16

Crash frequency reduction (crashes/yr) for safety improvements

Segment	Centerline Rumble StripEs						Edgeline Rumble StripEs						Update signing to MUTCD standards						Safety Edge						Shoulder Rumble Strips						Construct 6' Shoulder						Modify Vertical Alignment					
	Total	Severity					Total	Severity					Total	Severity					Total	Severity					Total	Severity					Total	Severity					Total	Severity				
		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD		K	A	B	C	PD
1	0.06	0.01	0.01	0.02	0.02	0.03	0.22	0.01	0.03	0.06	0.07	0.09	0.25	0.01	0.03	0.07	0.07	0.05	0.12	0.01	0.01	0.03	0.03	0.04	0.61	0.04	0.08	0.18	0.19	0.28	0.44	0.03	0.06	0.14	0.13	0.22	0.49	0.04	0.07	0.16	0.16	0.24
2	0.04	0.00	0.01	0.01	0.02	0.02	0.14	0.01	0.01	0.04	0.05	0.04	0.16	0.01	0.01	0.05	0.05	0.03	0.07	0.00	0.01	0.02	0.02	0.02	0.39	0.02	0.04	0.11	0.13	0.14	0.28	0.02	0.03	0.08	0.09	0.11	0.39	0.03	0.05	0.15	0.16	0.14
3	0.04	0.00	0.00	0.01	0.01	0.02	0.11	0.01	0.01	0.04	0.03	0.04	0.13	0.01	0.01	0.04	0.03	0.02	0.06	0.00	0.00	0.02	0.01	0.02	0.14	0.01	0.01	0.04	0.03	0.04	0.04	0.00	0.00	0.01	0.00	0.01	0.09	0.01	0.01	0.04	0.02	0.02
4	0.05	0.00	0.01	0.02	0.02	0.02	0.14	0.01	0.02	0.06	0.05	0.05	0.17	0.01	0.02	0.07	0.05	0.03	0.08	0.00	0.01	0.03	0.02	0.02	0.41	0.03	0.05	0.17	0.13	0.15	0.30	0.02	0.04	0.13	0.09	0.12	0.34	0.03	0.04	0.16	0.11	0.13
5	0.02	0.00	0.01	0.01	0.01	0.01	0.08	0.01	0.01	0.04	0.03	0.03	0.09	0.01	0.02	0.04	0.03	0.02	0.04	0.00	0.01	0.02	0.01	0.02	0.23	0.02	0.05	0.10	0.08	0.11	0.17	0.02	0.04	0.08	0.06	0.09	0.21	0.03	0.05	0.11	0.08	0.10
6	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.01	0.01	0.01	0.05	0.01	0.01	0.01	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.01	0.12	0.01	0.02	0.03	0.03	0.03	0.09	0.01	0.01	0.02	0.02	0.02	0.12	0.02	0.02	0.04	0.03	0.03
7	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.01	0.01	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.01	0.03	0.03	0.03	0.04	0.01	0.01	0.02	0.02	0.02	-	-	-	-	-	-
8	0.02	0.00	0.00	0.01	0.01	0.01	0.08	0.01	0.01	0.04	0.03	0.03	0.10	0.01	0.01	0.04	0.03	0.02	0.05	0.00	0.00	0.02	0.01	0.02	0.24	0.02	0.03	0.11	0.09	0.10	0.17	0.02	0.03	0.08	0.06	0.08	0.18	0.02	0.03	0.08	0.07	0.08
9	0.02	0.00	0.00	0.01	0.01	0.01	0.07	0.01	0.01	0.03	0.03	0.03	0.08	0.01	0.01	0.03	0.03	0.02	0.04	0.00	0.00	0.01	0.01	0.01	0.20	0.02	0.03	0.07	0.07	0.08	0.14	0.02	0.02	0.06	0.05	0.06	0.18	0.02	0.03	0.08	0.07	0.07

AECOM

WisDOT Project ID: 0695-21-50
AECOM No. 60241350 June 2012

STH 65 Safety Analysis
Polk County

Exhibit 5-3

Crash Frequency Reductions - Corridor Segments

Exhibit 6
STH 65 & Kennedy Mill Avenue

Worksheet 2A -- General Information and Input Data for Rural Two-Lane Two-Way Roadway Intersections

General Information		Location Information	
Analyst	JJS	Roadway	STH 65
Agency or Company	AECOM	Intersection	Kennedy Mill Avenue (existing)
Date Performed	11/07/12	Jurisdiction	WisDOT
Scenario	Intersection Conversion	Analysis Year	2023

Input Data				Base Conditions	Site Conditions			
Intersection type (3ST, 4ST, 4SG)				--	3ST			
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ =	19,500	(veh/day)	--	1,600			
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ =	4,300	(veh/day)	--	400			
Intersection skew angle (degrees) [If 4ST, does skew differ for minor legs?]			No	0	Skew for Leg 1 (All):	0	Skew for Leg 2 (4ST only):	0
Number of signalized or uncontrolled approaches with a left-turn lane (0, 1, 2, 3, 4)				0	0			
Number of signalized or uncontrolled approaches with a right-turn lane (0, 1, 2, 3, 4)				0	0			
Intersection lighting (present/not present)				Not Present	Not Present			
Calibration Factor, C_i				1.00	1.00			

Worksheet 2B -- Crash Modification Factors for Rural Two-Lane Two-Way Roadway Intersections

(1) CMF for Intersection Skew Angle CMF_{1i} from Equations 10-22 or 10-23	(2) CMF for Left-Turn Lanes CMF_{2i} from Table 10-13	(3) CMF for Right-Turn Lanes CMF_{3i} from Table 10-14	(4) CMF for Lighting CMF_{4i} from Equation 10-24	(5) Combined CMF CMF_{COMB} (1)*(2)*(3)*(4)
1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Intersection Crashes for Rural Two-Lane Two-Way Roadway Intersections

(1) Crash Severity Level	(2) $N_{spf\ 3ST,\ 4ST\ or\ 4SG}$ from Equations 10-8, 10-9, or 10-10	(3) Overdispersion Parameter, k from Section 10.6.2	(4) Crash Severity Distribution from Table 10-5	(5) $N_{spf\ 3ST,\ 4ST\ or\ 4SG}$ by Severity Distribution $(2)_{TOTAL}$ * (4)	(6) Combined CMFs from (5) of Worksheet 2B	(7) Calibration Factor, C_i	(8) Predicted average crash frequency, $N_{predicted\ int}$ (5)*(6)*(7)
Total	0.334	0.54	1.000	0.334	1.00	1.00	0.334
Fatal and Injury (FI)	--	--	0.657	0.220	1.00	1.00	0.220
Property Damage Only (PDO)	--	--	0.343	0.115	1.00	1.00	0.115

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Two-Lane Two-Way Road Intersections

(1) Collision Type	(2) Proportion of Collision Type(TOTAL) from Table 10-6	(3) $N_{predicted\ int\ (TOTAL)}$ (crashes/year) $(8)_{TOTAL}$ from Worksheet 2C	(4) Proportion of Collision Type(FI) from Table 10-6	(5) $N_{predicted\ int\ (FI)}$ (crashes/year) $(8)_{FI}$ from Worksheet 2C	(6) Proportion of Collision Type(PDO) from Table 10-6	(7) $N_{predicted\ int\ (PDO)}$ (crashes/year) $(8)_{PDO}$ from Worksheet 2C
Total	1.000	0.334	1.000	0.220	1.000	0.115
		(2)x(3)TOTAL		(4)x(5)FI		(6)x(7)PDO
SINGLE-VEHICLE						
Collision with animal	0.000	0.000	0.000	0.000	0.000	0.000
Collision with bicycle	0.000	0.000	0.000	0.000	0.000	0.000
Collision with pedestrian	0.000	0.000	0.000	0.000	0.000	0.000
Overturned	0.000	0.000	0.000	0.000	0.000	0.000
Ran off road	0.808	0.270	0.791	0.174	0.839	0.096
Other single-vehicle collision	0.000	0.000	0.000	0.000	0.000	0.000
Total single-vehicle crashes	0.808	0.270	0.791	0.174	0.839	0.096
MULTIPLE-VEHICLE						
Angle collision	0.110	0.037	0.105	0.023	0.120	0.014
Head-on collision	0.000	0.000	0.000	0.000	0.000	0.000
Rear-end collision	0.014	0.005	0.000	0.000	0.041	0.005
Sideswipe collision	0.068	0.023	0.104	0.023	0.000	0.000
Other multiple-vehicle collision	0.000	0.000	0.000	0.000	0.000	0.000
Total multiple-vehicle crashes	0.192	0.064	0.209	0.046	0.161	0.018

Worksheet 2E -- Summary Results for Rural Two-Lane Two-Way Road Intersections

(1) Crash severity level	(2) Crash Severity Distribution (proportion) (4) from Worksheet 2C	(3) Predicted average crash frequency (crashes / year) (8) from Worksheet 2C
Total	1.000	0.3
Fatal and Injury (FI)	0.657	0.2
Property Damage Only (PDO)	0.343	0.1

Worksheet 3A -- Predicted and Observed Crashes by Severity and Site Type Using the Site-Specific EB Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,** $N_{observed}$ (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,** $N_{expected}$
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
INTERSECTIONS							
						1.000	0.0
						1.000	0.0
Kennedy Mill Ave Intersection	0.334	0.220	0.115	0.62	0.540	0.847	0.4
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
COMBINED (sum of column)	0.334	0.220	0.115	0.62	--	--	0.4

Worksheet 3B -- Site-Specific EB Method Summary Results

(1)	(2)	(3)
Crash severity level	$N_{predicted}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(8)_{COMB}$ from Worksheet 3A
	0.334	0.4
Fatal and Injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(3)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$
	0.220	0.2
Property Damage Only (PDO)	$(4)_{COMB}$ from Worksheet 3A	$(3)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$
	0.115	0.1

Worksheet 2A -- General Information and Input Data for Rural Two-Lane Two-Way Roadway Intersections

General Information		Location Information	
Analyst	JJS	Roadway	STH 65
Agency or Company	AECOM	Intersection	Kennedy Mill Avenue
Date Performed	11/07/12	Jurisdiction	WisDOT
Scenario	Intersection Conversion	Analysis Year	2023

Input Data				Base Conditions	Site Conditions			
Intersection type (3ST, 4ST, 4SG)				--	3ST			
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ =	19,500	(veh/day)	--	1,600			
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ =	4,300	(veh/day)	--	400			
Intersection skew angle (degrees) [If 4ST, does skew differ for minor legs?]			No	0	Skew for Leg 1 (All):	0	Skew for Leg 2 (4ST only):	0
Number of signalized or uncontrolled approaches with a left-turn lane (0, 1, 2, 3, 4)				0	0			
Number of signalized or uncontrolled approaches with a right-turn lane (0, 1, 2, 3, 4)				0	1			
Intersection lighting (present/not present)				Not Present	Not Present			
Calibration Factor, C_i				1.00	1.00			

Worksheet 2B -- Crash Modification Factors for Rural Two-Lane Two-Way Roadway Intersections

(1) CMF for Intersection Skew Angle CMF_{1i} from Equations 10-22 or 10-23	(2) CMF for Left-Turn Lanes CMF_{2i} from Table 10-13	(3) CMF for Right-Turn Lanes CMF_{3i} from Table 10-14	(4) CMF for Lighting CMF_{4i} from Equation 10-24	(5) Combined CMF CMF_{COMB} (1)*(2)*(3)*(4)
1.00	1.00	0.86	1.00	0.86

Worksheet 2C -- Intersection Crashes for Rural Two-Lane Two-Way Roadway Intersections

(1) Crash Severity Level	(2) $N_{spf\ 3ST,\ 4ST\ or\ 4SG}$ from Equations 10-8, 10-9, or 10-10	(3) Overdispersion Parameter, k from Section 10.6.2	(4) Crash Severity Distribution from Table 10-5	(5) $N_{spf\ 3ST,\ 4ST\ or\ 4SG}$ by Severity Distribution $(2)_{TOTAL}$ * (4)	(6) Combined CMFs from (5) of Worksheet 2B	(7) Calibration Factor, C_i	(8) Predicted average crash frequency, $N_{predicted\ int}$ (5)*(6)*(7)
Total	0.334	0.54	1.000	0.334	0.86	1.00	0.287
Fatal and Injury (FI)	--	--	0.657	0.220	0.86	1.00	0.189
Property Damage Only (PDO)	--	--	0.343	0.115	0.86	1.00	0.099

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Two-Lane Two-Way Road Intersections

(1) Collision Type	(2) Proportion of Collision Type(TOTAL) from Table 10-6	(3) $N_{predicted\ int\ (TOTAL)}$ (crashes/year) $(8)_{TOTAL}$ from Worksheet 2C	(4) Proportion of Collision Type(FI) from Table 10-6	(5) $N_{predicted\ int\ (FI)}$ (crashes/year) $(8)_{FI}$ from Worksheet 2C	(6) Proportion of Collision Type(PDO) from Table 10-6	(7) $N_{predicted\ int\ (PDO)}$ (crashes/year) $(8)_{PDO}$ from Worksheet 2C
Total	1.000	0.287	1.000	0.189	1.000	0.099
		(2)x(3)TOTAL		(4)x(5)FI		(6)x(7)PDO
SINGLE-VEHICLE						
Collision with animal	0.000	0.000	0.000	0.000	0.000	0.000
Collision with bicycle	0.000	0.000	0.000	0.000	0.000	0.000
Collision with pedestrian	0.000	0.000	0.000	0.000	0.000	0.000
Overturned	0.000	0.000	0.000	0.000	0.000	0.000
Ran off road	0.808	0.232	0.791	0.149	0.839	0.083
Other single-vehicle collision	0.000	0.000	0.000	0.000	0.000	0.000
Total single-vehicle crashes	0.808	0.232	0.791	0.149	0.839	0.083
MULTIPLE-VEHICLE						
Angle collision	0.110	0.032	0.105	0.020	0.120	0.012
Head-on collision	0.000	0.000	0.000	0.000	0.000	0.000
Rear-end collision	0.014	0.004	0.000	0.000	0.041	0.004
Sideswipe collision	0.068	0.020	0.104	0.020	0.000	0.000
Other multiple-vehicle collision	0.000	0.000	0.000	0.000	0.000	0.000
Total multiple-vehicle crashes	0.192	0.055	0.209	0.039	0.161	0.016

Worksheet 2E -- Summary Results for Rural Two-Lane Two-Way Road Intersections

(1) Crash severity level	(2) Crash Severity Distribution (proportion) (4) from Worksheet 2C	(3) Predicted average crash frequency (crashes / year) (8) from Worksheet 2C
Total	1.000	0.3
Fatal and Injury (FI)	0.657	0.2
Property Damage Only (PDO)	0.343	0.1

Worksheet 3A -- Predicted and Observed Crashes by Severity and Site Type Using the Site-Specific EB Method

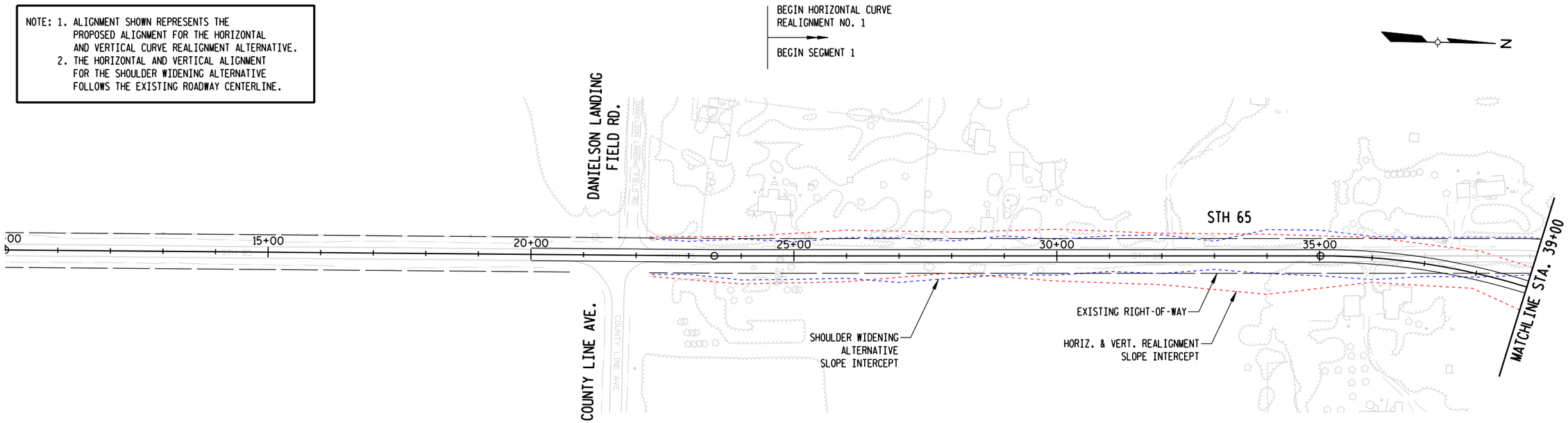
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,** $N_{observed}$ (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,** $N_{expected}$
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
INTERSECTIONS							
						1.000	0.0
						1.000	0.0
Kennedy Mill Ave Intersection	0.287	0.189	0.099	0.62	0.540	0.866	0.3
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
						1.000	0.0
COMBINED (sum of column)	0.287	0.189	0.099	0.62	--	--	0.3

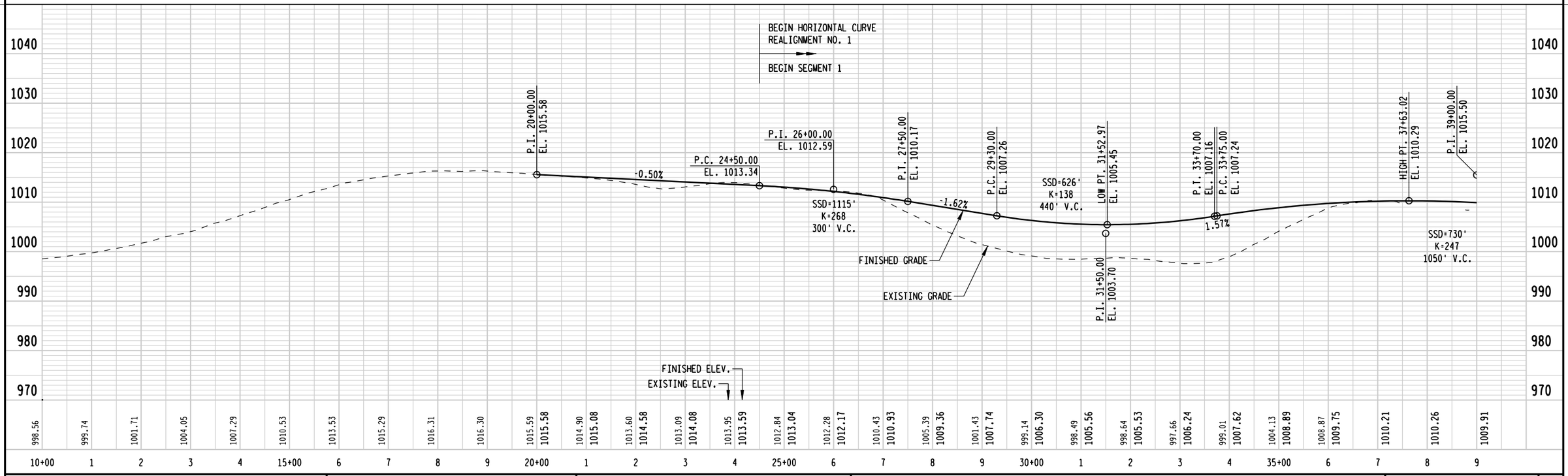
Worksheet 3B -- Site-Specific EB Method Summary Results

(1)	(2)	(3)
Crash severity level	$N_{predicted}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(8)_{COMB}$ from Worksheet 3A
	0.287	0.3
Fatal and Injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(3)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$
	0.189	0.2
Property Damage Only (PDO)	$(4)_{COMB}$ from Worksheet 3A	$(3)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$
	0.099	0.1

Exhibit 7
Proposed Plan and Profile

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.





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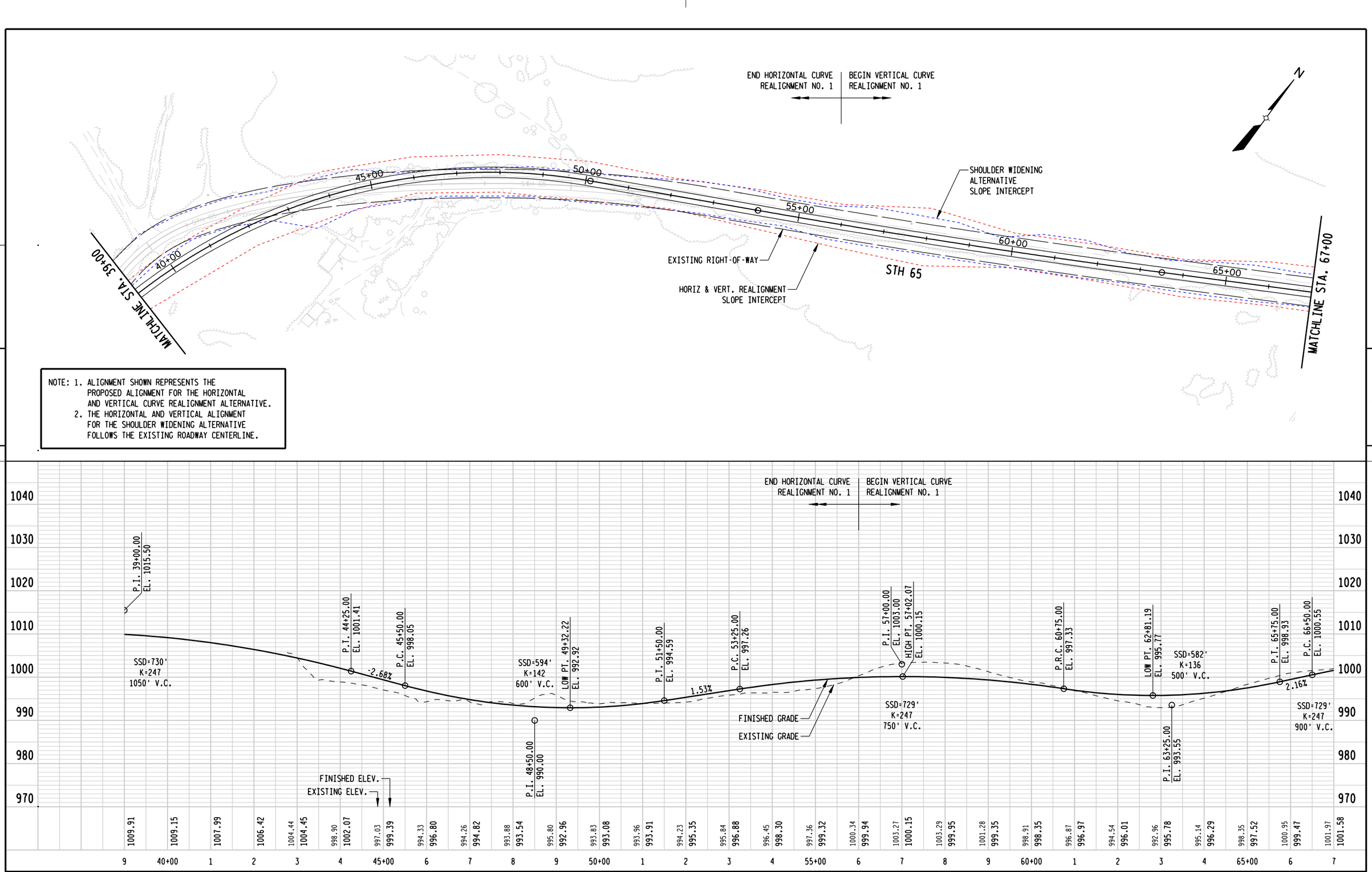
WISDOT/CADDS SHEET 40

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.



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NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

END VERTICAL CURVE REALIGNMENT NO. 1 | BEGIN HORIZONTAL CURVE REALIGNMENT NO. 2

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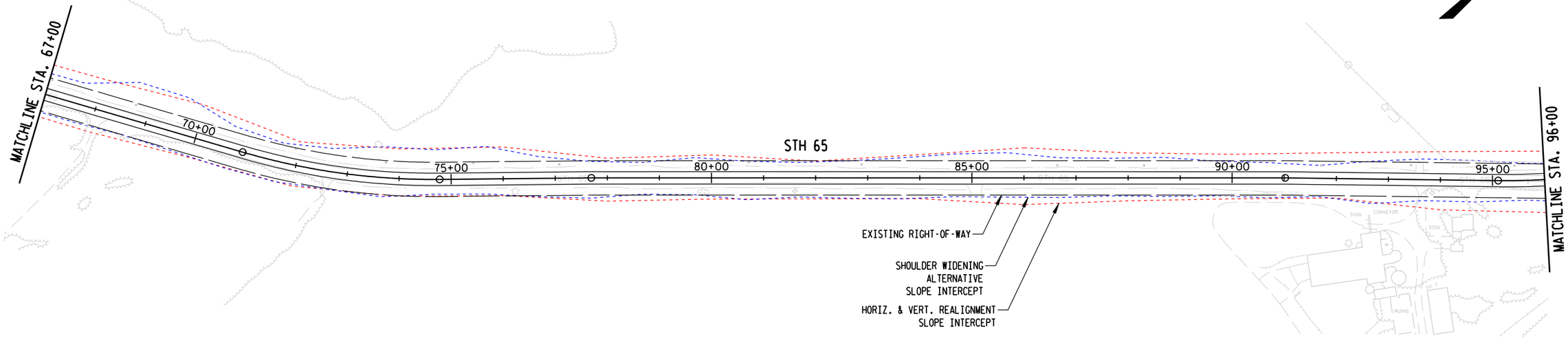

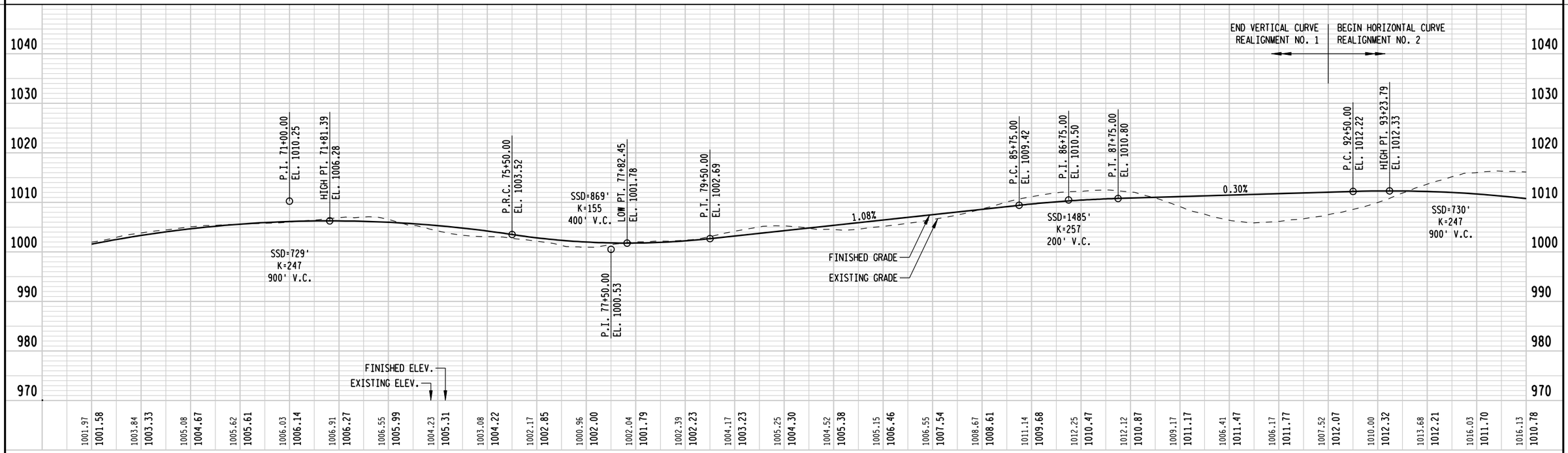

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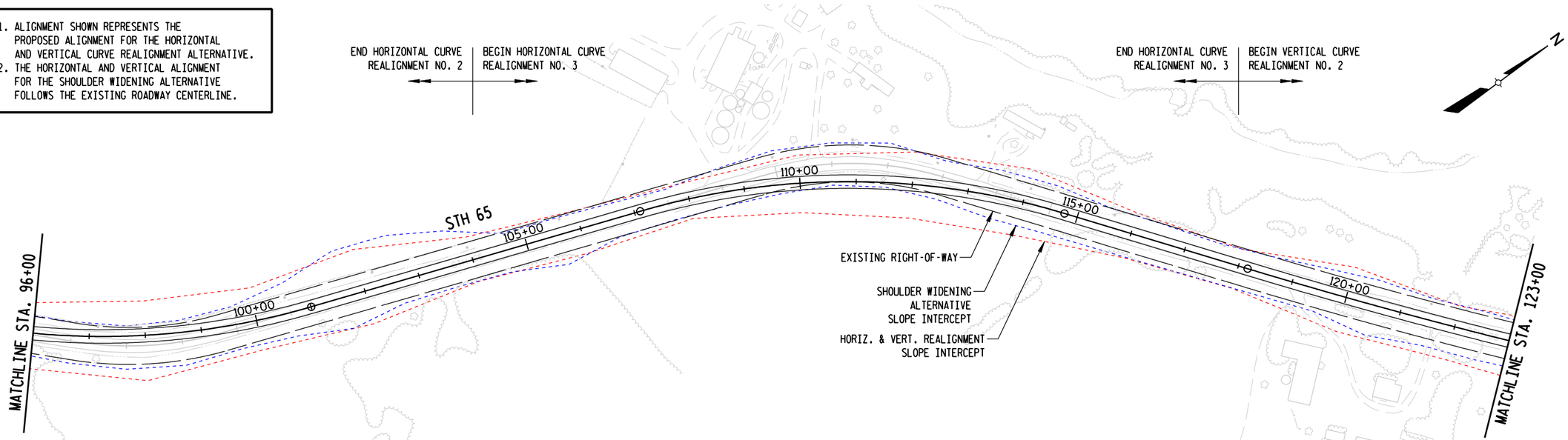
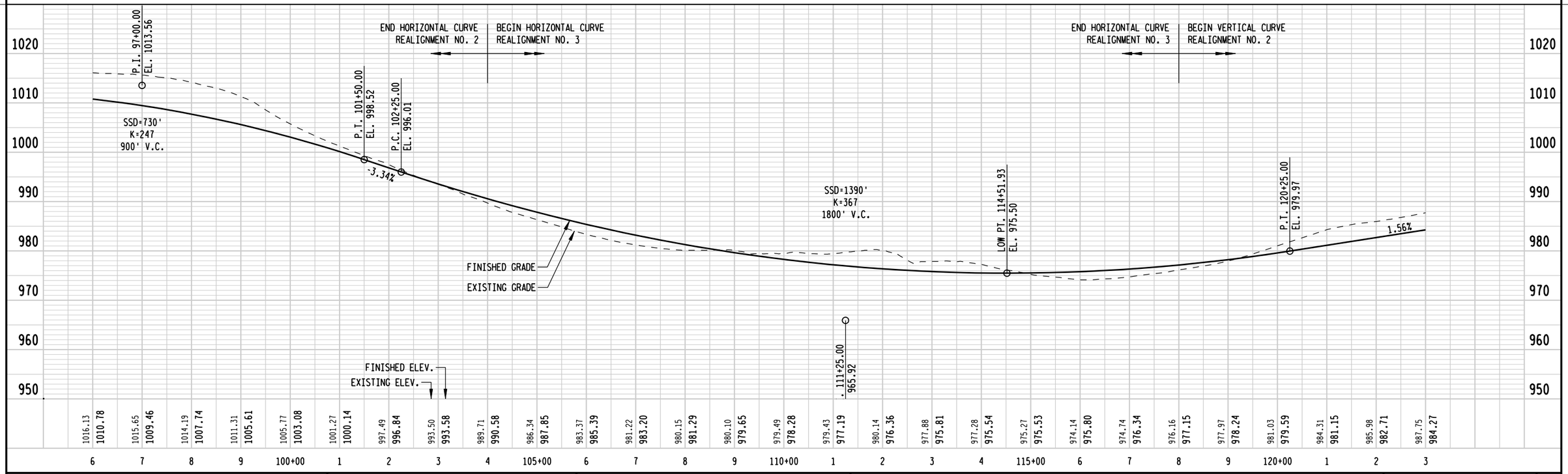
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.





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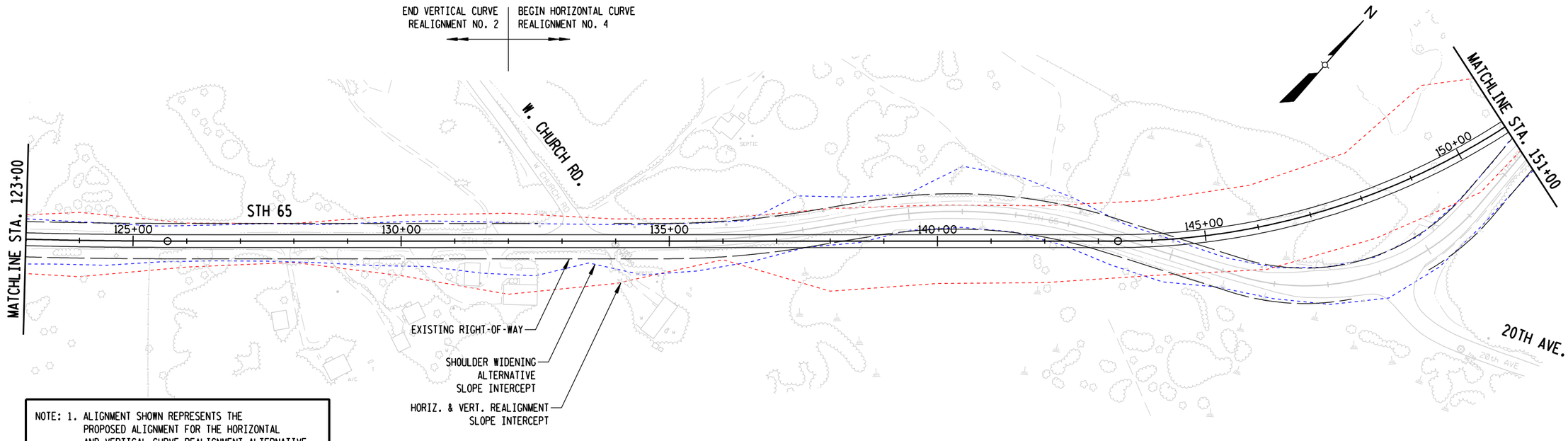
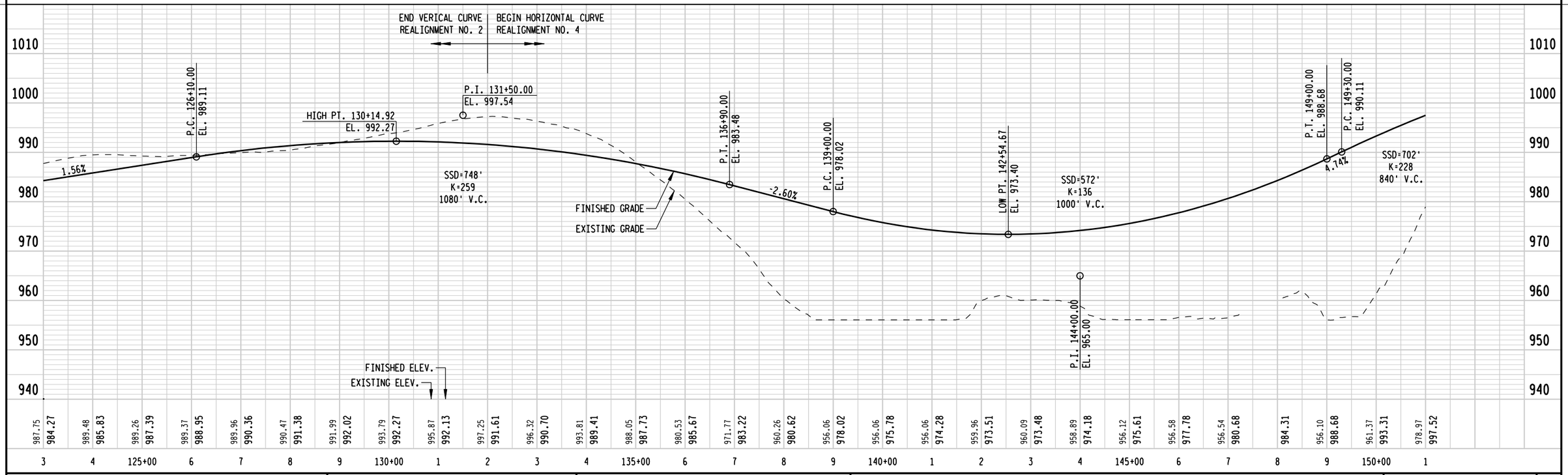


NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.



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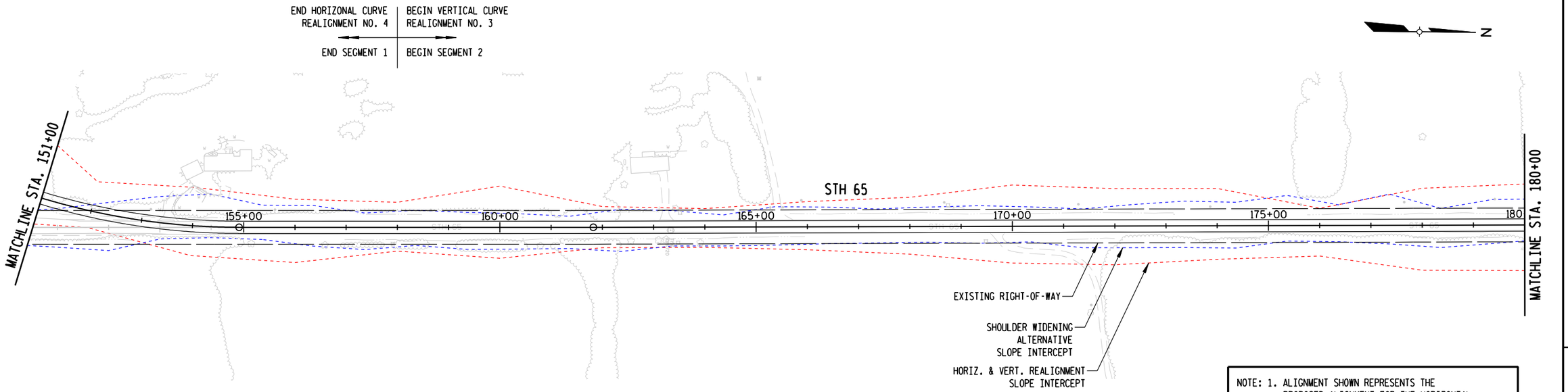
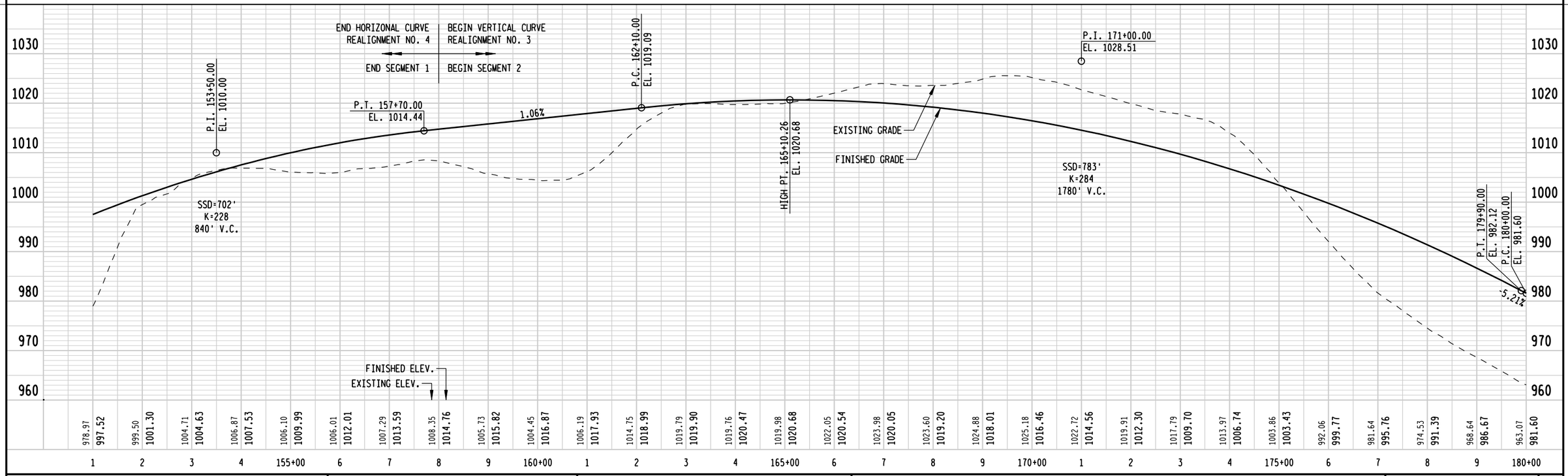


NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.



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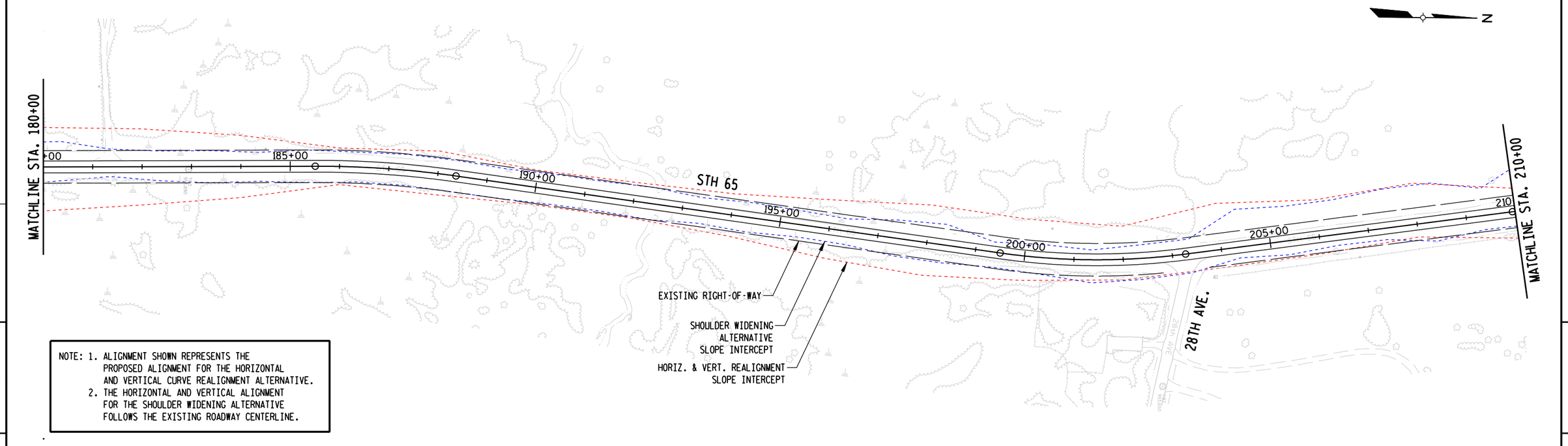

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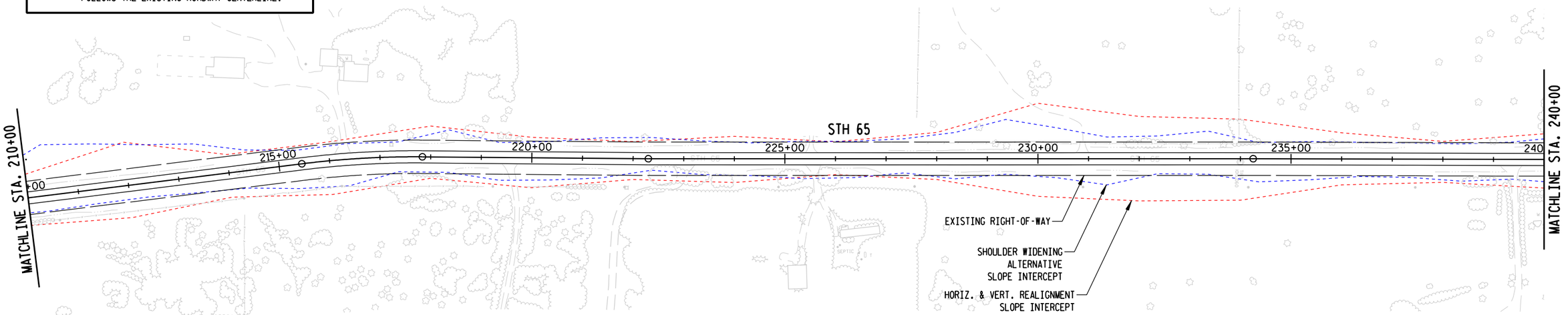
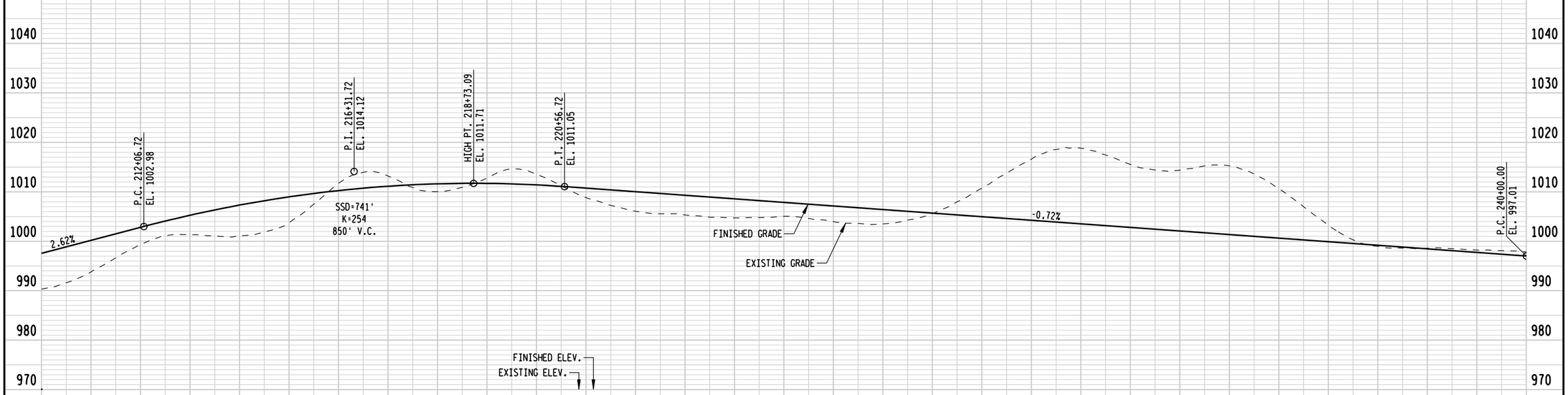
NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

N





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NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

END VERTICAL CURVE REALIGNMENT NO. 3 | BEGIN VERTICAL CURVE REALIGNMENT NO. 4
END SEGMENT 2 | BEGIN SEGMENT 3

END VERTICAL CURVE REALIGNMENT NO. 4 | BEGIN HORIZONTAL CURVE REALIGNMENT NO. 5

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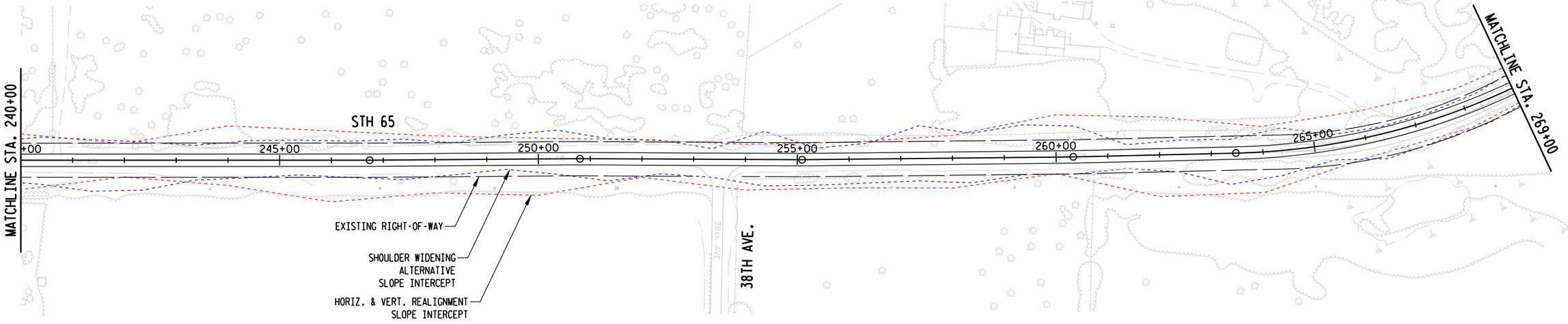
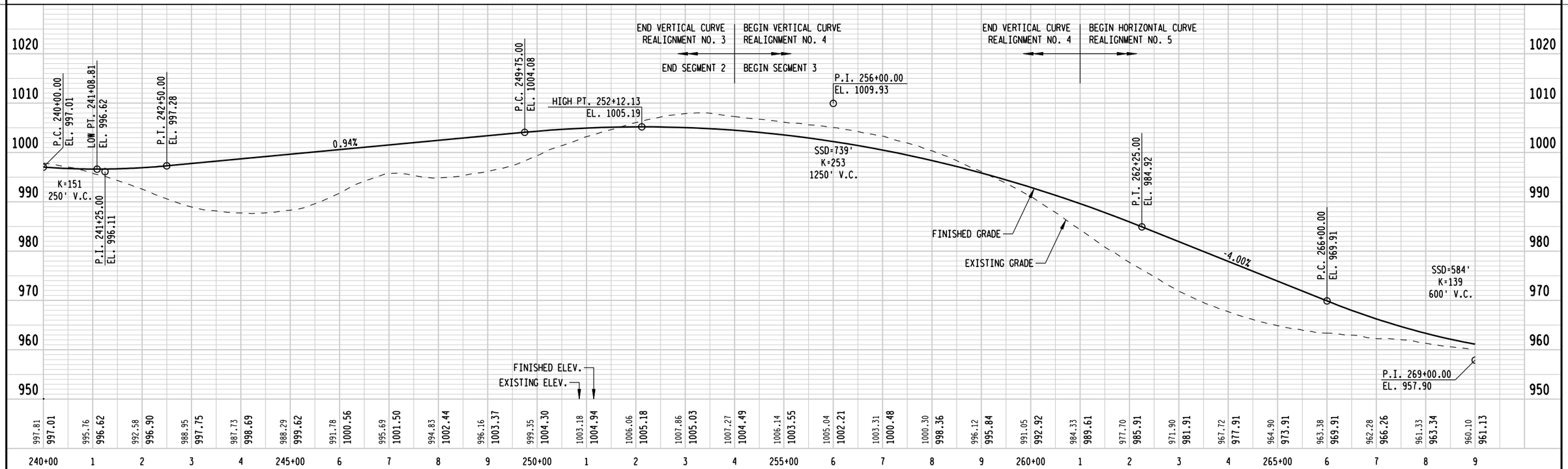
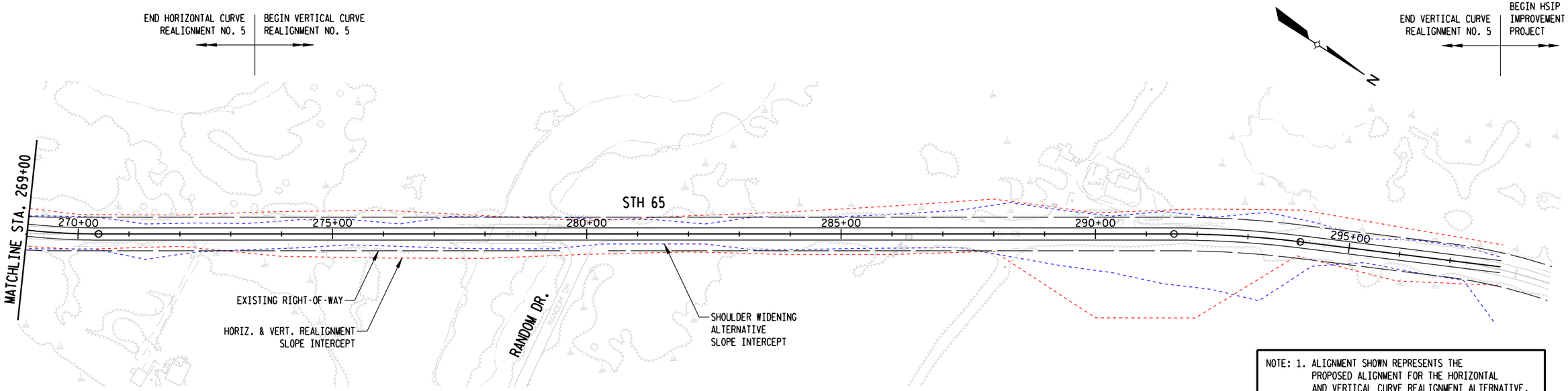


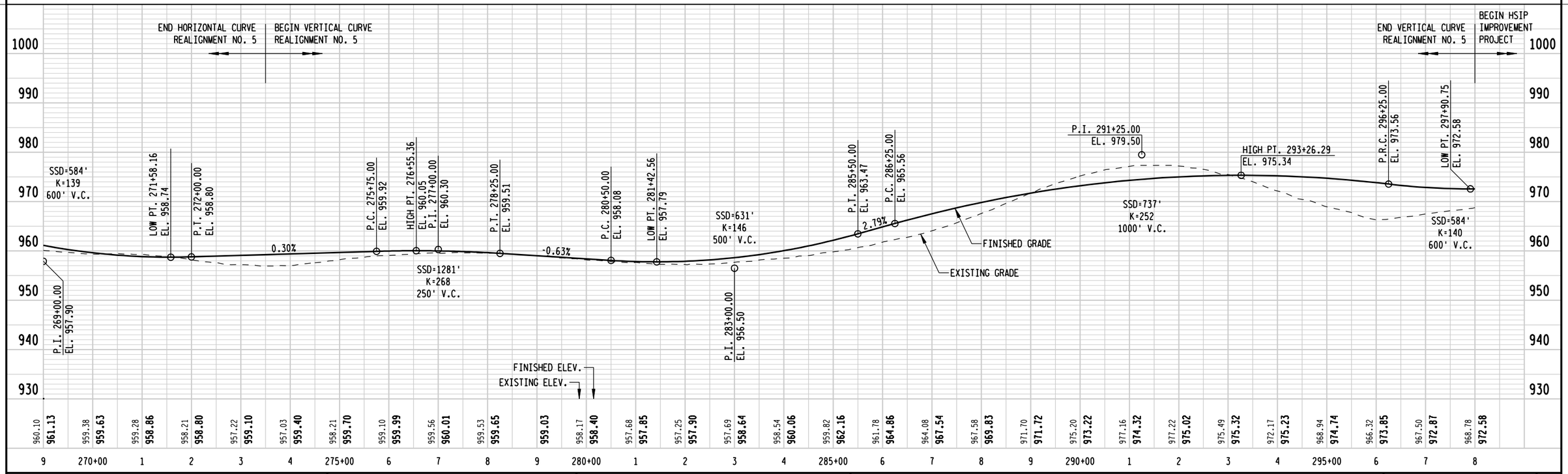


PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 240+00 - STA. 269+00	SHEET E

FILE NAME: I:\work\1060065\trans\sth 65\050109_pp.dgn
BATCH PRINT SHEET 9 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\1060065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:41 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40



NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.
3. THIS SHEET INCLUDES A SEGMENT OF STH 65 TO BE IMPROVED AS PART OF A HSIP PROJECT.



PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 269+00 - STA. 299+00	SHEET	E

FILE NAME: l:\work\106065\trans\sth 65\050110_pp.dgn
BATCH PRINT SHEET 10 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: l:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:43 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

NOTE: 1. THIS SHEET INCLUDES A SEGMENT OF STH 65 TO BE IMPROVED AS PART OF A HSIP PROJECT.

5

5

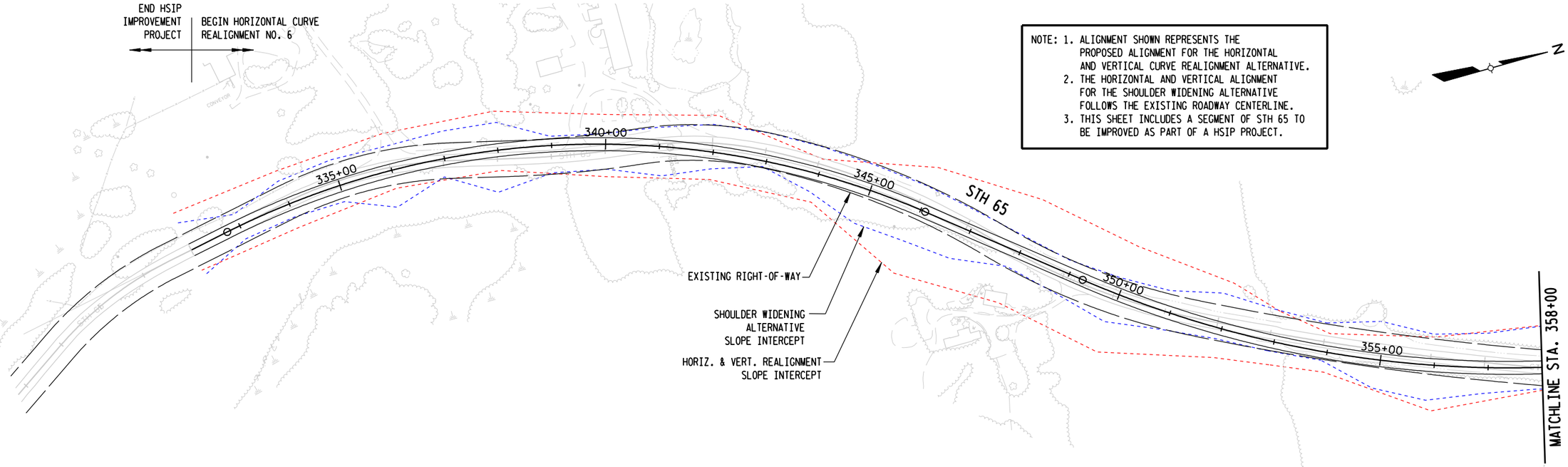
PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 299+00 - STA. 328+00	SHEET	E

FILE NAME: I:\work\106065\trans\sth 65\050111_pp.dgn
BATCH PRINT SHEET 11 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:45 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

END HSIP IMPROVEMENT PROJECT | BEGIN HORIZONTAL CURVE REALIGNMENT NO. 6

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.
3. THIS SHEET INCLUDES A SEGMENT OF STH 65 TO BE IMPROVED AS PART OF A HSIP PROJECT.

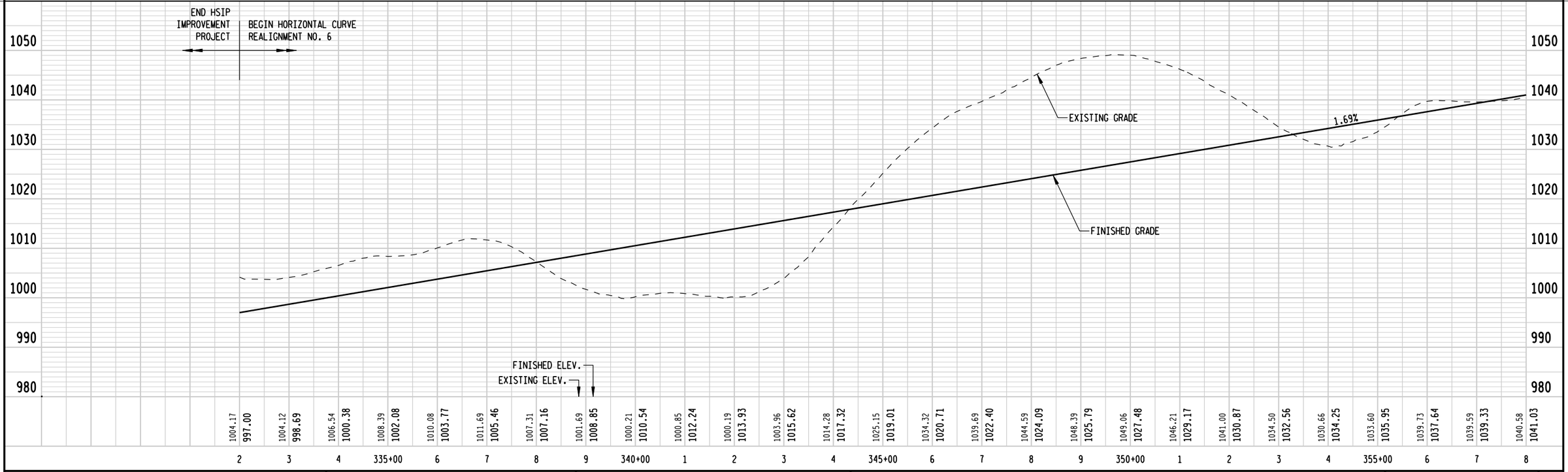
N



5

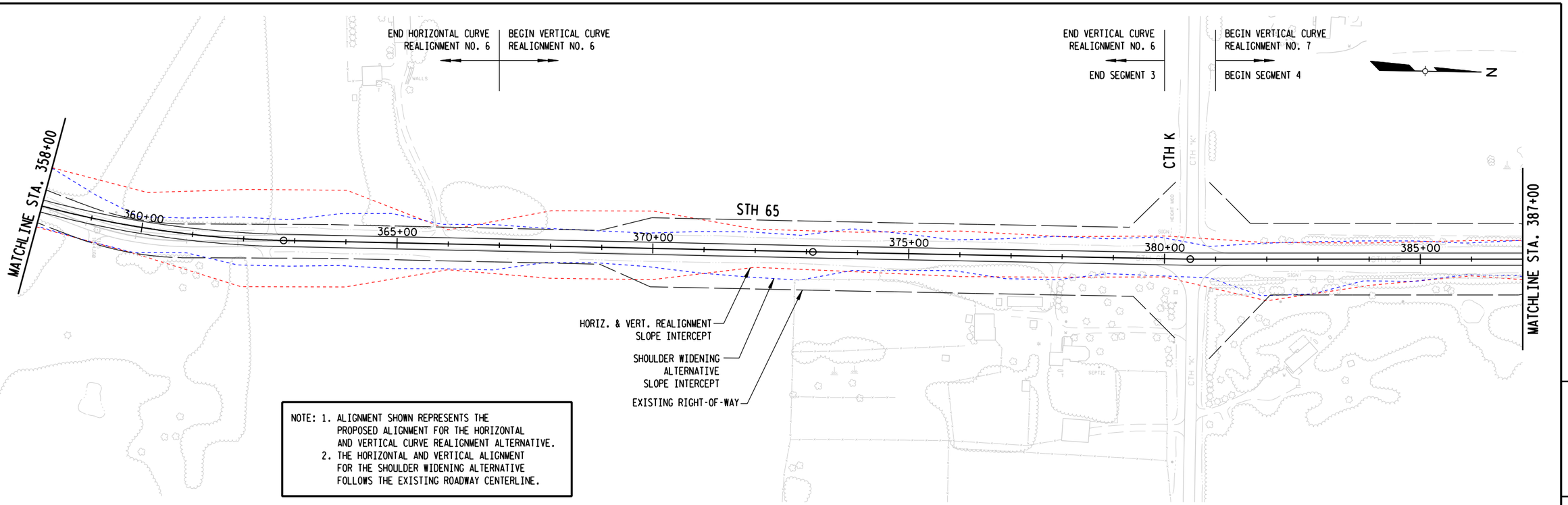
5

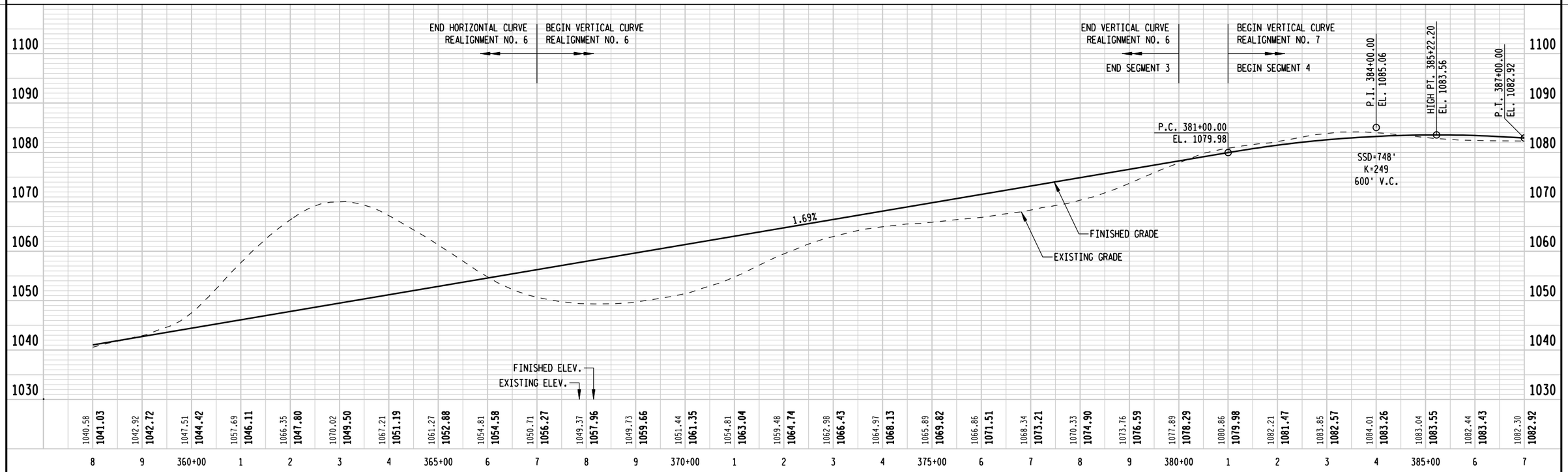
END HSIP IMPROVEMENT PROJECT | BEGIN HORIZONTAL CURVE REALIGNMENT NO. 6



PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 328+00 - STA. 358+00	SHEET	E

FILE NAME: l:\work\106065\trans\sth 65\050112_pp.dgn
BATCH PRINT SHEET 12 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: l:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:47 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

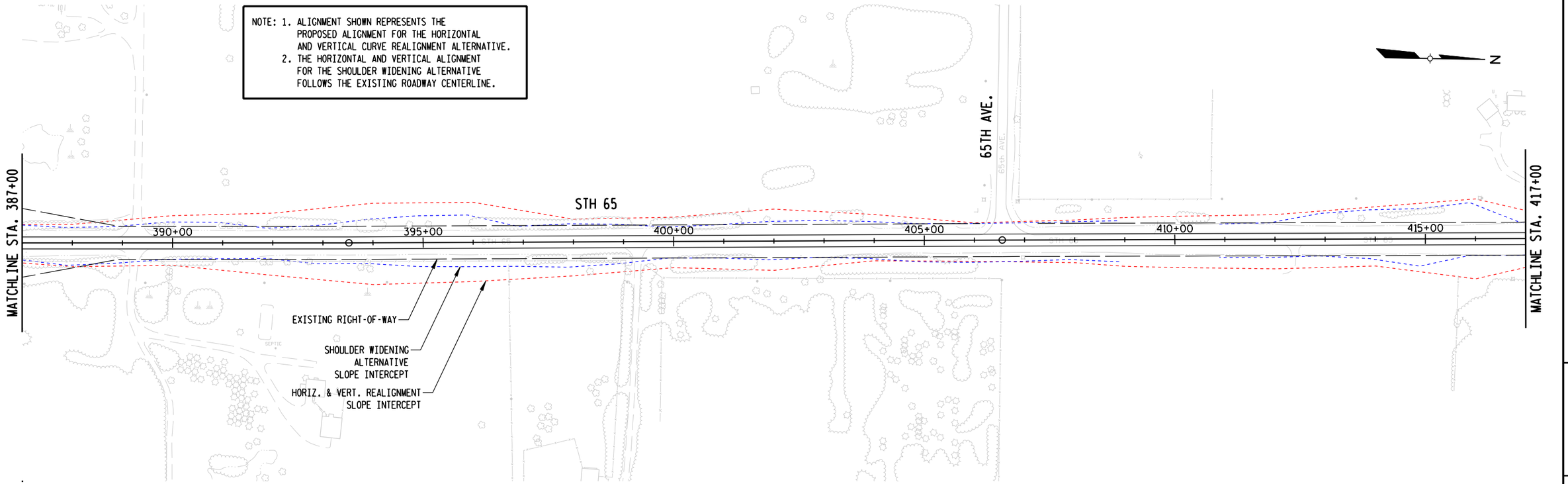




PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 358+00 - STA. 387+00	SHEET	E

FILE NAME: I:\work\106065\trans\sth 65\050113_pp.dgn
BATCH PRINT SHEET 13 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:48 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

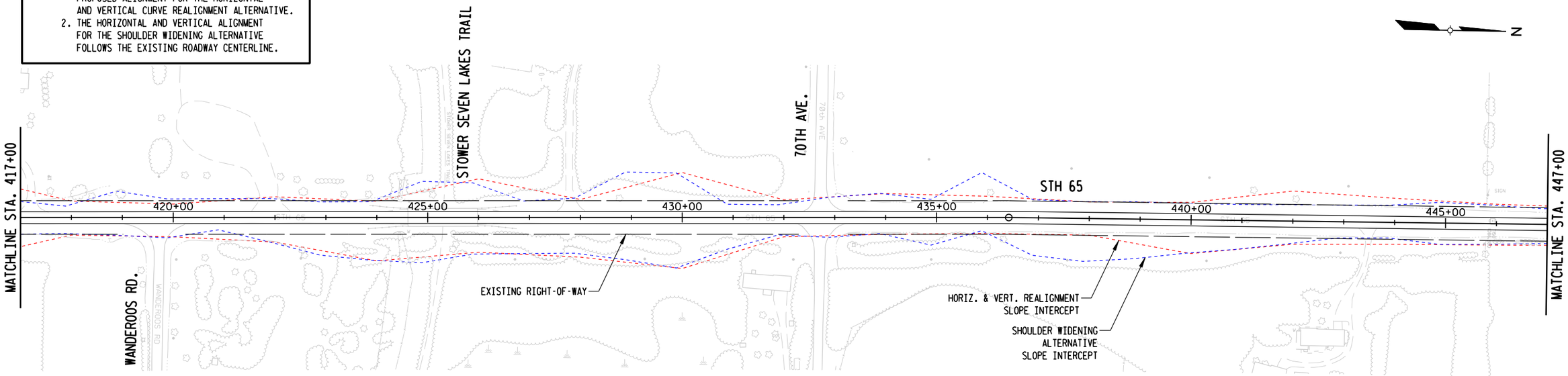
NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

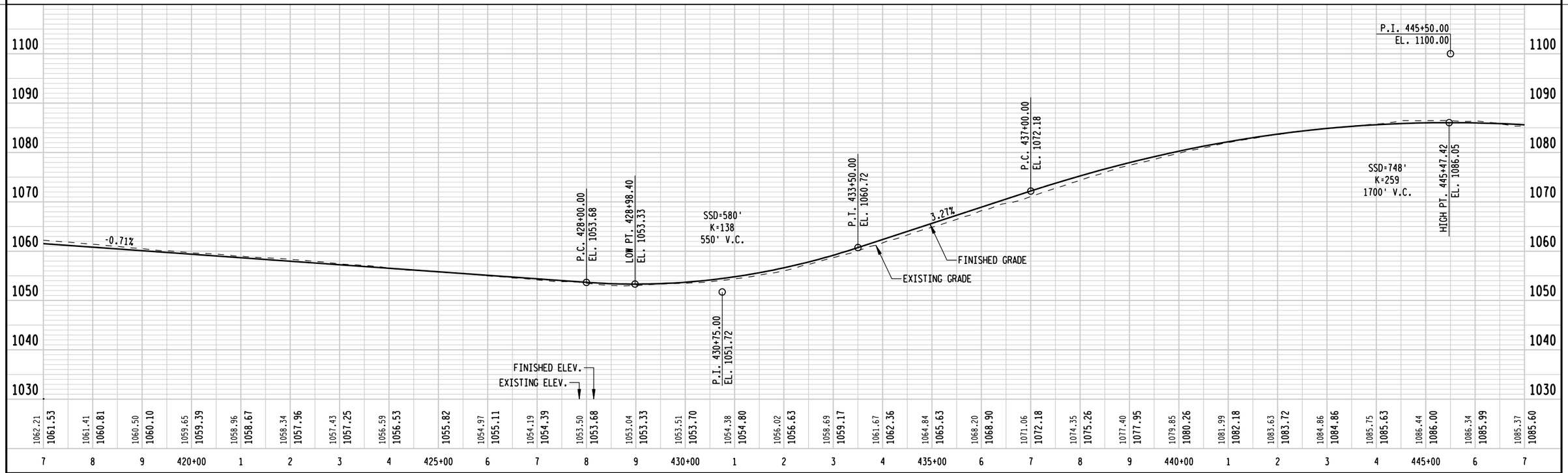


PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 387+00 - STA. 417+00	SHEET	E

FILE NAME: l:\work\106065\trans\sth 65\050114_pp.dgn
BATCH PRINT SHEET 14 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: l:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:50 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

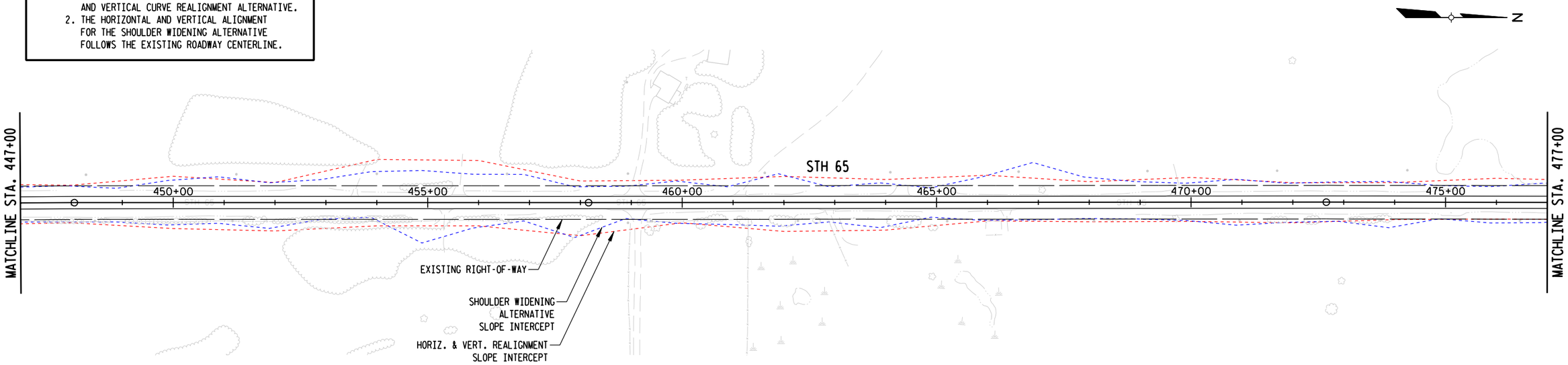




PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 417+00 - STA. 447+00	SHEET E

FILE NAME: I:\work\106065\trans\sth 65\050115_pp.dgn
BATCH PRINT SHEET 15 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:52 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.



PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 447+00 - STA. 477+00	SHEET	E

FILE NAME: l:\work\106065\trans\sth 65\050116_pp.dgn
BATCH PRINT SHEET 16 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: l:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:53 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

	EXISTING ELEV.	FINISHED ELEV.
7	1041.76	1043.94
8	1041.96	1042.94
9	1042.07	1041.93
480+00	1041.88	1041.25
1	1042.04	1041.25
2	1042.17	1041.91
3	1042.01	1043.24
4	1041.98	1045.15
485+00	1042.18	1047.15
6	1043.07	1049.10
7	1045.78	1050.69
8	1050.90	1051.88
9	1057.85	1052.65
490+00	1064.25	1053.02
1	1061.97	1052.98
2	1056.55	1052.54
3	1054.91	1051.68
4	1052.86	1050.42
495+00	1048.34	1048.75
6	1044.16	1046.72
7	1042.12	1044.98
8	1042.34	1043.93
9	1043.36	1043.55
500+00	1044.56	1043.78
1	1045.50	1044.08
2	1044.90	1044.39
3	1044.83	1044.70
4	1044.66	1045.00
505+00	1045.12	1045.31
6	1045.43	1045.62
7	1045.63	1045.92

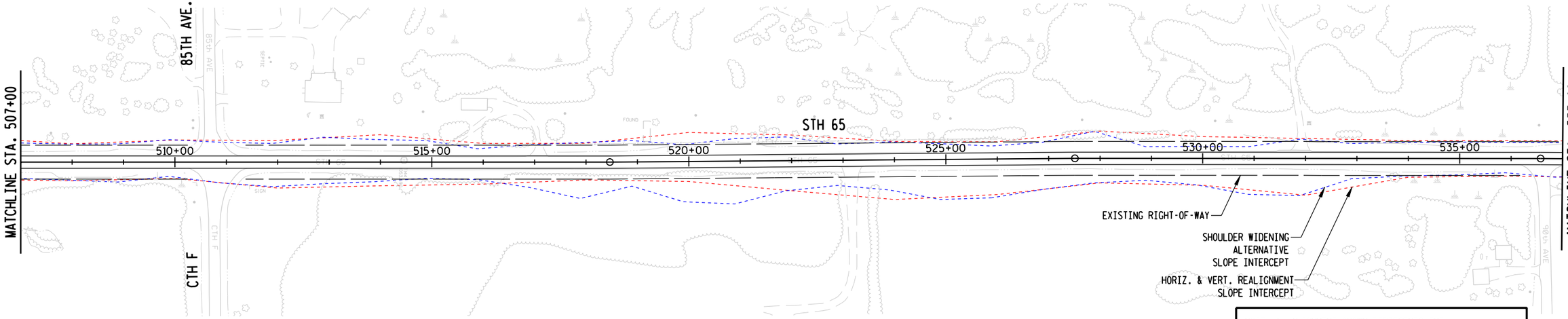
PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 477+00 - STA. 507+00	SHEET	E

FILE NAME: l:\work\106065\trans\sth 65\050117_pp.dgn
BATCH PRINT SHEET 17 OF 28

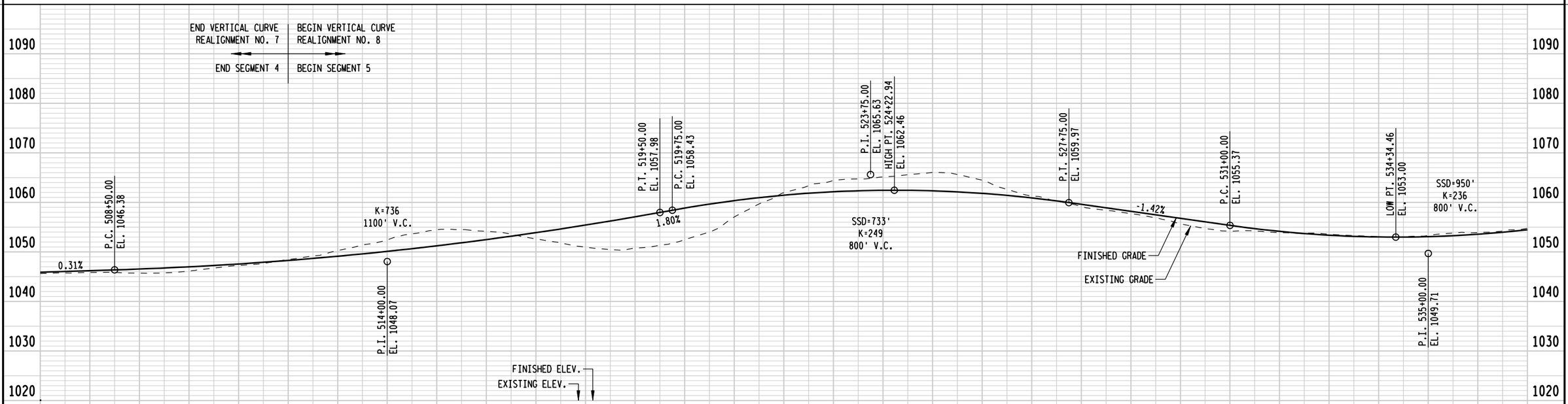
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: l:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl

PLOT DATE: 4/23/2012
PLOT TIME: 9:32:55 AM

PLOT SCALE: 1:200



NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.



	7	8	9	510+00	1	2	3	4	515+00	6	7	8	9	520+00	1	2
EXISTING ELEV.	1045.63	1045.86	1045.73	1046.15	1047.27	1048.47	1050.27	1052.43	1054.47	1054.17	1052.65	1050.97	1050.78	1052.49	1057.05	1061.96
FINISHED ELEV.	1045.92	1046.23	1046.56	1047.00	1047.58	1048.29	1049.14	1050.13	1051.25	1052.51	1053.90	1055.43	1057.09	1058.86	1060.36	1061.46

	3	4	525+00	6	7	8	9	530+00	1	2	3	4	535+00	6	7
EXISTING ELEV.	1064.42	1065.16	1066.06	1064.50	1061.28	1059.19	1057.75	1055.65	1054.22	1053.91	1053.59	1053.11	1053.32	1053.90	1054.79
FINISHED ELEV.	1062.16	1062.45	1062.34	1061.83	1060.92	1059.61	1058.20	1056.78	1055.37	1054.16	1053.38	1053.03	1053.09	1053.58	1054.49

PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 507+00 - STA. 537+00	SHEET	E

FILE NAME: I:\work\106065\trans\sth 65\050118_pp.dgn
BATCH PRINT SHEET 18 OF 28

PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl

PLOT DATE: 4/23/2012
PLOT TIME: 9:32:56 AM

PLOT SCALE: 1:200

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 537+00 - STA. 567+00	SHEET	E

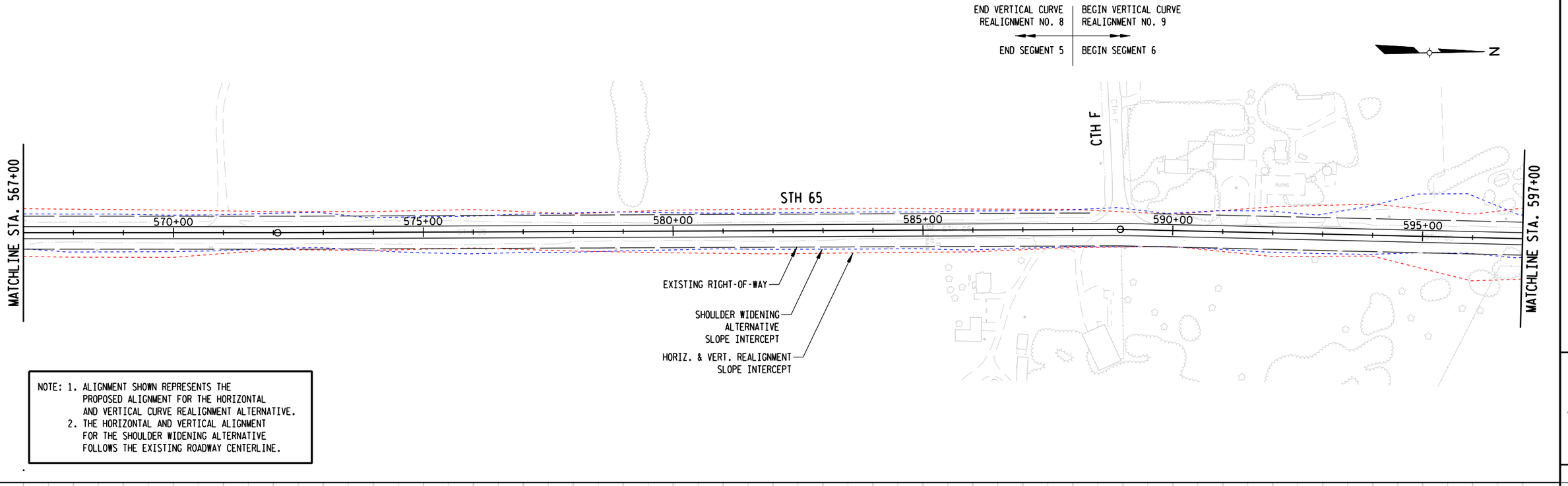
FILE NAME: I:\work\106065\trans\sth 65\050119_pp.dgn
BATCH PRINT SHEET 19 OF 28

PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl

PLOT DATE: 4/23/2012
PLOT TIME: 9:32:58 AM

PLOT SCALE: 1:200

WISDOT/CADDS SHEET 40



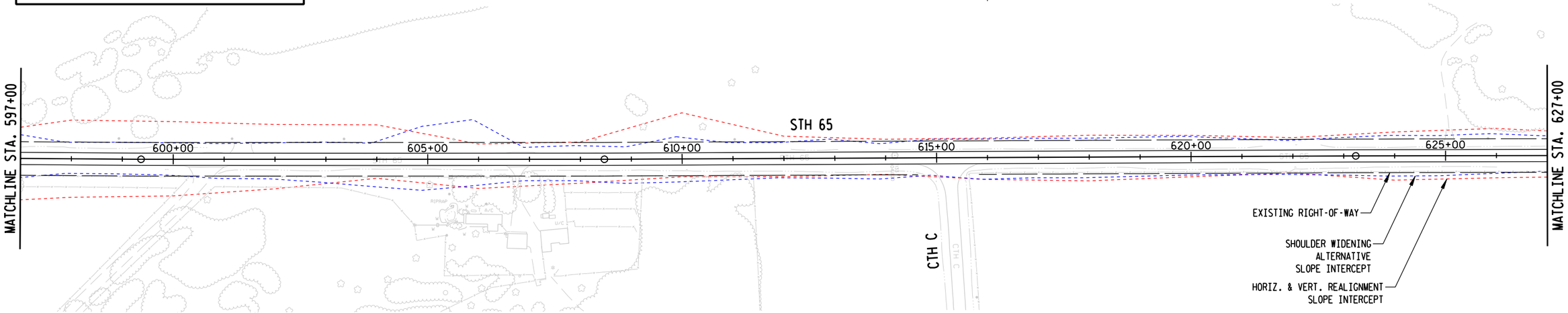
PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 567+00 - STA. 597+00	SHEET E

FILE NAME: I:\work\106065\trans\sth 65\050120_pp.dgn
BATCH PRINT SHEET 20 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:32:59 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

END VERTICAL CURVE REALIGNMENT NO. 9 | BEGIN VERTICAL CURVE REALIGNMENT NO. 10
END SEGMENT 6 | BEGIN SEGMENT 7

N



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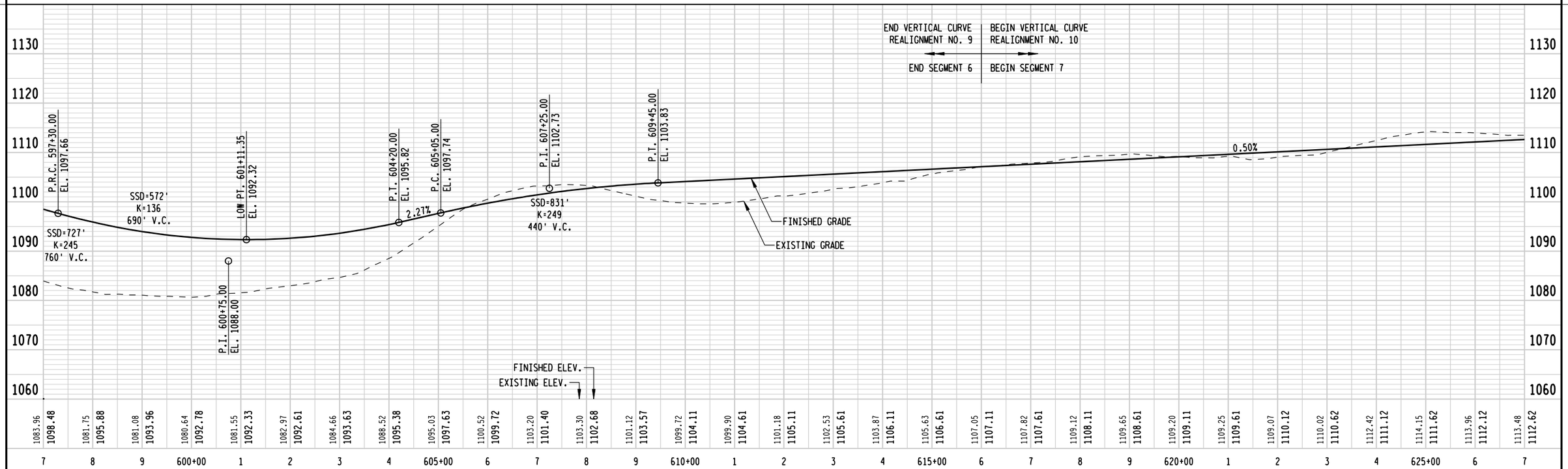
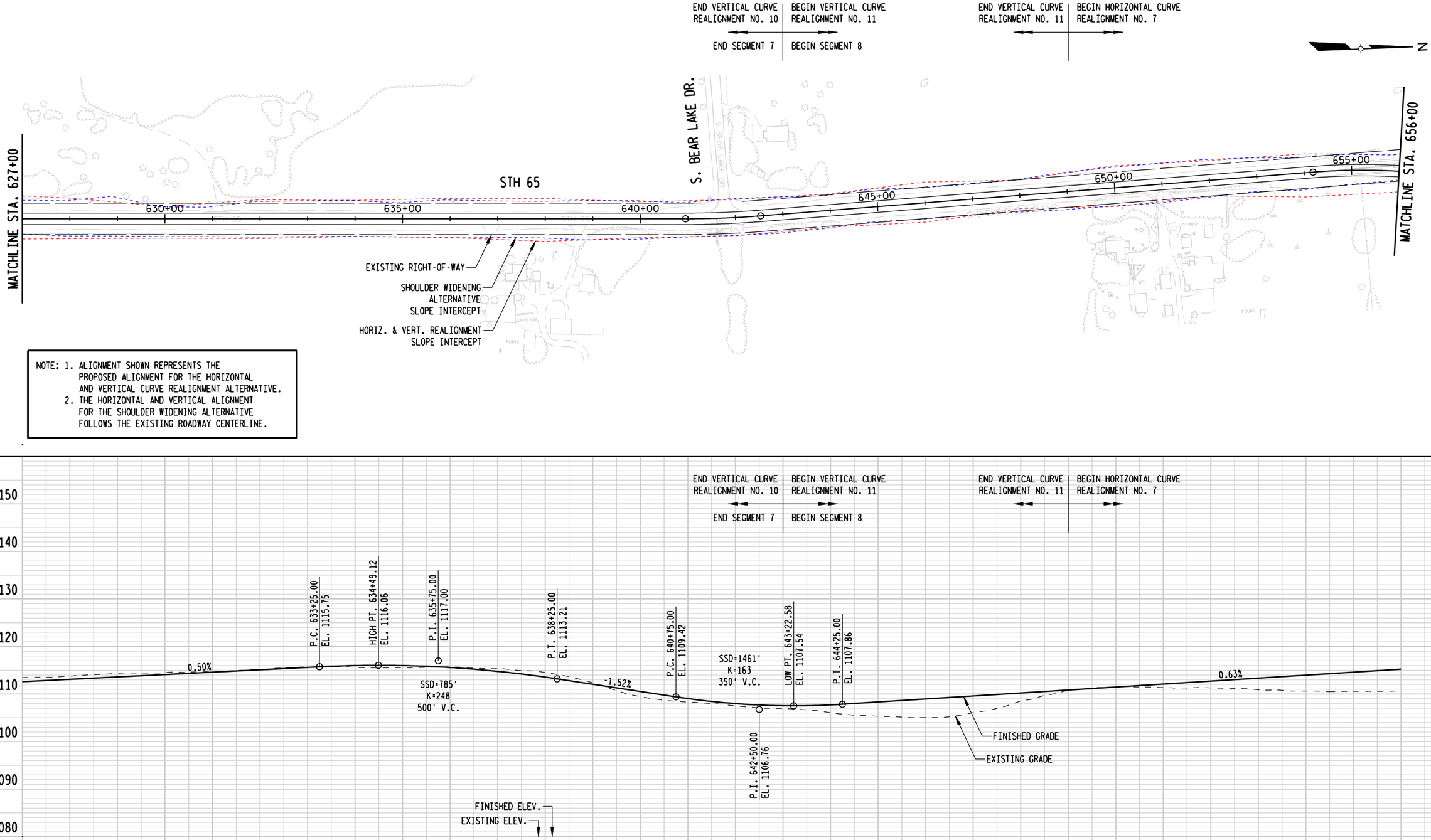
5

END VERTICAL CURVE REALIGNMENT NO. 9 | BEGIN VERTICAL CURVE REALIGNMENT NO. 10
END SEGMENT 6 | BEGIN SEGMENT 7



PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 597+00 - STA. 627+00	SHEET	E

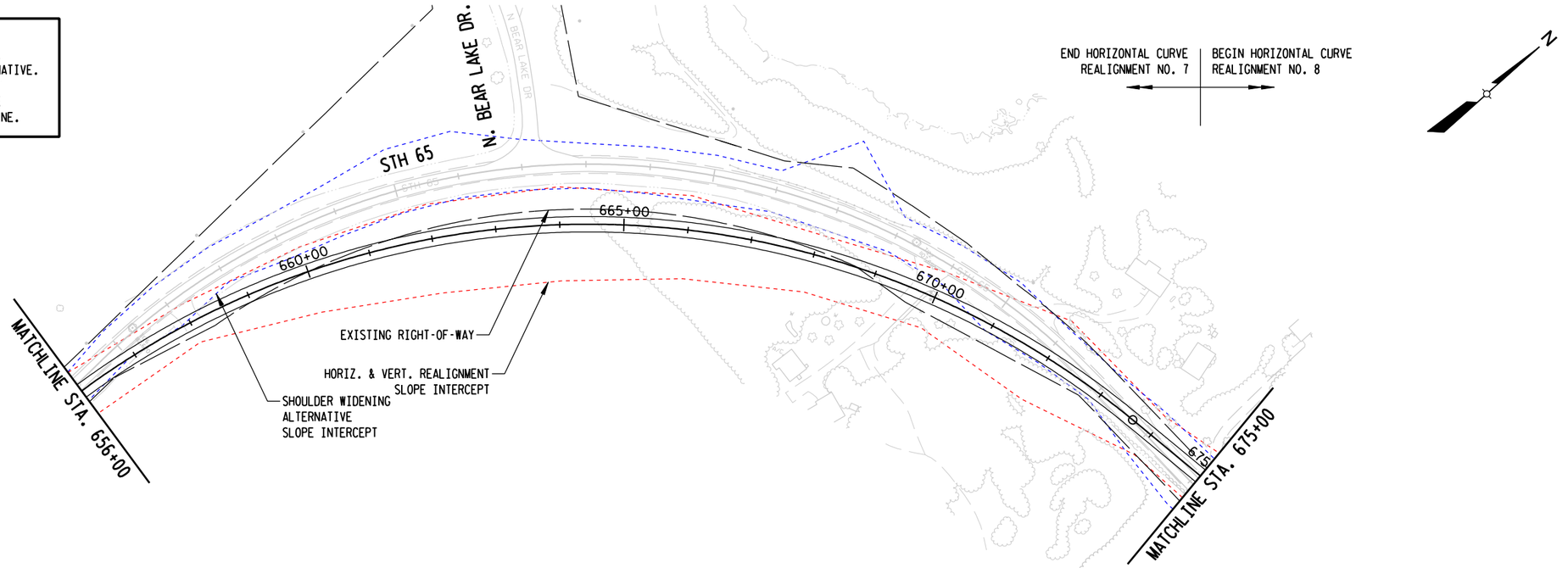
FILE NAME: I:\work\106065\trans\sth 65\050121_pp.dgn
BATCH PRINT SHEET 21 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:33:00 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

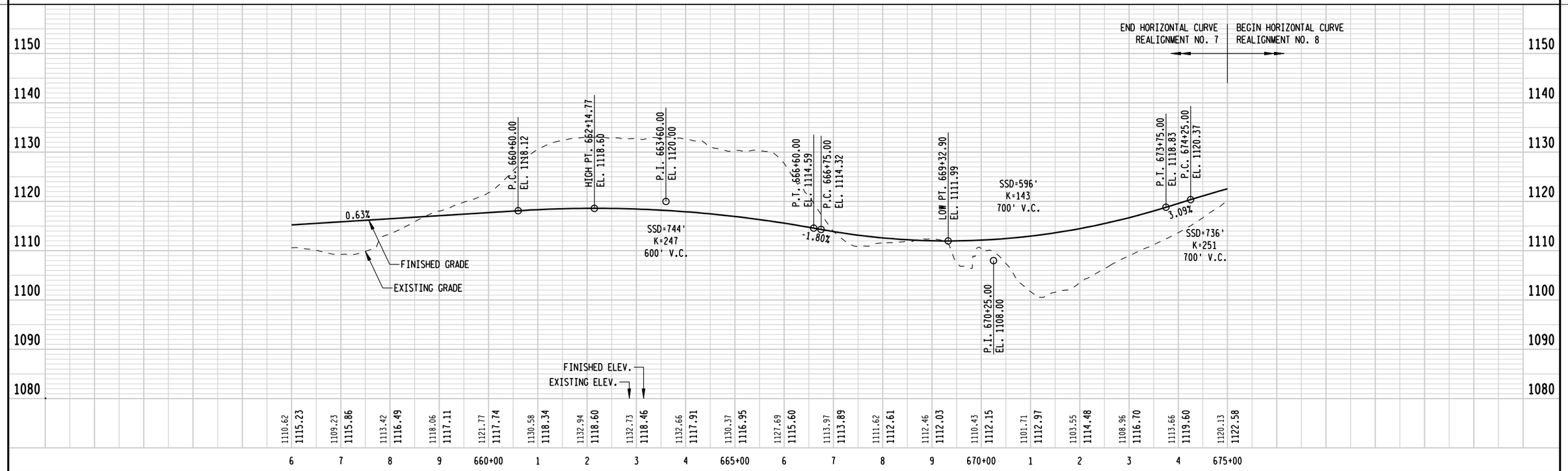


PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 627+00 - STA. 656+00	SHEET E

FILE NAME: I:\work\106065\trans\sth 65\050122_pp.dgn
BATCH PRINT SHEET 22 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:33:02 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

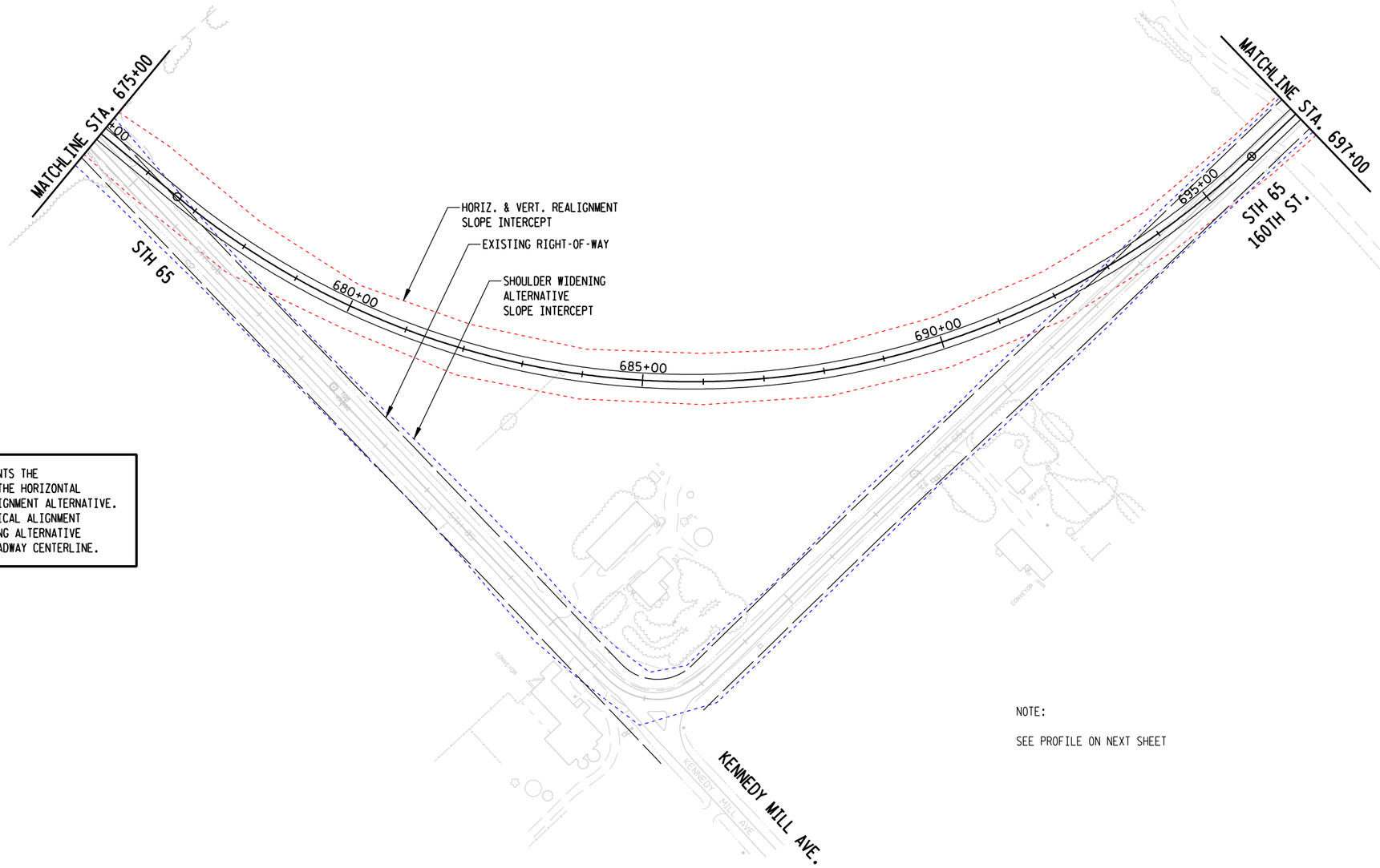




PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 656+00 - STA. 675+00	SHEET	E

FILE NAME: I:\work\106065\trans\sth 65\050123_pp.dgn
BATCH PRINT SHEET 23 OF 28
PRINTER DRIVER: L:\library\TPN_CADstds\Workspace-Clients\WisDOT\Microstation\Resources\MS_Printing\Printer_Drivers\ET_PDF_11 x 17.plt
PEN TABLE: I:\work\106065\Trans\STH 65\MS_Printing\Pen_Tables\ET_WisDOT_SI_color.tbl
PLOT DATE: 4/23/2012
PLOT TIME: 9:33:03 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

END HORIZONTAL CURVE REALIGNMENT NO. 7 | BEGIN HORIZONTAL CURVE REALIGNMENT NO. 8



NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

NOTE:

SEE PROFILE ON NEXT SHEET

PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 675+00 - STA. 697+00	SHEET	E

FILE NAME: l:\work\106065\trans\sth 65\050124_pp.dgn
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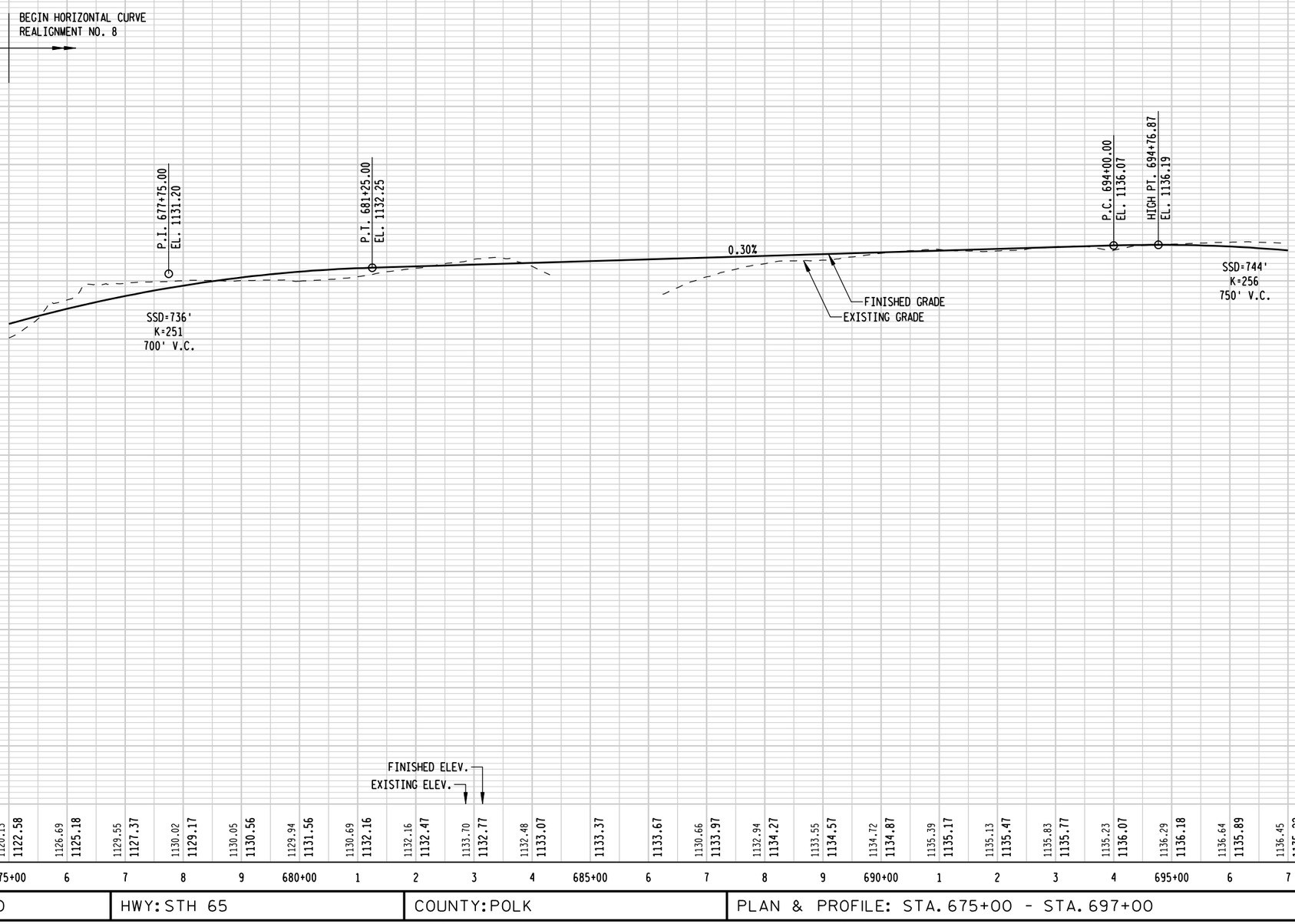
END HORIZONTAL CURVE REALIGNMENT NO. 7 | BEGIN HORIZONTAL CURVE REALIGNMENT NO. 8



FINISHED ELEV.
EXISTING ELEV.

1120.13	1122.58	1126.69	1125.18	1129.55	1127.37	1130.02	1129.17	1130.05	1130.56	1129.94	1131.56	1130.69	1132.16	1132.16	1132.47	1133.70	1132.77	1132.48	1133.07	1133.37	1133.67	1130.66	1133.97	1132.94	1134.27	1133.55	1134.57	1134.72	1134.87	1135.39	1135.17	1135.13	1135.47	1135.83	1135.77	1135.23	1136.07	1136.29	1136.18	1136.64	1135.89	1136.45	1135.22
675+00		6		7		8		9		680+00		1		2		3		4		685+00		6		7		8		9		690+00		1		2		3		4		695+00		6		7	

PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 675+00 - STA. 697+00	SHEET	E

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BATCH PRINT SHEET 25 OF 28
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PLOT DATE: 4/23/2012
PLOT TIME: 9:33:06 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40B

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.

	7	8	9	700+00	1	2	3	4	705+00	6	7	8	9	710+00	1	2
EXISTING ELEV.	1136.45	1135.00	1129.90	1124.03	1119.65	1117.74	1117.64	1118.80	1120.38	1122.03	1123.75	1125.18	1126.76	1128.22	1129.80	1131.26
FINISHED ELEV.	1135.22	1134.15	1132.70	1130.85	1128.62	1126.13	1124.19	1122.96	1122.41	1122.56	1123.40	1124.85	1126.38	1127.92	1129.45	1130.99

	3	4	715+00	6	7	8	9	720+00	1	2	3	4	725+00	6	7
EXISTING ELEV.	1132.63	1134.23	1135.52	1137.20	1138.67	1140.37	1141.73	1142.55	1142.79	1142.32	1140.82	1138.86	1135.99	1132.42	1131.45
FINISHED ELEV.	1132.52	1134.06	1135.59	1137.13	1138.62	1139.79	1140.60	1141.05	1141.13	1140.86	1140.22	1139.26	1138.26	1137.28	1136.73

PROJECT NUMBER: 0695-21-50 | HWY: STH 65 | COUNTY: POLK | PLAN & PROFILE: STA. 697+00 - STA. 727+00 | SHEET | E

FILE NAME: I:\work\106065\trans\sth 65\050126_pp.dgn
BATCH PRINT SHEET 26 OF 28

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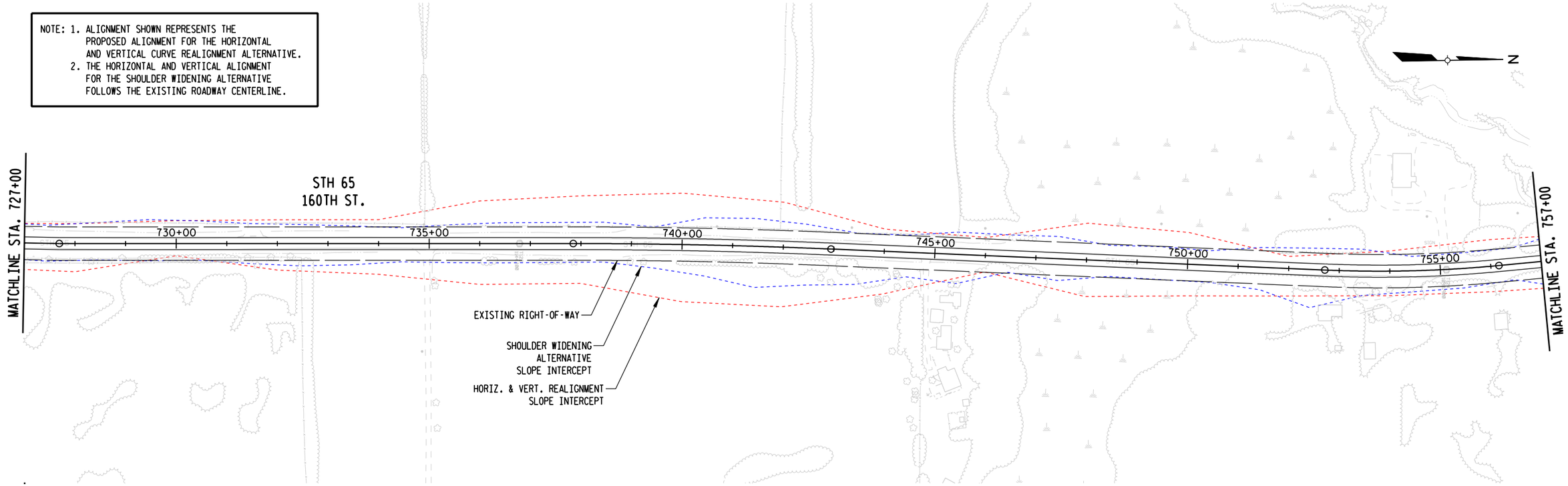
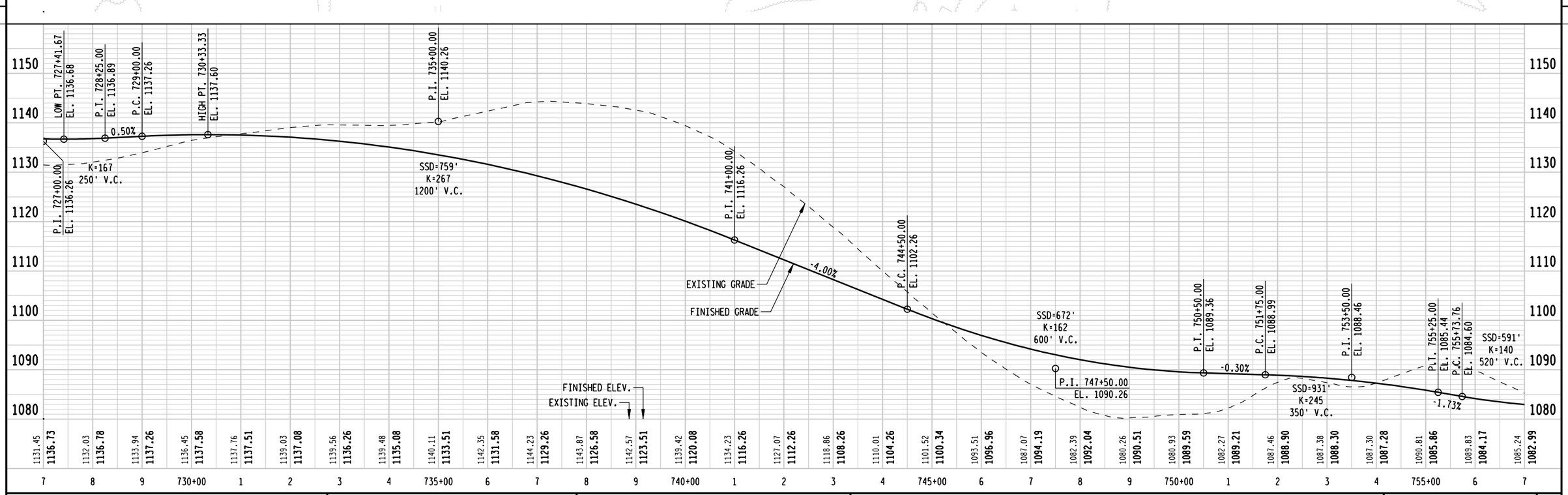
PLOT DATE: 4/23/2012
PLOT TIME: 9:33:08 AM

PLOT SCALE: 1:200

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.





PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 727+00 - STA. 757+00	SHEET E

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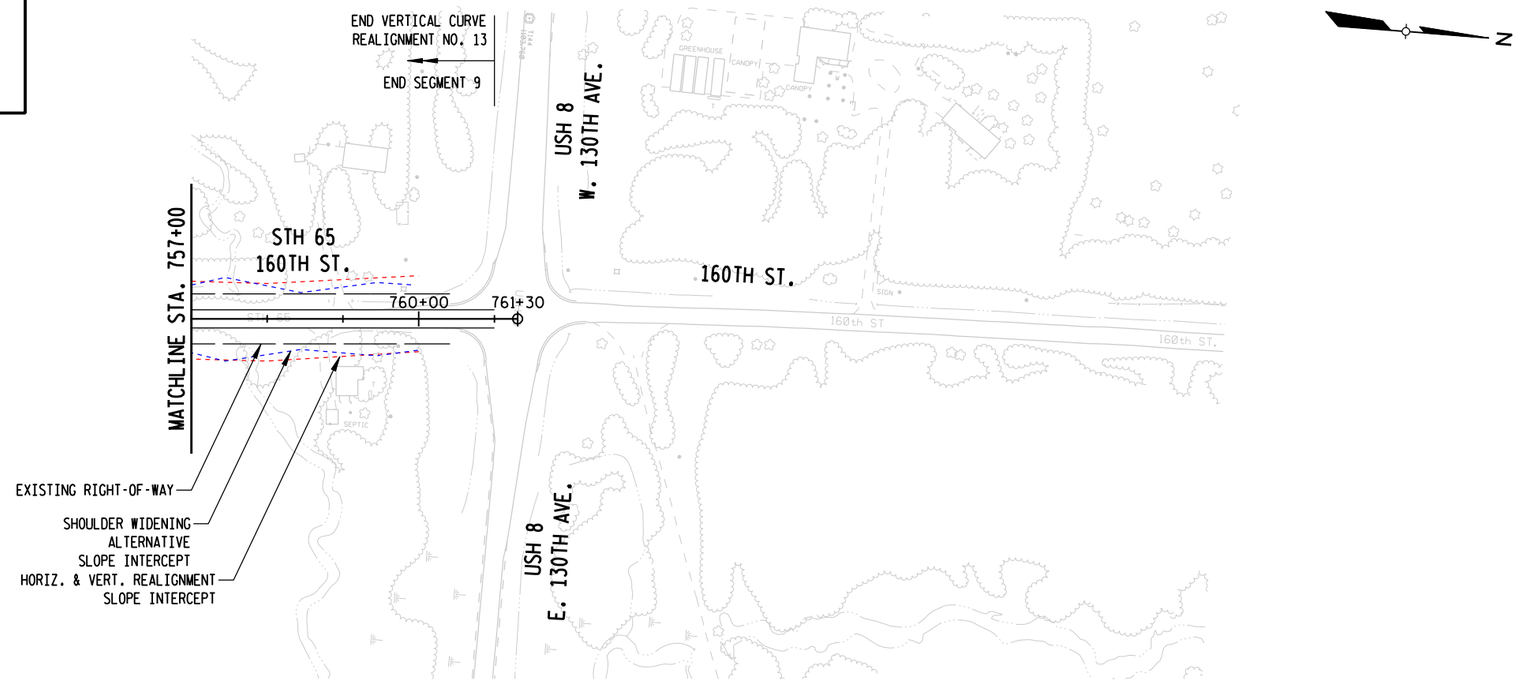
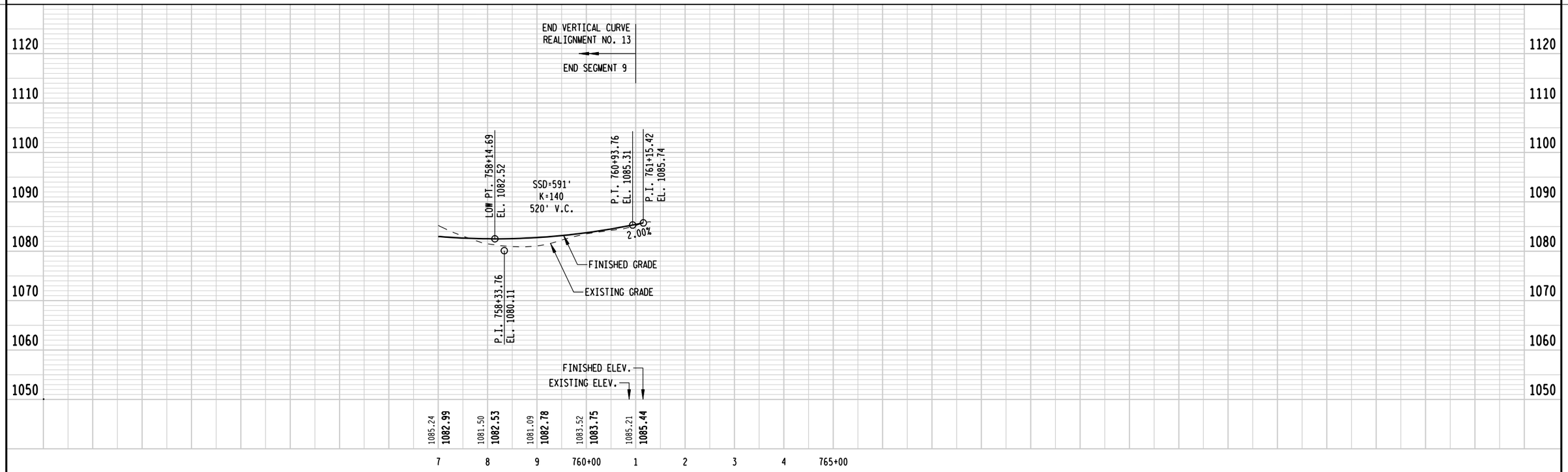
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40

NOTE: 1. ALIGNMENT SHOWN REPRESENTS THE PROPOSED ALIGNMENT FOR THE HORIZONTAL AND VERTICAL CURVE REALIGNMENT ALTERNATIVE.
2. THE HORIZONTAL AND VERTICAL ALIGNMENT FOR THE SHOULDER WIDENING ALTERNATIVE FOLLOWS THE EXISTING ROADWAY CENTERLINE.





PROJECT NUMBER: 0695-21-50	HWY: STH 65	COUNTY: POLK	PLAN & PROFILE: STA. 757+00 - STA. 761+30	SHEET	E

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BATCH PRINT SHEET 28 OF 28
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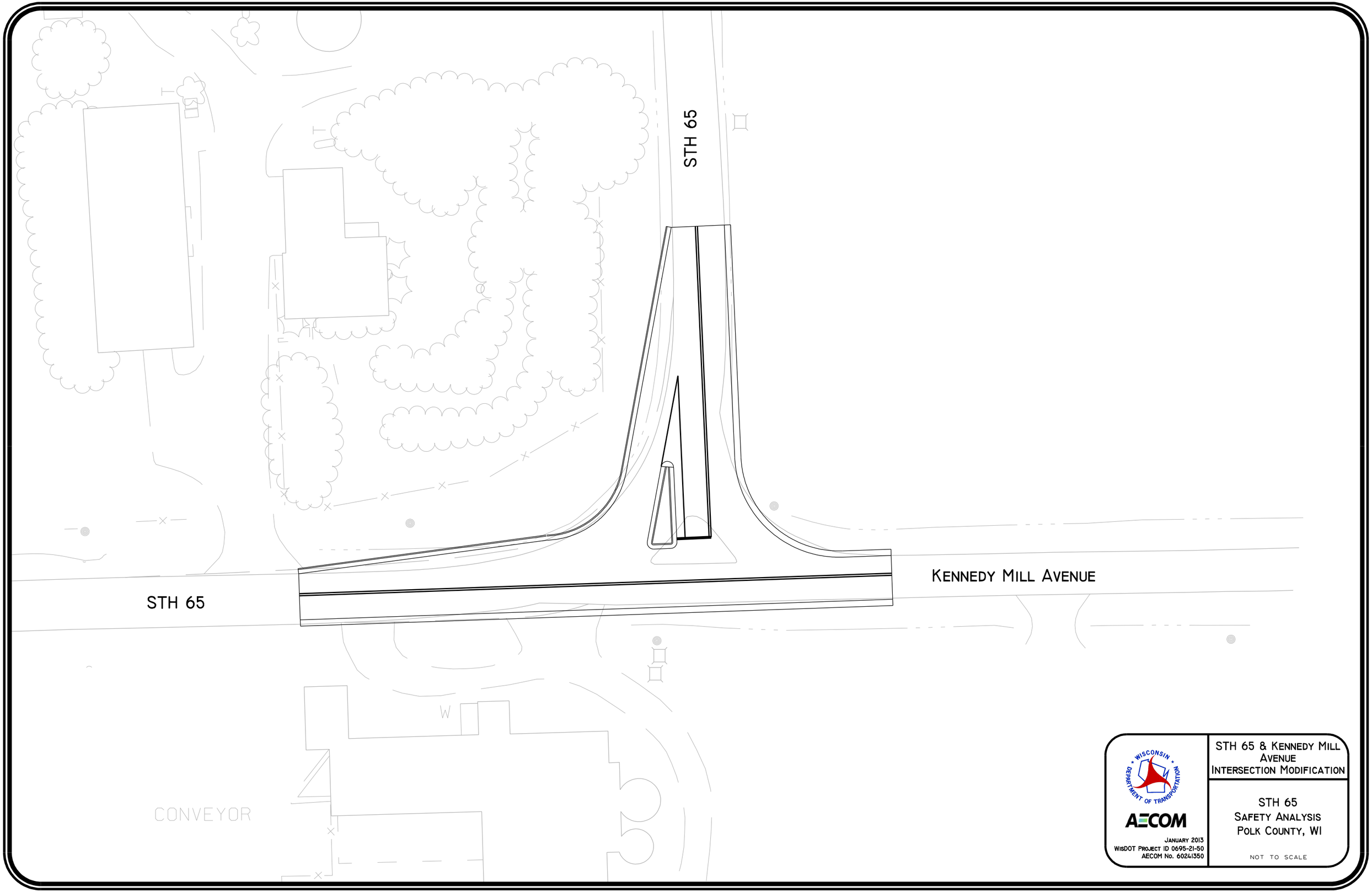
PLOT TIME: 9:33:12 AM
PLOT SCALE: 1:200
WISDOT/CADDS SHEET 40



WISCONSIN DEPARTMENT OF TRANSPORTATION

AECOM

JANUARY 2013
WISDOT PROJECT ID 0695-21-50
AECOM No. 60241350

STH 65 & KENNEDY MILL AVENUE INTERSECTION MODIFICATION

STH 65 SAFETY ANALYSIS POLK COUNTY, WI

NOT TO SCALE

Exhibit 8
Cost Estimates

STH 65
Alternative Cost Estimate

Alternative: Horizontal Curve Realignment No. 1, STA 40- STA 50

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	31.5	$500.00	$ 15,750
2	**PAVEMENT**				
	STH 65	STA	31.5	$5,606.25	$ 176,597
3	**BASE COURSE**				
	STH 65	STA	31.5	$2,666.67	$ 84,000
4	**SELECT MATERIAL**				
	STH 65	STA	31.5	$3,200.00	$ 100,800
5	**SAFETY EDGE APPLICATION**	STA	31.5	$40.63	$ 1,280
6	**EARTHWORK**				
	Excavation Common	CY	9,700	$7.00	$ 67,900
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	14,600	$8.00	$ 116,800
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	31.5	$1,000.00	$ 31,500
9	**FINISHING AND EROSION CONTROL**	STA	31.5	$1,600.00	$ 50,400
10	**TRAFFIC CONTROL**	STA	31.5	$400.00	$ 12,600
11	**SIGNING AND PAVEMENT MARKINGS**	STA	31.5	$250.00	$ 7,875
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$86,477.60	$ 86,478
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 112,797
				TOTAL ROADWAY COSTS (Items 1-12)	$ 864,776
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 129,716
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.2	$25,000.00	$ 5,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	3.5	$5,000.00	$ 18,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 152,716
				TOTAL ALTERNATIVE COST	$ 1,018,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 1 - Modify Vertical Alignment No. 1, STA. 56+00 - 92+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	36.0	$500.00	$ 18,000
2	**PAVEMENT**				
	STH 65	STA	36.0	$5,606.25	$ 201,825
3	**BASE COURSE**				
	STH 65	STA	36.0	$2,666.67	$ 96,000
4	**SELECT MATERIAL**				
	STH 65	STA	36.0	$3,200.00	$ 115,200
5	**SAFETY EDGE APPLICATION**	STA	36.0	$40.63	$ 1,463
6	**EARTHWORK**				
	Excavation Common	CY	27,000	$7.00	$ 189,000
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	36.0	$1,000.00	$ 36,000
9	**FINISHING AND EROSION CONTROL**	STA	36.0	$1,600.00	$ 57,600
10	**TRAFFIC CONTROL**	STA	36.0	$400.00	$ 14,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	36.0	$250.00	$ 9,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$95,961.65	$ 95,962
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 125,167
				TOTAL ROADWAY COSTS (Items 1-12)	$ 959,617
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 143,942
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	3.9	$5,000.00	$ 20,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 163,942
				TOTAL ALTERNATIVE COST	$ 1,124,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Horizontal Curve Realignment No. 2, STA 98

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	12.0	$500.00	$ 6,000
2	**PAVEMENT**				
	STH 65	STA	12.0	$5,606.25	$ 67,275
3	**BASE COURSE**				
	STH 65	STA	12.0	$2,666.67	$ 32,000
4	**SELECT MATERIAL**				
	STH 65	STA	12.0	$3,200.00	$ 38,400
5	**SAFETY EDGE APPLICATION**	STA	12.0	$40.63	$ 488
6	**EARTHWORK**				
	Excavation Common	CY	24,100	$7.00	$ 168,700
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	12.0	$1,000.00	$ 12,000
9	**FINISHING AND EROSION CONTROL**	STA	12.0	$1,600.00	$ 19,200
10	**TRAFFIC CONTROL**	STA	12.0	$400.00	$ 4,800
11	**SIGNING AND PAVEMENT MARKINGS**	STA	12.0	$250.00	$ 3,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$45,722.25	$ 45,722
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 59,638
				TOTAL ROADWAY COSTS (Items 1-12)	$ 457,222
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 68,583
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.3	$25,000.00	$ 8,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	1.7	$5,000.00	$ 9,000
	RELOCATIONS				
18	Residential	Each	0	$0.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 85,583
				TOTAL ALTERNATIVE COST	$ 543,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Horizontal Curve Realignment No. 3, STA 111

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	14.0	$500.00	$ 7,000
2	**PAVEMENT**				
	STH 65	STA	14.0	$5,606.25	$ 78,488
3	**BASE COURSE**				
	STH 65	STA	14.0	$2,666.67	$ 37,333
4	**SELECT MATERIAL**				
	STH 65	STA	14.0	$3,200.00	$ 44,800
5	**SAFETY EDGE APPLICATION**	STA	14.0	$40.63	$ 569
6	**EARTHWORK**				
	Excavation Common	CY	12,600	$7.00	$ 88,200
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	14.0	$1,000.00	$ 14,000
9	**FINISHING AND EROSION CONTROL**	STA	14.0	$1,600.00	$ 22,400
10	**TRAFFIC CONTROL**	STA	14.0	$400.00	$ 5,600
11	**SIGNING AND PAVEMENT MARKINGS**	STA	14.0	$250.00	$ 3,500
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$39,228.59	$ 39,229
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 51,168
				TOTAL ROADWAY COSTS (Items 1-12)	$ 392,286
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 58,843
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.2	$25,000.00	$ 5,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	1.3	$5,000.00	$ 7,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 70,843
	TOTAL ALTERNATIVE COST				$ 464,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 1 - Modify Vertical Alignment No. 2, 118+00 - 132+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	14.0	$500.00	$ 7,000
2	**PAVEMENT**				
	STH 65	STA	14.0	$5,606.25	$ 78,488
3	**BASE COURSE**				
	STH 65	STA	14.0	$2,666.67	$ 37,333
4	**SELECT MATERIAL**				
	STH 65	STA	14.0	$3,200.00	$ 44,800
5	**SAFETY EDGE APPLICATION**	STA	14.0	$40.63	$ 569
6	**EARTHWORK**				
	Excavation Common	CY	19,300	$7.00	$ 135,100
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	14.0	$1,000.00	$ 14,000
9	**FINISHING AND EROSION CONTROL**	STA	14.0	$1,600.00	$ 22,400
10	**TRAFFIC CONTROL**	STA	14.0	$400.00	$ 5,600
11	**SIGNING AND PAVEMENT MARKINGS**	STA	14.0	$250.00	$ 3,500
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$45,322.94	$ 45,323
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 59,117
				TOTAL ROADWAY COSTS (Items 1-12)	$ 453,229
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 67,984
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.6	$25,000.00	$ 15,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	1.2	$5,000.00	$ 6,000
	RELOCATIONS				
18	Residential	Each	1	$200,000.00	$ 200,000
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 288,984
				TOTAL ALTERNATIVE COST	$ 743,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Horizontal Curve Realignment No. 4, STA 136 - STA 149

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	26.0	$500.00	$ 13,000
2	**PAVEMENT**				
	STH 65	STA	26.0	$5,606.25	$ 145,763
3	**BASE COURSE**				
	STH 65	STA	26.0	$2,666.67	$ 69,333
4	**SELECT MATERIAL**				
	STH 65	STA	26.0	$3,200.00	$ 83,200
5	**SAFETY EDGE APPLICATION**	STA	26.0	$40.63	$ 1,056
6	**EARTHWORK**				
	Excavation Common	CY	10,700	$7.00	$ 74,900
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	131,500	$8.00	$ 1,052,000
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	26.0	$1,000.00	$ 26,000
9	**FINISHING AND EROSION CONTROL**	STA	26.0	$1,600.00	$ 41,600
10	**TRAFFIC CONTROL**	STA	26.0	$400.00	$ 10,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	26.0	$250.00	$ 6,500
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$198,001.68	$ 198,002
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 258,263
				TOTAL ROADWAY COSTS (Items 1-12)	$ 1,980,017
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 297,003
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.7	$25,000.00	$ 18,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	5.7	$5,000.00	$ 29,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 344,003
	TOTAL ALTERNATIVE COST				$ 2,325,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 2 - Modify Vertical Alignment No. 3, 158+00 - 254+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	96.0	$500.00	$ 48,000
2	**PAVEMENT**				
	STH 65	STA	96.0	$5,606.25	$ 538,200
3	**BASE COURSE**				
	STH 65	STA	96.0	$2,666.67	$ 256,000
4	**SELECT MATERIAL**				
	STH 65	STA	96.0	$3,200.00	$ 307,200
5	**SAFETY EDGE APPLICATION**	STA	96.0	$40.63	$ 3,900
6	**EARTHWORK**				
	Excavation Common	CY	109,400	$7.00	$ 765,800
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	25,700	$8.00	$ 205,600
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	96.0	$1,000.00	$ 96,000
9	**FINISHING AND EROSION CONTROL**	STA	96.0	$1,600.00	$ 153,600
10	**TRAFFIC CONTROL**	STA	96.0	$400.00	$ 38,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	96.0	$250.00	$ 24,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$316,633.33	$ 316,633
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 413,000
				TOTAL ROADWAY COSTS (Items 1-12)	$ 3,166,333
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 474,950
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.5	$25,000.00	$ 13,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	13.9	$5,000.00	$ 70,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 557,950
				TOTAL ALTERNATIVE COST	$ 3,725,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 3 - Modify Vertical Alignment No. 4, 254+00 - 261+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	7.0	$500.00	$ 3,500
2	**PAVEMENT**				
	STH 65	STA	7.0	$5,606.25	$ 39,244
3	**BASE COURSE**				
	STH 65	STA	7.0	$2,666.67	$ 18,667
4	**SELECT MATERIAL**				
	STH 65	STA	7.0	$3,200.00	$ 22,400
5	**SAFETY EDGE APPLICATION**	STA	7.0	$40.63	$ 284
6	**EARTHWORK**				
	Excavation Common	CY	8,700	$7.00	$ 60,900
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0.0	$0.90	$ -
8	**DRAINAGE**	STA	7.0	$1,000.00	$ 7,000
9	**FINISHING AND EROSION CONTROL**	STA	7.0	$1,600.00	$ 11,200
10	**TRAFFIC CONTROL**	STA	7.0	$400.00	$ 2,800
11	**SIGNING AND PAVEMENT MARKINGS**	STA	7.0	$250.00	$ 1,750
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$21,797.35	$ 21,797
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 28,431
				TOTAL ROADWAY COSTS (Items 1-12)	$ 217,973
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 32,696
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.9	$5,000.00	$ 5,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 37,696
				TOTAL ALTERNATIVE COST	$ 256,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Horizontal Curve Realignment No. 5, STA 268

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	12.5	$500.00	$ 6,250
2	**PAVEMENT**				
	STH 65	STA	12.5	$5,606.25	$ 70,078
3	**BASE COURSE**				
	STH 65	STA	12.5	$2,666.67	$ 33,333
4	**SELECT MATERIAL**				
	STH 65	STA	12.5	$3,200.00	$ 40,000
5	**SAFETY EDGE APPLICATION**	STA	12.5	$40.63	$ 508
6	**EARTHWORK**				
	Excavation Common	CY	1,700	$7.00	$ 11,900
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	19,000	$8.00	$ 152,000
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	12.5	$1,000.00	$ 12,500
9	**FINISHING AND EROSION CONTROL**	STA	12.5	$1,600.00	$ 20,000
10	**TRAFFIC CONTROL**	STA	12.5	$400.00	$ 5,000
11	**SIGNING AND PAVEMENT MARKINGS**	STA	12.5	$250.00	$ 3,125
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$46,090.22	$ 46,090
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 60,118
				TOTAL ROADWAY COSTS (Items 1-12)	$ 460,902
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 69,135
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	1.5	$5,000.00	$ 8,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 77,135
	TOTAL ALTERNATIVE COST				$ 539,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 3 -Modify Vertical Alignment No. 5, 273+50 - 298+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	24.5	$500.00	$ 12,250
2	**PAVEMENT**				
	STH 65	STA	24.5	$5,606.25	$ 137,353
3	**BASE COURSE**				
	STH 65	STA	24.5	$2,666.67	$ 65,333
4	**SELECT MATERIAL**				
	STH 65	STA	24.5	$3,200.00	$ 78,400
5	**SAFETY EDGE APPLICATION**	STA	24.5	$40.63	$ 995
6	**EARTHWORK**				
	Excavation Common	CY	22,700	$7.00	$ 158,900
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	24.5	$1,000.00	$ 24,500
9	**FINISHING AND EROSION CONTROL**	STA	24.5	$1,600.00	$ 39,200
10	**TRAFFIC CONTROL**	STA	24.5	$400.00	$ 9,800
11	**SIGNING AND PAVEMENT MARKINGS**	STA	24.5	$250.00	$ 6,125
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$69,241.28	$ 69,241
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 90,315
				TOTAL ROADWAY COSTS (Items 1-12)	$ 692,413
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 103,862
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.2	$25,000.00	$ 5,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	3.2	$5,000.00	$ 16,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 124,862
	TOTAL ALTERNATIVE COST				$ 818,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Horizontal Curve Realignment No. 6, STA 338- STA 363

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	35.0	$500.00	$ 17,500
2	**PAVEMENT**				
	STH 65	STA	35.0	$5,606.25	$ 196,219
3	**BASE COURSE**				
	STH 65	STA	35.0	$2,666.67	$ 93,333
4	**SELECT MATERIAL**				
	STH 65	STA	35.0	$3,200.00	$ 112,000
5	**SAFETY EDGE APPLICATION**	STA	35.0	$40.63	$ 1,422
6	**EARTHWORK**				
	Excavation Common	CY	152,500	$7.00	$ 1,067,500
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	35.0	$1,000.00	$ 35,000
9	**FINISHING AND EROSION CONTROL**	STA	35.0	$1,600.00	$ 56,000
10	**TRAFFIC CONTROL**	STA	35.0	$400.00	$ 14,000
11	**SIGNING AND PAVEMENT MARKINGS**	STA	35.0	$250.00	$ 8,750
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$208,133.62	$ 208,134
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 271,479
				TOTAL ROADWAY COSTS (Items 1-12)	$ 2,081,336
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 312,200
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	1.6	$25,000.00	$ 40,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	5.7	$5,000.00	$ 29,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 381,200
	TOTAL ALTERNATIVE COST				$ 2,463,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 3 -Modify Vertical Alignment No. 6, 367+00 - 380+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	13.0	$500.00	$ 6,500
2	**PAVEMENT**				
	STH 65	STA	13.0	$5,606.25	$ 72,881
3	**BASE COURSE**				
	STH 65	STA	13.0	$2,666.67	$ 34,667
4	**SELECT MATERIAL**				
	STH 65	STA	13.0	$3,200.00	$ 41,600
5	**SAFETY EDGE APPLICATION**	STA	13.0	$40.63	$ 528
6	**EARTHWORK**				
	Excavation Common	CY	600	$7.00	$ 4,200
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	22,400	$8.00	$ 179,200
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	13.0	$1,000.00	$ 13,000
9	**FINISHING AND EROSION CONTROL**	STA	13.0	$1,600.00	$ 20,800
10	**TRAFFIC CONTROL**	STA	13.0	$400.00	$ 5,200
11	**SIGNING AND PAVEMENT MARKINGS**	STA	13.0	$250.00	$ 3,250
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$49,615.81	$ 49,616
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 64,716
				TOTAL ROADWAY COSTS (Items 1-12)	$ 496,158
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 74,424
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.5	$5,000.00	$ 3,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 77,424
				TOTAL ALTERNATIVE COST	$ 574,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 4 -Modify Vertical Alignment No. 7, 381+00 - 512+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	131.0	$500.00	$ 65,500
2	**PAVEMENT**				
	STH 65	STA	131.0	$5,606.25	$ 734,419
3	**BASE COURSE**				
	STH 65	STA	131.0	$2,666.67	$ 349,333
4	**SELECT MATERIAL**				
	STH 65	STA	131.0	$3,200.00	$ 419,200
5	**SAFETY EDGE APPLICATION**	STA	131.0	$40.63	$ 5,322
6	**EARTHWORK**				
	Excavation Common	CY	112,600	$7.00	$ 788,200
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	131.0	$1,000.00	$ 131,000
9	**FINISHING AND EROSION CONTROL**	STA	131.0	$1,600.00	$ 209,600
10	**TRAFFIC CONTROL**	STA	131.0	$400.00	$ 52,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	131.0	$250.00	$ 32,750
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$362,246.62	$ 362,247
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 472,496
				TOTAL ROADWAY COSTS (Items 1-12)	$ 3,622,466
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 543,370
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	1.1	$25,000.00	$ 28,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	13.4	$5,000.00	$ 67,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 638,370
				TOTAL ALTERNATIVE COST	$ 4,261,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 5 -Modify Vertical Alignment No. 8, 512+00 - 588+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	76.0	$500.00	$ 38,000
2	**PAVEMENT**				
	STH 65	STA	76.0	$5,606.25	$ 426,075
3	**BASE COURSE**				
	STH 65	STA	76.0	$2,666.67	$ 202,667
4	**SELECT MATERIAL**				
	STH 65	STA	76.0	$3,200.00	$ 243,200
5	**SAFETY EDGE APPLICATION**	STA	76.0	$40.63	$ 3,088
6	**EARTHWORK**				
	Excavation Common	CY	64,600	$7.00	$ 452,200
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	45,500	$8.00	$ 364,000
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0.0	$0.90	$ -
8	**DRAINAGE**	STA	76.0	$1,000.00	$ 76,000
9	**FINISHING AND EROSION CONTROL**	STA	76.0	$1,600.00	$ 121,600
10	**TRAFFIC CONTROL**	STA	76.0	$400.00	$ 30,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	76.0	$250.00	$ 19,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$256,798.14	$ 256,798
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 334,954
				TOTAL ROADWAY COSTS (Items 1-12)	$ 2,567,981
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 385,197
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.7	$25,000.00	$ 18,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	8.0	$5,000.00	$ 40,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 443,197
				TOTAL ALTERNATIVE COST	$ 3,012,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 6 -Modify Vertical Alignment No. 9, 588+00 - 616+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	28.0	$500.00	$ 14,000
2	**PAVEMENT**				
	STH 65	STA	28.0	$5,606.25	$ 156,975
3	**BASE COURSE**				
	STH 65	STA	28.0	$2,666.67	$ 74,667
4	**SELECT MATERIAL**				
	STH 65	STA	28.0	$3,200.00	$ 89,600
5	**SAFETY EDGE APPLICATION**	STA	28.0	$40.63	$ 1,138
6	**EARTHWORK**				
	Excavation Common	CY	8,200	$7.00	$ 57,400
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	45,200	$8.00	$ 361,600
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	28.0	$1,000.00	$ 28,000
9	**FINISHING AND EROSION CONTROL**	STA	28.0	$1,600.00	$ 44,800
10	**TRAFFIC CONTROL**	STA	28.0	$400.00	$ 11,200
11	**SIGNING AND PAVEMENT MARKINGS**	STA	28.0	$250.00	$ 7,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$109,981.47	$ 109,981
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 143,454
				TOTAL ROADWAY COSTS (Items 1-12)	$ 1,099,815
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 164,972
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.6	$25,000.00	$ 15,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	3.0	$5,000.00	$ 15,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 194,972
	TOTAL ALTERNATIVE COST				$ 1,295,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Modify Vertical Alignment No. 10, 616+00 - 643+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	27.0	$500.00	$ 13,500
2	**PAVEMENT**				
	STH 65	STA	27.0	$5,606.25	$ 151,369
3	**BASE COURSE**				
	STH 65	STA	27.0	$2,666.67	$ 72,000
4	**SELECT MATERIAL**				
	STH 65	STA	27.0	$3,200.00	$ 86,400
5	**SAFETY EDGE APPLICATION**	STA	27.0	$40.63	$ 1,097
6	**EARTHWORK**				
	Excavation Common	CY	16,100	$7.00	$ 112,700
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	27.0	$1,000.00	$ 27,000
9	**FINISHING AND EROSION CONTROL**	STA	27.0	$1,600.00	$ 43,200
10	**TRAFFIC CONTROL**	STA	27.0	$400.00	$ 10,800
11	**SIGNING AND PAVEMENT MARKINGS**	STA	27.0	$250.00	$ 6,750
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$68,196.38	$ 68,196
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 88,952
				TOTAL ROADWAY COSTS (Items 1-12)	$ 681,964
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 102,295
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.2	$25,000.00	$ 5,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	2.0	$5,000.00	$ 10,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 117,295
	TOTAL ALTERNATIVE COST				$ 800,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 8 -Modify Vertical Alignment No. 11, 643+00 - 649+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	6.0	$500.00	$ 3,000
2	**PAVEMENT**				
	STH 65	STA	6.0	$5,606.25	$ 33,638
3	**BASE COURSE**				
	STH 65	STA	6.0	$2,666.67	$ 16,000
4	**SELECT MATERIAL**				
	STH 65	STA	6.0	$3,200.00	$ 19,200
5	**SAFETY EDGE APPLICATION**	STA	6.0	$40.63	$ 244
6	**EARTHWORK**				
	Excavation Common	CY	600	$7.00	$ 4,200
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	2,000	$8.00	$ 16,000
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	6.0	$1,000.00	$ 6,000
9	**FINISHING AND EROSION CONTROL**	STA	6.0	$1,600.00	$ 9,600
10	**TRAFFIC CONTROL**	STA	6.0	$400.00	$ 2,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	6.0	$250.00	$ 1,500
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$14,525.25	$ 14,525
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 18,946
				TOTAL ROADWAY COSTS (Items 1-12)	$ 145,252
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 21,788
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.4	$5,000.00	$ 2,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 23,788
				TOTAL ALTERNATIVE COST	$ 170,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Horizontal Curve Realignment No. 7, STA 670

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	26.0	$500.00	$ 13,000
2	**PAVEMENT**				
	STH 65	STA	26.0	$5,606.25	$ 145,763
3	**BASE COURSE**				
	STH 65	STA	26.0	$2,666.67	$ 69,333
4	**SELECT MATERIAL**				
	STH 65	STA	26.0	$3,200.00	$ 83,200
5	**SAFETY EDGE APPLICATION**	STA	26.0	$40.63	$ 1,056
6	**EARTHWORK**				
	Excavation Common	CY	45,300	$7.00	$ 317,100
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	26.0	$1,000.00	$ 26,000
9	**FINISHING AND EROSION CONTROL**	STA	26.0	$1,600.00	$ 41,600
10	**TRAFFIC CONTROL**	STA	26.0	$400.00	$ 10,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	26.0	$250.00	$ 6,500
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$92,773.43	$ 92,773
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 121,009
				TOTAL ROADWAY COSTS (Items 1-12)	$ 927,734
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 139,160
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	1.7	$25,000.00	$ 43,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	2.0	$5,000.00	$ 10,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 192,160
	TOTAL ALTERNATIVE COST				$ 1,120,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Horizontal Curve Realignment No. 8, STA 692

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	23.0	$500.00	$ 11,500
2	**PAVEMENT**				
	STH 65	STA	23.0	$5,606.25	$ 128,944
3	**BASE COURSE**				
	STH 65	STA	23.0	$2,666.67	$ 61,333
4	**SELECT MATERIAL**				
	STH 65	STA	23.0	$3,200.00	$ 73,600
5	**SAFETY EDGE APPLICATION**	STA	23.0	$40.63	$ 934
6	**EARTHWORK**				
	Excavation Common	CY	15,000	$7.00	$ 105,000
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	23.0	$1,000.00	$ 23,000
9	**FINISHING AND EROSION CONTROL**	STA	23.0	$1,600.00	$ 36,800
10	**TRAFFIC CONTROL**	STA	23.0	$400.00	$ 9,200
11	**SIGNING AND PAVEMENT MARKINGS**	STA	23.0	$250.00	$ 5,750
				TOTAL ROADWAY COSTS (Items 1-12)	$ 456,061
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 45,606
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 68,409
14	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-13	N/A	$ 102,614
				TOTAL CONSTRUCTION COSTS (Items 1-14)	$ 672,691
15	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	N/A	$ 100,904
16	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Roadway Costs	N/A	$ 47,088
17	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
18	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
19	**ROW ACQUISITION (AGRICULTURAL)**	Acres	4.4	$5,000.00	$ 22,000
	RELOCATIONS				
20	Residential	Each	0	$200,000.00	$ -
21	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 169,992
	TOTAL ALTERNATIVE COST				$ 843,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 8 -Modify Vertical Alignment No. 12, 698+00 - 710+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	12.0	$500.00	$ 6,000
2	**PAVEMENT**				
	STH 65	STA	12.0	$5,606.25	$ 67,275
3	**BASE COURSE**				
	STH 65	STA	12.0	$2,666.67	$ 32,000
4	**SELECT MATERIAL**				
	STH 65	STA	12.0	$3,200.00	$ 38,400
5	**SAFETY EDGE APPLICATION**	STA	12.0	$40.63	$ 488
6	**EARTHWORK**				
	Excavation Common	CY	3,500	$7.00	$ 24,500
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	16,500	$8.00	$ 132,000
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
8	**DRAINAGE**	STA	12.0	$1,000.00	$ 12,000
9	**FINISHING AND EROSION CONTROL**	STA	12.0	$1,600.00	$ 19,200
10	**TRAFFIC CONTROL**	STA	12.0	$400.00	$ 4,800
11	**SIGNING AND PAVEMENT MARKINGS**	STA	12.0	$250.00	$ 3,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$44,136.94	$ 44,137
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 57,570
				TOTAL ROADWAY COSTS (Items 1-12)	$ 441,369
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 66,205
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.7	$5,000.00	$ 4,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 70,205
				TOTAL ALTERNATIVE COST	$ 512,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 9 -Modify Vertical Alignment No. 13, 710+00 - 761+00

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	51.0	$500.00	$ 25,500
2	**PAVEMENT**				
	STH 65	STA	51.0	$5,606.25	$ 285,919
3	**BASE COURSE**				
	STH 65	STA	51.0	$2,666.67	$ 136,000
4	**SELECT MATERIAL**				
	STH 65	STA	51.0	$3,200.00	$ 163,200
5	**SAFETY EDGE APPLICATION**	STA	51.0	$40.63	$ 2,072
6	**EARTHWORK**				
	Excavation Common	CY	102,400	$7.00	$ 716,800
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY	0.0	$0.90	$ -
8	**DRAINAGE**	STA	51.0	$1,000.00	$ 51,000
9	**FINISHING AND EROSION CONTROL**	STA	51.0	$1,600.00	$ 81,600
10	**TRAFFIC CONTROL**	STA	51.0	$400.00	$ 20,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	51.0	$250.00	$ 12,750
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$194,296.80	$ 194,297
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 253,431
				TOTAL ROADWAY COSTS (Items 1-12)	$ 1,942,968
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 291,445
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	1.2	$25,000.00	$ 30,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	5.5	$5,000.00	$ 28,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 349,445
				TOTAL ALTERNATIVE COST	$ 2,293,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material
2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 1 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	135.1	$500.00	$ 67,550
2	**PAVEMENT**				
	STH 65	STA	135.1	$1,121.25	$ 151,481
3	**BASE COURSE**				
	STH 65	STA	135.1	$888.89	$ 120,089
4	**SELECT MATERIAL**				
	STH 65	STA	135.1	$1,066.67	$ 144,107
5	**SAFETY EDGE APPLICATION**	STA	135.1	$40.63	$ 5,488
6	**EARTHWORK**				
	Excavation Common	CY	47,400	$7.00	$ 331,800
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	135.1	$1,000.00	$ 135,100
9	**FINISHING AND EROSION CONTROL**	STA	135.1	$1,600.00	$ 216,160
10	**TRAFFIC CONTROL**	STA	135.1	$400.00	$ 54,040
11	**SIGNING AND PAVEMENT MARKINGS**	STA	135.1	$250.00	$ 33,775
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$163,675.52	$ 163,676
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 213,490
				TOTAL ROADWAY COSTS (Items 1-12)	$ 1,636,755
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 245,513
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	1.8	$25,000.00	$ 45,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	8.4	$5,000.00	$ 42,000
	RELOCATIONS				
18	Residential	Each	1	$200,000.00	$ 200,000
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 532,513
	TOTAL ALTERNATIVE COST				$ 2,170,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 2 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	96.0	$500.00	$ 48,000
2	**PAVEMENT**				
	STH 65	STA	96.0	$1,121.25	$ 107,640
3	**BASE COURSE**				
	STH 65	STA	96.0	$888.89	$ 85,333
4	**SELECT MATERIAL**				
	STH 65	STA	96.0	$1,066.67	$ 102,400
5	**SAFETY EDGE APPLICATION**	STA	96.0	$40.63	$ 3,900
6	**EARTHWORK**				
	Excavation Common	CY	29,100.0	$7.00	$ 203,700
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	96.0	$1,000.00	$ 96,000
9	**FINISHING AND EROSION CONTROL**	STA	96.0	$1,600.00	$ 153,600
10	**TRAFFIC CONTROL**	STA	96.0	$400.00	$ 38,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	96.0	$250.00	$ 24,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$112,137.78	$ 112,138
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 146,267
				TOTAL ROADWAY COSTS (Items 1-12)	$ 1,121,378
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 168,207
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.4	$25,000.00	$ 10,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	6.3	$5,000.00	$ 32,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 210,207
				TOTAL ALTERNATIVE COST	$ 1,332,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 3 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	90.0	$500.00	$ 45,000
2	**PAVEMENT**				
	STH 65	STA	90.0	$1,121.25	$ 100,913
3	**BASE COURSE**				
	STH 65	STA	90.0	$888.89	$ 80,000
4	**SELECT MATERIAL**				
	STH 65	STA	90.0	$1,066.67	$ 96,000
5	**SAFETY EDGE APPLICATION**	STA	90.0	$40.63	$ 3,656
6	**EARTHWORK**				
	Excavation Common	CY	30,400	$7.00	$ 212,800
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	90.0	$1,000.00	$ 90,000
9	**FINISHING AND EROSION CONTROL**	STA	90.0	$1,600.00	$ 144,000
10	**TRAFFIC CONTROL**	STA	90.0	$400.00	$ 36,000
11	**SIGNING AND PAVEMENT MARKINGS**	STA	90.0	$250.00	$ 22,500
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$107,966.00	$ 107,966
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 140,825
				TOTAL ROADWAY COSTS (Items 1-12)	$ 1,079,660
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 161,949
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	1.1	$25,000.00	$ 28,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	5.4	$5,000.00	$ 27,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 216,949
				TOTAL ALTERNATIVE COST	$ 1,297,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 4 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	13.1	$500.00	$ 6,550
2	**PAVEMENT**				
	STH 65	STA	13.1	$1,121.25	$ 14,688
3	**BASE COURSE**				
	STH 65	STA	13.1	$888.89	$ 11,644
4	**SELECT MATERIAL**				
	STH 65	STA	13.1	$1,066.67	$ 13,973
5	**SAFETY EDGE APPLICATION**	STA	13.1	$40.63	$ 532
6	**EARTHWORK**				
	Excavation Common	CY	26,300	$7.00	$ 184,100
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	13.1	$1,000.00	$ 13,100
9	**FINISHING AND EROSION CONTROL**	STA	13.1	$1,600.00	$ 20,960
10	**TRAFFIC CONTROL**	STA	13.1	$400.00	$ 5,240
11	**SIGNING AND PAVEMENT MARKINGS**	STA	13.1	$250.00	$ 3,275
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$35,612.75	$ 35,613
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 46,451
				TOTAL ROADWAY COSTS (Items 1-12)	$ 356,128
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 53,419
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.6	$25,000.00	$ 15,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	10.3	$5,000.00	$ 52,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 120,419
	TOTAL ALTERNATIVE COST				$ 477,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 5 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	76.0	$500.00	$ 38,000
2	**PAVEMENT**				
	STH 65	STA	76.0	$1,121.25	$ 85,215
3	**BASE COURSE**				
	STH 65	STA	76.0	$888.89	$ 67,556
4	**SELECT MATERIAL**				
	STH 65	STA	76.0	$1,066.67	$ 81,067
5	**SAFETY EDGE APPLICATION**	STA	76.0	$40.63	$ 3,088
6	**EARTHWORK**				
	Excavation Common	CY	18,500	$7.00	$ 129,500
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	76.0	$1,000.00	$ 76,000
9	**FINISHING AND EROSION CONTROL**	STA	76.0	$1,600.00	$ 121,600
10	**TRAFFIC CONTROL**	STA	76.0	$400.00	$ 30,400
11	**SIGNING AND PAVEMENT MARKINGS**	STA	76.0	$250.00	$ 19,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$84,648.41	$ 84,648
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 110,411
				TOTAL ROADWAY COSTS (Items 1-12)	$ 846,484
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 126,973
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.5	$25,000.00	$ 13,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	5.9	$5,000.00	$ 30,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 169,973
				TOTAL ALTERNATIVE COST	$ 1,017,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 6 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	28.0	$500.00	$ 14,000
2	**PAVEMENT**				
	STH 65	STA	28.0	$1,121.25	$ 31,395
3	**BASE COURSE**				
	STH 65	STA	28.0	$888.89	$ 24,889
4	**SELECT MATERIAL**				
	STH 65	STA	28.0	$1,066.67	$ 29,867
5	**SAFETY EDGE APPLICATION**	STA	28.0	$40.63	$ 1,138
6	**EARTHWORK**				
	Excavation Common	CY	6,700	$7.00	$ 46,900
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	28.0	$1,000.00	$ 28,000
9	**FINISHING AND EROSION CONTROL**	STA	28.0	$1,600.00	$ 44,800
10	**TRAFFIC CONTROL**	STA	28.0	$400.00	$ 11,200
11	**SIGNING AND PAVEMENT MARKINGS**	STA	28.0	$250.00	$ 7,000
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$31,080.93	$ 31,081
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 40,540
				TOTAL ROADWAY COSTS (Items 1-12)	$ 310,809
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 46,621
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.5	$25,000.00	$ 13,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	1.8	$5,000.00	$ 9,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 68,621
	TOTAL ALTERNATIVE COST				$ 380,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 7 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	27.3	$500.00	$ 13,650
2	**PAVEMENT**				
	STH 65	STA	27.3	$1,121.25	$ 30,610
3	**BASE COURSE**				
	STH 65	STA	27.3	$888.89	$ 24,267
4	**SELECT MATERIAL**				
	STH 65	STA	27.3	$1,066.67	$ 29,120
5	**SAFETY EDGE APPLICATION**	STA	27.3	$40.63	$ 1,109
6	**EARTHWORK**				
	Excavation Common	CY	4,900	$7.00	$ 34,300
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	27.3	$1,000.00	$ 27,300
9	**FINISHING AND EROSION CONTROL**	STA	27.3	$1,600.00	$ 43,680
10	**TRAFFIC CONTROL**	STA	27.3	$400.00	$ 10,920
11	**SIGNING AND PAVEMENT MARKINGS**	STA	27.3	$250.00	$ 6,825
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$28,818.98	$ 28,819
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 37,590
				TOTAL ROADWAY COSTS (Items 1-12)	$ 288,190
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 43,228
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.2	$25,000.00	$ 5,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	1.6	$5,000.00	$ 8,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 56,228
	TOTAL ALTERNATIVE COST				$ 345,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 8 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	73.0	$500.00	$ 36,500
2	**PAVEMENT**				
	STH 65	STA	73.0	$1,121.25	$ 81,851
3	**BASE COURSE**				
	STH 65	STA	73.0	$888.89	$ 64,889
4	**SELECT MATERIAL**				
	STH 65	STA	73.0	$1,066.67	$ 77,867
5	**SAFETY EDGE APPLICATION**	STA	73.0	$40.63	$ 2,966
6	**EARTHWORK**				
	Excavation Common	CY	16,200	$7.00	$ 113,400
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	73.0	$1,000.00	$ 73,000
9	**FINISHING AND EROSION CONTROL**	STA	73.0	$1,600.00	$ 116,800
10	**TRAFFIC CONTROL**	STA	73.0	$400.00	$ 29,200
11	**SIGNING AND PAVEMENT MARKINGS**	STA	73.0	$250.00	$ 18,250
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$79,879.19	$ 79,879
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 104,190
				TOTAL ROADWAY COSTS (Items 1-12)	$ 798,792
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 119,819
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.7	$25,000.00	$ 18,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	3.0	$5,000.00	$ 15,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 152,819
	TOTAL ALTERNATIVE COST				$ 952,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Segment 9 - Construct 6' Shoulder

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	51.2	$500.00	$ 25,600
2	**PAVEMENT**				
	STH 65	STA	51.2	$1,121.25	$ 57,408
3	**BASE COURSE**				
	STH 65	STA	51.2	$888.89	$ 45,511
4	**SELECT MATERIAL**				
	STH 65	STA	51.2	$1,066.67	$ 54,613
5	**SAFETY EDGE APPLICATION**	STA	51.2	$40.63	$ 2,080
6	**EARTHWORK**				
	Excavation Common	CY	14,300	$7.00	$ 100,100
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
7	**PULVERIZE AND RELAY**				
	STH 65	SY		$0.90	$ -
8	**DRAINAGE**	STA	51.2	$1,000.00	$ 51,200
9	**FINISHING AND EROSION CONTROL**	STA	51.2	$1,600.00	$ 81,920
10	**TRAFFIC CONTROL**	STA	51.2	$400.00	$ 20,480
11	**SIGNING AND PAVEMENT MARKINGS**	STA	51.2	$250.00	$ 12,800
12	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$58,697.10	$ 58,697
13	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-12	N/A	$ 76,561
				TOTAL ROADWAY COSTS (Items 1-12)	$ 586,971
14	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 88,046
15	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
16	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.7	$25,000.00	$ 18,000
17	**ROW ACQUISITION (AGRICULTURAL)**	Acres	2.8	$5,000.00	$ 14,000
	RELOCATIONS				
18	Residential	Each	0	$200,000.00	$ -
19	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 120,046
				TOTAL ALTERNATIVE COST	$ 708,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 40

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.26	$500.00	$ 1,130.00
2	**PAVEMENT**				
	STH 65	STA	2.26	$1,121.25	$ 2,534.03
3	**BASE COURSE**				
	STH 65	STA	2.26	$888.89	$ 2,008.89
4	**SELECT MATERIAL**				
	STH 65	STA	2.26	$1,066.67	$ 2,410.67
5	**EARTHWORK**				
	Excavation Common	CY	304	$7.00	$ 2,129
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.26	$1,000.00	$ 2,260
8	**FINISHING AND EROSION CONTROL**	STA	2.26	$1,600.00	$ 3,616
9	**TRAFFIC CONTROL**	STA	2.26	$400.00	$ 904
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.26	$250.00	$ 565
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,281.50	$ 2,282
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 2,976
				TOTAL ROADWAY COSTS (Items 1-12)	$ 22,815
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 3,422
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 3,422
	TOTAL ALTERNATIVE COST				$ 30,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 42

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.14	$500.00	$ 1,070.00
2	**PAVEMENT**				
	STH 65	STA	2.14	$1,121.25	$ 2,399.48
3	**BASE COURSE**				
	STH 65	STA	2.14	$888.89	$ 1,902.22
4	**SELECT MATERIAL**				
	STH 65	STA	2.14	$1,066.67	$ 2,282.67
5	**EARTHWORK**				
	Excavation Common	CY	244	$7.00	$ 1,707
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.14	$1,000.00	$ 2,140
8	**FINISHING AND EROSION CONTROL**	STA	2.14	$1,600.00	$ 3,424
9	**TRAFFIC CONTROL**	STA	2.14	$400.00	$ 856
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.14	$250.00	$ 535
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,120.21	$ 2,120
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 2,765
				TOTAL ROADWAY COSTS (Items 1-12)	$ 21,202
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 3,180
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 3,180
	TOTAL ALTERNATIVE COST				$ 30,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 45

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	4.19	$500.00	$ 2,095.00
2	**PAVEMENT**				
	STH 65	STA	4.19	$1,121.25	$ 4,698.04
3	**BASE COURSE**				
	STH 65	STA	4.19	$888.89	$ 3,724.44
4	**SELECT MATERIAL**				
	STH 65	STA	4.19	$1,066.67	$ 4,469.33
5	**EARTHWORK**				
	Excavation Common	CY	611	$7.00	$ 4,279
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	4.19	$1,000.00	$ 4,190
8	**FINISHING AND EROSION CONTROL**	STA	4.19	$1,600.00	$ 6,704
9	**TRAFFIC CONTROL**	STA	4.19	$400.00	$ 1,676
10	**SIGNING AND PAVEMENT MARKINGS**	STA	4.19	$250.00	$ 1,048
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$4,272.97	$ 4,273
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 5,573
				TOTAL ROADWAY COSTS (Items 1-12)	$ 42,730
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 6,409
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 6,409
	TOTAL ALTERNATIVE COST				$ 50,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 50

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	5.28	$500.00	$ 2,640.00
2	**PAVEMENT**				
	STH 65	STA	5.28	$1,121.25	$ 5,920.20
3	**BASE COURSE**				
	STH 65	STA	5.28	$888.89	$ 4,693.33
4	**SELECT MATERIAL**				
	STH 65	STA	5.28	$1,066.67	$ 5,632.00
5	**EARTHWORK**				
	Excavation Common	CY	596	$7.00	$ 4,170
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	5.28	$1,000.00	$ 5,280
8	**FINISHING AND EROSION CONTROL**	STA	5.28	$1,600.00	$ 8,448
9	**TRAFFIC CONTROL**	STA	5.28	$400.00	$ 2,112
10	**SIGNING AND PAVEMENT MARKINGS**	STA	5.28	$250.00	$ 1,320
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$5,225.74	$ 5,226
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 6,816
				TOTAL ROADWAY COSTS (Items 1-12)	$ 52,257
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 7,839
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 7,839
	TOTAL ALTERNATIVE COST				$ 70,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 73

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	3.83	$500.00	$ 1,915.00
2	**PAVEMENT**				
	STH 65	STA	3.83	$1,121.25	$ 4,294.39
3	**BASE COURSE**				
	STH 65	STA	3.83	$888.89	$ 3,404.44
4	**SELECT MATERIAL**				
	STH 65	STA	3.83	$1,066.67	$ 4,085.33
5	**EARTHWORK**				
	Excavation Common	CY	745	$7.00	$ 5,214
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	3.83	$1,000.00	$ 3,830
8	**FINISHING AND EROSION CONTROL**	STA	3.83	$1,600.00	$ 6,128
9	**TRAFFIC CONTROL**	STA	3.83	$400.00	$ 1,532
10	**SIGNING AND PAVEMENT MARKINGS**	STA	3.83	$250.00	$ 958
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$4,075.08	$ 4,075
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 5,315
				TOTAL ROADWAY COSTS (Items 1-12)	$ 40,751
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 6,113
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 6,113
	TOTAL ALTERNATIVE COST				$ 50,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 98

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.65	$500.00	$ 1,325.00
2	**PAVEMENT**				
	STH 65	STA	2.65	$1,121.25	$ 2,971.31
3	**BASE COURSE**				
	STH 65	STA	2.65	$888.89	$ 2,355.56
4	**SELECT MATERIAL**				
	STH 65	STA	2.65	$1,066.67	$ 2,826.67
5	**EARTHWORK**				
	Excavation Common	CY	413	$7.00	$ 2,893
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.65	$1,000.00	$ 2,650
8	**FINISHING AND EROSION CONTROL**	STA	2.65	$1,600.00	$ 4,240
9	**TRAFFIC CONTROL**	STA	2.65	$400.00	$ 1,060
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.65	$250.00	$ 663
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,726.80	$ 2,727
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 3,557
				TOTAL ROADWAY COSTS (Items 1-12)	$ 27,268
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 4,090
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 4,090
	TOTAL ALTERNATIVE COST				$ 40,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 111

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	3.31	$500.00	$ 1,655.00
2	**PAVEMENT**				
	STH 65	STA	3.31	$1,121.25	$ 3,711.34
3	**BASE COURSE**				
	STH 65	STA	3.31	$888.89	$ 2,942.22
4	**SELECT MATERIAL**				
	STH 65	STA	3.31	$1,066.67	$ 3,530.67
5	**EARTHWORK**				
	Excavation Common	CY	545	$7.00	$ 3,814
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	3.31	$1,000.00	$ 3,310
8	**FINISHING AND EROSION CONTROL**	STA	3.31	$1,600.00	$ 5,296
9	**TRAFFIC CONTROL**	STA	3.31	$400.00	$ 1,324
10	**SIGNING AND PAVEMENT MARKINGS**	STA	3.31	$250.00	$ 828
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$3,431.85	$ 3,432
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 4,476
				TOTAL ROADWAY COSTS (Items 1-12)	$ 34,318
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 5,148
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 5,148
	TOTAL ALTERNATIVE COST				$ 40,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 136

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.67	$500.00	$ 1,335.00
2	**PAVEMENT**				
	STH 65	STA	2.67	$1,121.25	$ 2,993.74
3	**BASE COURSE**				
	STH 65	STA	2.67	$888.89	$ 2,373.33
4	**SELECT MATERIAL**				
	STH 65	STA	2.67	$1,066.67	$ 2,848.00
5	**EARTHWORK**				
	Excavation Common	CY	670	$7.00	$ 4,689
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.67	$1,000.00	$ 2,670
8	**FINISHING AND EROSION CONTROL**	STA	2.67	$1,600.00	$ 4,272
9	**TRAFFIC CONTROL**	STA	2.67	$400.00	$ 1,068
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.67	$250.00	$ 668
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,977.81	$ 2,978
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 3,884
				TOTAL ROADWAY COSTS (Items 1-12)	$ 29,778
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 4,467
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 4,467
	TOTAL ALTERNATIVE COST				$ 40,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 141

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	4.49	$500.00	$ 2,245.00
2	**PAVEMENT**				
	STH 65	STA	4.49	$1,121.25	$ 5,034.41
3	**BASE COURSE**				
	STH 65	STA	4.49	$888.89	$ 3,991.11
4	**SELECT MATERIAL**				
	STH 65	STA	4.49	$1,066.67	$ 4,789.33
5	**EARTHWORK**				
	Excavation Common	CY	1,073	$7.00	$ 7,514
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	4.49	$1,000.00	$ 4,490
8	**FINISHING AND EROSION CONTROL**	STA	4.49	$1,600.00	$ 7,184
9	**TRAFFIC CONTROL**	STA	4.49	$400.00	$ 1,796
10	**SIGNING AND PAVEMENT MARKINGS**	STA	4.49	$250.00	$ 1,123
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$4,959.44	$ 4,959
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 6,469
				TOTAL ROADWAY COSTS (Items 1-12)	$ 49,594
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 7,439
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 7,439
	TOTAL ALTERNATIVE COST				$ 60,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 149

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	4.99	$500.00	$ 2,495.00
2	**PAVEMENT**				
	STH 65	STA	4.99	$1,121.25	$ 5,595.04
3	**BASE COURSE**				
	STH 65	STA	4.99	$888.89	$ 4,435.56
4	**SELECT MATERIAL**				
	STH 65	STA	4.99	$1,066.67	$ 5,322.67
5	**EARTHWORK**				
	Excavation Common	CY	714	$7.00	$ 4,996
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	4.99	$1,000.00	$ 4,990
8	**FINISHING AND EROSION CONTROL**	STA	4.99	$1,600.00	$ 7,984
9	**TRAFFIC CONTROL**	STA	4.99	$400.00	$ 1,996
10	**SIGNING AND PAVEMENT MARKINGS**	STA	4.99	$250.00	$ 1,248
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$5,075.77	$ 5,076
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 6,621
				TOTAL ROADWAY COSTS (Items 1-12)	$ 50,758
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 7,614
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 7,614
	TOTAL ALTERNATIVE COST				$ 60,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 188

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.86	$500.00	$ 1,430.00
2	**PAVEMENT**				
	STH 65	STA	2.86	$1,121.25	$ 3,206.78
3	**BASE COURSE**				
	STH 65	STA	2.86	$888.89	$ 2,542.22
4	**SELECT MATERIAL**				
	STH 65	STA	2.86	$1,066.67	$ 3,050.67
5	**EARTHWORK**				
	Excavation Common	CY	151	$7.00	$ 1,057
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.86	$1,000.00	$ 2,860
8	**FINISHING AND EROSION CONTROL**	STA	2.86	$1,600.00	$ 4,576
9	**TRAFFIC CONTROL**	STA	2.86	$400.00	$ 1,144
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.86	$250.00	$ 715
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,674.43	$ 2,674
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 3,488
				TOTAL ROADWAY COSTS (Items 1-12)	$ 26,744
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 4,012
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 4,012
	TOTAL ALTERNATIVE COST				$ 40,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 203

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	3.77	$500.00	$ 1,885.00
2	**PAVEMENT**				
	STH 65	STA	3.77	$1,121.25	$ 4,227.11
3	**BASE COURSE**				
	STH 65	STA	3.77	$888.89	$ 3,351.11
4	**SELECT MATERIAL**				
	STH 65	STA	3.77	$1,066.67	$ 4,021.33
5	**EARTHWORK**				
	Excavation Common	CY	290	$7.00	$ 2,028
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	3.77	$1,000.00	$ 3,770
8	**FINISHING AND EROSION CONTROL**	STA	3.77	$1,600.00	$ 6,032
9	**TRAFFIC CONTROL**	STA	3.77	$400.00	$ 1,508
10	**SIGNING AND PAVEMENT MARKINGS**	STA	3.77	$250.00	$ 943
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$3,607.93	$ 3,608
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 4,706
				TOTAL ROADWAY COSTS (Items 1-12)	$ 36,079
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 5,412
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 5,412
	TOTAL ALTERNATIVE COST				$ 50,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 218

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.38	$500.00	$ 1,190.00
2	**PAVEMENT**				
	STH 65	STA	2.38	$1,121.25	$ 2,668.58
3	**BASE COURSE**				
	STH 65	STA	2.38	$888.89	$ 2,115.56
4	**SELECT MATERIAL**				
	STH 65	STA	2.38	$1,066.67	$ 2,538.67
5	**EARTHWORK**				
	Excavation Common	CY	352	$7.00	$ 2,464
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.38	$1,000.00	$ 2,380
8	**FINISHING AND EROSION CONTROL**	STA	2.38	$1,600.00	$ 3,808
9	**TRAFFIC CONTROL**	STA	2.38	$400.00	$ 952
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.38	$250.00	$ 595
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,431.45	$ 2,431
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 3,171
				TOTAL ROADWAY COSTS (Items 1-12)	$ 24,315
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 3,647
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 3,647
	TOTAL ALTERNATIVE COST				$ 30,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 268

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	5.21	$500.00	$ 2,605.00
2	**PAVEMENT**				
	STH 65	STA	5.21	$1,121.25	$ 5,841.71
3	**BASE COURSE**				
	STH 65	STA	5.21	$888.89	$ 4,631.11
4	**SELECT MATERIAL**				
	STH 65	STA	5.21	$1,066.67	$ 5,557.33
5	**EARTHWORK**				
	Excavation Common	CY	349	$7.00	$ 2,446
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	5.21	$1,000.00	$ 5,210
8	**FINISHING AND EROSION CONTROL**	STA	5.21	$1,600.00	$ 8,336
9	**TRAFFIC CONTROL**	STA	5.21	$400.00	$ 2,084
10	**SIGNING AND PAVEMENT MARKINGS**	STA	5.21	$250.00	$ 1,303
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$4,939.67	$ 4,940
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 6,443
				TOTAL ROADWAY COSTS (Items 1-12)	$ 49,397
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 7,410
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 7,410
	TOTAL ALTERNATIVE COST				$ 60,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 294

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.49	$500.00	$ 1,245.00
2	**PAVEMENT**				
	STH 65	STA	2.49	$1,121.25	$ 2,791.91
3	**BASE COURSE**				
	STH 65	STA	2.49	$888.89	$ 2,213.33
4	**SELECT MATERIAL**				
	STH 65	STA	2.49	$1,066.67	$ 2,656.00
5	**EARTHWORK**				
	Excavation Common	CY	2,027	$7.00	$ 14,190
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.49	$1,000.00	$ 2,490
8	**FINISHING AND EROSION CONTROL**	STA	2.49	$1,600.00	$ 3,984
9	**TRAFFIC CONTROL**	STA	2.49	$400.00	$ 996
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.49	$250.00	$ 623
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$4,052.78	$ 4,053
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 5,286
				TOTAL ROADWAY COSTS (Items 1-12)	$ 40,528
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 6,079
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 6,079
	TOTAL ALTERNATIVE COST				$ 50,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 338

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	3.24	$500.00	$ 1,620.00
2	**PAVEMENT**				
	STH 65	STA	3.24	$1,121.25	$ 3,632.85
3	**BASE COURSE**				
	STH 65	STA	3.24	$888.89	$ 2,880.00
4	**SELECT MATERIAL**				
	STH 65	STA	3.24	$1,066.67	$ 3,456.00
5	**EARTHWORK**				
	Excavation Common	CY	532	$7.00	$ 3,723
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	3.24	$1,000.00	$ 3,240
8	**FINISHING AND EROSION CONTROL**	STA	3.24	$1,600.00	$ 5,184
9	**TRAFFIC CONTROL**	STA	3.24	$400.00	$ 1,296
10	**SIGNING AND PAVEMENT MARKINGS**	STA	3.24	$250.00	$ 810
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$3,357.98	$ 3,358
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 4,380
				TOTAL ROADWAY COSTS (Items 1-12)	$ 33,580
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 5,037
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 5,037
	TOTAL ALTERNATIVE COST				$ 40,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 342

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.42	$500.00	$ 1,210.00
2	**PAVEMENT**				
	STH 65	STA	2.42	$1,121.25	$ 2,713.43
3	**BASE COURSE**				
	STH 65	STA	2.42	$888.89	$ 2,151.11
4	**SELECT MATERIAL**				
	STH 65	STA	2.42	$1,066.67	$ 2,581.33
5	**EARTHWORK**				
	Excavation Common	CY	296	$7.00	$ 2,072
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.42	$1,000.00	$ 2,420
8	**FINISHING AND EROSION CONTROL**	STA	2.42	$1,600.00	$ 3,872
9	**TRAFFIC CONTROL**	STA	2.42	$400.00	$ 968
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.42	$250.00	$ 605
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,416.06	$ 2,416
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 3,151
				TOTAL ROADWAY COSTS (Items 1-12)	$ 24,161
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 3,624
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 3,624
	TOTAL ALTERNATIVE COST				$ 30,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 345

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.38	$500.00	$ 1,190.00
2	**PAVEMENT**				
	STH 65	STA	2.38	$1,121.25	$ 2,668.58
3	**BASE COURSE**				
	STH 65	STA	2.38	$888.89	$ 2,115.56
4	**SELECT MATERIAL**				
	STH 65	STA	2.38	$1,066.67	$ 2,538.67
5	**EARTHWORK**				
	Excavation Common	CY	285	$7.00	$ 1,998
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.38	$1,000.00	$ 2,380
8	**FINISHING AND EROSION CONTROL**	STA	2.38	$1,600.00	$ 3,808
9	**TRAFFIC CONTROL**	STA	2.38	$400.00	$ 952
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.38	$250.00	$ 595
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,370.94	$ 2,371
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 3,093
				TOTAL ROADWAY COSTS (Items 1-12)	$ 23,709
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 3,556
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 3,556
	TOTAL ALTERNATIVE COST				$ 30,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 348

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	4.54	$500.00	$ 2,270.00
2	**PAVEMENT**				
	STH 65	STA	4.54	$1,121.25	$ 5,090.48
3	**BASE COURSE**				
	STH 65	STA	4.54	$888.89	$ 4,035.56
4	**SELECT MATERIAL**				
	STH 65	STA	4.54	$1,066.67	$ 4,842.67
5	**EARTHWORK**				
	Excavation Common	CY	1,637	$7.00	$ 11,458
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	4.54	$1,000.00	$ 4,540
8	**FINISHING AND EROSION CONTROL**	STA	4.54	$1,600.00	$ 7,264
9	**TRAFFIC CONTROL**	STA	4.54	$400.00	$ 1,816
10	**SIGNING AND PAVEMENT MARKINGS**	STA	4.54	$250.00	$ 1,135
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$5,516.29	$ 5,516
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 7,195
				TOTAL ROADWAY COSTS (Items 1-12)	$ 55,163
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 8,274
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 8,274
	TOTAL ALTERNATIVE COST				$ 70,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 353

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	4.00	$500.00	$ 2,000.00
2	**PAVEMENT**				
	STH 65	STA	4.00	$1,121.25	$ 4,485.00
3	**BASE COURSE**				
	STH 65	STA	4.00	$888.89	$ 3,555.56
4	**SELECT MATERIAL**				
	STH 65	STA	4.00	$1,066.67	$ 4,266.67
5	**EARTHWORK**				
	Excavation Common	CY	671	$7.00	$ 4,695
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	4.00	$1,000.00	$ 4,000
8	**FINISHING AND EROSION CONTROL**	STA	4.00	$1,600.00	$ 6,400
9	**TRAFFIC CONTROL**	STA	4.00	$400.00	$ 1,600
10	**SIGNING AND PAVEMENT MARKINGS**	STA	4.00	$250.00	$ 1,000
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$4,158.52	$ 4,159
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 5,424
				TOTAL ROADWAY COSTS (Items 1-12)	$ 41,585
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 6,238
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 6,238
	TOTAL ALTERNATIVE COST				$ 50,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 358

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	7.34	$500.00	$ 3,670.00
2	**PAVEMENT**				
	STH 65	STA	7.34	$1,121.25	$ 8,229.98
3	**BASE COURSE**				
	STH 65	STA	7.34	$888.89	$ 6,524.44
4	**SELECT MATERIAL**				
	STH 65	STA	7.34	$1,066.67	$ 7,829.33
5	**EARTHWORK**				
	Excavation Common	CY	1,972	$7.00	$ 13,801
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	7.34	$1,000.00	$ 7,340
8	**FINISHING AND EROSION CONTROL**	STA	7.34	$1,600.00	$ 11,744
9	**TRAFFIC CONTROL**	STA	7.34	$400.00	$ 2,936
10	**SIGNING AND PAVEMENT MARKINGS**	STA	7.34	$250.00	$ 1,835
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$8,304.60	$ 8,305
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 10,832
				TOTAL ROADWAY COSTS (Items 1-12)	$ 83,046
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 12,457
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 12,457
	TOTAL ALTERNATIVE COST				$ 100,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 363

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	2.13	$500.00	$ 1,065.00
2	**PAVEMENT**				
	STH 65	STA	2.13	$1,121.25	$ 2,388.26
3	**BASE COURSE**				
	STH 65	STA	2.13	$888.89	$ 1,893.33
4	**SELECT MATERIAL**				
	STH 65	STA	2.13	$1,066.67	$ 2,272.00
5	**EARTHWORK**				
	Excavation Common	CY	263	$7.00	$ 1,843
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	2.13	$1,000.00	$ 2,130
8	**FINISHING AND EROSION CONTROL**	STA	2.13	$1,600.00	$ 3,408
9	**TRAFFIC CONTROL**	STA	2.13	$400.00	$ 852
10	**SIGNING AND PAVEMENT MARKINGS**	STA	2.13	$250.00	$ 533
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$2,128.96	$ 2,129
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 2,777
				TOTAL ROADWAY COSTS (Items 1-12)	$ 21,290
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 3,193
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 3,193
	TOTAL ALTERNATIVE COST				$ 30,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 644

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	1.58	$500.00	$ 790.00
2	**PAVEMENT**				
	STH 65	STA	1.58	$1,121.25	$ 1,771.58
3	**BASE COURSE**				
	STH 65	STA	1.58	$888.89	$ 1,404.44
4	**SELECT MATERIAL**				
	STH 65	STA	1.58	$1,066.67	$ 1,685.33
5	**EARTHWORK**				
	Excavation Common	CY	156	$7.00	$ 1,089
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	1.58	$1,000.00	$ 1,580
8	**FINISHING AND EROSION CONTROL**	STA	1.58	$1,600.00	$ 2,528
9	**TRAFFIC CONTROL**	STA	1.58	$400.00	$ 632
10	**SIGNING AND PAVEMENT MARKINGS**	STA	1.58	$250.00	$ 395
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$1,543.12	$ 1,543
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 2,013
				TOTAL ROADWAY COSTS (Items 1-12)	$ 15,431
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 2,315
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 2,315
	TOTAL ALTERNATIVE COST				$ 20,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

already existing guardrail DO NOT INCLUDE IN INCREMENTAL BCR
Alternative Cost Estimate

Alternative: 6' Shoulder Additions, 659+62 - 676+83

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	17.21	$500.00	$ 8,605.00
2	**PAVEMENT**				
	STH 65	STA	17.21	$1,121.25	$ 19,296.71
3	**BASE COURSE**				
	STH 65	STA	17.21	$888.89	$ 15,297.78
4	**SELECT MATERIAL**				
	STH 65	STA	17.21	$1,066.67	$ 18,357.33
5	**EARTHWORK**				
	Excavation Common	CY	1,970	$7.00	$ 13,788
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	17.21	$1,000.00	$ 17,210
8	**FINISHING AND EROSION CONTROL**	STA	17.21	$1,600.00	$ 27,536
9	**TRAFFIC CONTROL**	STA		$400.00	$ -
10	**SIGNING AND PAVEMENT MARKINGS**	STA		$250.00	$ -
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$15,605.01	$ 15,605
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 20,354
				TOTAL ROADWAY COSTS (Items 1-12)	$ 156,050
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 23,408
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 23,408
	TOTAL ALTERNATIVE COST				$ 180,000

NOTE: 1. Assumed pavement structure for STH 65: 4" asphalt, 12" Base Aggregate, 16" Select Material. Base aggregate and select material under shoulder widening areas only.

2. Typical section for estimate includes 12' lanes and 6' shoulders (3' paved).

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 692

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	1.82	$500.00	$ 910.00
2	**PAVEMENT**				
	STH 65	STA	1.82	$1,121.25	$ 2,040.68
3	**BASE COURSE**				
	STH 65	STA	1.82	$888.89	$ 1,617.78
4	**SELECT MATERIAL**				
	STH 65	STA	1.82	$1,066.67	$ 1,941.33
5	**EARTHWORK**				
	Excavation Common	CY	377	$7.00	$ 2,638
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	1.82	$1,000.00	$ 1,820
8	**FINISHING AND EROSION CONTROL**	STA	1.82	$1,600.00	$ 2,912
9	**TRAFFIC CONTROL**	STA	1.82	$400.00	$ 728
10	**SIGNING AND PAVEMENT MARKINGS**	STA	1.82	$250.00	$ 455
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$1,957.35	$ 1,957
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 2,553
				TOTAL ROADWAY COSTS (Items 1-12)	$ 19,573
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 2,936
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 2,936
	TOTAL ALTERNATIVE COST				$ 30,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 718

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	1.29	$500.00	$ 645.00
2	**PAVEMENT**				
	STH 65	STA	1.29	$1,121.25	$ 1,446.41
3	**BASE COURSE**				
	STH 65	STA	1.29	$888.89	$ 1,146.67
4	**SELECT MATERIAL**				
	STH 65	STA	1.29	$1,066.67	$ 1,376.00
5	**EARTHWORK**				
	Excavation Common	CY	128	$7.00	$ 898
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	1.29	$1,000.00	$ 1,290
8	**FINISHING AND EROSION CONTROL**	STA	1.29	$1,600.00	$ 2,064
9	**TRAFFIC CONTROL**	STA	1.29	$400.00	$ 516
10	**SIGNING AND PAVEMENT MARKINGS**	STA	1.29	$250.00	$ 323
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$1,261.09	$ 1,261
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 1,645
				TOTAL ROADWAY COSTS (Items 1-12)	$ 12,611
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 1,892
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 1,892
	TOTAL ALTERNATIVE COST				$ 20,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Construct 12' Shoulder on Curve for Guardrail, STA 764

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MISC. REMOVALS, CLEARING, & GRUBBING**	STA	3.44	$500.00	$ 1,720.00
2	**PAVEMENT**				
	STH 65	STA	3.44	$1,121.25	$ 3,857.10
3	**BASE COURSE**				
	STH 65	STA	3.44	$888.89	$ 3,057.78
4	**SELECT MATERIAL**				
	STH 65	STA	3.44	$1,066.67	$ 3,669.33
5	**EARTHWORK**				
	Excavation Common	CY	155	$7.00	$ 1,082
	Excavation Rock	CY	0	$11.00	$ -
	Borrow	CY	0	$8.00	$ -
6	**PULVERIZE AND RELAY**				
	STH 65	SY	0	$0.90	$ -
7	**DRAINAGE**	STA	3.44	$1,000.00	$ 3,440
8	**FINISHING AND EROSION CONTROL**	STA	3.44	$1,600.00	$ 5,504
9	**TRAFFIC CONTROL**	STA	3.44	$400.00	$ 1,376
10	**SIGNING AND PAVEMENT MARKINGS**	STA	3.44	$250.00	$ 860
11	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	$3,192.21	$ 3,192
12	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-11	N/A	$ 4,164
				TOTAL ROADWAY COSTS (Items 1-12)	$ 31,922
13	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Roadway Costs	$0.00	$ 4,788
14	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
15	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
16	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
17	Residential	Each	0	$200,000.00	$ -
18	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 13-18)	$ 4,788
	TOTAL ALTERNATIVE COST				$ 40,000

NOTE: 1. Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material. Asphalt, base aggregate, and select material under shoulder widening areas only.

2. Estimate includes one 12' shoulder (6' paved) for side of the road where guardrail will be added.

STH 65
Alternative Cost Estimate

Alternative: Segment 1 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	34,176	$1.00	$ 35,000
2	**PAVEMENT**				
	HMA Overlay	TON	4,352	$65.00	$ 283,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	256	$5.00	$ 2,000
3	**EARTHWORK**				
	Excavation Common	CY	512	$20.00	$ 11,000
	Placing & Shaping Shoulders	STA	256.0	$14.00	$ 4,000
4	**TRAFFIC CONTROL**	STA	128.0	$400.00	$ 52,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	128.0	$250.00	$ 32,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 419,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 42,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 70,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 54,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 585,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 87,750
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 40,950
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 128,700
	TOTAL ALTERNATIVE COST				$ 714,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 2 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	28,302	$1.00	$ 29,000
2	**PAVEMENT**				
	HMA Overlay	TON	3,604	$65.00	$ 235,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	212	$5.00	$ 2,000
3	**EARTHWORK**				
	Excavation Common	CY	424	$20.00	$ 9,000
	Placing & Shaping Shoulders	STA	212.0	$14.00	$ 3,000
4	**TRAFFIC CONTROL**	STA	106.0	$400.00	$ 43,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	106.0	$250.00	$ 27,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 348,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 35,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 58,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 45,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 486,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 72,900
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 34,020
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 106,920
	TOTAL ALTERNATIVE COST				$ 593,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 3 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	23,496	$1.00	$ 24,000
2	**PAVEMENT**				
	HMA Overlay	TON	2,992	$65.00	$ 195,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	176	$5.00	$ 1,000
3	**EARTHWORK**				
	Excavation Common	CY	352	$20.00	$ 8,000
	Placing & Shaping Shoulders	STA	176.0	$14.00	$ 3,000
4	**TRAFFIC CONTROL**	STA	88.0	$400.00	$ 36,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	88.0	$250.00	$ 22,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 289,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 29,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 48,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 37,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 403,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 60,450
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 28,210
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 88,660
				TOTAL ALTERNATIVE COST	$ 492,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 4 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	34,176	$1.00	$ 35,000
2	**PAVEMENT**				
	HMA Overlay	TON	4,352	$65.00	$ 283,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	256	$5.00	$ 2,000
3	**EARTHWORK**				
	Excavation Common	CY	512	$20.00	$ 11,000
	Placing & Shaping Shoulders	STA	256.0	$14.00	$ 4,000
4	**TRAFFIC CONTROL**	STA	128.0	$400.00	$ 52,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	128.0	$250.00	$ 32,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 419,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 42,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 70,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 54,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 585,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 87,750
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 40,950
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 128,700
				TOTAL ALTERNATIVE COST	$ 714,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 5 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	20,292	$1.00	$ 21,000
2	**PAVEMENT**				
	HMA Overlay	TON	2,584	$65.00	$ 168,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	152	$5.00	$ 1,000
3	**EARTHWORK**				
	Excavation Common	CY	304	$20.00	$ 7,000
	Placing & Shaping Shoulders	STA	152.0	$14.00	$ 3,000
4	**TRAFFIC CONTROL**	STA	76.0	$400.00	$ 31,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	76.0	$250.00	$ 19,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 250,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 25,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 42,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 32,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 349,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 52,350
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 24,430
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 76,780
				TOTAL ALTERNATIVE COST	$ 426,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 6 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	7,476	$1.00	$ 8,000
2	**PAVEMENT**				
	HMA Overlay	TON	952	$65.00	$ 62,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	56	$5.00	$ 1,000
3	**EARTHWORK**				
	Excavation Common	CY	112	$20.00	$ 3,000
	Placing & Shaping Shoulders	STA	56.0	$14.00	$ 1,000
4	**TRAFFIC CONTROL**	STA	28.0	$400.00	$ 12,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	28.0	$250.00	$ 7,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 94,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 10,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 16,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 12,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 132,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 19,800
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 9,240
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 29,040
				TOTAL ALTERNATIVE COST	$ 162,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 7 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	7,289	$1.00	$ 8,000
2	**PAVEMENT**				
	HMA Overlay	TON	928	$65.00	$ 61,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	55	$5.00	$ 1,000
3	**EARTHWORK**				
	Excavation Common	CY	109	$20.00	$ 3,000
	Placing & Shaping Shoulders	STA	54.6	$14.00	$ 1,000
4	**TRAFFIC CONTROL**	STA	27.3	$400.00	$ 11,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	27.3	$250.00	$ 7,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 92,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 10,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 16,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 12,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 130,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 19,500
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 9,100
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 28,600
	TOTAL ALTERNATIVE COST				$ 159,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 8 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	12,015	$1.00	$ 13,000
2	**PAVEMENT**				
	HMA Overlay	TON	1,530	$65.00	$ 100,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	90	$5.00	$ 1,000
3	**EARTHWORK**				
	Excavation Common	CY	180	$20.00	$ 4,000
	Placing & Shaping Shoulders	STA	90.0	$14.00	$ 2,000
4	**TRAFFIC CONTROL**	STA	45.0	$400.00	$ 18,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	45.0	$250.00	$ 12,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 150,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 15,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 25,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 19,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 209,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 31,350
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 14,630
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 45,980
				TOTAL ALTERNATIVE COST	$ 255,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 9 Resurfacing (Alternative 1)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	13,670	$1.00	$ 14,000
2	**PAVEMENT**				
	HMA Overlay	TON	1,741	$65.00	$ 114,000
	Place Cold In-Place Recyled Asphalt Shoulder	STA	102	$5.00	$ 1,000
3	**EARTHWORK**				
	Excavation Common	CY	205	$20.00	$ 5,000
	Placing & Shaping Shoulders	STA	102.4	$14.00	$ 2,000
4	**TRAFFIC CONTROL**	STA	51.2	$400.00	$ 21,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	51.2	$250.00	$ 13,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 170,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 17,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 29,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 22,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 238,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 35,700
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 16,660
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 52,360
				TOTAL ALTERNATIVE COST	$ 291,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width), removing existing CABC shoulders (1' width) to 6" depth, placing cold in-place recycled asphalt shoulders (1' width, 6" depth), and placing 2" HMA pavement (26' width)

STH 65
Alternative Cost Estimate

Alternative: Segment 1 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	34,176	$1.00	$ 35,000
2	**PAVEMENT**				
	STH 65	TON	4,122	$65.00	$ 268,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	256.0	$14.00	$ 4,000
4	**TRAFFIC CONTROL**	STA	128.0	$400.00	$ 52,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	128.0	$250.00	$ 32,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 391,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 40,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 65,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 50,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 546,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 81,900
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 38,220
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 120,120
	TOTAL ALTERNATIVE COST				$ 667,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Alternative Cost Estimate

Alternative: Segment 2 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	28,302	$1.00	$ 29,000
2	**PAVEMENT**				
	STH 65	TON	3,413	$65.00	$ 222,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	212.0	$14.00	$ 3,000
4	**TRAFFIC CONTROL**	STA	106.0	$400.00	$ 43,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	106.0	$250.00	$ 27,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 324,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 33,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 54,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 42,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 453,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 67,950
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 31,710
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 99,660
	TOTAL ALTERNATIVE COST				$ 553,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Alternative Cost Estimate

Alternative: Segment 3 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	23,496	$1.00	$ 24,000
2	**PAVEMENT**				
	STH 65	TON	2,834	$65.00	$ 185,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	176.0	$14.00	$ 3,000
4	**TRAFFIC CONTROL**	STA	88.0	$400.00	$ 36,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	88.0	$250.00	$ 22,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 270,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 27,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 45,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 35,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 377,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 56,550
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 26,390
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 82,940
	TOTAL ALTERNATIVE COST				$ 460,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Alternative Cost Estimate

Alternative: Segment 4 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	34,176	$1.00	$ 35,000
2	**PAVEMENT**				
	STH 65	TON	4,122	$65.00	$ 268,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	256.0	$14.00	$ 4,000
4	**TRAFFIC CONTROL**	STA	128.0	$400.00	$ 52,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	128.0	$250.00	$ 32,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 391,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 40,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 65,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 50,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 546,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 81,900
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 38,220
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 120,120
	TOTAL ALTERNATIVE COST				$ 667,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Alternative Cost Estimate

Alternative: Segment 5 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	20,292	$1.00	$ 21,000
2	**PAVEMENT**				
	STH 65	TON	2,447	$65.00	$ 160,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	152.0	$14.00	$ 3,000
4	**TRAFFIC CONTROL**	STA	76.0	$400.00	$ 31,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	76.0	$250.00	$ 19,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 234,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 24,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 39,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 30,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 327,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 49,050
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 22,890
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 71,940
	TOTAL ALTERNATIVE COST				$ 399,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Alternative Cost Estimate

Alternative: Segment 6 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	7,476	$1.00	$ 8,000
2	**PAVEMENT**				
	STH 65	TON	902	$65.00	$ 59,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	56.0	$14.00	$ 1,000
4	**TRAFFIC CONTROL**	STA	28.0	$400.00	$ 12,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	28.0	$250.00	$ 7,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 87,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 9,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 15,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 12,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 123,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 18,450
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 8,610
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 27,060
	TOTAL ALTERNATIVE COST				$ 151,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Alternative Cost Estimate

Alternative: Segment 7 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	7,289	$1.00	$ 8,000
2	**PAVEMENT**				
	STH 65	TON	879	$65.00	$ 58,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	54.6	$14.00	$ 1,000
4	**TRAFFIC CONTROL**	STA	27.3	$400.00	$ 11,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	27.3	$250.00	$ 7,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 85,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 9,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 15,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 11,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 120,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 18,000
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 8,400
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 26,400
	TOTAL ALTERNATIVE COST				$ 147,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Alternative Cost Estimate

Alternative: Segment 8 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	12,015	$1.00	$ 13,000
2	**PAVEMENT**				
	STH 65	TON	1,449	$65.00	$ 95,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	90.0	$14.00	$ 2,000
4	**TRAFFIC CONTROL**	STA	45.0	$400.00	$ 18,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	45.0	$250.00	$ 12,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 140,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 14,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 24,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 18,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 196,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 29,400
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 13,720
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 43,120
				TOTAL ALTERNATIVE COST	$ 240,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Alternative Cost Estimate

Alternative: Segment 9 Resurfacing (Alternative 2)

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	**MILLING PAVEMENT**	SY	13,670	$1.00	$ 14,000
2	**PAVEMENT**				
	STH 65	TON	1,649	$65.00	$ 108,000
3	**EARTHWORK**				
	Placing & Shaping Shoulders	STA	102.4	$14.00	$ 2,000
4	**TRAFFIC CONTROL**	STA	51.2	$400.00	$ 21,000
5	**SIGNING AND PAVEMENT MARKINGS**	STA	51.2	$250.00	$ 13,000
				TOTAL ROADWAY COSTS (Items 1-5)	$ 158,000
6	**MOBILIZATION & FIELD OFFICE**	L.S.	10 % of Total Roadway Costs	N/A	$ 16,000
7	**INCIDENTALS (Items not estimated)**	L.S.	15 % of Items 1-6	N/A	$ 27,000
8	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of items 1-7	N/A	$ 21,000
				TOTAL CONSTRUCTION COSTS (Items 1-8)	$ 222,000
9	**ROADWAY DESIGN ENGINEERING**	L.S.	15 % of Total Construction Costs	N/A	$ 33,300
10	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Total Construction Costs	N/A	$ 15,540
11	**BRIDGE**				
	Bridge Construction Cost	L.S.	0	$0.00	$ -
	Bridge Design Engineering	L.S.	10 % of Bridge Construction Cost	$0.00	$ -
12	**ROW ACQUISITION (NON-AGRICULTURAL)**	Acres	0.0	$25,000.00	$ -
13	**ROW ACQUISITION (AGRICULTURAL)**	Acres	0.0	$5,000.00	$ -
	RELOCATIONS				
14	Residential	Each	0	$200,000.00	$ -
15	Commercial	Each	0	$0.00	$ -
				TOTAL ADDITIONAL COSTS (Items 9-15)	$ 48,840
	TOTAL ALTERNATIVE COST				$ 271,000

NOTE: Estimate includes milling 2" from existing asphalt (24' width) and replacing with 2" HMA pavement.

STH 65
Cost Estimate

Intersection: STH 65 & Kennedy Mill Avenue
Alternative: Intersection Modification

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	ROUNDED TOTAL
1	**PAVEMENT REMOVAL**	SY	1,463	$3.00	$ 4,000
2	**MISC. REMOVALS**	MILE	0.09	$28,000.00	$ 3,000
3	**PAVEMENT, BASE,& SELECT MAT.**	SY	1,829	$43.00	$ 79,000
4	**CURB AND GUTTER**	LF	392	$15.00	$ 6,000
5	**SIDEWALK**	SF	0	$4.00	$ -
6	**DRAINAGE & STORM SEWER**	MILE	0.09	$167,000.00	$ 16,000
7	**FINISHING & EROSION CONTROL**	MILE	0.09	$70,000.00	$ 7,000
8	**TRAFFIC CONTROL**	MILE	0.09	$84,000.00	$ 8,000
9	**SIGNING & PAVEMENT MARKINGS**	MILE	0.09	$100,000.00	$ 9,000
10	**SIGNALS, ELECTRIC, LIGHTING**	LS	0	$0.00	$ -
11	**MOBILIZATION & FIELD OFFICE**	LS	1	$15,000.00	$ 15,000
12	**COSTS UNIQUE TO ALTERNATIVE**	L.S.	0	$0.00	$ -
				TOTAL ROADWAY COSTS (Items 1-12)	$ 147,000
13	**INCIDENTALS**	L.S.	15 % of Items 1-12	N/A	$ 22,000
14	**CONSTRUCTION CONTINGENCY**	L.S.	10 % of Items 1-13	N/A	$ 17,000
15	**CONSTRUCTION ENGINEERING**	L.S.	7 % of Items 1-14	N/A	$ 13,000
				Total Construction Costs (Items 1-15)	$ 199,000
16	**DESIGN ENGINEERING**	L.S.	15 % of Items 1-14	N/A	$ 28,000
				Total Design Engineering Costs (Item 16)	$ 28,000
17	**UTILITIES**	L.S.	1	$5,000.00	$ 5,000
18	**ROW ACQUISITION (NON-COMMERCIAL)**	Acres	0.00	$0.00	$ -
19	**ROW ACQUISITION (COMMERCIAL)**	Acres	0.00	$0.00	$ -
	RELOCATIONS				
20	Residential	Each	0	$0.00	$ -
21	Commercial	Each	0	$0.00	$ -
				Total ROW Costs (Items 17-21)	$ 5,000
	TOTAL ALTERNATIVE COST				$ 232,000

Note: Assumed pavement structure for STH 65: 4.5" Asphalt, 12" Base Aggregate, 16" Select Material

Exhibit 9
Benefit Cost Ratios

	Segment 1							Segment 2						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD				
Centerline Rumble Stripes	0.04	0.02	0.03	$ 80,265.42	$ 63,434.93	$ 5,702.40	11.12	0.02	0.02	0.02	$ 45,372.35	$ 35,858.43	$ 4,752.00	7.55
Edgeline Rumble StripEs	0.10	0.07	0.09	$ 211,540.27	$ 167,183.35	$ 11,404.80	14.66	0.06	0.05	0.04	$ 129,685.11	$ 102,492.03	$ 9,504.00	10.78
Update Signing to MUTCD Standards	0.11	0.07	0.05	$ 225,409.90	$ 178,144.72	$ 6,000.00	29.69	0.07	0.05	0.03	$ 145,939.35	$ 115,337.99	$ 5,000.00	23.07
Safety Edge	0.05	0.03	0.04	$ 102,951.60	$ 81,364.15	$ 5,148.00	15.81	0.03	0.02	0.02	$ 62,421.45	$ 49,332.58	$ 4,290.00	11.50
Shoulder Rumble Strips	0.30	0.19	0.28	$ 625,731.28	$ 494,524.52	$ 2,178,110.08	0.23	0.17	0.13	0.14	$ 363,911.56	$ 287,604.59	$ 1,338,758.40	0.21
Construct 6' Shoulder	0.23	0.13	0.22	$ 472,565.12	$ 373,475.08	$ 2,170,000.00	0.17	0.13	0.09	0.11	$ 273,961.73	$ 216,515.93	$ 1,332,000.00	0.16
Modify Vertical Alignment	0.27	0.16	0.24	$ 556,877.88	$ 440,108.68	$ 1,867,000.00	0.24	0.23	0.16	0.14	$ 480,732.79	$ 379,930.11	$ 3,725,000.00	0.10

	Segment 3							Segment 4						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD				
Centerline Rumble Stripes	0.01	0.01	0.02	$ 23,481.04	$ 18,557.41	$ 4,039.20	4.59	0.03	0.02	0.02	$ 62,421.45	$ 49,332.58	$ 5,702.40	8.65
Edgeline Rumble StripEs	0.06	0.03	0.04	$ 120,000.70	$ 94,838.30	$ 8,078.40	11.74	0.09	0.05	0.05	$ 181,627.29	$ 143,542.68	$ 11,404.80	12.59
Update Signing to MUTCD Standards	0.06	0.03	0.02	$ 118,410.97	$ 93,581.91	$ 4,250.00	22.02	0.10	0.05	0.03	$ 197,086.66	$ 155,760.45	$ 6,000.00	25.96
Safety Edge	0.02	0.01	0.02	$ 40,530.15	$ 32,031.56	$ 3,646.50	8.78	0.04	0.02	0.02	$ 79,470.56	$ 62,806.74	$ 5,148.00	12.20
Shoulder Rumble Strips	0.06	0.03	0.04	$ 120,000.70	$ 94,838.30	$ 1,302,744.64	0.07	0.25	0.13	0.15	$ 501,099.25	$ 396,026.02	$ 485,110.08	0.82
Construct 6' Shoulder	0.01	0.00	0.01	$ 17,843.97	$ 14,102.35	$ 1,297,000.00	0.01	0.19	0.09	0.12	$ 377,051.21	$ 297,989.05	$ 477,000.00	0.62
Modify Vertical Alignment	0.06	0.02	0.02	$ 113,568.76	$ 89,755.04	$ 1,648,000.00	0.05	0.23	0.11	0.13	$ 455,726.90	$ 360,167.59	$ 4,261,000.00	0.08

	Segment 5							Segment 6						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD				
Centerline Rumble Stripes	0.02	0.01	0.01	$ 39,735.28	$ 31,403.37	$ 3,564.00	8.81	0.00	0.00	0.00	$ -	$ -	$ 1,188.00	0.00
Edgeline Rumble StripEs	0.06	0.03	0.03	$ 119,205.84	$ 94,210.10	$ 7,128.00	13.22	0.02	0.01	0.01	$ 39,735.28	$ 31,403.37	$ 2,376.00	13.22
Update Signing to MUTCD Standards	0.07	0.03	0.02	$ 135,460.07	$ 107,056.06	$ 3,750.00	28.55	0.03	0.01	0.01	$ 56,784.38	$ 44,877.52	$ 1,250.00	35.90
Safety Edge	0.03	0.01	0.02	$ 57,579.25	$ 45,505.72	$ 3,217.50	14.14	0.00	0.00	0.01	$ 794.87	$ 628.20	$ 1,072.50	0.59
Shoulder Rumble Strips	0.17	0.08	0.11	$ 337,315.93	$ 266,585.68	$ 1,022,068.80	0.26	0.06	0.03	0.03	$ 119,205.84	$ 94,210.10	$ 381,689.60	0.25
Construct 6' Shoulder	0.14	0.06	0.09	$ 274,894.48	$ 217,253.10	$ 1,017,000.00	0.21	0.04	0.02	0.02	$ 79,470.56	$ 62,806.74	$ 380,000.00	0.17
Modify Vertical Alignment	0.19	0.08	0.10	$ 370,619.27	$ 292,905.79	$ 3,012,000.00	0.10	0.08	0.03	0.03	$ 153,304.04	$ 121,158.41	$ 1,295,000.00	0.09

	Segment 7							Segment 8						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD				
Centerline Rumble Stripes	0.00	0.00	0.00	$ -	$ -	$ 1,188.00	0.00	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 3,326.40	5.39
Edgeline Rumble StripEs	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 2,376.00	7.55	0.06	0.03	0.03	$ 119,205.84	$ 94,210.10	$ 6,652.80	14.16
Update Signing to MUTCD Standards	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 1,250.00	14.34	0.06	0.03	0.02	$ 118,410.97	$ 93,581.91	$ 3,500.00	26.74
Safety Edge	0.00	0.00	0.00	$ -	$ -	$ 1,072.50	0.00	0.02	0.01	0.02	$ 40,530.15	$ 32,031.56	$ 3,003.00	10.67
Shoulder Rumble Strips	0.05	0.03	0.03	$ 102,156.73	$ 80,735.95	$ 346,689.60	0.23	0.16	0.09	0.10	$ 324,314.17	$ 256,310.20	$ 956,730.88	0.27
Construct 6' Shoulder	0.04	0.02	0.02	$ 79,470.56	$ 62,806.74	$ 345,000.00	0.18	0.13	0.06	0.08	$ 257,050.51	$ 203,150.75	$ 952,000.00	0.21
Modify Vertical Alignment	-	-	-	-	-	-	-	0.13	0.07	0.08	$ 261,892.71	$ 206,977.62	$ 682,000.00	0.30

	Segment 9						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD				
Centerline Rumble Stripes	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 2,376.00	7.55
Edgeline Rumble StripEs	0.05	0.03	0.03	$ 102,156.73	$ 80,735.95	$ 4,752.00	16.99
Update Signing to MUTCD Standards	0.05	0.03	0.02	$ 101,361.86	$ 80,107.75	$ 2,500.00	32.04
Safety Edge	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 2,145.00	8.36
Shoulder Rumble Strips	0.12	0.07	0.08	$ 244,843.61	$ 193,503.46	$ 711,379.20	0.27
Construct 6' Shoulder	0.10	0.05	0.06	$ 199,471.26	$ 157,645.03	$ 708,000.00	0.22
Modify Vertical Alignment	0.13	0.07	0.07	$ 261,097.85	$ 206,349.42	$ 2,293,000.00	0.09

AECOM

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STH 65 Safety Analysis
Polk County

Exhibit 9-1

Benefit Cost Ratios - Corridor Segments

	STA 40							STA 42							STA 45						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.01	0.00	0.00	$ 17,049.10	$ 13,474.15	$ 565.00	23.85	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00
Install Guardrail	0.04	0.00	0.01	$ 68,991.28	$ 54,524.81	$ 37,535.80	1.45	0.00	0.00	0.00	$ -	$ -	$ 37,272.00	0.00	0.01	0.01	0.00	$ 21,891.31	$ 17,301.02	$ 61,378.00	0.28
Skid Resistant Pavement	0.03	0.00	0.02	$ 52,737.04	$ 41,678.85	$ 2,712.41	15.37	0.00	0.00	0.00	$ -	$ -	$ 2,554.66	0.00	0.01	0.00	0.01	$ 17,843.97	$ 14,102.35	$ 5,010.04	2.81

	STA 50							STA 73							STA 98						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.02	0.01	$ 10,479.28	$ 8,281.93	$ 565.00	14.66
Install Guardrail	0.01	0.01	0.00	$ 21,891.31	$ 17,301.02	$ 83,556.40	0.21	0.01	0.01	0.00	$ 21,891.31	$ 17,301.02	$ 60,666.80	0.29	0.01	0.07	0.03	$ 53,329.14	$ 42,146.79	$ 48,318.60	0.87
Skid Resistant Pavement	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 6,312.73	2.84	0.01	0.00	0.01	$ 17,843.97	$ 14,102.35	$ 4,584.75	3.08	0.00	0.05	0.08	$ 30,569.97	$ 24,159.89	$ 3,180.52	7.60

	STA 111							STA 136							STA 141						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.00	0.01	0.00	$ 4,842.20	$ 3,826.86	$ 565.00	6.77	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.01	0.00	$ 4,842.20	$ 3,826.86	$ 565.00	6.77
Install Guardrail	0.01	0.04	0.00	$ 36,417.92	$ 28,781.61	$ 49,623.00	0.58	0.01	0.01	0.00	$ 21,891.31	$ 17,301.02	$ 48,330.60	0.36	0.01	0.03	0.00	$ 31,575.72	$ 24,954.75	$ 71,988.40	0.35
Skid Resistant Pavement	0.01	0.03	0.01	$ 32,370.59	$ 25,582.94	$ 3,960.55	6.46	0.00	0.00	0.00	$ -	$ -	$ 3,187.70	0.00	0.01	0.02	0.01	$ 27,528.38	$ 21,756.08	$ 5,375.06	4.05

	STA 149							STA 188							STA 203						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.00	0.01	0.00	$ 4,842.20	$ 3,826.86	$ 565.00	6.77	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.01	0.00	$ 4,842.20	$ 3,826.86	$ 565.00	6.77
Install Guardrail	0.02	0.03	0.01	$ 49,419.69	$ 39,057.10	$ 72,982.00	0.54	0.00	0.00	0.01	$ 794.87	$ 628.20	$ 48,720.60	0.01	0.01	0.02	0.00	$ 26,733.51	$ 21,127.88	$ 60,538.20	0.35
Skid Resistant Pavement	0.02	0.02	0.02	$ 45,372.35	$ 35,858.43	$ 5,969.24	6.01	0.00	0.00	0.02	$ 1,589.74	$ 1,256.39	$ 3,420.92	0.37	0.00	0.02	0.01	$ 10,479.28	$ 8,281.93	$ 4,507.84	1.84

	STA 218							STA 268							STA 294						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.01	0.02	0.00	$ 26,733.51	$ 21,127.88	$ 565.00	37.39	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00
Install Guardrail	0.02	0.06	0.01	$ 63,946.30	$ 50,537.69	$ 37,774.60	1.34	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 73,415.20	0.24	0.00	0.00	0.00	$ -	$ -	$ 57,974.60	0.00
Skid Resistant Pavement	0.02	0.04	0.02	$ 55,056.76	$ 43,512.16	$ 2,855.21	15.24	0.01	0.00	0.04	$ 20,228.57	$ 15,986.94	$ 6,228.29	2.57	0.00	0.00	0.00	$ -	$ -	$ 4,584.75	0.00

	STA 338							STA 342							STA 345						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00
Install Guardrail	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 49,488.80	0.36	0.00	0.00	0.00	$ -	$ -	$ 37,833.60	0.00	0.00	0.00	0.00	$ -	$ -	$ 37,760.40	0.00
Skid Resistant Pavement	0.00	0.00	0.02	$ 1,589.74	$ 1,256.39	$ 3,880.30	0.32	0.00	0.00	0.00	$ -	$ -	$ 2,890.49	0.00	0.00	0.00	0.00	$ -	$ -	$ 2,846.72	0.00

	STA 348							STA 353							STA 358						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.02	0.00	0.00	$ 34,098.21	$ 26,948.31	$ 565.00	47.70	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00
Install Guardrail	0.04	0.01	0.00	$ 73,038.62	$ 57,723.48	$ 82,088.20	0.70	0.00	0.00	0.00	$ -	$ -	$ 61,006.60	0.00	0.01	0.01	0.00	$ 21,891.31	$ 17,301.02	$ 117,682.60	0.15
Skid Resistant Pavement	0.03	0.00	0.01	$ 51,942.18	$ 41,050.66	$ 5,434.74	7.55	0.00	0.00	0.00	$ -	$ -	$ 4,787.95	0.00	0.01	0.01	0.01	$ 22,686.18	$ 17,929.21	$ 8,780.19	2.04

	STA 363							STA 644							STA 670						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.01	0.01	0.00	$ 21,891.31	$ 17,301.02	$ 565.00	30.62
Install Guardrail	0.01	0.00	0.00	$ 17,049.10	$ 13,474.15	$ 37,251.00	0.36	0.00	0.00	0.00	$ -	$ -	$ 26,159.40	0.00							
Skid Resistant Pavement	0.01	0.00	0.00	$ 17,049.10	$ 13,474.15	$ 2,542.10	5.30	0.00	0.00	0.00	$ -	$ -	$ 1,889.32	0.00	0.03	0.01	0.02	$ 57,579.25	$ 45,505.72	$ 2,174.21	20.93

	STA 692							STA 718							STH 764						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Chevrons	0.04	0.02	0.01	$ 78,675.69	$ 62,178.54	$ 565.00	110.05	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00	0.00	0.00	0.00	$ -	$ -	$ 565.00	0.00
Install Guardrail	0.10	0.06	0.01	$ 200,339.13	$ 158,330.92	$ 36,635.80	4.32	0.00	0.00	0.00	$ -	$ -	$ 49,888.60	0.00	0.01	0.01	0.00	$ 21,891.31	$ 17,301.02	$ 25,577.40	0.68
Skid Resistant Pavement	0.08	0.04	0.05	$ 159,735.98	$ 126,241.67	$ 1,541.29	81.91	0.00	0.00	0.00	$ -	$ -	$ 20,590.22	0.00	0.00	0.00	0.00	$ -	$ -	$ 4,119.38	0.00

AECOM

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AECOM No. 60241350 June 2012

STH 65 Safety Analysis
Polk County

Exhibit 9-2

Benefit Cost Ratios - Horizontal Curve Segments

	Horizontal Curve Realignment No. 1, STA 40- STA 50							STA 73							Horizontal Curve Realignment No. 2, STA 98						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Speed Reducing Pavement Markings	0.05	0.01	0.04	$ 93,267.19	$ 73,710.42	$ 11,300.00	6.52	0.01	0.00	0.01	$ 17,843.97	$ 14,102.35	$ 11,300.00	1.25	0.01	0.05	0.08	$ 47,619.07	$ 37,634.04	$ 11,300.00	3.33
Flashing Beacon	0.00	0.00	0.01	$ 794.87	$ 628.20	$ 7,000.00	0.09	0.00	0.00	0.00	$ -	$ -	$ 7,000.00	0.00	0.00	0.01	0.02	$ 6,431.94	$ 5,083.26	$ 7,000.00	0.73
Flatten Horizontal Curve	0.20	0.06	0.12	$ 379,573.70	$ 299,982.61	$ 1,018,000.00	0.29	-	-	-	-	-	-	-	0.10	0.13	0.19	$ 248,542.18	$ 196,426.49	$ 543,000.00	0.36

	Horizontal Curve Realignment No. 3, STA 111							Horizontal Curve Realignment No. 4, STA 136 - STA 149							STA 188						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Speed Reducing Pavement Markings	0.01	0.03	0.01	$ 32,370.59	$ 25,582.94	$ 11,300.00	2.26	0.03	0.04	0.03	$ 72,900.73	$ 57,614.51	$ 11,300.00	5.10	0.00	0.00	0.02	$ 1,589.74	$ 1,256.39	$ 11,300.00	0.11
Flashing Beacon	0.00	0.01	0.00	$ 4,842.20	$ 3,826.86	$ 7,000.00	0.55	0.00	0.01	0.02	$ 6,431.94	$ 5,083.26	$ 7,000.00	0.73	0.00	0.00	0.00	$ -	$ -	$ 7,000.00	0.00
Flatten Horizontal Curve	0.09	0.08	0.05	$ 196,153.90	$ 155,023.28	$ 464,000.00	0.33	0.19	0.16	0.13	$ 411,741.51	$ 325,405.30	$ 2,325,000.00	0.14	-	-	-	-	-	-	-

	STA 203							STA 218							Horizontal Curve Realignment No. 5, STA 268						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Speed Reducing Pavement Markings	0.00	0.02	0.01	$ 10,479.28	$ 8,281.93	$ 11,300.00	0.73	0.02	0.04	0.02	$ 55,056.76	$ 43,512.16	$ 11,300.00	3.85	0.01	0.00	0.04	$ 20,228.57	$ 15,986.94	$ 11,300.00	1.41
Flashing Beacon	0.00	0.00	0.00	$ -	$ -	$ 7,000.00	0.00	0.00	0.01	0.00	$ 4,842.20	$ 3,826.86	$ 7,000.00	0.55	0.00	0.00	0.01	$ 794.87	$ 628.20	$ 7,000.00	0.09
Flatten Horizontal Curve	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	0.02	0.06	$ 82,650.03	$ 65,319.52	$ 539,000.00	0.12

	STA 294							Horizontal Curve Realignment No. 6, STA 338- STA 363							STA 644						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Speed Reducing Pavement Markings	0.00	0.00	0.00	$ -	$ -	$ 11,300.00	0.00	0.05	0.01	0.04	$ 93,267.19	$ 73,710.42	$ 11,300.00	6.52	0.00	0.00	0.00	$ -	$ -	$ 11,300.00	0.00
Flashing Beacon	0.00	0.00	0.00	$ -	$ -	$ 7,000.00	0.00	0.01	0.00	0.01	$ 17,843.97	$ 14,102.35	$ 7,000.00	2.01	0.00	0.00	0.00	$ -	$ -	$ 7,000.00	0.00
Flatten Horizontal Curve	-	-	-	-	-	-	-	0.18	0.07	0.11	$ 349,522.83	$ 276,232.97	$ 2,463,000.00	0.11	-	-	-	-	-	-	-

	Horizontal Curve Realignment No. 7, STA 670							Horizontal Curve Realignment No. 8, STA 692							STA 718						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD					K/A/B	C	PD					K/A/B	C	PD				
Speed Reducing Pavement Markings	0.03	0.01	0.02	$ 57,579.25	$ 45,505.72	$ 11,300.00	4.03	0.08	0.04	0.05	$ 159,735.98	$ 126,241.67	$ 11,300.00	11.17	0.00	0.00	0.00	$ -	$ -	$ 11,300.00	0.00
Flashing Beacon	0.00	0.00	0.00	$ -	$ -	$ 7,000.00	0.00	0.02	0.01	0.01	$ 39,735.28	$ 31,403.37	$ 7,000.00	4.49	0.00	0.00	0.00	$ -	$ -	$ 7,000.00	0.00
Intersection Modifications	-	-	-	-	-	-	-	0.30	0.16	0.24	$ 608,025.19	$ 480,531.14	$ 232,000.00	2.07	-	-	-	-	-	-	-
Flatten Horizontal Curve	0.05	0.03	0.03	$ 102,156.73	$ 80,735.95	$ 1,120,000.00	0.07	0.81	0.35	0.35	$ 1,578,274.88	$ 1,247,333.56	$ 843,000.00	1.48	-	-	-	-	-	-	-

	STA 764						
	Crash Reduction			Benefit 2018	Benefit 2012	Cost	B/C
	K/A/B	C	PD				
Speed Reducing Pavement Markings	0.00	0.00	0.00	$ -	$ -	$ 11,300.00	0.00
Flashing Beacon	0.00	0.00	0.00	$ -	$ -	$ 7,000.00	0.00
Flatten Horizontal Curve	-	-	-	-	-	-	-

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WisDOT Project ID: 0695-21-50
AECOM No. 60241350 January 2013

STH 65 Safety Analysis
Polk County

Exhibit 9-3

Benefit Cost Ratios - Horizontal Curve Groups

Exhibit 10
Prioritized Improvements

Safety Improvement Ranking

		Cost ($)			Cost ($)
1	**STA 692 - Flatten Horizontal Curve**	**$ 843,000**	39	Segment 8 - Safety Edge	$ 3,000
2	*STA 692 - Intersection Modifications*	$ 232,000	40	Segment 6 - Edgeline Rumble StripEs	$ 2,400
3	Segment 1 - Update Signing to MUTCD Standards	$ 6,000	41	Segment 3 - Safety Edge	$ 3,600
4	Segment 1 - Edgeline Rumble StripEs	$ 11,400	42	Segment 5 - Centerline Rumble Stripes	$ 3,600
5	Segment 4 - Update Signing to MUTCD Standards	$ 6,000	43	STA 348 - Chevrons	$ 600
6	Segment 4 - Edgeline Rumble StripEs	$ 11,400	44	STA 98 - Speed Reducing Pavement Markings	$ 11,300
7	STA 692 - Skid Resistant Pavement	$ 1,500	45	STA 692 - Flashing Beacon	$ 7,000
8	*STA 692 - Install Guardrail*	*$ 36,600*	46	STA 111 - Skid Resistant Pavement	$ 4,000
9	STA 692 - Speed Reducing Pavement Markings	$ 11,300	47	STA 98 - Skid Resistant Pavement	$ 3,200
10	Segment 2 - Update Signing to MUTCD Standards	$ 5,000	48	STA 218 - Chevrons	$ 600
11	Segment 5 - Update Signing to MUTCD Standards	$ 3,800	49	*STA 40 - Install Guardrail*	$ 37,500
12	Segment 2 - Edgeline Rumble StripEs	$ 9,500	50	STA 670 - Chevrons	$ 600
13	Segment 8 - Update Signing to MUTCD Standards	$ 3,500	51	Segment 7 - Update Signing to MUTCD Standards	$ 1,300
14	Segment 3 - Update Signing to MUTCD Standards	$ 4,300	52	STA 141 - Skid Resistant Pavement	$ 5,400
15	Segment 8 - Edgeline Rumble StripEs	$ 6,700	53	Segment 9 - Safety Edge	$ 2,100
16	Segment 5 - Edgeline Rumble StripEs	$ 7,100	54	Segment 7 - Edgeline Rumble StripEs	$ 2,400
17	Segment 3 - Edgeline Rumble StripEs	$ 8,100	55	Segment 9 - Centerline Rumble Stripes	$ 2,400
18	Segment 9 - Update Signing to MUTCD Standards	$ 2,500	56	Segment 8 - Centerline Rumble Stripes	$ 3,300
19	Segment 1 - Safety Edge	$ 5,100	57	Segment 3 - Centerline Rumble Stripes	$ 4,000
20	Segment 9 - Edgeline Rumble StripEs	$ 4,800	58	STA 111 - Speed Reducing Pavement Markings	$ 11,300
21	STA 40 - STA 50 - Speed Reducing Pavement Markings	$ 11,300	59	STA 40 - Chevrons	$ 600
22	STA 338 - STA 363 - Speed Reducing Pavement Markings	$ 11,300	60	*STA 218 - Install Guardrail*	*$ 37,800*
23	STA 692 - Chevrons	$ 600	61	STA 50 - Skid Resistant Pavement	$ 6,300
24	Segment 1 - Centerline Rumble Stripes	$ 5,700	62	STA 363 - Skid Resistant Pavement	$ 2,500
25	Segment 4 - Safety Edge	$ 5,100	63	STA 268 - Skid Resistant Pavement	$ 6,200
26	STA 136 - STA 149 - Speed Reducing Pavement Markings	$ 11,300	64	STA 73 - Skid Resistant Pavement	$ 4,600
27	Segment 2 - Safety Edge	$ 4,300	65	STA 358 - Skid Resistant Pavement	$ 8,800
28	Segment 4 - Centerline Rumble Stripes	$ 5,700	66	STA 45 - Skid Resistant Pavement	$ 5,000
29	Segment 6 - Update Signing to MUTCD Standards	$ 1,200	67	STA 98 - Chevrons	$ 600
30	STA 670 - Skid Resistant Pavement	$ 2,200	68	STA 338 - STA 363 - Flashing Beacon	$ 7,000
31	Segment 5 - Safety Edge	$ 3,200	69	STA 268 - Speed Reducing Pavement Markings	$ 11,300
32	STA 218 - Skid Resistant Pavement	$ 2,900	70	STA 203 - Skid Resistant Pavement	$ 4,500
33	STA 40 - Skid Resistant Pavement	$ 2,700	71	STA 111 - Chevrons	$ 600
34	STA 348 - Skid Resistant Pavement	$ 5,400	72	STA 141 - Chevrons	$ 600
35	STA 670 - Speed Reducing Pavement Markings	$ 11,300	73	STA 149 - Chevrons	$ 600
36	STA 218 - Speed Reducing Pavement Markings	$ 11,300	74	STA 203 - Chevrons	$ 600
37	Segment 2 - Centerline Rumble Stripes	$ 4,800	75	STA 73 - Speed Reducing Pavement Markings	$ 11,300
38	STA 149 - Skid Resistant Pavement	$ 6,000		**TOTAL COST**	**$ 1,544,400**

Notes: 1. Installing edgeline rumble StripEs and centerline rumble stripEs will effectively narrow the travel lane by one foot to a 10 or 11 foot width. This would be problematic unless widening of the travel lanes occurred.

2. The intersection of STH 65 and CTH K and the 0.6 mile segment of STH 65 from 40th Avenue to the north (future HSIP project location) were excluded from the analysis.

Legend
Grayshade: Horizontal curve improvement
No shading: Corridor segment improvement
Bold text: Reconstruction improvements on new alignment
Italic text: Reconstruction improvements on existing alignment
Plain text: Low cost improvements

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WisDOT Project ID: 0695-21-50
AECOM No. 60241350 January 2013

STH 65 Safety Analysis
Polk County

Exhibit 10

Prioritized Improvements

Exhibit 11
Countermeasure Implementation Locations

START PROJECT
COUNTY LINE AVE.

SEGMENT 1

CURVE GROUP
STA 40
STA 42
STA 45
STA 50
STA 73
65
STA 98
STA 111
W CHURCH RD.
CURVE GROUP
STA 136
STA 141
STA 149
SEGMENT 1
SEGMENT 2
CTH C
STA 188
STA 203
STA 218
65
28TH AVE.
SEGMENT 2
SEGMENT 3
38TH AVE.
STA 268
RANDOM DR.
STA 294
40TH AVE.
FUTURE HSIP SEGMENT (NOT INCLUDED IN ANALYSIS)

W
S
N
E

LEGEND

- CHEVRONS
- SPEED REDUCING PAVEMENT MARKINGS
- SOLAR POWERED FLASHING BEACON TO SUPPLEMENT ADVANCE CURVE SIGNING
- GUARDRAIL
- SKID RESISTANT PAVEMENT
- FLATTEN HORIZONTAL CURVE

STA # REPRESENTS THE PI OF A HORIZONTAL CURVE

NOTES:

1. THE FOLLOWING COUNTERMEASURES ARE RECOMMENDED FOR IMPLEMENTATION IN ALL SEGMENTS:
   *CENTERLINE RUMBLE STRIPES
   *EDGELINE RUMBLE STRIPES,
   *SAFETY EDGE
   *UPDATING SIGNING TO MUTCD STANDARDS
2. THE INTERSECTION OF STH 65 AND CTH K AND THE 0.6 MILE SEGMENT OF STH 65 FROM 40TH AVENUE TO THE NORTH (FUTURE HSIP PROJECT LOCATION) WERE EXCLUDED FROM THE ANALYSIS.
3. INSTALLING EDGELINE RUMBLE STRIPES AND CENTERLINE RUMBLE STRIPES WILL EFFECTIVELY NARROW THE TRAVEL LANE BY ONE FOOT TO A 10 OR 11 FOOT WIDTH. THIS WOULD BE PROBLEMATIC UNLESS WIDENING OF THE TRAVEL LANES OCCURRED.

WISCONSIN DEPARTMENT OF TRANSPORTATION

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SEPTEMBER 2012
WISDOT PROJECT ID 0695-21-50
AECOM No. 60241350

EXHIBIT 11
COUNTERMEASURE IMPLEMENTATION LOCATIONS

STH 65
SAFETY ANALYSIS
POLK COUNTY, WI

NOT TO SCALE

STH 65 & CTH K Intersection Recently Reconstructed (Not Included in Analysis)

Curve Group

STA 338
STA 342
STA 345
STA 348
STA 353
STA 358
STA 363

Future HSIP Segment (Not Included in Analysis)

SEGMENT 3
SEGMENT 4
SEGMENT 5
SEGMENT 6
SEGMENT 7
SEGMENT 8
SEGMENT 9

65

CTH K / 60TH Ave.
65TH Ave.
Stower Seven Lakes Trail
Wanderoos Rd.
85TH Ave.
CTH F / STH 130
90TH Ave.
CTH F
CTH C
South Bear Lake Dr.
North Bear Lake Dr.
120TH Ave.
Kennedy Mill Ave.
USH 8 / East 103TH Ave.
End Project

STA 644
STA 670
STA 692
STA 718
STA 764

W
S
N
E

Notes:
1. The following countermeasures are recommended for implementation in all segments:
   *Centerline rumble stripes
   *Edgeline rumble stripes,
   *Safety edge
   *Updating signing to MUTCD standards
2. The intersection of STH 65 and CTH K and the 0.6 mile segment of STH 65 from 40th Avenue to the north (future HSIP project location) were excluded from the analysis.
3. Installing edgeline rumble stripes and centerline rumble stripes will effectively narrow the travel lane by one foot to a 10 or 11 foot width. This would be problematic unless widening of the travel lanes occurred.

Legend
- Chevrons
- Speed Reducing Pavement Markings
- Solar Powered Flashing Beacon to Supplement Advance Curve Signing
- Guardrail
- Skid Resistant Pavement
- Flatten Horizontal Curve

Sta # represents the PI of a horizontal curve

Wisconsin Department of Transportation

AECOM

September 2012
WisDOT Project ID 0695-21-50
AECOM No. 60241350

Exhibit 11
Countermeasure Implementation Locations

STH 65
Safety Analysis
Polk County, WI

NOT TO SCALE

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