VALUE ENGINEERING SUMMARY
OF THE
I-75 WIDENING
ITEM NO. 6-16.00
BOONE, KENTON & GRANT COUNTIES
KENTUCKY

SEPTEMBER 8-12, 1997

Prepared by:
William F. Ventry, P.E., C.V.S.

In Association With:

Kentucky Transportation Cabinet

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

INTRODUCTION

This Value Engineering report summarizes the results of the Value Engineering study performed by Ventry Engineering for the Kentucky Transportation Cabinet. The study was performed during the week of September 8-12, 1997.

The subject of the study was the widening of I-75 in Boone, kenton & Grant Counties.

PROJECT DESCRIPTION

The proposed project is the reconstruction of I-75 by adding an additional lane to the median of the existing I-75 from KY 491 to north of I-71. This is proposed to be accomplished by paving the additional new lanes on the inside as well as the entire median with the full depth of the proposed new pavement design.

It is proposed to replace the existing KY 491 bridge with a new three lane structure.

It is also proposed to replace the haunched portion of the existing KY 14/16 bridge with a new structure and keep the existing AASHTO girder portion.

In addition, the Eads Road bridge is proposed to be jacked up approximately 4 feet to achieve the required vertical clearance over I-75.

METHODOLOGY

The Value Engineering Team followed the basic Value Engineering procedure for conducting this type of analysis.

This process included the following phases:

1. Investigation
2. Speculation
3. Evaluation
4. Development
5. Presentation
6. Report Preparation

Evaluation criteria identified as a basis for the comparison of alternatives included the following:

- Construction cost
- Maintenance cost
- Constructability
- Maintenance of Traffic
- Design life
- Salvage Value
- Pavement Drainage

- Snow/Ice removal or storage
- Vertical and horizontal clearances
- Cross road profiles
- Traffic operations
- Construction time

RESULTS

The following six areas of focus were analyzed by the Value Engineering team and from these areas the following Value Engineering alternatives were developed and are recommended for Implementation:

1-Drainage Blanket

The Value Engineering Team recommends that Value Engineering Alternative No. 1 be implemented. This alternative uses an untreated stone blanket.

If this recommendation can be implemented, there is a possible savings of **$1,008,735.**

What About problems with - paving on untreated stone blanket ? NO

2-KY 14/16 Structure

OK

The Value Engineering Team recommends that Value Engineering Alternative No. 2 be implemented. This alternative replaces the existing bridge with a new structure but does not use a crossover for maintenance of traffic.

If this recommendation can be implemented, there is a possible savings of **$ 461,100.**

3-KY 14/16 Interchange Ramp Revision and Culvert Extension

The Value Engineering Team recommends that the Value Engineering Alternative be implemented. This alternative changes the proposed ramp revision and eliminates the culvert extension and fill.

If this recommendation can be implemented, there is a possible savings of **$ 216,258.**

If there is ~~NO~~ adequate for Area for this OKAY

4-Mainline Overlay and New Pavement Thickness

The Value Engineering Team recommends that the Value Engineering Alternative be implemented. This alternative minimizes the thickness by revising the pavement design.

How was paving design revised?

If this recommendation can be implemented, there is a possible savings of **$1,359,250.**

Do we want to lessen the thickness of the pavement on I-75 ? I think Not

5-Typical Section

The Value Engineering Team recommends that Value Engineering Alternative No. 4B be implemented. This alternative uses an 8 meter depressed median, uses a standard height single slope barrier in the median, uses 12'(3.6m) paved shoulders in the median, reduces the thickness of the median shoulder pavement and/or uses lesser grade of materials for the shoulder pavement in the median and feathers the shoulders down from the edge of pavement on the outside and does nothing outside the existing shoulders.

If we to have use the shoulder for riding surface during phasing or future construction we will loose this saving 3 fold.

If this recommendation can be implemented, there is a possible savings of **$4,534,366.**

6-KY 491 Structure

I thought alternate #1 was on page 3

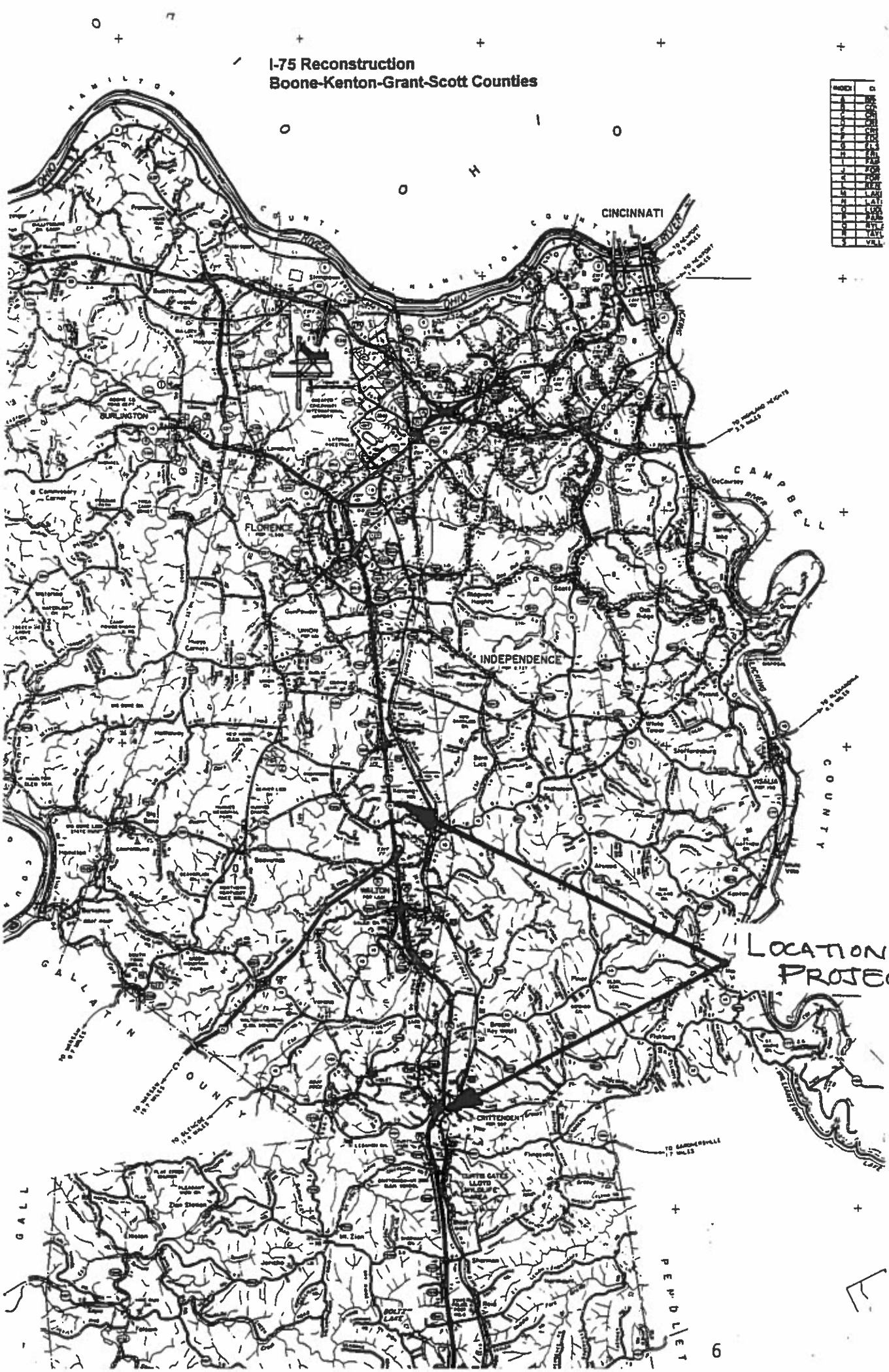
The Value Engineering Team recommends that Value Engineering Alternative No. 2 be implemented. This alternative salvages the existing bridge by jacking it up to obtain the required vertical clearance and widens the existing bridge to obtain the desired typical section width.

Can be problems jacking old bridges. This must depend on future expansion in this area I am not convince this is WAY to go,

If this recommendation can be implemented, there is a possible savings of **$ 866,800.**

If all the recommendations can be implemented, there is a possible total savings of **$8,446,509.**

II. LOCATION OF PROJECT


I-75 Reconstruction
Boone-Kenton-Grant-Scott Counties
CINCINNATI
OHIO RIVER
BURLINGTON
FLORENCE
INDEPENDENCE
CAMPBELL COUNTY
GALLATIN COUNTY
PENDLETON
LOCATION OF PROJECT

III. TEAM MEMBERS AND PROJECT DESCRIPTION

TEAM MEMBERS

NAME	AFFILIATION	EXPERTISE	PHONE
William F. Ventry, P.E., C.V.S.	Ventry Engineering	Team Leader	850/627-3900
Don Keenan	Ventry Engineering	Structural Team Member	850/627-3900
Jerry Love	Ventry Engineering	Geometric Team Member	850/627-3900
Duncan Silver	Ventry Engineering	Pavement Design Team Member	850/627-3900
Dale Carpenter	Kentucky Transportation Cabinet	Structural Team Member	502/564-4560
Larry Trenkemp	Kentucky Transportation Cabinet	Construction Team Member	606/341-2700
Kevin Villier	Kentucky Transportation Cabinet	Roadway Design Team Member	502/367-6411

PROJECT DESCRIPTION

The proposed project is the reconstruction of I-75 by adding an additional lane to the median of the existing I-75 from KY 491 to north of I-71. This is proposed to be accomplished by paving the additional new lanes on the inside as well as the entire median with the full depth of the proposed new pavement design.

It is proposed to replace the existing KY 491 bridge with a new three lane structure.

It is also proposed to replace the haunched portion of the existing KY 14/16 bridge with a new structure and keep the existing AASHTO girder portion.

In addition, the Eads Road bridge is proposed to be jacked up approximately 4 feet to achieve the required vertical clearance over I-75.

PERSONS CONTACTED

NAME	AFFILIATION	PHONE
Bill Madden	Kentucky Transportation Cabinet, Traffic	502/564-3020
Robert Parks	Florence & Hutcheson	502/444-9691
Joette Fields	Kentucky Transportation Cabinet, Value Engineering	502/654-3280
Daryl Greer	Kentucky Transportation Cabinet, Value Engineering	502/654-3280
Janet Coffey	Kentucky Transportation Cabinet, Operations	502/564-4560
Leo Frank	Kentucky Transportation Cabinet, Pavement Design	502/564-3280

IV. INVESTIGATION PHASE

FUNCTIONAL ANALYSIS WORKSHEET, INVESTIGATION PHASE
PROJECT: I-75 WIDENING; BOONE, KENTON & GRANT COUNTIES
DATE: SEPTEMBER 8-12, 1997

ITEM	FUNCT. VERB	FUNCT. NOUN	TYPE	COST *	WORTH *	VALUE INDEX
Base, New Pavement	Support	Pavement	B	$3,500	$2,000	1.8
Drainage Blanket	Drain	Subgrade	S	$1,760	$ 800	2.2
Surface, New Pavement	Support	Vehicles	B	$ 800	$ 600	1.3
Base, Inside Shoulder	Support	Pavement	B	$4,200	$2,100	2.0
Surface, Inside Shoulder	Protect	Pavement Edge	B	$1,000	$ 500	2.0
Perforated Drain Pipe	Remove	Water	S	$ 775	$ 775	1.0
Milling of Existing Pavement	Remove	Material	B	$ 900	$ 0	∞
Overlay of Existing Pavement	Support	Vehicles	B	$3,100	$2,700	1.1
Median Drainage System	Convey	Water	B	$ 900	$ 900	1.0
Temporary Barrier Wall	Protect	Workers	S	$1,575	$ 575	3.0
Permanent Barrier Wall	Redirect	Vehicle	B	$2,173	$2,173	1.0
Earthwork	Achieve	Profile	S	$1,617	$1,000	1.6
KY 491 Bridge	Span	I-75	B	$1,250	$ 500	
Eads Road Bridge	Provide	Clearance	S	$ 250	$ 250	1.0
KY 14/16 Bridge	Provide	Clearance	S	$ 800	$ 150	
Guardrail	Redirect	Vehicles	B	$ 444	$ 444	1.0
Ramp Realignment/Culvert Extension	Revise	Area	S	$ 700	$ 400	1.8

ITEM	FUNCT. VERB	FUNCT. NOUN	TYPE	COST *	WORTH *	VALUE INDEX
Maintenance of Traffic	Traffic	Control	B	$ 800	$ 800	1.0
Base, Outside Shoulder	Match	Mainline	S	$ 650	$ 300	2.0
Surface, Outside Shoulder	Match	Mainline	S	$ 700	$ 350	2.0

B = Basic Function
S = Secondary Function
* = All amounts x 1000

INVESTIGATION

The following have been identified by the Value Engineering Team as areas of focus and investigation for the Value Engineering process:

1. **Drainage Blanket**

2. **KY 14/16 Structure**

3. **KY 14/16 Interchange Ramp Revision and Culvert Extension**

4. **Mainline Overlay and New Pavement Thickness**

5. **Typical Section**

6. **KY 491 Structure**

V. SPECULATION PHASE

SPECULATION

Ideas generated, utilizing the brainstorming method, for performing the functions of previously identified areas of focus.

1. DRAINAGE BLANKET

- **Use untreated stone**
- **Use a rock subgrade**
- **Change slope on subgrade and use existing edge drain**
- **Eliminate drainage blanket entirely**
- **Use milled material**
- **Use ground tires**

2. KY 14/16 STRUCTURE

- **Shift the alignment and keep the existing bridge**
- **Cut a notch in the existing haunch and add post-tensioning**
- **Jack the old and new bridges to obtain vertical clearance**
- **Lower I-75 to obtain vertical clearance**
- **Replace with a new bridge but do not use a crossover for maintenance of traffic**

3. KY 14/16 INTERCHANGE RAMP REVISION AND CULVERT EXTENSION

- **Change proposed ramp revision**
- **Eliminate the culvert extension and fill**
- **Provide culvert extension but do not fill over the culvert extension**

4. MAINLINE OVERLAY AND NEW PAVEMENT THICKNESS

- **Minimize the thickness by revising pavement design**
- **Substitute open graded friction course for surface course**

- Eliminate overlay entirely
- Use stage construction for a future resurfacing at ten years
- Break the pavement design north and south of I-71
- Do not mill the existing pavement
- Mill only the bad areas of the existing pavement

5. TYPICAL SECTION

- Use spilt wall with earth fill in median
- Use single slope barrier wall in median
- Reduce thickness of median shoulder pavement
- Reduce the median shoulder width to 12'(3.6m)
- Use lesser grade of materials for the shoulder pavement in the median
- Use permanent precast barrier wall for temporary wall and the use in permanent position in median
- Eliminate or minimize outside ditch regrading
- Modify the proposed outside ditch section
- Minimize the thickness of the outside shoulders
- Use lesser grade of materials on the outside shoulders
- Feather down from the edge of pavement and do nothing to the outside shoulders
- Use standard height barrier in the median
- Use tribeam guardrail in the median
- Use two single face guardrail in the median
- Shift the alignment to the outside to obtain clear zone requirements and eliminate median barrier entirely

6. KY 491 STRUCTURE

- **Salvage the existing bridge by jacking it up to obtain required vertical clearance**
- **Widen the existing bridge to obtain desired typical section**
- **Provide a new bridge but eliminate the proposed crossovers**
- **Construct a new bridge on the existing foundations**
- **Use a single span bridge with MSE walls**
- **Replace with a new four span bridge**
- **Use a steel through bridge**
- **Eliminate proposed widen of the bridge typical by moving turning movement off the bridge**
- **Shift the alignment to obtain better vertical clearance**

VI. EVALUATION PHASE

VI.(a) ALTERNATIVES

ALTERNATIVES

The following alternatives were formulated during the "eliminate and combine" portion of the Evaluation Phase.

1. DRAINAGE BLANKET

Value Engineering Alternative No. 1-Use untreated stone

Value Engineering Alternative No. 2-Change slope on subgrade and use existing edge drain

Value Engineering Alternative No. 3-Eliminate entirely

2. KY 14/16 STRUCTURE

Value Engineering Alternative No. 1-Shift the alignment and keep the existing bridge by jacking the old and new bridges to obtain vertical clearance

Value Engineering Alternative No. 2-Replace with a new bridge but do not use a crossover for maintenance of traffic

3. KY 14/16 INTERCHANGE RAMP REVISION AND CULVERT EXTENSION

Value Engineering Alternative-Change proposed ramp revision and eliminate the culvert extension and fill

4. MAINLINE OVERLAY AND NEW PAVEMENT THICKNESS

Value Engineering Alternative-Minimize the thickness by revising pavement design

5. TYPICAL SECTION

Value Engineering Alternative No. 1-In a 9.2 meter depressed median, use double faced guardrail in the median, 12'(3.6m) paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median and minimize the thickness of the outside shoulders and modify the proposed outside ditch section.

Value Engineering Alternative No. 2-In a 9.2 meter raised median, use a standard height single slope barrier wall or a split barrier with earth fill in the median, 12'(3.6m) paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median, minimize the thickness of the outside shoulders and modify the proposed outside ditch section.

Value Engineering Alternative No. 3-In a 9.2 meter raised median, use a double face guardrail in the median, 10' paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median, minimize the thickness of the outside shoulders and modify the proposed outside ditch section.

Value Engineering Alternative No. 4-In a 8 meter depressed median, use a standard height single slope barrier in the median, 12'(3.6m) paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median and feather down from the edge of pavement and do nothing to the outside shoulders.

Value Engineering Alternative No. 5-In a 8 meter depressed median, use double faced guardrail in the median, 12'(3.6m) paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median and feather down from the edge of pavement and do nothing to the outside shoulders.

6. KY 491 STRUCTURE

Value Engineering Alternative No. 1-Salvage the existing bridge by jacking it up to obtain required vertical clearance and widen the existing bridge to obtain desired typical section

Value Engineering Alternative No. 2-Provide a new two span bridge but eliminate the proposed crossovers

Value Engineering Alternative No. 3-Construct a new bridge on the existing foundations and replace with a new four span bridge

VI.(b) ADVANTAGES AND DISADVANTAGES

EVALUATION

The following Advantages and Disadvantages were developed for the Value Engineering Alternatives previously generated during the speculation phase. It also includes the Advantages and Disadvantages for the As Proposed.

1. DRAINAGE BLANKET

"As Proposed"-Use treated stone blanket

Advantages

- **May extend pavement life on a portion of the project**
- **Adds structural support**

Disadvantages

- **High construction cost**
- **Treatment of stone may not be required**
- **Blanket will only be under a portion of the final typical section**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 1-Use untreated stone blanket

Advantages

- **May extend pavement life on a portion of the project**
- **Adds structural support**
- **Medium construction cost**

Disadvantages

- **Blanket will only be under a portion of the final typical section**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 2-Change slope on subgrade and use existing edge drain

Advantages

- May reduce the volume of blanket required
- Medium construction cost
- Median drain pies would not be required

Disadvantages

- Would require more bituminous material
- Existing drain pipe will be under pavement
- Existing drain pipe may be damaged during construction

Conclusion:
Eliminate from further Evaluation

Value Engineering Alternative No. 3-Eliminate entirely

Advantages

- Low construction cost
- Less construction time

Disadvantages

- Reduced pavement life

Conclusion:
Eliminate from further Evaluation

2. KY 14/16 STRUCTURE

"As Proposed"-Replace the haunched portion of the bridge with a new AASHTO girder portion and leave the existing AASHTO portion as is

Advantages

- Achieves required vertical clearance
- Matches existing profile

Disadvantages

- **Constructability**
- **Maintenance of traffic on I-75**
- **High construction cost**
- **Does not salvage to remaining life of the existing bridge**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 1-Shift the alignment and keep the existing bridge by jacking the old and new bridges to obtain vertical clearance

Advantages

- **Salvages the remaining life of the existing bridge**
- **Less maintenance of traffic on I-75**
- **Medium construction cost**
- **Achieves vertical clearance**

Disadvantages

- **Changes profile on KY 14/16**
- **More maintenance of traffic on KY 14/16**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 2-Replace with a new bridge but do not use a crossover for maintenance of traffic

Advantages

- **Medium construction cost**
- **Achieves required vertical clearance**
- **Matches existing profile**
- **Less maintenance of traffic on I-75**

Disadvantages

- **Constructability**
- **Does not salvage to remaining life of the existing bridge**

Conclusion:
Recommend to be carried forward for further Evaluation

3. KY 14/16 INTERCHANGE RAMP REVISION AND CULVERT EXTENSION

"As Proposed"-Revise the ramp layout and extend the existing box culvert and fill over the extended box culvert

Advantages

- **Provide two lanes on the ramp**

Disadvantages

- **May cause operation conflicts on the ramp**
- **High construction cost**
- **More culvert maintenance**
- **Possible conflict with sanitary sewer**
- **Requires borrow for fill over culvert**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative-Change proposed ramp revision and eliminate the culvert extension and fill

Advantages

- **Eliminates need for borrow**
- **Medium construction cost**
- **Less conflict with sanitary sewer**
- **Less culvert maintenance**

Disadvantages

- **None apparent**

Conclusion:
Recommend to be carried forward for further Evaluation

4. MAINLINE OVERLAY AND NEW PAVEMENT THICKNESS

"As Proposed"-5 1/2 "

Advantages

- **Extended pavement life**
- **Better riding surface**

Disadvantages

- **High construction cost**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative-Minimize the thickness by revising pavement design

Advantages

- **Lower construction cost**
- **Extended pavement life**
- **Better riding surface**

Disadvantages

- **None apparent**

Conclusion:
Recommend to be carried forward for further Evaluation

5. TYPICAL SECTION

"As Proposed"-In a 9.2 meter depressed median, use high barrier in the median, 14' full depth(same as mainline) paved shoulders in the median, 10' full depth(same as mainline) thickness outside shoulders and regrade all the existing ditches and slopes on the outside

Advantages

- **More snow storage area in median**
- **Excess capacity in shoulders**
- **Excavation of outside area to new criteria**
- **Good pavement drainage**

Disadvantages

- **High construction cost**
- **Disturbs the existing area outside the existing shoulders**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 1-In a 9.2 meter depressed median, use double faced guardrail in the median, 12'(3.6m) paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median and minimize the thickness of the outside shoulders and modify the proposed outside ditch section

Advantages

- **Medium construction cost**
- **More snow storage in median**

Disadvantages

- **Increased guardrail maintenance**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 2-In a 9.2 meter raised median, use a standard height single slope barrier wall or a split barrier with earth fill in the median, 12'(3.6m) paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median, minimize the thickness of the outside shoulders and modify the proposed outside ditch section

Advantages

- **No median drains required**
- **Medium construction cost**

Disadvantages

- **Poorer roadway cross-slope drainage**
- **Increased snow and ice removal**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 3-In a 9.2 meter raised median, use a double face guardrail in the median, 10' paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median, minimize the thickness of the outside shoulders and modify the proposed outside ditch section

Advantages

- **No median drains required**

- Low construction cost

Disadvantages

- Poorer roadway cross-slope drainage
- Increased snow and ice removal
- Increased guardrail maintenance

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 4-In a 8 meter depressed median, use a standard height single slope barrier in the median, 12'(3.6m) paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median and feather down from the edge of pavement and do nothing to the outside shoulders

Advantages

- Snow storage
- Low construction cost
- Low maintenance cost
- Good pavement drainage
- Less outside ditch maintenance

Disadvantages

- Does not utilize 4' of existing paved shoulder

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 5-In a 8 meter depressed median, use double faced guardrail in the median, 12'(3.6m) paved shoulders, reduce the thickness of the median shoulder pavement and/or use lesser grade of materials for the shoulder pavement in the median and feather down from the edge of pavement and do nothing to the outside shoulders

Advantages

- Snow storage
- Lowest construction cost
- Good pavement drainage
- Less outside ditch maintenance

Disadvantages

- Does not utilize 4' of existing paved shoulder
- More guardrail maintenance

Conclusion:
Recommend to be carried forward for further Evaluation

6. KY 491 STRUCTURE

"As Proposed"-remove the existing bridge and replace with a two span AASHTO girder structure

Advantages

- Provide new HS 25 structure
- Increases the capacity of the crossroad

Disadvantages

- Raises the existing profile by approximately 6'
- High construction cost
- Difficult maintenance of traffic on I-75
- Does not salvage the remaining life of the existing bridge

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 1-Salvage the existing bridge by jacking it up to obtain required vertical clearance and widen the existing bridge to obtain desired typical section

Advantages

- Reduces the maintenance of traffic on I-75
- Uses the remaining life of the existing bridge
- Low construction cost

Disadvantages

- Raises the existing profile grade approximately 4'
- Some increase in maintenance of traffic on KY 491

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 2-Provide a new two span bridge but eliminate the proposed crossovers

Advantages

- **Provide new HS 25 structure**
- **Increases the capacity of the crossroad**
- **Less maintenance of traffic on I-75**

Disadvantages

- **Raises the existing profile by approximately 6'**
- **High construction cost**
- **Does not salvage the remaining life of the existing bridge**

Conclusion:
Recommend to be carried forward for further Evaluation

Value Engineering Alternative No. 3-Construct a new bridge on the existing foundations and replace with a new four span bridge

Advantages

- **Low to medium construction cost**
- **Minimizes profile grade changes**
- **Reduced maintenance of traffic on I-75**

- **New superstructure**
- **Salvages the remaining life of the foundations of the existing bridge**
- **Can meet HS 25 on superstructure**

Disadvantages

- **None apparent**

Conclusion:
Recommend to be carried forward for further Evaluation

VI.(c) EVALUATION MATRIX

***NOTE:** **Matrices are used to determine a preferred alternative when more than one competing Alternative to the "As Proposed" Alternative survives the advantages and disadvantages process.**

EVALUATION MATRIX

TYPICAL SECTION

4- VERY GOOD 3 - GOOD 2 - FAIR 1 - POOR	CONSTRUCTION COST	MAINTENANCE COST	PAVEMENT DRAINAGE	SNOW/ICE REMOVAL/STORAGE	OUTSIDE DITCH EARTHWORK	MEDIAN DRAINAGE			TOTAL SCORE	RANKING
Weight / Alternative	9	5	5	4	3	2				
As Proposed	1 / 9	3 / 15	4 / 20	4 / 16	1 / 3	1 / 2			65	
VE ALT. NO 1	2.5 / 22.5	2 / 10	4 / 20	4 / 16	1 / 3	1 / 2			73.5	3
VE ALT. NO 2	2 / 18	3.5 / 17.5	2 / 10	2 / 8	2 / 6	4 / 8			67.5	
VE ALT. NO. 3	3 / 27	2.5 / 12.5	2 / 10	2 / 8	2 / 6	4 / 8			71.5	
VE ALT. NO. 4	3.5 / 31.5	4 / 20	4 / 20	3.5 / 14	3 / 9	2 / 4			98.5	1
VE ALT. NO. 5	4 / 36	1.5 / 7.5	4 / 20	3.5 / 14	3 / 9	2 / 4			90.5	2

VII. DEVELOPMENT PHASE

VII.(a) DRAINAGE BLANKET

VII.(a)(1) AS PROPOSED

"As Proposed"

The proposed design calls for a drainage blanket (Type II - Asphalt) placed to a depth of 260 mm under the widened pavement and median shoulder.

VII.(a)(2) V.E. ALTERNATIVE

V.E. Alternative

The V.E. Alternative proposes to utilize an untreated drainage blanket 260mm in depth in lieu of the asphalt treated. Since the primary function of the drainage blanket is to drain water percolating through the pavement structure to the perforated underdrain, the untreated crushed and graded material should adequately convey any water that may collect under the pavement structure.

DRAINAGE BLANKET
COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
DRAINAGE BLANKET TYPE II ASPHALT	$22.00	80,000MT	$1,760,000	0	0
DRAINAGE BLANKET TYPE I - UNTREATED	$ 9.58	0	0	78,420/MT	$751,265
TOTAL			$1,760,000		$751,265

Possible Savings $ 1,008,735

VII.(b) KY 14/16 STRUCTURE

VII.(b)(1) AS PROPOSED

"As Proposed"

The existing bridge is a 2 span reinforced concrete deck girder (RCDG) bridge that has been widened with prestressed concrete I beams (PCIB). The "As Proposed" is to remove the RCDG portion of the bridge and replace it with PCIB beams. This scheme uses a maintenance of traffic (MOT) that utilizes a traffic crossover. This crossover is estimated to cost $521,068 and does not include the MOT cost for traffic on KY 14/16.

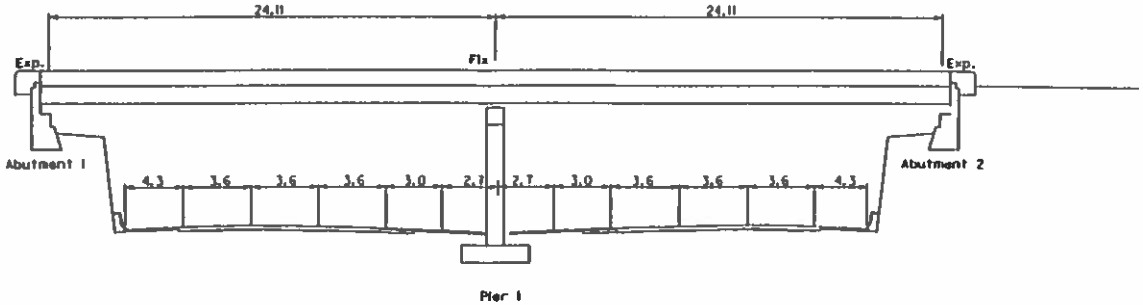
VII.(b)(2) V.E. ALTERNATIVES

V.E. Alternative No. 1

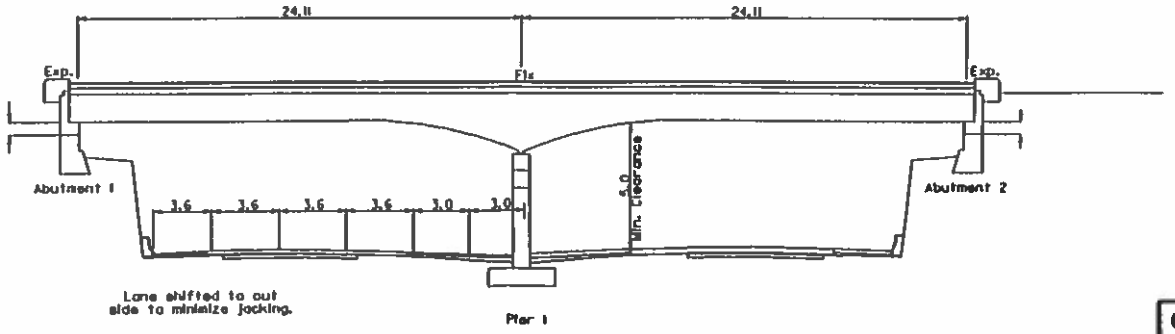
The V. E. Alternative No. 1 is to jack each portion of the existing KY 14/16 bridge approximately .57 meters higher than the present elevation. This will provide 5 meters of vertical clearance. The alignment of I-75 is shifted .6 meters to the outside to minimize the amount of jacking. The .56 meter of elevation change will affect the KY 14/16 and four ramps. This alternative will minimize the maintenance of traffic (MOT). The "As Proposed" requires an expensive crossover of I-75 traffic and MOT of KY 14/16. The V. E. Alternative 1 does not require major I-75 MOT costs. The V. E. Alternative costs $270,886 less than the "As Proposed".

V.E. Alternative No. 2

The V.E. Alternative No. 2 is the same as the "As Proposed" except the maintenance of traffic plan for the V.E. Alternative No. 2 does not utilize a crossover. The V.E. Alternative No. 2 utilizes the on/off ramps to divert traffic during the demolition of the existing spans over traffic and erection of new beams. The MOT plan is detailed in the MOT plan. The V.E. Alternative No. 2 costs $461,068 less than the "As Proposed". This is the recommended alternative.



AS PROPOSED

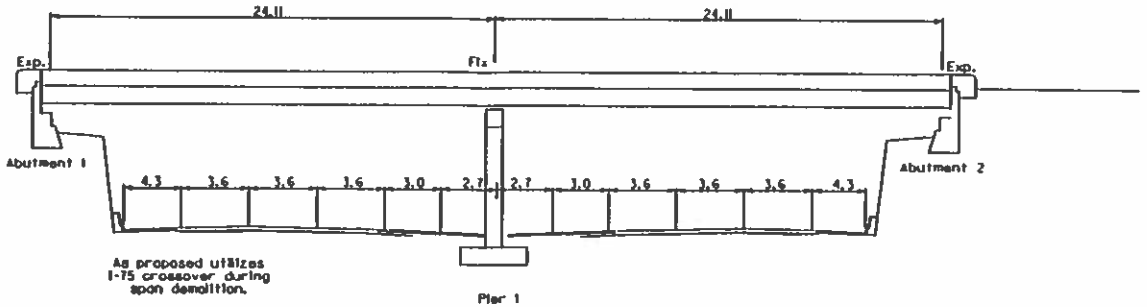


VE-1

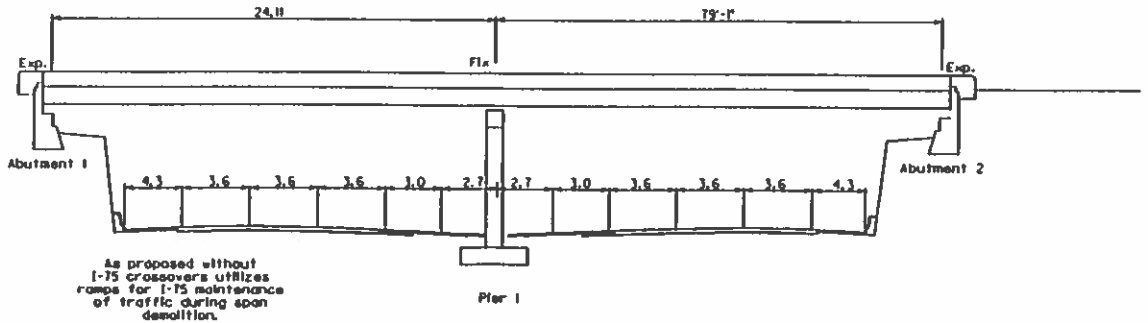
VALUE ENGINEERING ALTERNATIVE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
KY 14 & KY 16
ROAD
STATION

12-SEP-1997	A1C



AS PROPOSED



VE-2

VALUE ENGINEERING ALTERNATIVE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
KY 14 & KY 16
ROAD
STATION
CONSTRUCTION PROJECT NO. 12-SEP-1997
MAINTENANCE PROJECT NO. A12B
DRAWING NO.

48

LETTING DATE

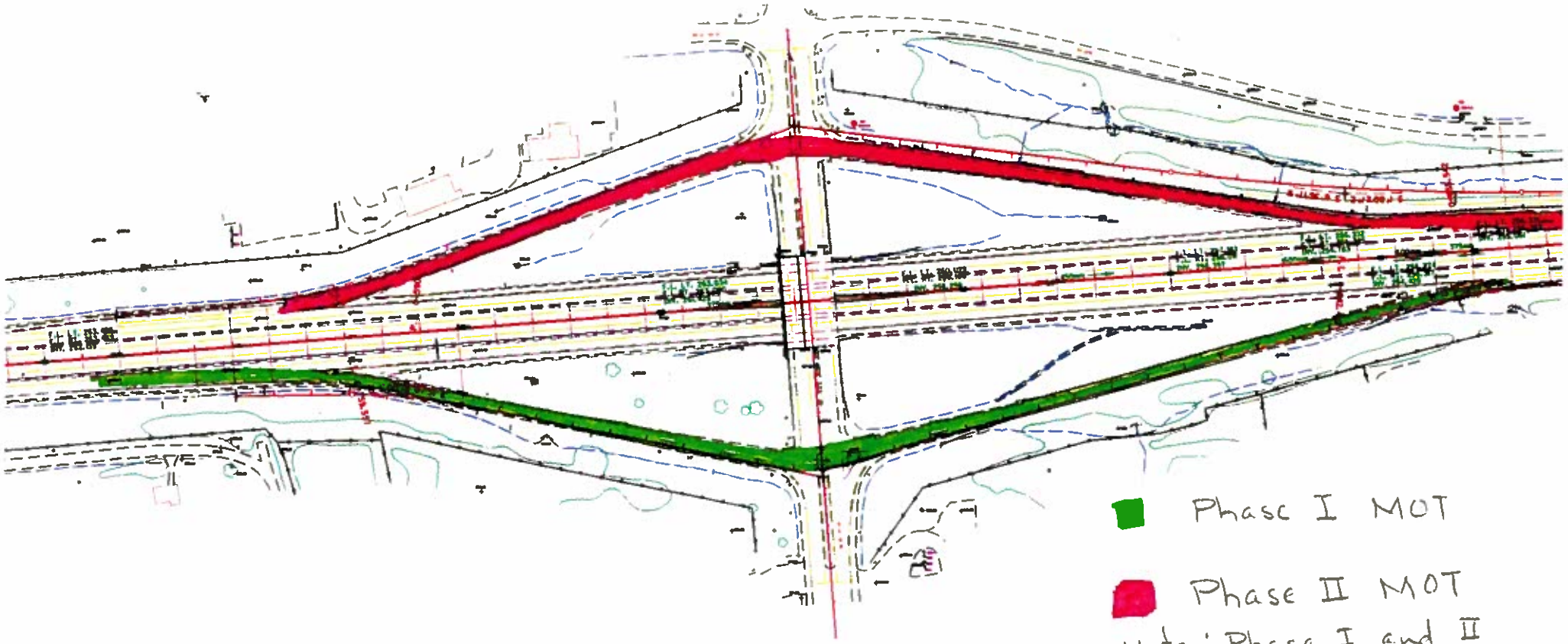
The "As Proposed" KY 14/16 bridge utilizes a crossover to maintain I-75 traffic during demolition and construction. The estimated cost of the crossover is $521,000. The V.E. proposal is to utilize the on/off ramps at the I-75/KY 14/16 interchange to detour I-75 traffic. The detours would only be used during off peak hours.

The MOT plan is to restrict the I-75 traffic to one lane and detour the traffic to the off ramp across KY 14/16 and onto the on ram proceeding onto I-75. The existing bridge will be removed in sections. The prestressed concrete AASHTO girder portion of the bridge will remain in place and be used to maintain KY 14/16 traffic. I-75 will be diverted to demolition the reinforced concrete deck girder portion of the existing bridge and erect the new beams.

The need for diverting traffic will be as follows.

2 nights to demolition RCDG Bridge
2 nights to set beams
1 night to cast deck

Total 5 nights and $10,000 for additional MOT of KY 14/16.



KY 14-16 MOT

VE-2

KY 14/16 V.E. ALTERNATIVE NO. 1
COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
"AS PROPOSED' NEW SUPERSTRUCTURE & UTILIZE EXISTING SUBSTRUCTURE	$160,000	1	$160,000		
MOT CROSSOVER	$521,068	1	$521,068		
DEMOLITION	$100,000	1	$100,000		
V.E. BRIDGE JACK BOTH BRIDGES	$306,182			1	$306,182
ROADWAY RECONSTRUCTION	$144,000			1	$144,000
MOT USING RAMPS	$ 60,000			1	$ 60,000
TOTAL			$781,068		$510,182

Possible Savings: $270,886

KY 14-16 VE-1

4 nights

Cost of Jacking both Structures @ KY 14-16 and shifting I-75 2' to outside

Jack 1470 m^2 .57 m @ $150/$m^2$ = 220,500.00

Conc. for Substr. seats & wing wall extensions 70.65 m^3 × $445/$m^3$ = 31,439.25

Rebars 8,494 Kg @ $1.40/Kg = 11,891.60

Drilled epoxy conc. anchors 328 @ $10 each = 3280.00

Bearing Pads 72 @ $300 each = 21,600.00

Exp. Jts. 56 m @ $312/m = 17,472.00

$306,182.85

Demolition $10,000

MOT $30,000

Rdwy

I-75 SB off Ramp

I-75 SB On Ramp

I-75 NB off Ramp

I-75 NB On Ramp

KY 14-16 Over Br

KY 14-16 Along I-75 South

I-75 Shift

KY 14-16 VE-1

Bridge Area

29.497 m wide × 49.84' long = 1470.13 m^2

Conc. for beam seats

Orig. Cap .85 m × .91 m wide × 10.5 m long = 8.12 m^3

New Pier .85 m × .91 m wide × 16.76 m long = 12.96 m^3

21.09 m^3

End Bents & Wing Wall Extensions

.85 m × .91 m wide × 27.26 m long × 2 = 42.17 m^3

2.0 × .5 × 1.95 × 4 = 7.4 m^3

70.65 m^3

Rebars

$m^3 = 35.31 ft^3$

5% × 70.65 m^3 × 35.31 × 150 = 18,710 #

18,710 # × 454 g / 16 = 8,494,340 g = 8,494 Kg

Anchors @ .5 m ctrs each face of each substr.

(10.5 + 16.76) × 2 × 3 = 163.56 ÷ .5 = 327 Sp.

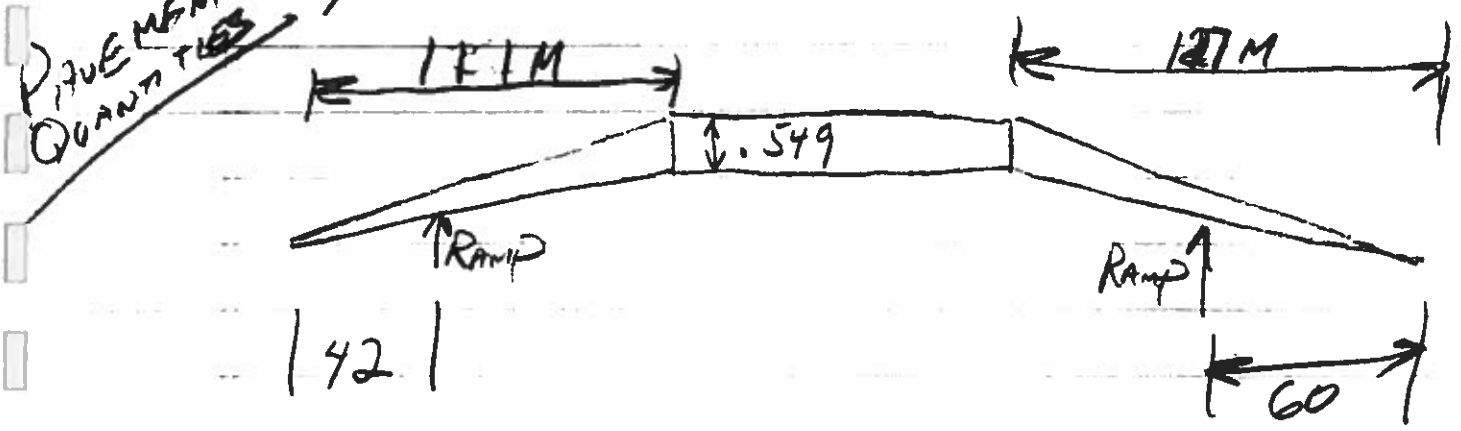
= 328 Anchors

KY 14-16 VE-1

Bearing Pads

12 x 3 x 2 = 72

KY 14/16 - GRADE RAISE.



AREA
27.262 X (111 + 127) 6488 SM.

KY 14/16 BASE = 6488 X 2.35 X 275/1000 = 4200 TONS

RAMPS LEFT - .207 FILL
BASE 2 X 122M X 7.2 X 2.35 X 100/1000 = 412 TONS

RAMPS RIGHT - .259 FILL
BASE 2X 122M X 7.2 X 2.35 X 130/1000 = 537 TONS
BASE 5150 TONS

KY 14/16
SURF 6488 X 2.35 X 40/1000 = 609 TONS

RAMPS LEFT 2X 122M X 7.2 X 2.35 X 40/1000 = 165 TONS
RT 2X 122M X 7.2 X 2.35 X 40/1000 = 165 TONS
330 TONS

BASE 5150 X 22 = $113,000
SURF 330 X 34 = 11,220
MOT = 10,000
MAINT STAGE = 10,000 / 144,220

KY 14/16 V.E. ALTERNATIVE 2
COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
MOT CROSSOVER	$521,068	1	$521,068		
BRIDGE RECONSTRUCTION AND DEMOLITION	$260,000	1	$260,000	1	$260,000
MOT USING RAMPS	$ 60,000			1	$ 60,000
TOTAL			$781,068		$320,000

Possible Savings $ 461,068

KY 14-16 VE-2

As proposed except no crossover

Replace portion of bridge with haunched beams

From Consultants Cost Estimate

Class AA Conc.	141 m^3 x $445/$m^3$	= $62,745
Rebars	16,920 Kg x $1.40/Kg	= $23,688
PCIB III	193 m @ $279/m	= $53,847
50 mm Expansion dts.	21 m @ $312/m	= $6,552
Class A Conc.	15 m^3 x $390/$m^3$	= $5,850
Rebars	900 Kg x $1.20/Kg	= $1,080
Remove Part of Exist. Slab	10 m^3 x $250/$m^3$	= $2,500
Drilled Conc. Anchors	140 x $10 ea.	= $1,400
		$157,662

MOT I-75 $10,000/night/direction 6 nights $60,000

Rdwy Cost to be same as As-Proposed

VII.(c) KY 14/16 INTERCHANGE RAMP REVISION AND CULVERT EXTENSION

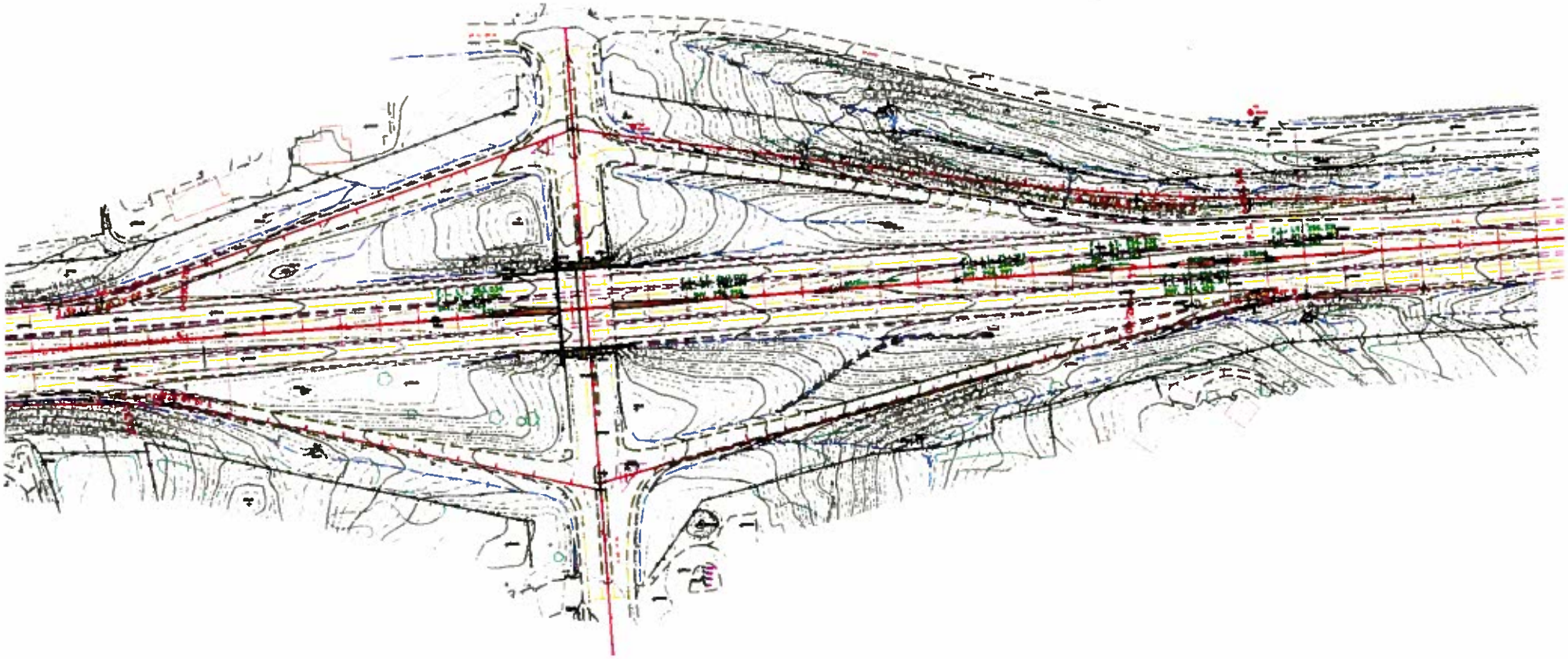
VII.(c)(1) AS PROPOSED

"As Proposed"

The proposed plan for the interchange improvements include upgrading the ramp terminals on I-75 to meet present day design standards and minor improvements to the ramp intersections with KY 14/16. All of the existing ramp alignments are generally maintained with the exceptions of Ramp D which has been shifted to the west and widened to two lanes to provide additional ramp storage for the high volume of trucks from SB I-75 destined for the large truck terminal on the west side of KY 14/16 immediately west of the ramp intersections. Access to the truck terminal is from KY 14/16. It has been recognized that there is insufficient spacing between the ramp D & A intersections with KY 14/16 and the KY 1292/KY 14/16 intersection to provide desirable traffic operations. The distance between these two intersections is approximately 50m. The only feasible means of correcting this condition is to relocate KY 1292 and KY 14/16 to the west which has been considered to be beyond the scope of the I-75 corridor improvements.

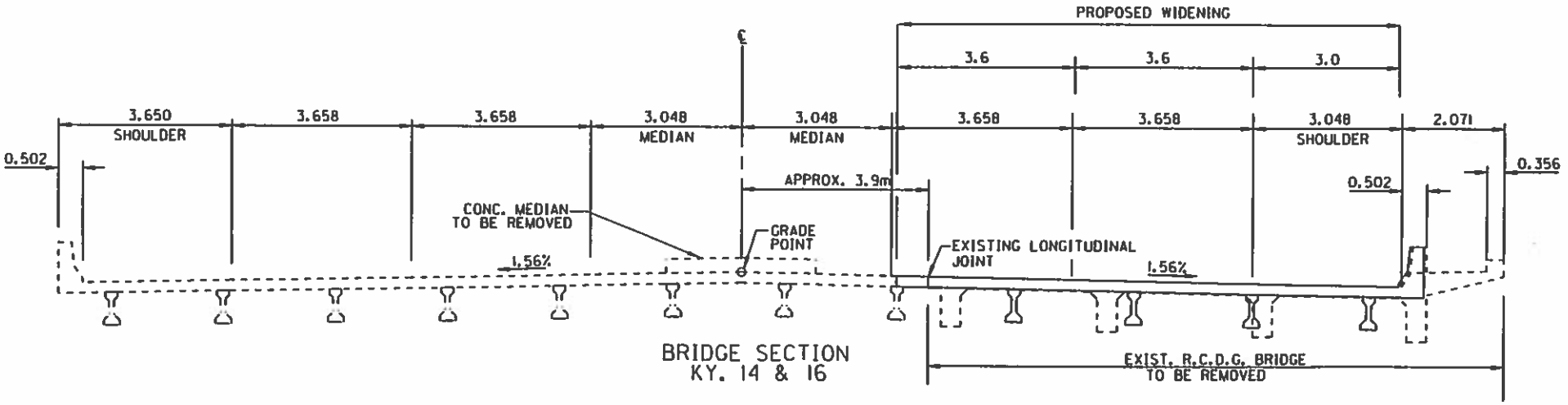
In addition to the ramp improvements, the proposed plan also includes the combining and extending of concrete box culverts under and along the west side of ramp D.

The proposed ramp alignment and culvert locations are shown on the following sheet. The existing raised median on the interchange structure is being removed and single lane left turn lanes and two through lanes are being provided in each direction as shown in the typical section. The existing profile of KY 14/16 is being maintained through the interchange area.



AS PROPOSED

AS PROPOSED



AS PROPOSED

VII.(c)(2) V.E. ALTERNATIVE

V.E. Alternative

The V.E. Alternative for the KY 14/16 interchange is described as follows.

- Upgrade ramp terminals on I-75 to current design standards as now proposed.
- Widen Ramp D to 2 lanes generally following the existing ramp alignment as shown on the following sheets. See cross section drawings for the elimination of a major portion of the culvert extension. Widen Ramp C to accommodate double left turning traffic.
- Provide 2 lane ramp exits and entrances at ramp intersections with KY 14/16 as shown in the Value Engineering plans.
- Provide 2 through lanes in each direction on KY 14/16 between ramp terminals. Provide 2 eastbound left turn lanes, 1 westbound left turn lane, and a flush median as shown on the Value Engineering KY 14/16 typical section.
- Provide inter-connected traffic signals at the three intersections in the interchange area.

Cost Comparison

The cost comparison indicates that the V.E. Alternative would result in a savings of approximately $216,288. This reduction in cost is due primarily to maintaining Ramp D on the existing ramp alignment to the extent possible and the elimination of the large box culvert extension. The proposed design called for placing waste material along the westerly side of Ramp D; however it has been determined that the proposed construction contract for this section of I-75 requires borrow material and it therefore, becomes more costly to place fill in this areas where it is not required to develop the widened ramp section.

Traffic Analysis

Traffic volumes provided by the department for the KY 14/16 interchange included in this section. The design hourly volumes significantly exceed the volume warrants for signalized intersections particularly with the high percentage of trucks. An inter-connected signal system for the three intersections in the interchange area have therefore been included in the V. E. Alternative.

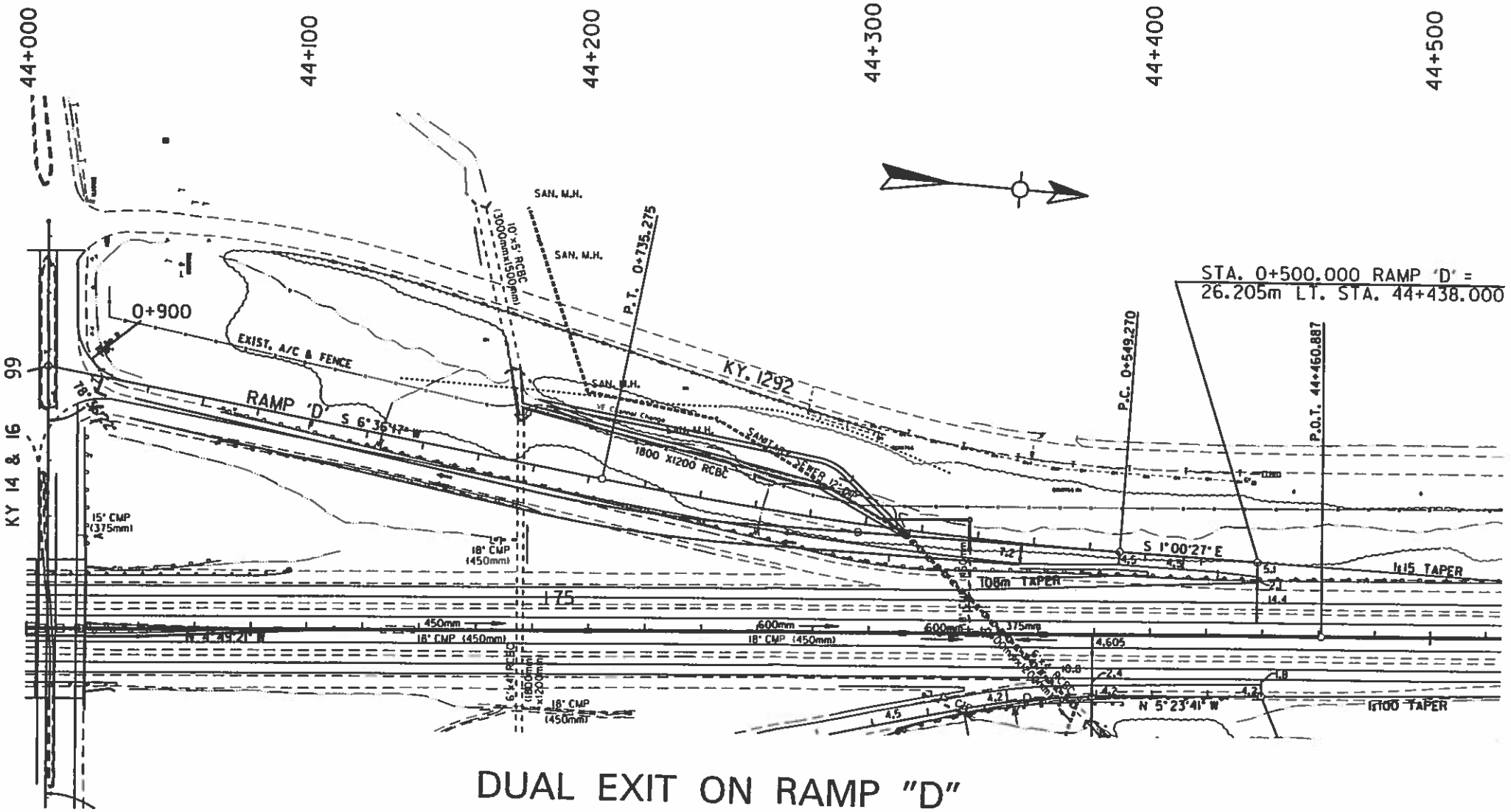
As shown in the traffic volume sheets, two critical volumes in the interchange include the high volumes of left turning traffic from eastbound KY 14/16 to NB I-75 in the p.m., (800 vph including high truck percent), and traffic from SB I-75 to westbound KY 14/16 (976 vph), also in the p.m. Two left turn lanes are definitely needed and are therefore proposed for the 800 vph left turning traffic onto NB I-75. As shown in the typical section, two left turn lanes in the eastbound direction can be provided by eliminating the shoulders on the interchange structure.

Although two right turn lanes should be provided for the 975 vph right turning traffic from the SB I-75 off ramp, the short distance between the ramp intersections 50M and the intersection serving the truck terminal prohibit the development of two right turn lanes, particularly in view of the high volume of trucks from the SB off-ramp proceeding to the truck terminal.

A capacity analysis of the merge of Ramp C with NB I-75 was made, using the Highway Capacity Analysis procedure. As noted in the data sheet, the merging ramp should operate at Level of Service C.

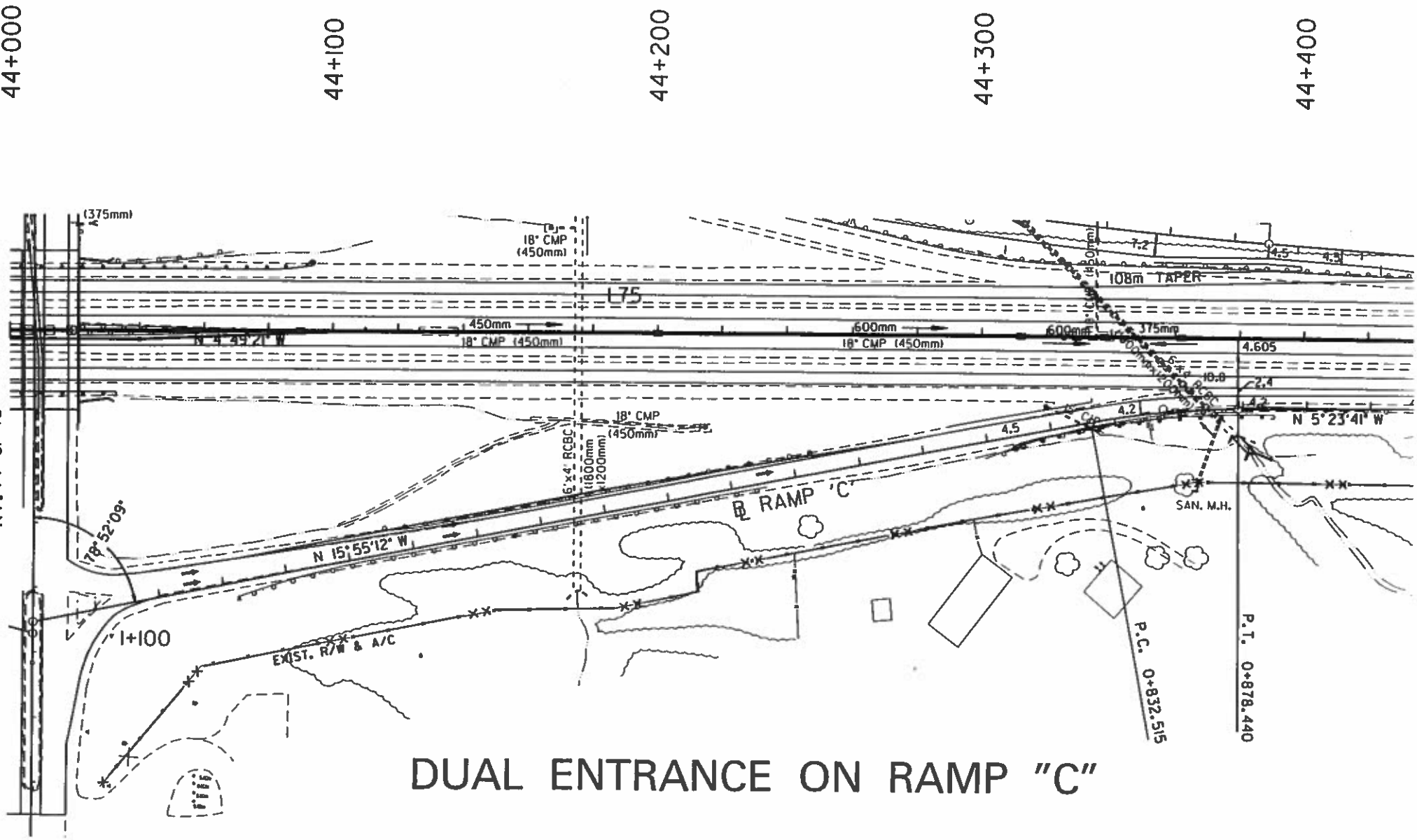
Summary

Because of the estimated construction cost savings and the additional traffic capacity provided by providing two left turn lanes for the high volume left turning traffic NB I-75, it is recommended that this V.E. Alternative be adopted.



DUAL EXIT ON RAMP "D"

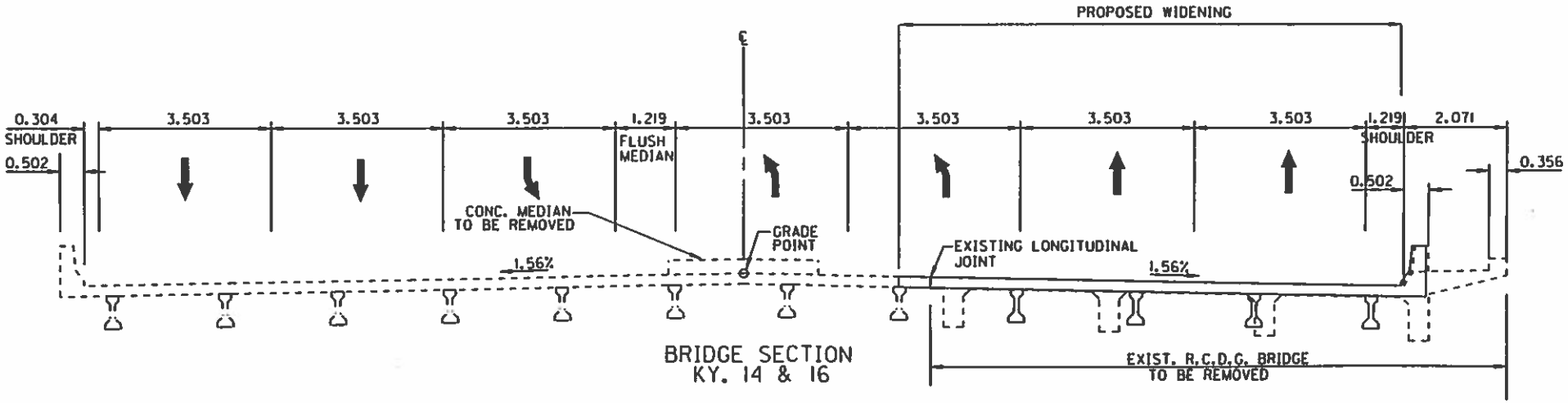
VALUE ENGINEERING ALTERNATIVE



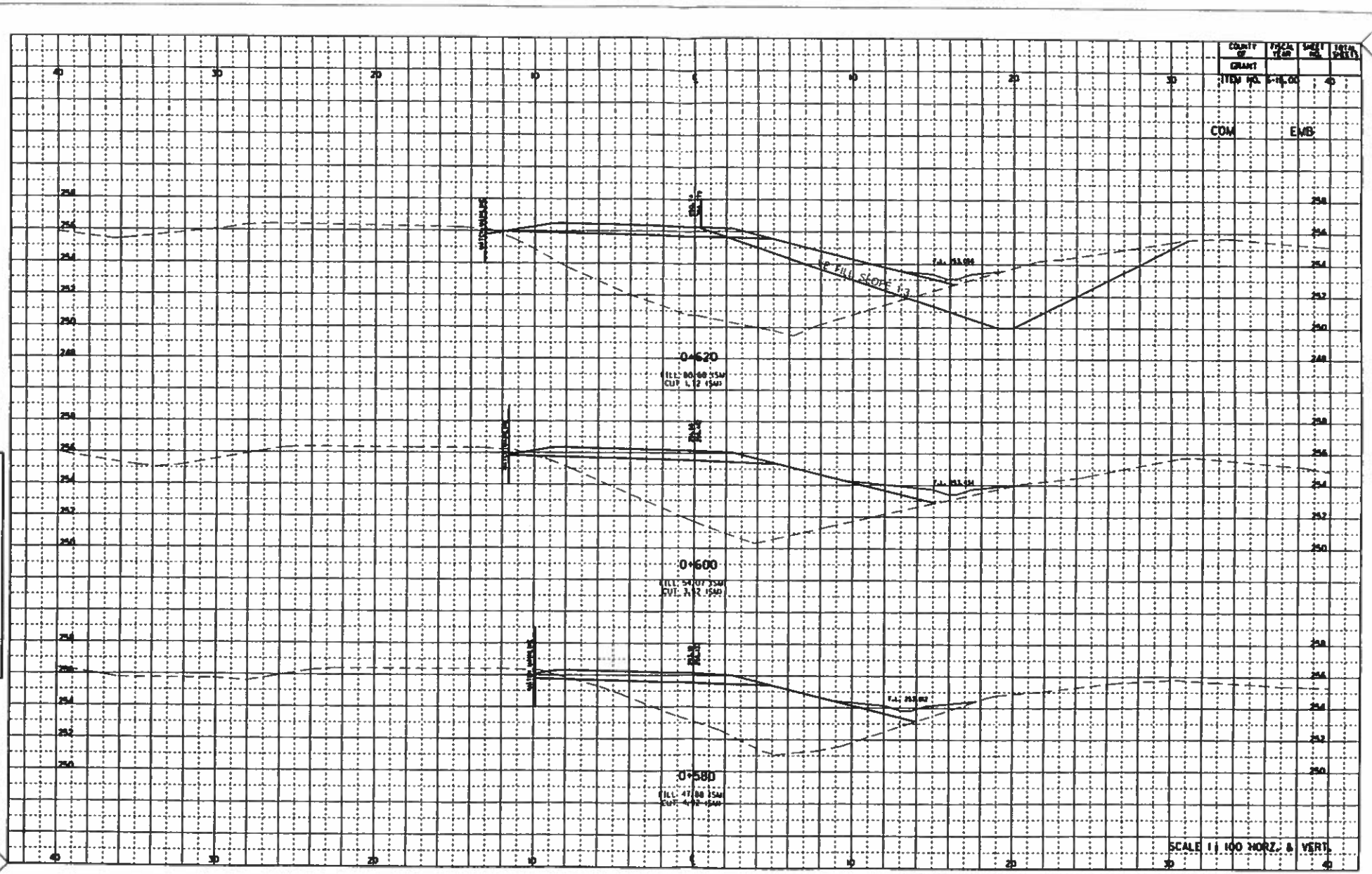
DUAL ENTRANCE ON RAMP "C"

VALUE ENGINEERING ALTERNATIVE

WITH REVISED LANE CONFIGURATION

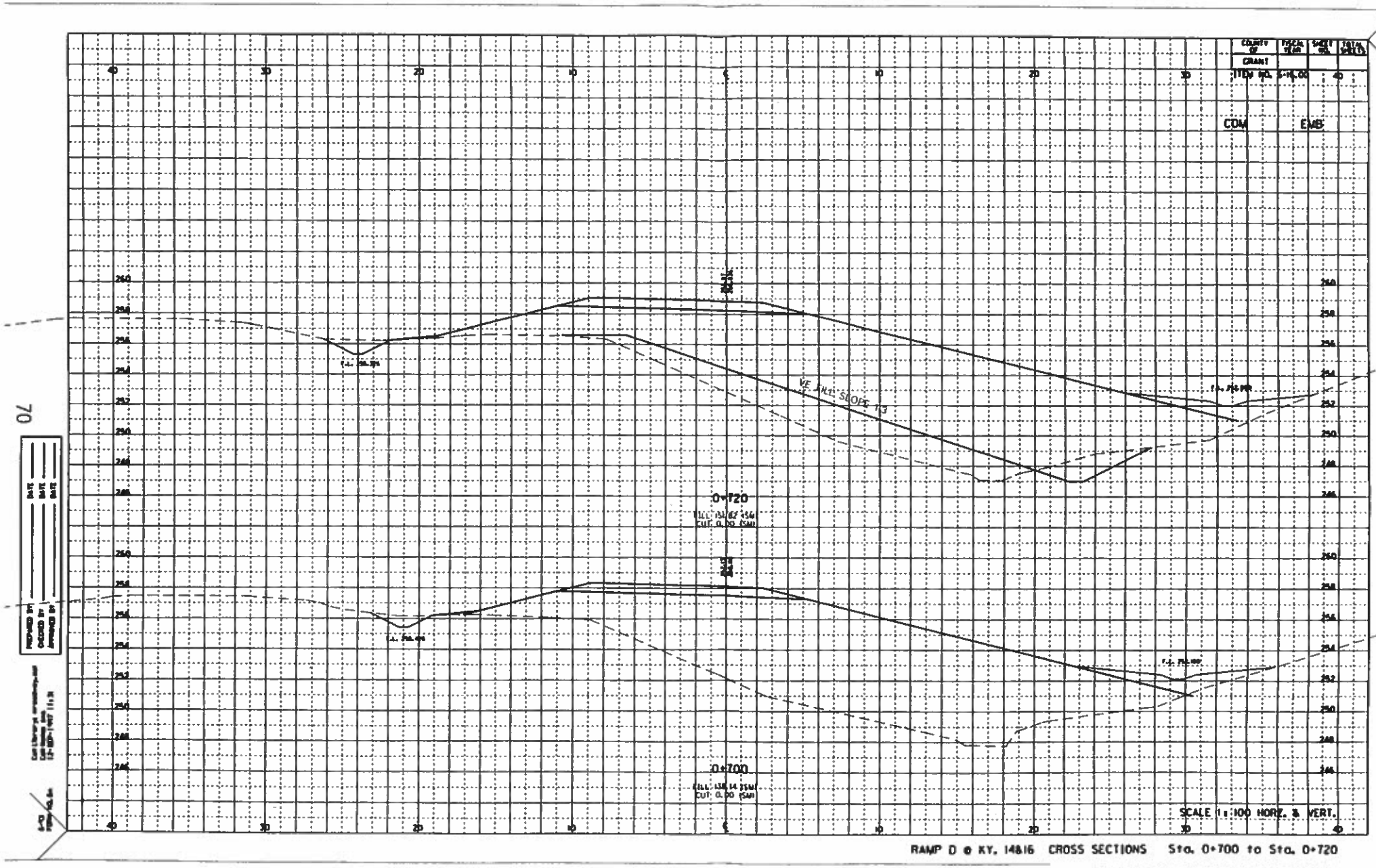


VALUE ENGINEERING ALTERNATIVE



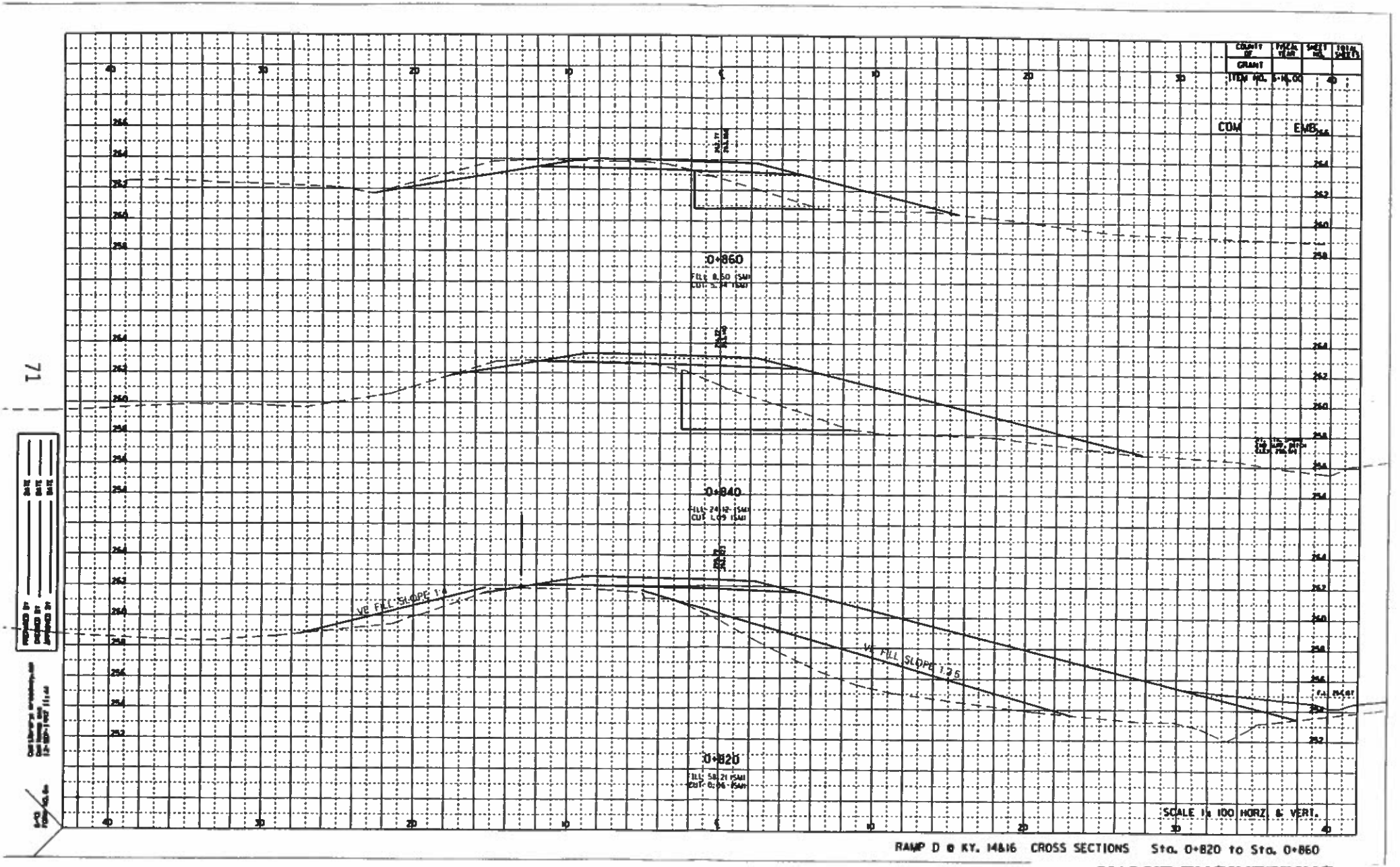
RAMP D @ KY. 14816 CROSS SECTIONS Sta. 0+580 to Sta. 0+620

VALUE ENGINEERING ALTERNATIVE



RAMP D @ KY. 1486 CROSS SECTIONS Sta. 0+700 to Sta. 0+720

VALUE ENGINEERING ALTERNATIVE



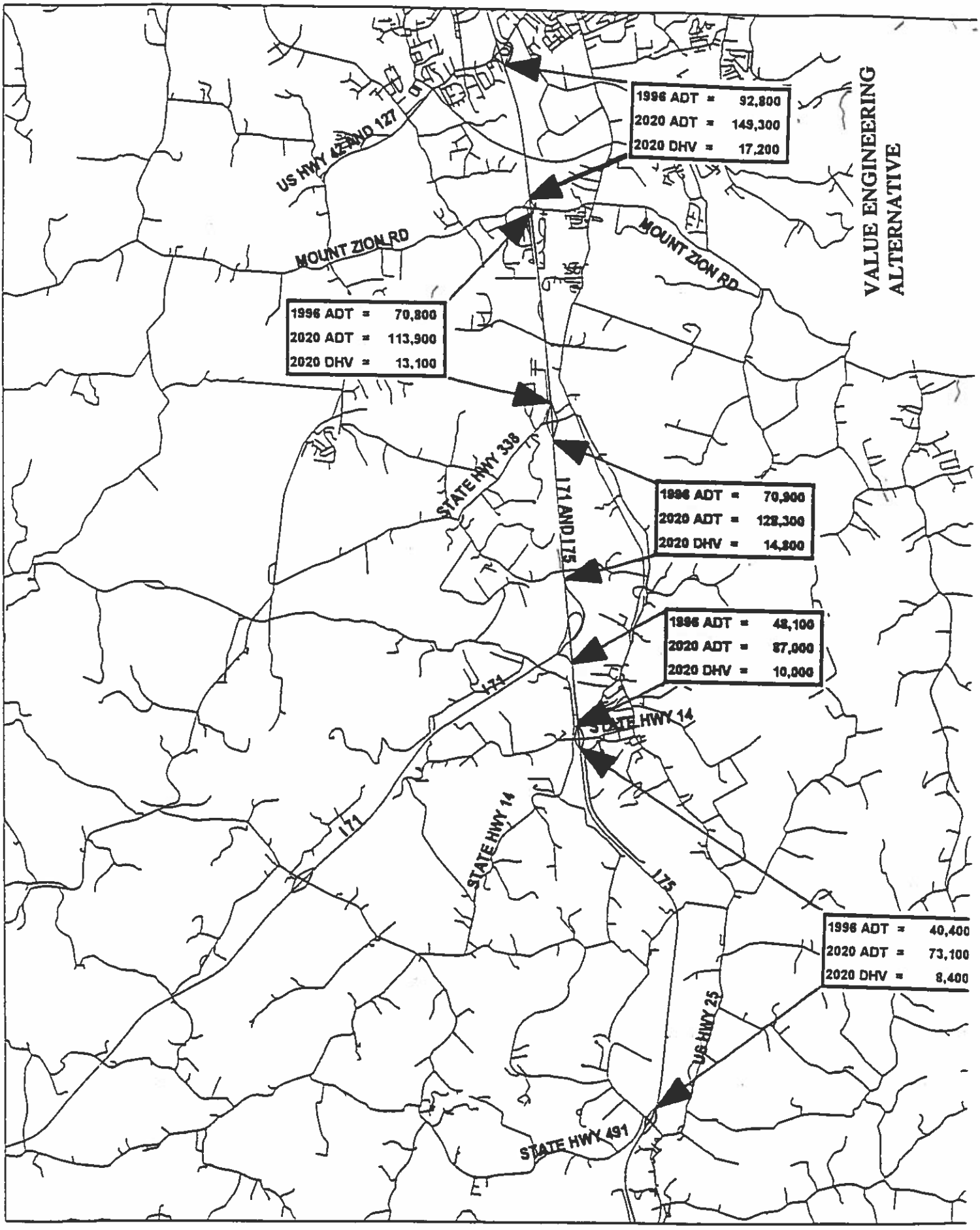
RAMP D @ KY. 1486 CROSS SECTIONS Sta. 0+820 to Sta. 0+860

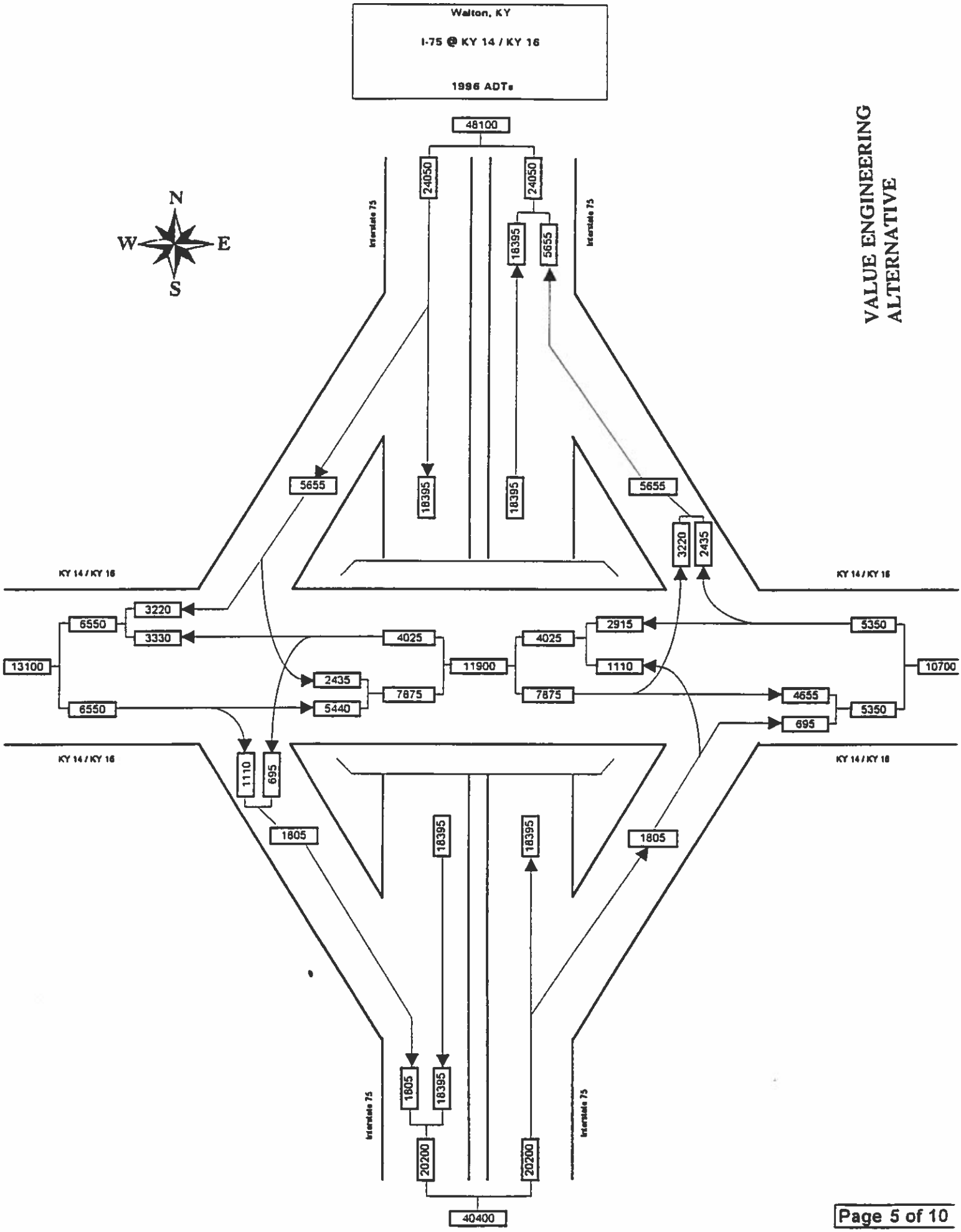
VALUE ENGINEERING ALTERNATIVE

KY 14/16 - I-75 INTERCHANGE & CULVERT EXTENSIONS
COST COMPARISON

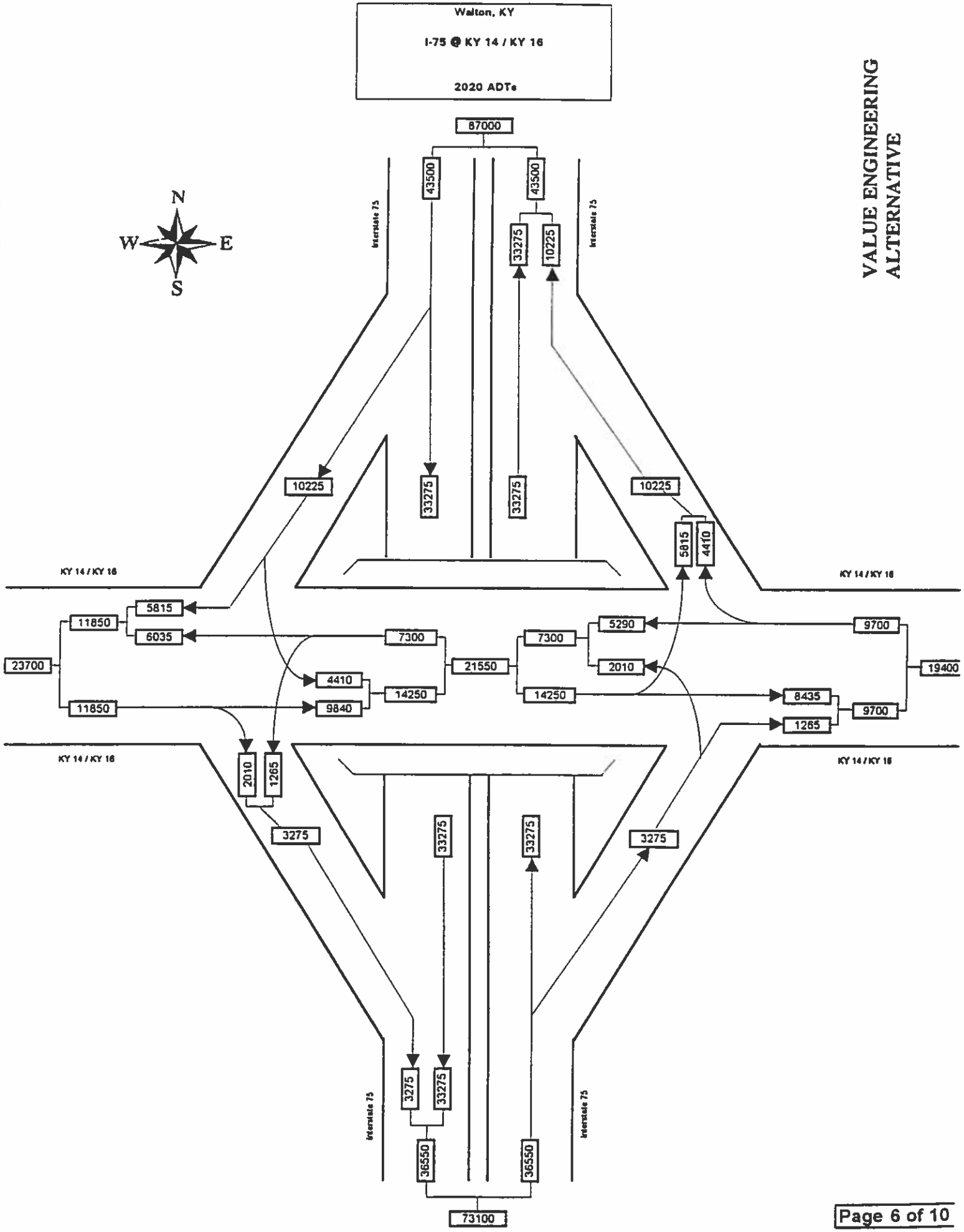
DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
EMBANKMENT IN PLACE	$ 6.00/CM	28,100	$168,600	12508	$ 75,048
BIT. CONC. SURFACE	$38.00/MT	1452	$ 55,176	1522	$ 57,836
BIT. CONC. BASE	$34.00/MT	1944	$ 67,796	2180	$ 74,120
DGA BASE	$12.00/MT	1545	$ 18,540	1610	$ 19,320
TRAFFIC SIGNALS 3 INTERSECTIONS	L. SUM.	1	$150,000	1	$655,100
1800 MM x 1200 MM RCBC EXT.	L. SUM.	1	$160,000	1	$ 65,100
TRANSITION 1800 x 1200 RCBC TO 3000 x 1500 RCBC	L. SUM.	1	$ 37,600	1	0
TOTAL			$657,712		$441,424

Possible Savings $ 216,288

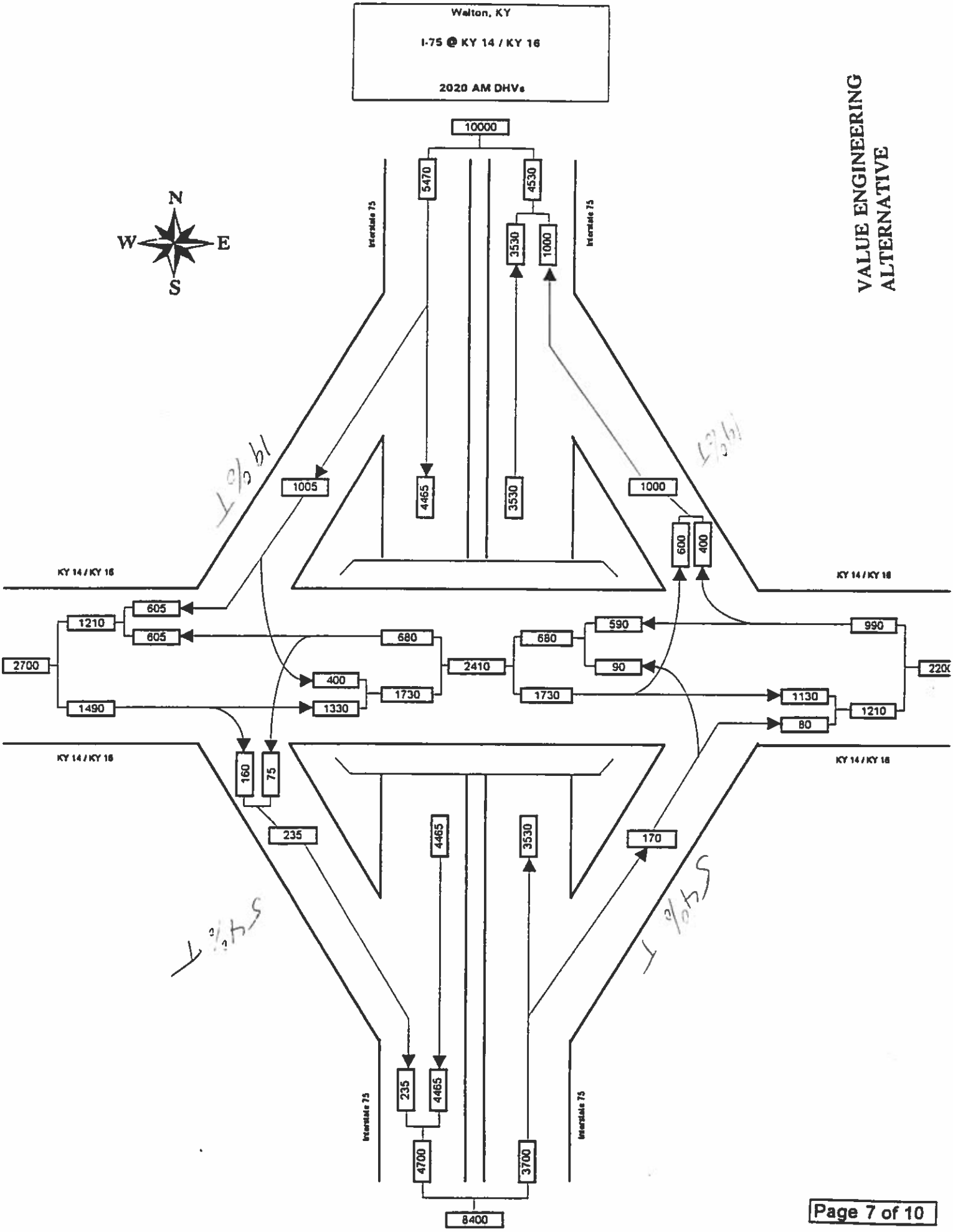

VALUE ENGINEERING ALTERNATIVE
1996 ADT = 92,800
2020 ADT = 149,300
2020 DHV = 17,200
1996 ADT = 70,800
2020 ADT = 113,900
2020 DHV = 13,100
1996 ADT = 70,900
2020 ADT = 128,300
2020 DHV = 14,800
1996 ADT = 48,100
2020 ADT = 87,000
2020 DHV = 10,000
1996 ADT = 40,400
2020 ADT = 73,100
2020 DHV = 8,400
US HWY 42 AND 127
MOUNT ZION RD
MOUNT ZION RD
STATE HWY 338
171 AND 175
I-71
STATE HWY 14
STATE HWY 14
I-71
I-75
US HWY 25
STATE HWY 491


Walton, KY
I-75 @ KY 14 / KY 16
1996 ADTs
VALUE ENGINEERING ALTERNATIVE
N
W
E
S
Interstate 75
KY 14 / KY 16
48100
24050
24050
18395
5655
5655
18395
18395
5655
3220
2435
3220
6550
3330
4025
4025
2915
5350
13100
2435
11900
1110
10700
7875
7875
4655
6550
5440
5350
695
1110
695
1805
18395
18395
1805
1805
18395
18395
20200
20200
40400

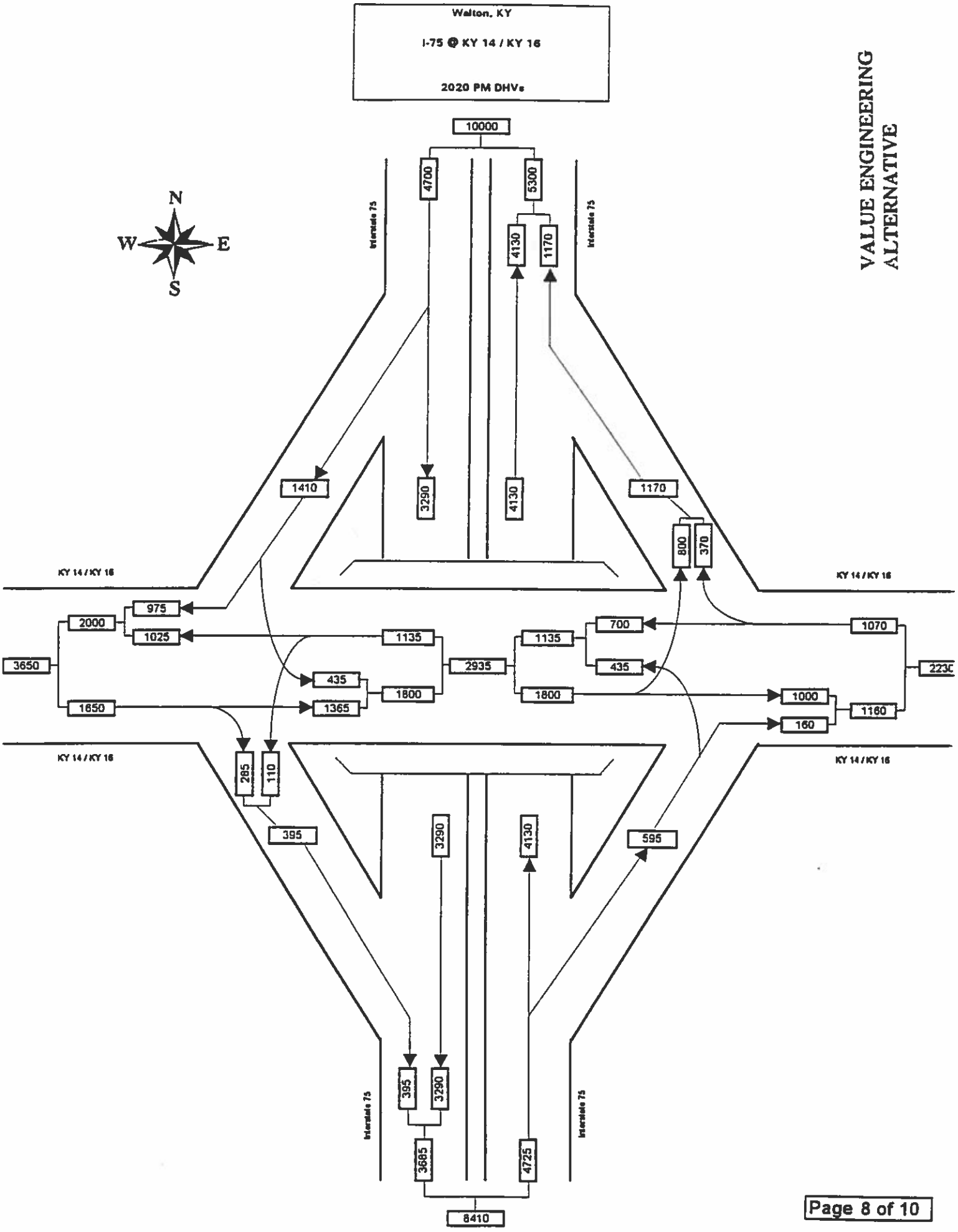
Page 5 of 10


Walton, KY
I-75 @ KY 14 / KY 16
2020 ADTs
VALUE ENGINEERING ALTERNATIVE
N
W
E
S
87000
43500
43500
33275
10225
10225
33275
33275
10225
5815
4410
KY 14 / KY 16
KY 14 / KY 16
5815
11850
6035
7300
7300
5290
9700
23700
4410
21550
2010
19400
14250
14250
8435
11850
9840
9700
1265
KY 14 / KY 16
KY 14 / KY 16
2010
1265
3275
33275
33275
3275
3275
33275
36550
36550
73100

Page 6 of 10

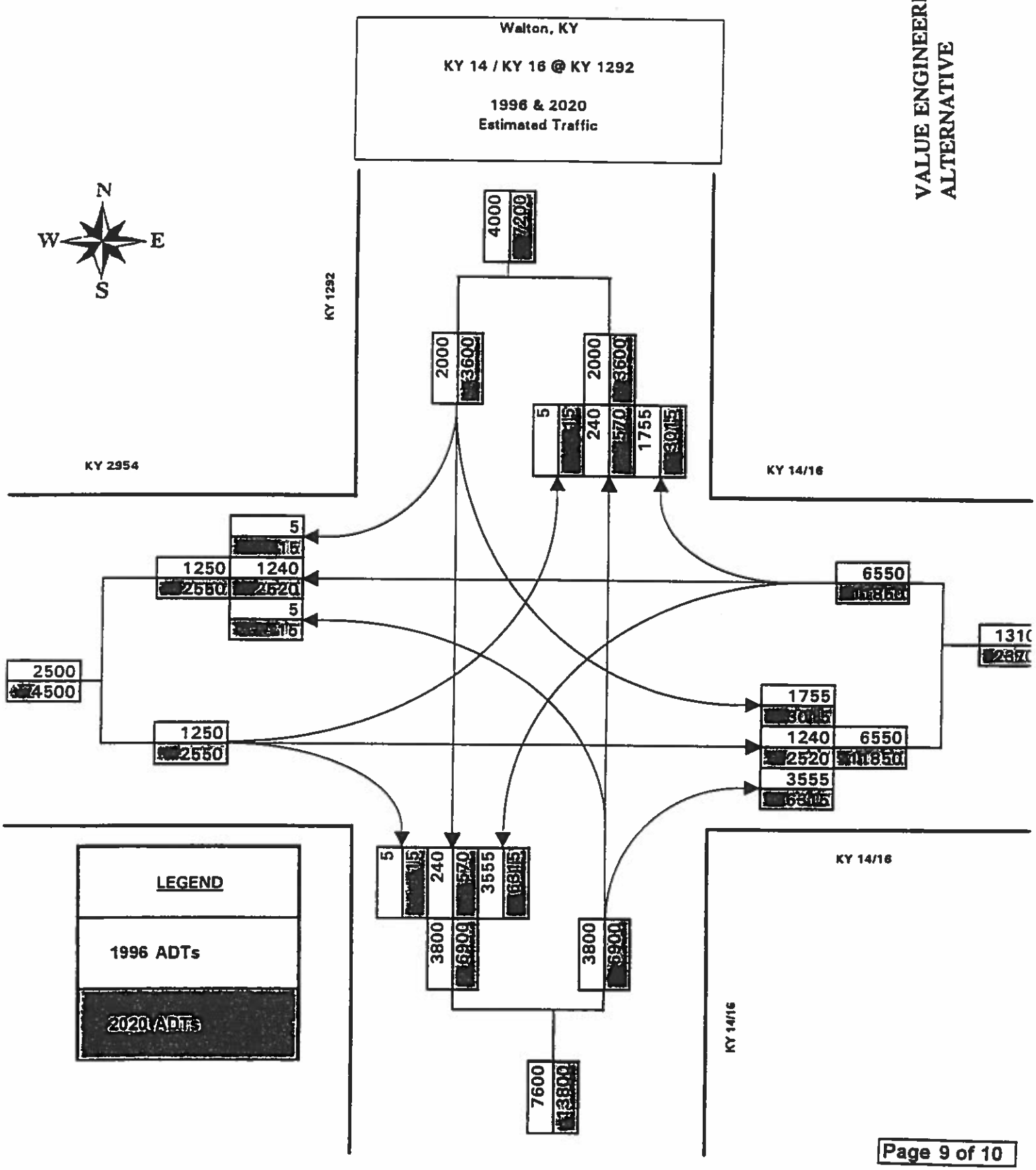

Walton, KY
I-75 @ KY 14 / KY 16
2020 AM DHVs
VALUE ENGINEERING ALTERNATIVE
N
W
E
S
10000
5470
4530
3530
1000
Interstate 75
Interstate 75
1005
4465
3530
1000
600
400
KY 14 / KY 16
KY 14 / KY 16
605
1210
605
680
680
590
990
2700
400
2410
90
220
1730
1730
1130
1490
1330
1210
80
KY 14 / KY 16
KY 14 / KY 16
160
75
235
4465
3530
170
235
4465
4700
3700
Interstate 75
Interstate 75
8400

Page 7 of 10

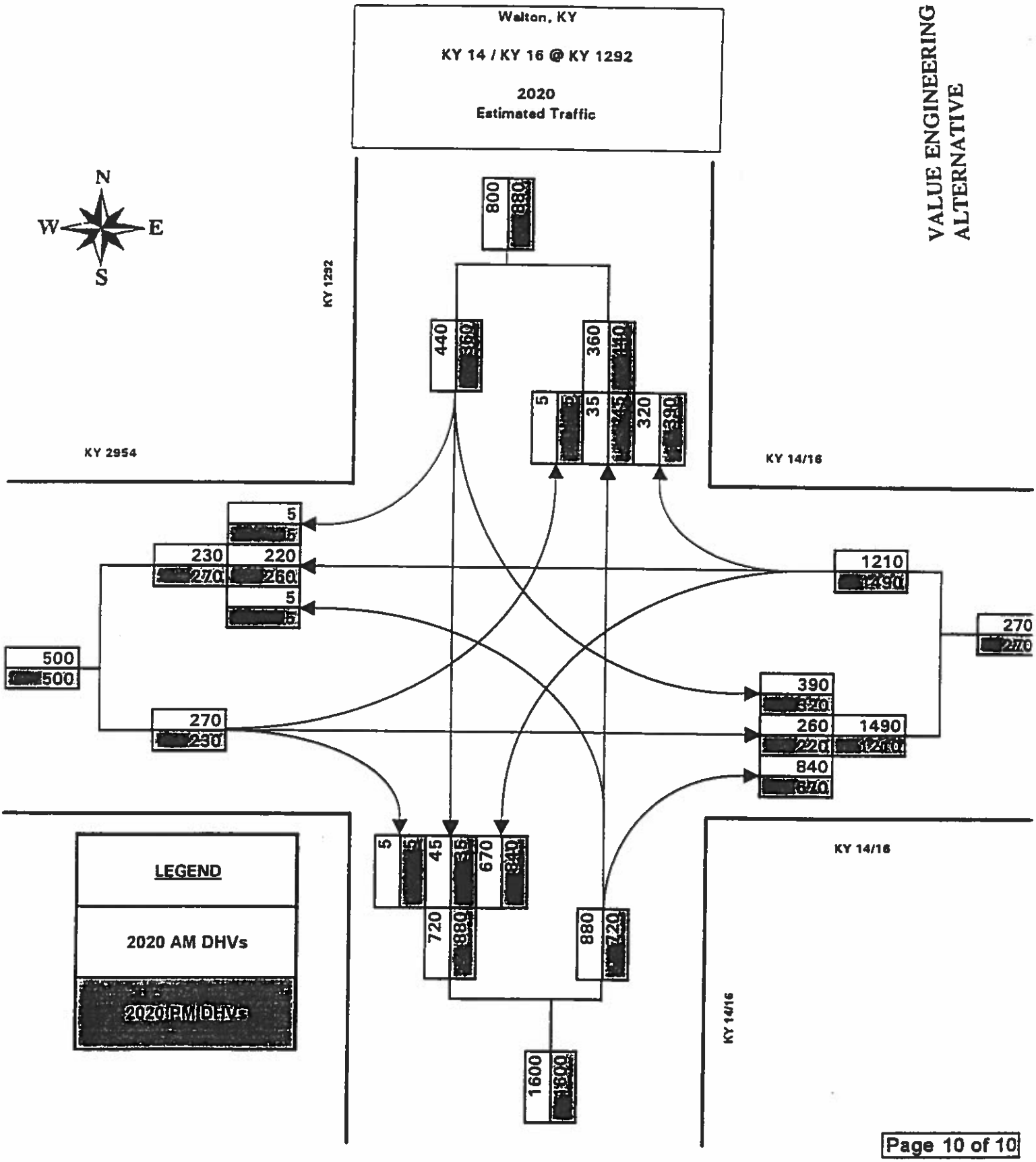

Walton, KY
I-75 @ KY 14 / KY 16
2020 PM DHVs
VALUE ENGINEERING ALTERNATIVE
N
W
E
S
Interstate 75
KY 14 / KY 16
10000
4700
5300
4130
1170
1410
3290
800
370
975
2000
1025
1135
700
1070
3650
435
2935
1800
1000
1160
1650
1365
160
285
110
395
595
3685
4725
8410

Page 8 of 10

VALUE ENGINEERING
ALTERNATIVE



VALUE ENGINEERING
ALTERNATIVE



Ramp C Merging Analysis

HCS: Ramps Release 2.1
****

File Name .....
Facility Section.....
Analyst.....
Time of Analysis.....
Date of Analysis..... 9/11/97
Other Information....

A. Adjustment Data	Upstream Ramp	Freeway	Analysis Ramp	Downstream Ramp
Type of Ramp	N.A.	N.A.	ON	N.A.
Traffic Volume	N.A.	3530	1000	N.A.
Flow Rate (pcph)	N.A.	3995	1153	N.A.
Number of Lanes	N.A.	3	1	N.A.
Total Width (ft)	N.A.	36.0	14.0	N.A.
Obstructions	N.A.	0	0	N.A.
Distance from Edge (ft)	N.A.	6.0	6.0	N.A.
Percentage HV's	N.A.	15	19	N.A.
Percentage RV's	N.A.	0	0	N.A.
Free-flow Speed (mph)	N.A.	55	50	N.A.
Left (L) or Right (R)	N.A.	N.A.	R	N.A.
Length of Acc. Lane (ft)	N.A.	N.A.	1000	N.A.

B. Adjustment Factors

	Terrain Type	E T	E R	F HV	F W	F P
Freeway	LEVEL	1.50	1.20	0.930	1.00	1.00
Ramp		1.50	1.20	0.913	1.00	1.00

Estimation of V12:

PFM = 0.605 Using Equation: 2 V12 = 2419

Capacity Checks:

VFO = 5148 VR12 = 3572

C. Level of Service Results

Level of Service (LOS)	C
Computed Density(pc/mi/ln)	27
Computed Speed(mph)	50

VII.(d) MAINLINE PAVEMENT OVERLAY AND NEW PAVEMENT THICKNESS

VII.(d)(1) AS PROPOSED

"As Proposed"

The "As Proposed" pavement is based on 59 million EAL's loading. This loading required a 5.5 inch thick pavement overlay that dictates the thickness of the new pavement widening.

TYPICAL SECTIONS
I 75

COUNTY OF	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
BOONE		2	

ITEM NO. 6-16.00

① SEE CROSS SECTIONS FOR SLOPES OUTSIDE THE LIMITS OF THE SHOULDERS.

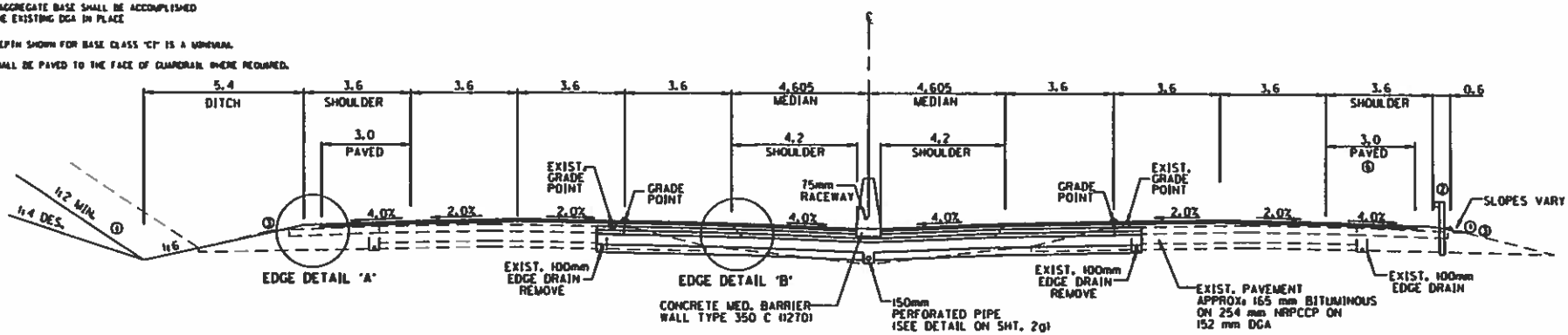
② SHOULDER SHALL BE WIDENED 0.6 m WHERE GUARDRAIL IS REQUIRED.

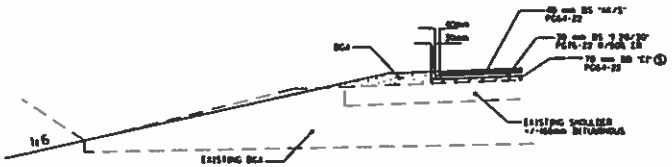
③ BITUMINOUS SEAL REQUIRED FROM OUTSIDE EDGE OF PAVED SHOULDER TO A POINT 0.6 m DOWN THE DITCH OR FILL SLOPE. TWO APPLICATIONS OF THE FOLLOWING:
EMULSIFIED ASPHALT RS-2 ..... 1.3 kg/sq. m.
BITUMINOUS SEAL AGGREGATE ..... 10.8 kg/sq. m.
(SIZE NO. 8 OR 9 m)

④ STABILIZED AGGREGATE BASE SHALL BE ACCOMPLISHED UTILIZING THE EXISTING DGA IN PLACE

⑤ THE 70mm DEPTH SHOWN FOR BASE CLASS "CI" IS A MINIMUM.

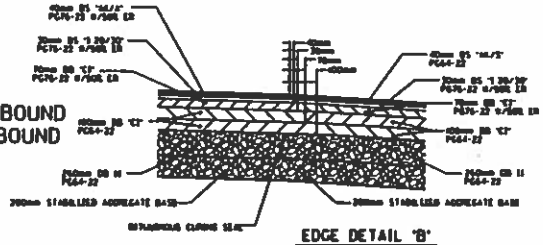
⑥ SHOULDER SHALL BE PAVED TO THE FACE OF GUARDRAIL WHERE REQUIRED.





EDGE DETAIL 'A'

NORMAL SECTION
EXISTING FOUR LANE
PROPOSED SIX LANE
STA. 40+969.737 - STA. 41+931.222
STA. 42+944.290 - STA. +/- 46+382 SOUTHBOUND
STA. 42+944.290 - STA. +/- 47+196 NORTHBOUND



EDGE DETAIL 'B'

NEW CONSTRUCTION : GRADE, DRAIN, & FLEXIBLE PAVEMENT

TRAFFIC LANES & MEDIAN SHOULDER- WIDENING

APPROXIMATELY 730mm BASE
- 200mm STABILIZED AGGREGATE BASE ④
- BITUMINOUS CURING SEAL (@ 0.7 kg/sq. m)
- 260mm DRAINAGE BLANKET - TYPE II - ASPH. PG64-22
- 200mm COMPACTED DEPTH BITUMINOUS CONCRETE BASE CLASS "CI" PG 64-22 (2-100 mm COURSES)
- 70mm COMPACTED DEPTH BITUMINOUS CONCRETE BASE CLASS "CI" PG76-22 W/SOXER

TACK COAT ..... 0.23 kg/sq.m. BETWEEN EACH BITUMINOUS COURSE (APPLY AS DIRECTED BY THE ENGINEER)

APPROXIMATELY 70mm SURFACE
- 30mm COMPACTED DEPTH BITUMINOUS CONCRETE SURFACE CLASS "1-20/30" PG76-22/ER
- 40mm COMPACTED DEPTH BITUMINOUS CONCRETE SURFACE CLASS "AK/A" PG76-22 W/SOXER
- MEDIAN SHOULDER SURFACE IS CLASS "AK/S" PG64-22

TRAFFIC LANES OVERLAY

VARIES APPROXIMATELY 140mm OVERLAY MINIMUM
- 70mm COMPACTED DEPTH BITUMINOUS CONCRETE BASE CLASS "CI" PG76-22 W/SOXER ⑤
- 30mm COMPACTED DEPTH BITUMINOUS CONCRETE SURFACE CLASS "1-20/30" PG76-22/ER
- 40mm COMPACTED DEPTH BITUMINOUS SURFACE CLASS "AK/A" PG76-22 W/SOXER

OUTSIDE SHOULDERS OVERLAY

VARIES APPROXIMATELY 140mm OVERLAY MINIMUM
- DENSE GRADED AGGREGATE SHOULDER WEDGE
- 70mm COMPACTED DEPTH BITUMINOUS CONCRETE BASE "CI" PG64-22 ⑤
- 30mm COMPACTED DEPTH BITUMINOUS CONCRETE SURFACE CLASS "1-20/30" PG76-22/ER
- 40mm COMPACTED DEPTH BITUMINOUS CONCRETE SURFACE CLASS "AK/S" PG64-22
- BITUMINOUS MATERIAL FOR TACK - 0.23 kg/sq. m BETWEEN EACH BITUMINOUS COURSE (APPLY AS DIRECTED BY THE ENGINEER)

AS PROPOSED

TYPICAL SECTIONS I 75

VII.(d)(2) V.E. ALTERNATIVE

V.E. Alternative

During the V.E. evaluation, we investigated the reasonableness of the design pavement loading. The design ESL's were evaluated and the ESL forecasts were not consistently determined between the project sections. The design ESL's varied from 30 million to 59 million in this 8 mile section.

Our review determined that the variation was due to the lane distribution factor and not a change in the ADT or the midpoint design ESL's. The midpoint design ESL's was relatively constant at approximately 12,000.

The V.E. team determined that a reasonable design ESL's should be 40 million. The V.E. team recomputed the required structural number to be 7.3 verses the "As Proposed" structural number of 8.1. The revised structural number resulted in a new pavement thickness of 4 inches. The pavement layers were adjusted to the structural number of 7.3. See next page for the pavement layer thickness.

The cost savings: $1,359,200.

SHOULDER WIDENING	PAVEMENT WIDENING	PAVEMENT OVERLAY	SHOULDER OVERLAY
40mm BS	40mm BS	40mm BS	40mm BS
30mm BS	30mm BS	30mm BS	30mm BS
70mm BB	70mm BB	70mm BB	BB
100mm BB	100mm BB	EXISTING	EXISTING
360mm	100mm BB		
DB	260mm DB		
200mm DGA	200mm DGA		

VALUE ENGINEERING ALTERNATIVE

ELIMINATED ITEMS

CHANGED ITEMS

OVERLAY OF EXISTING PAVEMENT AND NEW PAVEMENT THICKNESS COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
BITUMINOUS SURFACE	38	61,672	$2,343,536	25,902	$984,285

Possible Savings $ 1,359,251

KY - I75
9/11/97

FLEXIBLE PAVEMENT STRUCTURAL NUMBER

LAYER	Coeff.	INCHES	MM	SN	SN req
SHOULDER WIDENING				6.85	6.29
DGA	0.14	7.9	200	1.10	
DB	0.18	14.2	360	2.55	
BB	0.4	6.7	170	2.68	
BS	0.44	1.2	30	0.52	
PAVEMENT WIDENING				7.72	7.33
DGA	0.14	7.9	200	1.10	
DB	0.18	10.2	260	1.84	
BB	0.4	10.6	270	4.25	
BS	0.44	1.2	30	0.52	
		0.0		0.00	
PAVEMENT OVERLAY				7.59	7.33
DGAexist	0.14	5.9	150	0.83	
B&Sexist	0.28	10.2	260	2.87	
BSexist	0.35	6.5	165	2.27	
BB	0.4	2.8	70	1.10	
BS	0.44	1.2	30	0.52	
SHOULDER OVERLAY				6.79	6.3
DGA	0.14	5.9	150	0.83	
BB	0.4	1.4	35	0.55	
BS	0.44	1.2	30	0.52	
BSexist	0.35	6.5	165	2.27	
BSexist	0.35	5.9	150	2.07	
DGAexist	0.14	3.9	100	0.55	

PAVEMENT CONDITION EVALUATION FORM
INTERSTATES AND PARKWAYS

0895

ROAD NO: I 75 ROAD NAME: Lexington - Covington

COUNTY: GRANT-KENTON-BOONE DISTRICT: 6

FROM: 0.1 mi South of KY 491 MP: 165.79
TO: 1.04 mi North of I 71 MP: 173.50

ADT(95): 41450 POSTED SPEED: 65 MPH LENGTH: 7.71

CONSTRUCTED NOV 61 DGA: 6 INCHES CBR: JOINT SPACING: 50
CONTRACTOR FOR JUL 85 ACTION: G & G KY Const, Et Al

DATE	ACTION	PAVEMENT INCHES	PAVEMENT TYPE	SURFACE TYPE	REMARKS
NOV 61	CONSTRUCTED	10.0	PCC		
DEC 78	RESURFACED	2.0	AC		
SEP 84	MILLED	-2.0	AC		
SEP 84	BREAK & SEAT				Also Edge Drains
SEP 84	RESURFACED	6.5	AC		
JUL 85	SURFACED			OGFC	

VISUAL CONDITION SURVEY

(DEMERIT POINTS)	MAXIMUM EXT	MAXIMUM SEV	NB EXT	NB SEV	NB SUM	LANE	SB EXT	SB SEV	SB SUM
CRACKING	18	13	2	5	7		2	4	6
BASE FAILURES - FAULTING	9	9			1				0.1
RAVELING - WEAR SPALLING	6	6	4	5	9		4	5	9
OUT OF SECTION	6	6			2				2
PATCHING	12				01				0
APPEARANCE		15			5				4
>---- TOTAL ---->	51	49			24.1				21.1

REMARKS: _____

GUARDRAIL: POOR FAIR (GOOD) SHOULDER: AC : POOR FAIR (GOOD)

	NB INN	NB OUT	SB INN	SB OUT
NUMBER OF LANES: 4				
PREVIOUS RI (94):	3.6	3.7	3.7	3.6
RI (95):	3.5	3.5	3.6	3.6
DECREASE IN RI:	.1	.2	.1	0
RUTTING (INCHES):		3/8		3/8
SKID NUMBER:		51		54

RECOMMENDED ACTION(S): REPAIR GRIND BREAK & SEAT EDGE DRAINS OVERLAY
MILL SAMI REPLACE PAVEMENT _____

ESTIMATED REMAINING SERVICE LIFE (YEARS): 2 NB YEAR: 1997
(YEARS): 2 SB YEAR: 1997

RATERS: RIZENBERGS BURCHETT ~~DADE~~ DATE: 8/14/95

REMARKS: _____

RANKING

09-11-1997

State:
Agency:
Company:
Contractor:
Engineer:

Job Number:

Location:

Shoulder SN.

========== Flexible Analysis ==========

Structural Number	=	6.29	
Design E 18's	=	12,000,000	
Reliability	=	95.00	percent
Overall Deviation	=	0.45	
Resilient Modulus	=	4,500.0	psi
Initial Serviceability	=	4.20	
Terminal Serviceablity	=	2.50	

Layer Number	Layer Coefficient == a (i) ==	Drainage Coefficient ==== Cd ===	Layer Thickness === t ===	a(i)*Cd*t =========
1				
2				
3				
4				
5				
6				

Total SN = 0.00

09-11-1997

State:
Agency:
Company:
Contractor:
Engineer:

Job Number:

Location:

40^{10^6} Sn.

========== Flexible Analysis ==========

Structural Number	=	7.33	
Design E 18's	=	40,000,000	
Reliability	=	95.00	percent
Overall Deviation	=	0.45	
Resilient Modulus	=	4,500.0	psi
Initial Serviceability	=	4.20	
Terminal Serviceablity	=	2.50	

Layer Number	Layer Coefficient == a (i) ==	Drainage Coefficient ==== Cd ===	Layer Thickness === t ===	a(i)*Cd*t =========
1				
2				
3				
4				
5				
6				

Total SN = 0.00

09-11-1997

State:
Agency:
Company:
Contractor:
Engineer:

Job Number:

Location:

60^{10^2} Sn

========== Flexible Analysis ==========

Structural Number	=	7.71	
Design E 18's	=	60,000,000	
Reliability	=	95.00	percent
Overall Deviation	=	0.45	
Resilient Modulus	=	4,500.0	psi
Initial Serviceability	=	4.20	
Terminal Serviceablity	=	2.50	

Layer Number	Layer Coefficient == a (i) ==	Drainage Coefficient ==== Cd ===	Layer Thickness === t ===	a(i)*Cd*t =========
1				
2				
3				
4				
5				
6				

Total SN = 0.00

OVERLAY OF EXISTING PAVEMENT AND NEW PAVEMENT THICKNESS							
	AS PROPOSED						
		TONS	TONS	TONS	TONS		
		BSURF	BBASE	DRABLK	DGA		
	UNIT $	38	34	22	12		
	PVT-OL	42039					
	PVT-WID	19633					
	TOTAL	61672	0	0	0		
	COST	$2,343,536	$0	$0	$0	$2,343,536	
	VE						
		TONS	TONS	TONS	TONS		
		BSURF	BBASE	DRABLK	DGA		
	UNIT $	38	34	0	0		
	PVT-OL	17656	0				
	PVT-WID	8246	0				
	TOTAL	25902	0	0	0		
	COST	$984,285	$0	$0	$0	$984,285	
	SAV					$1,359,251	

OVERLAY OF EXISTING PAVEMENT AND						
	AS PROPOSED					
		TONS	TONS	TONS	TONS	
		BSURF	BBASE	DRABLK	DGA	
	UNIT $	38	34	22	12	
	PVT-OL	42039				
	PVT-WID	19633				
	TOTAL	=SUM(C7:C10)	=SUM(D7:D10)	=SUM(E7:E10)	=SUM(F7:F10)	
	COST	=C6*C11	=D6*D11	=E6*E11	=F6*F11	=SUM(C13:F13)
	VE					
		TONS	TONS	TONS	TONS	
		BSURF	BBASE	DRABLK	DGA	
	UNIT $	38	34	0	0	
	PVT-OL	=C8*0.42	=D8*1			
	PVT-WID	=C9*0.42	=D9*1			
	TOTAL	=SUM(C20:C22)	=SUM(D20:D22)	=SUM(E20:E22)	=SUM(F20:F22)	
	COST	=C23*C18	=D23*D18	=E23*E18	=F23*F18	=SUM(C25:F25)
	SAV					=G13-G25

Florence & Hutcheson Inc.
Consulting Engineers

FAX COVER

2550 Irvin Cobb Drive
Paducah, KY 42003
Phone (502)444-9691
Fax (502)443-3943
Email flohut@vci.net
P. O. Box 7267
Paducah, KY 42002-7267

To: JOETTE FIELDS

Date: 9-9-97

Fax No.: (502) 564-3324

FROM: ROBERT PARKS

No. of Pages: 13 (Include Cover)

MESSAGE: PRELIMINARY PAVING QUANTITIES FOR MAINLINE I75 ONLY.

PAVING QUANTITY CALCULATIONS

PROJECT NAME	I-75
PROJECT NUMBER	86056
PAVING ALTERNATE	MAINLINE TRAFFIC LANES (WIDENING)
FACILITY	

PAVEMENT DESIGN INFORMATION

FLEXIBLE PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
0.200			0.070	0.200	

LEVELING & WEDGING	SURFACE	TACK	C&G
	0.070	1.000	NO
		OVERLAY=-1	YES
		NONE=0	OR
		NEW PVMT.=1	NO

SHOULDERS COURSE THICKNESS (m)

NOTE. SHOULDER D.G.A. THICKNESS @ EDGE OF DRIVING LANE MUST BE INPUT

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
				0.070	

LEVELING & WEDGING	SURFACE	TACK
	0.070	-1.000
		OVERLAY=-1
SUBGRADE STABILIZATION		NONE=0
		NEW PVMT.=1

RIGID PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SHOULDERS COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SUBGRADE STABILIZATION

PAVING AREAS SUMMARY				
FLEXIBLE ALTERNATE	**PAVEMENT SQ.M.**		**SHOULDERS SQ.M.**	
SURFACE	119,454		0	
LEVELING & WEDGING				
BINDER	0		0	
BASE 1	119,454		0	
BASE 2	119,454		0	
BASE 3	0		0	
CRUSHED STONE	0			
DENSE GRADED AGG.	119,454			
BIT. SEAL AGGREGATE			0	
EMULSIFIED ASPH. RS-2			0	
BIT. MAT'L. TACK COAT	238,908		0	
BIT. MAT'L. TACK COAT (TOTAL)		238,908		
RIGID ALTERNATE	**PAVEMENT SQ.M.**		**SHOULDERS SQ.M.**	
SURFACE	0		0	
DRAINAGE BLANKET	0		0	
DENSE GRADED AGG.	0		0	

PAVING QUANTITIES		
ITEM	UNIT	QUANTITY
BITUMINOUS SURFACE	METRIC TON	19,633
BITUMINOUS SURFACE SHOULDERS	METRIC TON	0
BITUMINOUS LEVELING & WEDGING	METRIC TON	
BITUMINOUS BINDER	METRIC TON	0
BITUMINOUS BINDER SHOULDERS	METRIC TON	0
BITUMINOUS BASE	METRIC TON	75,729
BITUMINOUS BASE SHOULDERS	METRIC TON	0
CRUSHED STONE BASE	METRIC TON	0
DENSE GRADED AGGREGATE	METRIC TON	58,652
DRAINAGE BLANKET	METRIC TON	0
N.R.P.C.C.P.	SQUARE METERS	0
N.R.P.C.C.P. SHOULDERS	SQUARE METERS	0
BITUMINOUS MATERIAL FOR TACK	METRIC TON	51.8
BITUMINOUS SEAL AGGREGATE	METRIC TON	0.0
EMULSIFIED ASPHALT RS-2	METRIC TON	0.0
ANTI-STRIP ADDITIVE	EACH	95,363

PAVING QUANTITY CALCULATIONS

PROJECT NAME	I-75
PROJECT NUMBER	86056
PAVING ALTERNATE	MEDIAN SHOULDER ✓
FACILITY	

PAVEMENT DESIGN INFORMATION

FLEXIBLE PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
0.200			0.200	0.070	

LEVELING & WEDGING	SURFACE	TACK	C&G
	0.070	1.000	NO
		OVERLAY=-1	YES
		NONE=0	OR
		NEW PVMT.=1	NO

SHOULDERS COURSE THICKNESS (m)

NOTE: SHOULDER D.G.A. THICKNESS @ EDGE OF DRIVING LANE MUST BE INPUT

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
			0.200	0.070	

LEVELING & WEDGING	SURFACE	TACK
	0.070	1.000
		OVERLAY=-1
SUBGRADE STABILIZATION		NONE=0
		NEW PVMT.=1

RIGID PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT
	0.260	

SHOULDERS COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SUBGRADE STABILIZATION

* 18,560 DGA ON OUTSIDE OF SHOULDER

7/1/97 7:04 AM I751.XLS

PAVING AREAS SUMMARY		
FLEXIBLE ALTERNATE	PAVEMENT SQ.M.	SHOULDERS SQ.M.
SURFACE	142,451	0
LEVELING & WEDGING		
BINDER	0	0
BASE 1	142,451	0
BASE 2	142,451	0
BASE 3	0	0
CRUSHED STONE	0	
DENSE GRADED AGG.	142,451	
BIT. SEAL AGGREGATE		0
EMULSIFIED ASPH. RS-2		0
BIT. MAT'L. TACK COAT	284,902	0
BIT. MAT'L. TACK COAT (TOTAL)	284,902	
RIGID ALTERNATE	PAVEMENT SQ.M.	SHOULDERS SQ.M.
SURFACE	0	0
DRAINAGE BLANKET	142,451	0
DENSE GRADED AGG.	0	0

7/1/97 7:04 AM I751.XLS

PAVING QUANTITIES		
ITEM	UNIT	QUANTITY
BITUMINOUS SURFACE	METRIC TON	23,413
BITUMINOUS SURFACE SHOULDERS	METRIC TON	0
BITUMINOUS LEVELING & WEDGING	METRIC TON	
BITUMINOUS BINDER	METRIC TON	0
BITUMINOUS BINDER SHOULDERS	METRIC TON	0
BITUMINOUS BASE	METRIC TON	90,308
BITUMINOUS BASE SHOULDERS	METRIC TON	0
CRUSHED STONE BASE	METRIC TON	0
DENSE GRADED AGGREGATE	METRIC TON	69,943
DRAINAGE BLANKET	METRIC TON	79,075
N.R.P.C.C.P.	SQUARE METERS	0
N.R.P.C.C.P. SHOULDERS	SQUARE METERS	0
BITUMINOUS MATERIAL FOR TACK	METRIC TON	61.8
BITUMINOUS SEAL AGGREGATE	METRIC TON	0.0
EMULSIFIED ASPHALT RS-2	METRIC TON	0.0
ANTI-STRIP ADDITIVE	EACH	113,722

PAVING QUANTITY CALCULATIONS

PROJECT NAME	I-75
PROJECT NUMBER	86056
PAVING ALTERNATE	MAINLINE TRAFFIC LANES (OVERLAY)
FACILITY	

PAVEMENT DESIGN INFORMATION

FLEXIBLE PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
				0.070	

LEVELING & WEDGING	SURFACE	TACK	C&G
	0.070	-1.000	NO
		OVERLAY=-1	YES
		NONE=0	OR
		NEW PVMT.=1	NO

SHOULDERS COURSE THICKNESS (m)

NOTE: SHOULDER D.G.A. THICKNESS @ EDGE OF DRIVING LANE MUST BE INPUT

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
				0.070	

LEVELING & WEDGING	SURFACE	TACK
	0.070	-1.000
		OVERLAY=-1
SUBGRADE STABILIZATION		NONE=0
		NEW PVMT.=1

RIGID PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SHOULDERS COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SUBGRADE STABILIZATION

6/30/97 1:26 PM I751.XLS

PAVING AREAS SUMMARY				
FLEXIBLE ALTERNATE	PAVEMENT SQ.M.		SHOULDERS SQ.M.	
SURFACE	255,772		0	
LEVELING & WEDGING				
BINDER	0		0	
BASE 1	255,772		0	
BASE 2	0		0	
BASE 3	0		0	
CRUSHED STONE	0			
DENSE GRADED AGG.	0			
BIT. SEAL AGGREGATE			0	
EMULSIFIED ASPH. RS-2			0	
BIT. MAT'L. TACK COAT	511,544		0	
BIT. MAT'L. TACK COAT (TOTAL)		511,544		
RIGID ALTERNATE	PAVEMENT SQ.M.		SHOULDERS SQ.M.	
SURFACE	0		0	
DRAINAGE BLANKET	0		0	
DENSE GRADED AGG.	0		0	

PAVING QUANTITIES		
ITEM	UNIT	QUANTITY
BITUMINOUS SURFACE	METRIC TON	42,039
BITUMINOUS SURFACE SHOULDERS	METRIC TON	0
BITUMINOUS LEVELING & WEDGING	METRIC TON	
BITUMINOUS BINDER	METRIC TON	0
BITUMINOUS BINDER SHOULDERS	METRIC TON	0
BITUMINOUS BASE	METRIC TON	42,039
BITUMINOUS BASE SHOULDERS	METRIC TON	0
CRUSHED STONE BASE	METRIC TON	0
DENSE GRADED AGGREGATE	METRIC TON	0
DRAINAGE BLANKET	METRIC TON	0
N.R.P.C.C.P.	SQUARE METERS	0
N.R.P.C.C.P. SHOULDERS	SQUARE METERS	0
BITUMINOUS MATERIAL FOR TACK	METRIC TON	111.0
BITUMINOUS SEAL AGGREGATE	METRIC TON	0.0
EMULSIFIED ASPHALT RS-2	METRIC TON	0.0
ANTI-STRIP ADDITIVE	EACH	84,077

PAVING QUANTITY CALCULATIONS

PROJECT NAME	I-75
PROJECT NUMBER	86056
PAVING ALTERNATE	MAINLINE OUTSIDE SHOULDERS (OVERLAY)
FACILITY	

PAVEMENT DESIGN INFORMATION

FLEXIBLE PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
				0.070	

LEVELING & WEDGING	SURFACE	TACK	C&G
	0.070	-1.000	NO
		OVERLAY=-1	YES
		NONE=0	OR
		NEW PVMT.=1	NO

SHOULDERS COURSE THICKNESS (m)

NOTE: SHOULDER D.G.A. THICKNESS @ EDGE OF DRIVING LANE MUST BE INPUT

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
				0.070	

LEVELING & WEDGING	SURFACE	TACK
	0.070	-1.000
		OVERLAY=-1
SUBGRADE STABILIZATION		NONE=0
		NEW PVMT.=1

RIGID PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SHOULDERS COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SUBGRADE STABILIZATION

6/30/97 1:41 PM I751.XLS

PAVING AREAS SUMMARY				
FLEXIBLE ALTERNATE	**PAVEMENT SQ.M.**		**SHOULDERS SQ.M.**	
SURFACE	0		108.431	
LEVELING & WEDGING				
BINDER	0		0	
BASE 1	0		108.431	
BASE 2	0		0	
BASE 3	0		0	
CRUSHED STONE	0			
DENSE GRADED AGG.	0			
BIT. SEAL AGGREGATE			12	
EMULSIFIED ASPH. RS-2			12	
BIT. MAT'L. TACK COAT	0		216.862	
BIT. MAT'L. TACK COAT (TOTAL)		216.862		
RIGID ALTERNATE	**PAVEMENT SQ.M.**		**SHOULDERS SQ.M.**	
SURFACE	0		0	
DRAINAGE BLANKET	0		0	
DENSE GRADED AGG.	0		0	

6/30/97 1:41 PM I751.XLS

PAVING QUANTITIES		
ITEM	UNIT	QUANTITY
BITUMINOUS SURFACE	METRIC TON	0
BITUMINOUS SURFACE SHOULDERS	METRIC TON	17,822
BITUMINOUS LEVELING & WEDGING	METRIC TON	
BITUMINOUS BINDER	METRIC TON	0
BITUMINOUS BINDER SHOULDERS	METRIC TON	0
BITUMINOUS BASE	METRIC TON	0
BITUMINOUS BASE SHOULDERS	METRIC TON	17,822
CRUSHED STONE BASE	METRIC TON	0
DENSE GRADED AGGREGATE	METRIC TON	0
DRAINAGE BLANKET	METRIC TON	0
N.R.P.C.C.P.	SQUARE METERS	0
N.R.P.C.C.P. SHOULDERS	SQUARE METERS	0
BITUMINOUS MATERIAL FOR TACK	METRIC TON	47.1
BITUMINOUS SEAL AGGREGATE	METRIC TON	0.3
EMULSIFIED ASPHALT RS-2	METRIC TON	0.0
ANTI-STRIP ADDITIVE	EACH	0

Florence & Hutcheson Inc.
Consulting Engineers

FAX COVER

2550 Irvin Cobb Drive
Paducah, KY 42003
Phone (502)444-9691
Fax (502)443-3943
Email flohut@vci.net
P. O. Box 7267
Paducah, KY 42002-7267

To: Lorrie Fields Date: 9-10-97

Fax No.:( ) _____

FROM: Robert Parks

No. of Pages: 7 (Include Cover)

MESSAGE: Ky. 121 & 16 Ramp 'D' Paving Quantities.

PAVING QUANTITY CALCULATIONS

PROJECT NAME	I-75
PROJECT NUMBER	86056
PAVING ALTERNATE	KY. 491 RAMPS & RAMP "D" @ KY 14/16
FACILITY	

PAVEMENT DESIGN INFORMATION

FLEXIBLE PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
0.200			0.200	0.070	

LEVELING & WEDGING	SURFACE	TACK	C&G
	0.070	-1.000	NO
		OVERLAY=-1	YES
		NONE=0	OR
		NEW PVMT.=1	NO

SHOULDERS COURSE THICKNESS (m)

NOTE: SHOULDER D.G.A. THICKNESS @ EDGE OF DRIVING LANE MUST BE INPUT

DGA	STONE	BASE 3	BASE 2	BASE 1	BINDER
			0.200	0.070	

LEVELING & WEDGING	SURFACE	TACK
	0.070	-1.000
		OVERLAY=-1
		NONE=0
		NEW PVMT.=1

SUBGRADE STABILIZATION

RIGID PAVEMENT ALTERNATE

DRIVING LANES COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SHOULDERS COURSE THICKNESS (m)

DGA	DRAINAGE BLANKET	PAVEMENT

SUBGRADE STABILIZATION

PAVING AREAS								
DRIVING LANES			PLANE AREAS					
STA.	STA.	DIFF.	LENGTH	W1	W2	AVG. W	DESCRIPTION	AREA SQ. M.
			342.583	4.500	4.500	4.500	RAMP A	1,542
			321.359	4.500	4.500	4.500	RAMP B	1,446
			372.443	4.500	4.500	4.500	RAMP C	1,676
			316.374	4.500	4.500	4.500	RAMP D	1,424
			436.343	7.200	7.200	7.200	RAMP D @ KY 14/16	3,142
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
DRIVING LANES SUBTOTAL								9,229

6/30/97 3:46 PM I751.XLS

PAVING AREAS								
SHOULDERS			PLANE AREAS					
								AREA
STA.	STA.	DIFF.	LENGTH	W1	W2	AVG. W	DESCRIPTION	SQ. M.
		0.000	342.583	3.000	3.000	3.000	RAMP A	1,028
		0.000	321.359	3.000	3.000	3.000	RAMP B	964
		0.000	372.443	3.000	3.000	3.000	RAMP C	1,117
		0.000	316.374	3.000	3.000	3.000	RAMP D	949
		0.000	436.343	3.000	3.000	3.000	RAMP D @ KY 14/16	1,309
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
		0.000				0.000		0
SHOULDERS SUBTOTAL								5,367
AREA TO DEDUCT FOR INLETS ETC.								

6/30/97 3:46 PM I751.XLS

SHOULDERS				ADDITIONAL AREAS (DIGITIZED, ETC.)						
DESCRIPTION								AREA (SQ. M.)		
SHOULDERS SUBTOTAL									0	
TOTAL LENGTH ALONG EDGE OF SHOULDERS								1789.1		
BITUMINOUS SEAL COAT AREAS DIGITIZED(ONLY)										
A1	A2	A3	A4	A5	A6	A7		TOTAL		
								0		

PAVING AREAS SUMMARY		
FLEXIBLE ALTERNATE	PAVEMENT SQ.M.	SHOULDERS SQ.M.
SURFACE	9,229	5,367
LEVELING & WEDGING		
BINDER	0	0
BASE 1	9,229	5,367
BASE 2	9,229	5,367
BASE 3	0	0
CRUSHED STONE	0	
DENSE GRADED AGG.	9,229	
BIT. SEAL AGGREGATE		1,073
EMULSIFIED ASPH. RS-2		1,073
BIT. MAT'L. TACK COAT	27,687	16,102
BIT. MAT'L. TACK COAT (TOTAL)	43,789	
RIGID ALTERNATE	PAVEMENT SQ.M.	SHOULDERS SQ.M.
SURFACE	0	0
DRAINAGE BLANKET	0	0
DENSE GRADED AGG.	0	0

6/30/97 3:46 PM I751.XLS

6/30/97 3:46 PM I751.XLS

Rework (Check) P.D. Using New Updated ESALs

FRED N. MUDGE
SECRETARY OF TRANSPORTATION

COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
FRANKFORT, KENTUCKY 40622

PAUL E. PATTON
GOVERNOR

INTRA-DEPARTMENTAL MEMO

TO: William Crace, Director
Division of Operations

FROM: Bruce S. Siria, Director
Division of Transportation Planning

DATE: April 15, 1996

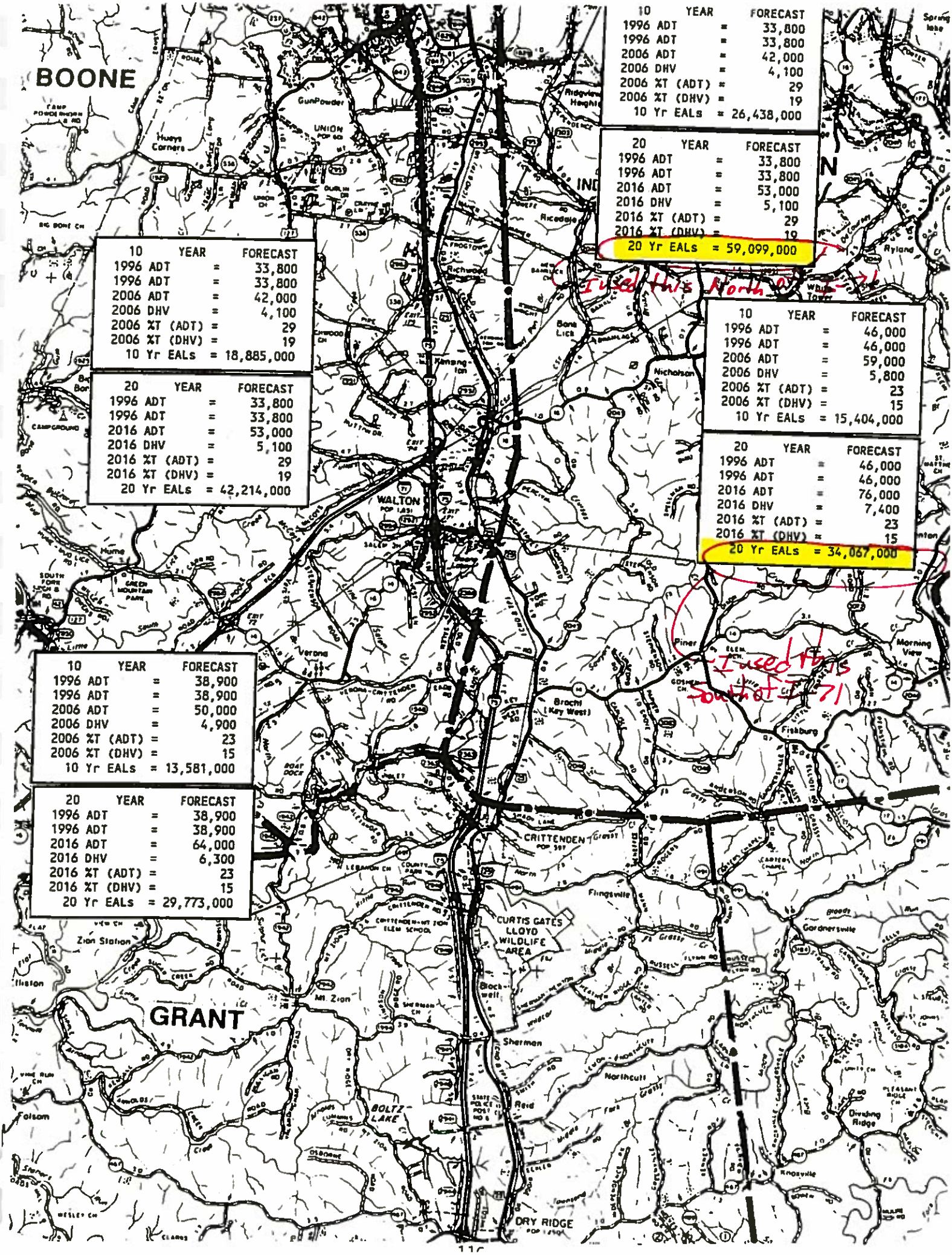
SUBJECT: Grant, Kenton and Boone Counties Traffic Forecast
I-75 from M.P. 165.79 to M.P. 173.50

In response to your August 10, 1995 e-mail requesting traffic forecasts on the subject project, we are providing current year ADTs, 2006 design year ADTs, 2016 design year ADTs, and estimated equivalent axleload accumulations on the attached map and worksheets.

If you have any questions, please call Rob Bostrom of this Division.

BSS:RR:lh
Attachments
c: Gary W. Sharpe ✓

Robert Bostrom 564-7183



10 YEAR	FORECAST
1996 ADT =	33,800
1996 ADT =	33,800
2006 ADT =	42,000
2006 DHV =	4,100
2006 %T (ADT) =	29
2006 %T (DHV) =	19
10 Yr EALs =	26,438,000

20 YEAR	FORECAST
1996 ADT =	33,800
1996 ADT =	33,800
2016 ADT =	53,000
2016 DHV =	5,100
2016 %T (ADT) =	29
2016 %T (DHV) =	19
20 Yr EALs =	59,099,000

10 YEAR	FORECAST
1996 ADT =	33,800
1996 ADT =	33,800
2006 ADT =	42,000
2006 DHV =	4,100
2006 %T (ADT) =	29
2006 %T (DHV) =	19
10 Yr EALs =	18,885,000

20 YEAR	FORECAST
1996 ADT =	33,800
1996 ADT =	33,800
2016 ADT =	53,000
2016 DHV =	5,100
2016 %T (ADT) =	29
2016 %T (DHV) =	19
20 Yr EALs =	42,214,000

10 YEAR	FORECAST
1996 ADT =	46,000
1996 ADT =	46,000
2006 ADT =	59,000
2006 DHV =	5,800
2006 %T (ADT) =	23
2006 %T (DHV) =	15
10 Yr EALs =	15,404,000

20 YEAR	FORECAST
1996 ADT =	46,000
1996 ADT =	46,000
2016 ADT =	76,000
2016 DHV =	7,400
2016 %T (ADT) =	23
2016 %T (DHV) =	15
20 Yr EALs =	34,067,000

10 YEAR	FORECAST
1996 ADT =	38,900
1996 ADT =	38,900
2006 ADT =	50,000
2006 DHV =	4,900
2006 %T (ADT) =	23
2006 %T (DHV) =	15
10 Yr EALs =	13,581,000

20 YEAR	FORECAST
1996 ADT =	38,900
1996 ADT =	38,900
2016 ADT =	64,000
2016 DHV =	6,300
2016 %T (ADT) =	23
2016 %T (DHV) =	15
20 Yr EALs =	29,773,000

FORECAST OF EQUIVALENT AXLE LOAD ACCUMULATIONS - DESIGN

TD 10-1 No...

COUNTY..... GRANT

DATE..... 04/15/96

NAME..... R. L. Rose

ROUTE ID:

Road Name..... Willamstown-Covington Rd.

Project Nos.....

Project Limits..... M.P. 165.79 to M.P. 171.315

Route No..... I-75
Item No.....
File No..... 95_130A.WKS
T.E. No..... 95.13
Segment..... A

Ref. Stations..... 1994 Vol. Count @ Stn 521 | 1993 Man'l Class Cnt, Stn p23
PTR Rpt, Stn 521, APRIL 1994 | 1994 EALs, FC 1
COAL94.SEG

FUNCTIONAL CLASS:

Rural -		Urban -	
01 Interstate	X	11 Interstate	
02 Principal Arterl		12 Othr Fre'ws & X-Wys	
06 Minor Arterial		14 Othr Prncpl Arterl	
07 Major Collector		16 Minor Arterial	
08 Minor Collector		17 Collector	
09 Local		19 Local	

DATES:

Construction Year	Design Period	Year at Mid-term
1996	10	2001

TRAFFIC PARAMETERS:

	Cnstrctn Yr Forecast		Annual Change		Years to Mid-term		Mid-term Incremnt		Cnstrctn Yr Forecast		Mid-term Forecast
Volume (AADT)	38,900	x	1.0250	^	5.0	=	5,112	+	38,900	=	44,012
Percent Trucks (%T)	23.0	x	1.0000	^	5.0	=	.000	+	23.000	=	23.0
Percent Trucks Hauling Coal (%CT)	.2	x	1.0000	^	5.0	=	.000	+	.2	=	.2
Non-Coal Trucks:											
Axles/Truck (A/NCT)	4.458	x	1.0000	^	5.0	=	.000	+	4.458	=	4.458
EALs/Axle (EAL/NCA)	.200	x	1.0000	^	5.0	=	.000	+	.200	=	.200
Coal Trucks:											
Axles/Truck (A/CT)	4.874	x	1.0000	^	5.0	=	.000	+	4.874	=	4.874
EALs/Axle (EAL/CA)	.810	x	1.0000	^	5.0	=	.000	+	.810	=	.810

DAILY EALs AT MID-TERM:

4-Tired Vehicles:	44,012 AADT	x	.770 1-(%T/100)	x	.005				=	169.445
Non-Coal Trucks:	44,012 AADT	x	.229 (%T/100)x (1)	x	4.458 A/NCT	x	.200 EAL/NCA		=	9,005.232
Coal Trucks:	44,012 AADT	x	.001 (%T/100)x (%CT/100)	x	4.874 A/CT	x	.810 EAL/CA		=	89.335
			Total Mid-term daily EALs.....						=	9,264.012

DESIGN EALs: 9,264.012 Mid-term Daily EALs x 365 x 10 Design Period x .4016 Lane Adjustment = 13,581,000 Design EAL in Critical Lane

No. of Lanes..... 4 1 or 2 Way..... 2

Form TF93_95.WKS

FORECAST OF EQUIVALENT AXLE LOAD ACCUMULATIONS - DESIGN

TD 10-1 No...

COUNTY..... GRANT

DATE..... 04/15/96

NAME..... R. L. Rose

ROUTE ID:

Road Name..... Willamstown-Covington Rd.

Project Nos.....

Project Limits..... M.P. 165.79 to M.P. 171.315

Route No..... I-75
Item No.....
File No..... 95_130B.WKS
T.E. No..... 95.13
Segment..... A

Ref. Stations..... 1994 Vol. Count @ Stn 521; PTR Rpt, Stn 521, APRIL 1994 | 1993 Man'l Class Cnt, Stn p23; 1994 EALs, FC 1; COAL94.SEG

FUNCTIONAL CLASS:

Rural -		Urban -	
01 Interstate	X	11 Interstate	----------
02 Principal Arterl	----------	12 Othr Fre'ws & X-Wys	----------
06 Minor Arterial	----------	14 Othr Prncpl Arterl	----------
07 Major Collector	----------	16 Minor Arterial	----------
08 Minor Collector	----------	17 Collector	----------
09 Local	----------	19 Local	----------

DATES:

Constrctn Year	Design Period	Year at Mid-term
1996	20	2006

TRAFFIC PARAMETERS:

	Cnstrctn Yr Forecast		Annual Change		Years to Mid-term		Mid-term Incremnt		Cnstrctn Yr Forecast		Mid-term Forecast
Volume (AADT)	38,900	x	1.0250	^	10.0	=	10,895	+	38,900	=	49,795
Percent Trucks (%T)	23.0	x	1.0000	^	10.0	=	.000	+	23.000	=	23.0
Percent Trucks Hauling Coal (%CT)	.2	x	1.0000	^	10.0	=	.000	+	.2	=	.2
Non-Coal Trucks:											
Axles/Truck (A/NCT)	4.458	x	1.0000	^	10.0	=	.000	+	4.458	=	4.458
EALs/Axle (EAL/NCA)	.200	x	1.0000	^	10.0	=	.000	+	.200	=	.200
Coal Trucks:											
Axles/Truck (A/CT)	4.874	x	1.0000	^	10.0	=	.000	+	4.874	=	4.874
EALs/Axle (EAL/CA)	.810	x	1.0000	^	10.0	=	.000	+	.810	=	.810

DAILY EALs AT MID-TERM:

4-Tired Vehicles:	49,795 AADT	x	.770 1-(%T/100)	x	.005				=	191.712
Non-Coal Trucks:	49,795 AADT	x	.229 (%T/100)x (1)	x	4.458 A/NCT	x	.200 EAL/NCA		=	10,188.594
Coal Trucks:	49,795 AADT	x	.001 (%T/100)x (%CT/100)	x	4.874 A/CT	x	.810 EAL/CA		=	101.074
			Total Mid-term daily EALs.....						=	10,481.380

DESIGN EALs: 10,481.380 Mid-term Daily EALs x 365 x 20 Design Period x .3891 Lane Adjustment = 29,773,000 Design EAL in Critical Lane

No. of Lanes..... 4 1 or 2 Way..... 2

Form TF93_95.WKS

FORECAST OF EQUIVALENT AXLE LOAD ACCUMULATIONS - DESIGN

TD 10-1 No...

COUNTY..... BOONE

DATE..... 04/15/96

NAME..... R. L. Rose

ROUTE ID:

Road Name..... Willamstown-Covington Rd.

Project Nos.....

Project Limits..... M.P. 171.315 to M.P. 172.544

Route No..... I-75
Item No.....
File No..... 95_130C.WKS
T.E. No..... 95.13
Segment..... B

Ref. Stations..... 1994 Vol. Count @ Stn 338; PTR Rpt, Stn 338, APRIL 1994 | 1993 Man'l Class Cnt, Stn p23; 1994 EALs, FC 1; COAL94.SEG

FUNCTIONAL CLASS:

Rural -		Urban -	
01 Interstate	X	11 Interstate	
02 Principal Arterl		12 Othr Fre'ws & X-Wys	
06 Minor Arterial		14 Othr Prncpl Arterl	
07 Major Collector		16 Minor Arterial	
08 Minor Collector		17 Collector	
09 Local		19 Local	

DATES:

Construction Year	Design Period	Year at Mid-term
1996	10	2001

TRAFFIC PARAMETERS:

	Cnstrctn Yr Forecast		Annual Change		Years to Mid-term		Mid-term Incremnt		Cnstrctn Yr Forecast		Mid-term Forecast
Volume (AADT)	46,227	x	1.0250	^	5.0	=	6,075	+	46,227	=	52,302
Percent Trucks (%T)	23.0	x	1.0000	^	5.0	=	.000	+	23.000	=	23.0
Percent Trucks Hauling Coal (%CT)	.2	x	1.0000	^	5.0	=	.000	+	.2	=	.2
Non-Coal Trucks:											
Axles/Truck (A/NCT)	4.458	x	1.0000	^	5.0	=	.000	+	4.458	=	4.458
EALs/Axle (EAL/NCA)	.200	x	1.0000	^	5.0	=	.000	+	.200	=	.200
Coal Trucks:											
Axles/Truck (A/CT)	4.874	x	1.0000	^	5.0	=	.000	+	4.874	=	4.874
EALs/Axle (EAL/CA)	.810	x	1.0000	^	5.0	=	.000	+	.810	=	.810

DAILY EALs AT MID-TERM:

4-Tired Vehicles:	52,302 AADT	x	.770 1-(%T/100)	x	.005				=	201.361
Non-Coal Trucks:	52,302 AADT	x	.230 (%T/100)x (1)	x	4.458 A/NCT	x	.200 EAL/NCA		=	10,704.294
Coal Trucks:	52,302 AADT	x	.000 (%T/100)x (%CT/100)	x	4.874 A/CT	x	.810 EAL/CA		=	93.395
			Total Mid-term daily EALs.....						=	10,999.050

DESIGN EALs: 10,999.050 Mid-term Daily EALs x 365 x 10 Design Period x .3837 Lane Adjustment = 15,404,000 Design EAL in Critical Lane

No. of Lanes..... 4 1 or 2 Way..... 2

Form TF93_95.WKS

FORECAST OF EQUIVALENT AXLE LOAD ACCUMULATIONS - DESIGN

TD 10-1 No...

COUNTY..... BOONE

DATE..... 04/15/96

NAME..... R. L. Rose

ROUTE ID:

Road Name..... Williamstown-Covington Rd.

Project Nos.....

Project Limits..... M.P. 171.315 to M.P. 172.544

Route No..... I-75
Item No.....
File No..... 95_130D.WKS
T.E. No..... 95.13
Segment..... 8

Ref. Stations..... 1994 Vol. Count @ Stn 338; PTR Rpt, Stn 338, APRIL 1994 | 1993 Man'l Class Cnt, Stn p23; 1994 EALs, FC 1; COAL94.SEG

FUNCTIONAL CLASS:

Rural -		Urban -	
01 Interstate	X	11 Interstate	
02 Principal Arteri		12 Othr Fre'ws & X-Wys	
06 Minor Arterial		14 Othr Prncpl Arteri	
07 Major Collector		16 Minor Arterial	
08 Minor Collector		17 Collector	
09 Local		19 Local	

DATES:

Construction Year	Design Period	Year at Mid-term
1996	20	2006

TRAFFIC PARAMETERS:

	Cnstrctn Yr Forecast		Annual Change		Years to Mid-term		Mid-term Increment		Cnstrctn Yr Forecast		Mid-term Forecast
Volume (AADT)	46,227	x	1.0250	^	10.0	=	12,947	+	46,227	=	59,174
Percent Trucks (%T)	23.0	x	1.0000	^	10.0	=	.000	+	23.000	=	23.0
Percent Trucks Hauling Coal (%CT)	.2	x	1.0000	^	10.0	=	.000	+	.2	=	.2
Non-Coal Trucks:											
Axles/Truck (A/NCT)	4.458	x	1.0000	^	10.0	=	.000	+	4.458	=	4.458
EALs/Axle (EAL/NCA)	.200	x	1.0000	^	10.0	=	.000	+	.200	=	.200
Coal Trucks:											
Axles/Truck (A/CT)	4.874	x	1.0000	^	10.0	=	.000	+	4.874	=	4.874
EALs/Axle (EAL/CA)	.810	x	1.0000	^	10.0	=	.000	+	.810	=	.810

DAILY EALs AT MID-TERM:

4-Tired Vehicles:	59,174 AADT	x	.770 1-(%T/100)	x	.005			=	227.822
Non-Coal Trucks:	59,174 AADT	x	.230 (%T/100)x (1)	x	4.458 A/NCT	x	.200 EAL/NCA	=	12,110.926
Coal Trucks:	59,174 AADT	x	.000 (%T/100)x (%CT/100)	x	4.874 A/CT	x	.810 EAL/CA	=	105.668
			Total Mid-term daily EALs.....					=	12,444.416

DESIGN EALs: 12,444.416 Mid-term Daily EALs x 365 x 20 Design Period x .3750 Lane Adjustment = 34,067,000 Design EAL in Critical Lane

No. of Lanes..... 4 1 or 2 Way..... 2

Form TF93_95.WKS

FORECAST OF EQUIVALENT AXLE LOAD ACCUMULATIONS - DESIGN

TD 10-1 No...

COUNTY..... BOONE

DATE..... 04/15/96

NAME..... R. L. Rose

ROUTE ID:

Road Name..... Williamstown-Covington Rd.

Project Nos.....

Project Limits..... M.P. 172.544 to M.P. 173.50

Route No..... I-75
Item No.....
File No..... 95_130R.WKS
T.E. No..... 95.13
Segment..... SB

Ref. Stations..... 1994 Vol. Count @ Stn 266 | 1995 Man'l Class Cnt, Stn 266
PTR Rpt, Stn 266, APRIL 1994 | 1994 EALs, FC 1
COAL94.SEG

FUNCTIONAL CLASS:

Rural -		Urban -	
01 Interstate	X	11 Interstate	
02 Principal Arterl		12 Othr Fre'ws & X-Wys	
06 Minor Arterial		14 Othr Prncpl Arterl	
07 Major Collector		16 Minor Arterial	
08 Minor Collector		17 Collector	
09 Local		19 Local	

DATES:

Construction Year	Design Period	Year at Mid-term
1996	10	2001

TRAFFIC PARAMETERS:

	Cnstrctn Yr Forecast		Annual Change		Years to Mid-term		Mid-term Incremnt		Cnstrctn Yr Forecast		Mid-term Forecast
Volume (AADT)	33,822	x	1.0225	^	5.0	=	3,980	+	33,822	=	37,802
Percent Trucks (%T)	29.3	x	1.0000	^	5.0	=	.000	+	29.300	=	29.3
Percent Trucks Hauling Coal (%CT)	.2	x	1.0000	^	5.0	=	.000	+	.2	=	.2
Non-Coal Trucks:											
Axles/Truck (A/NCT)	4.580	x	1.0000	^	5.0	=	.000	+	4.580	=	4.580
EALs/Axle (EAL/NCA)	.200	x	1.0000	^	5.0	=	.000	+	.200	=	.200
Coal Trucks:											
Axles/Truck (A/CT)	4.874	x	1.0000	^	5.0	=	.000	+	4.874	=	4.874
EALs/Axle (EAL/CA)	.810	x	1.0000	^	5.0	=	.000	+	.810	=	.810

DAILY EALs AT MID-TERM:

4-Tired Vehicles:	37,802 AADT	x	.707 1-(%T/100)	x	.005			= 133.630
Non-Coal Trucks:	37,802 AADT	x	.292 (%T/100)x (1)	x	4.580 A/NCT	x	.200 EAL/NCA	= 10,124.941
Coal Trucks:	37,802 AADT	x	.001 (%T/100)x (%CT/100)	x	4.874 A/CT	x	.810 EAL/CA	= 89.163
			Total Mid-term daily EALs.....					= 10,347.735

DESIGN EALs:

10,347.735 Mid-term Daily EALs	x	365	x	10 Design Period	x	.5000 Lane Adjustment	= 18,885,000 Design EAL in Critical Lane

No. of Lanes..... 3 1 or 2 Way..... 1

Form TF93_95.WKS

FORECAST OF EQUIVALENT AXLE LOAD ACCUMULATIONS - DESIGN

TD 10-1 No...

COUNTY..... BOONE

DATE..... 04/15/96

NAME..... R. L. Rose

ROUTE ID:

Road Name..... Willamstown-Covington Rd.

Project Nos.....

Project Limits..... M.P. 172.544 to M.P. 173.50

Route No..... I-75
Item No.....
File No..... 95_130T.WKS
T.E. No..... 95.13
Segment..... SB

Ref. Stations..... 1994 Vol. Count @ Stn 266; PTR Rpt, Stn 266, APRIL 1994 | 1995 Man'l Class Cnt, Stn 266; 1994 EALs, FC 1; COAL94.SEG

FUNCTIONAL CLASS:

Rural -		Urban -	
01 Interstate	X	11 Interstate	
02 Principal Arterl		12 Othr Fre'ws & X-Wys	
06 Minor Arterial		14 Othr Prncpl Arterl	
07 Major Collector		16 Minor Arterial	
08 Minor Collector		17 Collector	
09 Local		19 Local	

DATES:

Construction Year	Design Period	Year at Mid-term
1996	20	2006

TRAFFIC PARAMETERS:

	Cnstrctn Yr Forecast		Annual Change		Years to Mid-term		Mid-term Increment		Cnstrctn Yr Forecast		Mid-term Forecast
Volume (AADT)	33,822	x	1.0225	^	10.0	=	8,429	+	33,822	=	42,251
Percent Trucks (%T)	29.3	x	1.0000	^	10.0	=	.000	+	29.300	=	29.3
Percent Trucks Hauling Coal (%CT)	.2	x	1.0000	^	10.0	=	.000	+	.2	=	.2
Non-Coal Trucks:											
Axles/Truck (A/NCT)	4.580	x	1.0000	^	10.0	=	.000	+	4.580	=	4.580
EALs/Axle (EAL/NCA)	.200	x	1.0000	^	10.0	=	.000	+	.200	=	.200
Coal Trucks:											
Axles/Truck (A/CT)	4.874	x	1.0000	^	10.0	=	.000	+	4.874	=	4.874
EALs/Axle (EAL/CA)	.810	x	1.0000	^	10.0	=	.000	+	.810	=	.810

DAILY EALs AT MID-TERM:

4-Tired Vehicles:	42,251 AADT	x	.707 1-(%T/100)	x	.005				=	149.356
Non-Coal Trucks:	42,251 AADT	x	.292 (%T/100)x (1)	x	4.580 A/NCT	x	.200 EAL/NCA		=	11,316.421
Coal Trucks:	42,251 AADT	x	.001 (%T/100)x (%CT/100)	x	4.874 A/CT	x	.810 EAL/CA		=	99.656
			Total Mid-term daily EALs.....						=	11,565.432

DESIGN EALs: 11,565.432 Mid-term Daily EALs x 365 x 20 Design Period x .5000 Lane Adjustment = 42,214,000 Design EAL in Critical Lane

No. of Lanes..... 3 1 or 2 Way..... 1

Form TF93_95.WKS

FORECAST OF EQUIVALENT AXLE LOAD ACCUMULATIONS - DESIGN

TD 10-1 No...

COUNTY..... BOONE

DATE..... 04/15/96

NAME..... R. L. Rose

ROUTE ID:

Road Name..... Willamstown-Covington Rd.

Project Nos.....

Project Limits..... M.P. 172.544 to M.P. 173.50

Route No..... I-75
Item No.....
File No..... 95_130S.WKS
T.E. No..... 95.13
Segment..... NB

Ref. Stations..... 1994 Vol. Count @ Stn 266
PTR Rpt, Stn 266, APRIL 1994
1995 Man'l Class Cnt, Stn 266
1994 EALs, FC 1
COAL94.SEG

FUNCTIONAL CLASS:

Rural -		Urban -	
01 Interstate	X	11 Interstate	
02 Principal Arterl		12 Othr Fre'ws & X-Wys	
06 Minor Arterial		14 Othr Prncpl Arterl	
07 Major Collector		16 Minor Arterial	
08 Minor Collector		17 Collector	
09 Local		19 Local	

DATES:

Construction Year	Design Period	Year at Mid-term
1996	10	2001

TRAFFIC PARAMETERS:

	Cnstrctn Yr Forecast		Annual Change		Years to Mid-term		Mid-term Incremnt		Cnstrctn Yr Forecast		Mid-term Forecast
Volume (AADT)	33,822	x	1.0225	^	5.0	=	3,980	+	33,822	=	37,802
Percent Trucks (%T)	29.3	x	1.0000	^	5.0	=	.000	+	29.300	=	29.3
Percent Trucks Hauling Coal (%CT)	.2	x	1.0000	^	5.0	=	.000	+	.2	=	.2
Non-Coal Trucks:											
Axles/Truck (A/NCT)	4.580	x	1.0000	^	5.0	=	.000	+	4.580	=	4.580
EALs/Axle (EAL/NCA)	.200	x	1.0000	^	5.0	=	.000	+	.200	=	.200
Coal Trucks:											
Axles/Truck (A/CT)	4.874	x	1.0000	^	5.0	=	.000	+	4.874	=	4.874
EALs/Axle (EAL/CA)	.810	x	1.0000	^	5.0	=	.000	+	.810	=	.810

DAILY EALs AT MID-TERM:

4-Tired Vehicles:	37,802 AADT	x	.707 1-(%T/100)	x	.005			= 133.630
Non-Coal Trucks:	37,802 AADT	x	.292 (%T/100)x (1)	x	4.580 A/NCT	x	.200 EAL/NCA	= 10,124.941
Coal Trucks:	37,802 AADT	x	.001 (%T/100)x (%CT/100)	x	4.874 A/CT	x	.810 EAL/CA	= 89.163

Total Mid-term daily EALs..... = 10,347.735

DESIGN EALs: 10,347.735 Mid-term Daily EALs x 365 x 10 Design Period x .7000 Lane Adjustment = 26,438,000 Design EAL in Critical Lane

No. of Lanes..... 2 1 or 2 Way..... 1

Form TF93_95.WKS

FORECAST OF EQUIVALENT AXLE LOAD ACCUMULATIONS - DESIGN

TD 10-1 No...

COUNTY..... BOONE

DATE..... 04/15/96

NAME..... R. L. Rose

ROUTE ID:

Road Name..... Willamstown-Covington Rd.

Project Nos.....

Project Limits..... M.P. 172.544 to M.P. 173.50

Route No..... I-75
Item No.....
File No..... 95_130U.WKS
T.E. No..... 95.13
Segment..... NB

Ref. Stations..... 1994 Vol. Count @ Stn 266 | 1995 Man'l Class Cnt, Stn 266
PTR Rpt, Stn 266, APRIL 1994 | 1994 EALs, FC 1
COAL94.SEG

FUNCTIONAL CLASS:

Rural -		Urban -	
01 Interstate	X	11 Interstate	
02 Principal Arterl		12 Othr Fre'ws & X-Wys	
06 Minor Arterial		14 Othr Prncpl Arterl	
07 Major Collector		16 Minor Arterial	
08 Minor Collector		17 Collector	
09 Local		19 Local	

DATES:

Construction Year	Design Period	Year at Mid-term
1996	20	2006

TRAFFIC PARAMETERS:

	Cnstrctn Yr Forecast		Annual Change		Years to Mid-term		Mid-term Incremnt		Cnstrctn Yr Forecast		Mid-term Forecast
Volume (AADT)	33,822	x	1.0225	^	10.0	=	8,429	+	33,822	=	42,251
Percent Trucks (%T)	29.3	x	1.0000	^	10.0	=	.000	+	29.300	=	29.3
Percent Trucks Hauling Coal (%CT)	.2	x	1.0000	^	10.0	=	.000	+	.2	=	.2
Non-Coal Trucks:											
Axles/Truck (A/NCT)	4.580	x	1.0000	^	10.0	=	.000	+	4.580	=	4.580
EALs/Axle (EAL/NCA)	.200	x	1.0000	^	10.0	=	.000	+	.200	=	.200
Coal Trucks:											
Axles/Truck (A/CT)	4.874	x	1.0000	^	10.0	=	.000	+	4.874	=	4.874
EALs/Axle (EAL/CA)	.810	x	1.0000	^	10.0	=	.000	+	.810	=	.810

DAILY EALs AT MID-TERM:

4-Tired Vehicles:	42,251 AADT	x	.707 1-(%T/100)	x	.005				=	149.356
Non-Coal Trucks:	42,251 AADT	x	.292 (%T/100)x (1)	x	4.580 A/NCT	x	.200 EAL/NCA		=	11,316.421
Coal Trucks:	42,251 AADT	x	.001 (%T/100)x (%CT/100)	x	4.874 A/CT	x	.810 EAL/CA		=	99.656
			Total Mid-term daily EALs.....						=	11,565.432

DESIGN EALs: 11,565.432 Mid-term Daily EALs x 365 x 20 Design Period x .7000 Lane Adjustment = 59,099,000 Design EAL in Critical Lane

No. of Lanes..... 2 1 or 2 Way..... 1

Form TF93_95.WKS

KENTUCKY TRANSPORTATION CABINET
DIVISION OF HIGHWAY DESIGN
PAVEMENT BRANCH

TD 61-29A
REV. 1-95

Pavement Design

Sheet 1

Grant
Kenton
Boone

Grant FSP 041 0075 165-167 D
Kenton FSP 059 0075 166-170 D
Boone FSP 008 0075 169-176 D

County Boone Item 6-016.0 UPN

Road Name Lexington-Covington Road (I-75) F.P. OOOIR 00757 081

Just South of KY. 491 Interchange (MP. 165.0) extending North to just South of the KY. 338 Interchange (MP. 175.3).

Traffic 46,000 , 1996 76,000 , 2016 E.S.A.L. 20 yr. @ 5.91×10^7

Existing Bit. on Rigid on DGA Thickness ± 200mm on 254mm on 152mm

Length ± 17.700 kilometers Design Speed 110 km/hr Design CBR 3 Exist.

FOR TYPICAL SECTION SEE ATTACHED SHEET(S)

PAVEMENT

Traffic Lanes			
(Widening)			
(2)	7	STABILIZED AGGREGATE BASE	200mm DEPTH
	358	BITUMINOUS CURING SEAL	0.7 KG/SQ M
	18	DRAIN BLANKET-TYPE II-ASPH PG64-22	260mm DEPTH
	137	BIT CONC BASE CLASS CI PG64-22	200mm DEPTH (100mm + 100mm)
(Overall)			
	139	BIT BASE CL CI PG76-22 W/50%ER	70mm DEPTH
	161	BIT SURF CL I-20/30 PG76-22/ER	30mm DEPTH
	243	BIT SURF CL AK/A PG76-22/50%ER	40mm DEPTH
	356	BITUMINOUS MATERIAL FOR TACK	SEE PLAN NOTE NO. 453
Median & Inside Shoulder			
(2)	7	STABILIZED AGGREGATE BASE	200mm DEPTH
	358	BITUMINOUS CURING SEAL	0.7 KG/SQ M
	18	DRAIN BLANKET-TYPE II-ASPH PG64-22	260mm DEPTH
	137	BIT CONC BASE CLASS CI PG64-22	270mm DEPTH (100mm+100mm+70)
	161	BIT SURF CL I-20/30 PG76-22/ER	30mm DEPTH
	246	BIT CONC SURF CL AK/S PG64-22	40mm DEPTH
	356	BITUMINOUS MATERIAL FOR TACK	SEE PLAN NOTE NO. 453

(Cont. on Sheet No. 2)

LJF
5-15-97

SUBMITTED _____ DATE _____ Asst. Dir., Division of Design

RECOMMENDED _____ DATE _____ Director of Design

APPROVED _____ DATE _____ Asst. State Highway Engineer

APPROVED _____ DATE _____ For Division Administrator FHWA

PAVEMENT (Cont.)

Outside Shoulders

1	DGA BASE	M TON (See Sht. Nos. 5 &
137	BIT CONC BASE CLASS CI PG64-22	70mm DEPTH
161	BIT SURF CL I-20/30 PG76-22/ER	30mm DEPTH
246	BIT CONC SURF CL AK/S PG64-22	40mm DEPTH
356	BITUMINOUS MATERIAL FOR TACK	SEE PLAN NOTE NO. 453

Bituminous Seal required from outside edge of paved shoulder to a point where the DGA ties into the existing ditch or fill slope. Two applications of the following:

291	EMULSIFIED ASPHALT RS-2	1.3 KG/SQ M
100	BITUMINOUS SEAL AGGREGATE	10.8 KG/SQ M (Size No. 8 or 9M)

Longitudinal Pavement Edge Drains (Median)

(3) 2599	FABRIC-GEOTEXTILE TYPE IV	SQ M
(3) 71	CRUSHED AGGREGATE SIZE NO 57	200mm DEPTH (Trench)
1001	PERFORATED PIPE-150MM	METER
(4) 1011	NON-PERFORATED PIPE-150MM	METER
1741	CORED HOLE DRAINAGE BOX CON 150MM	EACH

Remove and Replace for Clearance Under Structures (7)

2091	REMOVING PAVEMENT	SQ M
(2) 7	STABILIZED AGGREGATE BASE	200mm DEPTH
18	DRAIN BLANKET-TYPE II-ASPH PG64-22	160mm DEPTH
137	BIT CONC BASE CLASS CI PG64-22	270mm DEPTH (100mm+100mm+70mm)
161	BIT SURF CL I-20/30 PG76-22/ER	30mm DEPTH
356	BITUMINOUS MATERIAL FOR TACK	SEE PLAN NOTE NO. 453

NOTES:

(1) The Contractor is advised that the compaction of asphalt mixtures furnished for mainline usage, at 25mm (one inch) or greater, on this project will be accepted by OPTION A of the **Special Note for Control and Acceptance of Asphalt Mixtures (8b)**. The compaction of all other asphalt mixtures will be accepted by OPTION B.

(2) The stabilized aggregate base shall be accomplished utilizing the existing DGA in place. (See attached Special Note).

(3) FABRIC-GEOTEXTILE TYPE IV and CRUSHED AGGREGATE SIZE NO 57 shall be incidental to the Contract Unit Bid Price for PERFORATED PIPE-150mm.

(4) All longitudinal pipe drainage systems for the pavement drainage blanket shall be outletted to a Median Box Inlet. Outlets shall be in a fill section whenever possible. Outlet spacing shall not exceed 150 meter except grades 1% or less, then the spacing of outlets shall not exceed 75 meter. All sags shall have an outlet. The Design Engineer shall spot these on the plans or in the proposal.

(Cont. on Sheet No. 3)

NOTES (Cont.)

(5) For superelevated sections, the pavement drainage blanket for widening to the inside shall be constructed so as to provide positive drainage (2% or greater to the PERFORATED PIPE-150mm in the median.

(6) The Division of Transportation Planning has three sets of traffic counting loops imbedded in the existing pavement at milepoints 170.0, 172.1 and 174.1. The site at milepoint 170.0 has two loops per lane in both the north and southbound directions for a total of 12 loops. The site at milepoint 172.1 has one loop per lane in both the north and southbound directions for a total of six loops. The site at 174.1 has two loops per lane in both the north and southbound directions for a total of 12 loops. The Contractor will install a total of 30 loops in the new pavement. Installation shall be coordinated with and approved by the Division of Planning. See the attachment labeled "Special Notes for Installation of Traffic Loops and Piezoelectric Sensors" for quantities of materials and installation details.

(7) Mill Open Graded Friction Course before overlay is applied.

PLAN NOTE NO.: 444; 446

SPECIAL PROVISION

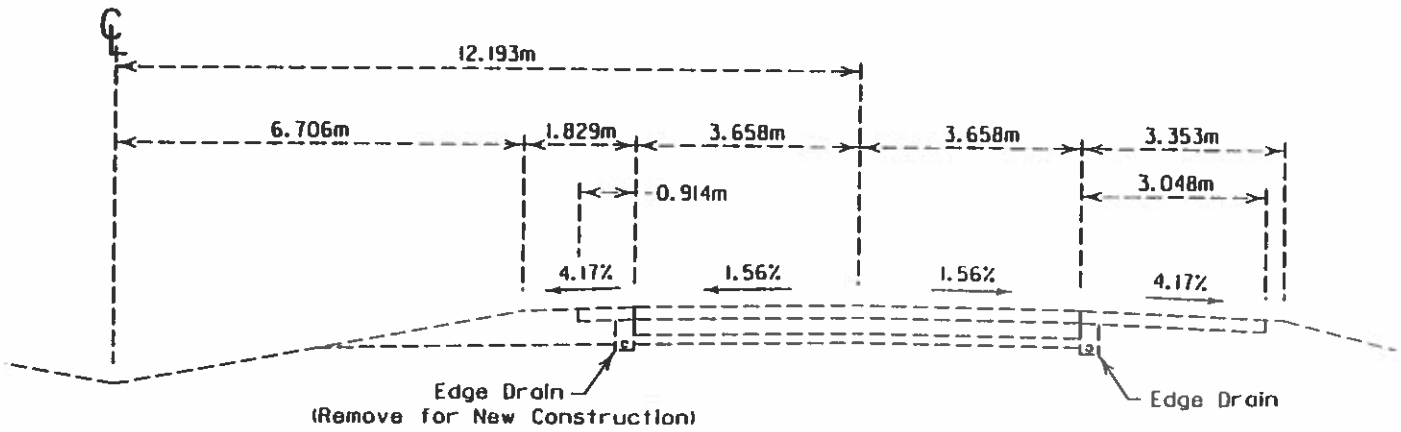
(1043) No. 43F (94)MARSHALL DESIGN METHOD CRITERIA
(1070) No. 70D (94)STABILIZED AGGREGATE BASES
(1087) No. 87A (94)BITUMINOUS CONCRETE BASE, CLASS K
(1094) No. 94 (94)COMPACTION TEST STRIPS CLASS I MIXTURES
(1079) No. 79B (94)STRESS ABSORBING MEMBRANE INTERLAYER (SAMI)

SPECIAL NOTE FOR

(2066) POLYMER ASPHALT EMULSIONS (3-9-92)
(2067) BITUMINOUS INDENTED RUMBLE STRIPS (5-2-95)
(2086) PAVEMENT DRAINAGE BLANKET (5-14-91)
(2093) BITUMINOUS CONCRETE SURFACE, CLASS AK/A, AK/B AND AK/S (7-31-96)
(2094) POLISH RESISTANT AGGREGATE REQUIREMENTS (6-6-95)
(2100) CONTROL AND ACCEPTANCE OF ASPHALT MIXTURES (12-19-96)
(2128) MINERAL ADMIXTURES IN PORTLAND CEMENT CONCRETE (4-19-95)
( ) BITUMINOUS CONCRETE BASE, CLASS CI (7-14-94) Attached
( ) STABILIZATION OF EXISTING DENSE GRADED AGGREGATE (5-29-96) Attached
( ) INSPECTION AND CERTIFICATION OF EDGE DRAIN SYSTEMS (9-30-96) ATTACHED
( ) INSTALLATION OF TRAFFIC LOOPS AND PIEZOELECTRIC SENSORS ATTACHED

GRANT/TIS
6-016.dgn

Grant County
Item 6-016.0
0001R 00757 081



Existing

KY 491 to I-71 Interchange

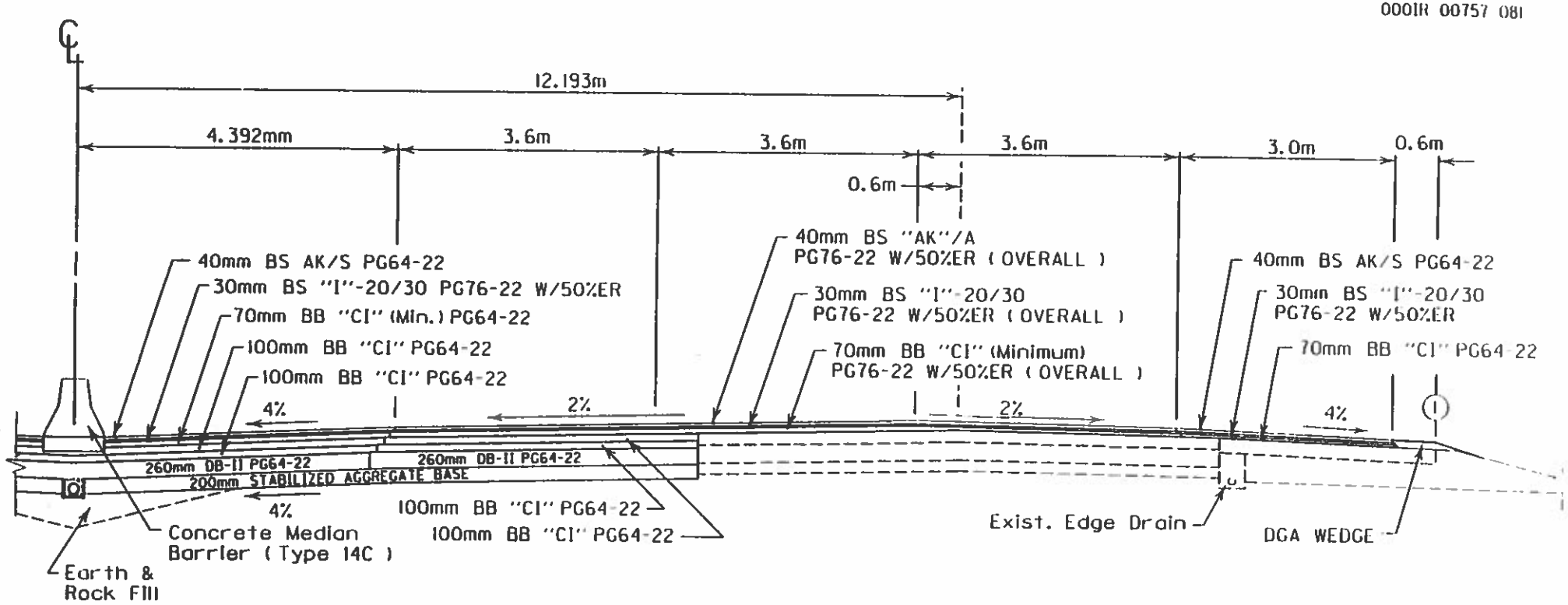
EXISTING PAVEMENT SCHEDULE

Traffic Lanes	Shoulders
165mm Bituminous on 254mm NR PCCP (B&S) on 152mm DGA	165mm Bituminous on Full Depth DGA

TYPICAL TANGENT SECTION

Lexington-Covington Road (I-75)

Grant County
Item 6-016.0
0001R 00757 081



Proposed

(1) BITUMINOUS SEAL.

KY 491 to I-71 Interchange

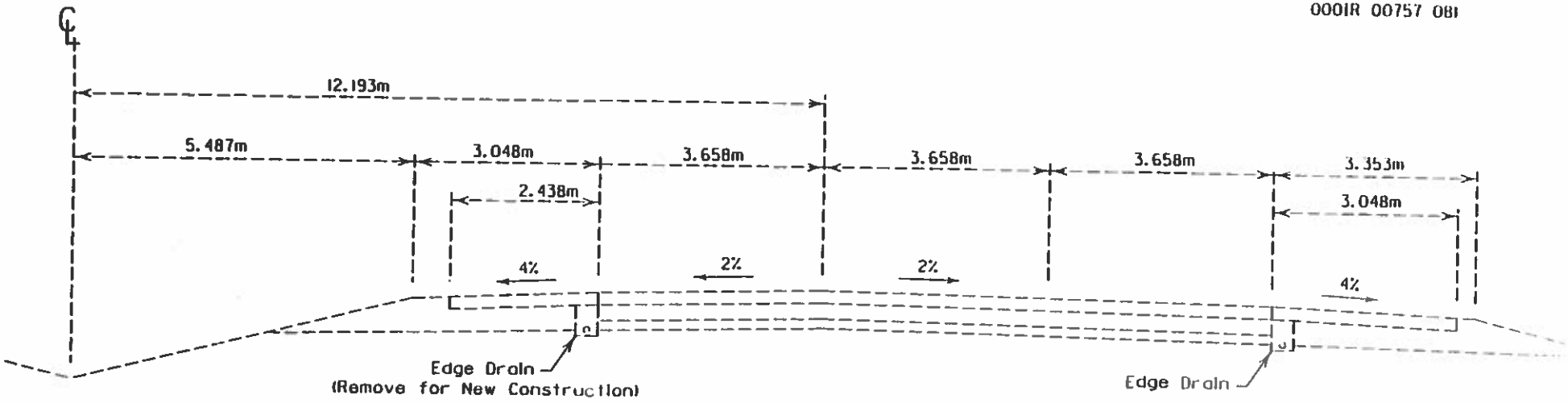
TYPICAL TANGENT SECTION

Lexington-Covington Road (I-75)

Sheet 5

GRANT/175
6-016a.dgn

Grant County
Item 6-016.0
0001R 00757 081



Existing

I71 to KY 338

EXISTING PAVEMENT SCHEDULE

Traffic Lanes	Shoulders
200mm Approx. Bit. on 254mm NR PCCP on 152mm DGA	200mm Approx. Bit. on Full Depth DGA

TYPICAL TANGENT SECTION

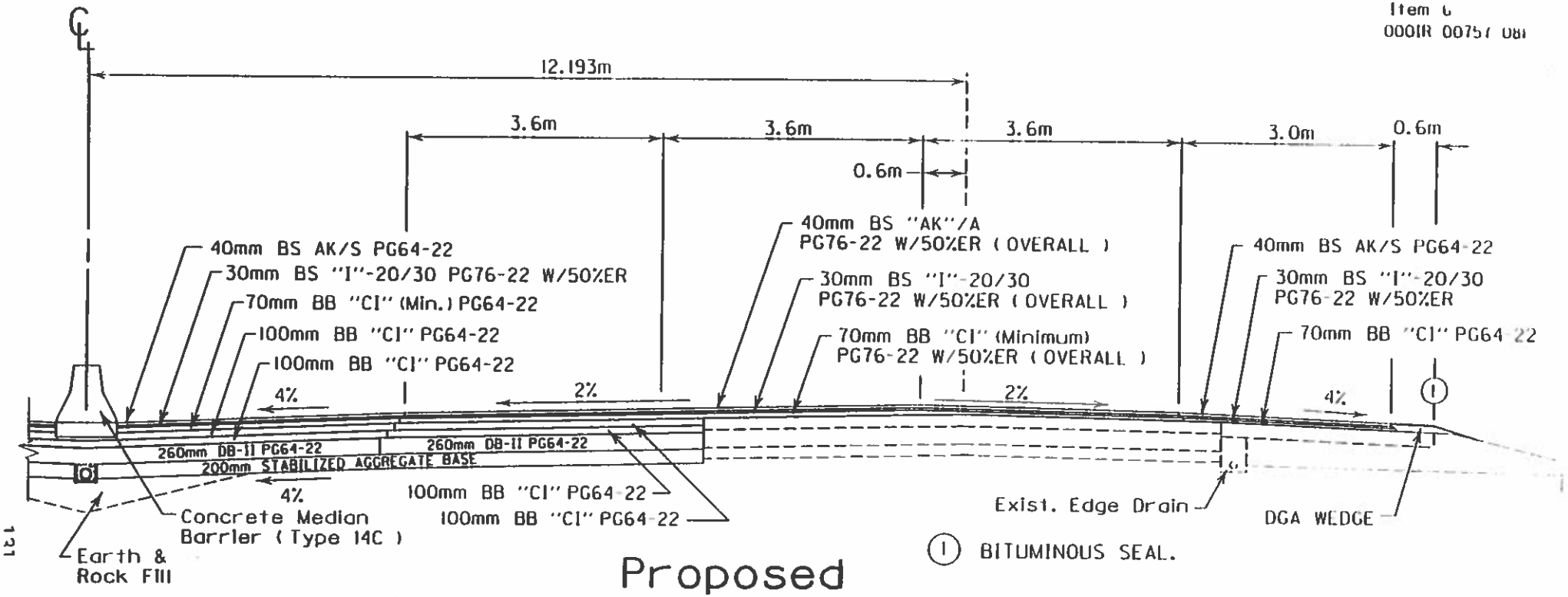
Lexington-Covington Road (I-75)

130

Sheet 6

GRANT/175 MAY20,1996
6-016m.dgn

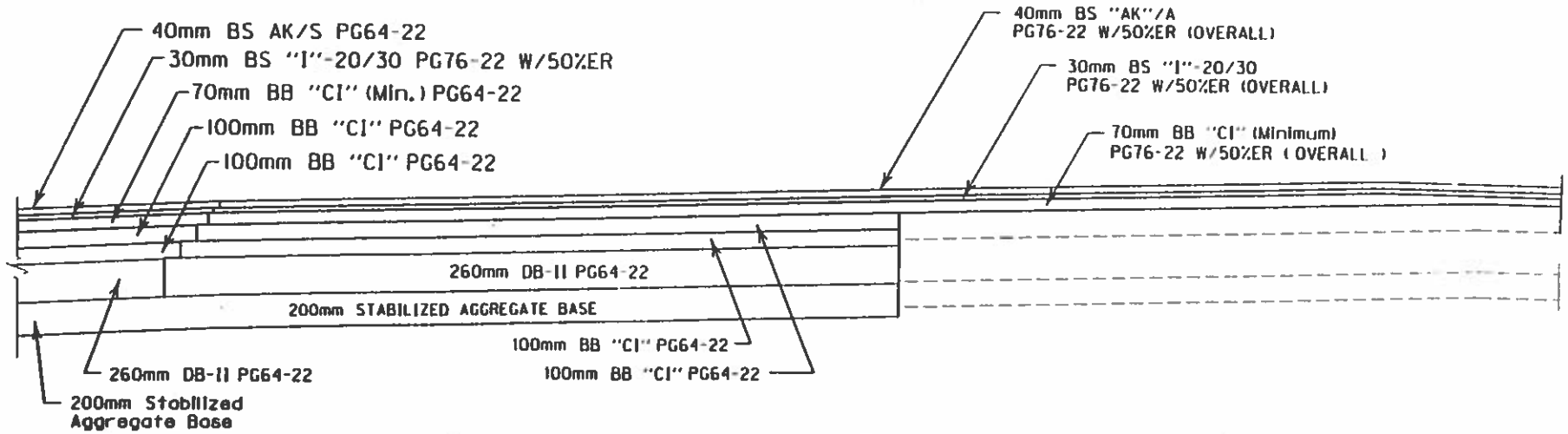
Grant
Item 6
0001R 00757 081



121

Proposed

I71 to KY 338

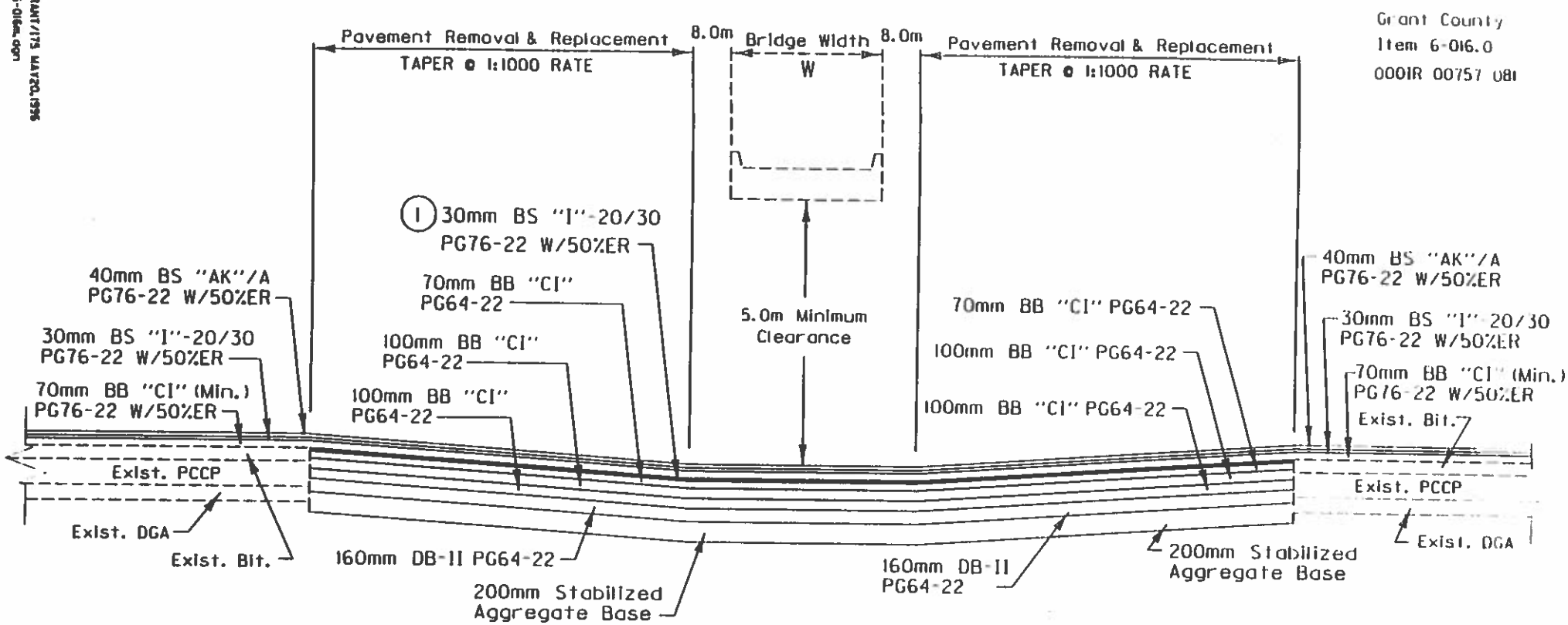


Sheet 7

TYPICAL TANGENT SECTION

Lexington-Covington Road (I-75)

Grant County
Item 6-016.0
0001R 00757 081



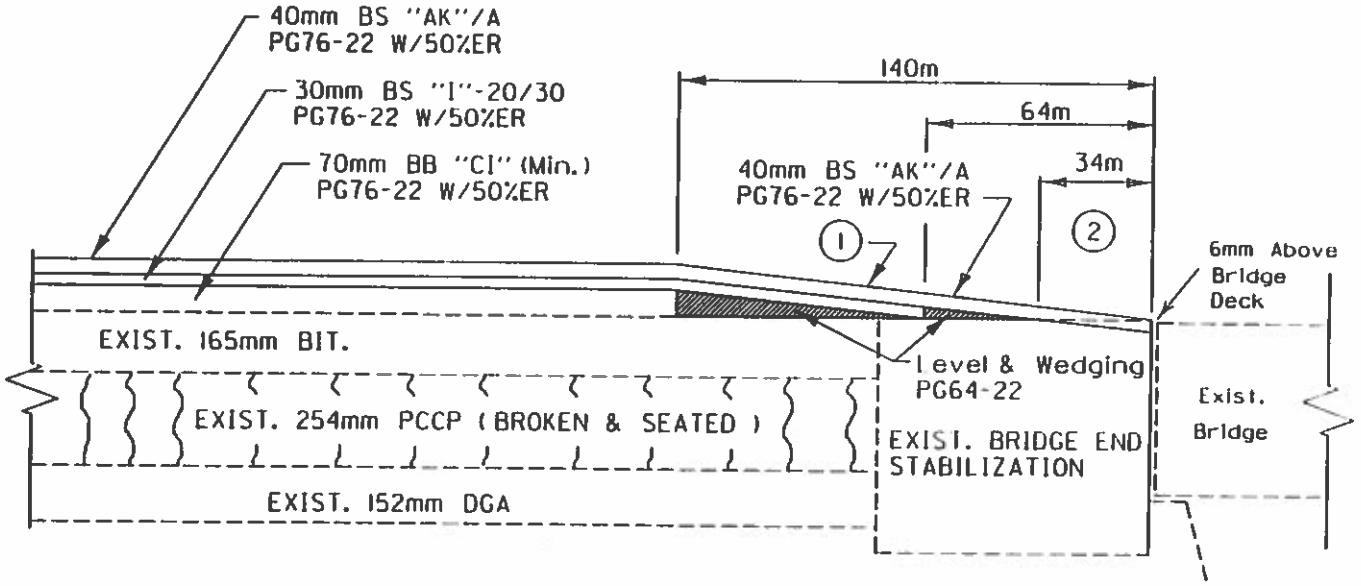
(1) PLACE 30mm BS "I"-20/30 PG76-22 W/50%ER FOR FULL LENGTH OF REPLACEMENT FOR A RIDING SURFACE BEFORE OVERLAY IS PLACED.

2. PAVEMENT REMOVAL AND REPLACEMENT TO BE FROM SHOULDER TO SHOULDER.

Pavement Replacement and Tapering of Overlays for Clearance Under Structures

Detail

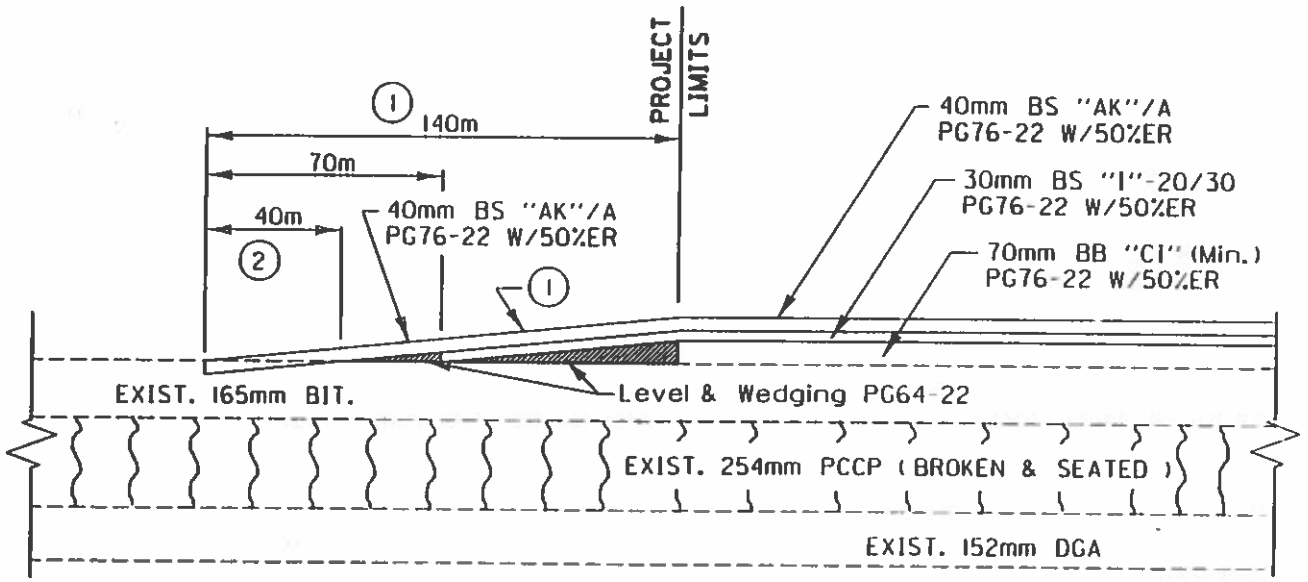
I-75



(1) TAPER @ 1:1000 RATE.

(2) MILL EXISTING PAVEMENT TO RECEIVE
40mm BS AK/A PG76-22 W/50%ER

TAPERING OF OVERLAYS AT BRIDGE ENDS



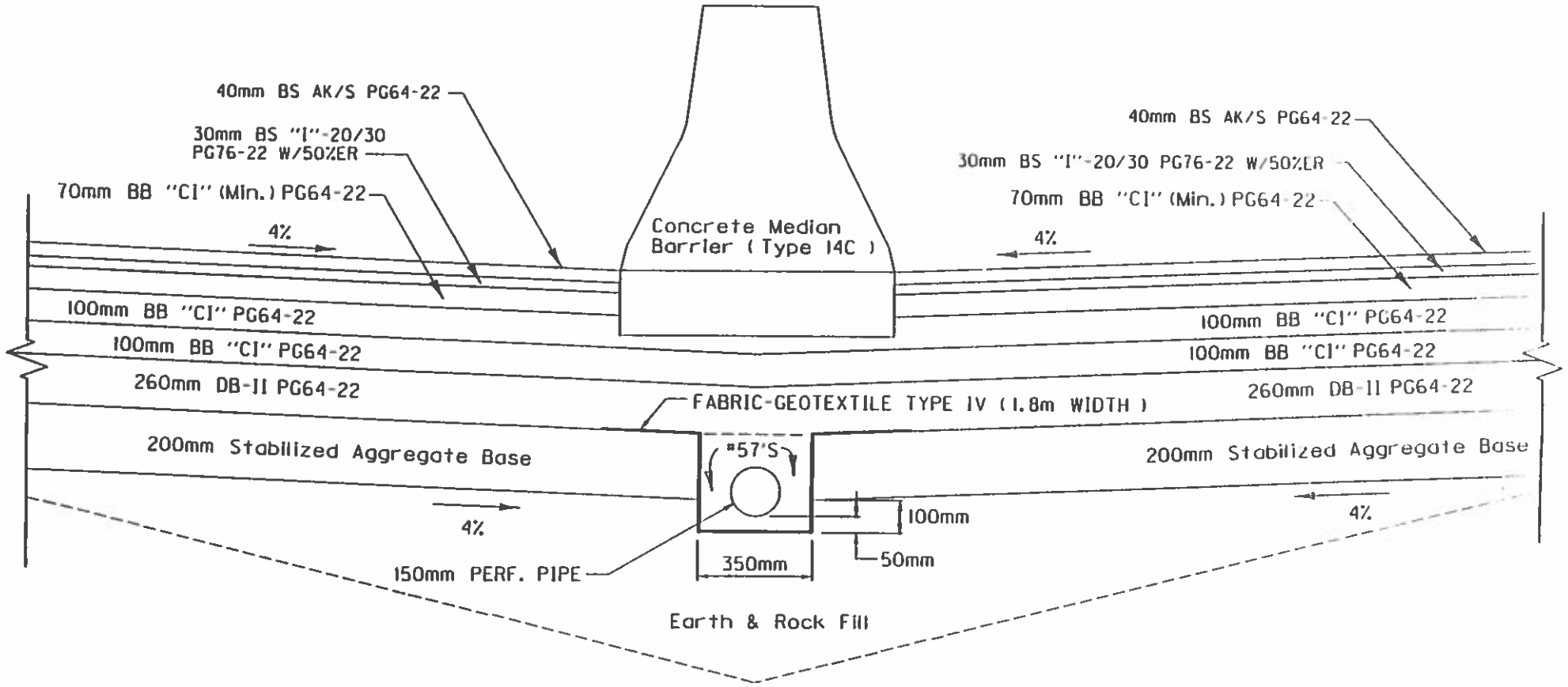
(1) TAPER @ 1:1000 RATE.

(2) MILL EXISTING PAVEMENT TO RECEIVE
40mm BS AK/A PG76-22 W/50%ER

TAPERING OF OVERLAYS AT PROJECT TERMINI

GRANT/115 MAY20,1996
6-016a.dgn

Grant County
Item 6-016.0
0001R 00757 081



PAVEMENT DRAINAGE DETAIL

135

Sheet 1

KENTUCKY TRANSPORTATION CABINET DEPARTMENT HIGHWAYS

DIVISION OF TRANSPORTATION PLANNING

PORTABLE TRAFFIC RECORDER REPORT

ROUTE: I 75 KENTON COUNTY STATION: 521 N

WEEK OF APRIL 02 TO APRIL 08 1996

DATE:	02	03	04	05	06	07	08	
DAY:	TUE	WED	THU	FRI	SAT	SUN	MON	TOTALS
12- 1 AM		290	280					570
1- 2 AM		210	260					470
2- 3 AM		210	260					470
3- 4 AM		250	250					500
4- 5 AM		320	360					680
5- 6 AM		740	780					1520
6- 7 AM		1300	1300					2600
7- 8 AM		1450	1330					2780
8- 9 AM		1320	1180					2500
9-10 AM	1350	1410						2760
10-11 AM	1370	1290						2660
11-12 AM	1370	1330						2700
12- 1 PM	1400	1320						2720
1- 2 PM	1390	1410						2800
2- 3 PM	1640	1420						3060
3- 4 PM	1640	1490						3130
4- 5 PM	1370	1600						2970
5- 6 PM	1270	1380						2650
6- 7 PM	1030	1240						2270
7- 8 PM	900	880						1780
8- 9 PM	810	770						1580
9-10 PM	670	660						1330
10-11 PM	580	620						1200
11-12 PM	400	470						870
TOTALS:	17190	23380	6000					46570

AVERAGE DAILY TRAFFIC: 23052

MONTHLY FACTOR: 99
AXLE FACTOR: 100
TOTAL HOURS: 48
AM HIGH HOUR: 1450 BETWEEN 7- 8 AM ON WEDNESDAY
PM HIGH HOUR: 1640 BETWEEN 2- 3 PM ON TUESDAY

MACHINE NUMBER: P93
MULTIPLE: N
ONE-WAY: N
DATA SOURCE: V

KEN CKY ANS TA I C NET PAI NT HI AY

DIVISION OF TRANSPORTATION PLANNING

PORTABLE TRAFFIC RECORDER REPORT

ROUTE: I 75 KENTON COUNTY STATION: 521 S

WEEK OF APRIL 02 TO APRIL 08 1996

DATE:	02	03	04	05	06	07	08	
DAY:	TUE	WED	THU	FRI	SAT	SUN	MON	TOTALS
12- 1 AM		460	590					1050
1- 2 AM		290	370					660
2- 3 AM		310	290					600
3- 4 AM		210	390					600
4- 5 AM		280	350					630
5- 6 AM		400	530					930
6- 7 AM		620	790					1410
7- 8 AM		960	1150					2110
8- 9 AM		1060	1200					2260
9-10 AM	1030	1170						2200
10-11 AM	1110	1290						2400
11-12 AM	1140	1250						2390
12- 1 PM	1060	1180						2240
1- 2 PM	1060	1180						2240
2- 3 PM	1210	1350						2560
3- 4 PM	1490	1630						3120
4- 5 PM	1560	1640						3200
5- 6 PM	1570	1530						3100
6- 7 PM	1300	1370						2670
7- 8 PM	940	1210						2150
8- 9 PM	810	1120						1930
9-10 PM	770	1040						1810
10-11 PM	550	850						1400
11-12 PM	580	810						1390
TOTALS:	16180	23210	5660					45050

AVERAGE DAILY TRAFFIC: 22300

MONTHLY FACTOR: 99
AXLE FACTOR: 100
TOTAL HOURS: 48
AM HIGH HOUR: 1290 BETWEEN 10-11 AM ON WEDNESDAY
PM HIGH HOUR: 1640 BETWEEN 4- 5 PM ON WEDNESDAY

MACHINE NUMBER: P94
MULTIPLE: N
ONE-WAY: N
DATA SOURCE: V

KENTUCKY TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS
DIVISION OF TRANSPORTATION PLANNING

PORTABLE TRAFFIC RECORDER REPORT

ROUTE: I 75 BOONE COUNTY STATION: 338 N

WEEK OF APRIL 02 TO APRIL 08 1996

DATE:	02	03	04	05	06	07	08	
DAY:	TUE	WED	THU	FRI	SAT	SUN	MON	TOTALS
12- 1 AM		350	360					710
1- 2 AM		250	270					520
2- 3 AM		240	280					520
3- 4 AM		260	280					540
4- 5 AM		360	410					770
5- 6 AM		810	880					1690
6- 7 AM		1580	1610					3190
7- 8 AM		1730	1700					3430
8- 9 AM		1530	1490					3020
9-10 AM		1610	1460					3070
10-11 AM	1520	1510						3030
11-12 AM	1610	1520						3130
12- 1 PM	1580	1560						3140
1- 2 PM	1560	1620						3180
2- 3 PM	1840	1640						3480
3- 4 PM	1890	1710						3600
4- 5 PM	1590	1820						3410
5- 6 PM	1440	1600						3040
6- 7 PM	1240	1440						2680
7- 8 PM	1040	1090						2130
8- 9 PM	930	900						1830
9-10 PM	760	730						1490
10-11 PM	680	710						1390
11-12 PM	440	540						980
TOTALS:	18120	27110	8740					53970

AVERAGE DAILY TRAFFIC: 26715

MONTHLY FACTOR: 99
AXLE FACTOR: 100
TOTAL HOURS: 48
AM HIGH HOUR: 1730 BETWEEN 7- 8 AM ON WEDNESDAY
PM HIGH HOUR: 1890 BETWEEN 3- 4 PM ON TUESDAY

MACHINE NUMBER: P92
MULTIPLE: N
ONE-WAY: N
DATA SOURCE: V

KEN KY ANS TAT CA NET PAR NT HI AY

DIVISION OF TRANSPORTATION PLANNING

PORTABLE TRAFFIC RECORDER REPORT

ROUTE: I 75 BOONE COUNTY STATION: 338 S

WEEK OF APRIL 02 TO APRIL 08 1996

DATE:	02	03	04	05	06	07	08	
DAY:	TUE	WED	THU	FRI	SAT	SUN	MON	TOTALS
12- 1 AM		490	640					1130
1- 2 AM		330	400					730
2- 3 AM		340	350					690
3- 4 AM		230	430					660
4- 5 AM		310	390					700
5- 6 AM		480	600					1080
6- 7 AM		770	940					1710
7- 8 AM		1160	1390					2550
8- 9 AM		1200	1430					2630
9-10 AM		1280	1750					3030
10-11 AM	1270	1450						2720
11-12 AM	1320	1410						2730
12- 1 PM	1260	1420						2680
1- 2 PM	1290	1420						2710
2- 3 PM	1390	1580						2970
3- 4 PM	1770	1980						3750
4- 5 PM	1900	1970						3870
5- 6 PM	1920	1870						3790
6- 7 PM	1560	1750						3310
7- 8 PM	1130	1420						2550
8- 9 PM	1030	1290						2320
9-10 PM	900	1200						2100
10-11 PM	670	970						1640
11-12 PM	660	910						1570
TOTALS:	18070	27230	8320					53620

AVERAGE DAILY TRAFFIC: 26542

MONTHLY FACTOR: 99
AXLE FACTOR: 100
TOTAL HOURS: 48
AM HIGH HOUR: 1750 BETWEEN 9-10 AM ON THURSDAY
PM HIGH HOUR: 1980 BETWEEN 3- 4 PM ON WEDNESDAY

MACHINE NUMBER: P98
MULTIPLE: N
ONE-WAY: N
DATA SOURCE: V

KEN___KY ___ANS___TAT___ CA___NET___PAR___NT ___ HI___AYS

DIVISION OF TRANSPORTATION PLANNING

PORTABLE TRAFFIC RECORDER REPORT

ROUTE: I 75 BOONE COUNTY STATION: 266 N

WEEK OF APRIL 02 TO APRIL 08 1996

DATE:	02	03	04	05	06	07	08	
DAY:	TUE	WED	THU	FRI	SAT	SUN	MON	TOTALS
12- 1 AM		600	610					1210
1- 2 AM		400	490					890
2- 3 AM		420	440					860
3- 4 AM		410	470					880
4- 5 AM		520	650					1170
5- 6 AM		1220	1220					2440
6- 7 AM		2100	2180					4280
7- 8 AM		2380	2280					4660
8- 9 AM		2160	2170					4330
9-10 AM		2210	2030					4240
10-11 AM	2110	2150						4260
11-12 AM	2290	1980						4270
12- 1 PM	2210	2310						4520
1- 2 PM	2190	2290						4480
2- 3 PM	2520	2380						4900
3- 4 PM	2580	2510						5090
4- 5 PM	2360	2590						4950
5- 6 PM	2140	2410						4550
6- 7 PM	1860	2120						3980
7- 8 PM	1540	1690						3230
8- 9 PM	1360	1360						2720
9-10 PM	1130	1170						2300
10-11 PM	1020	1070						2090
11-12 PM	750	840						1590
TOTALS:	26060	39290	12540					77890

AVERAGE DAILY TRAFFIC: 38555

MONTHLY FACTOR: 99
AXLE FACTOR: 100
TOTAL HOURS: 48
AM HIGH HOUR: 2380 BETWEEN 7- 8 AM ON WEDNESDAY
PM HIGH HOUR: 2590 BETWEEN 4- 5 PM ON WEDNESDAY

MACHINE NUMBER: P90
MULTIPLE: N
ONE-WAY: N
DATA SOURCE: V

KEN KY ANS TAT I C NET PAR NT HI AYS
DIVISION OF TRANSPORTATION PLANNING

PORTABLE TRAFFIC RECORDER REPORT

ROUTE: I 75 BOONE COUNTY STATION: 266 S

WEEK OF APRIL 02 TO APRIL 08 1996

DATE:	02	03	04	05	06	07	08	
DAY:	TUE	WED	THU	FRI	SAT	SUN	MON	TOTALS
12- 1 AM		720	960					1680
1- 2 AM		490	630					1120
2- 3 AM		520	570					1090
3- 4 AM		400	630					1030
4- 5 AM		540	610					1150
5- 6 AM		740	890					1630
6- 7 AM		1160	1410					2570
7- 8 AM		1710	1980					3690
8- 9 AM		1730	2080					3810
9-10 AM		1900	2520					4420
10-11 AM	1840	2100						3940
11-12 AM	1880	2020						3900
12- 1 PM	1830	1950						3780
1- 2 PM	1850	2000						3850
2- 3 PM	2020	2300						4320
3- 4 PM	2480	2820						5300
4- 5 PM	2640	0						2640
5- 6 PM	2650	2620						5270
6- 7 PM	2210	2390						4600
7- 8 PM	1620	2000						3620
8- 9 PM	1450	1800						3250
9-10 PM	1370	1680						3050
10-11 PM	960	1390						2350
11-12 PM	990	1320						2310
TOTALS:	25790	36300	12280					74370

AVERAGE DAILY TRAFFIC: 36813

MONTHLY FACTOR: 99
AXLE FACTOR: 100
TOTAL HOURS: 48
AM HIGH HOUR: 2520 BETWEEN 9-10 AM ON THURSDAY
PM HIGH HOUR: 2820 BETWEEN 3- 4 PM ON WEDNESDAY

MACHINE NUMBER: P91
MULTIPLE: N
ONE-WAY: N
DATA SOURCE: V

KENTUCKY TRANSPORTATION CABINET DEPARTMENT OF HIGHWAYS
DIVISION OF TRANSPORTATION PLANNING

PERMANENT TRAFFIC RECORDER REPORT

ROUTE: I75 GRANT COUNTY STATION: 23 N

WEEK OF AUGUST 10 TO AUGUST 16 1997

DATE:	10	11	12	13	14	15	16	
DAY:	SUN	MON	TUE	WED	THU	FRI	SAT	TOTALS
12- 1 AM	512	464	279	305	324	360	417	2661
1- 2 AM	343	299	230	189	242	280	329	1912
2- 3 AM	237	248	224	190	233	259	268	1659
3- 4 AM	201	190	187	214	226	246	246	1510
4- 5 AM	159	254	240	267	265	284	239	1708
5- 6 AM	158	536	486	486	497	495	274	2932
6- 7 AM	219	746	675	695	684	709	382	4110
7- 8 AM	340	874	820	822	823	788	557	5024
8- 9 AM	541	793	798	783	825	844	897	5481
9-10 AM	948	910	944	856	867	1023	1189	6737
10-11 AM	1227	1001	921	945	1007	1136	1337	7574
11-12 AM	1633	1107	941	1018	1075	1291	1417	8482
12- 1 PM	2042	1099	1114	1093	1128	1306	1469	9251
1- 2 PM	2297	760	1124	1183	1262	1431	1481	9538
2- 3 PM	2303	1263	1202	1355	1383	1561	1499	10566
3- 4 PM	2488	1938	1277	1267	1455	1584	1629	11638
4- 5 PM	2363	1613	1241	1248	1471	1579	1517	11032
5- 6 PM	2258	1389	1150	1341	1373	1644	1645	10800
6- 7 PM	2441	1144	1057	1107	1252	1477	1491	9969
7- 8 PM	1834	933	827	936	904	1208	1309	7951
8- 9 PM	1644	716	707	691	833	899	1060	6550
9-10 PM	1290	679	642	665	734	1062	1013	6085
10-11 PM	1011	591	523	493	622	776	804	4820
11-12 PM	656	390	402	410	469	530	659	3516
TOTALS:	29145	19937	18011	18559	19954	22772	23128	151506

AVERAGE DAY OF WEEK: 21644

PEAK HOUR: 2488 SUNDAY BETWEEN 3- 4 PM

KENTUCKY TRANSPORTATION CABINET - DEPARTMENT OF HIGHWAYS
DIVISION OF TRANSPORTATION PLANNING

PERMANENT TRAFFIC RECORDER REPORT

ROUTE: I75 GRANT COUNTY STATION: 23 S

WEEK OF AUGUST 10 TO AUGUST 16 1997

DATE:	10	11	12	13	14	15	16	
DAY:	SUN	MON	TUE	WED	THU	FRI	SAT	TOTALS
12- 1 AM	583	378	429	435	522	557	712	3616
1- 2 AM	357	257	301	301	342	411	557	2526
2- 3 AM	265	217	257	288	297	348	392	2064
3- 4 AM	208	189	251	210	261	320	384	1823
4- 5 AM	173	225	253	241	292	374	379	1937
5- 6 AM	218	352	369	360	359	474	451	2583
6- 7 AM	352	547	550	525	604	706	610	3894
7- 8 AM	568	888	907	842	977	1161	1088	6431
8- 9 AM	797	930	934	907	1095	1108	1373	7144
9-10 AM	1211	1207	1012	1093	1279	1519	1611	8932
10-11 AM	1517	1485	1265	1290	1459	1814	1937	10767
11-12 AM	1707	1462	1352	1426	1469	2001	1953	11370
12- 1 PM	1849	1419	1240	1315	1523	1842	1773	10961
1- 2 PM	1827	1353	1245	1308	1454	1852	1739	10778
2- 3 PM	1803	1268	1248	1254	1404	1880	1670	10527
3- 4 PM	1715	1497	1380	1462	1609	2139	1599	11401
4- 5 PM	1546	1504	1430	1495	1591	2019	1492	11077
5- 6 PM	1924	1328	1402	1380	1561	1986	1476	11057
6- 7 PM	1469	1229	1166	1184	1424	2060	1305	9837
7- 8 PM	1217	992	952	1027	1278	1854	1082	8402
8- 9 PM	1036	874	806	874	1054	1423	1002	7069
9-10 PM	867	746	726	833	921	1246	910	6249
10-11 PM	719	662	647	677	777	949	868	5299
11-12 PM	464	565	572	626	716	882	885	4710
TOTALS:	24392	21574	20694	21353	24268	30925	27248	170454

AVERAGE DAY OF WEEK: 24351

PEAK HOUR: 2139 FRIDAY BETWEEN 3- 4 PM

```
**********************************************************************
CO:GRANT                                    RT:I    75     DIR:0   STN#:P23

FROM MP:  158.544   AT: KY 22                        UPDATED => 08/15/97
  TO MP:  166.263   AT: KY 491

FUNCTIONAL CLASS: 01  RURAL  Interstate                 ACTIVE STATION
                                                This is an ATR station
STATION TYPE:  1  ATR

  2017  57100(-)      VOL89  31000( )      VOL80  21700( )      VOL71  19800( )
 VOL97  38100(-)      VOL88  30500( )      VOL79  23000( )      VOL70  18900( )
 VOL96  38500( )      VOL87  29400( )      VOL78  23400( )      VOL69  18200( )
 VOL95  37700(2)      VOL86  26400( )      VOL77  22400( )      VOL68  17500( )
 VOL94  35300( )      VOL85  25000( )      VOL76  22900( )      VOL67  16900( )
 VOL93  33100( )      VOL84  24400( )      VOL75  21100( )      VOL66  15100( )
 VOL92  33400( )      VOL83  23300( )      VOL74  19300( )      VOL65  12700( )
 VOL91  32300( )      VOL82  22600( )      VOL73  20900( )      VOL64  10100( )
 VOL90  30700( )      VOL81  21700( )      VOL72  20600( )      VOL63  13900(-)

    This Station was OPENED in 1962


 ENTER or PgDn-next record    PgUp-previous record    ESC-exit    F1-Pre Value
```

CO:KENTON RT:I 75 DIR:0 STN#:521

FROM MP: 187.721 AT: US 25 UPDATED => 08/15/97
TO MP: 188.678 AT: KY 1072

FUNCTIONAL CLASS: 11 URBAN Interstate ACTIVE STATION

STATION TYPE: 6 Interstate

2017	178000(-)	VOL89	99500(E)	VOL80	92700( )	VOL71	82000( )
VOL97	135000(-)	VOL88	105000(A)	VOL79	81600( )	VOL70	85400( )
VOL96	125000(E)	VOL87	98400( )	VOL78	91700( )	VOL69	78800(-)
VOL95	123000( )	VOL86	86300( )	VOL77	92000( )	VOL68	73600(-)
VOL94	105000( )	VOL85	82300( )	VOL76	90600( )	VOL67	67600(-)
VOL93	109000(A)	VOL84	82000( )	VOL75	90000(-)	VOL66	60200(-)
VOL92	125000( )	VOL83	96600( )	VOL74	99900( )	VOL65	50600( )
VOL91	109000( )	VOL82	91200( )	VOL73	87800(-)	VOL64	68400(-)
VOL90	95500( )	VOL81	91000(-)	VOL72	84300(-)	VOL63	0(-)

TRAFFIC IMPACT YEAR was in 1994
This Station was OPENED in 1965

ENTER or PgDn-next record PgUp-previous record ESC-exit F1-Pre Value

****

CO:BOONE CITY:COVINGTON-NEWPORT RT:I 75 DIR:0 STN#:521

FROM MP: 169.439 AT: KENTON COUNTY LINE UPDATED => 08/15/97
TO MP: 171.315 AT: KY 14

FUNCTIONAL CLASS: 01 RURAL Interstate ACTIVE STATION

STATION TYPE: 0

2017	50800(-)	VOL89	29600(-)	VOL80	29400( )	VOL71	19600( )
VOL97	41100(-)	VOL88	28600( )	VOL79	26100(-)	VOL70	19100(-)
VOL96	45400( )	VOL87	24900( )	VOL78	28700( )	VOL69	18200(-)
VOL95	39400(2)	VOL86	24200( )	VOL77	24200( )	VOL68	16300( )
VOL94	37000(2)	VOL85	26800( )	VOL76	23600( )	VOL67	19300( )
VOL93	30100( )	VOL84	27300(-)	VOL75	22200( )	VOL66	16900( )
VOL92	31500( )	VOL83	28600( )	VOL74	22200(-)	VOL65	12600( )
VOL91	30100(E)	VOL82	25400( )	VOL73	22500( )	VOL64	16100(-)
VOL90	28400( )	VOL81	26500( )	VOL72	20700(-)	VOL63	15700(-)

ENTER or PgDn-next record PgUp-previous record ESC-exit F1-Pre Value

****

CO:BOONE CITY:COVINGTON-NEWPORT RT:I 75 DIR:0 STN#:338

FROM MP: 171.315 AT: KY 14 UPDATED => 08/15/97
TO MP: 172.544 AT: I 71

FUNCTIONAL CLASS: 01 RURAL Interstate ACTIVE STATION

STATION TYPE: 6 Interstate

2017	64100(-)	VOL89	31900( )	VOL80	34000( )	VOL71	24200( )
VOL97	48600(-)	VOL88	34700( )	VOL79	30500(-)	VOL70	23300(-)
VOL96	53300( )	VOL87	27000( )	VOL78	31300( )	VOL69	21800( )

VOL93	40500( )	VOL84	31800( )	VOL75	27000( )	VOL66	21000( )
VOL92	38700( )	VOL83	33500( )	VOL74	31400( )	VOL65	21000(-)
VOL91	33500(E)	VOL82	27600( )	VOL73	28100( )	VOL64	20600(-)
VOL90	32000( )	VOL81	29400( )	VOL72	24500( )	VOL63	20100(-)

ENTER or PgDn-next record PgUp-previous record ESC-exit F1-Pre Value

CO:BOONE CITY:COVINGTON-NEWPORT RT:I 75 DIR:O STN#:256

FROM MP: 172.544 AT: I 71
TO MP: 175.364 AT: KY 338

UPDATED => 08/15/97

FUNCTIONAL CLASS: 01 RURAL Interstate

ACTIVE STATION

STATION TYPE: 6 Interstate

2017	93900(-)	VOL89	53200(-)	VOL80	50400( )	VOL71	35100( )
VOL97	72000(-)	VOL88	51300( )	VOL79	45400(-)	VOL70	31000(-)
VOL96	75400( )	VOL87	43100( )	VOL78	46400( )	VOL69	27700(-)
VOL95	69200(2)	VOL86	41900( )	VOL77	44000( )	VOL68	24900( )
VOL94	64700(2)	VOL85	45300( )	VOL76	43400( )	VOL67	22000(-)
VOL93	62700( )	VOL84	48500(-)	VOL75	40600(-)	VOL66	17000( )
VOL92	59100(A)	VOL83	55700( )	VOL74	43100( )	VOL65	16300(-)
VOL91	54400(E)	VOL82	40100( )	VOL73	37800(-)	VOL64	11000( )
VOL90	51300( )	VOL81	50300( )	VOL72	38800( )	VOL63	21000(-)

ENTER or PgDn-next record PgUp-previous record ESC-exit F1-Pre Value

CO:KENTON RT:I 75 DIR:O STN#:521

FROM MP: 166.263 AT: GRANT-KENTON CO LINE
TO MP: 169.437 AT: BOONE CO. LINE

UPDATED => 08/15/97

FUNCTIONAL CLASS: 01 RURAL Interstate

ACTIVE STATION

STATION TYPE: O

2017	50800(-)	VOL89	29600(-)	VOL80	29400( )	VOL71	19600( )
VOL97	41100(-)	VOL88	28600( )	VOL79	26100(-)	VOL70	19100(-)
VOL96	45400( )	VOL87	24900( )	VOL78	28700( )	VOL69	18200(-)
VOL95	39400(2)	VOL86	24200( )	VOL77	24200( )	VOL68	16300( )
VOL94	37000(2)	VOL85	26800( )	VOL76	23600( )	VOL67	19300( )
VOL93	30100( )	VOL84	27300(-)	VOL75	22200( )	VOL66	16900( )
VOL92	31500( )	VOL83	28600( )	VOL74	22200(-)	VOL65	12600( )
VOL91	30100(E)	VOL82	25400( )	VOL73	22500( )	VOL64	16100(-)
VOL90	28400( )	VOL81	26500( )	VOL72	20700(-)	VOL63	15700(-)

ENTER or PgDn-next record PgUp-previous record ESC-exit F1-Pre Value

CO:KENTON RT:I 75 DIR:O STN#:521

FROM MP: 166.163 AT: BOONE CO. LINE UPDATED ON [illegible]
TO MP: 169.439 AT: BOONE CO. LINE

FUNCTIONAL CLASS: 01 RURAL Interstate ACTIVE STATION

STATION TYPE: 6 Interstate

2017	50800(-)	VOL89	29600(-)	VOL80	29400( )	VOL71	19600( )
VOL97	41100(-)	VOL88	28600( )	VOL79	26100(-)	VOL70	19100(-)
VOL96	45400( )	VOL87	24900( )	VOL78	28700( )	VOL69	18200(-)
VOL95	39400(2)	VOL86	24200( )	VOL77	24200( )	VOL68	16300( )
VOL94	37000(2)	VOL85	26800( )	VOL76	23600( )	VOL67	19300( )
VOL93	30100( )	VOL84	27300(-)	VOL75	22200( )	VOL66	16900( )
VOL92	31500( )	VOL83	28600( )	VOL74	22200(-)	VOL65	12600( )
VOL91	30100(E)	VOL82	25400( )	VOL73	22500( )	VOL64	16100(-)
VOL90	28400( )	VOL81	26500( )	VOL72	20700(-)	VOL63	15700(-)

ENTER or PgDn-next record PgUp-previous record ESC-exit F1-Pre Value

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995 — ENGLISH — ALL PROJECTS 1996

# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
285	1289216.000	13.6194	1	D G A BASE	TON	216	1292881.300	11.5780	-15.0
34	938026.000	10.9091	3	CRUSHED STONE BASE	TON	17	466588.000	12.1013	10.9
5	364082.000	1.5664	8	CEMENT MODIFIED ROADBED	SQ YD	5	435507.000	1.4362	-8.3
16	800035.000	1.2385	13	LIME STABILIZED ROADBED	SQ YD	5	399586.000	1.1389	-8.0
18	15771.000	86.1833	14	LIME	TON	5	8098.000	74.3315	-13.8
2	21335.000	8.6900	15	DRAINAGE BLANKET-TYPE I-UNTR	TON	2	90659.000	9.7594	12.3
10	208747.000	24.9361	18	DRAINAGE BLANKET-TYPE II-ASPH	TON	10	366791.000	18.7437	-24.8
71	51588.000	11.3706	20	TRAFFIC BOUND BASE	TON	49	9527.400	12.7004	11.7
6	20039.000	17.9926	21	DRAINAGE BLANKET-EMBANKMENT	CU YD	1	2595.000	19.8000	10.0
32	27026.700	14.9826	71	CRUSHED AGGREGATE SIZE NO 57	TON	10	3841.000	13.1036	-12.5
2	5561.000	10.4693	72	CRUSHED LIMESTONE SIZE NO 57	TON	1	665.000	16.3000	55.7
25	7859.000	14.8295	77	AGGREGATE FOR MAILBOX TURNOUTS	TON	20	6733.000	13.7835	-7.1
32	75913.000	12.7212	78	CRUSHED AGGREGATE SIZE NO 2	TON	30	11932.000	32.7002	157.1
75	19096.300	27.0656	100	BITUMINOUS SEAL AGGREGATE	TON	70	22650.600	30.7879	13.8
4	410.500	471.4738	101	SAMI	TON	2	427.110	501.4472	6.4
4	3848.000	20.1488	102	SAMI COVER AGGREGATE	TON	2	4005.000	32.3191	60.4
211	1033824.800	26.8562	120	BIT CONC BASE CLASS I	TON	196	668289.500	27.9346	4.0
9	334628.000	31.9977	123	BIT CONC BASE CLASS K	TON	12	496322.000	22.9749	-28.2
126	316429.000	28.9177	128	BIT CONC BINDER CLASS I-O	TON	118	226746.200	29.5997	2.4
523	1547984.200	29.8537	149	BIT CONC SURFACE CLASS I-O	TON	377	786262.900	29.9091	0.2
146	478296.000	29.8645	154	BIT CONC SURFACE CLASS I-20/30	TON	121	303867.000	28.6915	-3.9
63	129811.000	29.3528	157	BIT CONC SURFACE CLASS I-40/20	TON	63	158452.000	27.6401	-5.8
482	595482.000	29.6898	190	BIT MIX FOR LEVELING & WEDGING	TON	399	393291.000	29.7766	0.3
15	115871.000	31.1491	244	BIT CONC SURFACE CLASS AK/A	TON	12	128499.000	33.2906	6.9
30	186902.000	30.7455	245	BIT CONC SURFACE CLASS AK/B	TON	17	89899.000	29.3424	-4.6
47	139266.000	28.5364	246	BIT CONC SURFACE CLASS AK/S	TON	40	159962.000	28.7529	0.8
5	14991.000	32.2846	258	BIT CONC SURFACE CLASS N-30	TON	7	21149.000	26.1108	-19.1
149	146115.500	29.7437	263	BIT MIX FOR SHOULDERS	TON	120	82270.000	28.9578	-2.6
73	2124.700	274.3314	291	EMULSIFIED ASPHALT RS-2	TON	58	1731.450	290.8051	6.0
49	900.300	336.8578	296	CUTBACK ASPHALT EMUL PRIMER L	TON	55	886.000	318.0931	-5.6
608	14324.830	232.5625	356	BITUMINOUS MATERIAL FOR TACK	TON	511	9935.220	224.7549	-3.4
27	1676.600	227.3628	358	BITUMINOUS CURING SEAL	TON	20	1777.000	204.8230	-9.9
55	17152.000	17.9618	440	ENTRANCE PIPE-15 INCH	LIN FT	33	4646.000	23.8851	33.0
51	10419.000	20.1306	441	ENTRANCE PIPE-18 INCH	LIN FT	29	2800.000	23.3385	15.9
34	4752.000	24.2563	443	ENTRANCE PIPE-24 INCH	LIN FT	16	1751.000	32.0414	32.1
20	2740.000	30.9832	445	ENTRANCE PIPE-30 INCH	LIN FT	7	522.000	34.6015	11.7

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995				ENGLISH		ALL PROJECTS 1996			
# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
4	168.000	29.1929	452	ENTRANCE PIPE-24 INCH EQUIV	LIN FT	2	52.000	28.0385	-4.0
3	88.000	27.5909	454	ENTRANCE PIPE-30 INCH EQUIV	LIN FT	1	120.000	30.0000	8.7
17	4461.500	31.2480	460	CULVERT PIPE-12 INCH	LIN FT	12	1430.000	36.4473	16.6
72	44916.500	28.2071	461	CULVERT PIPE-15 INCH	LIN FT	37	13471.000	38.3214	35.9
126	95724.000	30.9572	462	CULVERT PIPE-18 INCH	LIN FT	59	22437.000	41.1457	32.9
95	35109.000	39.5013	464	CULVERT PIPE-24 INCH	LIN FT	46	9825.000	54.5998	38.2
73	20454.500	43.4732	466	CULVERT PIPE-30 INCH	LIN FT	25	7309.000	56.2412	29.4
52	9728.000	56.3363	468	CULVERT PIPE-36 INCH	LIN FT	17	1999.000	63.4883	12.7
30	8253.000	68.4113	469	CULVERT PIPE-42 INCH	LIN FT	8	2497.000	81.4131	19.0
31	6488.000	86.8803	470	CULVERT PIPE-48 INCH	LIN FT	10	1214.000	113.6433	30.8
18	3146.000	87.9564	471	CULVERT PIPE-54 INCH	LIN FT	7	2436.000	102.8249	16.9
18	4934.000	123.3184	472	CULVERT PIPE-60 INCH	LIN FT	4	691.000	118.2281	-4.1
4	846.000	132.5255	473	CULVERT PIPE-66 INCH	LIN FT	6	1180.000	131.4831	-0.8
6	1383.000	137.7115	474	CULVERT PIPE-72 INCH	LIN FT	1	490.000	235.0000	70.6
2	164.000	232.3171	476	CULVERT PIPE-84 INCH	LIN FT	2	184.000	323.0217	39.0
1	94.000	39.5000	490	CULVERT PIPE-15 INCH EQUIV	LIN FT	1	56.000	90.0000	127.8
13	1070.000	41.4892	491	CULVERT PIPE-18 INCH EQUIV	LIN FT	5	342.000	48.2705	16.3
12	989.000	61.6857	492	CULVERT PIPE-24 INCH EQUIV	LIN FT	2	127.000	72.0079	16.7
10	964.000	50.2219	494	CULVERT PIPE-30 INCH EQUIV	LIN FT	1	124.000	52.0000	3.5
14	1978.000	63.7860	496	CULVERT PIPE-36 INCH EQUIV	LIN FT	2	207.000	71.7391	12.5
10	868.000	103.6110	499	CULVERT PIPE-48 INCH EQUIV	LIN FT	2	242.000	85.0413	-17.9
3	228.000	203.9123	502	CULVERT PIPE-66 INCH EQUIV	LIN FT	2	100.000	199.0000	-2.4
1	6.000	349.0000	503	CULVERT PIPE-72 INCH EQUIV	LIN FT	1	134.000	150.0000	-57.0
12	1400.000	73.0071	980	SLOTTED DRAIN PIPE-12 INCH	LIN FT	8	1618.000	115.7108	58.5
5	730.000	76.8767	981	SLOTTED DRAIN PIPE-15 INCH	LIN FT	4	277.000	113.6390	47.8
1	20.000	70.0000	982	SLOTTED DRAIN PIPE-18 INCH	LIN FT	2	254.000	84.5276	20.8
48	735279.000	4.1558	1000	PERFORATED PIPE-4 INCH	LIN FT	37	1529488.000	3.5009	-15.8
16	27304.000	7.3864	1001	PERFORATED PIPE-6 INCH	LIN FT	10	189160.000	8.4398	14.3
11	16435.000	6.9730	1002	PERFORATED PIPE-8 INCH	LIN FT	2	1205.000	3.4938	-49.9
48	53426.000	6.8803	1010	NON-PERFORATED PIPE-4 INCH	LIN FT	39	96811.000	7.3583	6.9
18	4463.000	8.9208	1011	NON-PERFORATED PIPE-6 INCH	LIN FT	7	3026.000	16.0879	80.3
8	1442.000	8.3644	1012	NON-PERFORATED PIPE-8 INCH	LIN FT	1	24.000	16.5000	97.3
2	2277.000	54.5355	1052	SEWER PIPE-8 INCH	LIN FT	2	880.000	29.8750	-45.2
1	198.000	33.0000	1056	SEWER PIPE-18 INCH	LIN FT	1	58.000	14.0000	-57.6
5	1032.000	73.7403	1061	STEEL ENCASEMENT PIPE-4 INCH	LIN FT	1	922.000	24.0000	-67.5
7	1585.000	82.9151	1065	STEEL ENCASEMENT PIPE-8 INCH	LIN FT	5	1035.000	103.6087	25.0
9	2780.000	89.9802	1067	STEEL ENCASEMENT PIPE-10 INCH	LIN FT	3	1307.000	34.1863	-62.0

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995 | ENGLISH | ALL PROJECTS 1996

# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
10	3130.000	72.5152	1069	STEEL ENCASEMENT PIPE-12 INCH	LIN FT	4	1382.000	49.7198	-31.4
4	1110.000	107.3998	1071	STEEL ENCASEMENT PIPE-14 INCH	LIN FT	3	635.000	68.8445	-35.9
7	1723.000	87.4089	1073	STEEL ENCASEMENT PIPE-16 INCH	LIN FT	3	431.000	69.5186	-20.5
2	1034.000	56.0542	1075	STEEL ENCASEMENT PIPE-18 INCH	LIN FT	8	1210.000	103.2967	84.3
3	1547.000	243.8890	1081	STEEL ENCASEMENT PIPE-24 INCH	LIN FT	8	1012.000	138.8982	-43.0
4	1809.000	17.9421	1091	DUCTILE IRON PIPE-4 INCH	LIN FT	1	20.000	20.0000	11.5
7	11011.000	23.9660	1093	DUCTILE IRON PIPE-6 INCH	LIN FT	8	9827.000	24.4868	2.2
16	11089.500	34.1717	1095	DUCTILE IRON PIPE-8 INCH	LIN FT	12	2607.000	30.8458	-9.7
3	8726.000	38.5876	1097	DUCTILE IRON PIPE-10 INCH	LIN FT	4	946.000	33.4799	-13.2
4	24257.000	38.2683	1099	DUCTILE IRON PIPE-12 INCH	LIN FT	10	19514.000	32.2468	-15.7
3	11482.000	57.7698	1103	DUCTILE IRON PIPE-16 INCH	LIN FT	3	4614.000	44.5365	-22.9
15	1732.000	12.1195	1310	REMOVING PIPE	LIN FT	14	3981.000	15.4034	27.1
10	53.000	162.9245	1314	PLUGGING PIPE	EACH	8	82.000	178.4756	9.5
7	39.000	1322.8205	1432	SLOPED BOX OUTLET TYPE 1-15 IN	EACH	7	34.000	1453.5294	9.9
11	30.000	1440.3333	1433	SLOPED BOX OUTLET TYPE 1-18 IN	EACH	15	40.000	1456.2500	1.1
15	65.000	1698.8462	1434	SLOPED BOX OUTLET TYPE 1-24 IN	EACH	8	24.000	1652.0833	-2.8
1	1.000	1300.0000	1440	SLOPED BOX INLET-OUTLET TYPE 1	EACH	1	1.000	1800.0000	38.5
20	104.000	1695.3387	1450	S & F BOX INLET-OUTLET-18 INCH	EACH	12	52.000	1816.7308	7.2
40	159.000	2025.7907	1451	S & F BOX INLET-OUTLET-24 INCH	EACH	19	62.000	2129.8387	5.1
35	151.000	2462.7577	1452	S & F BOX INLET-OUTLET-30 INCH	EACH	12	53.000	2612.5472	6.1
22	65.000	2937.5446	1453	S & F BOX INLET-OUTLET-36 INCH	EACH	8	18.000	3116.1111	6.1
18	619.000	2290.0029	1456	CURB BOX INLET TYPE A	EACH	12	232.000	2284.0733	-0.3
15	64.000	2578.0312	1480	CURB BOX INLET TYPE B	EACH	10	33.000	2837.1212	10.0
2	8.000	2200.0000	1484	CURB BOX INLET TYPE B-T	EACH	6	24.000	2562.5000	16.5
1	1.000	1500.0000	1487	CURB BOX INLET TYPE F	EACH	1	3.000	2650.0000	76.7
31	117.000	1836.3189	1490	DROP BOX INLET TYPE 1	EACH	20	80.000	2032.3125	10.7
15	20.000	2112.2155	1493	DROP BOX INLET TYPE 2	EACH	7	8.000	2349.3750	11.2
1	2.000	1960.0000	1494	DROP BOX INLET TYPE 2 MODIFIED	EACH	1	2.000	3650.0000	86.2
13	50.000	1966.2020	1496	DROP BOX INLET TYPE 3	EACH	5	30.000	2051.0000	4.3
3	3.000	2300.0000	1499	DROP BOX INLET TYPE 4	EACH	1	1.000	1900.0000	-17.4
2	6.000	3000.0000	1502	DROP BOX INLET TYPE 5A	EACH	3	6.000	2491.6667	-16.9
15	223.000	1841.2572	1505	DROP BOX INLET TYPE 5B	EACH	3	13.000	2203.8462	19.7
4	33.000	1877.2727	1508	DROP BOX INLET TYPE 5C	EACH	2	3.000	2133.3333	13.6
13	102.000	2021.8627	1511	DROP BOX INLET TYPE 5D	EACH	5	7.000	2271.4286	12.3
10	66.000	1927.2727	1517	DROP BOX INLET TYPE 5F	EACH	3	11.000	1990.9091	3.3
1	3.000	900.0000	1518	DROP BOX INLET TYPE 5F MOD	EACH	1	1.000	2100.0000	133.3
7	7.000	2542.8571	1538	DROP BOX INLET TYPE 7	EACH	2	2.000	2750.0000	8.1

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995 ENGLISH ALL PROJECTS 1996

# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
7	11.000	1395.4545	1541	DROP BOX INLET TYPE 10	EACH	2	15.000	1673.3333	19.9
14	81.000	1343.9975	1544	DROP BOX INLET TYPE 11	EACH	7	59.000	1660.9322	23.6
1	48.000	150.0000	1547	DROP BOX INLET TYPE 12	LIN FT	1	36.000	160.0000	6.7
4	716.000	142.9190	1550	DROP BOX INLET TYPE 12A	LIN FT	5	449.000	225.8575	58.0
15	139.000	1461.3309	1559	DROP BOX INLET TYPE 13G	EACH	5	70.000	1424.9143	-2.5
6	22.000	2225.0000	1568	DROP BOX INLET TYPE 13S	EACH	3	15.000	2252.0000	1.2
1	8.000	1500.0000	1577	DROP BOX INLET TYPE 14	EACH	4	78.000	2108.6538	40.6
3	4.000	1725.0000	1580	DROP BOX INLET TYPE 15	EACH	1	17.000	2400.0000	39.1
11	85.000	1608.0000	1581	DROP BOX INLET TYPE 16G	EACH	8	17.000	2066.1765	28.5
4	6.000	371.6667	1584	CAPPING DROP BOX INLET	EACH	5	7.000	371.4286	-0.1
5	10.000	370.0000	1585	REMOVING DROP BOX INLET	EACH	2	3.000	466.6667	26.1
1	3.000	1700.0000	1586	DROP BOX INLET TYPE 16GT	EACH	3	47.000	1665.5319	-2.0
3	3.000	2166.6667	1587	DROP BOX INLET TYPE 16S	EACH	1	1.000	2200.0000	1.5
1	9.000	4200.0000	1616	CONC MED BAR BOX INLET TY 14B1	EACH	3	8.000	4025.0000	-4.2
3	3.000	663.3333	1634	CAPPING CURB BOX INLET	EACH	1	1.000	740.0000	11.6
3	6.000	880.8333	1641	JUNCTION BOX-15 INCH	EACH	5	11.000	1276.3636	44.9
9	15.000	1038.2000	1642	JUNCTION BOX-18 INCH	EACH	8	38.000	1401.8421	35.0
4	5.000	1308.0000	1643	JUNCTION BOX-24 INCH	EACH	9	15.000	1493.6667	14.2
3	5.000	1525.0000	1644	JUNCTION BOX-30 INCH	EACH	3	3.000	1700.0000	11.5
2	4.000	2200.0000	1645	JUNCTION BOX-36 INCH	EACH	6	9.000	1940.0000	-11.8
3	4.000	1950.0000	1646	JUNCTION BOX-42 INCH	EACH	1	1.000	2000.0000	2.6
3	3.000	1666.6667	1647	JUNCTION BOX-48 INCH	EACH	1	1.000	2100.0000	26.0
1	2.000	2500.0000	1648	JUNCTION BOX-54 INCH	EACH	1	1.000	4250.0000	70.0
2	5.000	880.0000	1650	JUNCTION BOX	EACH	2	28.000	1757.1429	99.7
1	1.000	335.0000	1655	REMOVING JUNCTION BOX	EACH	2	2.000	225.0000	-32.8
4	4.000	2100.0000	1660	SPRING BOX INLET TYPE A	EACH	1	1.000	1800.0000	-14.3
2	4.000	1625.0000	1670	SPRING BOX INLET TYPE B	EACH	2	2.000	1650.0000	1.5
1	1.000	2475.0000	1690	FLUME INLET TYPE 1	EACH	1	1.000	4500.0000	81.8
9	29.000	2857.7586	1691	FLUME INLET TYPE 2	EACH	8	35.000	2737.1429	-4.2
1	1.000	600.0000	1707	CAPPING CATCH BASIN	EACH	1	3.000	150.0000	-75.0
1	1.000	1000.0000	1708	RECONSTRUCTING CATCH BASIN	EACH	2	2.000	1000.0000	0.0
7	48.000	247.2917	1709	ADJUSTING CATCH BASIN	EACH	13	73.000	151.8493	-38.6
6	99.000	277.7778	1718	REMOVING INLET	EACH	3	34.000	483.0882	73.9
3	30.000	436.6667	1719	ADJUSTING INLET	EACH	8	36.000	1554.5833	256.0
2	4.000	1463.7750	1720	RECONSTRUCT EXISTING INLET	EACH	1	2.000	1000.0000	-31.7
5	5.000	2410.0000	1726	SAFETY BOX INLET-18 INCH SDB-1	EACH	2	8.000	2343.7500	-2.7
1	1.000	1700.0000	1727	SAFETY BOX INLET-24 INCH SDB-1	EACH	1	1.000	2075.0000	22.1

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995 | ENGLISH | ALL PROJECTS 1996

# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
1	1.000	5000.0000	1728	SAFETY BOX INL-18 IN DBL SDB-5	EACH	2	8.000	3190.6250	-36.2
1	1.000	5000.0000	1729	SAFETY BOX INL-24 IN DBL SDB-5	EACH	1	1.000	2925.0000	-41.5
9	140.000	173.7143	1740	CORED HOLE DRAINAGE BOX CON-4"	EACH	11	263.000	194.3726	11.9
17	40.000	1585.4662	1756	MANHOLE TYPE A	EACH	9	110.000	1439.4545	-9.2
5	10.000	1700.3500	1761	MANHOLE TYPE B	EACH	5	12.000	2191.6667	28.9
13	20.000	3407.5000	1767	MANHOLE TYPE C	EACH	13	49.000	3360.0000	-1.4
3	40.000	278.7500	1787	REMOVING MANHOLE	EACH	1	2.000	150.0000	-46.2
10	32.000	755.4925	1789	RECONSTRUCTING MANHOLE	EACH	5	10.000	830.0000	9.9
5	15.000	573.0200	1791	ADJUST MANHOLE FRAME TO GRADE	EACH	2	4.000	575.0000	0.3
25	207.000	279.4928	1792	ADJUSTING MANHOLE	EACH	18	146.000	253.2192	-9.4
7	56.000	1763.0059	1799	SANITARY SEWER MANHOLE	EACH	4	45.000	1442.1111	-18.2
30	137531.500	10.7003	1810	STANDARD CURB AND GUTTER	LIN FT	16	93861.000	13.5467	26.6
3	1399.000	9.4353	1812	REMOVING CURB AND GUTTER	LIN FT	2	8795.000	6.0000	-36.4
11	30290.000	4.6577	1830	STANDARD INTEGRAL CURB	LIN FT	9	6732.000	7.8803	69.2
2	3567.000	5.1679	1840	LIP INTEGRAL CURB	LIN FT	2	3394.000	14.0000	170.9
2	118.000	40.0000	1845	ISLAND INTEGRAL CURB	LIN FT	2	176.000	13.2159	-67.0
11	7210.890	14.8253	1875	STANDARD HEADER CURB	LIN FT	10	8019.000	13.4425	-9.3
1	240.000	20.0000	1890	ISLAND HEADER CURB TYPE 1	LIN FT	2	525.000	18.5924	-7.0
3	1908.000	16.4155	1891	ISLAND HEADER CURB TYPE 2	LIN FT	1	234.000	14.0000	-14.7
2	420.000	21.2500	1895	VALLEY GUTTER	LIN FT	1	19.500	28.5000	34.1
17	86146.500	3.8892	1897	BITUMINOUS WEDGE CURB	LIN FT	10	12415.000	4.2446	9.1
2	17274.000	6.0273	1902	REMOVING INTEGRAL CURB	LIN FT	2	22007.000	5.9210	-1.8
6	27045.000	2.9229	1904	REMOVING CURB	LIN FT	4	1459.000	9.4068	221.8
1	84.000	65.0000	1915	STD BARRIER MEDIAN TYPE 1	SQ YD	1	1263.000	45.0000	-30.8
2	717.000	53.6192	1917	STD BARRIER MEDIAN TYPE 2	SQ YD	1	17.000	80.0000	49.2
1	2011.000	47.5000	1923	STD BARRIER MEDIAN TYPE 5	SQ YD	1	194.000	41.0000	-13.7
2	646.500	54.4316	1951	CONC MEDIAN BARRIER TYPE 6C2	LIN FT	5	608.000	87.1628	60.1
7	143.000	9.6829	1982	DELINEATOR FOR GUARDRAIL-WHITE	EACH	3	44.000	9.0073	-7.0
10	300.000	9.7500	1984	DELINEATOR FOR BARRIER-WHITE	EACH	4	297.000	8.5758	-12.0
13	3548.000	4.7179	1985	DELINEATOR FOR BARRIER-YELLOW	EACH	14	6888.000	5.5407	17.4
1	7132.000	42.0000	1988	CONC MEDIAN BARRIER TYPE 14C1	LIN FT	4	11772.000	54.6106	30.0
1	1230.000	27.0000	1991	TEMP CONC MED BARRIER TYPE 9M	LIN FT	5	87535.000	36.8497	36.5
5	39015.000	12.6425	1992	TEMP CONC MED BAR TY 9M INST	LIN FT	7	162950.000	21.3456	68.8
2	10.000	1570.0000	2001	CURB TO BARRIER WALL TRANS	EACH	1	1.000	2900.0000	84.7
1	860.000	7.0000	2009	REMOVING BIT CONCRETE MEDIAN	SQ YD	2	5298.000	7.4525	6.5
9	65.000	360.9338	2014	BARRICADE-TYPE III	EACH	3	26.000	242.3077	-32.9
3	9082.000	32.7203	2063	PCC BASE-8 INCH	SQ YD	1	1369.000	40.0000	22.2

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995 ENGLISH ALL PROJECTS 1996

# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
3	10981.000	35.9705	2064	PCC BASE-9 INCH	SQ YD	2	2548.000	41.9623	16.7
3	15522.000	60.6928	2069	PCC PAVEMENT-10 INCH NON-REINF	SQ YD	3	13715.000	55.2459	-9.0
1	11347.000	40.8000	2070	PCC PAVEMENT-12 INCH NON-REINF	SQ YD	3	61342.000	33.7275	-17.3
6	52025.000	30.6368	2073	PCC PAVEMENT-9 INCH NON-REINF	SQ YD	3	7837.000	40.6926	32.8
7	3688.000	30.0843	2075	PCC PAVEMENT-6 INCH NON-REINF	SQ YD	1	1944.000	28.0000	-6.9
4	9087.000	28.5136	2078	PCC PAVE-6 INCH NON-REINF SHLD	SQ YD	2	27046.000	18.9796	-33.4
1	45850.000	22.2000	2081	PCC PAVE-8 INCH NON-REINF SHLD	SQ YD	2	168.000	66.4286	199.2
10	66236.600	24.3307	2084	PCC PAVEMENT-8 INCH NON-REINF	SQ YD	7	34181.000	30.2110	24.2
47	192822.000	3.0023	2091	REMOVING PAVEMENT	SQ YD	27	126052.000	5.9704	98.9
22	42909.000	34.2024	2101	CEM CONC ENT PAVEMENT-8 INCH	SQ YD	11	9300.000	42.6540	24.7
2	60757.000	0.7286	2107	BREAKING AND SEATING PAVEMENT	SQ YD	9	961103.000	0.6235	-14.4
2	220.000	240.9091	2110	PARTIAL DEPTH PATCHING	CU FT	2	390.000	144.2308	-40.1
3	55354.000	2.1196	2115	SAW-CLEAN-RESEAL TVERSE JOINT	LIN FT	4	36352.000	1.7917	-15.5
2	79200.000	1.8510	2116	SAW-CLEAN-RESEAL LONGIT JOINT	LIN FT	5	148647.000	1.4698	-20.6
10	5822.760	40.1889	2157	PAVED DITCH TYPE 1	SQ YD	4	5444.000	34.7590	-13.5
1	75.000	2.0000	2165	REMOVING PAVED DITCH	SQ YD	1	85.000	10.0000	400.0
101	128034.220	31.6751	2167	RIGHT-OF-WAY MOWING TYPE 3	ACRE	113	147500.000	28.6082	-9.7
81	34053220.000	2.8109	2200	ROADWAY EXCAVATION	CU YD	59	4136057.000	3.7468	33.3
11	1822.000	18.9319	2203	STRUCTURE EXCAV-UNCLASSIFIED	CU YD	2	522.500	77.3091	308.4
14	11082.000	10.0886	2204	SPECIAL EXCAVATION	CU YD	7	4235.000	18.8055	86.4
27	244459.800	9.1378	2223	ROADWAY FILL-GRANULAR EMB	CU YD	19	79690.000	18.1995	99.2
8	6.000	9333.3333	2226	EARTHWORK	LP SUM	2	2.000	3685.0000	-60.5
45	2938035.000	3.7641	2230	EMBANKMENT IN PLACE	CU YD	50	1902946.000	5.9108	57.0
40	21992.000	10.7087	2231	STRUCTURE GRANULAR BACKFILL	CU YD	15	3017.000	25.5050	138.2
5	14208.000	19.4867	2235	BACKFILLING UNDERCUT	CU YD	7	10705.000	23.3555	19.9
10	40.926	11385.1469	2236	DITCHING	MILE	10	28.199	11214.6973	-1.3
1	3500.000	2.2000	2237	DITCHING	LIN FT	1	2297.000	2.1000	-4.5
10	45.000	1068.8889	2240	REMOVING UNDERGROUND TANK	EACH	3	10.000	4800.0000	349.1
73	135509.800	0.4923	2242	WATER	M GAL	44	24917.000	2.1163	329.9
4	3721.000	1.9128	2255	REMOVING FENCE	LIN FT	3	3205.000	1.4495	-24.2
28	755408.000	3.1269	2261	R/W FENCE-WOVEN WIRE	LIN FT	10	37403.000	4.1272	32.0
1	350.000	3.4000	2262	R/W FENCE-WOVEN WIRE TYPE 1	LIN FT	6	24709.000	3.7727	11.0
3	6808.000	3.0813	2265	REMOVING RIGHT-OF-WAY FENCE	LIN FT	4	7563.000	1.1729	-61.9
2	870.000	6.0431	2267	REMOVING & RESETTING R/W FENCE	LIN FT	1	1044.000	3.0000	-50.4
1	300.000	26.3500	2268	REMOVING & REPLACING R/W FENCE	LIN FT	6	172215.000	4.2845	-83.7
1	7518.000	7.5000	2273	R/W FENCE-4 FT CHAIN LINK	LIN FT	1	6279.000	9.6000	28.0
1	308.000	12.7500	2274	R/W FENCE-6 FT CHAIN LINK	LIN FT	1	2470.000	12.3800	-2.9

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ENGLISH

ALL PROJECTS 1995						ALL PROJECTS 1996			
# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
2	21.000	157.1429	2287	DBL VEHICULAR CHAIN LINK GATE	EACH	1	1.000	1500.0000	854.5
1	1.000	500.0000	2289	DBL VEHICULAR WOVEN WIRE GATE	EACH	1	1.000	700.0000	40.0
1	200.000	5.0000	2350	ADJUSTING GUARDRAIL	LIN FT	1	400.000	6.7500	35.0
164	905586.500	9.2488	2351	GUARDRAIL-STEEL W BEAM-S FACE	LIN FT	122	588467.000	9.4928	2.6
9	3637.500	13.9540	2352	GUARDRAIL-STEEL W BEAM-D FACE	LIN FT	9	4150.000	15.6444	12.1
9	178738.000	1.6580	2353	GUARDRL-STEEL W BM-S FACE-INST	LIN FT	2	30300.000	2.5453	53.5
16	2350.000	22.8298	2355	GUARDRAIL-STEEL W BM-S FACE A	LIN FT	20	2050.000	25.1585	10.2
32	154652.000	0.3036	2358	HAULING GUARDRAIL	LIN FT	29	340508.500	0.2885	-5.0
137	1561.000	41.7037	2360	GUARDRAIL TERMINAL SECT NO 1	EACH	84	515.000	36.1653	-13.3
47	216.000	481.7778	2363	GUARDRAIL CON TO BR END TYPE A	EACH	40	171.000	552.4795	14.7
9	28.000	5441.9643	2365	CRASH CUSHION TYPE IX-A	EACH	16	149.000	5068.7919	-6.9
44	232.000	381.4440	2369	GUARDRAIL END TREATMENT TY 2A	EACH	37	315.000	391.8714	2.7
64	335.000	561.4478	2370	GUARDRAIL END TREATMENT TYPE 4	EACH	42	145.000	548.4224	-2.3
91	978.000	489.7104	2371	GUARDRAIL END TREATMENT TYPE 7	EACH	51	235.000	538.7312	10.0
45	189.000	461.5520	2373	GUARDRAIL END TREATMENT TYPE 3	EACH	34	76.000	435.8487	-5.6
2	9.000	591.1111	2376	GUARDRAIL CON TO BR END TYPE B	EACH	2	10.000	643.2000	8.8
13	63.000	581.2698	2377	GUARDRAIL CON TO BR END TYPE C	EACH	4	10.000	581.0000	0.0
7	43.000	688.6512	2379	GUARDRAIL CON TO BR END TYPE E	EACH	6	30.000	612.5000	-11.1
4	16.000	425.0000	2380	GUARDRAIL CON TO BR END TY E-1	EACH	1	5.000	150.0000	-64.7
69	268763.500	0.7945	2381	REMOVING GUARDRAIL	LIN FT	46	421830.500	0.9274	16.7
3	4.000	472.5000	2382	GR CON TO SHLD BR PIER TY A	EACH	2	5.000	645.8000	36.6
10	4474.000	6.8762	2383	REMOVING & RESETTING GUARDRAIL	LIN FT	6	6137.500	6.6914	0.2
2	3.000	116.6667	2384	GR CON TO SHLD BR PIER TY A-1	EACH	1	2.000	150.0000	28.6
9	26.000	170.3846	2387	GUARDRAIL CON TO BR END TY A-1	EACH	11	26.000	207.8154	22.0
4	37.000	28.3243	2395	REMOVE GUARDRAIL TERMINAL SECT	EACH	1	1.000	15.0000	-47.0
7	63.000	94.7619	2396	REMOVE GUARDRAIL END TREATMENT	EACH	13	275.000	159.8582	68.7
21	16991.000	6.5673	2397	TEMPORARY GUARDRAIL	LIN FT	12	9057.500	15.2592	132.4
1	32.000	200.0000	2402	REMOVING STONE MASONRY	CU YD	1	15.000	50.0000	-75.0
10	343.820	169.8185	2403	REMOVING CONCRETE MASONRY	CU YD	12	881.100	125.6180	-26.0
61	2003.000	40.5756	2434	R/W MARKER RURAL TYPE 1	EACH	36	794.000	48.2003	18.8
10	117.000	42.0427	2435	R/W MARKER RURAL TYPE 2	EACH	2	126.000	47.0714	12.0
2	63.000	49.2857	2436	R/W MARKER RURAL TYPE 3	EACH	1	2.000	56.0000	13.6
41	1368.000	38.5598	2437	R/W MARKER MUNICIPAL TYPE 1	EACH	17	460.000	43.1380	11.9
2	6.000	46.6667	2438	R/W MARKER MUNICIPAL TYPE 2	EACH	2	101.000	44.6535	-4.3
1	27.000	50.0000	2439	R/W MARKER MUNICIPAL TYPE 3	EACH	1	1.000	60.0000	20.0
5	18.000	54.4444	2440	R/W MARKER MUNICIPAL TYPE 1A	EACH	3	18.000	54.1667	-0.5
1	1175.000	10.0000	2473	FILLING AND CAPPING CISTERN	SQ FT	1	64.000	50.0000	400.0

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995 — ENGLISH — ALL PROJECTS 1996

# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
16	124.000	794.8340	2475	PLUGGING WATER WELL	EACH	4	10.000	1070.0000	34.6
5	3148.000	37.4792	2482	CHANNEL LINING CLASS IA	TON	2	213.000	71.1972	90.0
58	108495.300	14.3116	2483	CHANNEL LINING CLASS II	TON	47	45932.500	17.6676	23.4
60	112590.000	15.1733	2484	CHANNEL LINING CLASS III	TON	35	49482.800	18.4258	21.4
13	80602.000	7.1308	2488	CHANNEL LINING CLASS IV	CU YD	8	39107.000	5.9023	-17.2
5	8952.000	83.6466	2542	PORTLAND CEMENT	TON	5	8629.200	85.6215	2.4
98	98.000	55250.1797	2545	CLEARING AND GRUBBING	LP SUM	72	72.000	34874.3028	-36.9
5	10.750	587.1628	2551	CONCRETE-CLASS A FOR STEPS	CU YD	4	31.510	801.5614	36.5
15	1355.410	264.1898	2555	CONCRETE-CLASS B	CU YD	3	374.000	352.8075	33.5
1	2.000	150.0000	2565	OBJECT MARKER TYPE 2	EACH	2	13.000	63.0769	-57.9
1	12.000	24.0000	2567	DELINEATOR POSTS	EACH	1	200.000	18.0000	-25.0
61	61.000	138827.1226	2568	MOBILIZATION	LP SUM	39	39.000	166730.2251	20.1
851	851.000	10033.8513	2569	DEMOBILIZATION	LP SUM	731	731.000	8840.2439	-11.9
25	80.172	9337.1085	2575	DITCHING AND SHOULDERING	MILE	15	46.411	9558.9456	2.4
18	329645.000	0.9654	2584	EXCELSIOR BLANKET	SQ YD	8	40636.000	0.9624	-0.3
63	10048.110	10.6991	2585	EDGE KEY	LIN FT	54	5772.400	11.3302	5.9
9	4565.000	9.8528	2587	HOOK BOLT WITH EXPAN ANCHOR	EACH	7	3337.000	12.1981	23.8
18	28299.000	1.5465	2596	FABRIC-GEOTEXTILE TYPE I	SQ YD	7	16532.000	1.2437	-19.6
33	605869.000	1.1056	2598	FABRIC-GEOTEXTILE TYPE III	SQ YD	20	196848.000	1.5031	36.0
25	231828.000	1.2008	2599	FABRIC-GEOTEXTILE TYPE IV	SQ YD	17	46040.000	1.8472	37.2
4	647.700	130.8407	2601	FINAL DRESSING CLASS B	100 FT	8	915.460	104.0284	-20.5
7	17.000	2273.5294	2606	FIRE HYDRANT	EACH	6	49.000	1752.3469	-22.9
4	107.000	107.7850	2610	RETAINING WALL-GABION	CU YD	1	48.000	130.0000	20.6
3	517.000	35.3578	2611	HANDRAIL-TYPE A-1	LIN FT	1	437.000	45.0000	27.3
1	230.000	39.0000	2612	HANDRAIL-TYPE A-2	LIN FT	1	408.000	75.0000	92.3
13	77.000	203.7013	2625	REMOVING HEADWALL	EACH	15	112.000	414.0625	103.3
253	253.000	28957.5083	2650	MAINTAIN AND CONTROL TRAFFIC	LP SUM	236	236.000	28541.9638	-1.4
43	43.000	27113.9302	2651	DETOUR CONSTRUCTION	LP SUM	19	19.000	42997.8947	58.6
13	6427.200	12.8272	2652	DETOUR SIGNING	SQ FT	12	3911.440	17.1428	33.6
8	22.000	19272.7273	2671	VAR MESSAGE SIGN-PORT 3 LINE	EACH	33	67.000	14863.0597	-22.9
176	176548.000	19.9066	2677	BIT PAVE MILLING AND TEXTURING	TON	190	228588.000	19.0785	-4.2
2	216.000	6.3694	2678	SCARIFYING PAVEMENT	SQ YD	1	467.000	8.0000	25.6
7	131.810	157.2874	2690	SAFELOADING	CU YD	9	163.400	126.9278	-19.3
4	6.000	1383.3333	2692	SETTLEMENT PLATFORM	EACH	2	3.000	1333.3333	-3.6
22	32580.000	1.8314	2701	TEMPORARY SILT FENCE	LIN FT	8	15322.000	2.3303	27.2
18	2578.000	13.7543	2702	SAND FOR BLOTTER	TON	8	1297.000	17.7448	29.0
19	200.000	194.5550	2703	SILT TRAP TYPE A	EACH	9	26.000	281.5385	44.7

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ENGLISH

ALL PROJECTS 1995						ALL PROJECTS 1996			
# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
3	30.000	253.3333	2704	SILT TRAP TYPE B	EACH	4	7.000	340.7143	34.5
91	4795.000	49.0611	2705	SILT CHECK	EACH	70	2102.000	53.3187	8.7
6	7564.000	3.1328	2710	SCARIFYING AND RESHAPING	SQ YD	2	2769.000	4.7638	52.1
2	247.540	49.0000	2714	SHOULDERING	100 FT	2	150.000	195.0000	298.0
1	8674.000	18.4500	2719	SIDEWALK-4 1/2 INCH CONCRETE	SQ YD	1	5475.000	25.0000	35.5
36	58917.530	23.5444	2720	SIDEWALK-4 INCH CONCRETE	SQ YD	37	16462.000	33.5922	42.7
2	634.300	10.0000	2721	REMOVING CONCRETE SIDEWALK	SQ YD	2	437.000	16.0549	60.5
133	133.000	28469.8873	2726	STAKING	LP SUM	89	89.000	20796.1798	-27.0
47	47.000	14717.0213	2731	REMOVING EXISTING STRUCTURE	LP SUM	43	43.000	10284.8140	-30.1
4	32.000	575.0000	2738	RIFFLE STRUCTURE-DUMPED STONE	TON	2	1060.000	14.1245	-97.5
18	50000.000	1.4513	2742	TRAINEE PAYMENT REIMBURSEMENT	HOUR	15	40200.000	1.0790	-25.7
25	227778.000	1.3601	2747	REMOVABLE STRIPING TAPE-WHITE	LIN FT	30	405636.000	1.1601	-14.7
33	320177.000	1.3774	2748	REMOVABLE STRIPING TAPE-YELLOW	LIN FT	29	366721.000	1.2352	-10.3
2	48774.000	2.1548	2774	PREFABRICATED WICK DRAIN	LIN FT	1	56640.000	0.9500	-55.9
38	59.000	4196.2339	2775	FLASHING ARROW	EACH	34	69.000	4171.0145	-0.6
1	2.000	20000.0000	2889	CRASH CUSHION TYPE VI E	EACH	1	2.000	24750.0000	23.7
13	37.000	15262.1622	2894	CRASH CUSHION TYPE VI-T	EACH	17	56.000	14897.3214	-2.4
8	30.000	1646.6667	2898	RELOCATE CRASH CUSHION	EACH	14	34.000	1600.0000	-2.8
8	29.000	6237.2414	2929	CRASH CUSHION TYPE IX	EACH	10	126.000	5502.9365	-11.8
1	11.000	590.0000	3016	PRECAST CONC BOX SECT 8 X 4	LIN FT	2	100.000	437.1000	-25.9
2	3482.000	6.2715	3205	PAVEMENT MARKER TYPE IV - M W	EACH	6	7631.000	6.3482	1.2
1	40.000	16.5900	3206	PAVEMENT MARKER TYPE IV - M Y	EACH	1	100.000	9.3500	-43.6
25	13831.000	6.9545	3210	PAVEMENT MARKER TYPE IV - B Y	EACH	17	3057.000	6.9756	0.3
43	16563.000	29.2343	3213	PAVEMENT MARKER TYPE V - M W	EACH	39	10514.000	26.7195	-8.6
9	4240.000	31.0755	3214	PAVEMENT MARKER TYPE V - M Y	EACH	7	1246.000	31.6931	2.0
37	40786.000	23.6340	3215	PAVEMENT MARKER TYPE V - B Y	EACH	44	41670.000	13.9679	-40.9
3	4110.000	2.8274	3217	PAVEMENT MARKER TYPE VI - M W	EACH	6	3535.000	6.1614	117.9
4	1641.000	2.8829	3218	PAVEMENT MARKER TYPE VI - M Y	EACH	6	3399.000	4.7653	65.3
4	2117.000	5.2192	3219	PAVEMENT MARKER TYPE VI - B Y	EACH	3	14861.000	2.7778	-46.8
83	57700.000	5.0003	3221	REMOVING PAVEMENT MARKER TY V	EACH	107	60747.000	5.4939	9.9
46	497.000	96.9980	3230	LOW SHOULDER SIGN	EACH	81	598.000	107.7659	11.1
4	63241.000	14.7673	3234	RAILROAD RAILS-DRILLED	LIN FT	7	37407.000	12.9434	-12.4
3	33194.000	3.5324	3236	CRIBBING	SQ FT	1	380.000	2.7500	-22.1
9	1729.200	43.2654	3240	BASE FAILURE REPAIR	SQ YD	21	28505.340	46.6540	7.8
2	8060.000	5.2481	3245	JOINT MILLING	LIN FT	2	2300.000	6.5217	24.3
1	1068.000	17.8900	3246	RELIEF JOINT-4 INCH	LIN FT	3	2544.000	36.6368	104.8
3	993.000	123.6203	3247	REPAIR EXISTING BLOWUP	SQ YD	6	3575.000	96.8513	-21.7

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995			ENGLISH			ALL PROJECTS 1996			
# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
6	1636.000	23.2630	3250	ONE STEP MEMBRANE	SQ YD	2	291.000	18.9931	-18.4
2	6828.000	0.2098	3255	PARKING LOT STRIPING	LIN FT	7	46054.000	0.3716	77.1
10	108.000	2013.1822	3265	HIGHWAY SWEEPING	CYCLE	6	72.000	881.1150	-56.2
21	925411.000	1.3145	3269	TRIM & REMOVE TREES & BRUSH	LIN FT	2	81064.000	1.3529	2.9
1	303.000	22.0000	3285	PRE-DERBY MOWING	ACRE	2	635.000	20.0000	-9.1
5	764.680	99.9393	3286	FINE TURF MOWING	ACRE	5	782.400	103.7283	3.8
4	170.000	17.3559	3340	STEEL PIPE-2 1/2 INCH	LIN FT	2	110.000	15.1818	-12.5
4	167.000	24.8024	3343	STEEL PIPE-4 INCH	LIN FT	2	110.000	38.5455	55.4
7	3870.000	13.0465	3360	COPPER PIPE-3/4 INCH	LIN FT	3	3558.000	12.5818	-3.6
4	718.000	12.1978	3361	COPPER PIPE-1 INCH	LIN FT	3	1832.000	9.7653	-19.9
5	530.000	23.3311	3363	COPPER PIPE-2 INCH	LIN FT	2	2413.000	13.0340	-44.1
7	2094.000	13.0514	3381	PVC PIPE-2 INCH	LIN FT	3	6180.000	8.2330	-36.9
10	3927.000	26.3831	3382	PVC PIPE-3 INCH	LIN FT	3	94.000	15.7904	-40.1
11	15721.000	14.7886	3383	PVC PIPE-4 INCH	LIN FT	5	2209.000	13.7297	-7.2
18	32511.000	17.6868	3385	PVC PIPE-6 INCH	LIN FT	6	8655.000	21.9941	24.4
10	26551.000	21.1300	3387	PVC PIPE-8 INCH	LIN FT	5	18238.000	21.3211	0.9
4	4332.000	27.9019	3389	PVC PIPE-10 INCH	LIN FT	3	2079.000	22.8225	-18.2
3	3386.000	33.8835	3391	PVC PIPE-12 INCH	LIN FT	3	10211.000	34.7300	2.5
5	51.000	136.9020	3425	ADJUSTING WATER VALVE	EACH	1	14.000	75.0000	-45.2
6	37.000	376.2162	3431	RELOCATE WATER METER	EACH	4	68.000	290.2941	-22.8
5	57.000	268.9474	3432	REMOVE AND RELOCATE METER	EACH	1	59.000	400.0000	48.7
4	28.000	2298.4821	3436	REMOVE-REINSTALL FIRE HYDRANT	EACH	2	10.000	1025.0000	-55.4
1	4.000	125.0000	3437	RECONNECT EXISTING SERVICE	EACH	2	23.000	243.4783	94.8
1	1.000	500.0000	3464	TIE-IN, 4 INCH	EACH	3	7.000	642.8571	28.6
3	7.000	546.8571	3468	TIE-IN, 6 INCH	EACH	5	39.000	986.4103	80.4
1	1.000	410.0000	3468	TIE-IN, 8 INCH	EACH	2	4.000	987.5000	140.9
1	4.000	574.0000	3472	TIE-IN, 12 INCH	EACH	3	17.000	2176.4706	279.2
5	9.000	225.0556	3522	GATE VALVE-2 INCH	EACH	2	33.000	321.3333	42.8
5	10.000	284.0000	3523	GATE VALVE-3 INCH	EACH	1	1.000	500.0000	76.1
10	26.000	306.4469	3524	GATE VALVE-4 INCH	EACH	3	7.000	453.1429	47.9
14	105.000	394.9869	3526	GATE VALVE-6 INCH	EACH	7	87.000	453.6782	14.9
9	41.000	524.7776	3528	GATE VALVE-8 INCH	EACH	5	11.000	657.0909	25.2
3	15.000	862.0000	3530	GATE VALVE-10 INCH	EACH	2	4.000	1025.0000	18.9
6	49.000	845.7139	3532	GATE VALVE-12 INCH	EACH	3	34.000	998.8235	18.1
5	46.000	1290.9130	4701	POLE 40' MTG HT	EACH	3	61.000	1178.6885	-8.7
4	20.000	16710.0000	4712	POLE 100' MTG HT HIGH MAST	EACH	4	18.000	16098.2222	-3.7
1	1.000	17500.0000	4714	POLE 120' MTG HT HIGH MAST	EACH	5	51.000	16470.0000	-5.9

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995			ENGLISH			ALL PROJECTS 1996			
# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
1	1.000	300.0000	4720	BRACKET 4'	EACH	1	9.000	1150.0000	283.3
8	73.000	493.2877	4740	POLE BASE	EACH	3	52.000	529.4231	7.3
4	21.000	3314.2857	4742	POLE BASE-HIGH MAST	EACH	9	69.000	5335.3080	61.0
5	46.000	289.5652	4750	TRANSFORMER BASE	EACH	2	35.000	347.1429	19.9
5	6.000	5342.5000	4760	POLE W/SECONDARY CONTROL EQUIP	EACH	8	12.000	5025.0833	-5.9
3	3.000	28883.3333	4761	LIGHTING CONTROL EQUIPMENT	EACH	1	1.000	26565.0000	-8.0
6	74.000	747.2973	4770	HPS LUMINAIRE	EACH	1	9.000	225.7500	-69.8
1	10.000	800.0000	4772	HPS LUMINAIRE OFFSET	EACH	1	35.000	650.0000	-18.8
4	176.000	490.9091	4773	HPS LUMINAIRE HIGH MAST	EACH	9	610.000	612.6107	24.8
1	4.000	4000.0000	4775	NAVIGATION LIGHT 360 DEG GREEN	EACH	1	2.000	1700.0000	-57.5
1	8.000	3000.0000	4776	NAVIGATION LIGHT 180 DEG RED	EACH	1	4.000	1400.0000	-53.3
10	228.000	52.0439	4780	FUSED CONNECTOR KIT	EACH	4	160.000	59.7619	14.8
1	120.000	1.6000	4790	CONDUIT-1/2 INCH	LIN FT	1	30.000	6.3000	293.7
3	2330.000	3.8453	4791	CONDUIT-3/4 INCH	LIN FT	2	328.000	5.3902	40.2
26	20714.000	1.8463	4793	CONDUIT-1 1/4 INCH	LIN FT	22	14443.000	2.3315	26.3
23	16783.000	4.8671	4795	CONDUIT-2 INCH	LIN FT	23	43847.000	6.1003	25.3
3	5960.000	6.8188	4797	CONDUIT-3 INCH	LIN FT	7	6720.000	7.3249	7.4
3	3085.000	14.7861	4798	CONDUIT-3 1/2 INCH	LIN FT	6	5490.000	13.9717	-5.5
2	31.000	107.9032	4800	MARKER	EACH	8	131.000	100.3588	-7.0
6	68.000	744.6324	4810	JUNCTION BOX	EACH	12	112.000	287.5670	-61.4
29	256.000	261.4648	4811	JUNCTION BOX TYPE B	EACH	28	202.000	300.1176	14.8
31	53984.000	2.7914	4820	TRENCHING AND BACKFILLING	LIN FT	32	89531.000	2.5424	-8.9
3	1095.000	50.3242	4821	OPEN CUT ROADWAY	LIN FT	3	1850.000	32.8324	-34.8
20	103342.000	0.3777	4830	LOOP WIRE	LIN FT	15	37682.000	0.3917	3.7
3	2555.000	0.5000	4831	WIRE-NO. 14	LIN FT	7	98536.000	0.4437	-11.3
9	20430.000	0.3593	4832	WIRE-NO. 12	LIN FT	5	24930.000	0.3716	3.4
7	20190.000	0.6220	4833	WIRE-NO. 8	LIN FT	3	31850.000	0.5969	-4.0
1	15000.000	0.5500	4834	WIRE-NO. 6	LIN FT	4	46740.000	0.6945	26.3
1	9900.000	2.1000	4835	WIRE-NO. 4	LIN FT	4	20500.000	1.0017	-52.3
1	3150.000	1.3200	4836	WIRE-NO. 2	LIN FT	5	37770.000	0.8210	-37.8
1	8000.000	1.3000	4837	WIRE-NO. 0	LIN FT	1	8400.000	0.9500	-26.9
3	9260.000	1.8760	4840	CABLE-INTERCONNECT	LIN FT	3	69220.000	2.0000	6.6
6	3640.000	1.0749	4842	CABLE-NO. 14/3C	LIN FT	4	28385.000	0.4255	-60.4
21	48170.000	1.1508	4844	CABLE-NO. 14/5C	LIN FT	14	92523.000	0.6997	-39.2
7	8650.000	1.1296	4845	CABLE-NO. 14/7C	LIN FT	4	2925.000	0.9836	-12.9
21	74480.000	1.1266	4850	CABLE-NO. 14/1 PAIR	LIN FT	12	53420.000	1.1952	6.1
3	6235.000	2.4119	4860	CABLE-NO. 8/3C DUCTED	LIN FT	3	4870.000	1.9109	-20.8

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995				ENGLISH		ALL PROJECTS 1996			
# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
2	19300.000	3.2277	4862	CABLE-NO. 4/3C DUCTED	LIN FT	6	40450.000	2.6968	-16.4
1	7800.000	4.4000	4863	CABLE-NO. 2/3C DUCTED	LIN FT	5	42840.000	3.5011	-20.4
7	46.000	748.2609	4871	POLE-35 FT WOODEN	EACH	3	4.000	937.5000	25.3
16	115.000	3926.9478	4880	STEEL STRAIN POLE	EACH	13	190.000	3603.6895	-8.2
6	19.000	506.0000	4882	SIGNAL PEDESTAL	EACH	5	50.000	697.6000	37.9
7	63.000	178.3175	4884	ANCHOR	EACH	4	305.000	222.0164	24.5
22	20495.000	2.8253	4885	MESSENGER-10800 LB	LIN FT	15	28475.000	3.2029	13.4
23	36293.000	5.4334	4895	LOOP SAW SLOT AND FILL	LIN FT	22	37908.000	6.3541	16.9
15	140.000	139.8428	4900	PEDESTRIAN DETECTOR	EACH	7	74.000	162.0270	15.9
1	4.000	130.0000	4910	SIGNAL-8 INCH	EACH	2	4.000	247.5000	90.4
22	351.000	359.2564	4912	SIGNAL-3 SECTION 12 INCH	EACH	15	744.000	339.6196	-5.5
1	4.000	440.0000	4913	SIGNAL-4 SECTION 12 INCH	EACH	1	2.000	397.0000	-9.8
6	16.000	581.7500	4914	SIGNAL-5 SECTION 12 INCH	EACH	9	26.000	576.3462	-0.9
15	178.000	358.5169	4916	SIGNAL-PEDESTRIAN	EACH	8	830.000	320.9783	-10.5
21	43.000	8800.9070	4920	SIGNAL CONTROLLER-TYPE 170	EACH	14	93.000	7675.9462	-12.8
1	2.000	25000.0000	4925	MASTER CONTROLLER	EACH	2	3.000	3328.0000	-86.7
1	1.000	310.0000	4928	INTERCONNECT PANEL	EACH	2	100.000	187.8000	-39.4
2	3.000	1470.0000	4930	BEACON CONTROLLER-2 CIRCUIT	EACH	3	3.000	1598.3333	8.7
7	7.000	8128.5714	4940	REMOVE LIGHTING	LP SUM	8	8.000	5281.5000	-35.0
3	27.000	522.2222	4942	REMOVE, STORE & REINSTALL POLE	EACH	1	7.000	1050.0000	101.1
16	30.000	943.3333	4950	REMOVE SIGNAL EQUIPMENT	EACH	10	18.000	4369.4444	363.2
1	149.000	60.0000	5026	EASTERN WHITE PINE 5-6 FT	EACH	1	9.000	150.0000	150.0
23	9836.000	66.8414	5598	SHADE TREES 6'-8' HT B&B	EACH	5	2137.000	80.5381	20.5
100	313.550	121.7327	5953	TEMP EROSION CONTROL-MULCH	TON	71	94.500	384.0238	215.5
44	14917.000	1.3019	5954	TEMP EROSION CONTROL-SEED	LB	29	3653.000	1.9591	50.5
44	28283.000	1.1252	5955	TEMP EROSION CONTROL-BIT MATL	GAL	61	8843.500	1.9696	75.0
97	11925.000	1.5035	5958	CORRECTIVE SEEDING-SEED	LB	68	3611.000	1.5000	-0.2
109	1553.080	301.7562	5960	FERTILIZER 10-20-20	TON	82	530.130	317.9950	5.4
59	607.500	297.6309	5966	FERTILIZER 20-10-10	TON	36	198.750	314.2717	5.6
97	261.200	185.4038	5980	CORRECTIVE SEEDING-STRAW	TON	68	77.300	185.0000	-0.2
3	20605.000	0.5960	5985	SEED AND PROTECT, METHOD 1	SQ YD	6	26424.000	0.5442	-8.7
108	11662125.000	0.2000	5986	SEED AND PROTECT, METHOD 2	SQ YD	80	4221227.000	0.2239	12.0
68	10556.600	15.1473	5989	SPECIAL SEEDING CROWN VETCH	LB	45	3236.000	16.1002	6.3
58	464824.000	2.2428	5990	SODDING	SQ YD	37	262874.000	2.2364	-0.3
110	13039.510	18.4787	5992	AGRICULTURAL LIMESTONE	TON	83	3027.040	24.1484	30.7
7	98918.000	0.9114	6400	GMSS GALV STEEL TYPE A	LB	8	83206.000	0.9397	3.1
10	37445.900	16.8934	6405	SBM ALUMINUM PANEL SIGNS	SQ FT	10	19680.000	18.5333	9.7

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

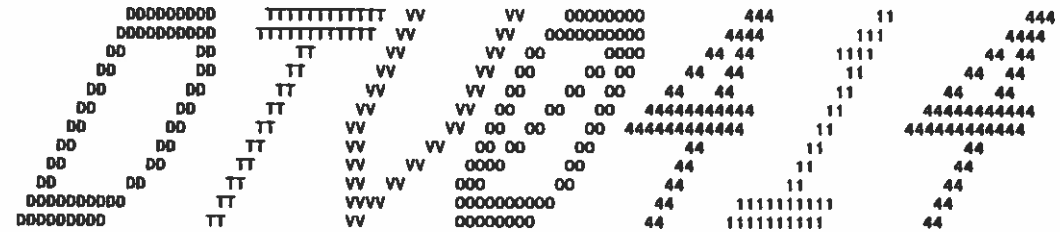
ALL PROJECTS 1995 | ENGLISH | ALL PROJECTS 1996

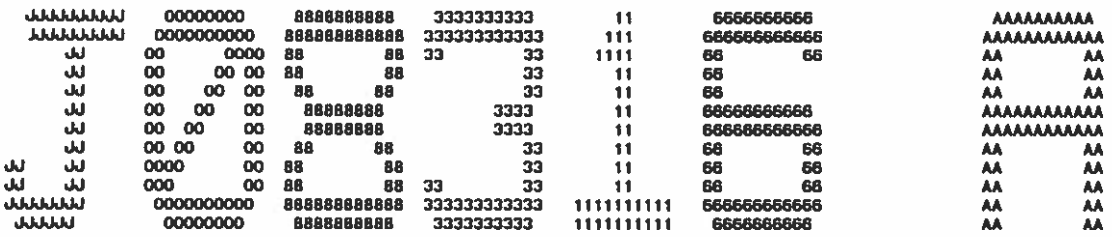
# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
6	6017.000	10.9470	6406	SBM ALUM SHEET SIGNS .080 INCH	SQ FT	9	1302.000	14.2963	30.6
7	9705.500	12.8970	6407	SBM ALUM SHEET SIGNS .125 INCH	SQ FT	9	2820.000	15.0286	16.5
6	28690.000	1.7033	6410	STEEL POST TYPE 1	LIN FT	6	8596.000	84.5888	4866.2
8	39462.000	3.2729	6411	STEEL POST TYPE 2	LIN FT	9	9324.000	3.8993	19.1
1	118.000	55.5000	6412	STEEL POST MILE MARKERS	EACH	2	36.000	116.6667	110.2
7	5217.000	1.6614	6413	DELINEATORS WHITE	EACH	7	1348.000	2.5095	51.0
5	955.000	2.0788	6414	DELINEATORS AMBER	EACH	6	318.000	2.9555	42.2
42	1285549.000	0.8574	6427	TRENCHING	LIN FT	49	1204672.000	0.5234	-39.0
1	1.000	39000.0000	6436	OSS ALUMINUM 75 FT TRUSS	EACH	1	1.000	30600.0000	-21.5
7	66280.000	1.4435	6440	GMSS GALV STEEL TYPE B	LB	9	133387.000	1.3067	-9.5
3	7.000	2782.1429	6448	SIGN BRIDGE ATTACHMENT BRACKET	EACH	3	5.000	3020.0000	8.5
8	78.000	185.0000	6451	REMOVE SIGN SUPPORT BEAM	EACH	6	184.000	162.1739	-1.7
1	1.000	128000.0000	6471	OSS ALUMINUM 140 FT TRUSS	EACH	1	1.000	63000.0000	-50.8
11	460.990	475.4037	6490	CLASS A CONCRETE FOR SIGNS	CU YD	10	554.390	357.5354	-24.8
3	24688.000	1.3085	6491	STEEL REINFORCEMENT FOR SIGNS	LB	5	19926.000	1.1539	-11.8
1	1.000	1800.0000	6821	JUNCTION BOX TYPE B	EACH	1	5.000	2000.0000	11.1
62	85059.200	13.7049	8001	STRUCTURE EXCAVATION-COMMON	CU YD	52	33835.200	15.1072	10.2
43	17832.900	29.8434	8002	STRUCTURE EXCAV-SOLID ROCK	CU YD	37	7029.600	36.1225	21.0
1	1996.000	34.0000	8016	REINF CONC SLOPE WALL-8 INCH	SQ YD	1	808.000	52.0000	52.9
29	33339.000	18.1210	8019	CYCLOPEAN STONE RIP RAP	TON	14	8913.000	24.4437	34.9
2	821.000	18.4101	8020	CRUSHED AGGREGATE SLOPE PROT	TON	4	1453.000	20.3772	10.7
38	4093.000	31.7694	8033	TEST PILES	LIN FT	13	2748.000	32.5950	2.6
2	2.000	29000.0000	8037	COFFERDAM-PIER 1	LP SUM	1	1.000	1.0000	-100.0
31	21721.000	26.2444	8046	PILES-STEEL HP12X53	LIN FT	10	6262.000	29.9710	14.2
6	7954.000	29.8247	8050	PILES-STEEL HP14X73	LIN FT	2	57107.000	24.3603	-18.3
2	802.000	28.8030	8060	PILES-PRECAST CONCRETE-14 INCH	LIN FT	3	7714.000	31.1045	8.0
9	302.000	88.5563	8094	PILE POINTS-12 INCH	EACH	3	88.000	98.0882	10.8
2	42.000	111.9048	8095	PILE POINTS-14 INCH	EACH	1	28.000	150.0000	34.0
163	51247.230	274.6592	8100	CONCRETE-CLASS A	CU YD	130	32544.790	309.4600	12.7
2	147.610	101.6530	8102	CONCRETE-CLASS D	CU YD	1	15.000	600.0000	490.2
3	283.330	255.7089	8103	CONCRETE-CLASS D MODIFIED	CU YD	1	1.720	500.0000	95.5
49	37395.300	296.9362	8104	CONCRETE-CLASS AA	CU YD	41	22486.700	383.4415	29.1
141	7850163.600	0.5199	8150	STEEL REINFORCEMENT	LB	107	4417412.700	0.6136	18.0
50	8570963.000	0.6566	8151	STEEL REINF-EPOXY COATED	LB	44	5667567.000	0.6336	-3.5
65	663694.000	1.3238	8160	STRUCTURAL STEEL	LB	55	7922063.000	1.2298	-7.1
2	2.000	4750.0000	8170	SHEAR CONNECTORS	LP SUM	7	7.000	25025.2857	426.8
1	273.000	50.0000	8257	HANDRAIL, PEDESTRIAN ALUMINUM	LIN FT	1	229.000	100.0000	100.0

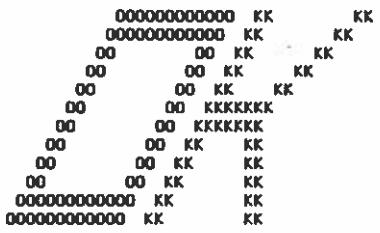
TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS
AVERAGE AWARDED UNIT BID PRICES

ALL PROJECTS 1995 ENGLISH ALL PROJECTS 1996

# B	TOTAL QUAN	AVE U BID	ITEM	ITEM DESCRIPTION	UNITS	# B	TOTAL QUAN	AVE U BID	%CHANGE FROM 1995
1	1.000	4200.0000	8269	ELECTRICAL CONDUIT	LP SUM	4	4.000	10611.2500	152.6
6	6.000	33750.0000	8305	REMOVE EXISTING REINF CONCRETE	LP SUM	16	16.000	83718.7500	148.1
2	2.000	123250.0000	8310	REMOVE EXISTING SUPERSTRUCTURE	LP SUM	8	8.000	34462.5000	-72.0
1	1.000	2500.0000	8410	LOW FLOW DIVERSION CURB	LP SUM	3	3.000	1333.3333	-46.7
1	1.000	130000.0000	8435	JACK & SUPPORT BRIDGE SPANS	LP SUM	2	2.000	10250.0000	-92.1
34	4798.000	74.6808	8469	EXPANSION DAM-1 1/2" NEOPRENE	LIN FT	10	758.000	75.4024	1.0
3	290.000	97.1552	8470	EXPANSION DAM-2 INCH NEOPRENE	LIN FT	6	885.000	89.8169	-7.6
4	408.000	86.5588	8471	EXPANSION DAM-2 1/2" NEOPRENE	LIN FT	4	183.000	135.0000	56.0
1	201.000	120.0000	8472	EXPANSION DAM-4 INCH NEOPRENE	LIN FT	6	924.000	145.5628	21.3
27	9805.000	100.2364	8500	APPROACH SLAB	SQ YD	7	1677.000	112.5542	12.3
31	14977.000	15.2959	8504	EPOXY SAND SLURRY	SQ YD	22	8829.900	20.8982	36.6
13	43635.000	10.8310	8510	REM EPOXY BIT FOREIGN OVERLAY	SQ YD	12	20549.000	11.2316	3.7
16	132.000	611.5909	8526	CONC CLASS AA FULL DEPTH PATCH	CU YD	12	226.300	522.6469	-14.5
28	4495.300	744.6473	8534	CONCRETE OVERLAY-LATEX	CU YD	22	2739.600	762.7431	2.4
4	185.000	739.8788	8535	CONC OVERLAY-PORTLAND CEMENT	CU YD	1	43.000	850.0000	14.9
24	9180.600	15.8170	8540	JOINT SEALING	LIN FT	14	11488.300	5.5527	-64.9
31	113535.000	3.9087	8549	BLAST CLEANING	SQ YD	22	65373.000	4.0228	2.9
28	67515.000	6.9757	8551	MACHINE PREP OF EXISTING SLAB	SQ YD	13	36006.000	12.7865	83.3
5	5849.600	68.8226	8632	PRECAST PC I BEAM TYPE II	LIN FT	4	1790.500	98.6194	43.3
13	17818.200	83.5709	8633	PRECAST PC I BEAM TYPE III	LIN FT	8	7013.300	91.3207	9.3
12	33974.200	90.6568	8634	PRECAST PC I BEAM TYPE IV	LIN FT	2	11300.500	97.6816	7.7
8	16104.400	122.8217	8635	PRECAST 66 INCH PCI BEAM-MOD	LIN FT	1	3530.600	112.0000	-8.8
1	204.000	120.0000	8651	PRECAST PC BOX BEAM, B12-48	LIN FT	6	928.800	141.4369	17.9
3	923.300	133.6646	8653	PRECAST PC BOX BEAM, B21-48	LIN FT	5	1680.200	127.3576	-4.7
5	3021.700	119.8825	8654	PRECAST PC BOX BEAM, B27-48	LIN FT	3	1294.000	135.4893	13.0
3	1522.900	136.5333	8655	PRECAST PC BOX BEAM, B33-48	LIN FT	3	3241.700	142.0317	4.0
1	848.000	120.0000	8663	PRECAST PC BOX BEAM, CB21-48	LIN FT	3	1724.400	135.7519	13.1
1	517.000	19.0000	8711	CHAIN LINK FENCE-6 FT	LIN FT	2	2841.000	16.0133	-15.7
10	1132.000	58.1818	8802	GUARDRAIL-STEEL W BM-S FACE CH	LIN FT	17	2624.000	49.8975	-14.2
1	150.000	27.0000	8806	GUARDRAIL-BRIDGE CASE I-A	LIN FT	1	100.000	25.0000	-7.4
2	6.000	800.0000	8810	PRECAST CONC BRIDGE RAIL BLOCK	EACH	1	4.000	500.0000	-37.5
1	1126.000	10.0000	8812	GUARDRAIL RADIUS ELEMENTS	LIN FT	1	287.500	10.0000	0.0
1	77.000	90.0000	8820	DRAIN PIPE-6 INCH	LIN FT	5	4869.000	48.4568	-46.2
2	3872.000	48.6928	8821	DRAIN PIPE-8 INCH	LIN FT	1	950.000	58.0000	19.1







```
               DDDDDDDDD     TTTTTTTTTTTT  VV        VV    00000000          444          11             444
              DDDDDDDDDD    TTTTTTTTTTTT  VV        VV   0000000000        4444         111            4444
             DD       DD        TT       VV        VV  00      0000      44 44        1111           44 44
            DD        DD       TT       VV        VV  00     00 00     44  44          11          44  44
           DD        DD       TT       VV        VV  00    00  00    44   44          11         44   44
          DD        DD       TT       VV        VV  00   00   00   44444444444       11        44444444444
         DD        DD       TT       VV        VV  00  00    00  444444444444       11       444444444444
        DD        DD       TT        VV      VV   00 00     00         44          11             44
       DD        DD       TT         VV    VV    0000      00         44          11             44
      DD       DD        TT          VV  VV     000       00         44          11             44
     DDDDDDDDDD         TT           VVVV       0000000000          44      1111111111         44
    DDDDDDDDD          TT            VV         00000000           44      1111111111         44

  JJJJJJJJJJ    00000000     8888888888    3333333333        11        6666666666                  AAAAAAAAAA
   JJJJJJJJJ   0000000000   888888888888  333333333333      111       666666666666                AAAAAAAAAAAA
      JJ      00      0000  88        88  33        33     1111       66        66                AA        AA
      JJ      00     00 00  88        88            33       11       66                          AA        AA
      JJ      00    00  00   88      88             33       11       66                          AA        AA
      JJ      00   00   00    88888888           3333        11       66666666666                 AAAAAAAAAAAA
      JJ      00  00    00    88888888           3333        11       666666666666                AAAAAAAAAAAA
      JJ      00 00     00   88      88             33       11       66        66                AA        AA
JJ    JJ      0000      00  88        88            33       11       66        66                AA        AA
JJ    JJ      000       00  88        88  33        33       11       66        66                AA        AA
JJJJJJJJ       0000000000   888888888888  333333333333   1111111111   666666666666                AA        AA
 JJJJJJ         00000000     8888888888    3333333333    1111111111    6666666666                 AA        AA

                                                000000000000  KK        KK
                                               000000000000  KK       KK
                                              00        00  KK      KK
                                             00        00  KK     KK
                                            00        00  KK    KK
                                           00        00  KKKKKK
                                          00        00  KKKKKK
                                         00        00  KK    KK
                                        00        00  KK     KK
                                       00        00  KK      KK
                                      000000000000  KK       KK
                                     000000000000  KK        KK

END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
END   JOB08316 DTV0414  ACC  SURVEILLANCE      43051999    7.39.15 PM   09 SEP 97   R7.PR1    SYS BSYS   JOB08316  INTRDR  A*
```

Joette

REPORT NO. R1346 | KENTUCKY ACCIDENT REPORTING SYSTEM | DATE 09/09/97 | PAGE 1

PROGRAM NO. V0419

SELECTED LOCATION DETAIL LISTING
FROM 01/01/93 TO 12/31/96

COUNTY 059 KENTON | ROUTE/STREET 9075 | MILEPOST RANGE 168.5 TO 168.7 | INTERSECTING ROUTE/STREET | CITY

MASTER CASE #	MILEPOINT/ INTERSECTION	DATE	TIME	LTE CND	SUR CND	LN	IN	FA	PED ACT	RDW CHR	AID SYS	TV	DA	WEA CND	1ST COL	PRIMARY ROUTE/STREET	MILEPOINT	INTERSECTING ROUTE/STREET	BOUNDING STREET	CITY	CMP RDW	TR CT	LT CN	TYPE VEH	PRE ACT	2ND COL	HM FC	VE FC	EN FC	DR TR	--OPERATOR-- SEX	RT	RS	AG
015275	168527 KSP-POST 06	02/25/94	2345	DRK	DRY	04	01	00	00	02	A	01	40	CLR	23	9075 I 75	168.527			CRITTENDEN	01	10 11	06	01	01	00	07	10	14	05	M	14	1	29
015918	168527 KSP-POST 06	02/25/94	2347	DRK	DRY	04	00	00	00	02	A	02	35	CLR	01	9075 I 75	168.527			CRITTENDEN	01	10 11	06	04	01	00	12	10	14	01	M	01	1	44
																								01	10	00	00	10	09	00				
109092	168527 KSP-POST 06	11/01/94	1300	DAY	DRY	04	00	00	00	01	A	01	46	CLR	32	9075 I 75	168.527			CRITTENDEN	01	11	01	01	01	00	16	09	14	05	F	00	3	24
072912	168527 KSP-POST 06	06/26/96	2330	DRK	DRY	04	00	00	00	01	L	02	29	CLR	01	9075 I 75	168.527			CRITTENDEN	01	11	06	01	01	00	16	09	14	05	F	00	3	29
																								01	01	00	16	10	14	05	M	14	1	70
116030	168581 KSP-POST 06	08/21/93	1105	DAY	DRY	04	00	00	00	02	A	01	44	CLR	31	9075	168.581			CRITTENDEN	01	11	01	01	01	34	16	06	14	01	F	00	3	58
045553	168589 KENTON COUNTY P	05/16/95	1529	DAY	WET	04	01	00	00	01	L	03	25	RAI	01	9075 I 75	168.589			CRITTENDEN	01	11	01	01	01	00	15	10	11	05	M	14	1	54
																								01	01	01	15	10	11	05	M	01	1	71
																								01	01	00	15	10	11	05	F	14	1	52
073122	168601 KSP-POST 06	08/11/94	0215	DRK	DRY	04	00	00	00	01	L	01	44	CLR	31	9075 I 75	168.601			CRITTENDEN	01	11	04	01	01	00	15	05	14	05	M	00	3	20
141210	168627 KENTON COUNTY P	12/27/95	0640	DAW	SNO	04	00	00	00	01	L	01	44	SNO	31	9075 I75 SB	168.627	EADS	VIOLET RD	WALTON	01	10 11	02	01	01	00	16	10	11	05	M	00	3	24
124689	168628 KENTON COUNTY P	12/26/94	1330	DAY	DRY	04	00	00	00	01	A	02	25	CDY	01	9075 I 75	168.628			CRITTENDEN	01	11	01	01	01	00	03	10	14	05	F	01	1	51
																								01	01	00	16	10	14	05	M	01	3	23
021200	168665 KENTON COUNTY P	03/11/95	1950	DRK	DRY	04	01	00	12	04	L	01	38	CLR	02	9075 I 75	168.665	KY 14	KY 491	CRITTENDEN	01	11	06	01	01	00	13	10	03	05	F	14	1	31
106325	168685 KENTON COUNTY P	10/10/95	1540	DAY	DRY	04	00	00	00	01	L	01	40	CLR	12	9075 I75	168.685			WALTON	01	10	01	01	01	00	16	10	13	05	M	14	2	47
093778	168778 KENTON COUNTY P	10/02/94	1850	DAY	DRY	04	01	00	00	04	A	02	29	CLR	01	9075 I 75 SB	168.778			CRITTENDEN	01	11	01	04	12	00	02	10	14	05	M	00	3	34
																								01	01	21	16	10	14	05	M	00	3	30

SELECTED LOCATION DETAIL LISTING
FROM 01/01/93 TO 12/31/96

COUNTY 059 KENTON ROUTE/STREET 9075 MILEPOST RANGE 168.5 TO 168.7 INTERSECTING ROUTE/STREET CITY

ACCIDENT SUMMARY

TOTAL ACCIDENTS	12
TOTAL FATAL ACCIDENTS	0
TOTAL INJURY ACCIDENTS	4
TOTAL PROPERTY DAMAGE ONLY	8
TOTAL FATALITIES	0
TOTAL INJURIES	4
TOTALS BY LIGHT CONDITION -	12
01 DAYLIGHT	6
02 DAWN	1
04 DARKNESS-HIGHWAY LIGHTED/ON	1
06 DARKNESS-HIGHWAY NOT LIGHTED	4
TOTALS BY ROADWAY SURFACE -	12
01 DRY	10
02 WET	1
03 SNO	1
TOTALS BY OPERATOR RESIDENCE -	17
1 LOCAL RESIDENT	8
2 RESIDING ELSEWHERE IN STATE	1
3 NON-RESIDENT	8
TOTALS BY WEATHER CONDITION -	12
01 CLEAR	9
02 RAINING	1
03 SNOWING	1
06 CLOUDY	1
TOTALS BY NUMBER OF VEHICLES -	12
1 VEHICLE	7
2 VEHICLES	4
3 VEHICLES	1
4 VEHICLES	0
5 OR MORE VEHICLES	0
TOTALS BY DRIVER SEX -	17
MALE	11
FEMALE	6
NOT STATED	0

SELECTED LOCATION DETAIL LISTING
FROM 01/01/93 TO 12/31/96

COUNTY 059 KENTON ROUTE/STREET 9075 MILEPOST RANGE 168.5 TO 168.7 INTERSECTING ROUTE/STREET CITY

ACCIDENT SUMMARY

TOTALS BY DRIVER AGE GROUP -	17
NOT STATED	0
0-14	0
15	0
16	0
17	0
18	0
19	0
20	1
21-24	3
25-34	5
35-44	1
45-54	4
55-64	1
65-74	2
75 AND OVER	0
TOTAL TRUCK ACCIDENTS -	2
TOTAL FATAL TRUCK ACCIDENTS -	0
TOTAL INJURY TRUCK ACCIDENTS -	1
TOTAL PROPERTY DAMAGE TRUCK ONLY -	1
TOTAL FATALITIES IN TRUCK ACCIDENTS	0
TOTAL INJURIES IN TRUCK ACCIDENTS	1
TOTAL TRUCKS INVOLVED IN ACCIDENT	2

KENTUCKY ACCIDENT REPORTING SYSTEM

REPORT R1348

SELECTED LOCATION DETAIL LISTING

DELIVER TO:

NAME: BOYD T. SIGLER

ADDRESS: KY DOT DIVISION OF TRAFFIC

1ST FLOOR STATE OFFICE BLDG

FRANKFORT, KY. 40622

DELIVERY INSTRUCTIONS: PICKUP

REPORT NO. R1346 KENTUCKY ACCIDENT REPORTING SYSTEM DATE 09/09/97 PAGE 1

PROGRAM NO. V0419

SELECTED LOCATION DETAIL LISTING
FROM 01/01/93 TO 12/31/96

COUNTY 008 BOONE ROUTE/STREET 9075 MILEPOST RANGE 171.2 TO 171.4 INTERSECTING ROUTE/STREET

MASTER CASE #	MILEPOINT/ INTERSECTION	DATE	TIME	LTE CND	SUR CND	LN	IN	FA	PED ACT	RDW CHR	AID SYS	TV	DA	WEA CND	1ST COL	PRIMARY ROUTE/STREET	MILEPOINT	INTERSECTING ROUTE/STREET	BOUNDING STREET	CITY	CITY CMP RDW	TR CT	LT CN	TYPE VEH	PRE ACT	2ND COL	HM FC	VE FC	EN FC	DR TR	--OPERATOR-- SEX	RT	RS	AG
238530	171200 BOONE COUNTY PD	05/02/93	1354	DAY	DR' NUMBE	04	00	00	00	01	L	02	24	CDY	01	9075 I 75	171.200			WALTON	01	11	01	01	01	00	03	10	14	01	F	14	1	34
																								01	08	00	16	10	14	01	M	01	3	57
238520	171200 BOONE COUNTY PD	05/02/93	1520	DAY	WET NUMBER	04	00	00	00	03	A	02	25	RAI	01	9075 I 75	171.200			WALTON	01	11	01	01	01	00	12	10	08	01	M	00	3	30
																								01	07	00	16	10	08	01	F	14	2	34
284906	171215 SHERIFF'S OFFIC	09/17/93	1415	DAY	DRY NUMBER	04	00	00	00	01	L	01	40	CLR	20	9075 I 75 NB	171.215			WALTON	02	12	01	01	01	00	16	10	14	01	M	01	3	67
013951	171215 BOONE COUNTY PD	02/03/94	0822	DAY	SNO NUMBER	04	01	00	00	05	L	01	43	SNO	23	9075 I 75	171.215			WALTON	01	11	01	01	01	00	16	10	14	01	F	14	1	28
038536	171215 BOONE COUNTY PD	04/20/96	1040	DAY	DRY NUMBER	04	00	00	00	01	L	02	29	CLR	01	9075 I 75 SB	171.215			WALTON	01	11	01	01	12	00	08	10	14	05	M	00	3	36
																								03	14	00	16	10	14	05	N	00	3	16
038537	171215 BOONE COUNTY PD	04/20/96	1040	DAY	DRY NUMBER	04	00	00	00	01	L	02	24	CLR	01	9075 I 75 SO	171.215			WALTON	01	11	01	03	01	00	03	10	14	05	M	00	3	38
																								01	07	00	16	10	14	05	F	00	3	21
054234	171215 BOONE COUNTY PD	05/24/96	0550	DRK	DRY NUMBER	04	00	00	00	01	L	01	42	CLR	26	9075 I 75	171.215			WALTON	01	11	04	01	01	00	16	10	01	01	F	01	1	22
089195	171258 KSP-POST 06	08/10/96	0110	DRK	DRY NUMBER	02	00	00	00	01	L	02	19	CLR	01	9075 9075 S	171.258	0014		WALTON	01	11	04	01	12	00	02	10	14	05	M	00	3	24
																								14	14	00	16	10	14	05	M	14	1	57
047189	171275 BOONE COUNTY PD	05/08/96	0750	DAY	WET NUMBER	04	01	00	00	01	L	01	40	CDY	23	9075 I 75	171.275			WALTON	02	11	01	01	01	31	12	10	11	01	F	14	1	27
031415	171300 WALTON PD	04/11/94	1715	DAY	WET NUMBER	04	01	00	00	03	L	02	06	RAI	01	9075 I 75 S	171.300	0075 KY 14		WARREN	01	01	01	01	06	00	16	10	14	03	M	14	1	42
																								01	08	00	12	10	14	03	M	00	3	59
148850	171300 WALTON PD	04/07/96	0155	DRK	DRY NUMBER	01	00	00	00	03	L	01	46	CLR	32	9075 I 75 NB	171.300	75 NB	MARY GRUBBS	WALTON	01	01	04	01	08	00	16	00	14	01	M	00	1	31
075601	171300 BOONE COUNTY PD	07/07/96	1439	DAY	DRY NUMBER	04	00	00	00	01	L	02	25	CLR	01	9075 I 75	171.300			WALTON	01	10	01	01	01	00	03	10	13	01	M	00	3	25
																								01	01	00	16	10	13	01	M	00	3	27

COUNTY 008 BOONE ROUTE/STREET 9075 MILEPOST RANGE 171.2 TO 171.4 INTERSECTING ROUTE/STREET CITY

MASTER CASE #	MILEPOINT/ INTERSECTION	DATE	TIME	LTE CND	SUB CND	LN	IN	FA	PED ACT	RDW CHR	AID SYS	TV	DA	WEA CND	1ST COL	PRIMARY ROUTE/STREET	MILEPOINT	INTERSECTING ROUTE/STREET	BOUNDING STREET	CITY	CMP RDW	TR CT	LT CN	TYPE VEH	PRE ACT	2ND COL	HM FC	VE FC	EN FC	DR TR	--OPERATOR-- SEX	RT	RS	AG
114412	171306 BOONE COUNTY PD	11/27/94	1400	DAY	WET	04	00	00	00	01	L	02	25	RAI	01	9075 I 0075	171.306			WALTON	01	14	01	03	01	00	01	10	11	01	M	01	3	45
																								01	01	00	16	10	14	01	F	00	3	43
035586	171306 SHERIFF'S OFFIC	04/10/96	1415	DAY	DRY	04	00	00	00	01	L	02	25	CLR	01	9075 I 75	171.306			WALTON	01	10	01	01	01	00	15	10	14	01	M	00	3	17
																								01	01	00	16	10	14	01	F	00	3	74
075797	171313 BOONE COUNTY PD	08/21/94	1630	DAY	DRY	04	02	00	00	01	L	02	29	CLR	01	9075 I 75	171.313			WALTON	01	10	01	01	01	00	03	10	14	01	M	00	3	63
																								01	11	00	16	10	14	01	M	00	3	17
229994	171315 BOONE COUNTY PD	04/14/93	1148	DAY	WET	04	03	00	00	01	L	04	24	RAI	01	9075 I 75 N	171.315			WALTON	01	10	01	01	01	00	12	10	08	01	M	00	3	73
																								01	01	01	12	10	08	01	M	00	3	58
																								01	01	01	12	10	08	01	F	00	3	39
																								01	01	00	16	10	08	01	F	00	1	73
241471	171315 BOONE COUNTY PD	05/09/93	2030	DSK	DRY	04	00	00	00	03	L	02	75	CLR	01	9075 I 75	171.315			WALTON	01	01	03	01	07	00	04	10	14	05	M	00	3	47
																								04	02	00	16	10	14	06	M	00	3	27
274484	171315 WALTON PD	08/01/93	1801	DAY	DRY	04	00	00	00	01	L	04	46	CLR	01	9075 I 75 N	171.315			WALTON	01	11	01	01	01	00	03	10	13	01	M	00	3	68
																								01	01	00	03	10	13	01	F	00	1	40
																								01	08	01	16	10	13	01	M	00	3	21
																								01	08	00	16	10	13	01	F	00	3	36
003380	171315 WALTON PD	01/02/94	2124	DRK	DRY	01	00	00	00	02	L	01	44	CLR	31	9075 I 75	171.315			WALTON	01	14	06	04	01	00	16	09	14	05	M	00	3	24
000046	171315 BOONE COUNTY PD	01/02/96	2045	DRK	SND	04	00	00	00	01	L	02	24	SLT	01	9075 I 75S	171.315			UNION	01	11	04	01	01	00	12	10	11	05	M	00	3	19
																						12												
																								01	07	00	16	10	14	05	M	00	3	22

COUNTY 008 BOONE ROUTE/STREET 9075 MILEPOST RANGE 171.2 TO 171.4 INTERSECTING ROUTE/STREET CITY

MASTER CASE #	MILEPOINT/ INTERSECTION	DATE	TIME	LTE CND	SUR CND	LN	IN	FA	PED ACT	RDW CHR	AID SYS	TV	DA	WEA CND	1ST COL	PRIMARY ROUTE/STREET	MILEPOINT	INTERSECTING ROUTE/STREET	BOUNDING STREET	CITY	CMP RDW	TR CT	LT CN	TYPE VEH	PRE ACT	2ND COL	HM FC	VE FC	EN FC	DR TR	--OPERATOR-- SEX	RT	RS	AG
091896	171315 KSP-POST 08	08/26/96	1330	DAY	DRY	04	00	00	00	02	L	03	24	CLR	01	9075 NUMBER I 75	171.315			WALTON	01	11	01	01	01	00	12	10	14	01	M	00	1	56
																								01	07	00	16	10	14	01	F	14	1	31
																								01	11	00	16	10	14	01	F	14	1	26
118888	171315 KSP-POST 08	10/25/96	1406	DAY	DRY	04	00	00	00	02	L	02	30	CDY	01	9075 NUMBER	171.315			WALTON	01	11	01	01	12	34	04	10	14	05	M	00	3	39
																								03	01	00	16	10	14	05	M	00	3	33
148896	171315 WALTON PD	11/12/96	1310	DAY	DRY	04	00	00	00	02	L	02	19	CLR	01	9075 NUMBER AW961182 I 75	171.315			WALTON	01	14	01	04	05	00	12 16	10	14	05	M	00	3	42
																								01	01	00	10	10	14	05	M	14	1	48
232065	171324 BOONE COUNTY PD	04/18/93	1535	DAY	DRY	04	02	00	00	01	L	01	43	CLR	23	9075 NUMBER 933437 I 75 N	171.324			WALTON	01	11	01	01	01	31	12	10	08	01	M	01	2	77
232070	171400 BOONE COUNTY PD	04/18/93	1557	DAY	DRY	04	00	00	00	01	A	02	24	CLR	01	9075 NUMBER 933436 I 75 N	171.400			WALTON	01	11	01	01	01	00	12	10	14	01	M	00	3	72
																								01	01	00	16	10	14	01	F	00	3	19
049236	171400 WALTON PD	05/22/95	1451	DAY	DRY	04	00	00	00	02	L	02	29	CLR	01	9075 NUMBER AW950448 I 75 NB	171.400	KY 14	I 71	WALTON	01	06	01	01	14	23	02 12	10	14	02	F	01	1	16
																								04	01	00	16	10	14	01	M	00	3	49
078285	171410 BOONE COUNTY PD	08/31/94	0740	DAY	WET	04	02	00	00	01	L	02	24	CLR	01	9075 NUMBER 947984 I 75	171.410			WALTON	01	13	01	01	01	00	01 12	10	14	05	M	14	1	23
																								01	07	00	16	10	14	05	F	00	3	29
082934	171415 KSP-POST 08	09/12/94	1230	DAY	DRY	04	00	00	00	02	L	01	40	CLR	12	9075 NUMBER I 75	171.415			WALTON	01	10 11	01	01	01	00	15	10	14	01	F	14	1	23
028455	171415 BOONE COUNTY PD	03/16/95	2000	DRK	DRY	04	00	00	00	02	L	02	29	CLR	01	9075 NUMBER 9502413 I 75	171.415			WALTON	01	11	06	04	01	00	15	10	14	01	N	00	0	
																								01	14	00	16	10	14	01	M	14	1	20
302418	171439 SHERIFF'S OFFIC	10/27/93	1730	DAY	DRY	06	00	00	00	01	L	01	42	CLR	26	9075 NUMBER 939829 I 75	171.439			RICHWOOD	02	12	01	01	01	00	16	10	01 01	05	M	14	1	37

SELECTED LOCATION DETAIL LISTING
FROM 01/01/93 TO 12/31/96

COUNTY 008 BOONE ROUTE/STREET 9075 MILEPOST RANGE 171.2 TO 171.4 INTERSECTING ROUTE/STREET CITY

ACCIDENT SUMMARY

TOTAL ACCIDENTS	30
TOTAL FATAL ACCIDENTS	0
TOTAL INJURY ACCIDENTS	7
TOTAL PROPERTY DAMAGE ONLY	23
TOTAL FATALITIES	0
TOTAL INJURIES	12
TOTALS BY LIGHT CONDITION -	30
01 DAYLIGHT	23
03 DUSK	1
04 DARKNESS-HIGHWAY LIGHTED/ON	4
06 DARKNESS-HIGHWAY NOT LIGHTED	2
TOTALS BY ROADWAY SURFACE -	30
01 DRY	22
02 WET	6
03 SND	2
TOTALS BY OPERATOR RESIDENCE -	56
0 NOT STATED	1
1 LOCAL RESIDENT	18
2 RESIDING ELSEWHERE IN STATE	2
3 NON-RESIDENT	35
TOTALS BY WEATHER CONDITION -	30
01 CLEAR	21
02 RAINING	4
03 SNOWING	1
05 SLEET/HAIL	1
06 CLOUDY	3
TOTALS BY NUMBER OF VEHICLES -	30
1 VEHICLE	9
2 VEHICLES	18
3 VEHICLES	1
4 VEHICLES	2
5 OR MORE VEHICLES	0
TOTALS BY DRIVER SEX -	56
MALE	36
FEMALE	18
NOT STATED	2

SELECTED LOCATION DETAIL LISTING
FROM 01/01/93 TO 12/31/96

COUNTY 008 BOONE ROUTE/STREET 9075 MILEPOST RANGE 171.2 TO 171.4 INTERSECTING ROUTE/STREET CITY

ACCIDENT SUMMARY

TOTALS BY DRIVER AGE GROUP -	56
NOT STATED	1
0-14	0
15	0
16	2
17	2
18	0
19	2
20	1
21-24	8
25-34	13
35-44	10
45-54	4
55-64	6
65-74	6
75 AND OVER	1
TOTAL TRUCK ACCIDENTS -	5
TOTAL FATAL TRUCK ACCIDENTS -	0
TOTAL INJURY TRUCK ACCIDENTS -	0
TOTAL PROPERTY DAMAGE TRUCK ONLY -	5
TOTAL FATALITIES IN TRUCK ACCIDENTS	0
TOTAL INJURIES IN TRUCK ACCIDENTS	0
TOTAL TRUCKS INVOLVED IN ACCIDENT	5

VII.(e) TYPICAL SECTION

VII.(e)(1) AS PROPOSED

"As Proposed"

Shoulder Pavement - Overlay

- The "As Proposed" shoulder pavement is based on 59 million EAL's loading and full depth shoulders. This loading required a 5.5 inch thick pavement overlay.

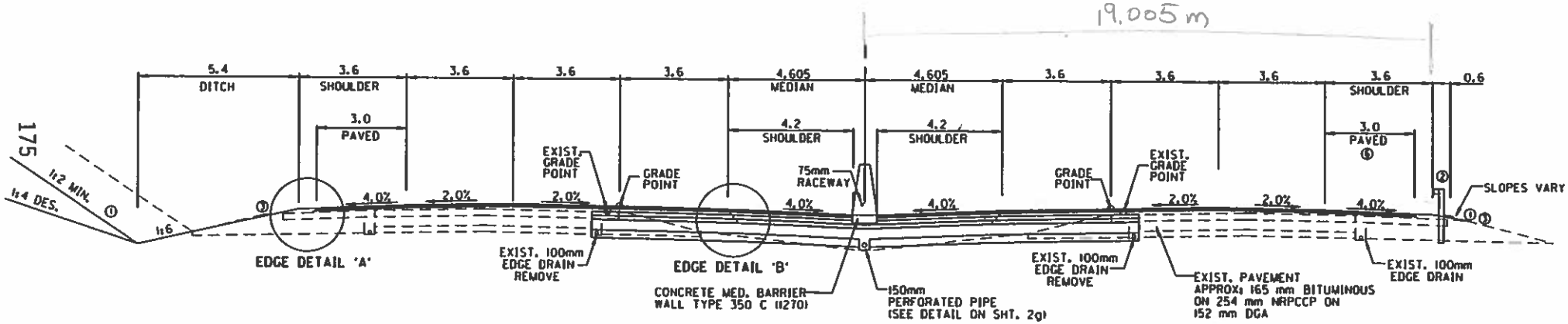
Shoulder Pavement - Widening

- The "As Proposed" shoulder pavement is based on 59 million EAL's loading and full depth shoulders. This loading required a 31.5 inches thick pavement.

As shown on the following typical section, the "As Proposed" rehabilitation of I-75 incorporates the following features.

- Adds an additional lane in the median area providing 3 lanes in each direction on I-75.
- Provides a full depth pavement section for the median area 14' (4.6m) on either side of the proposed high wall traffic barrier located on the centerline .
- Incorporates a two foot lateral shift in the pavement section toward the median.
- Flattens the outside slopes, requiring the removal of additional earthwork for embankment and excavation.
- Overlaps the existing four lanes (asphalt concrete surface) with a total asphalt concrete thickness. Since the proposed pavement overlay (including additional lane) and drainage blanket have been included in preceding sections of this report, this section is limited to an analysis and discussion of the typical section, excluding the pavement resurfacing, the additional pavement lane, and the drainage blanket.

AS PROPOSED



AS PROPOSED

VII.(e)(2) V.E. ALTERNATIVES

V.E. Alternative

Outside Shoulder Pavement - Overlay

During the V.E. evaluation, we investigated the shoulder overlay thickness. The V.E. team recommends that the pavement thickness be reduced from 5.5 inches to 4 inches; therefore the V.E. team determined that the outside shoulder overlay should be 4 inches. In addition, we determined that the outside shoulder overlay can be tapered from 4 inches to 1.5 inches and still meet the required shoulder EAL loading.

Median Shoulder Pavement - Widening

During the V.E. evaluation, we investigated the shoulder pavement thickness. The mainline pavement thickness was reduced from 31.5 inches to 30 inches; therefore the V.E. Team determined that the median shoulder pavement thickness could be reduced. In addition, we determined that the shoulder pavement layers can be adjusted by using a thicker layer of lower cost Drainage Blanket to replace higher cost Bituminous Base. The new thickness satisfies the shoulder structural number of 6.3.

As shown in the typical sections, V.E. Alternatives 4A and 4B are described as follows.

- Both alternatives have an overall median width of 26' with a traffic barrier. The outside shoulder is identical for both alternatives.
- Alternative 4A incorporates the full depth pavement section under the 12'(3.6m) wide paved median shoulder and a traffic barrier with a constant slope face. The embankment and cut slopes have been revised to incorporate desirable ditch and clear zone widths.
- Alternative 4B is identical to Alternative 4A with the exception of the 12'(3.6m) paved median shoulder which has a reduced shoulder pavement thickness and the existing outside embankment and cut slopes have been retained.
- Both alternatives provide an additional lane in each direction on I-75.

The summary of the shoulder pavement structural analysis for V.E. alternative 4B is shown on the following pages.

Cost Comparison

The primary difference in the proposed typical section and the V.E. Alternatives is the cost savings associated with the reduced median shoulder thickness (4B) and width (4A & 4B). In addition, there is a reduction in the earthwork with V.E. Alternative 4A because of the reduction of 4 feet in the median width. Since V.E. Alternative 4B maintains the existing outside slopes and ditch section there is a significant reduction in the earthwork quantities.

The total cost comparison of the "As Proposed" and V.E. Alternative Nos. 4A & 4B are summarized as follows.

"As Proposed" Typical Section	$8,248,218
V.E. Alternative No. 4A	$5,768,520
V.E. Alternative No. 4B	$3,713,852

Potential Savings V.E. Alternative No. 4A	$2,479,608
Potential Savings V.E. Alternative No. 4B	$4,534,366

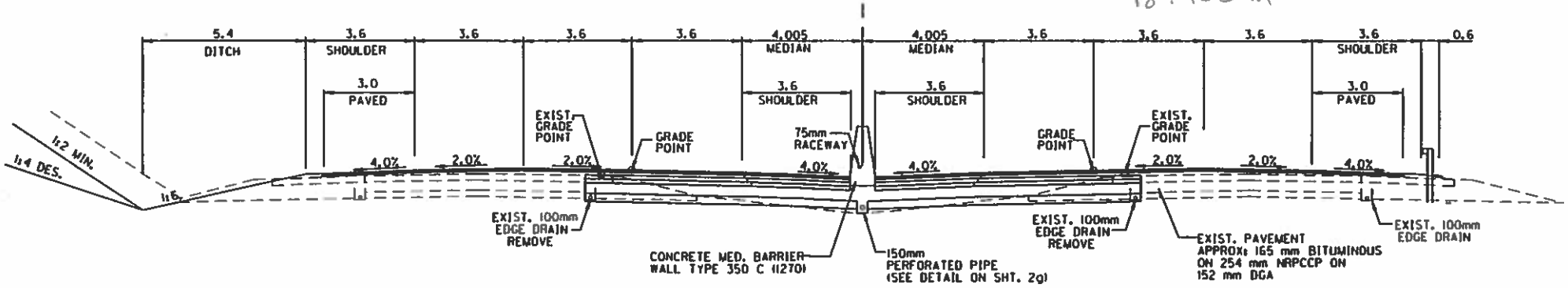
Recommendation

In view of the potential cost savings with V.E. Alternative No. 4B which maintains the outside slopes and ditch section and incorporates a reduced shoulder structural thickness, it is recommended for adoption.

VE 4-A

WITH REDUCED MEDIAN WIDTH

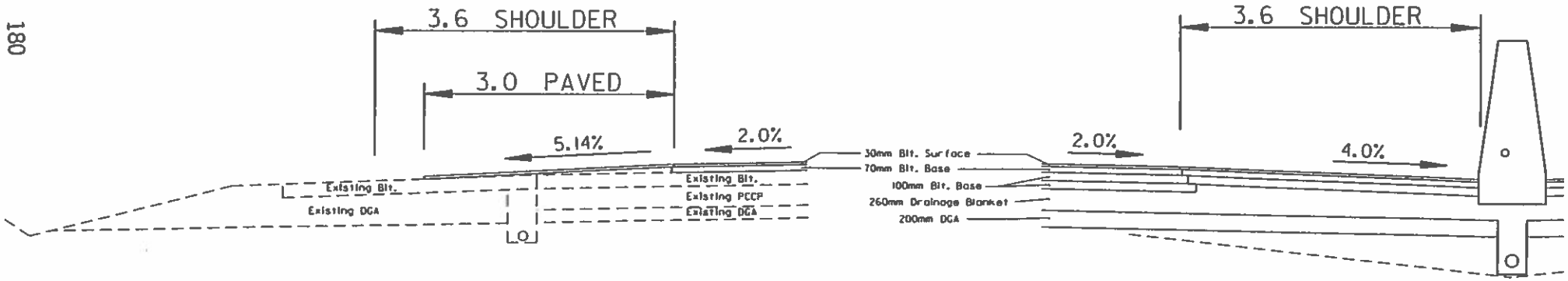
18.405 m



VALUE ENGINEERING ALTERNATIVE

VE 4-B

WITH REDUCED MEDIAN WIDTH AND PAVEMENT THICKNESSES WITHOUT OUTSIDE EARTHWORK



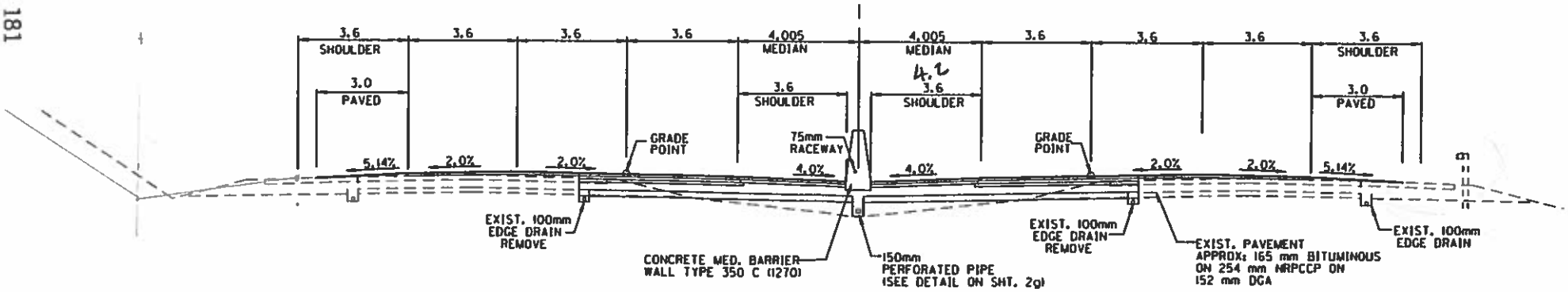
OUTSIDE SHOULDER DETAIL

MEDIAN SHOULDER DETAIL

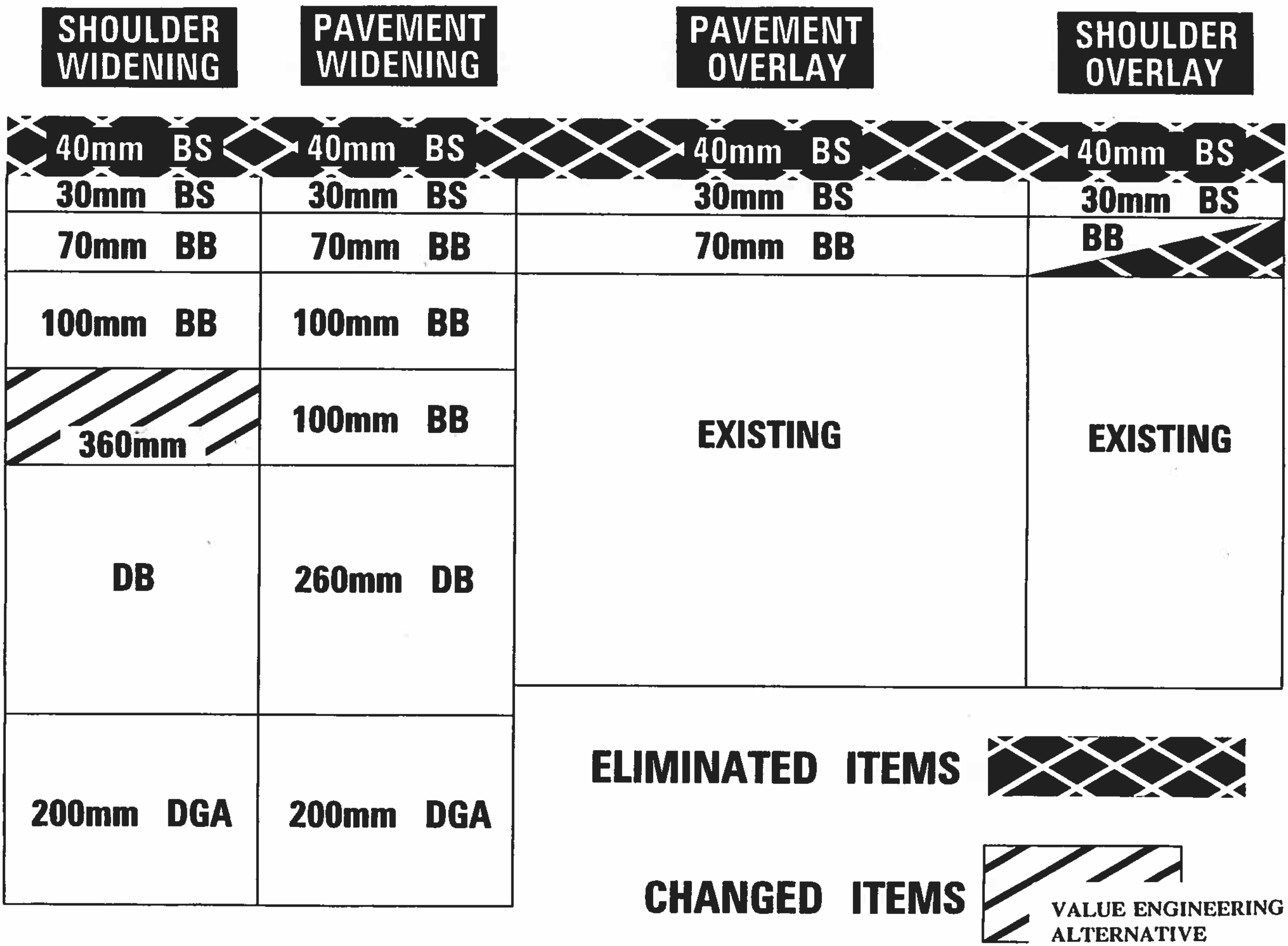
VALUE ENGINEERING ALTERNATIVE

VE 4-B

WITH REDUCED MEDIAN WIDTH AND PAVEMENT THICKNESSES WITHOUT OUTSIDE EARTHWORK



VALUE ENGINEERING ALTERNATIVE


SHOULDER WIDENING
PAVEMENT WIDENING
PAVEMENT OVERLAY
SHOULDER OVERLAY
40mm BS
30mm BS
70mm BB
100mm BB
360mm
DB
200mm DGA
40mm BS
30mm BS
70mm BB
100mm BB
100mm BB
260mm DB
200mm DGA
40mm BS
30mm BS
70mm BB
EXISTING
40mm BS
30mm BS
BB
EXISTING
ELIMINATED ITEMS
CHANGED ITEMS
VALUE ENGINEERING ALTERNATIVE

V.E. ALTERNATIVE NO. 4B
COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
BITUMINOUS SURFACE	$38.00	23,413	$ 889,694	8,555	$ 325,094
BITUMINOUS BASE	$34.00	90,308	$3,070,472	48,712	$1,656,213
DRAINAGE BLANKET	$22.00	36,000	$ 792,000		
UNTREATED DRAINAGE BLANKET	$ 9.60	0	0	43,222	$ 414,927
DGA	$12.00	69,943	$ 839,316	60,850	$ 730,205
EXCAVATION	$ 7.00	96,800/CUM	$ 677,600	0	0
EMBANKMENT	$ 6.00	225,992/CUM	$ 695,952	0	0
BIT. SURFACE (SHOULDER OVERLAY)	$38.00	17,822	$ 677,236	7,485	$ 284,439
BIT. BASE (SHOULDER OVERLAY)	$34.00	17,822	$ 605,948	8,911	$ 302,974
TOTAL			$8,248,218		$3,713,852

Possible Savings $ 4,534,366

V.E. ALTERNATIVE NO. 4A
COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
BITUMINOUS SURFACE	$38.00	23,413	$ 889,694	20,369	$ 774,034
BITUMINOUS BASE	$34.00	90,308	$3,070,472	78,568	$2,671,311
DRAINAGE BLANKET	$22.00	36,000	$ 792.000		
UNTREATED DRAINAGE BLANKET	$ 9.60	0	0	31,320	$ 300,672
DGA	$ 12.00	69,943	$ 839,316	60,850	$ 730,205
EXCAVATION	$ 7.00	96,800 CUM	$ 677,600	46,055	$ 322,385
EMBANKMENT	$ 6.00	115.992/CUM	$ 695.952	63,750	$ 382,500
BIT. SURFACE (SHOULDER OVERLAY)	$38.00	17,822	$ 677,236	7,485	$ 284,439
BIT. BASE (SHOULDER OVERLAY)	$34.00	17,822	$ 605,948	8,911	$ 302,974
TOTAL			$8,248,218		$5,768,520

Possible Savings **$ 2,479,698**

SHOULDER DETAIL PAVEMENT OUTSIDE						
		AS PROPOSED				
		TONS	TONS	TONS	TONS	TOTAL
		BSURF	BBASE	DRAB	DGA	
	UNIT	$38	$34	$22	$12	
	SH-O	17822	17822			
	COS	$677,236	$605,948			$1,283,184
		VE				
		TONS	TONS	TONS	TONS	
		BSURF	BBASE	DRAB	DGA	
	UNIT	$38	$34	$22	$12	
	SH-O	7485	8911			
	COS	$284,439	$302,974			$587,413
	SAV					$695,771

SHOULDER DETAIL PAVEMENT OUTSIDE						
		AS PROPOSED				
		TONS	TONS	TONS	TONS	TOTAL
		BSURF	BBASE	DRABLK	DGA	
	UNIT $	38	34	22	12	
	SH-OL	17822	17822			
	COST	=C5*C7	=D5*D7			=SUM(C9:F9)
		VE				
		TONS	TONS	TONS	TONS	
		BSURF	BBASE	DRABLK	DGA	
	UNIT $	38	34	22	12	
	SH-OL	=C7*0.42	=D7*0.5			
	COST	=C14*C16	=D14*D16			=SUM(C18:F18)
	SAV					=G9-G18

	SHOULDER PAVEMENT DETAIL MEDIAN							
			TONS	TONS	TONS	TONS	TONS	
			BSURF	BBASE	DRABLK	DRABLK	DGA	
		UNIT $	38	34	22	9.6	12	
		AS PROPOSED						
	30'	SH-WID	23413	90308	36000	36000	69943	
COST	30'	SH-WID	$889,694	$3,070,472	$792,000		$839,316	$5,591,482
		VE-4A						
	26'	SH-WID	20369	78568		31320	60850	
COST	26'	SH-WID	$774,034	$2,671,311	$0	$300,672	$730,205	$4,476,221
SAV								$1,115,261
		VE-4B						
	26'	SH-WIDVE	8555	48712		43222	60850	
COST	26'	SH-WIDVE		$1,656,213	$0	$414,927	$730,205	$2,801,345
SAV								$2,790,137
		WORKSHEET						
	30'	SH-WIDVE	9833	55990.96		49680	69943	
COST	30'	SH-WIDVE	$373,671	$1,903,693	$0	$476,928	$839,316	$3,593,608
SAV								$1,997,874

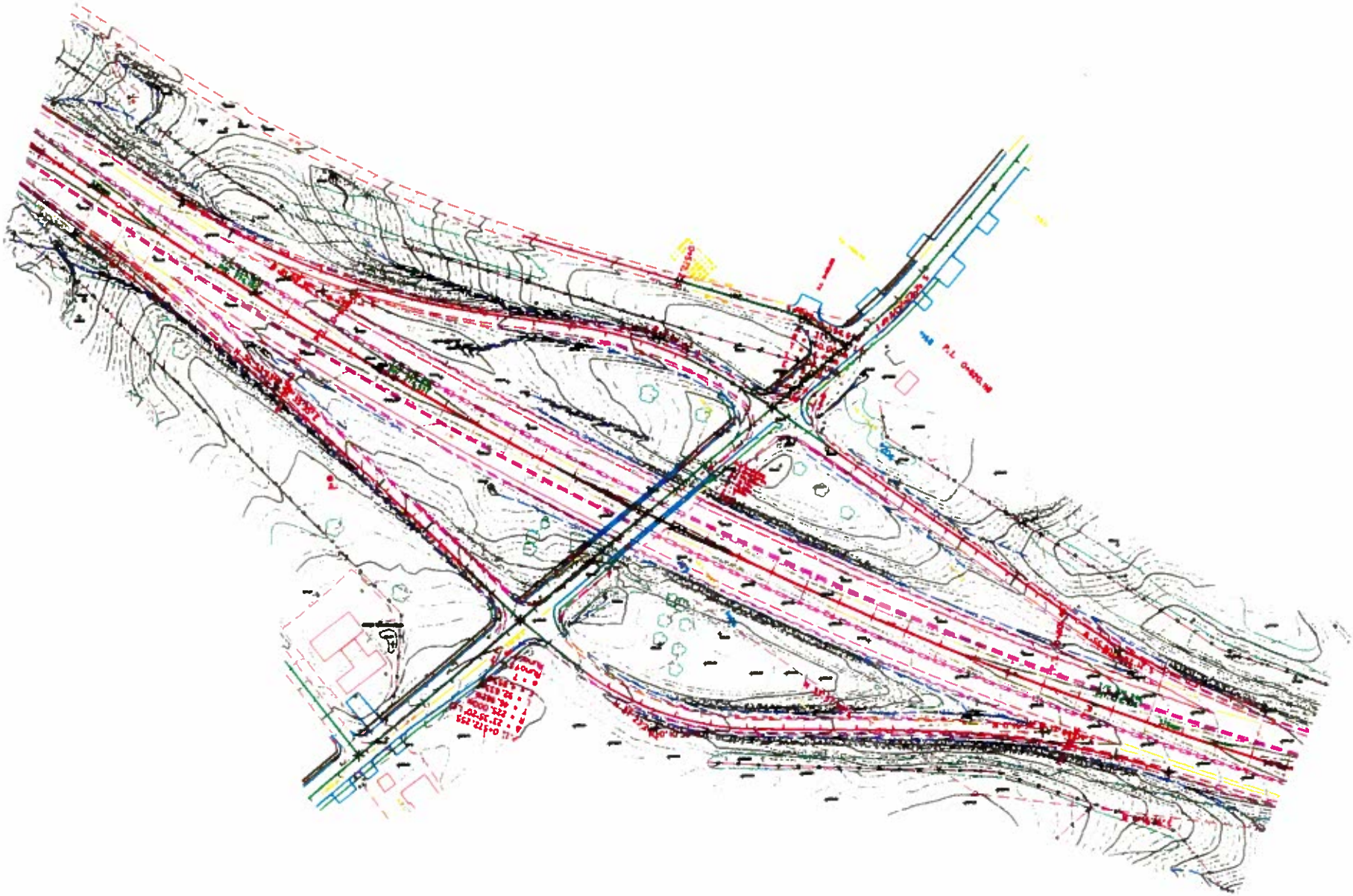
	SH								
			TONS	TONS	TONS	TONS	TONS		
			BSURF	BBASE	DRABLK	DRABLK	DGA		
		UNIT $	38	34	22	9.6	12		
		AS PROPOSED							
	30'	SH-WID	23413	90308	36000	36000	69943		
COST	30'	SH-WID	=D5*D8	=E5*E8	=F5*F8		=H5*H8		=SUM(D9:H9)
		VE-4A							
	26'	SH-WID	=D8*0.87	=E8*0.87		=G8*0.87	=H8*0.87		
COST	26'	SH-WID	=D5*D12	=E5*E12	=F5*F12	=G5*G12	=H5*H12		=SUM(D13:H13)
SAV									=J9-J13
		VE-4B							
	26'	SH-WIDVE	=D20*0.87	=E20*0.87		=G20*0.87	=H20*0.87		
COST	26'	SH-WIDVE		=E5*E16	=F5*F16	=G5*G16	=H5*H16		=SUM(D17:H17)
SAV									=J9-J17
		WORKSHEET							
	30'	SH-WIDVE	=D8*0.42	=E8*0.62		=G8*1.38	=H8*1		
COST	30'	SH-WIDVE	=D5*D20	=E5*E20	=F5*F20	=G5*G20	=H5*H20		=SUM(D21:H21)
SAV									=J9-J21

VII.(f) KY 491 STRUCTURE

VII.(f)(1) AS PROPOSED

"As Proposed"

The existing bridge is a four span reinforced concrete deck girder bridge (RCDG). The "As Proposed" is a two span bridge, (31.25m-31.25m) utilizing prestressed concrete Type IV beams and MSE walls. This alternatives maintenance of traffic (MOT) plan utilizes an expensive crossover to divert traffic while the existing bridge is demolitioned and beams are set.



AS PROPOSED

VII.(f)(2) V.E. ALTERNATIVES

V.E. Alternatives

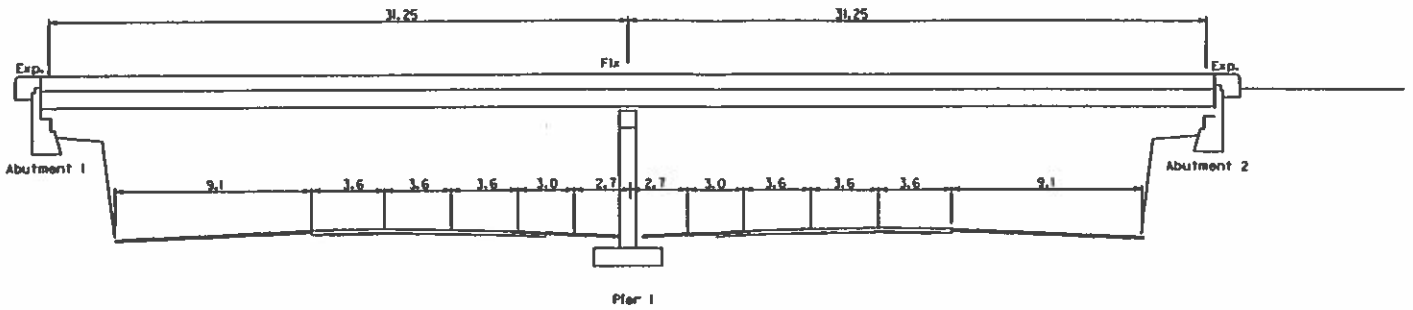
V.E. Alternative No. 1 is to jack the existing bridge and to widen as required to provide the required bridge width. This alternative utilizes the on/off ramps to divert traffic during the minor demolition and beam erection.

This alternative costs $866,799 less than the "As Proposed". This is the recommended alternative.

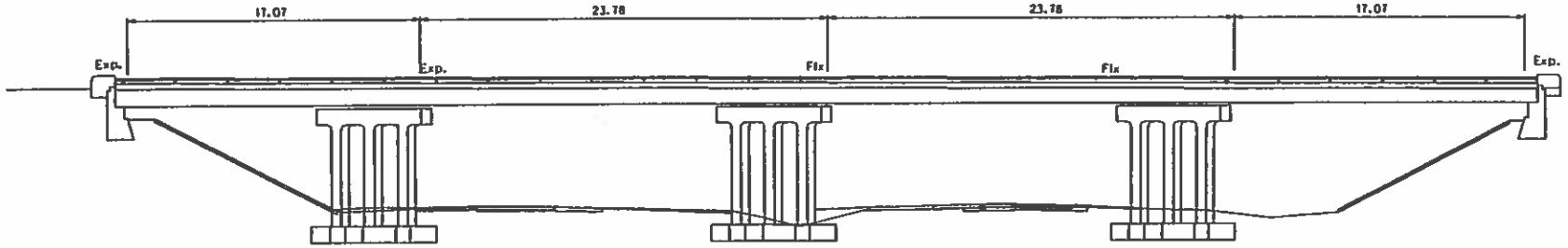
V.E. Alternative No. 2 is to use a two span (23.77m - 23.77m) bridge using prestressed concrete Type III girders and MSE walls. Barriers will be used at the face of the wall. The maintenance of traffic (MOT) plan is to use the on/off ramps to divert I-75 traffic during demolition and beam erection. This alternative costs $562,391 less than the "As Proposed".

V. E. Alternative No. 3 is to use the "As Proposed" bridge, a two span (31.25m - 31.25m) with Type IV girders and MSE walls. The maintenance of traffic (MOT) would be different. The "As Proposed" uses a crossover to divert traffic during demolition and beam erection. The V.E. 3 Alternative's MOT plan will use the on/off ramps to divert traffic. It is expected to divert I-75 traffic a total of twelve nights.

This alternative costs $710,585 less than the "As Proposed".



AS PROPOSED

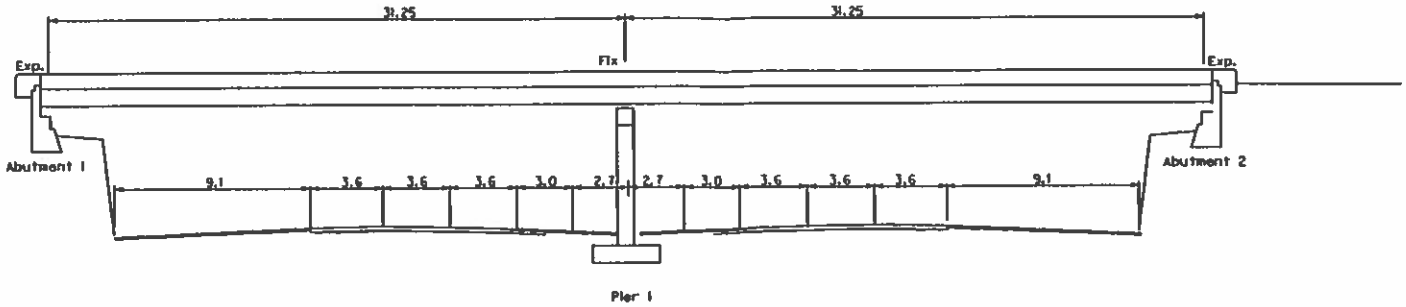


NEW SUPERSTRUCTURE ON ALTERED SUBSTRUCTURE.

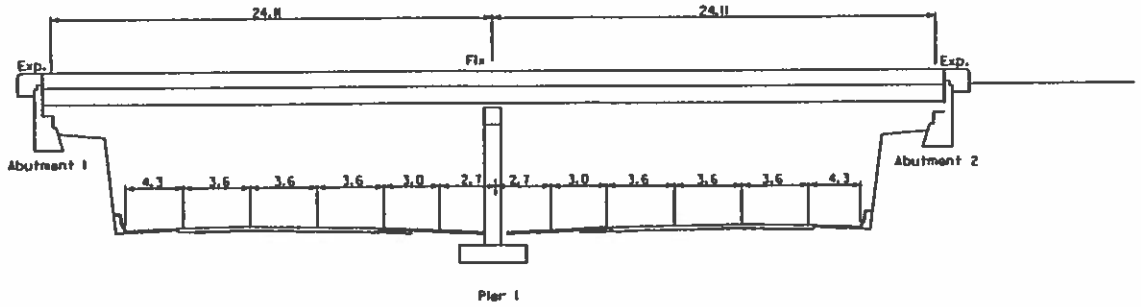
VE-3

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
KY 491
ROAD
STATION
GM1

VALUE ENGINEERING
ALTERNATIVE



AS PROPOSED

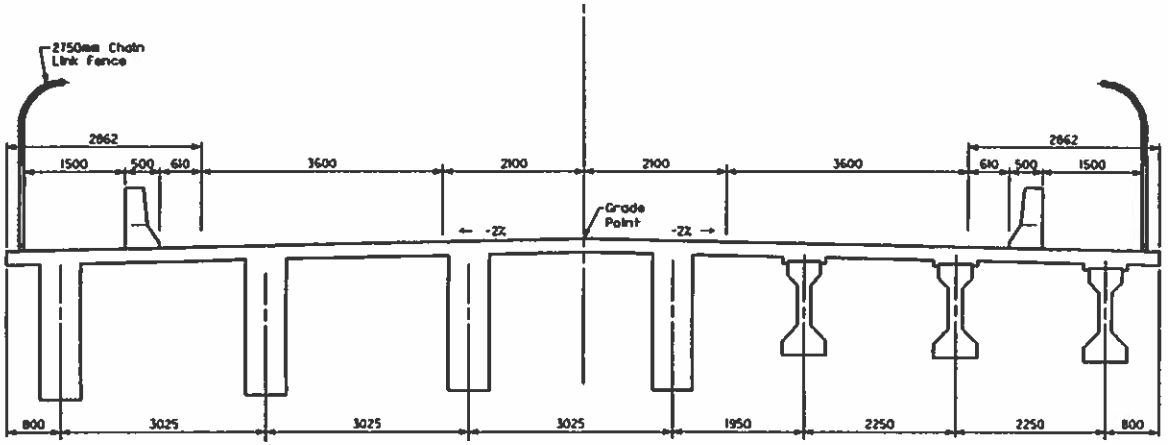


VE-2

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
TRANSPORT
COUNTY OF
KY 491
BRAB
LAY

VALUE ENGINEERING
ALTERNATIVE

196



BRIDGE SECTION KY 491

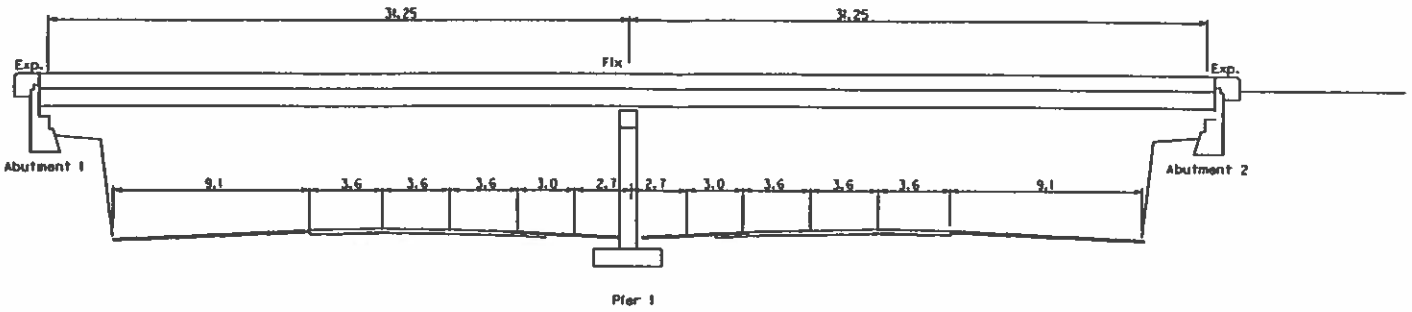
VE-1

REVISION	DATE
DATE:	CHECKED BY
DESIGNED BY:	
DETAILED BY:	

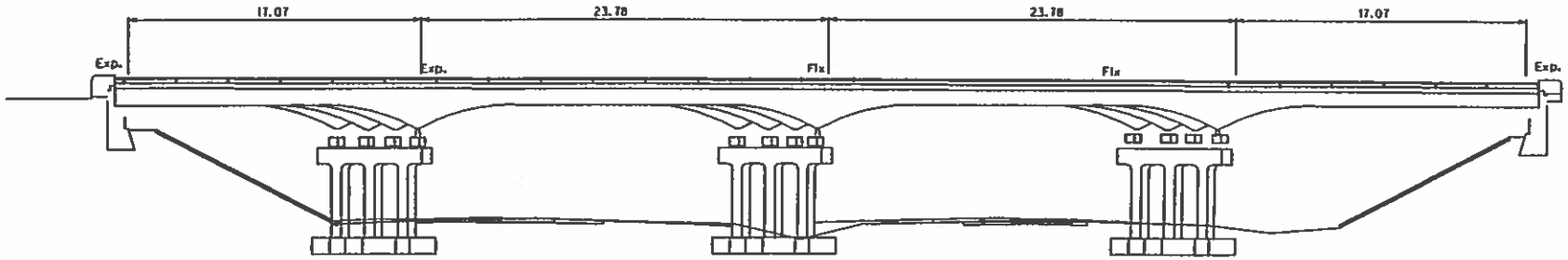
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

Bridge Design

VALUE ENGINEERING ALTERNATIVE



AS PROPOSED



JACK EXISTING BRIDGE AND WIDEN WITH TYPE 3 PCI BEAMS.

VE-1

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
KY 491
ROAD

	81	

VALUE ENGINEERING ALTERNATIVE

The "As Proposed" KY 491 bridge utilizes a crossover to maintain I-75 traffic during demolition and construction. The estimated cost of the crossover is $521,000. The V.E. proposal is to utilize the on/off ramps at the I-75/KY-491 interchange to detour I-75 traffic. The detours would only be used during off peak hours.

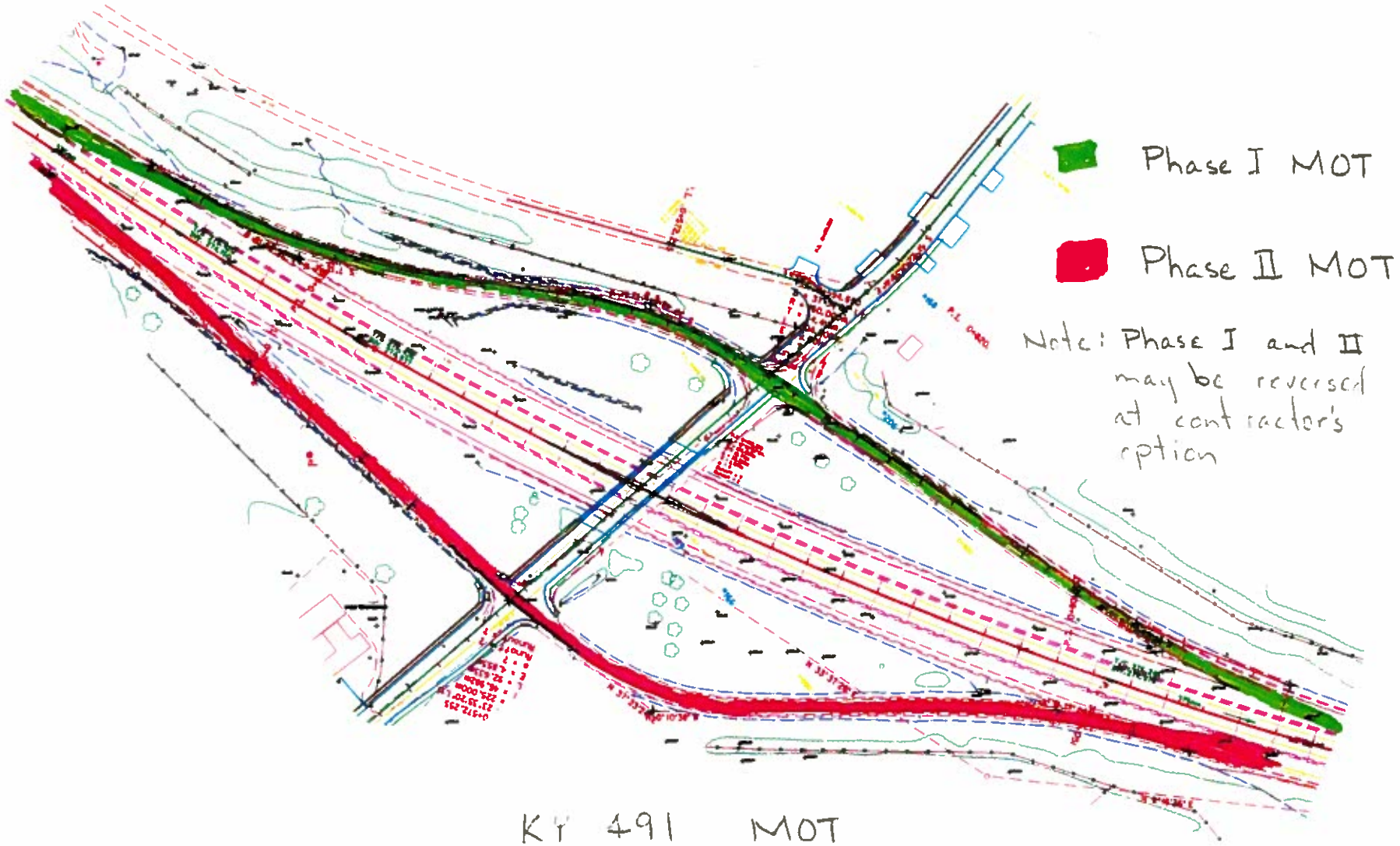
The MOT plan is to restrict the I-75 traffic to one lane and detour the traffic to the off ramp across KY 491 and onto the on ramp proceeding onto I-75. The existing bridge will be removed in sections. The existing bridge will remain in place during construction of the first phase of the new bridge. The existing bridge will be used for maintaining KY-491 traffic. I-75 will be diverted when beams are erected in the new bridge phase 1 construction.

The need for diverting traffic will be as follows:

2 nights to set beams in Phase 1 new bridge
2 nights to cast deck in Phase 1
2 nights/span to demolition existing bridge (total 4 nights)
2 days to set girders in Phase II
2 nights to cast deck in Phase II

Total of 12 nights

It might be considered to include an incentive in the contract for minimizing the time for diverting traffic. Allow a certain amount of time and reward the contractor for using less time. This would minimize traffic constraint and user cost.



KY 491 MOT
VE-2 & VE-3

VALUE ENGINEERING ALTERNATIVE

MAINT OF TRAFFIC / Night / Direction

INTERSTATE CLOSURES

TWO LANE CLOSURE

DRUM SPACING - 16.76M IN TAPERS, 33.53M Elsewhe

TAPERS = 2X270 M = 540 M. => 33 DRUMS
TANGENTS = 3X270 M = 810 M => 25 "
SAY 60 "

PER CLOSURE

Equip

DRUMS @ $/000	$1000
ARROW 2-@ $300/WK	600
VMS 1-@ $1000/WK	1000
Signs	500
TRUCK - 2 FLATBEDS @ $40	640
	$3740
+15%	= $4300

LABOR -

SETUP/TAKEDOWN - 4 HRS - PREMIUM TIME
8 MEN @ $38/HR @ 4 HRS = $1216

FLAGMEN W/ BLUELIGHTS
4 @ $60/HR X 8 HRS = 1920
$3136
+ 25% $3920

SUBTOTAL = $8220 + 15% PROFT
TOT = $9500

KY 491
V.E. ALTERNATIVE NO. 1
COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
"AS PROPOSED" 2 SPAN CONTINUOUS (31.25-31.25) WITH MSE WALLS	$626,818	1	$ 626,818		
CROSSOVER	$521,068	1	$ 521,068		
DEMOLITION "AS PROPOSED"	$120,000	1	$ 120,000		
V.E. NO. 1 JACK EXISTING STRUCTURE AND WIDEN	$371,087			1	$371.087
MOT	$ 20,000			1	$ 20,000
DEMOLITION	$ 10,000			1	$ 10,000
TOTAL			$1,267,886		$401,087

Possible Savings $ 866,799

KY 491 VE-1

Jack Existing Bridge and widen
Jack .56 m.

Jack 936.17 m^2 .56 m @ $120/$m^2$ = $112,340
Conc. for Substr. seats & wingwall extensions / widen 117.82 x $445/$m^3$ = $52,430
Rebars 14,165 x $1.40 = $19,531
Drilled epoxy conc. anchors
57 x $10 each = $570
Bearing Pads 64 x $300 each = $19,200
Exp. Jts. 34 x $312/m = $10,609
Super Widen Class A 124.50 m^3 x $390/$m^3$ = $48,555
Rebars Widen 14,968 Kg x $1.20/Kg = $17,962
Beams Type III 4 x 51.69 x $274.18/m = $ 81,591
$371,087

MOT $50,000
Demolition $10,000
$431,087

MOT
Demo

Rdwy may be slightly less than Rs - Proposed.

KY 491 VE-1

Bridge Area

81.69 m x 11.46 m = 936.17 m^2

Conc. for count seats

EB Cap .56 m high x .79 m w x 11.92 m long = 5.27 m^3
Pier Cap .56 m high x .91 m w x 11.07 m long = 5.64 m^3
Wingwall extension 2 x .5 x 1.85 x 4 = 7.4

Conc. 5.27 x 2 : 10.54
5.64 x 3 : 16.92
7.4
34.86 m^3

Widen EB 7.32 m

Cap 7.32 x 1.17 m x 1.37 m = 11.73 m^3
Ftg. .91 m x 2.13 x 1.52 x 2 = 5.89
Col. .61 m x 1.17 m x .69 x 3 = 1.48
19.10 m^3 / each EB

Wi...

Cap .91 x 1.07 x 7.32 = 7.13 m^3
Col .91 x .91 x 4 A2 = 3.66 m^3
Ftg .91 x 2.13 x 2.13 = 4.13 m^3
14.92 m^3 / pier

KY 491 VE-1

Conc.

Raise beam seats		34.86 m^3
Widen EB	19.10 x 2	38.20 m^3
Widen Piers	14.92 x 3	44.76 m^3
		117.82 m^3

Rebars

5% x 117.82 x 35.31 x 150 = 31,201 #

31,201 x 454 g/lb. = 14,165,254 g = 14,165 Kg

Drilled Anchors @ .5m c/s. each face of each support

(11.07 x 3) + (11.92 x 2) = 57.05 x 2 ÷ 5 = 57

Bearing Pads

4 Ext. Beams + new beams

8/span x 4 Spans x 2 ends = 64

Super Widen

7.62 m wide x .20 thick x 81.69 m = 124.50 m^3

Super Rebars

5% x 124.50 x 35.31 x 150 = 32,970 #

32,970 x 454 g/lb. = 14,968,380 g = 14,968 Kg

KY 491
V.E. ALTERNATIVE NO. 2
COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
"AS PROPOSED' BRIDGE	$602,000	1	$ 602,000		
ADD. EMBANKMENT	$ 25,960	1	$ 25,960		
CROSSOVER	$521,068	1	$ 521,068		
V.E. 2 BRIDGE INCLS. RDWY.	$466,637			1	$466,637
MOT	$120,000			1	$120,000
TOTAL			$1,149,028		$586,637

Possible Savings $ 562,391

KY 491 VE-2

New Bridge with No Crossovers
(2 Spans with MSE Walls - 7 lines Type III
(23.77 m - 23.77 m)
From Consultants Cost Estimate

Class AA Concr.	213 m^3 x $445/$m^3$	= $94,785
Rebars	19,465 Kg x $1.40/Kg	= $27,251
Type III Bms	14 x 23.77 x $274/m	= $91,181
40 mm Exp. Jt.	36 m x $246/m	= $8,856
Class A Conc.	82 m^3 x $390/$m^3$	= $31,980
Rebars	9,840 Kg x $1.20/Kg	= $11,808
MSE Walls	432 m^2 x $323/$m^2$	= $139,536
Rock Excavation	389 m^3 x $52/$m^3$	= $20,176
Ped. Half Cage	128 m x $118/m	= $15,104
Add. Rdwy Costs		= $25,960
		$466,637

Demolition
MOT (6-75) $10,000/night/direction x 12 nights = $120,000

KY 491 VE-2

Class A Super Conc.

17.028 m × 23.77 m × 2 × .20 m = 161.90 m^3

Rebars

.05 × 161.90 × 35.31 × 150 = 42,875 #

42,875 # × 454 g/lb. = 19,465,250 g = 19,465

KY 491
V.E. ALTERNATIVE NO. 3
COST COMPARISON

DESCRIPTION	UNIT COST	PROP'D QTY.	PROP'D COST	V.E. QTY.	V.E. COST
"AS PROPOSED" 2 SPAN (31.25-31.25) WITH MSE WALLS	$626,818	1	$ 626,818		
CROSSOVER	$521,068	1	$ 521,068		
DEMOLITION ("AS PROPOSED")	$120,000	1	$ 120,000		
V.E. NO. 3 NEW SUPER EXISTING SUBSTN	$374,706			1	$374,706
MOT	$120,000			1	$120,000
DEMOLITION V.E. NO. 3	$ 62,595			1	$ 65,595
TOTAL			$1,267,886		$557,301

Possible Savings $ 710,585

KY 491 VE 3

New Bridge on Existing Foundations & Wider

Assume Type III Conc Bms. @ 7'-10" ctrs

Class AA Conc.	83 m^3 x $445/$m^3$	= $36,935
Rebars	9,974 Kg x $1.40/Kg	= $13,964
PCIB III	7 x 81.69m x $274.18/m	= 156,784
40 mm Exp Jt.	36 m x $246/m	= 8,856
Class A Conc.	278 m^3 x $390/$m^3$	= $108,420
Rebars	33,423kg x $1.20/Kg	= $40,108
Ped. Half Cage	81.69m x $118/m	= $9,639
		374,706

Demolition $45/$m^2$ x 81.69m x 17.028m = $62,595

MOT I-75 $10,000/day/direction

$10,000 x

Conc

Widen EB 19.10 m^3/EB x2 = 38.20 m^3

" Pier 14.92 m^3/Pier x3 = 44.76 m^3

82.96 m^3

Rebars

.05 x 82.96 m^3 x 35.31 x 150 = 21970 #

21,970# x 454 g/lb = 9,974,380 g = 9,974 Kg

Conc - Super - Class A

81.69m long x .20 deep x 17.028m wide = 278.20 m^3

Rebars

5% x 278 x 35.31 x 150 = 73621 #

73,621# x 454 g/lb = 33,423,934 g = 33,423 Kg

VIII. SUMMARY OF RECOMMENDATIONS

SUMMARY OF RECOMMENDATIONS

It is the recommendation of the Value Engineering team that the following Value Engineering Alternatives be carried into the Project Development process for further development.

Recommendation Number 1-Drainage Blanket

The Value Engineering Team recommends that Value Engineering Alternative No. 1 be implemented. This alternative uses an untreated stone blanket.

If this recommendation can be implemented, there is a possible savings of $1,008,735.

Recommendation Number 2-KY 14/16 Structure

The Value Engineering Team recommends that Value Engineering Alternative No. 2 be implemented. This alternative replaces the existing bridge with a new structure but does not use a crossover for maintenance of traffic.

If this recommendation can be implemented, there is a possible savings of $ 461,100.

Recommendation Number 3-KY 14/16 Interchange Ramp Revision and Culvert Extension

The Value Engineering Team recommends that the Value Engineering Alternative be implemented. This alternative changes the proposed ramp revision and eliminates the culvert extension and fill.

If this recommendation can be implemented, there is a possible savings of $ 216,258.

Recommendation Number 4-Mainline Overlay and New Pavement Thickness

The Value Engineering Team recommends that the Value Engineering Alternative be implemented. This alternative minimizes the thickness by revising the pavement design.

If this recommendation can be implemented, there is a possible savings of $1,359,250.

Recommendation Number 5-Typical Section

The Value Engineering Team recommends that Value Engineering Alternative No. 4B be implemented. This alternative uses an 8 meter depressed median, uses a standard height single slope barrier in the median, uses 12'(3.6m) paved shoulders in the median, reduces the thickness of the median shoulder pavement and/or uses lesser grade of materials for the shoulder pavement in the median and feathers the shoulders down from the edge of pavement on the outside and does nothing outside the existing shoulders.

If this recommendation can be implemented, there is a possible savings of **$4,534,366.**

Recommendation Number 6-KY 491 Structure

The Value Engineering Team recommends that Value Engineering Alternative No. 1 be implemented. This alternative salvages the existing bridge by jacking it up to obtain the required vertical clearance and widens the existing bridge to obtain the desired typical section width.

If this recommendation can be implemented, there is a possible savings of **$ 866,800.**

If all the recommendations can be implemented, there is a possible total savings of **$8,446,509.**

I-75 WIDENING
V.E. STUDY PRESENTATION
SEPTEMBER 12, 1997

NAME	AFFILIATION	PHONE
BILL VENTRY	VENTRY ENGINEERING	(850) 627-3900
DON KEENAN	VENTRY ENGINEERING	(850) 627-3900
DUNCAN SILVER	VENTRY ENGINEERING	(801) 649-9559
KEVIN VILLIER	KYTC DIST. 5 DESIGN	(502) 367-6411
JOETTE FIELDS	KYTC HWY. DESIGN	(502) 564-3280
ROBERT SEMONES	KYTC HWY. DESIGN	(502) 564-3280
DALE CARPENTER	KYTC BRIDGE DESIGN	502) 564-4560
DARYL GREER	KYTC HWY. DESIGN	(502) 564-3280
LARRY TRENKAMP	KYTC D-6 COAST	(606) 341-2700
JERRY LOVE	VENTRY ENGINEERING	(850) 627-3900
ROBERT PARKS	FLORENCE & HUTCHESON	(502) 444-9691
GEORGE HOFFMAN	KYTC D6 PRE. CONSTR.	(606) 341-2700
JANET R. COFFEY	KYTC OPERATIONS	(502) 564-4556
TIM THARPE	KYTC OPERATIONS	(502) 564 4556
DAVID KRATT	KYTC DESIGN	(502) 564-3280
LEO FRANK	KYTC C/O DESIGN	(502) 564-3280