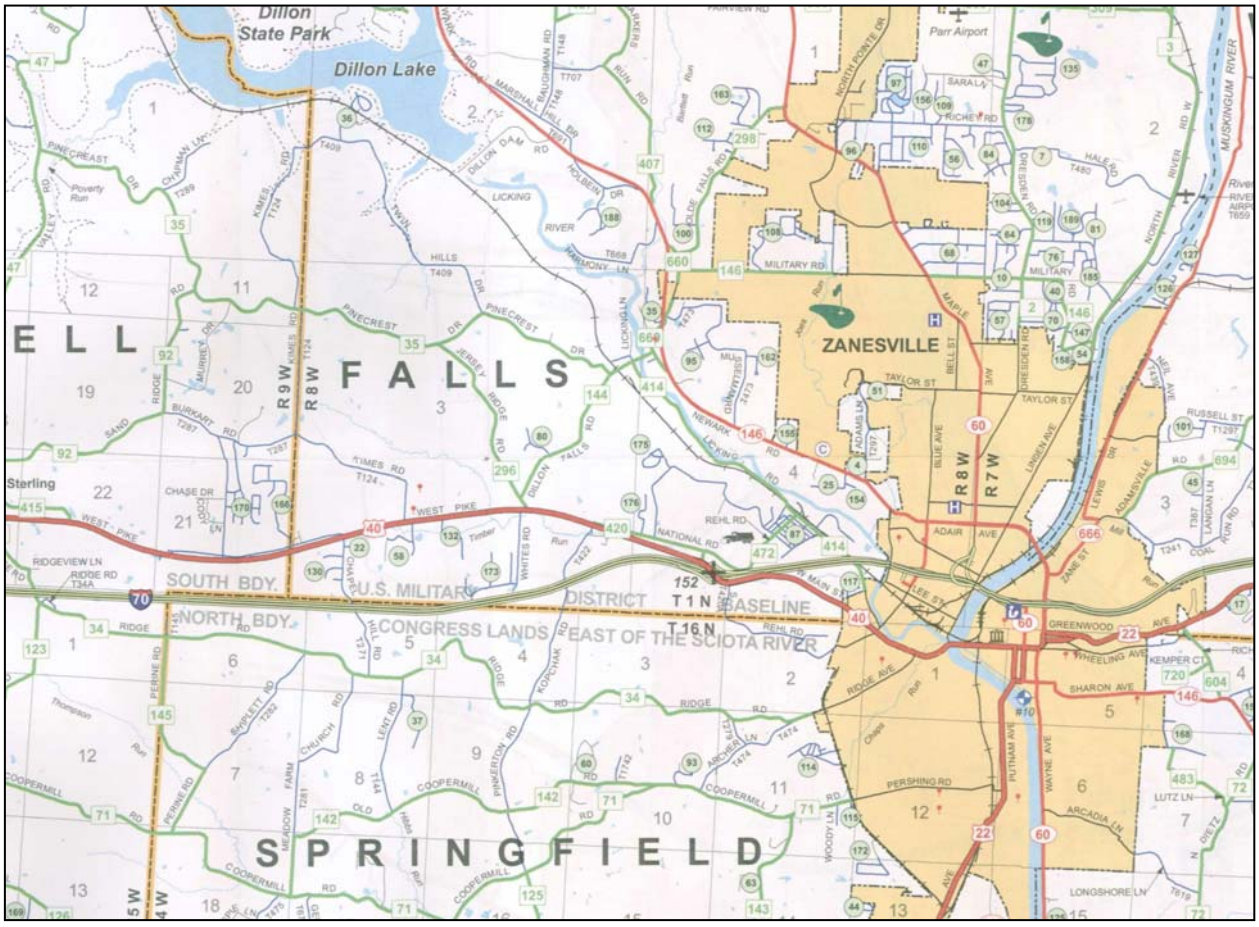
PLANNING STUDY

MUS-CR144
(DILLON FALLS ROAD)

MUS-CR144 (Dillon Falls Road) Corridor
(US Route 40 to State Route 146)
Muskingum County
Falls Township



RICHLAND ENGINEERING LIMITED
October 2007
(Updated December 2007)

RICHLAND ENGINEERING LIMITED

Planning Study (Update December 2007)
MUS-CR144 (Dillon Falls Road)
Muskingum County
Falls Township
Improvement Alternatives

Table of Contents

APPENDIX

Existing Design Deficiencies

Design Criteria Matrix

Accident Diagram

Plan Overview Map (600 scale - printed half size)
Plan Overview Map (400 scale - printed half size)

County Road 144 (Dillon Falls Road)
- Opinion of Probable Cost Alternative 40 MPH
- Opinion of Probable Cost Alternative 45 MPH
- Opinion of Probable Cost Alternative 55 MPH
- Opinion of Probable Cost Alternative 1
- Opinion of Probable Cost Alternative 2
- Opinion of Probable Cost Alternative 3
- Opinion of Probable Cost Alternative 3A
- Opinion of Probable Cost Alternative 4
- Opinion of Probable Cost Alternative 5
- Opinion of Probable Cost Alternative 5A

County Road 660 (Dillon School Drive)
- Opinion of Probable Cost Alternative 1 - 40 MPH
- Opinion of Probable Cost Alternative 2A - 45 MPH
- Opinion of Probable Cost Alternative 2B - 45 MPH
- Opinion of Probable Cost Alternative 3 - 45 MPH
- Opinion of Probable Cost Alternative 4 - 35 MPH

County Road 144 (Dillon Falls Road)/US Route 40 Connector
- Opinion of Probable Cost Alternative 1
- Opinion of Probable Cost Alternative 2
- Opinion of Probable Cost Alternative 3

ATTACHMENTS

Title Sheet
Typical Sections

County Road 144 (Dillon Falls Road)
- Existing Alignment - Plan and Profile
- Alternative 40 MPH - Plan & Profile
- Alternative 45 MPH - Plan & Profile
- Alternative 55 MPH - Plan & Profile
- Alternative 1 - Plan & Profile
- Alternative 2 - Plan
- Alternative 3 - Plan & Profile
- Alternative 4 - Plan & Profile
- Alternative 5 - Plan & Profile

County Road 660 (Dillon School Drive)
- Alternative 1 - 40 MPH - Plan
- Alternative 2A - 45 MPH - Plan
- Alternative 2B - 45 MPH - Plan
- Alternative 3 - 45 MPH - Plan & Profile
- Alternative 4 - 40 MPH - Plan & Profile

ADDENDUM (December 2007)

Addendum Title Sheet
County Road 144 (Dillon Falls Road)
- Alternative 45 MPH - Cross Sections for at-grade crossing of existing Railroad
- Alternative 1 - Cross Sections
- Alternative 3 - Cross Sections
- Alternative 4 - Cross Sections
- Alternative 3A - Plan & Profile
- Alternative 3A - Cross Sections
- Alternative 5A - Plan & Profile
- Alternative 5A - Cross Sections

County Road 144 (Dillon Falls Road)/US Route 40 Connector
- Alternative 1 - Plan & Profile
- Alternative 2 - Plan & Profile
- Alternative 3- Plan & Profile

I. SUMMARY

A planning study has been prepared for the Muskingum County Engineer to investigate an appropriate roadway that improves safety and access between US Route 40 and State Route 146. The general study area will evaluate improvement alternatives for County Road 144 (Dillon Falls Road) in Falls Township from the intersection of US Route 40 to County Road 660 (Dillon School Drive)/State Route 146. This section of roadway is currently classified as a rural minor collector with a 40 mph speed limit. The recent construction of North Pointe Drive by the City of Zanesville along with anticipated continued development adjacent to this new corridor will require adequate adjacent roadway facilities from the west side of Zanesville for the traveling public. Travel to the North Pointe Drive corridor commercial and office development from the western part of Muskingum County is expected to use County Road 144 (Dillon Falls Road) for access. County Road 144 (Dillon Falls Road) is a direct route that provides a reduction in travel distance and travel time from US Route 40 west of the City of Zanesville to the North Pointe Drive corridor on the north side of the City of Zanesville. The existing County Road 144 (Dillon Falls Road) roadway is not adequate to be utilized as a major collector route and the poor horizontal and vertical alignment make the existing roadway functionally deficient. Improvements will be needed to County Road 144 (Dillon Falls Road) to allow for efficient movement of traffic.

The scope of the planning study was to evaluate the existing County Road 144 (Dillon Falls Road) corridor and provide short term low cost improvements that could be implemented individually as funding would permit, while considering long term, significant impact projects that would improve the alignment and potentially encourage future development along a new corridor.

Multiple alignment concepts were evaluated to provide low cost improvements as a part of the planning study. Initially the existing County Road 144 (Dillon Falls Road) horizontal and vertical alignment was evaluated to determine locations where design deficiencies exist based upon the 40 mph posted speed limit. See the "Existing Design Deficiencies" map in the Appendix. Using the basic existing horizontal and vertical alignment, alternatives were developed incorporating different design speeds and associated roadway typical sections. The design speeds evaluated include 40mph, 45mph, and 55mph. See the "Design Criteria Matrix" in the Appendix for the various design parameters associated with each of the design speeds in accordance with the Ohio Department of Transportation Location and Design Manual Volume One - Roadway Standards. Two different typical sections were developed for the planning study, one was applied to the 40mph and 45mph design speeds and the other was used with the 55mph design speed.

The second component of the study was comprised of the long range, significant impact projects that considered new and alternative alignments for County Road 144 (Dillon Falls Road) and County Road 660 (Dillon School Drive). Several of the new alignments utilized various segments of the existing alignment. The new alignments were based upon a minimum 45 mph design speed.

The following is the various alternatives included in the planning study that address the short term, low cost alternatives. All of the short term, low cost alternatives (40 mph, 45 mph, 55 mph) depict realignment of County Road 144 (Dillon Falls Road) at the US Route 40 intersection. The improvements could require relocation of the West Side Market to construct County Road 144 (Dillon Falls Road) as the through roadway. The proposed intersection layout could be modified to avoid the West Side Market by maintaining County Road 144 (Dillon Falls Road) as the stop condition at County Road 296 (Jersey Ridge Road) or utilizing a unique County Road 144 (Dillon Falls Road) alignment connector to US Route 40 (US Route 40 Connector 1, Connector 2, Connector 3) that meets 45 mph normal design speed criteria. The improvement alternatives may require adjustments/modification to the existing County Road 144 (Dillon Falls Road) at US Route 40 traffic signal installation.

County Road 144 (Dillon Falls Road) - Alternative 40 mph would improve the horizontal and vertical alignment along County Road 144 (Dillon Falls Road) to meet the normal design criteria for 40 mph. The typical section would be improved to two 12 foot wide lanes, 2 foot wide aggregate shoulders, 4 foot wide graded shoulders, and roadside ditches.

County Road 144 (Dillon Falls Road) - Alternative 45 mph would improve the horizontal and vertical alignment along County Road 144 (Dillon Falls Road) to meet the normal design criteria for 45 mph. The typical section would be the same as the 40 mph alternative.

County Road 144 (Dillon Falls Road) - Alternative 55 mph would improve the horizontal and vertical alignment along County Road 144 (Dillon Falls Road) to meet the normal design criteria for 55 mph. The typical section would be improved to two 12 foot wide lanes, 6 foot wide aggregate shoulders, 10 foot wide graded shoulders, and roadside ditches.

Each of the alternatives provide improvements to the functionally deficient roadway that enhance the roadway facility to meet the normal design speed criteria for that alternative . The "Existing Design Deficiencies" map highlights the areas along the existing corridor where the design speed is less than 55 mph. The development of the roadway to meet a specific minimum design speed requirement affects the amount of work that will be required to improve the roadway.

The following is the various alternatives included in the planning study that address the long term, significant impact options. The improvement alternatives may require adjustments/modification to the existing County Road 144 (Dillon Falls Road) at US Route 40 traffic signal installation; traffic signal warrant analysis of a new intersection with US Route 40; adjustments/modification to the existing County Road 660 (Dillon School Drive) at State Route 146 traffic signal installation; adjustments/modification/traffic signal warrant analysis at a new intersection with State Route 146.

County Road 144 (Dillon Falls Road) - Alternative 1 uses a combination of the existing alignment along with two sections of new alignment. The first new roadway segment aligns the intersection of County Road 144 (Dillon Falls Road) with Whites Road at US Route 40. The second new roadway segment alignment begins east of the existing intersection of Kingsview Drive, extends north utilizing a 55 mph design speed, crossing the railroad and the Licking River intersecting State Route 146 at the extended existing Military Road intersection.

County Road 144 (Dillon Falls Road) - Alternative 2 utilizes the entire existing alignment of County Road 144 (Dillon Falls Road) along with the construction of a new structure over the Licking River at the previous bridge location and the reconstruction of Falls Lane. The construction of the new bridge at the previous location will implement a one way traffic pattern on County Road 660 (Dillon School Drive), on the existing bridge, on the new bridge, and on Falls Lane.

County Road 144 (Dillon Falls Road) - Alternative 3 creates a new intersection with US Route 40 across from the existing intersection of US Route 40 at Kopchak Road. The new intersection would incorporate the existing National Road intersection with US Route 40. From the new intersection, the new alignment would extend north to a location where it would merge onto the existing County Road 144 (Dillon Falls Road) alignment. The existing County Road 144 (Dillon Falls Road) would be utilized for approximately 600 feet. The new alignment will diverge from the existing alignment, extend north, crossing the railroad and the Licking River intersecting State Route 146 at the existing North Pointe Drive intersection.

County Road 144 (Dillon Falls Road) - Alternative 3A creates a new intersection with US Route 40 across from the existing intersection of US Route 40 at Kopchak Road. The new intersection would incorporate the existing National Road intersection with US Route 40. From the new intersection, the new alignment would extend north to a location where it would merge onto the existing County Road 144 (Dillon Falls Road) alignment. The existing County Road 144 (Dillon Falls Road) alignment developed for the Alternative 45 mph alignment would be utilized from this location ahead to the intersection with County Road 660 (Dillon School Drive). The proposed horizontal alignment for the new section of roadway meets a 55 mph design criteria. The proposed vertical alignment for the new section of roadway meets a 45 mph design criteria.

County Road 144 (Dillon Falls Road) - Alternative 4 creates a new intersection with US Route 40 approximately 700 feet east of the existing US Route 40 at County Road 144 (Dillon Falls Road) intersection. From this intersection the new alignment extends north to form a new intersection with existing County Road 144 (Dillon Falls Road) east of Kingsview Drive. From this new intersection the new alignment will continue north, crossing the railroad and the Licking River intersecting State Route 146 at the existing North Pointe Drive intersection.

County Road 144 (Dillon Falls Road) - Alternative 5 creates a new intersection with US Route 40 similar to Alternative 4 approximately 700 feet east of the existing US Route 40 at County Road 144 (Dillon Falls Road) intersection. From the new intersection a new alignment using a horizontal design speed of 55 mph and a vertical design speed of 45 mph would extend north to a location where it will merge onto the existing County Road 144 (Dillon Falls Road) alignment. The existing alignment of County Road 144 (Dillon Falls Road) upgraded to meet 45 mph design speed would be utilized to the east intersecting County Road 660 (Dillon School Drive).

County Road 144 (Dillon Falls Road) - Alternative 5A is the same as Alternative 5 except that the horizontal alignment is modified to increase the degree of curves to meet a 45 mph design

speed through the new roadway section. A new intersection is created with US Route 40 similar to Alternative 4 approximately 700 feet east of the existing US Route 40 at County Road 144 (Dillon Falls Road) intersection. From the new intersection a new alignment using a horizontal design speed of 45 mph and a vertical design speed of 45 mph would extend north to a location where it will merge onto the existing County Road 144 (Dillon Falls Road) alignment. The existing alignment of County Road 144 (Dillon Falls Road) upgraded to meet 45 mph design speed would be utilized to the east intersecting County Road 660 (Dillon School Drive).

County Road 660 (Dillon School Drive) - Alternative 1 flattens out the existing curve at the northwest corner of the existing school building and eliminates the reverse curve on the approach to the State Route 146 intersection. The single proposed curve is suitable for a design speed of 40 mph and shifts the intersection south of the existing location.

County Road 660 (Dillon School Drive) - Alternative 2 flattens out the existing curve at the northwest corner of the existing school building and eliminates the reverse curve on the approach to the State Route 146 intersection. The single proposed curve is suitable for a design speed of 45 mph and shifts the intersection north of the existing location.

County Road 660 (Dillon School Drive) - Alternative 2A flattens out the existing curve at the northwest corner of the existing school building and eliminates the reverse curve on the approach to the State Route 146 intersection. The single proposed curve is suitable for a design speed of 45 mph and shifts the intersection south of the existing location. This new alignment would be contingent upon the removal of the existing school building.

County Road 660 (Dillon School Drive) - Alternative 3 is contingent upon the removal of the existing school building. This alignment would eliminate the existing tee intersection formed by County Road 144 (Dillon Falls Drive) at County Road 660 (Dillon School Drive) and replace the intersection with reverse curves suitable for a design speed of 45 mph.

County Road 660 (Dillon School Drive) - Alternative 4 is contingent upon the removal of the existing school building. This alignment would eliminate the existing tee intersection formed by County Road 144 (Dillon Falls Drive) at County Road 660 (Dillon School Drive) and replace the intersection with reverse curves. The curve nearest to the intersection would be suitable for a design speed of 40 mph. This arrangement allows for the tangent section of roadway on the approach to the intersection along with an intersection angle of 60˚.

County Road 144 (Dillon Falls Road)/US Route 40 Connector - Alternative 1 maintains the location of the existing intersection of County Road 144 (Dillon Falls Drive) and US Route 40; shifts and flattens out the existing curve to the northeast at County Road 296 (Jersey Ridge Road) and matches into the existing alignment of County Road 144 (Dillon Falls Drive). The single proposed curve is suitable for a design speed of 45 mph. The new alignment requires the acquisition of the bank property and the residential property to the east of the bank. County Road 296 (Jersey Ridge Road) would be extended to create a stop condition "tee" intersection with County Road 144 (Dillon Falls Drive). The existing traffic signal at Dillon Falls Road and US Route 40 will be maintained.

County Road 144 (Dillon Falls Road)/US Route 40 Connector - Alternative 2 relocates the location of the existing intersection of County Road 144 (Dillon Falls Drive) and US Route 40; shifts and flattens out the existing curve to the northwest at County Road 296 (Jersey Ridge Road) and matches into the existing alignment of County Road 144 (Dillon Falls Drive). The single proposed curve is suitable for a design speed of 45 mph. The new alignment requires the acquisition of the Grange property. County Road 296 (Jersey Ridge Road) would be extended to create a stop condition "tee" intersection with County Road 144 (Dillon Falls Drive). The existing traffic signal at Dillon Falls Road and US Route 40 would be relocated.

County Road 144 (Dillon Falls Road)/US Route 40 Connector - Alternative 3 relocates the location of the existing intersection of County Road 144 (Dillon Falls Drive) and US Route 40; shifts with a reverse curvature the roadway to the northwest at County Road 296 (Jersey Ridge Road) and matches into the existing alignment of County Road 144 (Dillon Falls Drive). The reverse curves are suitable for a design speed of 45 mph. The new alignment requires right of way acquisition but no building takes. County Road 296 (Jersey Ridge Road) would be extended to create a stop condition "tee" intersection with County Road 144 (Dillon Falls Drive). The existing traffic signal at Dillon Falls Road and US Route 40 would be relocated.

Each of the long term, significant impact alternatives provide suitable horizontal and vertical alignments for the selected design speed. The alternatives address several areas of project development need. The specific areas of need for the long term alternatives can be broken down into three basic categories. The first category is new/improved access from US Route 40 to County Road 144 (Dillon Falls Road). Alternatives 1, 3, 3A, 4, 5 and 5A or County Road 144 (Dillon Falls Road)/US Route 40 Connector 1-3 provide new County Road 144 (Dillon Falls Road) alignment to intersect US Route 40. The second category is new/improved alignment of County Road (Dillon Falls Road) to the intersect State Route 146. Alternatives 1, 3A, 5 and 5A provide a combination of new alignment and an improved existing alignment; alternatives 3, and 4 provide essentially new alignments from US Route 40 to State Route 146. The third category is the intersection of County Road 144 (Dillon Falls Road)/County Road 660 (Dillon School Drive) with State Route 146. Alternative 1 provides a new intersection for County Road 144 (Dillon Falls Road) with State Route 146 at the extended existing intersection of State Route 146 with Military Road. Alternatives 3 and 4 provide a new intersection for County Road 144 (Dillon Falls Road) with State Route 146 at the new intersection of State Route 146 with North Pointe Drive. Alternative 2 constructs a parallel bridge on the original alignment of County Road 144 (Dillon Falls Road) over the Licking River and provides marking and signing modifications to implement a one way traffic pattern for the County Road 144 (Dillon Falls Road)/ County Road 660 (Dillon School Drive)/ State Route 146 intersection area. The County Road 660 (Dillon School Drive) Alternatives 1, 2A, 2B, 3 and 4 provide new/improved alignments for County Road 144 (Dillon Falls Road)/ County Road 660 (Dillon School Drive) at State Route 146 intersection.

The planning study is presented as a resource document for future project development. A summary of the key elements and features of the alternatives are presented in a table on the following page.

County Road 144 (Dillon Falls Road) Short Term - Low Cost
IMPROVEMENT ALTERNATIVES SUMMARY TABLE

	Alternative 40 MPH	**Alternative 45 MPH**	**Alternative 55 MPH**
Design Speed	40 mph	45 mph	55 mph
Proposed Horizontal Alignment	Salvage Existing	Salvage Existing	Salvage Existing
Proposed Lane Width	12 Feet	12 Feet	12 Feet
Maximum Superelevation Rate	8%	8%	8%
Proposed Roadway Typical Section	Treated Shoulders	Treated Shoulders	Treated Shoulders
Side Slopes	4:1 Normal 2:1 Maximum	4:1 Normal 2:1 Maximum	4:1 Normal 2:1 Maximum
Project Length	8,544 feet (1.62 Miles)	8,528 feet (1.62 Miles)	8,475 feet (1.61 Miles)
Sideroad Improvements	600 feet	600 feet	600 feet
Proposed Right of Way Width	60 feet	60 feet	60 feet
Right of Way - Number of Owners Affected	52	52	52
(Permanent & Temporary)/Estimated Acreage	8.6 Ac.	10.3 Ac.	15.3 Ac.
Utilities Affected	Yes	Yes	Yes
Environmental Considerations	Coordination	Coordination	Coordination
Estimated Construction Cost (engineering, right of way, and utilities not included)	$3,846,000	$4,099,000	$5,230,000

County Road 144 (Dillon Falls Road) Long Term - Significant Impact
IMPROVEMENT ALTERNATIVES SUMMARY TABLE

	Alternative 1	Alternative 3	Alternative 3A	Alternative 4
Design Speed	55	55H/45V	55H/45V	55H/45V
Proposed Horizontal Alignment	Existing/New	New	New/Existing	New
Proposed Lane Width	12	12	12	12
Maximum Superelevation Rate	8%	8%	8%	8%
Proposed Roadway Typical Section	Treated Shoulders	Treated Shoulders	Treated Shoulders	Treated Shoulders
Side Slopes	4:1 Normal	4:1	4:1	4:1
Project Length	12,040 feet	11,480 feet	8,170 feet	11,830 feet
Sideroad Improvements	500 feet	600 feet	500 feet	600 feet
Proposed Right of Way Width	60'	60'	60'	60'
Right of Way - Number of Owners Affected	34	26	30	20
(Permanent & Temporary)/Estimated Acreage	47.6	34.6	15.8	37.0
Utilities Affected	Yes	Yes	Yes	Yes
Environmental Considerations	Coordination	Coordination	Coordination	Coordination
Estimated Construction Cost (engineering right of way and utilities not included)	$35,125,000	$26,089,000	$7,044,000	$27,474,000

County Road 144 (Dillon Falls Road) Long Term - Significant Impact
IMPROVEMENT ALTERNATIVES SUMMARY TABLE (cont.)

	Alternative 5	Alternative 5A
Design Speed	55H/45V	45H/45V
Proposed Horizontal Alignment	New/Existing	New/Existing
Proposed Lane Width	12	12
Maximum Superelevation Rate	8%	8%
Proposed Roadway Typical Section	Treated Shoulders	Treated Shoulders
Side Slopes	4:1	4:1
Project Length	7,960 feet	7,958 feet
Sideroad Improvements	500 feet	500 feet
Proposed Right of Way Width	60'	60'
Right of Way - Number of Owners Affected	36	36
(Permanent & Temporary)/Estimated Acreage	13.0	13.6
Utilities Affected	Yes	Yes
Environmental Considerations	Coordination	Coordination
Estimated Construction Cost (engineering right of way and utilities not included)	$5,925,000	$5,723,000

II. INTRODUCTION

This planning study is prepared to investigate alternatives to provide an appropriate roadway facility from US Route 40 to State Route 146 on the west side of the City of Zanesville.

The study includes project purpose and need; alignment and profile; right of way needs; utility involvement; environmental concerns; maintenance of traffic during construction; intersection improvements at the various sideroads; and project costs.

The alternatives are presented for comparison and as a resource document for further project development. Environmental studies, agency coordination, funding, and public input will be necessary to advance the project(s).

Three design speed alternatives with two roadway typical section variations were identified for evaluation in the short term, low cost County Road 144 (Dillon Falls Road) improvement study. Design speeds are typically equal to or greater than the legal posted speed for the roadway. The maximum design speed for a rural collector road in relatively level terrain is 60 mph. The minimum design speed for a roadway shall be equal to the legal speed limit. Design speeds are based upon the relationship of the physical constraints of the roadway with the ability to travel the roadway at a specific speed. Basically, the ability to see far enough ahead to make a comfortable driving decision from the posted speed limit and avoid an unexpected condition. The design speed of a roadway determines the horizontal alignment, vertical alignment and intersection sight distance. The short term, low cost, proposed roadway horizontal alignment for the alternatives will utilize the existing County Road 144 (Dillon Falls Road) horizontal alignment and incorporate improvements to meet 40 mph, 45 mph and 55 mph design speeds.

The long term, significant impact alignment improvement study utilize either 45 mph or 55 mph design speeds. The alternatives for the County Road 144 (Dillon Falls Road)/US Route 40 Connector utilize 45 mph design speed. The alternatives for the County Road 144 (Dillon Falls Road)/County Road 660 (Dillon School Drive) at State Route 146 intersection utilize various design speeds.

III. PROJECT DESCRIPTION

The existing south terminus to County Road 144 (Dillon Falls Road) is a "T" intersection with US Route 40. The existing horizontal alignment of County Road 144 (Dillon Falls Road) is essentially winding. The existing typical section is a 20 foot wide normal crown roadway with minimal graded shoulders. County Road 144 (Dillon Falls Road) extends northeast intersecting County Road 296 (Jersey Ridge Road). County Road 296 (Jersey Ridge

Road) is the through road with no restrictions. Southbound County Road 144 (Dillon Falls Road) travel at the County Road 296 (Jersey Ridge Road) intersection is stop controlled. County Road 144 (Dillon Falls Road) continues northeast from the County Road 296 (Jersey Ridge Road) intersection. Township Road 1564 (Kingsview Drive) and County Road 35 (Pinecrest Drive) are "T" intersections with County Road 144 (Dillon Falls Road). Township Road 1564 (Kingsview Drive) and County Road 35 (Pinecrest Drive) are stop controlled at the existing intersections. The existing County Road 144 (Dillon Falls Road) extends northeast passing under the Ohio Central Railroad, across the Licking River on a pony truss bridge and terminates with a "T" intersection at County Road 660 (Dillon School Drive). County Road 414 (Licking Road) and Township Road 35A (Licking Drive) form a complete four approach intersections with County Road 144 (Dillon Falls Road) prior to the Licking River bridge. County Road 414 (Licking Road) and Township Road 35A (Licking Drive) are stop controlled at the existing intersections. Within this section of existing County Road 144 (Dillon Falls Road) there are five horizontal curves that do not meet a 55 mph design criteria. The existing County Road 660 (Dillon School Drive) southern roadway segment has minimal traffic. The majority of the traffic utilizes the northern roadway segment of existing County Road 660 (Dillon School Drive). The northern roadway segment of existing County Road 660 (Dillon School Drive) ends as a signalized "T" intersection with State Route 146. Parry Drive intersects County Road 660 (Dillon School Drive) prior to the County Road 660 (Dillon School Drive)/State Route 146 intersection.

The existing vertical alignment on County Road 144 (Dillon Falls Road) can be generally described as hilly. The County Road 144 (Dillon Falls Road) existing profile grade in the study area varies from a maximum profile grade of approximately 11% to approximately 0.12%. The existing vertical alignment for County Road 144 (Dillon Falls Road) complies with the requirements for a operating speed ranging from 24 mph to greater than 55 mph.

The existing intersection sight distance along County Road 144 (Dillon Falls Road) at the intersecting sideroads was evaluated. The required intersection sight distance for a 55 MPH operating speed is 610 feet. The existing intersection sight distance on County Road 144 (Dillon Falls Road) at the intersection with County Road 296 (Jersey Ridge Road) is greater than 610 feet in both directions. The existing intersection sight distance at Kingsview Drive looking southwest on County Road 144 (Dillon Falls Road) is limited to 395 feet by the existing profile grade. The sight distance meets current intersection sight distance design guidelines for 35 mph. The existing intersection sight distance at the County Road 35 (Pinecrest Drive) intersection with County Road 144 (Dillon Falls Road) is greater than 610 feet in both directions.

The proposed short term, low cost improvement project will reconstruct the existing County Road 144 (Dillon Falls Road) roadway utilizing the existing horizontal alignment where suitable. The existing vertical alignment will be salvaged where possible and upgraded in specific areas to meet the proposed design speed criteria. The proposed improvements to County Road 144 (Dillon Falls Road) have been evaluated for three design speeds: 40 mph, 45 mph and 55 mph.

IV. SAFETY

Traffic crash records were obtained from the Ohio Department of Public Safety for the years 2004 through January 2006. The crash data along County Road 144 (Dillon Falls Road) and County Road 660 (Dillon Falls Drive) was reviewed to identify the crashes in specific areas that could be attributed to design deficiencies. 53 crashes were reported through the County Road 144 (Dillon Falls Road) /County Road 660 (Dillon School Drive) project corridor during the three year period.

Thirteen of the 53 crashes were not intersection related. Eleven of the 13 non intersection related crashes were on tangent sections and 2 were denoted as being in curves. Of the non-intersection related accidents on County Road 144 (Dillon Falls Road) there were three locations with more that one accident. The first section is approximately from Station 23+00 to 28+00 (Kingsview Drive area), excluding the Township Road 1564 (Kingsview Drive) intersection. This section had four accidents reported. Within these limits the Existing Design Deficiencies drawing indicates that deficiencies for vertical alignment and excessive grade are present. The second section is between approximately Station 41+00 and 47+00 (2000 feet west of County Road 35). This section had 3 accidents reported. Within these limits design deficiencies for vertical alignment are identified. The final section of County Road 144 (Dillon Falls Road) with multiple accidents is located at approximately Station 55+00 to station 63+00 (west of County Road 35). This section had 3 accidents reported. Within these limits there are two design deficiencies for vertical alignment identified.

Of the 40 intersection crashes five involved deer, four involved alcohol, and one was attributed to weather. Five of the 40 accidents resulted in injury or fatality. Of the five injury/fatality accidents two involved alcohol, including the 1 fatality. The accidents located at the intersections not including the deer/alcohol/weather related accidents is as follows:

US Route 40 (signalized)	6
County Road 296 (Jersey Ridge Road)	5
Township Road 1564 (Kingsview Drive)	3
County Road 35 (Pinecrest Drive)	0
County Road 414 (Licking Road)	4
County Road 660 (Dillon School Drive)	6
State Route 146 (North) (signalized)	4
State Route 146 (South)	2

The Federal Highway Administration has a publication FHWA-RD-99-094 Statistical Models of At-Grade Intersection Accidents which indicates that over a three year period a rural three approach, stop controlled intersection will have an average of 2.38 accidents, a rural four approach, stop controlled intersection, the average is 3.93 accidents. Comparing the three approach stop controlled rates to the accidents reported along the project corridor indicates that the intersections at County Road 296 (Jersey Ridge Road) and County Road 660 (Dillon School Drive) are above average and the Township Road 1564 (Kingsview Drive) intersection is slightly above average. Using the four approach stop controlled rates, the County Road 414 (Licking Road) intersection is at the average accident rate.

Accident rates at the signalized intersections were compared to accident rates published by ODOT, Office of Systems Analysis Planning, Crash Information. The ODOT numbers indicate that for a rural 4 lane highway, signalized intersection the average number of accidents over a three year period is 10.71 accidents. This is similar to the US Route 40 and County Road 144 (Dillon Falls Road) intersection rate which had 6 recorded accidents. The ODOT numbers indicate that for a rural 2 lane highway, signalized intersection the average number of accidents over a three year period is 5.64 accidents. This condition is similar to the State Route 146 and County Road 660 (Dillon School Drive) intersection which had 4 recorded accidents. Both of the signalized intersections have below average recorded accident rates.

Of the 8 intersections along the corridor four of the stop controlled intersections have an above average number of accidents. Of the three intersections, the County Road 144 (Dillon Falls Road) /County Road 660 (Dillon School Drive) intersection handles the largest volume of traffic with the entire volume of eastbound County Road 144 (Dillon Falls Road) traffic stopping at the intersection. Four of the six accidents associated with this intersection were rear end, none of which resulted in injury, which can be attributed to multiple cars backed up at the stop sign and numerous stop and go actions. The County Road 144 (Dillon Falls Road)/County Road 296 (Jersey Ridge Road) intersection has stop control for all of the westbound County Road 144 (Dillon Falls Road) traffic. Three of the five accidents at this intersection involved failure to yield actions, one rear end accident and one accident that was classified as other. The County Road 144 (Dillon Falls Road) and Township Road 1564 (Kingsview Drive) intersection accounted for three accidents, one rear end accident of which can be attributed to the substandard sight distance at the intersection.

The crash data for the corridor in locations other than intersections indicates that the locations with multiple accidents reported may have been impacted by the design deficiencies of the existing roadway alignment. The reported intersection crash data evaluation provides an indication that an above average number of accidents occurred at several intersections. Of the intersections only one, Township Road 1564 (Kingsview Drive), appeared to have accidents attributed to design deficiencies.

V. TRAFFIC PROJECTIONS

The year 2010 has been used as the anticipated year for project construction. Traffic volumes provided by the County Engineer taken in August 2005 indicate that County Road 144 (Dillon Falls Road) had an average daily traffic volume of 4,395 vehicles per day. The traffic was expanded to a year 2010 opening day traffic volume of 4,600 vehicles per day. Projection of the 2010 average daily traffic (ADT) volume was expanded to a design year of 2030 using a growth rate of 1.0%, yielding a 2030 ADT of 5,500. The 1.0% yearly growth rate represents a number provided by the Ohio Department of Transportation for the low end of a moderate growth rate. The current development trends along North Pointe Drive and the associated use of the County Road 144 (Dillon Falls Road) corridor may exceed the 1.0% yearly growth rate. However, for the purpose of this study the 1.0% growth rate was used to provide a conservative traffic volume estimate for County Road 144 (Dillon Falls Road).

VI. PURPOSE AND NEED

The purpose of the improvement(s) will be to provide an appropriate roadway from US Route 40 to State Route 146 for an alternate thoroughfare route from the west side of Zanesville to the north side of Zanesville. The proposed improvement(s) will enhance safety, provide appropriate access, and will reduce congestion.

Traffic projections indicate that County Road 144 (Dillon Falls Road) will have an average daily traffic volume of 4,600 vehicles per day in 2010. The current legal speed limit is 40 mph. It is anticipated the amount of traffic utilizing County Road 144 (Dillon Falls Road) will increase as the development continues on the North Pointe Drive corridor. The convenient location of County Road 144 (Dillon Falls Road) on the west side of the City of Zanesville provides direct access to the North Pointe Drive development. The existing functional classification of County Road 144 (Dillon Falls Road) from US Route 40 to County Road 35 (Pinecrest Drive) is rural minor collector. The existing functional classification from County Road 35 (Pinecrest Drive) to County Road 660 (Dillon School Drive) is urban collector. The existing functional classification for County Road 660 (Dillon School Drive) is urban collector. The rural minor collector/urban collector functional designation is used for roadways providing service to smaller communities to collect traffic with an emphasis on providing access to adjacent properties. The development trends and desire for convenient access to the North Pointe Drive area have resulted in County Road 144 (Dillon Falls Road) beginning to be more heavily utilized as a through route, connecting US Route 40 to State Route 146. As through traffic increases and mobility along the roadway becomes a concern, the roadway functional classification/utilization by the traveling public may result in the roadway becoming a major collector or minor arterial facility.

The existing roadway geometrics and appropriate design speed affect both the horizontal and vertical alignment deficiencies of the existing roadway. The existing pavement section has a lack of proper lane width and graded shoulder width for the traffic volume.

The existing roadway has several locations with multiple crash locations including a fatality.

VII. DESIGN CRITERIA

Design Data

The following design data has been used to develop the alternatives:

	County Road 144
Current ADT (2010)	4,600
Design Year ADT (2030)*	5,500
Design Hourly Volume (2030)	550
Directional Distribution	50%
Trucks (24-Hour B&C)	1%
Design Speed #	45 mph #
Legal Speed #	40 mph (existing)#
Design Functional Classification	Rural Minor Collector (See Note Below)

Note: The existing functional classification of County Road 144 is "Rural Minor Collector". With the anticipated increase in traffic volumes it is anticipated the roadway functional classification will become "Major Collector or Minor Arterial".

* Traffic volumes were expanded at a rate of 1.0% per year.
# Dependent on the selection of an improvement alternative. New alignment alternatives meet 45 mph or 55 mph design speed.

Typical Section

The existing typical section for County Road 144 (Dillon Falls Road) is two lanes centered on approximately 20 feet of existing pavement width, minimal graded shoulders, and roadside ditches. Two proposed typical sections are compared and evaluated for cost comparison of the short term improvements on County Road 144 (Dillon Falls Road). One proposed typical section (40 mph, 45 mph) is two 12-foot wide lanes, 2 feet wide aggregate shoulder, a 4 foot wide graded shoulder, and a 2 foot bottom width roadside ditch. The second proposed typical section (55 mph) consists of two 12-foot wide lanes, 6 feet wide aggregate shoulder, a 10 foot wide graded shoulder, and a 2 foot bottom width roadside ditch. The proposed foreslope grading for both proposed typical sections is 4:1 normal and

2:1 maximum. Guardrail/barrier would be required in areas of 2:1 foreslope grading or at physical obstructions. A drawing of the proposed County Road 144 (Dillon Falls Road) typical sections is included in the attachments.

Existing Railroad Underpasss Structure

The existing County Road 144 (Dillon Falls Road) underpass of the railroad has a lateral clearance of approximately 26+- feet. The existing concrete abutment for the railroad bridge has no roadside protection (barrier or guardrail). The minimum lateral clearance for the underpass in accordance with ODOT Location and Design Manual Volume 1 current design standards is a treated shoulder width plus the roadside barrier protection clearance distance. If a new railroad underpass structure was built the roadway opening would need to be built to a minimum width of 34' - 4" from the face of the abutment wall to the opposite face of the abutment wall. The existing vertical clearance is approximately 14+- feet. In accordance with ODOT Location and Design Manual Volume 1 current design standards the preferred vertical roadway clearance for a rural collector is 15 feet. If a railroad overpass was constructed a minimum width of 40 feet from the face of the parapet to face of parapet would be required. The railroad vertical clearance would need to be 23 feet in accordance with the railroad requirements.

Existing Licking River Overpass Structure

The existing County Road 144 (Dillon Falls Road) pony truss bridge over the Licking River will remain in place. Improvements to the existing County Road 144 (Dillon Falls Road) bridge over the Licking River are not a part of this study. The existing bridge width is approximately 32+- feet wide from face to face of the guardrail. The existing profile grade is constant downhill from west to east. The proposed County Road 144 (Dillon Falls Road) work will transition at each end of the existing bridge to match into the existing horizontal and vertical alignment.

Geotechnical Subsurface Investigation

No subsurface investigation was performed for this engineering study. Upon determination of a preferred alternative, subsurface investigation is recommended for final plan development.

VIII. HORIZONTAL ALIGNMENT

The proposed improvements for the short term, low cost alternatives will utilize the existing County Road 144 (Dillon Falls Road) roadway horizontal alignment. The proposed alignment consists of utilizing the existing tangents and modifying the curves to accommodate the maximum allowable degree of curve for the design speed utilized. The existing degree of curvature varies up to a maximum 30˚ 00' 00" curve. The maximum degree of curve for a 40 mph, 45 mph and a 55 mph design speed is 12˚ 45' 00", 9˚ 45' 00", and 6˚ 00' 00" respectively.

The proposed horizontal alignment for the long term, significant impact projects utilize a 55 mph design speed for the sections of the alternatives that are entirely on new alignment unless otherwise noted. The proposed horizontal alignment for the improvement alternatives will be designed to meet the selected design speed.

IX. VERTICAL ALIGNMENT

The proposed profile grades for the short term, low cost alternatives will extend from a proposed intersection at US Route 40, meet the profile grade at the Licking River bridge, and match into the existing County Road 660 (Dillon School Drive) profile grade salvaging as much of the existing profile grade as possible. A maximum profile grade of 9%will be utilized for the 40 mph design speed roadway and a maximum profile grade of 8% will be utilized for the 45 mph and 55 mph design speed .

The maximum proposed profile grade for the long term, significant impact alternatives is 8% associated with a 45 and 55 mph design speed.

Several items control the feasible proposed profile grades including: balancing earthwork; matching into the existing profile grades at each end of the project; the grading adjacent to the graded shoulders; and minimizing impacts to adjacent properties. The maximum cut and fill varies for each of the proposed alternatives due to the combination of grades and lengths of vertical curves required to meet the design speed. The maximum proposed cut and fill for the proposed vertical alignment alternatives are both associated with alternative 4. The maximum proposed fill is approximately 88 feet and the maximum proposed cut is approximately 78 feet. The impacts to adjacent properties due to grading could be reduced with the construction of retaining walls.

X. MAINTENANCE OF TRAFFIC

The new roadway vertical alignments will be constructed along the existing horizontal alignment for the short term, low cost alternatives. A road closure on County Road 144 (Dillon Falls Road) will be required to construct the cut and fill sections. Convenient adjacent routes will enable the existing roadway to be closed in logical segments without major impact to through traffic. Detour travel routes include the use County Road 420

(National Road), County Road 414 (Licking Road) and /or County Road 296 (Jersey Ridge Road), County Road 35 (Pinecrest Drive). The proposed project should be constructed in stages between logical locations (ie. sideroads, driveways, extensive amount of work areas) to limit impacts to the local traffic and allow the contractor to work efficiently. Property owner access will be maintained at all times during the construction of the project. Temporary drive connections will be provided as required during the construction to ensure access to the properties within the work area.

The long term, significant impact alternatives on new alignments can generally be constructed without disruption to through traffic. Construction at tie in locations may require short term detours. Railroad traffic may require a temporary runaround to construct roadway improvements.

XI. DRAINAGE

The proposed typical section will function similar to the existing conditions. Overland drainage will be collected in roadside ditches/storm sewers and conveyed to the existing drainage courses. The existing drainage items disturbed by the proposed work will be provided with positive drainage flowlines. Existing culvert conduits may require complete replacement or extension. Existing culverts on the existing County Road 144 (Dillon Falls Road) alignment include conduits at Station 6+25, 13+10, 31+50, 44+50, 61+50, and 2 locations on County Road 660 (Dillon School Drive).

Post construction storm water management may be necessary due to erosion control requirements and policies. Post construction requirements anticipated to be cost effective for this type of project would include vegetated biofilters, infiltration trench and possibly extended detention. The post construction storm water management items will be reviewed and applied to each alternative as necessary. Farm drains and residential drains affected by the proposed construction will be provided with a positive outlet.

XII. RIGHT OF WAY

Additional right of way will be required to construct the proposed improvements. The existing roadway right of way was determined to be 40 feet, 20 feet each side of the centerline as shown on the Muskingum County Road GIS files. The minimum width of proposed roadway right of way in accordance with the Muskingum County Subdivision Regulations is 50 feet, 25 feet each side of the centerline. Review of the various alignments indicate that a proposed 50 feet roadway right of way would accommodate very few locations throughout the project limits. A 60 feet roadway right of way will more adequately

accommodate the proposed roadway typical section. A 60 foot roadway right of way width is the normal right of way width for all the alternatives. The various alternatives provide differing profile grades which require additional right of way to provide access for construction and maintenance to the roadside ditches and culverts. Additional temporary right of way will be required to construct smooth transitions to existing drives and provide grading transitions from the new typical sections to match existing. Temporary right of way will only be required to allow for construction of the proposed improvements. The addition of retaining walls to large excavation or fill areas could be incorporated into the project to lessen the impacts to properties and reduce the amount of right of way. The use of retaining walls would allow more flexibility with the design elements but is typically higher cost than right of way acquisition. A summary of additional right of way table for each of the alternatives is included in the attachments.

The right of way impact for the proposed alternatives is summarized as follows:

Short Term, Low Cost Alternatives

	Alternative 40 mph	Alternative 45 mph	Alternative 55 mph
Total number of owners	52	52	52
Right of way acreage (Acres)	8.6	10.3	15.3
Commercial relocations	1	1	1
Residential relocations	0	1	3
Out building takes	2	3	5
Temporary Right of Way Required	Yes	Yes	Yes

All the short term, low cost alternatives depict the realignment of County Road 144 (Dillon Falls Road) at the US Route 40 intersection which will require the relocation of the West Side Market to construct County Road 144 (Dillon Falls Road) as the through roadway. The proposed intersection layout could be modified to avoid the West Side Market by maintaining County Road 144 (Dillon Falls Road) as the stop condition at County Road 296 (Jersey Ridge Road) or utilizing a unique County Road 144 (Dillon Falls Road) alignment connector to US Route 40 (US Route 40 Connector 1, Connector 2, Connector 3) that meets 45 mph normal design speed criteria. Residential relocations will not be necessary for the 40 mph alternative. The 45 mph and the 55 mph alternative will both require residential relocations. There will be impacts to several out buildings located along the project for all of the alternatives.

Long Term, Significant Impact Alternatives

	Alternative 1	Alternative 3	Alternative 3A	Alternative 4	Alternative 5	Alternative 5A
Total number of owners	34	26	30	20	36	36
Right of way acreage (Acres)	47.6	34.6	15.8	37.0	13.0	13.6
Commercial relocations	1	0	0	0	0	0
Residential relocations	0	1	1	0	1	1
Out building takes	1	3	2	1	2	2
Temporary Right of Way Required	Yes	Yes	Yes	Yes	Yes	Yes

Alternative 1 of the long term, significant impact alternatives depict the realignment of County Road 144 (Dillon Falls Road) at the US Route 40 intersection which will require the relocation of the West Side Market to construct County Road 144 (Dillon Falls Road) as the through roadway. The proposed intersection layout could be modified to avoid the West Side Market by maintaining County Road 144 (Dillon Falls Road) as the stop condition at County Road 296 (Jersey Ridge Road) or utilizing a unique County Road 144 (Dillon Falls Road) alignment connector to US Route 40 (US Route 40 Connector 1, Connector 2, Connector 3) that meets 45 mph normal design speed criteria. Residential relocations will only be necessary for alternative 3, 3A, 5 and 5A. Alternative 3, 3A 5 and 5A will require one residential relocation unless a modified alignment with possible reduced design speed requirements was utilized to avoid the relocation. Existing out buildings located along the project for all of the alternatives will be impacted. New alignment alternatives can be modified during final development to limit impacts to specific items if necessary.

XIII. UTILITIES

Through early utility coordination several private and public utilities were indicated as located within the proposed project area. Many of the utilities will require relocation/adjustment work with County Road 144 (Dillon Falls Road) improvement alternatives. The new alignment alternatives will also likely impact existing utility facilities. During detailed development actual locate information will be required to determine actual impacts and the potential to limit impacts to the utility facilities with design adjustments. High cost utility relocation items will need to be identified during preliminary detailed design development to limit improvement conflict.

The following is a brief overview of identified utilities:

A gas collection line is located adjacent to County Road 144 (Dillon Falls Road) near the existing oil/gas well. The proposed improvements may impact the gas collection line.

Columbia Gas has distribution gas lines located along and crossing under County Road 144 (Dillon Falls Road). The gas distribution lines are located at the north end of the project and may be impacted by the proposed improvements.

Power, telephone, and cable TV overhead lines on poles exist along County Road 144 (Dillon Falls Road). The utility poles will be affected by the proposed improvements and will require relocation. Underground telephone lines exist adjacent to portions of County Road 144 (Dillon Falls Road) and will require relocation. Underground electric lines exist adjacent to portions of State Route 146 and may require relocation.

Public waterline extends along County Road 144 (Dillon Falls Road). The proposed improvements are anticipated to impact the water line and require relocation/adjustment.

XVI. ENVIRONMENTAL CONCERNS

The amount of environmental coordination will be dependent upon funding sources utilized for the improvements.

Ecological Resources

The current land use along the alignment is residential, agricultural, and commercial. The proposed alignment and profile for the short term roadway improvements have been developed to provide the necessary improvement and limit impact outside of the existing right of way. By visual review of the project limits there may be impacts to ecological resource areas that may require additional study to determine the boundaries of any sensitive areas. The existing ditches adjacent to the roadways are maintained in generally fair condition. Existing culverts will need to be extended or replaced. New or modification of river crossings will require extensive coordination. The amount of additional studies will depend on the selected improvement alternative. The long term improvements will likely affect several ecological resources to provide a roadway that meets the appropriate future need. Design considerations can be incorporated during project development to limit the required impacts. Additional coordination will be necessary.

Cultural Resources

By visual review of the project limits there is no obvious evidence significant historic or archeological resources adjacent to roadway improvement. The majority of the corridor has earth disturbance by agriculture, residential, and commercial development. An existing cemetery was observed adjacent to County Road 296 (Jersey Ridge Road). The long term improvements will likely affect several cultural resources to provide a roadway that meets the appropriate future need. Design considerations can be incorporated during project development to limit the required impacts. Additional coordination will be necessary.

Site Assessment

By visual review of the project limits there is evidence of oil/gas well(s) and aboveground storage tanks. No visible petroleum stains or other hazardous waste problems are apparent within the limits of the proposed work. Due to the residential, commercial, and agricultural nature of the adjacent properties and the existing oil/gas well, there may be private underground storage tanks that exist on the properties surrounding the proposed project. The long term improvements will likely affect several hazardous material locations to provide a roadway that meets the appropriate future need. Design considerations can be incorporated during project development to limit the required impacts. Additional coordination will be necessary.

XV. LONG TERM SIGNIFICANT IMPACT IMPROVEMENTS

Several alternatives are included in the planning study that address the long term, significant impact options. The improvement alternative should be considered as long term solution for a major thoroughfare connection that will provide economic opportunities on the west side of the City of Zanesville. The conceptual alternatives were developed by considering locations that will provide convenient connection/travel routes between US Route 40 and State Route 146. The following is a highlight of the alternatives:

County Road 144 (Dillon Falls Road) - Alternative 1 combination of the existing alignment along with two sections of new alignment. Beginning at the intersection of County Road 144 (Dillon Falls Road) with Whites Road at US Route 40 and extending to the State Route 146 at the extended existing Military Road intersection.

County Road 144 (Dillon Falls Road) - Alternative 2 existing County Road 144 (Dillon Falls Road) alignment with the construction of a new structure over the Licking River at the previous bridge location. O ne way traffic pattern on Dillon School Drive, on the existing bridge, on the new bridge, and on Falls Lane.

County Road 144 (Dillon Falls Road) - Alternative 3 new alignment beginning at the existing intersection of US Route 40 at Kopchak Road to a location where it would merge onto the existing County Road 144 (Dillon Falls Road) alignment, new alignment extending north, crossing the railroad and the Licking River intersecting State Route 146 at the existing North Pointe Drive intersection.

County Road 144 (Dillon Falls Road) - Alternative 3A new alignment beginning at the existing intersection of US Route 40 at Kopchak Road to a location where it would merge onto the existing County Road 144 (Dillon Falls Road) alignment. The existing County Road 144 (Dillon Falls Road) alignment developed for the Alternative 45 mph alignment would be utilized from this location ahead to the intersection with County Road 660 (Dillon School Drive).

County Road 144 (Dillon Falls Road) - Alternative 4 new alignment beginning at a new intersection with US Route 40 approximately 700 feet east of the existing US Route 40 at County Road 144 (Dillon Falls Road) intersection extending north to form a new intersection with existing County Road 144 (Dillon Falls Road) east of Kingsview Drive. New alignment will continue north, crossing the railroad and the Licking River intersecting State Route 146 at the existing North Pointe Drive intersection.

County Road 144 (Dillon Falls Road) - Alternative 5 new 55 mph horizontal alignment beginning at a new intersection with US Route 40 similar to Alternative 4 approximately 700 feet east of the existing US Route 40 at County Road 144 (Dillon Falls Road) intersection. Extending north to a location where it will merge onto the existing County Road 144 (Dillon Falls Road) alignment. The existing County Road 144 (Dillon Falls Road) alignment developed for the Alternative 45 mph alignment would be utilized from this location ahead to the intersection with County Road 660 (Dillon School Drive).

County Road 144 (Dillon Falls Road) - Alternative 5A new 45 mph horizontal alignment beginning at a new intersection with US Route 40 similar to Alternative 4 approximately 700 feet east of the existing US Route 40 at County Road 144 (Dillon Falls Road) intersection. Extending north to a location where it will merge onto the existing County Road 144 (Dillon Falls Road) alignment. The existing County Road 144 (Dillon Falls Road) alignment developed for the Alternative 45 mph alignment would be utilized from this location ahead to the intersection with County Road 660 (Dillon School Drive).

County Road 660 (Dillon School Drive) - Alternative 1 flattens out the existing curve to meet a 40 mph design speed at the northwest corner of the existing school building and eliminates the reverse curve on the approach to the State Route 146 intersection.

County Road 660 (Dillon School Drive) - Alternative 2 flattens out the existing curve to meet a 45 mph design speed at the northwest corner of the existing school building and

eliminates the reverse curve on the approach to the State Route 146 intersection.

County Road 660 (Dillon School Drive) - Alternative 2A flattens out the existing curve to meet a 45 mph design speed at the northwest corner of the existing school building and eliminates the reverse curve on the approach to the State Route 146 intersection. This new alignment would be contingent upon the removal of the existing school building.

County Road 660 (Dillon School Drive) - Alternative 3 is contingent upon the removal of the existing school building. This alignment would eliminate the existing tee intersection formed by County Road 144 (Dillon Falls Drive) at County Road 660 (Dillon School Drive) and replace the intersection with reverse curves suitable for a design speed of 45 mph.

County Road 660 (Dillon School Drive) - Alternative 4 is contingent upon the removal of the existing school building. This alignment would eliminate the existing tee intersection formed by County Road 144 (Dillon Falls Drive) at County Road 660 (Dillon School Drive) and replace the intersection with reverse curves. The curve nearest to the intersection would suitable for a design speed of 40 mph.

County Road 144 (Dillon Falls Road)/US Route 40 Connector - Alternative 1 maintains the location of the existing intersection of County Road 144 (Dillon Falls Drive) and US Route 40; shifts and flattens out the existing curve to the northeast at County Road 296 (Jersey Ridge Road) and matches into the existing alignment of County Road 144 (Dillon Falls Drive). The curve is suitable for a design speed of 45 mph.

County Road 144 (Dillon Falls Road)/US Route 40 Connector - Alternative 2 relocates the existing intersection of County Road 144 (Dillon Falls Drive) and US Route 40; shifts and flattens out the existing curve to the northwest at County Road 296 (Jersey Ridge Road) and matches into the existing alignment of County Road 144 (Dillon Falls Drive). The curve is suitable for a design speed of 45 mph.

County Road 144 (Dillon Falls Road)/US Route 40 Connector - Alternative 3 relocates the existing intersection of County Road 144 (Dillon Falls Drive) and US Route 40; shifts with a reverse curvature the roadway to the northwest at County Road 296 (Jersey Ridge Road) and matches into the existing alignment of County Road 144 (Dillon Falls Drive). The reverse curves are suitable for a design speed of 45 mph.

Each of the long term, significant impact alternatives provide suitable horizontal and vertical alignments for the selected design speed. The alternatives address several areas of project development need. The specific areas of need for the long term alternatives can be broken down into categories. The first category is new/improved access from US Route 40 to County Road 144 (Dillon Falls Road). The second category is new/improved alignment of County Road 144 (Dillon Falls Road) to the intersect State Route 146. The

third category is the intersection of County Road 144 (Dillon Falls Road)/County Road (Dillon School Drive) with State Route 146. The fourth category is access including trucks to land for economic opportunities.

The long term, significant impact alternatives are presented as independent additions and are not an exhaustive evaluation of all possibilities. Further study will be necessary to determine the "preferred" route of the proposed alignment. Study considerations should include such items as environmental coordination and funding sources. See the attachments for the conceptual alignment alternatives.

XVI. CONCLUSIONS

The engineering study presents short term, low cost alternatives and long term significant impact alternatives to provide an adequate roadway from US Route 40 to State Route 146 on the west side of the City of Zanesville. Various factors have been considered through the preliminary development of conceptual alternatives. The “Improvement Alternatives Summary Table” on page 5-6 summarizes the key elements for each alternative in the report and compares the alternatives to allow for determining a preferred alternative.

An important consideration for any proposed project is the estimated construction cost associated with the proposed work. The design speed chosen to develop the project has a major affect on the project cost. County Roads typically have an operating speed of 55 mph, Municipal Roads typically have a 35 mph speed limit. These typical speed limits are in accordance with the Ohio Manual of Uniform Traffic Control Devices. The existing roadway has a posted speed limit of 40 mph. It is desirable to increase the posted speed limit to 45 mph. A reduced speed needs to evaluate the existing speed of traffic, determination of comfortable driving speeds for the surrounding conditions, review of accident data, permit safety access to adjacent properties, and adequate for the traffic volume utilizing the facility. The reduction in design speed reduces the construction cost of the project. Based upon project site visit it is apparent the existing surrounding conditions specifically the roadway geometry require the traveling public to reduce their operating speed. Utilizing a speed limit below 55 mph will require a journalized speed limit.

To reduce project cost an option for the proposed improvements would be to use a design speed which is less than the actual speed limit for the facility or journalize a lower speed limit. This use of a design speed which is less than the actual speed limit for the facility acknowledges the speed limit and addresses the areas where the design of the proposed roadway would not meet the speed limit. An exception for the design of the roadway below the standards of the speed limit needs to be justified to the local authority, County or ODOT. Justification generally includes review of accident data, the future traffic safety that could be provided by the other improvements of the project, the impact to adjoining property that compliance to the design speed would cause, and any other pertinent information. Approval of an exception for the design of the roadway by the local authority would allow for the speed limit to remain and design standards for the proposed roadway design be based upon a lower design speed. Exceptions to the design standards are generally applied for in identified specific locations within a project and are

not used to reduce the project design standards.

To understand the cost difference that the various design speeds have on the project several short term, low cost improvement alternatives have been identified in the study. Costs associated with design speeds from 40 mph to 55 mph have been included for comparison.

Each of the short term, low cost improvement alternatives will improve the functionally deficient roadway. The development of the roadway to meet a specific design speed requirement will impact the amount of work that will be required to improve the roadway. The existing roadway with a posted 40 mph speed limit has deficient stopping sight distance associated with the profile grade at 13 locations. The intersection stopping sight distance is limited at Kingsview Drive. The existing stopping sight distance at Kingsview Drive looking southwest is 395 feet and meets a design speed of 35 mph limited by the existing profile grade. The proposed improvements to the County Road 144 (Dillon Falls Road) profile grade will correct the stopping sight distance by flattening the vertical curve to meet the selected alternative design speed. This will increase the amount of earthwork and extent of work to connect Kingsview Drive to the updated profile grade on County Road 144 (Dillon Falls Road).

The variation in roadway typical section will determine the character of the roadway. Existing County Road 144 (Dillon Falls Road) is a narrow roadway with limited graded shoulder and a roadside ditch. Use of a typical section with increased graded shoulder width will improve safety by providing additional recovery area for the traveling public but will increase the construction and the amount of right of way required to construct the improvements. Retaining walls which add project cost could be utilized in specific areas to limit impacts to adjacent properties to construct the required improvements.

The alignment alternatives range in estimated project cost from approximately $6,500,000 to $8,500,000. Logical staged construction projects can be developed to utilize available funding. Prioritization of the proposed improvements could be determined by considering safety, access, increased capacity, economic opportunities. Potential projects may entail logical separation of work such as right of way acquisition; drainage improvements; improvements between sideroads or driveways; addressing specific design deficient areas; or separation by ease/intensity of construction. Apparent logical locations would be improvements at the horizontal curve locations and at specific vertical curve locations. Further determination of design deficient areas such as the intersections could be used to determine potential individual projects.

Improvements to the existing County Road 144 (Dillon Falls Road) railroad underpass will be long term implementation items. The underpass opening is less than the design standard and would require complete replacement to meet the normal design criteria for the roadway facility. The anticipated cost for this improvement would also need to accommodate a temporary railroad run around during construction. The estimated cost to replace the existing County Road 144 (Dillon Falls Road) railroad underpass structure would be approximately $3,000,000 not including right of way cost. Extensive

embankment would be required on the roadway approaches to meet the elevation of the existing tracks if an at-grade crossing of County Road 144 (Dillon Falls Road) with the railroad would be permitted at the existing roadway location. To limit the affect on the sideroad intersections the roadway profile grade would need to meet a 40 mph design speed. Extensive retaining walls would be required to construct the improvements without major impacts to the adjacent properties. The anticipated cost to construct an at-grade crossing of County Road 144 (Dillon Falls Road) with the railroad would be approximately $2,000,000 not including right of way cost.

Improvements to the existing County Road 144 (Dillon Falls Road) Licking River crossing will be long term implementation items. The existing bridge has a general appraisal of 7A which indicates it is in good condition with no restrictions. As the bridge general appraisal decreases the options for the County Road 144 (Dillon Falls Road) river crossing should be reviewed. The options beyond repair of the existing bridge include construction of a new wider bridge or a new river crossing bridge adjacent to the existing bridge. The new wider bridges would accommodate maintenance of traffic during bridge inspection and maintenance repairs. The anticipated cost to construct a new wider County Road 144 (Dillon Falls Road) river crossing would be approximately $2,000,000. The new bridge construction may not require extensive additional right of way.

The proposed long term, significant impact alternatives should be considered when determining the preferred short term improvement to allow for proper future planning of the anticipated development corridor/outerbelt. The future planning may provide for possible modifications to the proposed alignment alternatives to meet the anticipated future requirements. The long term improvements vary from improvements to County Road 660 (Dillon School Drive) to construction of a new roadway on a new alignment. The long term improvements vary in estimated cost from $1,000,000 To $46,000,000.

Review of the factors identified in the engineering study of feasible alternatives will enable the County to determine the "preferred alternative" and prepare a detailed scope of work for final plan development.

XVII. COST

Itemized opinions of probable construction cost are included in the attachment. Construction costs are based on the ODOT Summary of Contracts awarded, 2006, adjusted at a rate of 27% to arrive at a construction year of 2010. The predicted inflation rates are based upon ODOT office of estimating tables published 6/26/06. The estimated permanent right of way cost is based upon the acreage impact and average value for properties along the roadway obtained from the Muskingum County Auditor. A summary of the proposed cost is as follows:

Short Term, Low Cost Alternatives

	Alternative 40 mph	**Alternative 45 mph**	**Alternative 55 mph**
Preliminary Engineering (12%)	$461,520	$491,880	$627,600
Construction	$3,028,000	$3,227,000	$4,118,000
Inflation (27%)	$818,000	$872,000	$1,112,000
Total Construction	$3,846,000	$4,099,000	$5,230,000
Estimated Utility Adjustment (power, cable, telephone, gas)	$150,000	$150,000	$150,000
Estimated Permanent Right of Way (Includes 1 total take)	$1,626,000	$1,659,000	$2,109,000
Construction Engineering (11%)	$423,060	$450,890	$573,300
Estimated Project Cost	**$6,506,580**	**$6,850,770**	**$8,691,900**

County Road 144 (Dillon Falls Road)
Long Term, Significant Impact Alternatives

	Alternative 1	Alternative 2	Alternative 3	Alternative 3A	Alternative 4
1. Preliminary Engineering (12%)	$4,215,000	$214,080	$3,130,680	$845,280	$3,296,880
2. Construction	$27,657,000	$1,404,000	$20,542,000	$5,546,000	$21,633,000
Inflation (27%)	$7,468,000	$380,000	$5,547,000	$1,498,000	$5,841,000
Total Construction	$35,125,000	$1,784,000	$26,089,000	$7,044,000	$27,474,000
3. Estimated Utility Adjustment (power, cable, telephone, gas)	$150,000	$25,000	$150,000	$150,000	$150,000
4. Estimated Right of Way Cost	$2,368,000	$20,000	$663,000	$308,000	$713,000
5. Construction Engineering (11%)	$3,863,750	$196,240	$2,869,790	$774,840	$3,022,140
Estimated Project Cost	**$45,721,750**	**$2,239,320**	**$32,902,470**	**$9,122,120**	**$34,656,020**

County Road 144 (Dillon Falls Road)
Long Term, Significant Impact Alternatives (cont.)

	Alternative 5	Alternative 5A
1. Preliminary Engineering (12%)	$711,000	$686,760
2. Construction	$4,665,000	$4,506,000
Inflation (27%)	$1,260,000	$1,217,000
Total Construction	$5,925,000	$5,723,000
3. Estimated Utility Adjustment (power, cable, telephone, gas)	$150,000	$150,000
4. Estimate Right of Way Cost	$260,000	$271,000
5. Construction Engineering (11%)	$651,750	$629,530
Estimated Project Cost	**$7,697,750**	**$7,460,290**

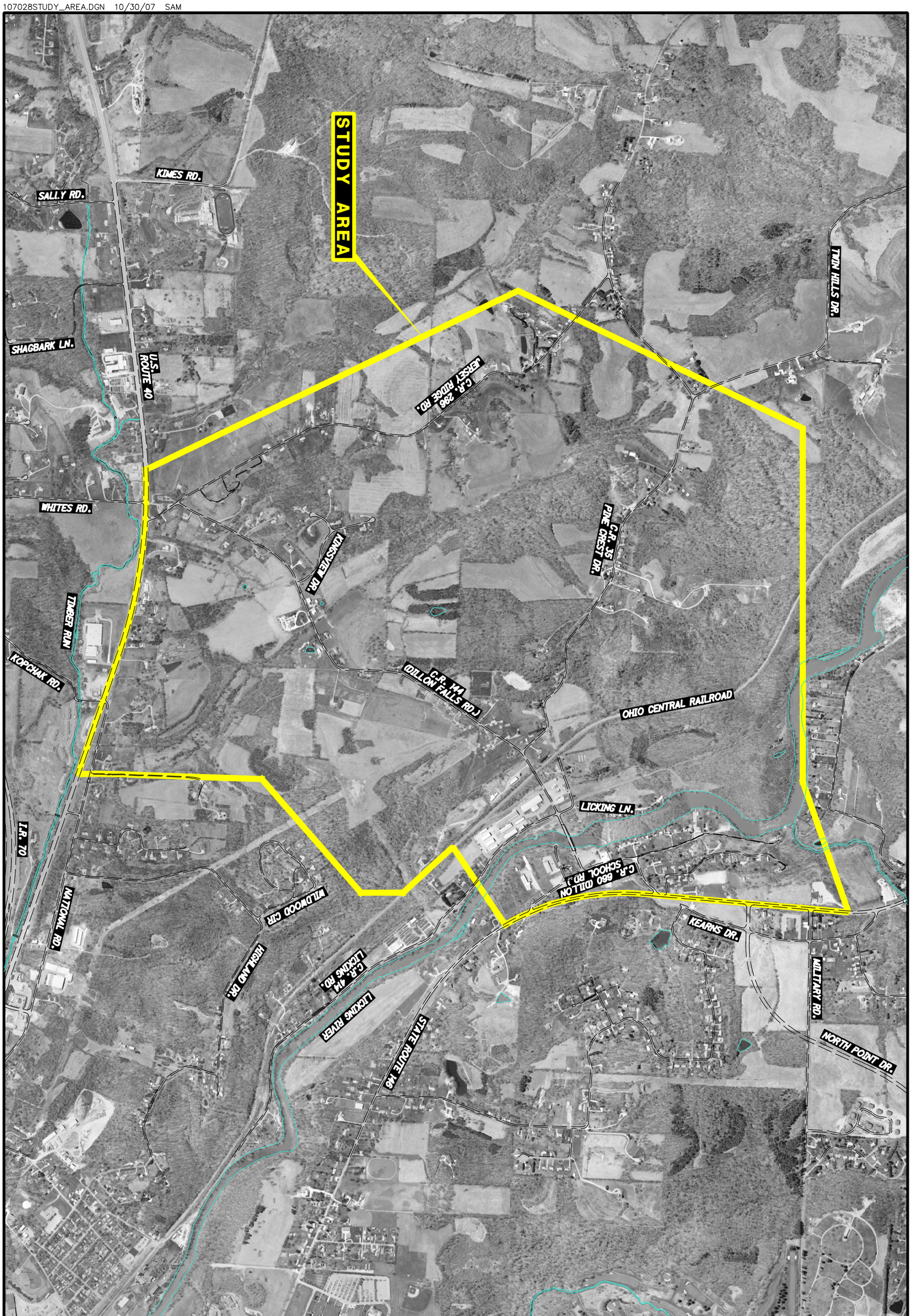
County Road 144 (Dillon Falls Road)
Long Term Significant Impact Alternatives

	CR660 (Dillon School Dr.) Alternative 1	CR660 (Dillon School Drive) Alternative 2	CR660 (Dillon School Drive) Alternative 2A	CR660 (Dillon School Drive) Alternative 3	CR660 (Dillon School Drive) Alternative 4
1. Preliminary Engineering (12%)	$101,280	$111,720	$109,440	$147,600	$147,600
2. Construction	$664,000	$733,000	$718,000	$968,000	$968,000
Inflation (27%)	$180,000	$198,000	$194,000	$262,000	$262,000
Total Construction	$844,000	$931,000	$912,000	$1,230,000	$1,230,000
3. Estimated Utility Adjustment (power, cable, telephone, gas)	$50,000	$50,000	$50,000	$50,000	$50,000
4. Estimated Right of Way Cost	$51,000	$51,000	$953,000	$953,000	$953,000
5. Construction Engineering (11%)	$92,840	$102,410	$100,320	$135,300	$135,300
Estimated Project Cost	**$1,139,120**	**$1,246,130**	**$2,124,760**	**$2,515,900**	**$2,515,900**

County Road 144 (Dillon Falls Road)
Long Term Significant Impact Alternatives (cont.)

	CR144 (Dillon Falls Road)/US40 Alternative 1	CR144 (Dillon Falls Road)/US40 Alternative 2	CR144 (Dillon Falls Road)/US40 Alternative 3
1. Preliminary Engineering (12%)	$72,000	$69,960	$70,800
2. Construction	$472,000	$459,000	$464,000
Inflation (27%)	$128,000	$124,000	$126,000
Total Construction	$600,000	$583,000	$590,000
3. Estimated Utility Adjustment (power, cable, telephone, gas)	$50,000	$50,000	$50,000
4. Estimated Right of Way Cost	$674,000	$77,000	$13,000
5. Construction Engineering (11%)	$66,000	$64,130	$64,900
Estimated Project Cost	**$1,462,000**	**$844,090**	**$787,700**

107028STUDY_AREA.DGN 10/30/07 SAM



	MUS-C.R. 144	STUDY AREA MAP	CALCULATED CHECKED 0 600 300 1200 HORIZONTAL SCALE IN FEET

HORIZONTAL SCALE IN FEET
0 100 200
CALCULATED
CHECKED

C.R. 144 (DILLON FALLS RD.)
EXISTING DESIGN DEFICIENCIES

MUS-C.R. 144

D7\028PLAN_EXIST_DEFICIENCIES.DGN 5/21/07 SAM

	PID No.		MUS-CR-144 Design Criteria Matrix							5-May-07
			Designed:	TW		Checked:			Reviewed:	
			Existing condition	55 mph Design	45 mph Design	40 mph Design				
	Item	L&D Reference	County Road 144 (Dillon Falls Road)							
100	Functional Classification	101.2, 101.3 & 503.2	Rural Minor Collector							
	Average Daily Traffic - Opening Day	102.2	4600	4600	4600	4600				
	Average Daily Traffic - 20 year	102.2	5500	5500	5500	5500				
	Design Hourly Volume	102.2	*							
	T(24)	102.2	*							
	T(D)	102.2	*							
	Directional Design Hourly Volume	102.2	*							
	Terrain	103.2	Hilly	Hilly	Hilly	Hilly				
	Design Speed	104-2, 503.2, 503-1	Varies	55	45	40				
	Legal Speed	104-2	55 mph	55 mph	45 mph	40 mph				
200	Stopping Sight Distance	201-1		495'	360'	305				
	Horizontal Sight Distance	201-2	See Note 1	See Note 1	See Note 1	See Note 1				
	Minimum Passing Sight Distance	201-3		1985'	1625'	1470'				
	Intersection Sight Distance	201-5	-	610'	500'	445'				
	Decision Sight Distance (Rural Stop)	201-6	-	535'	395'	330'				
	Decision Sight Distance (Rural speed/path/direction change)	201-6		865'	675'	600'				
	Maxiumum Centerline Deflection without Horizontal Curve	202-1		1º00'	1º45'	2º15'				
	Maximum Degree of Curve	202.4.1, 202-8, 202-10	30º00'	6º00'	9º45'	12º45'				
	Maximum Degree of Curve without Superelevation	202-3	N/A	0º38'	0º55'	1º08'				
	Maximum relative gradient for Superelevation	202-4	N/A	0.47	0.54	0.58				
	Superelevation Table & Max Super	202.4	N/A	202-7E (8%)	202-7E (8%)	202-7E (8%)				
	Desirable Grade Up	203-1, 503.3		7%	8%	8%				
	Maximum Grade Up	203-1, 503.3	10.98%	8%	9%	9%				
	Desirable Grade Down	203-1, 503.3		7%	8%	8%				
	Maximum Grade Down	203-1, 503.3	9.47%	8%	9%	9%				
	Maximum Change in Vertical Alignment without Vertical Curve	203-2		0.4%	0.55%	0.75%				
	Minimum Length of Vertical Curve	203.3.3 & 203.3.4		3X Design Speed	3X Design Speed	3X Design Speed				
	Minimum "K" value for crest vertical curve (SSD)	203-3		114	61	44				
	Minimum "K" value for sag vertical curve (SSD)	203-6		115	79	64				
300	Level of Service Minimum	301-1		C	C	C				
	Lane Width	301-2, 303-1		12'	12'	12'				
	Pavement Transition/Taper Rates	301.1.4		L=WS (dcrse) 5:1 (widen)	L=WS^2/60 (dcrse) 5:1 (widen)	L=WS^2/60 (dcrse) 5:1 (widen)				
	Graded shoulder width (with barrier or foreslope steeper than 6:1)	301-3, 303-1	1'	10'	10'	10'	Utilize footnote (l)			
	Treated shoulder width (with barrier or foreslope steeper than 6:1)	301-3, 303-1	0'	6'	6'	6'	Utilize footnote (l)			
	Graded shoulder width (without barrier and foreslope flatter than 6:1)	301-3, 303-1		6'	6'	6'	Utilize footnote (l)			
	Treated shoulder width (without barrier and foreslope flatter than 6:1)	301-3, 303-1		6'	6'	6'	Utilize footnote (l)			
	Normal Barrier Offset	301-3, 303-1		8'	8'	8'	Utilize footnote (l)			
	Minimum Curbed Shoulder Width	301-4		N/A	N/A	N/A				
	Normal Cross Slope	301-6		0.016	0.016	0.016				
	Vertical clearance over surfaced roadway	302-1		15' prefered	15' prefered	15' prefered				
	Criteria for existing bridges - Lateral Clearance	302-3		3'	3'	3'	Bridge exceeds 100 ft. length			
	Criteria for existing bridges - Vertical Clearance	302-3		14'	14'	14'				
	Sidewalk buffer	306-2	-	2'	2'	0				
	Cross-slopes adjacent to curbs	307-6		N/A	N/A	N/A				
600	Clear Zone Width (foreslope)	600-1		21 / 27	17 / 23	13 / 15				
	Concrete Barrier Flare Rate	602-1		16:1	13:1	11:1				
	Guardrail Flare Rate	602-1		12:1	10:1	9:1				
	* Traffic Data required									
	Note 1	Horizontal stopping sight distance is determined on a case by case basis								

BR-86 REV. 06-01

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

BRIDGE INSPECTION REPORT

6040071 BRIDGE NUMBER FAL C0035 S159 YEAR BUIL 99

STRUCTURE FILE NUMBER TWP ROUTE UNIT

DIST 5 BRIDGE TYPE 344 TYPE SERVICE 15 LICKING RIVER

DECK

1. FLOOR	8	1	2. WEARING SURFACE	41	2
3. CURBS, SDWKS., _WLKWYS.	9	1	4. MEDIAN	42	
5. RAILING	10	1	6. DRAINAGE	43	1
7. EXPANSION JOINT	11	1	**8. SUMMARY**	44	7

SUPERSTRUCTURE

9. ALIGNMENT	12	1	10. BEAMS/GIRDERS/SLAB	45	
11. DIAPHRAMS or CROSSFRAMES	13		12. JOISTS/STRINGERS	46	1
13. FLOOR BEAMS	14	1	14. FLOOR BEAM CONNECTORS	47	1
15. VERTICALS	15	1	16. DIAGONALS	48	1
17. END POSTS	16	1	18. TOP CHORD	49	1
19. LOWER CHORD	17	1	20. LOWER LATERAL BRACING	50	1
21. TOP LATERAL BRACING	18		22. SWAY BRACING	51	
23. PORTALS	19		24. BEARING DEVICES	52	1
25. ARCH	20		26. ARCH COLUMNS or HANGERS	53	
27. SPANDREL WALLS	21		28. PROTECTIVE COATING SYSTEM	54	8
29. PINS/HANGERS/HINGES	22		30. FATIGUE PRONE CONNECTORS	55	1
31. LIVE LOAD RESPONSE	23	S	**32. SUMMARY**	56	9

SUBSTRUCTURE

33. ABUTMENTS	24	1	34. ABUTMENT SEATS	57	1
35. PIERS	25	1	36. PIER SEATS	58	1
37. BACKWALLS	26	1	38. WINGWALLS	59	1
39. FENDERS and DOLPHINS	27		40. SCOUR	60	1
41. SLOPE PROTECTION	28	1	**42. SUMMARY**	62	9

CULVERTS

43. GENERAL	29		44. ALIGNMENT	63	
45. SHAPE	30		46. SEAMS	64	
47. HEADWALLS or ENDWALLS	31		48. SCOUR	65	
49. BLANK	32		**50. SUMMARY**	66	

CHANNEL

51. ALIGNMENT	33	1	52. PROTECTION	67	1
53. WATERWAY ADEQUACY	34	1	**54. SUMMARY**	68	9

APPROACHES

55. PAVEMENT	35	1	56. APPROACH SLABS	69	1
57. GUARDRAIL	36	1	58. RELIEF JOINTS	70	
59. EMBANKMENT	37		**60. SUMMARY**	71	7

GENERAL

61. NAVIGATION LIGHTS	38		62. WARNING SIGNS	72	
63. SIGN SUPPORTS	39		64. UTILITIES	73	
65. VERTICAL CLEARANCE	40	N	**66. GENERAL APPR. AND OPERATIONAL STATUS**	74	7A

67. INSPECTED BY

SIGNED 76 P [ ] 78 INITIAL [R E W]

DATE 03-12-07 (81 91)

68. REVIEWED B

SIGNED 81 P [PE] 83 INITIAL [D R D]

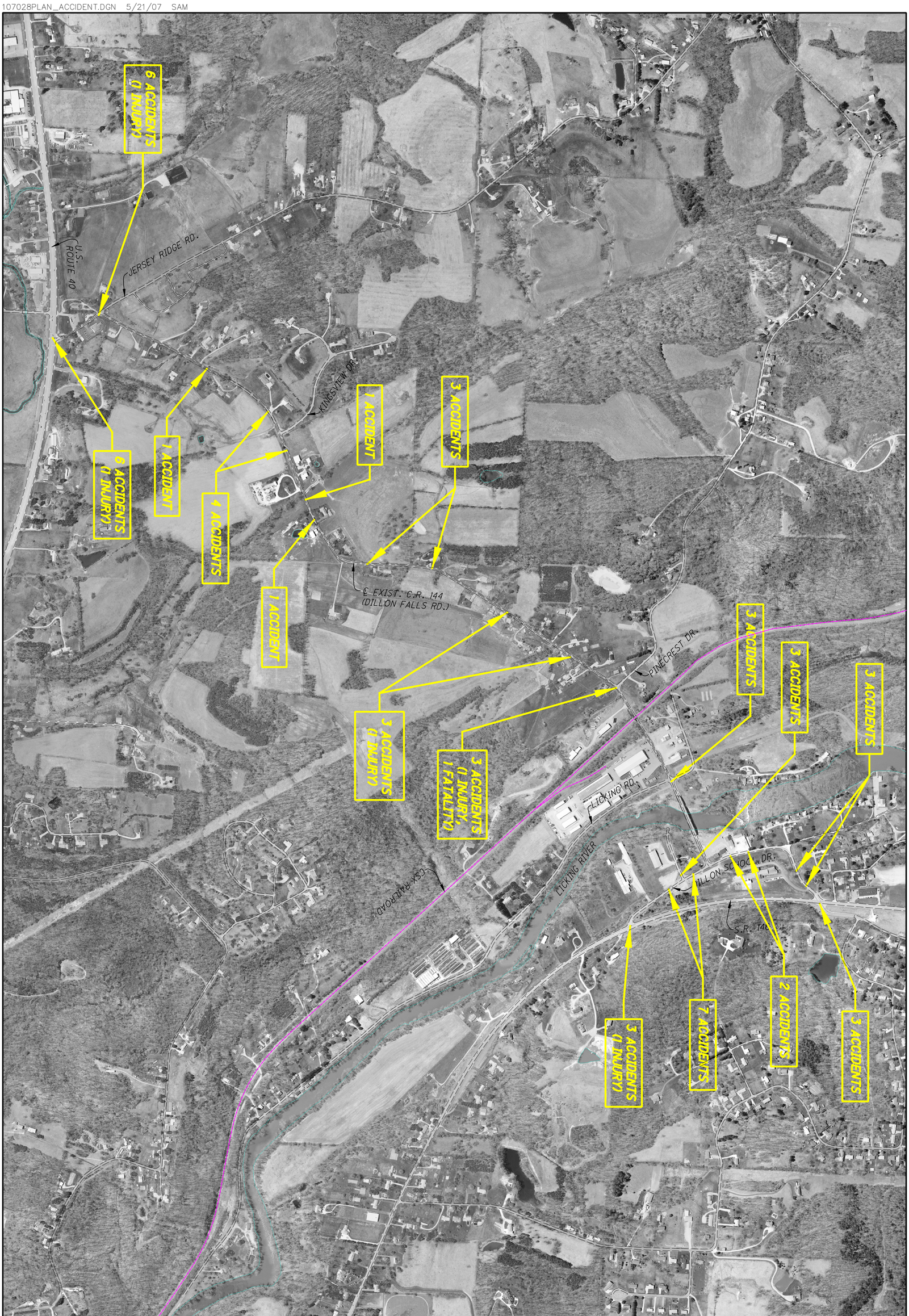
DATE 03-14-07 (100 105)

92 69. SURVEY 11111110 9

INSPECTOR'S PE NO

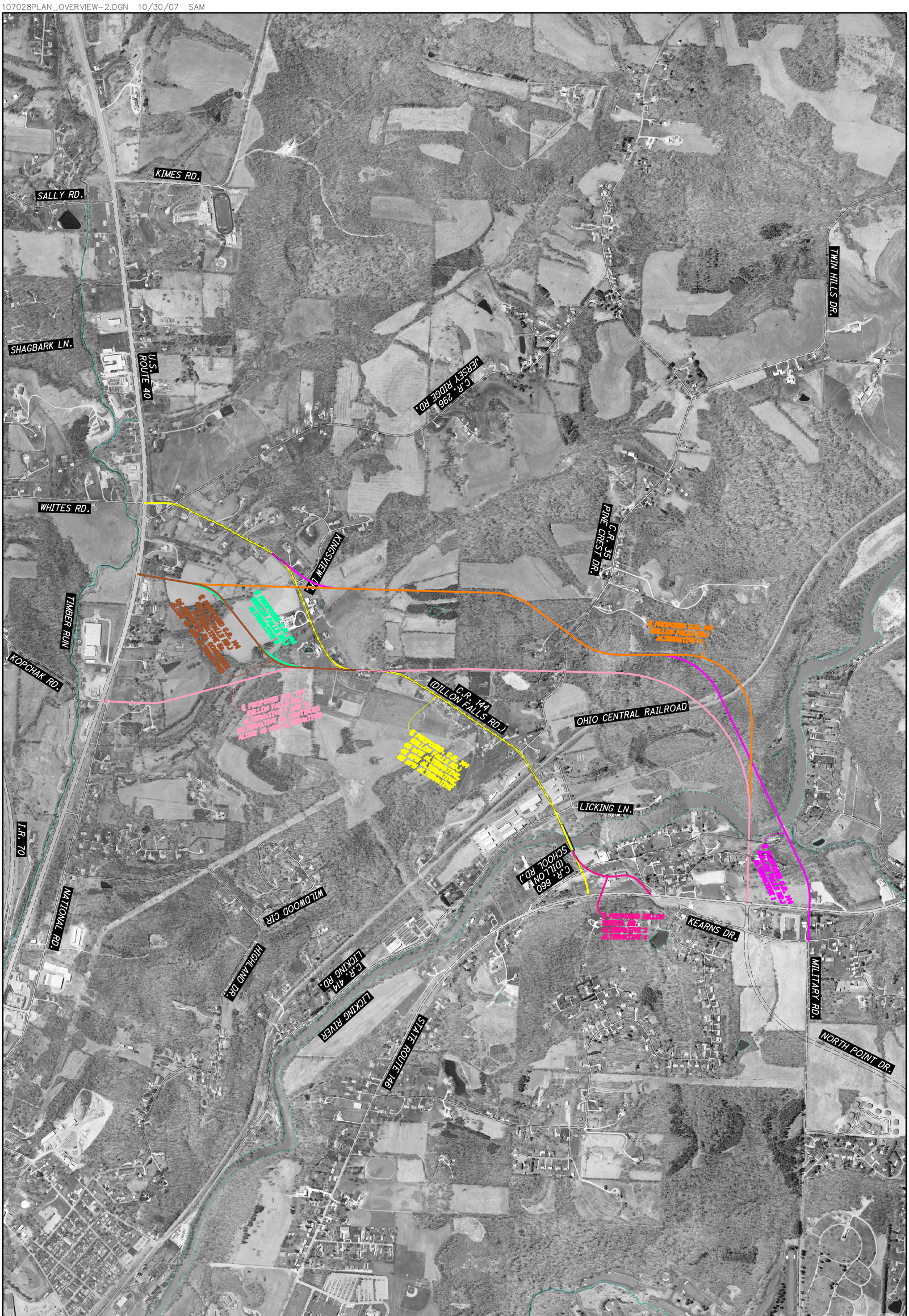
REVIEWER'S PE NO 56345

107028PLAN_ACCIDENT.DGN 5/21/07 SAM



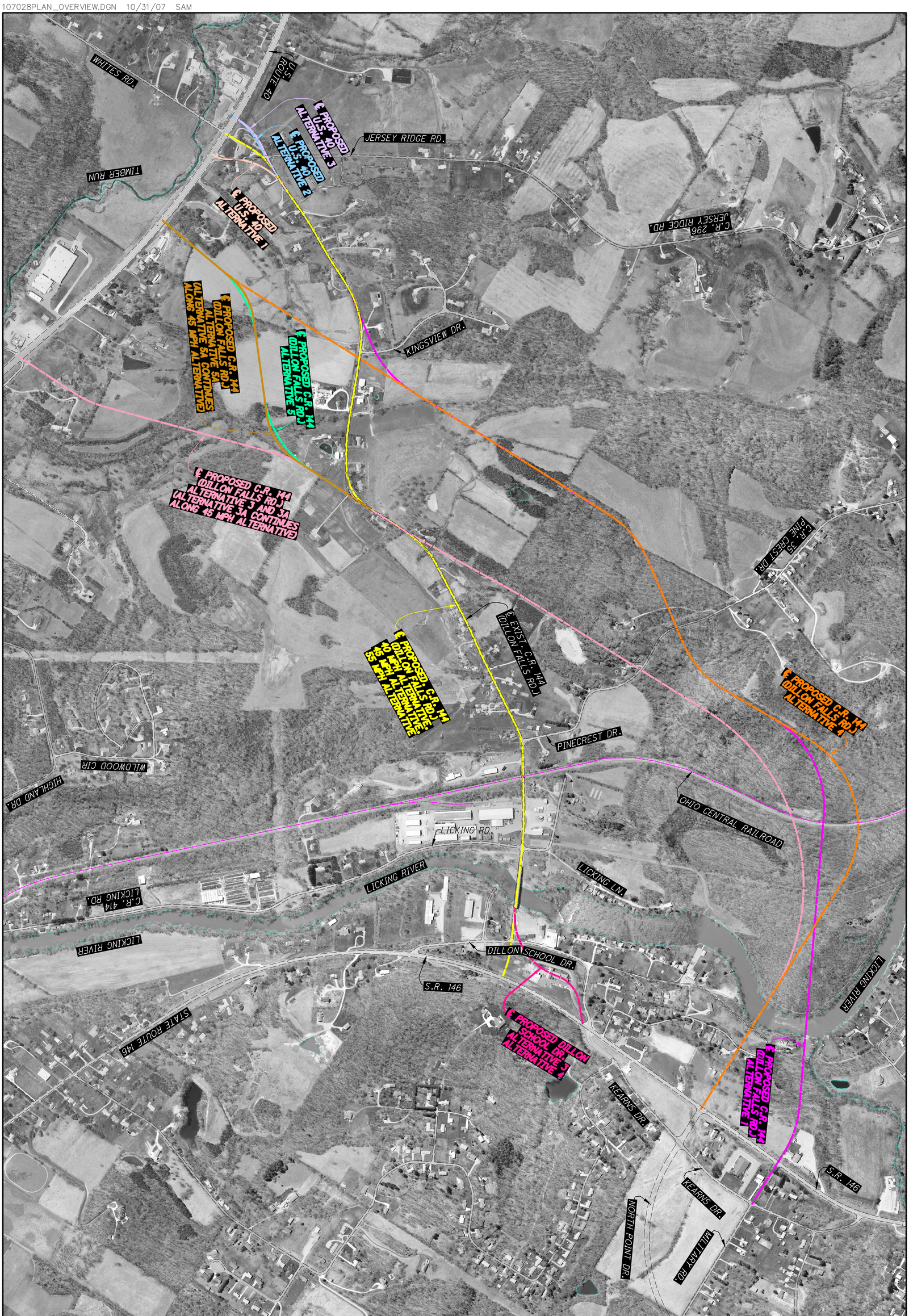
	MUS-C.R. 144	C.R. 144 (DILLON FALLS RD.) ACCIDENT DIAGRAM	CALCULATED / CHECKED	0 400 200 800 HORIZONTAL SCALE IN FEET

107028PLAN_OVERVIEW-2.DGN 10/30/07 SAM



	MUS-C.R. 144	C.R. 144 (DILLON FALLS RD.) PLAN OVERVIEW MAP	CALCULATED / CHECKED	0 600 300 1200 HORIZONTAL SCALE IN FEET

107028PLAN_OVERVIEW.DGN 10/31/07 SAM



	MUS-C.R. 144	C.R. 144 (DILLON FALLS RD.) PLAN OVERVIEW MAP	CALCULATED / CHECKED	0 400 200 800 HORIZONTAL SCALE IN FEET

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 40MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	491,000.00
EROSION CONTROL		$	576,000.00
DRAINAGE		$	135,000.00
PAVEMENT		$	797,000.00
TRAFFIC CONTROL		$	15,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	21,000.00
MISCELLANEOUS		$	220,000.00
DESIGN CONTINGENCY (30%)		$	698,000.00
	2007 SUBTOTAL	$	3,028,000.00
INFLATION TO 2010 (27%)		$	818,000.00
	CONSTRUCTION SUBTOTAL	**$**	**3,846,000.00**
PERMANENT RIGHT OF WAY (1 TOTAL TAKE)		$	1,248,000.00
TEMPORARY RIGHT OF WAY		$	32,000.00
INFLATION TO 2010 (27%)		$	346,000.00
	RIGHT OF WAY SUBTOTAL	**$**	**1,626,000.00**
	TOTAL PROJECT COST	**$**	**5,472,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 40 MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 45,000.00	LS	$ 45,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	36594	$ 209,317.68
203	CY	EMBANKMENT	$ 6.49	24669	$ 160,101.81
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
610	SQ FT	RETAINING WALL	$ 75.00	1000	$ 75,000.00
					$ 490,434.89
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	38708	$ 380,499.64
659	SY	SEEDING AND MULCHING	$ 0.40	348717	$ 139,486.80
659	TON	COMMERCIAL FERTILIZER	$ 283.66	48	$ 13,615.68
659	ACRE	LIME	$ 50.84	73	$ 3,711.32
659	MGAL	WATER	$ 1.59	1884	$ 2,995.56
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	20000	$ 20,000.00
					$ 575,309.00
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	1104	$ 41,952.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	224	$ 13,139.84
603	FT	18" CONDUIT, TYPE A	$ 58.46	224	$ 13,095.04
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	8	$ 8,726.24
604	EACH	MANHOLE, NO. 3	$ 2,641.88	8	$ 21,135.04
605	FT	AGGREGATE DRAINS	$ 7.13	163	$ 1,162.19
					$ 134,205.35
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	3772	$ 348,645.96
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	184	$ 27,088.48
304	CY	AGGREGATE BASE	$ 35.72	4107	$ 146,702.04
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1087	$ 1,239.18
408	GAL	PRIME COAT	$ 1.82	9856	$ 17,937.92
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	844	$ 43,854.24
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	1057	$ 113,786.05
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	755	$ 80,641.55
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22 (DRIVEWAY:	$ 177.31	92	$ 16,312.52
					$ 796,207.94

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 40 MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	253	$ 1,495.23
630	SF	SIGN, FLAT SHEET	$ 11.73	128	$ 1,501.44
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	3.24	$ 5,616.96
644	MILE	CENTER LINE	$ 3,193.46	1.62	$ 5,173.41
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 14,606.38
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	500	$ 18,165.00
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 20,228.60
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00 LS		$ 50,000.00
624		MOBILIZATION	$ 100,000.00 LS		$ 100,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00 LS		$ 20,000.00
					$ 220,000.00
DESIGN CONTINGE			***30%***		**$ 697,797.65**
					$ 3,023,789.81

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 45MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	610,000.00
EROSION CONTROL		$	603,000.00
DRAINAGE		$	135,000.00
PAVEMENT		$	802,000.00
TRAFFIC CONTROL		$	15,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	23,000.00
MISCELLANEOUS		$	220,000.00
DESIGN CONTINGENCY (30%)		$	744,000.00
	2007 SUBTOTAL	$	3,227,000.00
INFLATION TO 2010 (27%)		$	872,000.00
	CONSTRUCTION SUBTOTAL	$	4,099,000.00
PERMANENT RIGHT OF WAY (1 TOTAL TAKE)		$	1,261,000.00
TEMPORARY RIGHT OF WAY		$	45,000.00
INFLATION TO 2010 (27%)		$	353,000.00
	RIGHT OF WAY SUBTOTAL	$	1,659,000.00
	TOTAL PROJECT COST	**$**	**5,758,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 45 MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 55,000.00	LS	$ 55,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	50163	$ 286,932.36
203	CY	EMBANKMENT	$ 6.49	29446	$ 191,104.54
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
610	SQ FT	RETAINING WALL	$ 75.00	1000	$ 75,000.00
					$ 609,052.30
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	40695	$ 400,031.85
659	SY	SEEDING AND MULCHING	$ 0.40	366614	$ 146,645.60
659	TON	COMMERCIAL FERTILIZER	$ 283.66	50	$ 14,183.00
659	ACRE	LIME	$ 50.84	76	$ 3,863.84
659	MGAL	WATER	$ 1.59	1980	$ 3,148.20
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	20000	$ 20,000.00
					$ 602,872.49
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	1104	$ 41,952.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	224	$ 13,139.84
603	FT	18" CONDUIT, TYPE A	$ 58.46	224	$ 13,095.04
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	8	$ 8,726.24
604	EACH	MANHOLE, NO. 3	$ 2,641.88	8	$ 21,135.04
605	FT	AGGREGATE DRAINS	$ 7.13	163	$ 1,162.19
					$ 134,205.35
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	3765	$ 347,998.95
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	212	$ 31,210.64
304	CY	AGGREGATE BASE	$ 35.72	4099	$ 146,416.28
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1085	$ 1,236.90
408	GAL	PRIME COAT	$ 1.82	9838	$ 17,905.16
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	843	$ 43,802.28
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	1055	$ 113,570.75
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	753	$ 80,427.93
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	106	$ 18,794.86
					$ 801,363.75

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 45 MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	252	$ 1,489.32
630	SF	SIGN, FLAT SHEET	$ 11.73	128	$ 1,501.44
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	3.23	$ 5,599.62
644	MILE	CENTER LINE	$ 3,193.46	1.62	$ 5,173.41
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 14,583.13
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	75000	1	$ 75,000.00
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	550	$ 19,981.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 22,045.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00	LS	$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00	LS	$ 50,000.00
624		MOBILIZATION	$ 100,000.00	LS	$ 100,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00	LS	$ 20,000.00
					$ 220,000.00
DESIGN CONTINGE			***30%***		**$743,736.64**
					$ 3,222,858.76

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 55MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	1,180,000.00
EROSION CONTROL		$	626,000.00
DRAINAGE		$	134,000.00
PAVEMENT		$	892,000.00
TRAFFIC CONTROL		$	15,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	26,000.00
MISCELLANEOUS		$	220,000.00
DESIGN CONTINGENCY (30%)		$	950,000.00
	2007 SUBTOTAL	$	4,118,000.00
INFLATION TO 2010 (27%)		$	1,112,000.00
	CONSTRUCTION SUBTOTAL	$	5,230,000.00
PERMANENT RIGHT OF WAY (3 TOTAL TAKES)		$	1,585,000.00
TEMPORARY RIGHT OF WAY		$	75,000.00
INFLATION TO 2010 (27%)		$	449,000.00
	RIGHT OF WAY SUBTOTAL	$	2,109,000.00
	TOTAL PROJECT COST	**$**	**7,339,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 55 MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 80,000.00	LS	$ 80,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	112132	$ 641,395.04
203	CY	EMBANKMENT	$ 6.49	58904	$ 382,286.96
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
610	SQ FT	RETAINING WALL	$ 75.00	1000	$ 75,000.00
					$ 1,179,697.40
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	42334	$ 416,143.22
659	SY	SEEDING AND MULCHING	$ 0.40	381380	$ 152,552.00
659	TON	COMMERCIAL FERTILIZER	$ 283.66	52	$ 14,750.32
659	ACRE	LIME	$ 50.84	79	$ 4,016.36
659	MGAL	WATER	$ 1.59	2060	$ 3,275.40
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	20000	$ 20,000.00
					$ 625,737.30
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	1080	$ 41,040.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	224	$ 13,139.84
603	FT	18" CONDUIT, TYPE A	$ 58.46	224	$ 13,095.04
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	8	$ 8,726.24
604	EACH	MANHOLE, NO. 3	$ 2,641.88	8	$ 21,135.04
605	FT	AGGREGATE DRAINS	$ 7.13	162	$ 1,155.06
					$ 133,286.22
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	3741	$ 345,780.63
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	246	$ 36,216.12
304	CY	AGGREGATE BASE	$ 35.72	4074	$ 145,523.28
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1078	$ 1,228.92
408	GAL	PRIME COAT	$ 1.82	9777	$ 17,794.14
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	2512	$ 130,523.52
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	1048	$ 112,817.20
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	748	$ 79,893.88
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	123	$ 21,809.13
					$ 891,586.82

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE - 55 MPH
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	251	$ 1,483.41
630	SF	SIGN, FLAT SHEET	$ 11.73	127	$ 1,489.71
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	3.21	$ 5,564.95
644	MILE	CENTER LINE	$ 3,193.46	1.61	$ 5,141.47
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 14,498.88
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	650	$ 23,614.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 25,678.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00 LS		$ 50,000.00
624		MOBILIZATION	$ 100,000.00 LS		$ 100,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00 LS		$ 20,000.00
					$ 220,000.00
DESIGN CONTINGE			***30%***		**$949,645.42**
					$ 4,115,130.14

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	13,146,000.00
EROSION CONTROL		$	378,000.00
DRAINAGE		$	105,000.00
PAVEMENT		$	1,143,000.00
TRAFFIC CONTROL		$	33,000.00
TRAFFIC SIGNAL		$	150,000.00
MAINTENANCE OF TRAFFIC		$	12,000.00
MISCELLANEOUS		$	920,000.00
STRUCTURES		$	4,600,000.00
DESIGN CONTINGENCY (30%)		$	7,170,000.00
	2007 SUBTOTAL	$	27,657,000.00
INFLATION TO 2010 (27%)		$	7,468,000.00
	CONSTRUCTION SUBTOTAL	$	35,125,000.00
PERMANENT RIGHT OF WAY (1 TOTAL TAKE)		$	1,725,000.00
TEMPORARY RIGHT OF WAY		$	139,000.00
INFLATION TO 2010 (27%)		$	504,000.00
	RIGHT OF WAY SUBTOTAL	$	2,368,000.00
	TOTAL PROJECT COST	**$**	**37,493,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 240,000.00	LS	$ 240,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	518704	$ 2,966,986.88
203	CY	EMBANKMENT	$ 6.49	1519631	$ 9,862,405.19
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
610	SQ FT	RETAINING WALL	$ 75.00	1000	$ 75,000.00
					$ 13,145,407.47
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	23435	$ 230,366.05
659	SY	SEEDING AND MULCHING	$ 0.40	211123	$ 84,449.20
659	TON	COMMERCIAL FERTILIZER	$ 283.66	29	$ 8,226.14
659	ACRE	LIME	$ 50.84	44	$ 2,236.96
659	MGAL	WATER	$ 1.59	1141	$ 1,814.19
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	35000	$ 35,000.00
					$ 377,092.54
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	384	$ 14,592.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	100	$ 5,866.00
603	FT	18" CONDUIT, TYPE A	$ 58.46	100	$ 5,846.00
603	FT	24" CONDUIT, TYPE A	$ 76.86	300	$ 23,058.00
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	218	$ 1,554.34
					$ 104,574.64
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	5024	$ 464,368.32
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	98	$ 14,427.56
304	CY	AGGREGATE BASE	$ 35.72	5225	$ 186,637.00
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1447	$ 1,649.58
408	GAL	PRIME COAT	$ 1.82	12540	$ 22,822.80
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	3567	$ 185,341.32
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	1407	$ 151,463.55
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	1005	$ 107,344.05
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	49	$ 8,688.19
					$ 1,142,742.37

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	530	$ 3,132.30
630	SF	SIGN, FLAT SHEET	$ 11.73	273	$ 3,202.29
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	7.61	$ 13,192.92
644	MILE	CENTER LINE	$ 3,193.46	3.81	$ 12,167.08
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 32,513.93
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	$75,000.00	2	$150,000.00
					$ 150,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	250	$ 9,082.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 11,146.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00 LS		$ 50,000.00
624		MOBILIZATION	$ 800,000.00 LS		$ 800,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00 LS		$ 20,000.00
					$ 920,000.00
		STRUCTURES			
	SF		$ 95.00	5760	$ 600,000.00
	SF		$ 95.00	40500	$ 4,000,000.00
					$ 4,600,000.00
DESIGN CONTINGENCY				***35%***	**$7,169,216.97**
					$ 27,652,694.02

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 2
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
STRUCTURE		$	1,080,000.00
DESIGN CONTINGENCY (30%)		$	324,000.00
	2007 SUBTOTAL	$	1,404,000.00
INFLATION TO 2010 (27%)		$	380,000.00
	CONSTRUCTION SUBTOTAL	$	1,784,000.00
PERMANENT RIGHT OF WAY		$	5,000.00
TEMPORARY RIGHT OF WAY		$	10,000.00
INFLATION TO 2010 (27%)		$	5,000.00
	RIGHT OF WAY SUBTOTAL	$	20,000.00
	TOTAL PROJECT COST	**$**	**1,804,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	5,007,000.00
EROSION CONTROL		$	1,262,000.00
DRAINAGE		$	191,000.00
PAVEMENT		$	900,000.00
TRAFFIC CONTROL		$	20,000.00
TRAFFIC SIGNAL		$	90,000.00
MAINTENANCE OF TRAFFIC		$	12,000.00
MISCELLANEOUS		$	920,000.00
STRUCTURES		$	7,400,000.00
DESIGN CONTINGENCY (30%)		$	4,740,000.00
	2007 SUBTOTAL	$	20,542,000.00
INFLATION TO 2010 (27%)		$	5,547,000.00
	CONSTRUCTION SUBTOTAL	$	26,089,000.00
PERMANENT RIGHT OF WAY		$	240,000.00
TEMPORARY RIGHT OF WAY		$	282,000.00
INFLATION TO 2010 (27%)		$	141,000.00
	RIGHT OF WAY SUBTOTAL	$	663,000.00
	TOTAL PROJECT COST	**$**	**26,752,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 175,000.00	LS	$ 175,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	692807	$ 3,962,856.04
203	CY	EMBANKMENT	$ 6.49	133679	$ 867,576.71
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 5,006,448.15
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	86857	$ 853,804.31
659	SY	SEEDING AND MULCHING	$ 0.40	782493	$ 312,997.20
659	TON	COMMERCIAL FERTILIZER	$ 283.66	106	$ 30,067.96
659	ACRE	LIME	$ 50.84	162	$ 8,236.08
659	MGAL	WATER	$ 1.59	4226	$ 6,719.34
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	35000	$ 35,000.00
					$ 1,261,824.89
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	384	$ 14,592.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	240	$ 14,078.40
603	FT	18" CONDUIT, TYPE A	$ 58.46	420	$ 24,553.20
603	FT	24" CONDUIT, TYPE A	$ 76.86	300	$ 23,058.00
603	FT	60" CONDUIT, TYPE A	$ 271.80	100	$ 27,180.00
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	4750	$ 33,867.50
					$ 190,987.40
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	4396	$ 406,322.28
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	98	$ 14,427.56
304	CY	AGGREGATE BASE	$ 35.72	4571	$ 163,276.12
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1266	$ 1,443.24
408	GAL	PRIME COAT	$ 1.82	10970	$ 19,965.40
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	1134	$ 58,922.64
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	1231	$ 132,517.15
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	880	$ 93,992.80
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	49	$ 8,688.19
					$ 899,555.38

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	323	$ 1,908.93
630	SF	SIGN, FLAT SHEET	$ 11.73	165	$ 1,935.45
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	4.35	$ 7,541.29
644	MILE	CENTER LINE	$ 3,193.46	2.17	$ 6,929.81
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 19,134.82
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
	LS	TRAFFIC SIGNAL MODIFICATION	$15,000.00	1	$ 15,000.00
					$ 90,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	250	$ 9,082.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 11,146.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00	LS	$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00	LS	$ 50,000.00
624		MOBILIZATION	$ 800,000.00	LS	$ 800,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00	LS	$ 20,000.00
					$ 920,000.00
		STRUCTURES			
	SF		$ 95.00	4068	$ 400,000.00
	SF		$ 95.00	67320	$ 7,000,000.00
					$ 7,400,000.00
DESIGN CONTINGENCY				***30%***	**$4,739,729.03**
					$ 20,538,825.77

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 3A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	2,242,000.00
EROSION CONTROL		$	741,000.00
DRAINAGE		$	135,000.00
PAVEMENT		$	712,000.00
TRAFFIC CONTROL		$	15,000.00
TRAFFIC SIGNAL		$	90,000.00
MAINTENANCE OF TRAFFIC		$	12,000.00
MISCELLANEOUS		$	320,000.00
STRUCTURES		$	-
DESIGN CONTINGENCY (30%)		$	1,279,000.00
	2007 SUBTOTAL	$	5,546,000.00
INFLATION TO 2010 (27%)		$	1,498,000.00
	CONSTRUCTION SUBTOTAL	$	7,044,000.00
PERMANENT RIGHT OF WAY		$	80,000.00
TEMPORARY RIGHT OF WAY		$	162,000.00
INFLATION TO 2010 (27%)		$	66,000.00
	RIGHT OF WAY SUBTOTAL	$	308,000.00
	TOTAL PROJECT COST	**$**	**7,352,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 3A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 80,000.00	LS	$ 80,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	357293	$ 2,043,715.96
203	CY	EMBANKMENT	$ 6.49	6431	$ 41,737.19
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
610	SQ FT	RETAINING WALL	$ 75.00	1000	$ 75,000.00
					$ 2,241,468.55
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	49456	$ 486,152.48
659	SY	SEEDING AND MULCHING	$ 0.40	445545	$ 178,218.00
659	TON	COMMERCIAL FERTILIZER	$ 283.66	61	$ 17,303.26
659	ACRE	LIME	$ 50.84	93	$ 4,728.12
659	MGAL	WATER	$ 1.59	2406	$ 3,825.54
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	35000	$ 35,000.00
					$ 740,227.40
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	384	$ 14,592.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	100	$ 27,180.00
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	3900	$ 27,807.00
					$ 134,876.10
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	3600	$ 332,748.00
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	98	$ 14,427.56
304	CY	AGGREGATE BASE	$ 35.72	3744	$ 133,735.68
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1037	$ 1,182.18
408	GAL	PRIME COAT	$ 1.82	8984	$ 16,350.88
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	364	$ 18,913.44
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	1008	$ 108,511.20
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	720	$ 76,903.20
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	49	$ 8,688.19
					$ 711,460.33

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 3A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	244	$ 1,442.04
630	SF	SIGN, FLAT SHEET	$ 11.73	124	$ 1,454.52
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	3.1	$ 5,374.25
644	MILE	CENTER LINE	$ 3,193.46	1.55	$ 4,949.86
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 14,040.01
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
	LS	TRAFFIC SIGNAL MODIFICATION	$15,000.00	1	$ 15,000.00
					$ 90,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	250	$ 9,082.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 11,146.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00 LS		$ 50,000.00
624		MOBILIZATION	$ 200,000.00 LS		$ 200,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00 LS		$ 20,000.00
					$ 320,000.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$1,278,965.55**
					$ 5,542,184.04

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 4
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	5,017,000.00
EROSION CONTROL		$	1,390,000.00
DRAINAGE		$	191,000.00
PAVEMENT		$	901,000.00
TRAFFIC CONTROL		$	20,000.00
TRAFFIC SIGNAL		$	90,000.00
MAINTENANCE OF TRAFFIC		$	12,000.00
MISCELLANEOUS		$	920,000.00
STRUCTURES		$	8,100,000.00
DESIGN CONTINGENCY (30%)		$	4,992,000.00
	2007 SUBTOTAL	$	21,633,000.00
INFLATION TO 2010 (27%)		$	5,841,000.00
	CONSTRUCTION SUBTOTAL	$	27,474,000.00
PERMANENT RIGHT OF WAY		$	250,000.00
TEMPORARY RIGHT OF WAY		$	311,000.00
INFLATION TO 2010 (27%)		$	152,000.00
	RIGHT OF WAY SUBTOTAL	$	713,000.00
	TOTAL PROJECT COST	**$**	**28,187,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 4
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 185,000.00	LS	$ 185,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	692807	$ 3,962,856.04
203	CY	EMBANKMENT	$ 6.49	133679	$ 867,576.71
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 5,016,448.15
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	96014	$ 943,817.62
659	SY	SEEDING AND MULCHING	$ 0.40	864990	$ 345,996.00
659	TON	COMMERCIAL FERTILIZER	$ 283.66	117	$ 33,188.22
659	ACRE	LIME	$ 50.84	179	$ 9,100.36
659	MGAL	WATER	$ 1.59	4671	$ 7,426.89
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	35000	$ 35,000.00
					$ 1,389,529.09
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	384	$ 14,592.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	240	$ 14,078.40
603	FT	18" CONDUIT, TYPE A	$ 58.46	420	$ 24,553.20
603	FT	24" CONDUIT, TYPE A	$ 76.86	300	$ 23,058.00
603	FT	60" CONDUIT, TYPE A	$ 271.80	100	$ 27,180.00
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	4750	$ 33,867.50
					$ 190,987.40
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	4389	$ 405,675.27
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	98	$ 14,427.56
304	CY	AGGREGATE BASE	$ 35.72	4565	$ 163,061.80
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1264	$ 1,440.96
408	GAL	PRIME COAT	$ 1.82	10955	$ 19,938.10
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	1169	$ 60,741.24
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	1229	$ 132,301.85
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	878	$ 93,779.18
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	49	$ 8,688.19
					$ 900,054.15

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 4
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	332	$ 1,962.12
630	SF	SIGN, FLAT SHEET	$ 11.73	170	$ 1,994.10
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	4.49	$ 7,784.00
644	MILE	CENTER LINE	$ 3,193.46	2.25	$ 7,185.29
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 19,744.85
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
	LS	TRAFFIC SIGNAL MODIFICATION	$15,000.00	1	$ 15,000.00
					$ 90,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	250	$ 9,082.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 11,146.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00 LS		$ 50,000.00
624		MOBILIZATION	$ 800,000.00 LS		$ 800,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00 LS		$ 20,000.00
					$ 920,000.00
		STRUCTURES			
	SF		$ 95.00	84600	$ 8,100,000.00
	SF		$ 95.00	0	$ -
					$ 8,100,000.00
DESIGN CONTINGENCY				***30%***	**$4,991,372.93**
					$ 21,629,282.67

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 5
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	1,742,000.00
EROSION CONTROL		$	590,000.00
DRAINAGE		$	135,000.00
PAVEMENT		$	693,000.00
TRAFFIC CONTROL		$	7,000.00
TRAFFIC SIGNAL		$	90,000.00
MAINTENANCE OF TRAFFIC		$	12,000.00
MISCELLANEOUS		$	320,000.00
STRUCTURES		$	-
DESIGN CONTINGENCY (30%)		$	1,076,000.00
	2007 SUBTOTAL	$	4,665,000.00
INFLATION TO 2010 (27%)		$	1,260,000.00
	CONSTRUCTION SUBTOTAL	$	5,925,000.00
PERMANENT RIGHT OF WAY		$	80,000.00
TEMPORARY RIGHT OF WAY		$	124,000.00
INFLATION TO 2010 (27%)		$	56,000.00
	RIGHT OF WAY SUBTOTAL	$	260,000.00
	TOTAL PROJECT COST	**$**	**6,185,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 5
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 65,000.00	LS	$ 65,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	243660	$ 1,393,735.20
203	CY	EMBANKMENT	$ 6.49	31874	$ 206,862.26
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
610	SQ FT	RETAINING WALL	$ 75.00	1000	$ 75,000.00
					$ 1,741,612.86
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	38641	$ 379,841.03
659	SY	SEEDING AND MULCHING	$ 0.40	348109	$ 139,243.60
659	TON	COMMERCIAL FERTILIZER	$ 283.66	47	$ 13,332.02
659	ACRE	LIME	$ 50.84	72	$ 3,660.48
659	MGAL	WATER	$ 1.59	1880	$ 2,989.20
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	35000	$ 35,000.00
					$ 589,066.33
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	384	$ 14,592.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	100	$ 27,180.00
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	3800	$ 27,094.00
					$ 134,163.10
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	3502	$ 323,689.86
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	98	$ 14,427.56
304	CY	AGGREGATE BASE	$ 35.72	3642	$ 130,092.24
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1009	$ 1,150.26
408	GAL	PRIME COAT	$ 1.82	8741	$ 15,908.62
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	343	$ 17,822.28
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	981	$ 105,604.65
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	701	$ 74,873.81
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	49	$ 8,688.19
					$ 692,257.47

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 5
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	131	$ 774.21
630	SF	SIGN, FLAT SHEET	$ 11.73	65	$ 762.45
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	1.32	$ 2,288.39
644	MILE	CENTER LINE	$ 3,193.46	0.66	$ 2,107.68
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 6,752.07
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
	LS	TRAFFIC SIGNAL MODIFICATION	$15,000.00	1	$ 15,000.00
					$ 90,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	250	$ 9,082.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 11,146.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00 LS		$ 50,000.00
624		MOBILIZATION	$ 200,000.00 LS		$ 200,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00 LS		$ 20,000.00
					$ 320,000.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$1,075,499.38**
					$ 4,660,497.31

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 5A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	1,593,000.00
EROSION CONTROL		$	610,000.00
DRAINAGE		$	135,000.00
PAVEMENT		$	693,000.00
TRAFFIC CONTROL		$	14,000.00
TRAFFIC SIGNAL		$	90,000.00
MAINTENANCE OF TRAFFIC		$	12,000.00
MISCELLANEOUS		$	320,000.00
STRUCTURES		$	-
DESIGN CONTINGENCY (30%)		$	1,039,000.00
	2007 SUBTOTAL	$	4,506,000.00
INFLATION TO 2010 (27%)		$	1,217,000.00
	CONSTRUCTION SUBTOTAL	$	5,723,000.00
PERMANENT RIGHT OF WAY		$	80,000.00
TEMPORARY RIGHT OF WAY		$	133,000.00
INFLATION TO 2010 (27%)		$	58,000.00
	RIGHT OF WAY SUBTOTAL	$	271,000.00
	TOTAL PROJECT COST	**$**	**5,994,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 5A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 70,000.00	LS	$ 70,000.00
202	SY	PAVEMENT REMOVED	$ 7.09	0	$ -
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
203	CY	EXCAVATION	$ 5.72	224051	$ 1,281,571.72
203	CY	EMBANKMENT	$ 6.49	25376	$ 164,690.24
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
610	SQ FT	RETAINING WALL	$ 75.00	1000	$ 75,000.00
					$ 1,592,277.36
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	40130	$ 394,477.90
659	SY	SEEDING AND MULCHING	$ 0.40	361525	$ 144,610.00
659	TON	COMMERCIAL FERTILIZER	$ 283.66	49	$ 13,899.34
659	ACRE	LIME	$ 50.84	75	$ 3,813.00
659	MGAL	WATER	$ 1.59	1953	$ 3,105.27
832		STORM WATER POLLUTION PREVENTION PLAN	$ 15,000.00	LS	$ 15,000.00
832	EACH	EROSION CONTROL	$ 1.00	35000	$ 35,000.00
					$ 609,905.51
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	500	$ 19,525.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	500	$ 15,470.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	384	$ 14,592.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	100	$ 27,180.00
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	3800	$ 27,094.00
					$ 134,163.10
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	3501	$ 323,597.43
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	98	$ 14,427.56
304	CY	AGGREGATE BASE	$ 35.72	3641	$ 130,056.52
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	1009	$ 1,150.26
408	GAL	PRIME COAT	$ 1.82	8737	$ 15,901.34
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	342	$ 17,770.32
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	981	$ 105,604.65
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	701	$ 74,873.81
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	49	$ 8,688.19
					$ 692,070.08

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALTERNATIVE 5A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	239	$ 1,412.49
630	SF	SIGN, FLAT SHEET	$ 11.73	121	$ 1,419.33
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	3.03	$ 5,252.90
644	MILE	CENTER LINE	$ 3,193.46	1.51	$ 4,822.12
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 13,726.18
		TRAFFIC SIGNAL			
	LS	TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
	LS	TRAFFIC SIGNAL MODIFICATION	$15,000.00	1	$ 15,000.00
					$ 90,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	250	$ 9,082.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 11,146.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 50,000.00 LS		$ 50,000.00
624		MOBILIZATION	$ 200,000.00 LS		$ 200,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 20,000.00 LS		$ 20,000.00
					$ 320,000.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$1,038,986.50**
					$ 4,502,274.83

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	172,000.00
EROSION CONTROL		$	83,000.00
DRAINAGE		$	42,000.00
PAVEMENT		$	72,000.00
TRAFFIC CONTROL		$	3,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	4,000.00
MISCELLANEOUS		$	60,000.00
STRUCTURES		-	
DESIGN CONTINGENCY (30%)		$	153,000.00
	2007 SUBTOTAL	$	664,000.00
INFLATION TO 2010 (27%)		$	180,000.00
	CONSTRUCTION SUBTOTAL	$	844,000.00
PERMANENT RIGHT OF WAY		$	20,000.00
TEMPORARY RIGHT OF WAY		$	20,000.00
INFLATION TO 2010 (27%)		$	11,000.00
	RIGHT OF WAY SUBTOTAL	$	51,000.00
	TOTAL PROJECT COST	**$**	**895,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 15,000.00	LS	$ 15,000.00
202	SY	PAVEMENT REMOVED, ASPHALT	$ 3.24	1584	$ 5,132.16
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
202	LS	BUILDING DEMOLISHED	$ 85,000.00	0	$ 85,000.00
203	CY	EXCAVATION	$ 5.72	10470	$ 59,888.40
203	CY	EMBANKMENT	$ 6.49	882	$ 5,724.18
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 171,760.14
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	4833	$ 47,508.39
659	SY	SEEDING AND MULCHING	$ 0.40	43537	$ 17,414.80
659	TON	COMMERCIAL FERTILIZER	$ 283.66	6	$ 1,701.96
659	ACRE	LIME	$ 50.84	9	$ 457.56
659	MGAL	WATER	$ 1.59	236	$ 375.24
832		STORM WATER POLLUTION PREVENTION PLAN	$ 5,000.00	LS	$ 5,000.00
832	EACH	EROSION CONTROL	$ 1.00	10000	$ 10,000.00
					$ 82,457.95
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	100	$ 3,905.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	100	$ 3,094.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	48	$ 1,824.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	0	$ -
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	400	$ 2,852.00
					$ 41,977.10
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	354	$ 32,720.22
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	9	$ 1,324.98
304	CY	AGGREGATE BASE	$ 35.72	368	$ 13,144.96
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	102	$ 116.28
408	GAL	PRIME COAT	$ 1.82	883	$ 1,607.06
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	76	$ 3,948.96
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	99	$ 10,657.35
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	71	$ 7,583.51
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	5	$ 886.55
					$ 71,989.87

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	66	$ 390.06
630	SF	SIGN, FLAT SHEET	$ 11.73	31	$ 363.63
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	0.29	$ 502.75
644	MILE	CENTER LINE	$ 3,193.46	0.14	$ 447.08
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 2,522.86
		TRAFFIC SIGNAL			
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	50	$ 1,816.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 3,880.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 25,000.00 LS		$ 25,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 10,000.00 LS		$ 10,000.00
624		MOBILIZATION	$ 20,000.00 LS		$ 20,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 5,000.00 LS		$ 5,000.00
					$ 60,000.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$152,876.41**
					$ 662,464.43

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 2A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	189,000.00
EROSION CONTROL		$	100,000.00
DRAINAGE		$	43,000.00
PAVEMENT		$	90,000.00
TRAFFIC CONTROL		$	3,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	4,000.00
MISCELLANEOUS		$	60,000.00
STRUCTURES		-	
DESIGN CONTINGENCY (30%)		$	169,000.00
	2007 SUBTOTAL	$	733,000.00
INFLATION TO 2010 (27%)		$	198,000.00
	CONSTRUCTION SUBTOTAL	$	931,000.00
PERMANENT RIGHT OF WAY		$	20,000.00
TEMPORARY RIGHT OF WAY		$	20,000.00
INFLATION TO 2010 (27%)		$	11,000.00
	RIGHT OF WAY SUBTOTAL	$	51,000.00
	TOTAL PROJECT COST	**$**	**982,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 2A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 15,000.00	LS	$ 15,000.00
202	SY	PAVEMENT REMOVED, ASPHALT	$ 3.24	1584	$ 5,132.16
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
202	LS	BUILDING DEMOLISHED	$ 85,000.00	0	$ 85,000.00
203	CY	EXCAVATION	$ 5.72	13127	$ 75,086.44
203	CY	EMBANKMENT	$ 6.49	1104	$ 7,164.96
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 188,398.96
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	6059	$ 59,559.97
659	SY	SEEDING AND MULCHING	$ 0.40	54578	$ 21,831.20
659	TON	COMMERCIAL FERTILIZER	$ 283.66	8	$ 2,269.28
659	ACRE	LIME	$ 50.84	12	$ 610.08
659	MGAL	WATER	$ 1.59	295	$ 469.05
832		STORM WATER POLLUTION PREVENTION PLAN	$ 5,000.00	LS	$ 5,000.00
832	EACH	EROSION CONTROL	$ 1.00	10000	$ 10,000.00
					$ 99,739.58
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	100	$ 3,905.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	100	$ 3,094.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	48	$ 1,824.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	0	$ -
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	500	$ 3,565.00
					$ 42,690.10
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	444	$ 41,038.92
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	9	$ 1,324.98
304	CY	AGGREGATE BASE	$ 35.72	462	$ 16,502.64
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	128	$ 145.92
408	GAL	PRIME COAT	$ 1.82	1107	$ 2,014.74
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	95	$ 4,936.20
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	125	$ 13,456.25
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	89	$ 9,506.09
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	5	$ 886.55
					$ 89,812.29

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 2A
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	70	$ 413.70
630	SF	SIGN, FLAT SHEET	$ 11.73	33	$ 387.09
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	0.36	$ 624.11
644	MILE	CENTER LINE	$ 3,193.46	0.18	$ 574.82
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 2,819.06
		TRAFFIC SIGNAL			
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	50	$ 1,816.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 3,880.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 25,000.00 LS		$ 25,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 10,000.00 LS		$ 10,000.00
624		MOBILIZATION	$ 20,000.00 LS		$ 20,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 5,000.00 LS		$ 5,000.00
					$ 60,000.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$168,702.03**
					$ 731,042.12

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 2B
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	185,000.00
EROSION CONTROL		$	96,000.00
DRAINAGE		$	43,000.00
PAVEMENT		$	86,000.00
TRAFFIC CONTROL		$	3,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	4,000.00
MISCELLANEOUS		$	60,000.00
STRUCTURES		-	
DESIGN CONTINGENCY (30%)		$	166,000.00
	2007 SUBTOTAL	$	718,000.00
INFLATION TO 2010 (27%)		$	194,000.00
	CONSTRUCTION SUBTOTAL	$	912,000.00
PERMANENT RIGHT OF WAY (1 TOTAL TAKE)		$	750,000.00
TEMPORARY RIGHT OF WAY			
INFLATION TO 2010 (27%)		$	203,000.00
	RIGHT OF WAY SUBTOTAL	$	953,000.00
	TOTAL PROJECT COST	**$**	**1,865,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 2B
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 15,000.00	LS	$ 15,000.00
202	SY	PAVEMENT REMOVED, ASPHALT	$ 3.24	1584	$ 5,132.16
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
202	LS	BUILDING DEMOLISHED	$ 85,000.00	0	$ 85,000.00
203	CY	EXCAVATION	$ 5.72	12535	$ 71,700.20
203	CY	EMBANKMENT	$ 6.49	1055	$ 6,846.95
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 184,694.71
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	5785	$ 56,866.55
659	SY	SEEDING AND MULCHING	$ 0.40	52117	$ 20,846.80
659	TON	COMMERCIAL FERTILIZER	$ 283.66	8	$ 2,269.28
659	ACRE	LIME	$ 50.84	11	$ 559.24
659	MGAL	WATER	$ 1.59	282	$ 448.38
832		STORM WATER POLLUTION PREVENTION PLAN	$ 5,000.00	LS	$ 5,000.00
832	EACH	EROSION CONTROL	$ 1.00	10000	$ 10,000.00
					$ 95,990.25
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	100	$ 3,905.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	100	$ 3,094.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	48	$ 1,824.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	0	$ -
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	475	$ 3,386.75
					$ 42,511.85
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	424	$ 39,190.32
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	9	$ 1,324.98
304	CY	AGGREGATE BASE	$ 35.72	441	$ 15,752.52
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	122	$ 139.08
408	GAL	PRIME COAT	$ 1.82	1057	$ 1,923.74
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	91	$ 4,728.36
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	119	$ 12,810.35
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	85	$ 9,078.85
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	5	$ 886.55
					$ 85,834.75

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 2B
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	69	$ 407.79
630	SF	SIGN, FLAT SHEET	$ 11.73	33	$ 387.09
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	0.35	$ 606.77
644	MILE	CENTER LINE	$ 3,193.46	0.17	$ 542.89
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 2,763.88
		TRAFFIC SIGNAL			
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	50	$ 1,816.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 3,880.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 25,000.00 LS		$ 25,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 10,000.00 LS		$ 10,000.00
624		MOBILIZATION	$ 20,000.00 LS		$ 20,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 5,000.00 LS		$ 5,000.00
					$ 60,000.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$165,202.67**
					$ 715,878.21

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	225,000.00
EROSION CONTROL		$	132,000.00
DRAINAGE		$	44,000.00
PAVEMENT		$	123,000.00
TRAFFIC CONTROL		$	17,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	4,000.00
MISCELLANEOUS		$	125,000.00
STRUCTURES		$	-
DESIGN CONTINGENCY (30%)		$	223,000.00
	2007 SUBTOTAL	$	968,000.00
INFLATION TO 2010 (27%)		$	262,000.00
	CONSTRUCTION SUBTOTAL	$	1,230,000.00
PERMANENT RIGHT OF WAY (1 TOTAL TAKE)		$	750,000.00
TEMPORARY RIGHT OF WAY			
INFLATION TO 2010 (27%)		$	203,000.00
	RIGHT OF WAY SUBTOTAL	$	953,000.00
	TOTAL PROJECT COST	**$**	**2,183,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 20,000.00	LS	$ 20,000.00
202	SY	PAVEMENT REMOVED, ASPHALT	$ 3.24	1584	$ 5,132.16
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
202	LS	BUILDING DEMOLISHED	$ 85,000.00	0	$ 85,000.00
203	CY	EXCAVATION	$ 5.72	18068	$ 103,348.96
203	CY	EMBANKMENT	$ 6.49	1518	$ 9,851.82
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 224,348.34
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	8319	$ 81,775.77
659	SY	SEEDING AND MULCHING	$ 0.40	74942	$ 29,976.80
659	TON	COMMERCIAL FERTILIZER	$ 283.66	11	$ 3,120.26
659	ACRE	LIME	$ 50.84	16	$ 813.44
659	MGAL	WATER	$ 1.59	405	$ 643.95
832		STORM WATER POLLUTION PREVENTION PLAN	$ 5,000.00	LS	$ 5,000.00
832	EACH	EROSION CONTROL	$ 1.00	10000	$ 10,000.00
					$ 131,330.22
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	100	$ 3,905.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	100	$ 3,094.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	48	$ 1,824.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	0	$ -
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	675	$ 4,812.75
					$ 43,937.85
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	611	$ 56,474.73
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	9	$ 1,324.98
304	CY	AGGREGATE BASE	$ 35.72	635	$ 22,682.20
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	176	$ 200.64
408	GAL	PRIME COAT	$ 1.82	1524	$ 2,773.68
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	131	$ 6,806.76
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	171	$ 18,408.15
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	123	$ 13,137.63
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	5	$ 886.55
					$ 122,695.32

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	279	$ 1,648.89
630	SF	SIGN, FLAT SHEET	$ 11.73	142	$ 1,665.66
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	3.65	$ 6,327.75
644	MILE	CENTER LINE	$ 3,193.46	1.83	$ 5,844.03
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 16,305.67
		TRAFFIC SIGNAL			
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	50	$ 1,816.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 3,880.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 40,000.00 LS		$ 40,000.00
624		MOBILIZATION	$ 30,000.00 LS		$ 30,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 5,000.00 LS		$ 5,000.00
					$ 125,000.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$222,749.25**
					$ 965,246.75

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 4
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	225,000.00
EROSION CONTROL		$	130,000.00
DRAINAGE		$	44,000.00
PAVEMENT		$	125,000.00
TRAFFIC CONTROL		$	17,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	4,000.00
MISCELLANEOUS		$	125,000.00
STRUCTURES		$	-
DESIGN CONTINGENCY (30%)		$	223,000.00
	2007 SUBTOTAL	$	968,000.00
INFLATION TO 2010 (27%)		$	262,000.00
	CONSTRUCTION SUBTOTAL	$	1,230,000.00
PERMANENT RIGHT OF WAY (1 TOTAL TAKE)		$	750,000.00
TEMPORARY RIGHT OF WAY			
INFLATION TO 2010 (27%)		$	203,000.00
	RIGHT OF WAY SUBTOTAL	$	953,000.00
	TOTAL PROJECT COST	**$**	**2,183,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 4
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 20,000.00	LS	$ 20,000.00
202	SY	PAVEMENT REMOVED, ASPHALT	$ 3.24	1584.44444	$ 5,133.60
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
202	LS	BUILDING DEMOLISHED	$ 85,000.00	0	$ 85,000.00
203	CY	EXCAVATION	$ 5.72	18068	$ 103,348.96
203	CY	EMBANKMENT	$ 6.49	1518	$ 9,851.82
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 224,349.78
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	8213	$ 80,733.79
659	SY	SEEDING AND MULCHING	$ 0.40	73989	$ 29,595.60
659	TON	COMMERCIAL FERTILIZER	$ 283.66	10	$ 2,836.60
659	ACRE	LIME	$ 50.84	16	$ 813.44
659	MGAL	WATER	$ 1.59	400	$ 636.00
832		STORM WATER POLLUTION PREVENTION PLAN	$ 5,000.00	LS	$ 5,000.00
832	EACH	EROSION CONTROL	$ 1.00	10000	$ 10,000.00
					$ 129,615.43
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	100	$ 3,905.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	100	$ 3,094.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	48	$ 1,824.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	0	$ -
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	675	$ 4,812.75
					$ 43,937.85
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	618	$ 57,121.74
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	9	$ 1,324.98
304	CY	AGGREGATE BASE	$ 35.72	643	$ 22,967.96
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	178	$ 202.92
408	GAL	PRIME COAT	$ 1.82	1542	$ 2,806.44
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	132	$ 6,858.72
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	173	$ 18,623.45
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	124	$ 13,244.44
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	5	$ 886.55
					$ 124,037.20

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
DILLON SCHOOL DRIVE - ALTERNATIVE 4
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	279	$ 1,648.89
630	SF	SIGN, FLAT SHEET	$ 11.73	142	$ 1,665.66
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	3.66	$ 6,345.09
644	MILE	CENTER LINE	$ 3,193.46	1.83	$ 5,844.03
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 16,323.01
		TRAFFIC SIGNAL			
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	50	$ 1,816.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 3,880.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 50,000.00 LS		$ 50,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 40,000.00 LS		$ 40,000.00
624		MOBILIZATION	$ 30,000.00 LS		$ 30,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 5,000.00 LS		$ 5,000.00
					$ 125,000.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$222,643.02**
					$ 964,786.39

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
US 40 CONNECTOR - ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	67,000.00
EROSION CONTROL		$	44,000.00
DRAINAGE		$	42,000.00
PAVEMENT		$	85,000.00
TRAFFIC CONTROL		$	3,000.00
TRAFFIC SIGNAL		$	75,000.00
MAINTENANCE OF TRAFFIC		$	4,000.00
MISCELLANEOUS		$	43,000.00
STRUCTURES		$	-
DESIGN CONTINGENCY (30%)		$	109,000.00
	2007 SUBTOTAL	$	472,000.00
INFLATION TO 2010 (27%)		$	128,000.00
	CONSTRUCTION SUBTOTAL	$	600,000.00
PERMANENT RIGHT OF WAY (2 TOTAL TAKE)		$	530,000.00
TEMPORARY RIGHT OF WAY			
INFLATION TO 2010 (27%)		$	144,000.00
	RIGHT OF WAY SUBTOTAL	$	674,000.00
	TOTAL PROJECT COST	**$**	**1,274,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALIGNMENT AT US 40 - ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 10,000.00	LS	$ 10,000.00
202	SY	PAVEMENT REMOVED, ASPHALT	$ 3.24	10444	$ 33,838.56
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
202	LS	BUILDING DEMOLISHED	$ 5,000.00	2	$ 10,000.00
203	CY	EXCAVATION	$ 5.72	1691	$ 9,672.52
203	CY	EMBANKMENT	$ 6.49	346	$ 2,245.54
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 66,772.02
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	486	$ 4,777.38
659	SY	SEEDING AND MULCHING	$ 0.40	57340	$ 22,936.00
659	TON	COMMERCIAL FERTILIZER	$ 283.66	1	$ 283.66
659	ACRE	LIME	$ 50.84	1	$ 50.84
659	MGAL	WATER	$ 1.59	24	$ 38.16
832		STORM WATER POLLUTION PREVENTION PLAN	$ 5,000.00	LS	$ 5,000.00
832	EACH	EROSION CONTROL	$ 1.00	10000	$ 10,000.00
					$ 43,086.04
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	100	$ 3,905.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	100	$ 3,094.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	48	$ 1,824.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	0	$ -
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	400	$ 2,852.00
					$ 41,977.10
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	420	$ 38,820.60
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	9	$ 1,324.98
304	CY	AGGREGATE BASE	$ 35.72	430	$ 15,359.60
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	122	$ 139.08
408	GAL	PRIME COAT	$ 1.82	1032	$ 1,878.24
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	89	$ 4,624.44
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	119	$ 12,810.35
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	85	$ 9,078.85
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	5	$ 886.55
					$ 84,922.69

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALIGNMENT AT US 40 - ALTERNATIVE 1
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	66	$ 390.06
630	SF	SIGN, FLAT SHEET	$ 11.73	31	$ 363.63
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	0.29	$ 502.75
644	MILE	CENTER LINE	$ 3,193.46	0.15	$ 479.02
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 2,554.80
		TRAFFIC SIGNAL			
					$ 75,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	50	$ 1,816.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 3,880.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 20,000.00 LS		$ 20,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 10,000.00 LS		$ 10,000.00
624		MOBILIZATION	$ 10,000.00 LS		$ 10,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 2,500.00 LS		$ 2,500.00
					$ 42,500.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$108,207.83**
					$ 468,900.58

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
US 40 CONNECTOR - ALTERNATIVE 2
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	48,000.00
EROSION CONTROL		$	37,000.00
DRAINAGE		$	42,000.00
PAVEMENT		$	99,000.00
TRAFFIC CONTROL		$	3,000.00
TRAFFIC SIGNAL		$	77,000.00
MAINTENANCE OF TRAFFIC		$	4,000.00
MISCELLANEOUS		$	43,000.00
STRUCTURES		$	-
DESIGN CONTINGENCY (30%)		$	106,000.00
	2007 SUBTOTAL	$	459,000.00
INFLATION TO 2010 (27%)		$	124,000.00
	CONSTRUCTION SUBTOTAL	$	583,000.00
PERMANENT RIGHT OF WAY (1 TOTAL TAKE)		$	60,000.00
TEMPORARY RIGHT OF WAY			
INFLATION TO 2010 (27%)		$	17,000.00
	RIGHT OF WAY SUBTOTAL	$	77,000.00
	TOTAL PROJECT COST	**$**	**660,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALIGNMENT AT US 40 - ALTERNATIVE 2
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 10,000.00	LS	$ 10,000.00
202	SY	PAVEMENT REMOVED, ASPHALT	$ 3.24	2091	$ 6,774.84
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
202	LS	BUILDING DEMOLISHED	$ 5,000.00	1	$ 5,000.00
203	CY	EXCAVATION	$ 5.72	3572	$ 20,431.84
203	CY	EMBANKMENT	$ 6.49	683	$ 4,432.67
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 47,654.75
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	411	$ 4,040.13
659	SY	SEEDING AND MULCHING	$ 0.40	43727	$ 17,490.80
659	TON	COMMERCIAL FERTILIZER	$ 283.66	1	$ 283.66
659	ACRE	LIME	$ 50.84	1	$ 50.84
659	MGAL	WATER	$ 1.59	20	$ 31.80
832		STORM WATER POLLUTION PREVENTION PLAN	$ 5,000.00	LS	$ 5,000.00
832	EACH	EROSION CONTROL	$ 1.00	10000	$ 10,000.00
					$ 36,897.23
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	100	$ 3,905.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	100	$ 3,094.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	48	$ 1,824.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	0	$ -
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	325	$ 2,317.25
					$ 41,442.35
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	541	$ 50,004.63
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	9	$ 1,324.98
304	CY	AGGREGATE BASE	$ 35.72	304	$ 10,858.88
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	157	$ 178.98
408	GAL	PRIME COAT	$ 1.82	729	$ 1,326.78
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	120	$ 6,235.20
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	153	$ 16,470.45
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	109	$ 11,642.29
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	5	$ 886.55
					$ 98,928.74

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALIGNMENT AT US 40 - ALTERNATIVE 2
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	64	$ 378.24
630	SF	SIGN, FLAT SHEET	$ 11.73	30	$ 351.90
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	0.26	$ 450.74
644	MILE	CENTER LINE	$ 3,193.46	0.13	$ 415.15
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 2,415.37
		TRAFFIC SIGNAL			
		REMOVE TRAFFIC SIGNAL	$2,000.00	1	$ 2,000.00
		NEW TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
					$ 77,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	50	$ 1,816.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 3,880.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 20,000.00 LS		$ 20,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 10,000.00 LS		$ 10,000.00
624		MOBILIZATION	$ 10,000.00 LS		$ 10,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 2,500.00 LS		$ 2,500.00
					$ 42,500.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$105,215.57**
					$ 455,934.11

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD)
PRELIMINARY ENGINEERING STUDY
US 40 CONNECTOR - ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM			ESTIMATED COST
ROADWAY		$	46,000.00
EROSION CONTROL		$	37,000.00
DRAINAGE		$	42,000.00
PAVEMENT		$	105,000.00
TRAFFIC CONTROL		$	3,000.00
TRAFFIC SIGNAL		$	77,000.00
MAINTENANCE OF TRAFFIC		$	4,000.00
MISCELLANEOUS		$	43,000.00
STRUCTURES		$	-
DESIGN CONTINGENCY (30%)		$	107,000.00
	2007 SUBTOTAL	$	464,000.00
INFLATION TO 2010 (27%)		$	126,000.00
	CONSTRUCTION SUBTOTAL	$	590,000.00
PERMANENT RIGHT OF WAY		$	10,000.00
TEMPORARY RIGHT OF WAY			
INFLATION TO 2010 (27%)		$	3,000.00
	RIGHT OF WAY SUBTOTAL	$	13,000.00
	TOTAL PROJECT COST	**$**	**603,000.00**

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALIGNMENT AT US 40 - ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		ROADWAY			
201		CLEARING AND GRUBBING	$ 10,000.00	LS	$ 10,000.00
202	SY	PAVEMENT REMOVED, ASPHALT	$ 3.24	2091	$ 6,774.84
202	SF	WALK REMOVED	$ 1.37	0	$ -
202	FT	CURB REMOVED	$ 3.24	0	$ -
202	LS	BUILDING DEMOLISHED	$ 5,000.00	0	$ -
203	CY	EXCAVATION	$ 5.72	4155	$ 23,766.60
203	CY	EMBANKMENT	$ 6.49	561	$ 3,640.89
608	SF	4" CONCRETE WALK	$ 3.77	0	$ -
608	EACH	CURB RAMP	$ 507.70	2	$ 1,015.40
609	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 14.02	0	$ -
					$ 45,197.73
		EROSION CONTROL			
659	CY	TOPSOIL	$ 9.83	412	$ 4,049.96
659	SY	SEEDING AND MULCHING	$ 0.40	42687	$ 17,074.80
659	TON	COMMERCIAL FERTILIZER	$ 283.66	1	$ 283.66
659	ACRE	LIME	$ 50.84	1	$ 50.84
659	MGAL	WATER	$ 1.59	21	$ 33.39
832		STORM WATER POLLUTION PREVENTION PLAN	$ 5,000.00	LS	$ 5,000.00
832	EACH	EROSION CONTROL	$ 1.00	10000	$ 10,000.00
					$ 36,492.65
		DRAINAGE			
603	FT	8" CONDUIT, TYPE B	$ 39.05	100	$ 3,905.00
603	FT	8" CONDUIT, TYPE C	$ 30.94	100	$ 3,094.00
603	FT	12" CONDUIT, TYPE D	$ 38.00	48	$ 1,824.00
603	FT	15" CONDUIT, TYPE A	$ 58.66	60	$ 3,519.60
603	FT	18" CONDUIT, TYPE A	$ 58.46	60	$ 3,507.60
603	FT	24" CONDUIT, TYPE A	$ 76.86	60	$ 4,611.60
603	FT	60" CONDUIT, TYPE A	$ 271.80	0	$ -
604	EACH	CATCH BASIN, NO. 2-2B	$ 1,090.78	5	$ 5,453.90
604	EACH	MANHOLE, NO. 3	$ 2,641.88	5	$ 13,209.40
605	FT	AGGREGATE DRAINS	$ 7.13	300	$ 2,139.00
					$ 41,264.10
		PAVEMENT			
254	SY	PAVEMENT PLANING, ASPHALT CONCRETE	$ 1.40	0	$ -
254	SY	PATCHING PLANED SURFACE	$ 1.53	0	$ -
301	CY	ASPHALT CONCRETE BASE, PG64-22	$ 92.43	520	$ 48,063.60
301	CY	ASPHALT CONCRETE BASE, PG64-22 (DRIVEWAYS)	$ 147.22	9	$ 1,324.98
304	CY	AGGREGATE BASE	$ 35.72	537	$ 19,181.64
407	GAL	TACK COAT	$ 1.07	0	$ -
407	GAL	TACK COAT FOR INTERMEDIATE COURSE	$ 1.14	151	$ 172.14
408	GAL	PRIME COAT	$ 1.82	1288	$ 2,344.16
411	CY	STABILIZED CRUSHED AGGREGATE	$ 51.96	115	$ 5,975.40
448	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG64-22	$ 107.65	147	$ 15,824.55
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 106.81	105	$ 11,215.05
448	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG64-22	$ 177.31	5	$ 886.55
					$ 104,988.07

MUSKINGUM COUNTY: CR 144 (DILLON FALLS ROAD) PRELIMINARY ENGINEERING STUDY
ALIGNMENT AT US 40 - ALTERNATIVE 3
OPINION OF PROBABLE CONSTRUCTION COST

ITEM	UNIT	DESCRIPTION	UNIT COST 2007	QUANTITY	TOTAL PROJECT COST
		TRAFFIC CONTROL			
630	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 5.91	62	$ 366.42
630	SF	SIGN, FLAT SHEET	$ 11.73	29	$ 340.17
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 9.68	10	$ 96.80
630	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	$ 48.85	2	$ 97.70
630	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 11.68	12	$ 140.16
644	MILE	EDGE LINE	$ 1,733.63	0.23	$ 398.73
644	MILE	CENTER LINE	$ 3,193.46	0.11	$ 351.28
644	FT	STOP LINE	$ 5.77	84	$ 484.68
644	FT	CROSSWALK LINE	$ 2.53	0	$ -
					$ 2,275.94
		TRAFFIC SIGNAL			
		REMOVE TRAFFIC SIGNAL	$2,000.00	1	$ 2,000.00
		NEW TRAFFIC SIGNAL	$75,000.00	1	$ 75,000.00
					$ 77,000.00
		MAINTENANCE OF TRAFFIC			
410	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	$ 36.33	50	$ 1,816.50
614	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	$ 51.59	40	$ 2,063.60
					$ 3,880.10
		MISCELLANEOUS			
614		MAINTAINING TRAFFIC	$ 20,000.00 LS		$ 20,000.00
623		CONSTRUCTION LAYOUT STAKES	$ 10,000.00 LS		$ 10,000.00
624		MOBILIZATION	$ 10,000.00 LS		$ 10,000.00
SPECIAL		BID GUARANTY AND CONTRACT BOND	$ 2,500.00 LS		$ 2,500.00
					$ 42,500.00
		STRUCTURES			
	SF		$ 95.00	0	$ -
	SF		$ 95.00	0	$ -
					$ -
DESIGN CONTINGENCY				***30%***	**$106,079.58**
					$ 459,678.17

RICHLAND ENGINEERING LIMITED

• Bridge Design • Municipal • Highways • Airports
• Bridge Restoration • Site Development • Bikeways • Surveying

29 North Park Street • Mansfield Ohio 44902
Phone: (419)524-0074 Fax: (419)524-1812 email: reltd@r-e-l.com