

I-64 EASTBOUND AND WESTBOUND OVER KY 1024

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| SPECIFICATIONS | |
| 2000 Standard Specifications for Road and Bridge Construction | |
| 1996 AASHTO Standard Specifications for Highway Bridges Including Interims through 2002. | |
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| | |
| REVISION | |
| DATE | |
| DATE: | February 2002 |
| CHECKED BY: | D. Carpenter |
| DESIGNED BY: | R. Finley |
| DETAILED BY: | P. Yost |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | |
| COUNTY | |
| CARTER | |
| ROUTE | CROSSING |
| I-64 | Flat Fork Rd. (Ky. 1024) |
| TITLE | |
| PREPARED BY | |
| Division of Bridge Design | |
| D. Carpenter Section | |
| SHEET NO. | |
| 1 | |
| DRAWING NO. | |
| 25462 | |

FILE NAME: D:\bridges\projects\Date-Carpenter\25462-Carter.dgn

USERNAME: PYOST

DATE: 13-JAN-2003

SHEET LOCATION: GN1

GENERAL NOTES

SPECIFICATIONS: All references to the standard Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction, with current supplemental specifications. All references to the AASHTO Specifications are to the current edition of the AASHTO Standard Specifications for Highway Bridges, with Interims.

LIVE LOAD: This bridge work is designed for HS25 live load or alternate military loading, whichever produces the greater stress. The HS25 live load is arrived at by increasing the standard HS20-44 truck and lane loads as specified in the AASHTO Specifications by 25%.

DESIGN METHOD: All reinforced concrete members are designed by the load factor method as specified in the current AASHTO Specifications.

REINFORCEMENT: Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Spacing of bars is from center to center of bars. Clear distance to face of concrete is 2 inches unless otherwise noted. Any reinforcing bars designated by suffix (e) in the Plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix (s) in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

CONCRETE: Class 'AA' is to be used throughout the new slab and barriers.

BEVELED EDGES: All exposed edges shall be beveled 1/8" unless otherwise shown.

BILL OF INCIDENTAL MATERIAL: The Contractor is responsible for furnishing enough material to complete the work in accordance with the Plans and Specifications. The cost of these items is to be included in the unit price bid for Class AA Concrete.

DIMENSIONS: Dimensions are for a normal temperature of 60° F Layout dimensions are horizontal measurements.

SUPERSTRUCTURE SLAB: The superstructure slab shall be poured continuously from out to out before the concrete is allowed to set.

ON-SITE INSPECTION: Each contractor submitting a bid for this work shall make a thorough inspection of the project site prior to submitting a bid and shall be thoroughly familiarized with existing conditions so that work can be expeditiously performed after a contract is awarded. Submission of a bid will be considered evidence of this inspection having been made. Any claims resulting from site conditions will not be honored by the Department of Highway.

EXISTING REINFORCING STEEL: The cost of cutting, bending and cleaning existing reinforcing steel is to be incidental to the unit price bid for Removing Concrete Masonry.

MASONRY SURFACE FINISH: Only areas detailed in the plans shall receive masonry coating. All coating shall be applied in accordance with the specifications.

REMOVAL OF EXISTING REINFORCED CONCRETE: This work shall include removal of existing expansion dams and armored edges at each end of the bridge for both structures, the reinforced concrete curbs and handrails for the entire length of each bridge structure plus other concrete noted on the plans and depositing of this material away from each bridge site. Proper care shall be taken to protect the concrete beams and substructure from damage during each operation. The contractor shall be responsible for any damage caused by falling particles. The cost of this work shall be included in the unit price bid for Removing Concrete Masonry.

TEXTURING: Texture the surface of the new slab in accordance with Section 609 of the specifications. Cost to texture the surface is included in the unit price bid for 'Concrete Class AA'

SAFELOADING: The existing bridge end drainage on the west end of both bridges is to be plugged and safe loaded in accordance with the specifications. All cost are to be included in the unit price bid for 'Safe Loading'.

DAMAGE TO THE STRUCTURE: The contractor is responsible for any and all damages to the structure during reconstruction, even to the replacement of entire spans and removal of the fallen spans at his expense, should they be allowed to fall due to his actions.

PREWETTING THE DECK: The contractor shall use a high pressure washer (minimum 1200 PSI @ 2 gal./min.) to wash the deck of any loose material and dirt prior to placing the reinforcement steel. The contractor shall also continuously water the deck for 2 hours before placing the new concrete and maintain visible moisture on the deck without standing water while the new slab is being poured. All cost of this work is incidental to Class 'AA' Concrete.

EXISTING ALUMINUM HANDRAIL: The existing aluminum handrail, including posts, shall be carefully removed and transported to the Carter County Maintenance Garage. This material shall remain the property of the department. All costs is incidental to Removing Concrete Masonry

REMOVAL EXISTING OVERLAY: The existing overlay shall be removed in accordance with the specifications. The contractor shall also remove any delaminations and any bituminous material on the existing deck. The deck should have a 1/4" amplitude roughness after the overlay removal. All cost associated with removing the existing overlay and removing all bad deck material is included in the unit price bid for 'Removal of Epoxy, Bituminous Foreign Overlays'.

GRADE ELEVATIONS: The Engineer shall check the alignment of the finishing machine calls to verify that the new slab will have a smooth driving surface. Dead load camber is insignificant on the bridge.

ORIGINAL DRAWING NUMBER: The original drawing number for this structure is 25462.

ARMORED EDGES: Contrary to the Standard Drawing BJE-001, c.e. cost to fabricate and install the steel Armored Edge is included in the unit price bid for 'Armored Edge'.

NEOPRENE EXPANSION JOINTS: The costs for armored edges used in the expansion dams shall be included in the cost of the Expansion Dam.

BAR SPLICES: The unit price bid for 'Bar Splices' includes all labor, tools, materials, equipment and incidentals to splice the slab reinforcement between Phase I and Phase II construction. The contractor has two options for splicing the bars:

Option I: Field bend the bars placed in the Phase I construction from a vertical position to a horizontal position and lap with Phase II reinforcement as detailed.

Option II: Provide and install a mechanical coupler meeting the following requirements:

A) The contractor must submit a detail of the mechanical coupler to the engineer showing how the coupler works into the final construction. The manufactures data sheet shall also be included in this submittal.

B) The contractor must submit test specimens as required by the Standard Specifications for testing and approval.

C) The contractor must submit a revised bill of reinforcement to the engineer showing the changes in bar length of the affected bars.

This bid item only addresses the splices in the slab between Phase I and Phase II construction. All other mechanical couplers needed will be addressed separately. The quantity of 'Bar Splices' shall be field verified with the plans. The 'Bar Splices' are counted without regard for different sizes of splices. A splice for a No. 4, No. 5, and a No. 6 bar all count as equally as one 'Bar Splice'. The quantity for the reinforcement needed for Option I is included in the bid for 'Steel Reinforcement Epoxy Coated'. No adjustment in pay quantity for 'Steel Reinforcement Epoxy Coated' will be made regardless of the option used.

| ITEM NUMBER |
|-------------|
| 9-2008.00 |

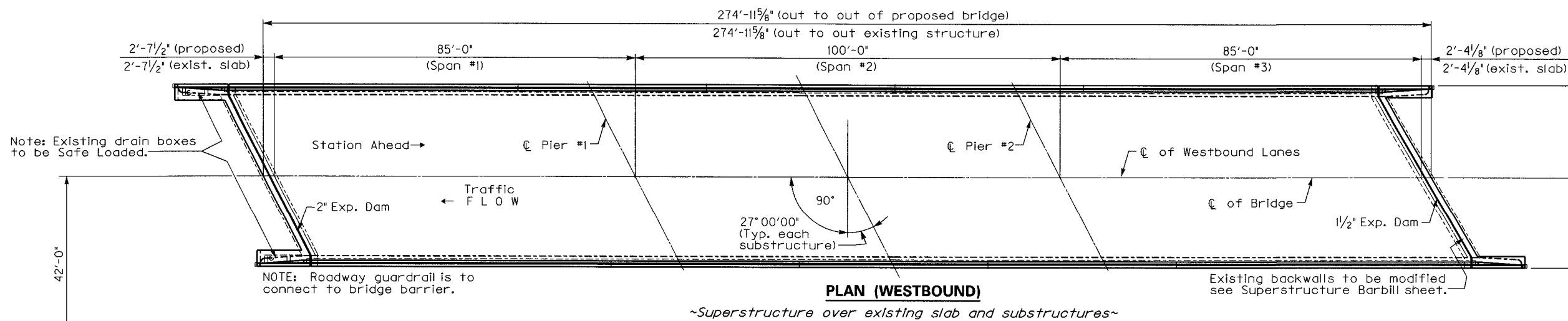
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|---------------------------|--------------------------|
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| | |
| REVISION | |
| DATE: | February 2001 |
| DESIGNED BY: | R. Finley |
| DETAILED BY: | P. Yost |
| CHECKED BY | |
| D. Carpenter | |
| R. Finley | |
| Commonwealth of Kentucky | |
| DEPARTMENT OF HIGHWAYS | |
| COUNTY | |
| CARTER | |
| ROUTE | CROSSING |
| I-64 | Flat Fork Rd. (Ky. 1024) |
| GENERAL NOTES | |
| PREPARED BY | |
| Division of Bridge Design | |
| D. Carpenter Section | |
| SHEET NO. | |
| 2 | |
| DRAWING NO. | |
| 25462 | |

FILE NAME: D:\bridges\projects\dale.carpenter\25462.carter.dgn

USERNAME: PYOST

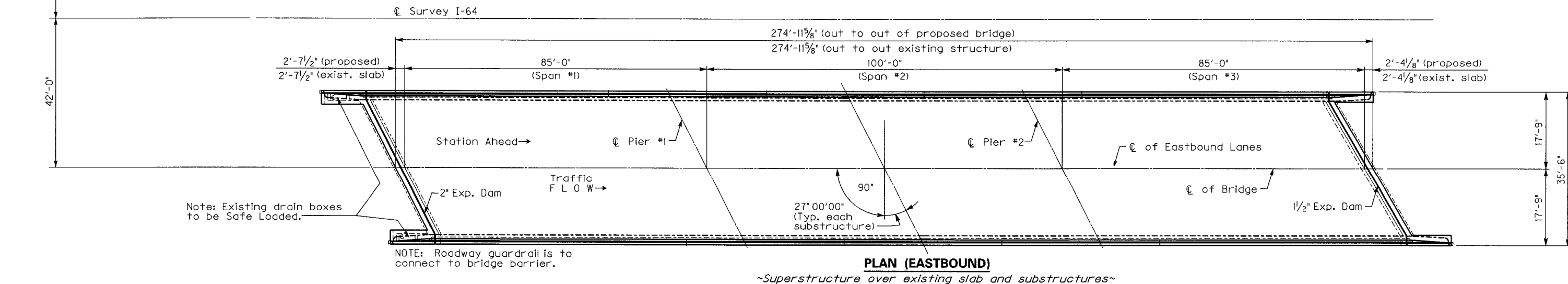
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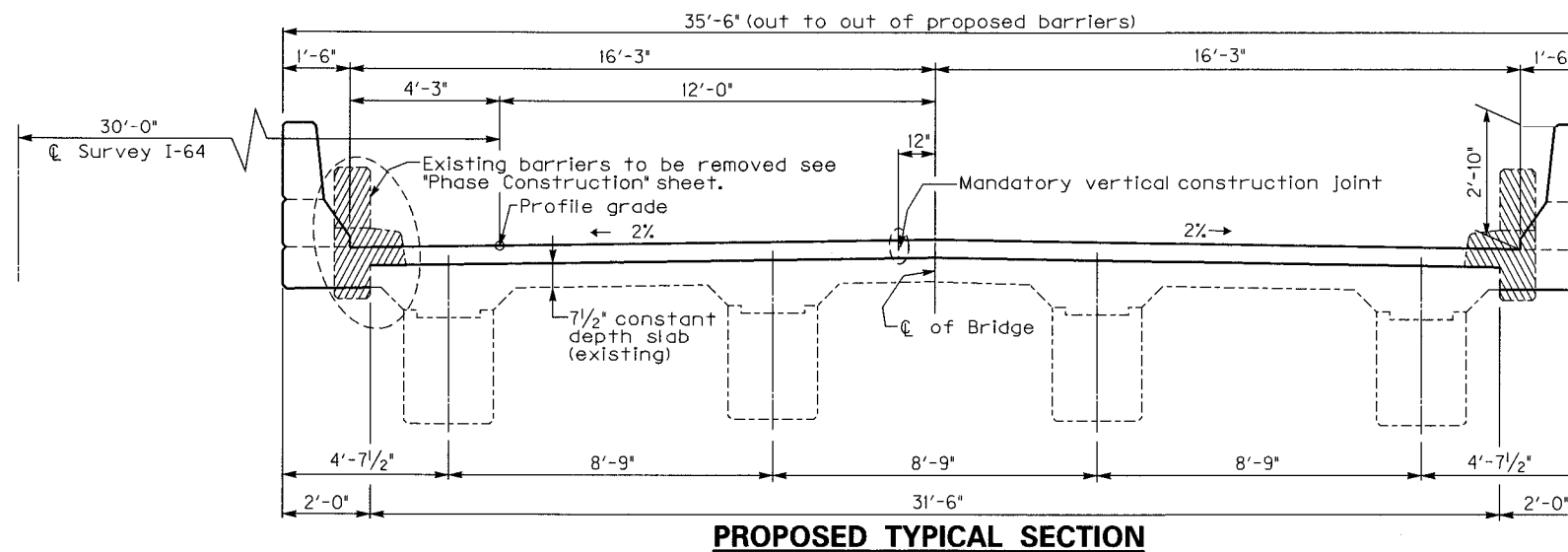
PLAN (WESTBOUND)

~Superstructure over existing slab and substructures~



PLAN (EASTBOUND)

~Superstructure over existing slab and substructures~



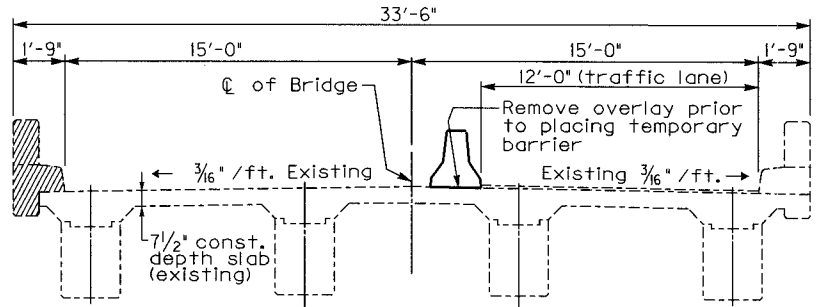
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| REVISION | | DATE |
| DATE: | February 2002 | CHECKED BY |
| DESIGNED BY: | R. Finley | D. Carpenter |
| DETAILED BY: | P. Yost | R. Finley |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY CARTER | | |
| ROUTE I-64 | CROSSING Flat Fork Rd. (Ky. 1024) | |
| LAYOUT | | |
| PREPARED BY Division of Bridge Design | | SHEET NO. 3 |
| D. Carpenter Section | | DRAWING NO. 25462 |

FILE NAME: D:\bridges\projects\Date-Carpenter\25462-Carter.dgn

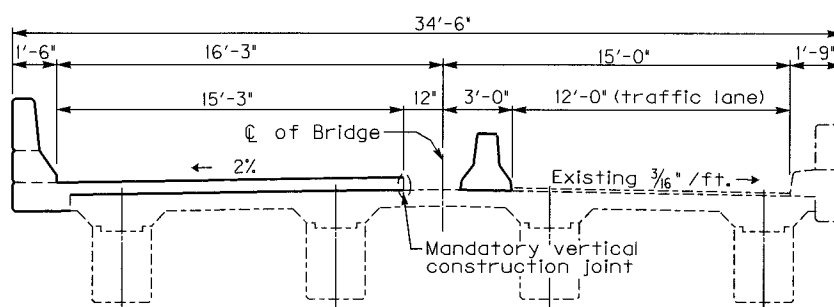
USERNAME: PYOST

DATE: 13-JAN-2003

SHEET LOCATION: PCI

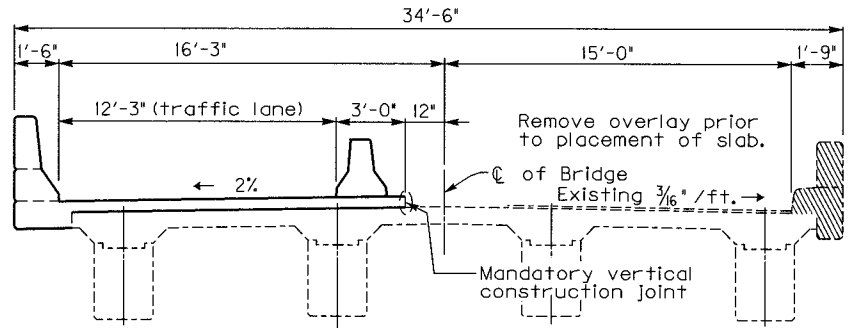


TYPICAL SECTION
~Showing Phase I Removal~

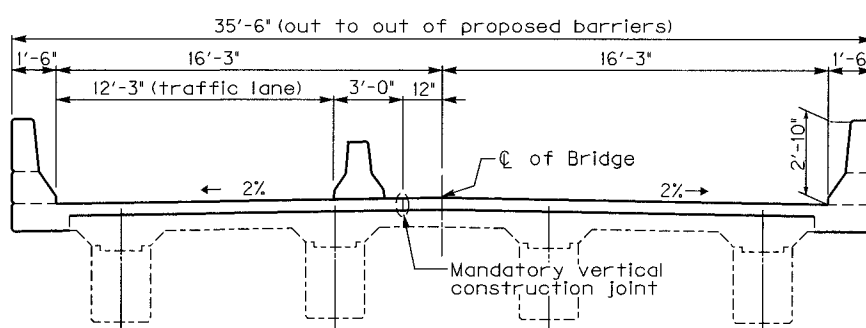


TYPICAL SECTION
~Showing Phase I Construction~

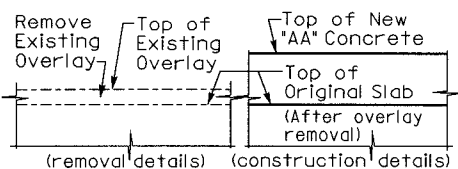
Construction and removal for
Eastbound bridge is shown
Westbound bridge is opposite hand



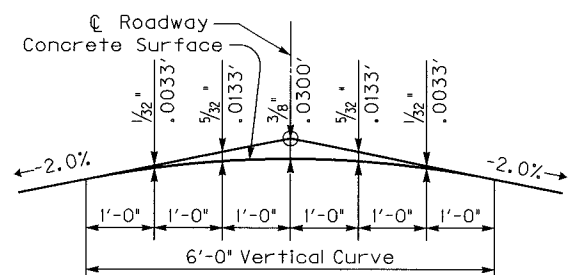
TYPICAL SECTION
~Showing Phase II Removal~



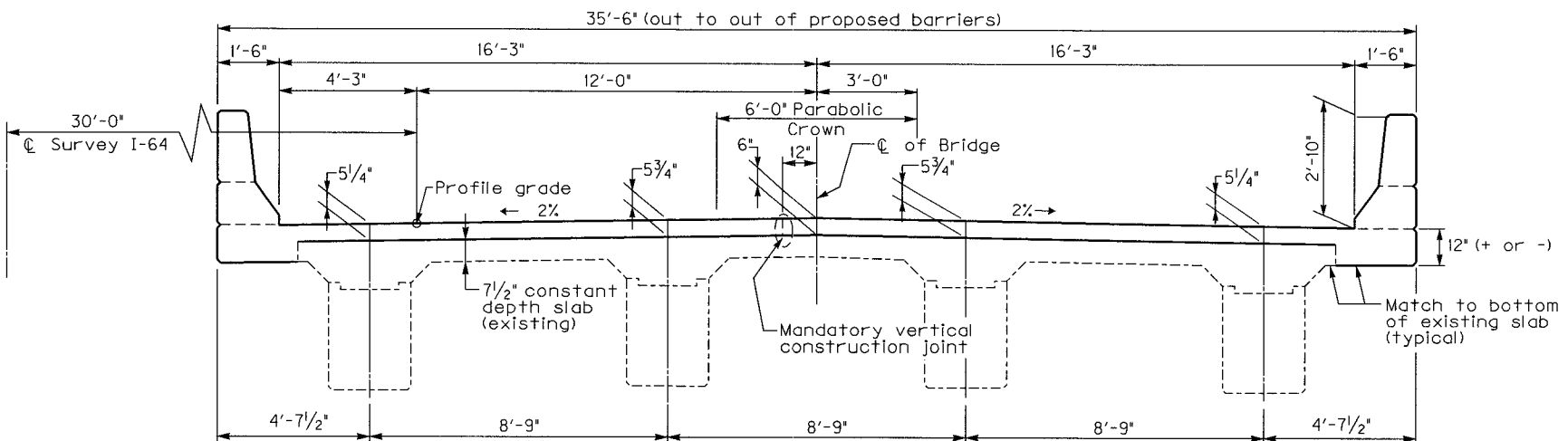
TYPICAL SECTION
~Showing Phase II Construction~



TYPICAL SLAB SECTION



PARABOLIC CROWN



TYPICAL SECTION
~Showing completed superstructure~

| |
|-------------|
| ITEM NUMBER |
| 9-2008.00 |

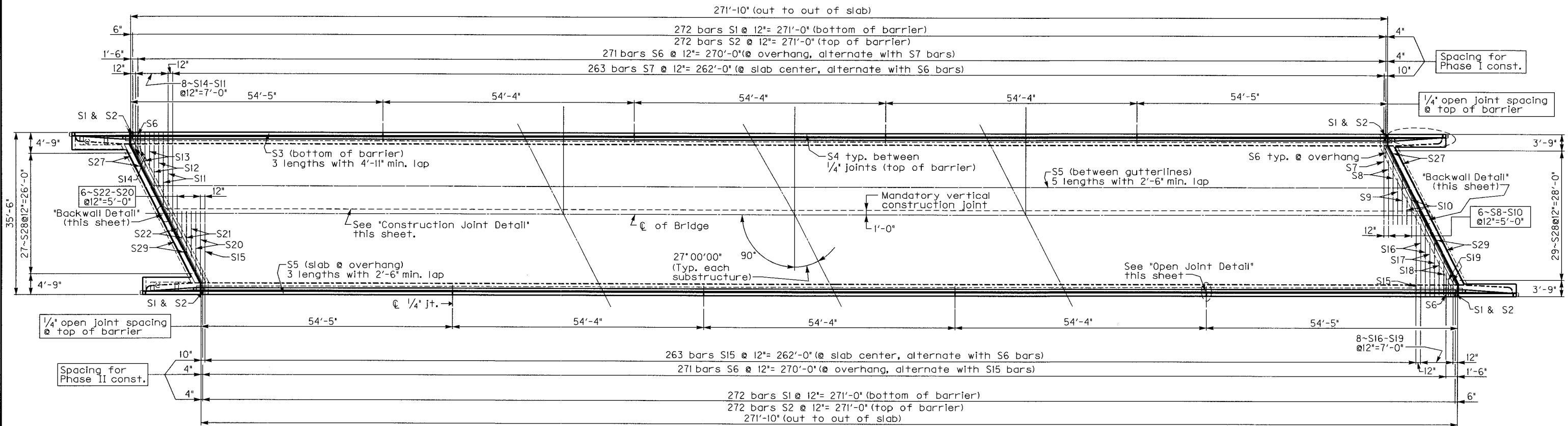
| | | |
|--|--------------------------------------|----------------------|
| REVISION | | DATE |
| DATE: | February 2002 | CHECKED BY |
| DESIGNED BY: | R. Finley | D. Carpenter |
| DETAILED BY: | P. Yost | R. Finley |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY CARTER | | |
| ROUTE I-64 | CROSSING Flat Fork Rd. (Ky. 1024) | |
| PHASE CONSTRUCTION | | |
| PREPARED BY Division of Bridge Design D. Carpenter Section | | SHEET NO. 4 |
| | | DRAWING NO. 25462 |

FILE NAME: D:\bridges\projects\Date_Carpenter_Section\25462-Carter\25462-Carter.dgn

USERNAME: PYOST

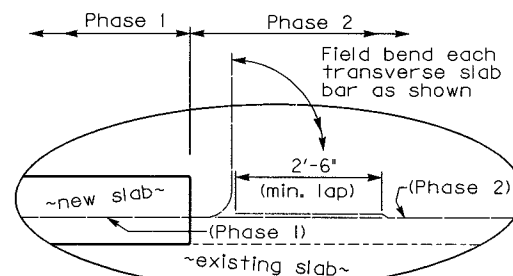
DATE: 13-JAN-2003

SHEET LOCATION:

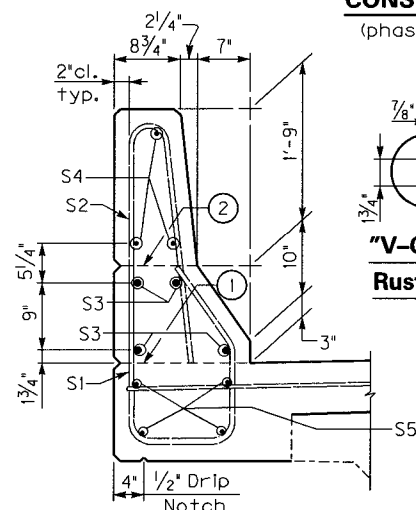


*PLAN FOR EASTBOUND & WESTBOUND BRIDGES

*Substructure removal and construction to be performed in synchronization with Phase work of superstructure



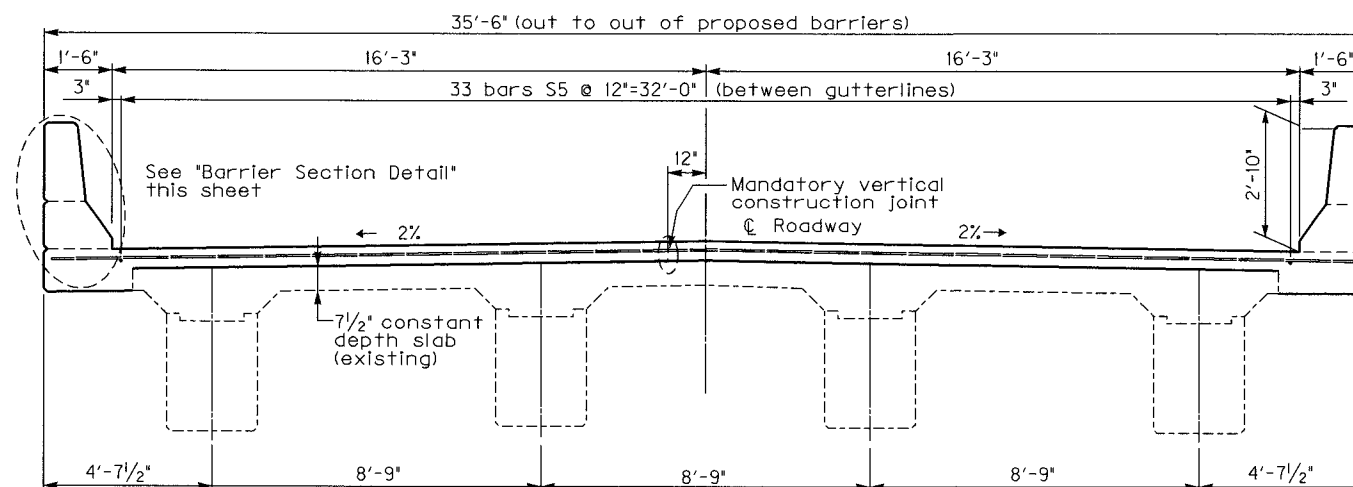
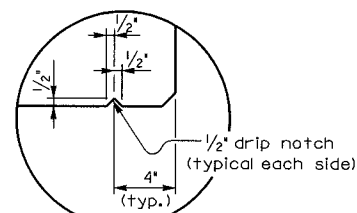
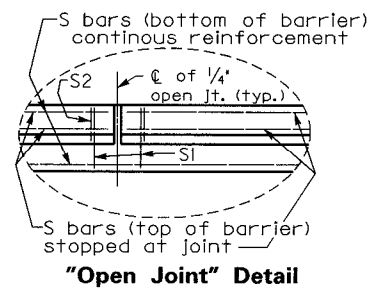
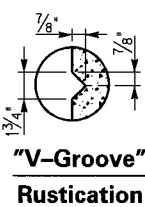
CONSTRUCTION JOINT DETAIL
(phase construction lap detail)



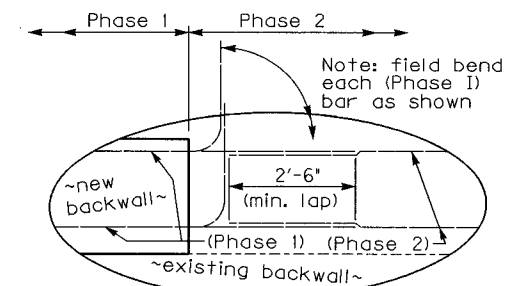
BARRIER SECTION

① Level mandatory roughened construction joint. Concrete above this joint to be placed after the slab has been properly cured.

② Permissible construction joint. "V-Groove" rustication joint is required if construction joint is used.



PROPOSED TYPICAL SECTION



BACKWALL DETAIL
(phase construction lap detail)

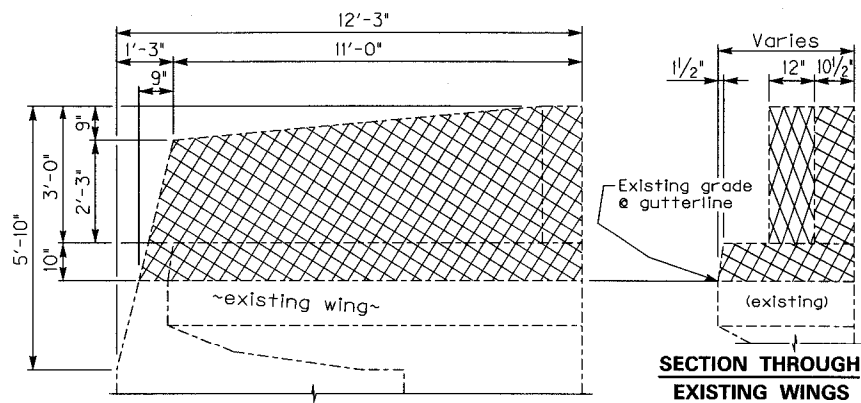
| REVISION | | DATE |
|--|---|-----------------------------|
| DATE: | February 2002 | CHECKED BY |
| DESIGNED BY: | R. Finley | D. Carpenter |
| DETAILED BY: | P. Yost | R. Finley |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY CARTER | | |
| ROUTE I-64 | CROSSING Flat Fork Rd. (Ky. 1024) | |
| SUPERSTRUCTURE | | |
| PREPARED BY Division of Bridge Design | | SHEET NO. 5 |
| D. Carpenter Section | | DRAWING NO. 25462 |

FILE NAME: D:\bridges\projects\Date_Carpenter_Section\25462_Carter.dgn

USERNAME: PYOST

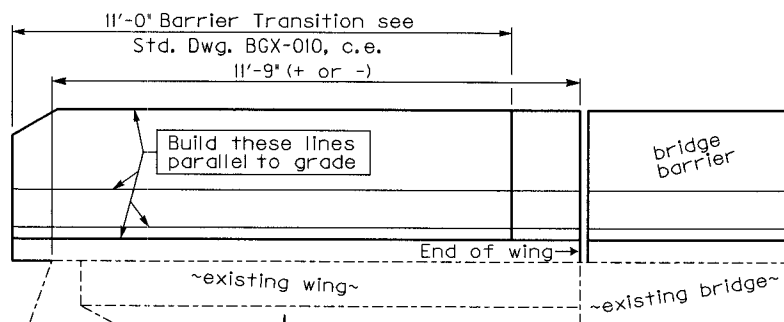
DATE: 13-JAN-2003

SHEET LOCATION: 2SS



ELEVATION @ EXISTING WING
(Showing concrete removal)

SECTION THROUGH EXISTING WINGS



ELEVATION @ EXISTING WINGS
(Showing new construction)

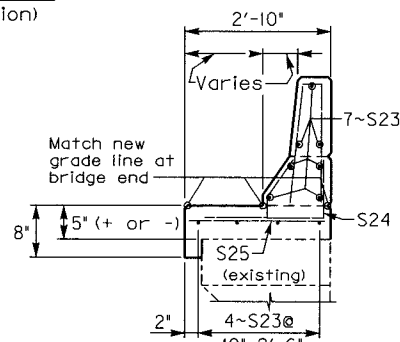


PLAN @ EXISTING SHORT WINGS
(Acute shown typical each wing)

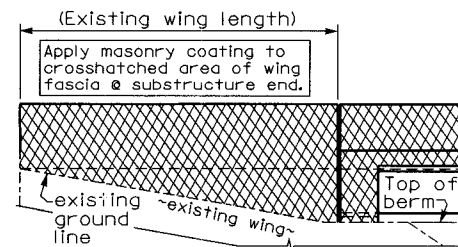
WING DETAILS @ END BENT #2N & #2S

Details typical for each existing wing. (4 wings total)

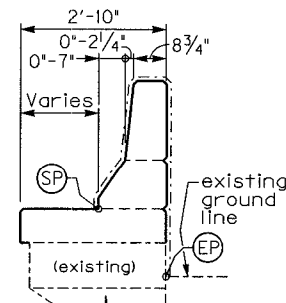
NOTE: Remove cross-hatched area of the existing structure. Clean and straighten protruding reinforcement to allow proper bonding to new concrete. Include all cost associated with this work in the bid for Remove Concrete Masonry.



SECTION THROUGH WING



BARRIER WING ELEVATION @ FASCIA

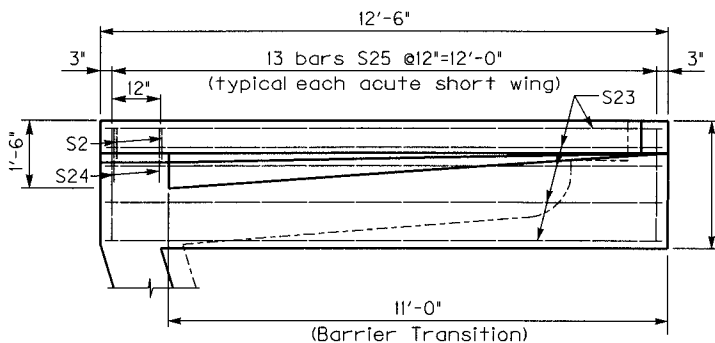


SP Start Point EP End Point
Denotes perimeter area of required masonry coating.

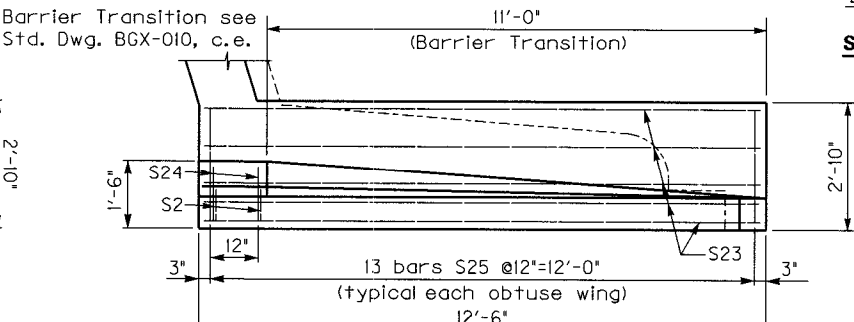
SECTION THROUGH WING

MASONRY COATING DETAILS

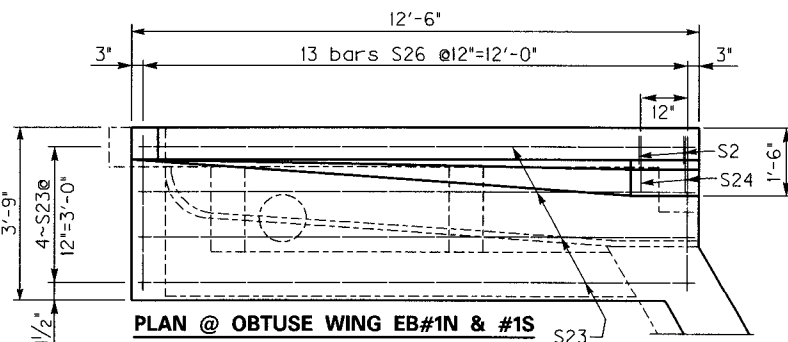
(typical each wing, 4/drain box, 4/without, 8 total)



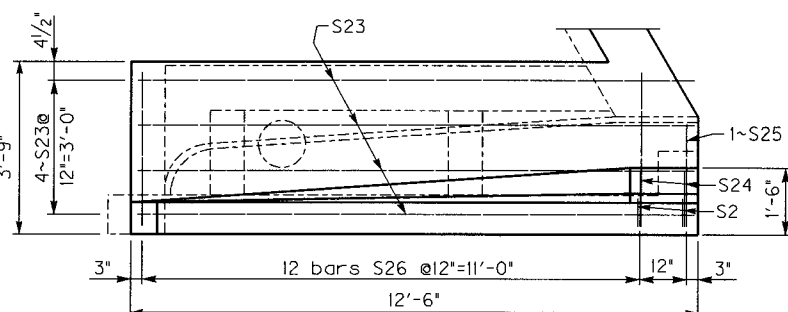
PLAN @ ACUTE WING EB#2N & #2S



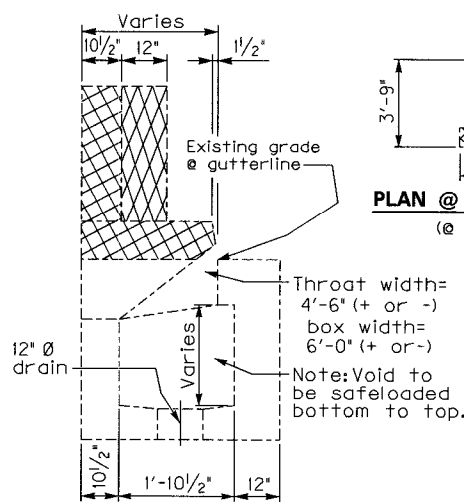
PLAN @ OBTUSE WING EB#2N & #2S



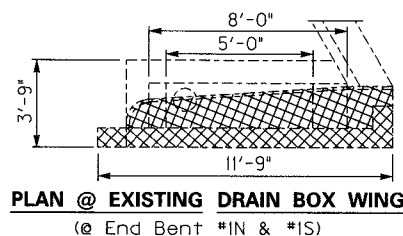
PLAN @ OBTUSE WING EB#1N & #1S



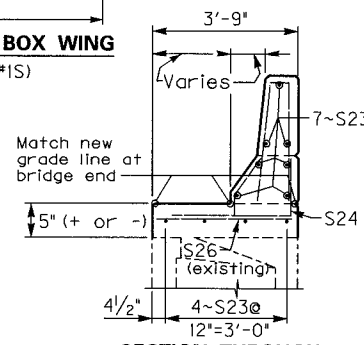
PLAN @ ACUTE WING EB#1N & #1S



SECTION THROUGH EXISTING DRAIN BOX WING



PLAN @ EXISTING DRAIN BOX WING
(@ End Bent #1N & #1S)



SECTION THROUGH DRAIN BOX WING

(typical each wing with drain box, 4 total)

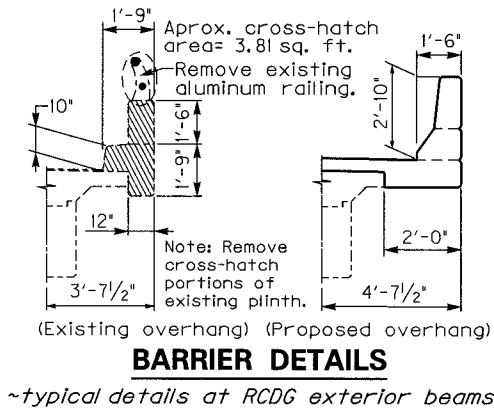
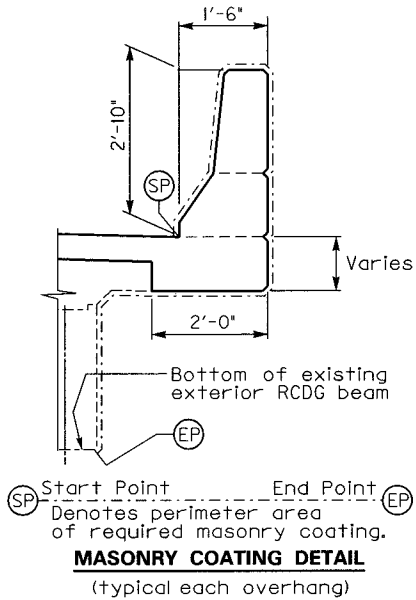
WING DETAILS @ END BENT #1N & #1S

Details typical for drain box wings.

ITEM NUMBER

9-2008.00

| REVISION | | DATE |
|---------------------------|--------------------------|--------------|
| DATE: | February 2002 | CHECKED BY |
| DESIGNED BY: | R. Finley | D. Carpenter |
| DETAILED BY: | P. Yost | R. Finley |
| Commonwealth of Kentucky | | |
| DEPARTMENT OF HIGHWAYS | | |
| COUNTY | | |
| CARTER | | |
| ROUTE | CROSSING | |
| I-64 | Flat Fork Rd. (Ky. 1024) | |
| Barrier & Wing Details | | |
| PREPARED BY | | SHEET NO. |
| Division of Bridge Design | | 6 |
| D. Carpenter Section | | DRAWING NO. |
| | | 25462 |

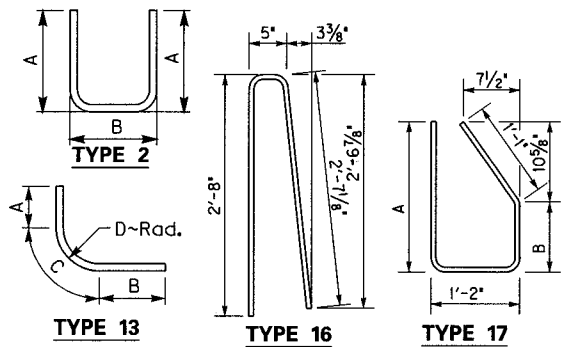


BARRIER DETAILS

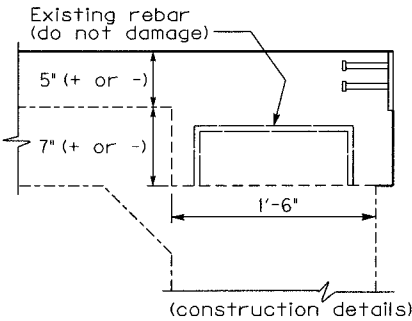
~typical details at RCDG exterior beams~

***BILL OF REINFORCEMENT FOR 2 STRUCTURES**

| MARK | TYPE | NO. | SIZE | LENGTH | LOCATION | A/E | B/F | C/G | D/H |
|------|------|------|------|--------|---------------------|----------|----------|----------|------|
| S1e | 17 | 1088 | 5 | 5- 1 | Barrier (bottom) | 1- 11/8 | 1- 1 3/8 | | |
| S2e | 16 | 1104 | 5 | 5- 7 | Barrier (top) | | | | |
| S3e | Str. | 80 | 8 | 58- 3 | Barrier (bottom) | | | | |
| S4e | Str. | 60 | 5 | 54- 0 | Barrier (top) | | | | |
| S5e | Str. | 410 | 5 | 56- 4 | Slab | | | | |
| S6e | Str. | 1084 | 5 | 3- 0 | Slab @ overhangs | | | | |
| S7e | 13 | 526 | 5 | 19- 5 | Slab @ center | 2- 6 | 16- 7 | 0- 4 1/4 | 0- 3 |
| S8e | 13 | 4 | 5 | 14- 2 | Slab @ skew ends | 2- 6 | 11- 4 | 0- 4 1/4 | 0- 3 |
| S9e | 13 | 4 | 5 | 10- 3 | Slab @ skew ends | 2- 6 | 7- 5 | 0- 4 1/4 | 0- 3 |
| S10e | 13 | 4 | 5 | 6- 4 | Slab @ skew ends | 2- 6 | 3- 6 | 0- 4 1/4 | 0- 3 |
| S11e | Str. | 4 | 5 | 15- 10 | Slab @ skew ends | | | | |
| S12e | Str. | 4 | 5 | 11- 11 | Slab @ skew ends | | | | |
| S13e | Str. | 4 | 5 | 8- 0 | Slab @ skew ends | | | | |
| S14e | Str. | 4 | 5 | 4- 1 | Slab @ skew ends | | | | |
| S15e | Str. | 526 | 5 | 18- 4 | Slab @ center | | | | |
| S16e | Str. | 4 | 5 | 15- 10 | Slab @ skew ends | | | | |
| S17e | Str. | 4 | 5 | 11- 11 | Slab @ skew ends | | | | |
| S18e | Str. | 4 | 5 | 8- 0 | Slab @ skew ends | | | | |
| S19e | Str. | 4 | 5 | 4- 0 | Slab @ skew ends | | | | |
| S20e | Str. | 4 | 5 | 13- 1 | Slab @ skew ends | | | | |
| S21e | Str. | 4 | 5 | 9- 2 | Slab @ skew ends | | | | |
| S22e | Str. | 4 | 5 | 5- 3 | Slab @ skew ends | | | | |
| S23e | Str. | 88 | 5 | 12- 2 | Wings | | | | |
| S24e | 17 | 16 | 5 | 3- 11 | Wings | 1- 4 1/8 | 0- 6 3/8 | | |
| S25e | Str. | 54 | 5 | 2- 6 | Wings @ EB #2N & 2S | | | | |
| S26e | Str. | 50 | 5 | 3- 5 | Wings @ EB #1N & 1S | | | | |
| S27e | 13 | 20 | 5 | 20- 5 | Backwalls | 2- 6 | 17- 7 | 0- 4 1/4 | 0- 3 |
| S28e | 2 | 112 | 5 | 2- 10 | Backwalls | 1- 1 | 0- 11 | | |
| S29e | Str. | 20 | 5 | 19- 4 | Backwalls | | | | |

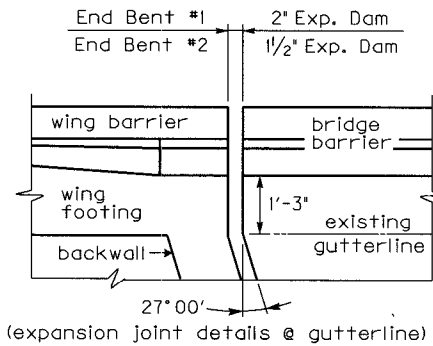
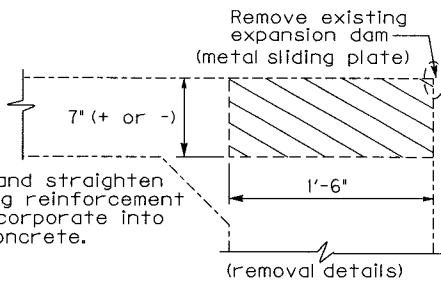


Note: Quantities shown in this barbill include the required reinforcement for both Eastbound & Westbound structures as detailed in these plans.



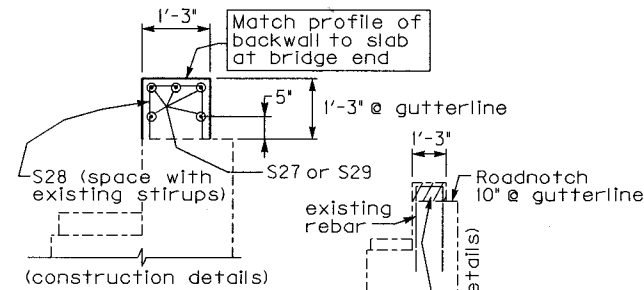
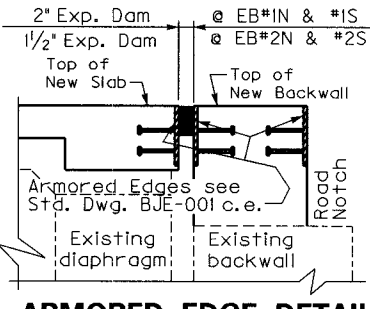
SLAB END DETAILS @ SUBSTRUCTURE
(typical each end of bridge)

NOTE: Clean and straighten existing reinforcement and incorporate into new concrete.



ARMORED EDGE DETAILS

(typical each end of bridge)



NOTE: Remove cross-hatched portion of existing concrete in backwall to bottom of existing roadnotch, clean and straighten existing reinforcement and embed into new concrete.

BACKWALL DETAILS @ SUBSTRUCTURE

| |
|-------------|
| ITEM NUMBER |
| 9-2008.00 |

| | | |
|--|---|-----------------------------|
| REVISION | | DATE |
| DATE: February 2002 | CHECKED BY | |
| DESIGNED BY: R. Finley | D. Carpenter | |
| DETAILED BY: P. Yost | R. Finley | |
| Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS | | |
| COUNTY CARTER | | |
| ROUTE I-64 | CROSSING Flat Fork Rd. (Ky. 1024) | |
| SUPERSTRUCTURE BARBILL | | |
| PREPARED BY Division of Bridge Design | | SHEET NO. 7 |
| D. Carpenter Section | | DRAWING NO. 25462 |