P-001-2011

cc: R. Nunley
S. Ross
S. Gutti
A. Calvin
D. Moses
M. Hite
M. Vaughn

M E M O R A N D U M

TO: Keith Damron, P.E.
Division of Planning

BY: Bart Asher, P.E., P.L.S.
Geotechnical Branch Manager

DATE: March 7, 2011

SUBJECT: **Mercer-Garrard County**
KY 152 (Kennedy Bridge Road) over Herrington Lake
Item # 7-1116.00
Preliminary Geotechnical Assessment

1. Location and Project Description

This project is located where KY 152 (Kennedy Bridge Road) crosses Herrington Lake at the border of Mercer and Garrard Counties. The bridge was constructed in order to keep the road open once Herrington Lake was built by Kentucky Utilities (KU). The bridge was finished and turned over to the adjoining counties on April 7, 1925 (*Mahan*). Water began impounding in the Lake on March 17, 1925.

The Division of Planning is conducting a Data, Needs and Analysis (DNA) study for the subject project. Project meeting notes indicate that there are currently four options for the replacement:

- Alternate 1: No Build
- Alternate 2: Replace with a bridge at same location
- Alternate 3: Replace at an adjacent location
- Alternate 4: Replace at an alternate location

This abbreviated review will discuss some geotechnical concerns with alternates 2 and 3. Alternate 4 can be reviewed by this office once an alternate location is considered.

The approximate coordinates for this site are: 37.746185 degrees North and -84.703665 degrees West.

2. Site Topography and Geologic Conditions

The current bridge spans Herrington Lake over what once was a deep gorge with Dix River flowing at the bottom. The existing profile indicates that the Mercer County side was basically a sheer cliff before the water was impounded. The slope on the Garrard county side is more gentle but still has some large vertical drops. The entire area of the lake surrounding the bridge has similar topography. It was noted during a field visit that the tops of some of the surrounding cliffs are substantially higher in elevation than where the bridge was constructed.

The site is located in the Bryantsville Quadrangle (# 945). The geologic mapping indicates that the bedrock at this site is (Source KGS):

- Tyrone Limestone – Limestone, of two types: (1) light-gray to light-olive-gray, cryptograined, containing specks and small tubes of clear calcite (birdseye limestone), and (2) very light gray to light-brownish-gray, cryptograined, containing pods and interlaced tubes of yellowish-gray, micrograined, calcareous dolomite. Birdseye limestone predominates in northern part of quadrangle and limestone containing dolomite bodies in southern part of quadrangle. Bentonite, as much as 2 feet thick, is present at top southwest of a line from the northwest corner of the quadrangle to Pollys Bend; a second bentonite bed, as much as 2 feet thick, is present about 25 feet below the top in all but the northwest corner of the quadrangle; a third bentonite bed, 0.1 to 0.3 foot thick and about 80 feet below the top, is present throughout the quadrangle. The upper two bentonites, and locally the lowermost bentonite, are underlain by thin chert layers. Chert nodules are present in some beds. Limestone immediately above the lowermost bentonite contains planar laminae of calcareous dolomite. Persistent units of argillaceous limestone and shale are present in uppermost 10 feet and in middle of unit.

  The Tyrone limestone is the type of bedrock visible in the surrounding cliffs.

- Oregon Formation – Interbedded dolomite and limestone: Dolomite is calcareous, yellowish gray to yellowish white, micrograined to very finely crystalline, thick bedded. Limestone is light gray to light brownish gray, cryptograined; some limestone beds contain pods and interlaced tubes of calcareous dolomite. Contacts are placed at top of highest and base of lowest dolomite bed. Unit thins southward by grading of upper dolomite beds into limestone.

- Camp Nelson Limestone - Limestone, light-gray to light-brownish-gray, cryptograined, containing pods and irregular interlaced tubes of yellowish-gray, micrograined, calcareous dolomite that make up 20 to 50 percent of the rock. Tubes commonly lie in a tangled network parallel to bedding, though some cut across bedding. Contains several zones of cryptograined limestone with specks and minute tubes of clear calcite. Calcareous shale, 5 to 10 feet thick, its base 10 to 15 feet below top of the formation, is present throughout the quadrangle.

  It appears, from available mapping, that the base of Pier 2 and Pier 3 is located in the Camp Nelson Limestone.

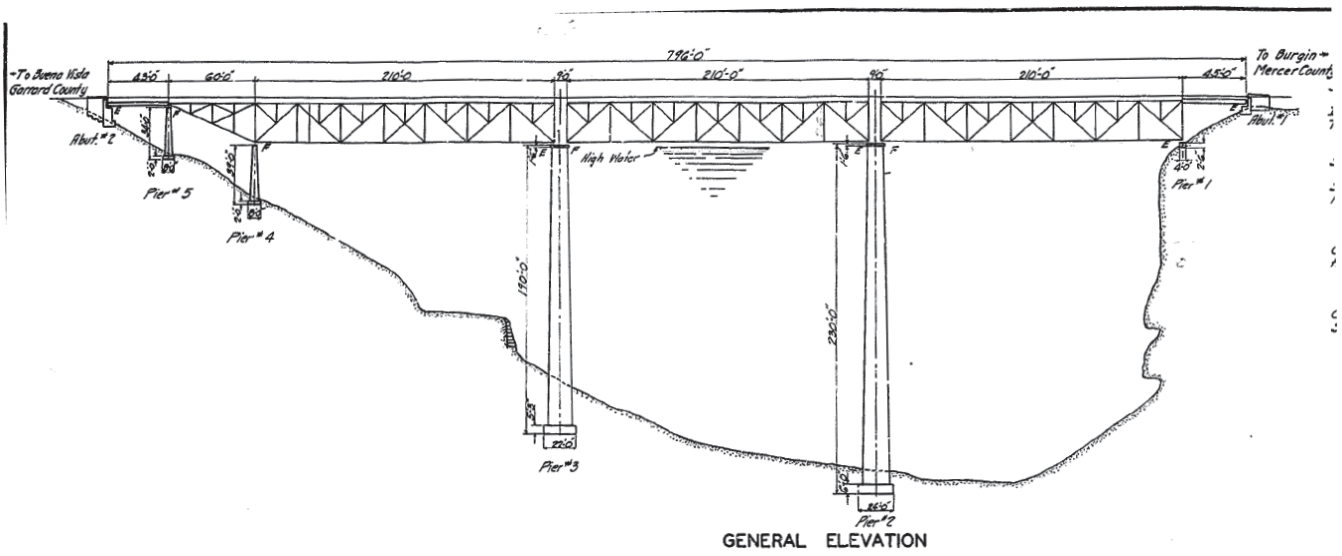
The available mapping indicates fault lines within approximately one mile of the bridge. Additionally, the Kentucky River Fault Zone is within approximately 3 miles of the existing bridge location.

Mapping indicates that this area has numerous karst features. Karst features may include sinkholes, caves and solution features in the bedrock.

3. Discussion of Alternates 2 and 3 Replace with Bridge at Same or Adjacent Location

A bridge at the same location may require a new foundation or portions of the existing foundations may be reused. This office has discussed reuse of these piers in the past.

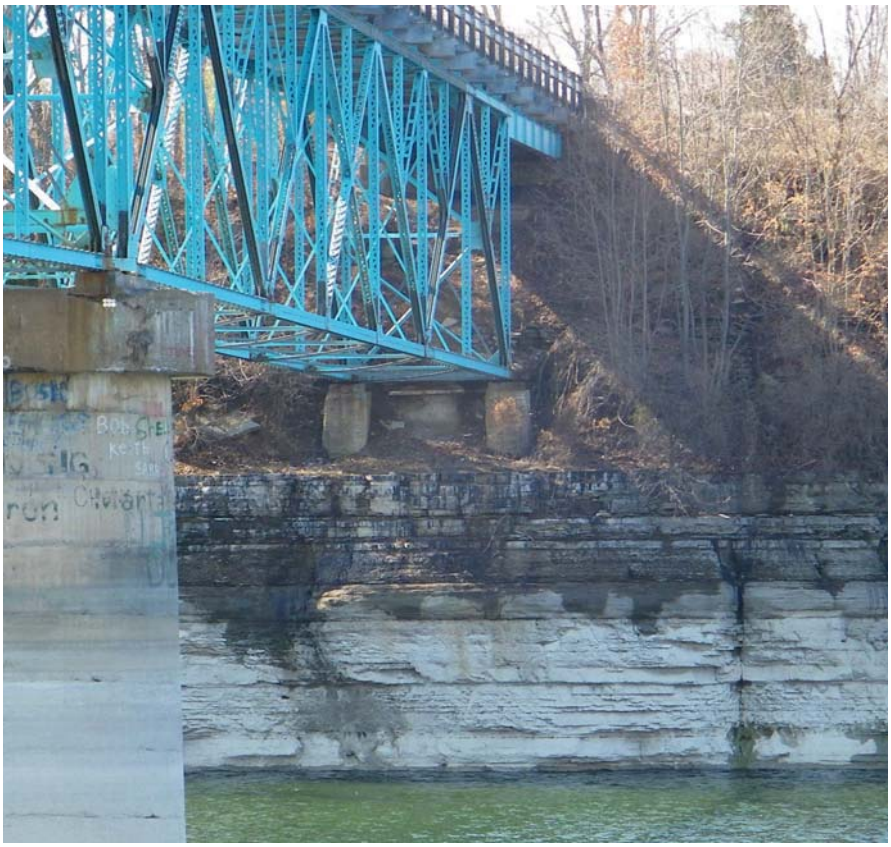
A site visit was performed to review the existing piers. It is unlikely that it would be desirable or economically viable to reuse abutment number 1, abutment number 2, or piers 1, 4 or 5 as shown in the below schematic (retrieved from the Division of Structural Design's plan database). Due to their size and location in the lake, it could be very desirable to reuse piers 2 and/or 3.



Profile view of the existing bridge

Abutment 1

P-001-2011
Mercer-Garrard County
KY 152 over Lake Herrington



Pier 1

Pier 3 (front) Pier 2 (rear)

P-001-2011
Mercer-Garrard County
KY 152 over Lake Herrington

Pier 4

Pier 5

Abutment 2

An article by F.C. Mahan from the *Kentucky Engineer* (year unknown - see appendix) supplied to this office by the District indicates that there have been some significant problems at Pier 2. Once the downstream dam was constructed and water began to back up around the piers it was noted that Pier 2 was actually rising and rotating. In the article Mahan states that the earliest inspection on record was in March of 1932 and that the top of Pier 2 was 1.33 feet higher than pier 3. (Mahan indicates that earlier records had been lost in a fire). Both were supposedly constructed to the same elevation. Mahan also states that "At the height of the movement the pier had risen approximately 30" and had tilted upstream and toward the Mercer County side approximately 12"." This office does not have current information that indicates the elevation difference between the two piers.

The article goes on to discuss various theories behind the movement. Those stated are:

1. *Trapped gas under footing.*
2. *Hydrostatic pressure*
3. *Since the lime cliffs are full of crevices, holes, etc. and may be cavernous in places, the extra weight of the water may have caused some shift in the immediate terrain.*
4. *There is a possibility of heaving of the bottom when certain strata are wet and softened.*

The article goes on to add that "Careful observations also indicate that possibly the whole cliff on the Mercer County side may be slowly moving toward the lake."

There was no conclusive evidence at that time or at this point to indicate the probable mechanism that caused the movement. Mapping does indicate that bentonite layers are prevalent in the Tyrone formation, which is presumably above the footing elevation of Pier 2. Some types of bentonite are known to swell to numerous times their dry size when water is added.

In order to make a decision as to whether Pier 2 and/or Pier 3 can be reused, a thorough investigation would be required. Drilling through the footing in numerous places would be desirable to examine the bearing stratum of both piers. Additionally, the existing concrete would need to be examined so that a useful remaining service life can be determined. Similar studies have been undertaken by the Cabinet in the past.

Replacement of the bridge at approximately the same location or just adjacent to this location, without the reuse of the piers, will also require a very thorough site investigation. It would be very desirable to try to find out the mechanism that caused the movement at pier 2 so that future problems with a new bridge can be avoided.

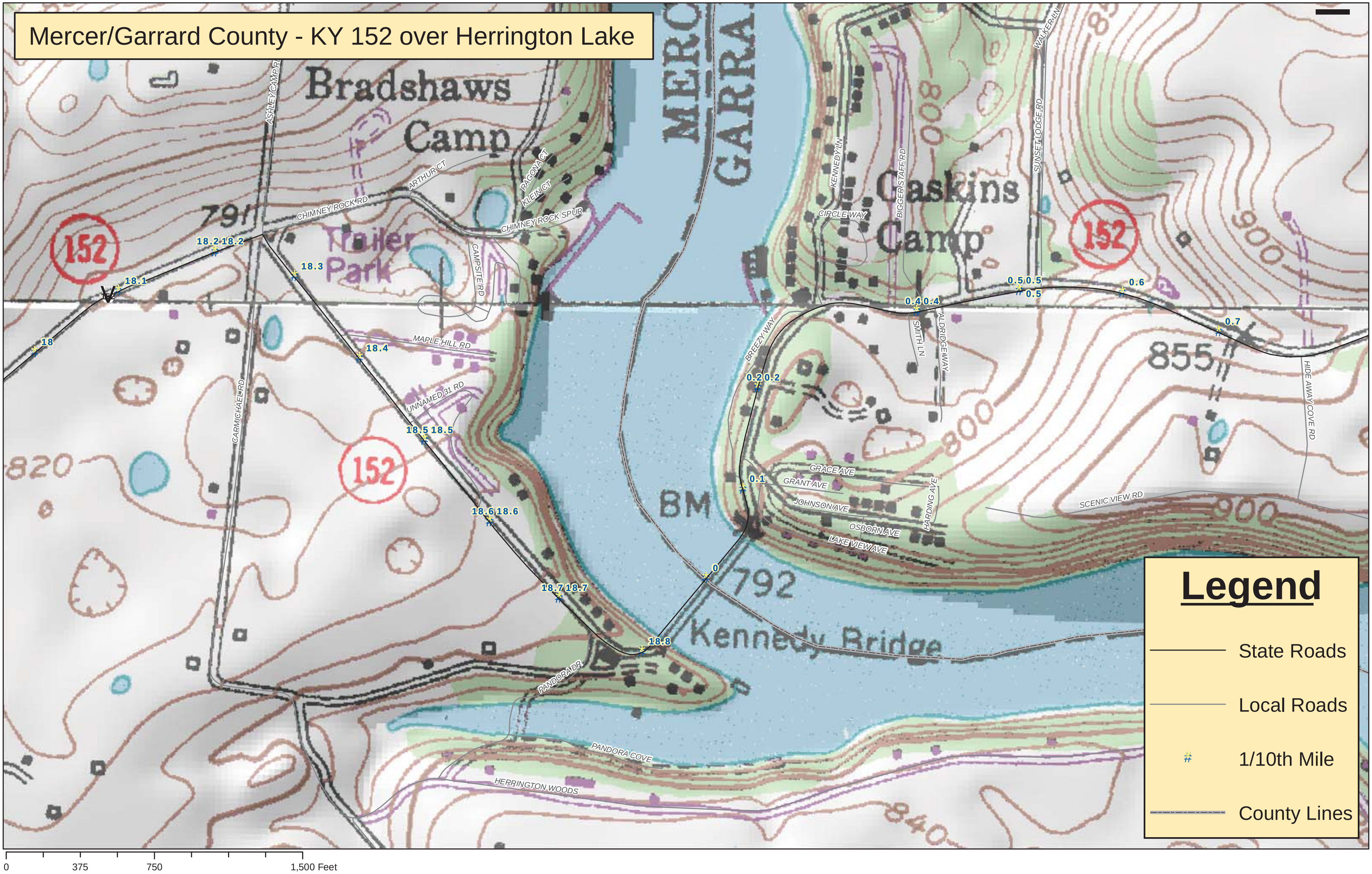
4. New Foundation and Superstructure Discussion

New foundations in the water would likely be large (12–14 foot) diameter drilled shafts socketed well into bedrock. This construction would have to take place from floating equipment due to the extreme depth of the lake. Conventional piers and stub abutments could likely be used on the shoreline.

A new superstructure on the existing or new foundations would likely be a plate girder structure or another truss of some type.

Attachments:

Site Map
Mahan Article
Bridge Inspection Report
Historical Plans (no plans for the initial construction were located)



Mercer/Garrard County - KY 152 over Herrington Lake
Legend
State Roads
Local Roads
1/10th Mile
County Lines
0
375
750
1,500 Feet
Bradshaws Camp
Trailer Park
Caskins Camp
Kennedy Bridge
CHIMNEY ROCK RD
CHIMNEY ROCK SPUR
ARTHUR CT
RAGONA CT
KLEIN CT
CAMPSITE RD
MAPLE HILL RD
UNNAMED 31 RD
CARMICHAEL RD
PANDORA DR
PANDORA COVE
HERRINGTON WOODS
BREEZY WAY
KENNEDY LN
CIRCLE WAY
BIGGER STAFF RD
SMITH LN
ALDRIDGE WAY
SUNSET LODGE RD
WALKER LN
GRACE AVE
GRANT AVE
JOHNSON AVE
OSBORN AVE
LAKE VIEW AVE
HARDING AVE
SCENIC VIEW RD
HIDE AWAY COVE RD

Kennedy Mill Bridge

By F. C. Mahan, M.E. 1906

EDITOR'S NOTE.—Mr. Mahan graduated in Mechanical and Electrical Engineering, University of Kentucky, 1906. From 1906 to 1908 he was surveying and assisting in abstracting land titles in eastern Kentucky. From 1908 to 1913 he was Chief Draftsman, Bureau of Land, at Manila, P. I. In this connection he made surveys on both Corregidor Island and Bataan Peninsula. Then from 1913 to 1931 he was Mining Engineer, Mine Superintendent, and Coal Operator in eastern Kentucky. From 1931 to 1942 he served as Design Engineer in the Bridge Office of the Highway Department at Frankfort, Kentucky. Since September, 1942, the beginning of the Enlisted Specialist Branch U. S. Army Engineer School at Lexington, Mr. Mahan has been a civilian instructor in charge of the Surveying Course.

The old turnpike road between Burgin and Buena Vista, Kentucky, crossed the Dick's River on an old wooden bridge in the vicinity of Kennedy's Mill, thus the name of the present bridge which has caused so much comment because it is apparently defying all of Newton's laws of gravitation by rising instead of settling.

The old bridge was a low level wooden bridge situated at the bottom of a precipitous gorge some 250 to 300 feet deep. The picturesque road leading to it was blasted out of the cliffs on either side and, through the old covered bridge, crossed the historic river which Daniel Boone named or rather "gave" to his faithful servant, Dick.

When the Dick's River dam (now spelled "Dix" by the Kentucky Utilities Company) was started, it became necessary to build a high level bridge over the impounded water and the reservoir thus formed was named Herrington Lake.

The new bridge was completed and turned over to Mercer and Garrard counties April 7, 1925. The superstructure consists of three 220 foot, one 60 foot and two 45 foot spans, all deck type. The 220 foot spans were erected by cantilever method and the trusses were designed to carry the extra stresses of erection. The substructures are of reinforced concrete, abutments are stub type on or near the top of the cliffs. On the Garrard County end there are two H. type concrete piers 34'-0" and 39'-0" high. Piers Nos. 2 and 3 are in the gorge proper, pier No. 3 being 190'-0" high and pier No. 2 being 230'-0" high, which levels are some 20'-0" below the roadway deck.

At about the time the bridge was completed the "Engineering News Record" had a very good description of the two taller piers. (See Figure No. 1.) These piers are hollow reinforced concrete tubes, similar to chimneys. They were built by the Weber Chimney Company of Chicago by its regular chimney building procedure. The foundation for the 230' pier has a 6½' reinforced concrete slab and the shaft or stack is anchored to the footing with 1" steel bars. The shell thickness at the bottom is 26⅞". Both piers are 12' wide and 22'-0" long at the top and covered with a concrete slab, and both piers have 3' square ports at top and bottom to permit them to fill with water. They are flat on the sides and round on both ends and the shell thickness gradually decreases toward top.

All substructures were supposed to be on solid rock. A closer inspection of the cliffs, however, reveals that the rock formation is in many layers with thin layers of fireclay between. From best information now obtainable, pier No. 2, the one in question, was judged to have had better foundation at the time of its erection.

The upward movement must have started after the impounded waters began to rise because it was still some time before it was realized that this pier was actually

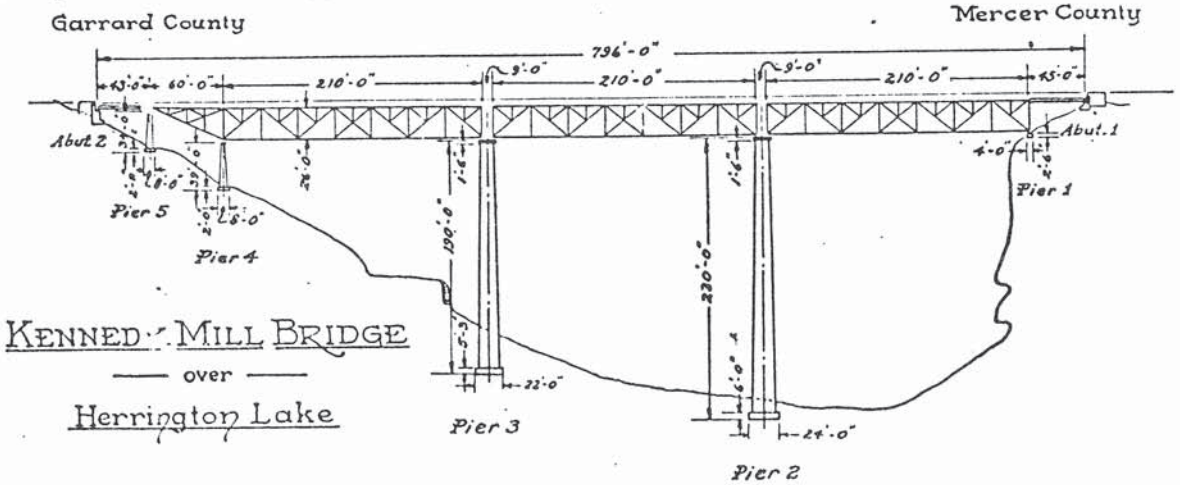


Fig. 1

rising. The earliest inspection on record in the Department of Highways was made by Mr. P. D. Gilham, March 17, 1932. Pier No. 2 at that time was 1.33' higher than pier No. 3. Previous records had been made but had unfortunately been lost in a fire.

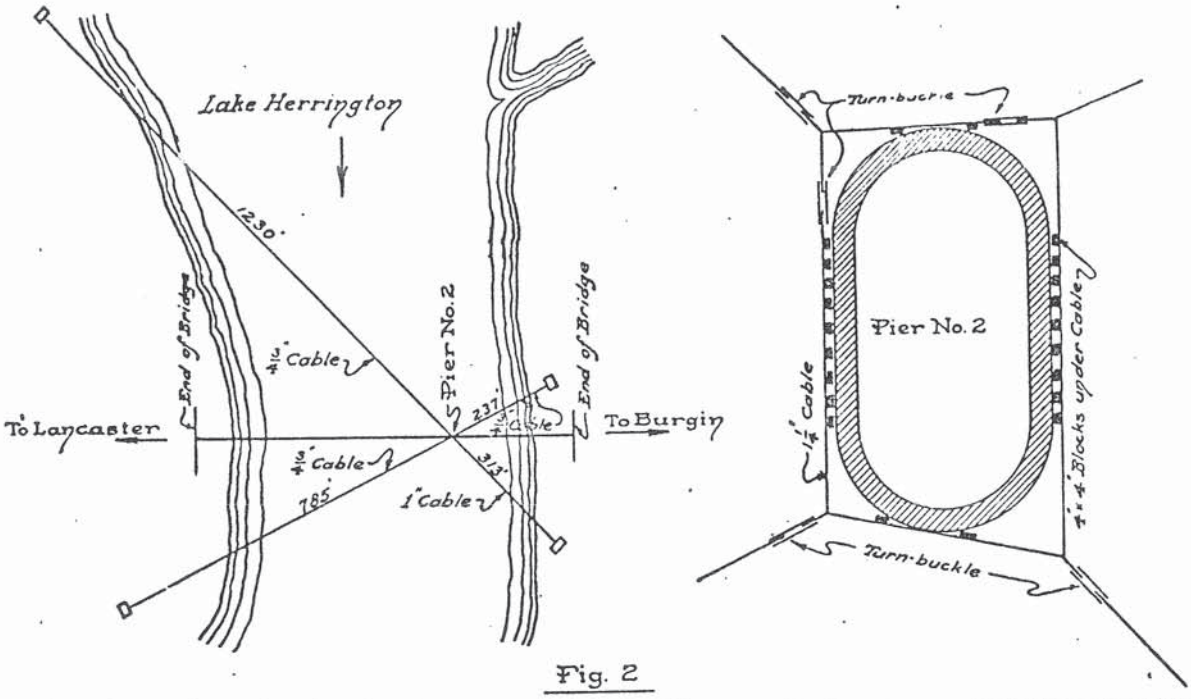


Fig. 2

Since the first inspection there has been a constant and careful check kept on the actions of this pier. Commencing in April, 1934, for a period of about two years, precise levels and a check on the alignment was run twice a month by Mr. Threlkel, Resident Engineer. His observations and data showed the most pronounced movements occurred in the early fall and spring. This fact might lead to a conclusion that the depth of the lake had some effect upon the pier's action. At the height of the movement the pier had risen approximately 30" and tilted up stream and toward the Mercer County side about 12".

The bench mark at the bridge was established by carrying the elevation from the U.S.G.S. bench mark in Burgin some 5 miles away and then checked back to the Burgin bench mark.

The tilting and upward movements of the pier were such that it was about to drag one of the bridge shoes off the pier. It was very evident that, to keep the bridge from falling into the lake, something had to be done.

It was decided to jack the bridge up and place an extended grillage under the shoes. To do this, it was necessary first to rivet a new I-beam to the bottom of the trusses of sufficient strength to carry the weight of the bridge. The grillage consisted of three 7" I-beams and two 7" channels bolted together to form a base for the new shoe to rest on and of sufficient length to extend beyond the pier cap. After doing this, there was some apprehension as to what would happen when the bridge was cut loose from the pier. As a precaution to prevent any sudden movement or vibration, it was decided to anchor the top of the pier to the shore line. A 1½" wire cable band was stretched tightly around the top of the pier with 4"x4" wood blocks inserted between the cable and the concrete masonry. From the four corners of the pier, cables were stretched to anchor on the lake shores. Turn buckles were inserted in each line to obtain uniform tension in all cables. (See Figure 2.) Even with this precaution there was a considerable vibration period when the bridge was cut loose. Final inspection showed that one of the shoes extended for more than half its length beyond the edge of the pier's cap. Had the extended grillage not been built, this span would now be in the lake.

The pier has shown no appreciable movement for some time. Possibly it has reached a stable point and will remain in its present condition. This, however, may be wishful thinking. Figures 3 and 4 were taken shortly after the bridge was completed and before the lake filled. It will be noted that the floor and bottom chord are in a straight line. Figures 5 and 6 were recently

(Continued on page 18)

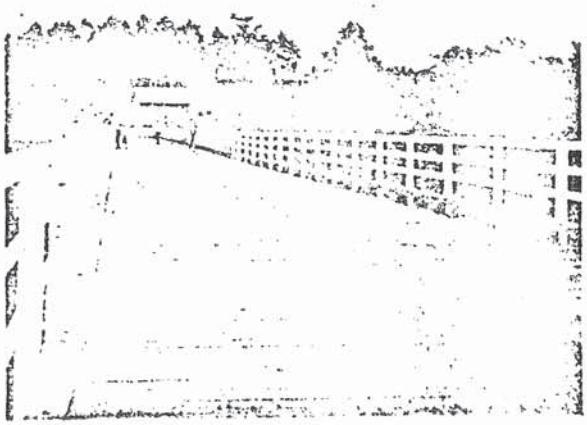


Fig. 3: May 31, 1925

KENNEDY MILL BRIDGE

(Continued from page 3)

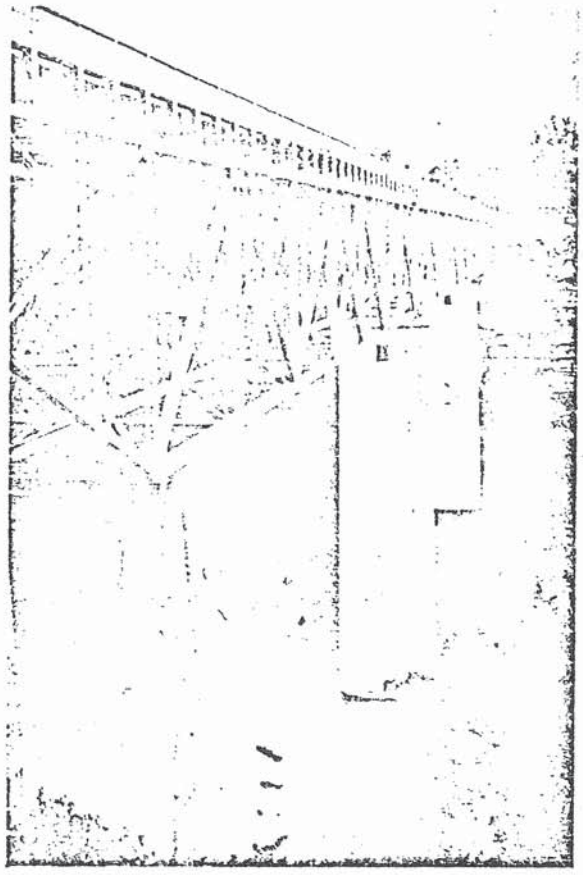


Fig. 4: May 31, 1925

taken and show very clearly the hump in the road and how the bottom chord is out of line. Figure 7 shows the lake filled and it is very noticeable that pier No. 2 is higher than pier No. 3. Note the top of ports in pier No. 2 are plainly visible and are completely submerged in pier No. 3 whereas they were originally on the same elevation.

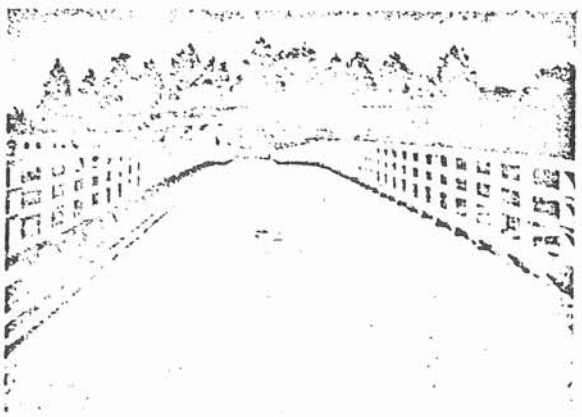


Fig. 5: June 9, 1932

There has been much speculation from various sources as to the cause of the movement of pier No. 2. If it were possible to inspect the footing at the bottom of the lake some evidence might be discovered as to the cause. It is generally attributed in some way to the creation of the lake. This movement might have taken place, however, had there never been a Lake Herrington.

Some of the many theories that have been advanced as to the probable cause are:

1. Trapped gases under footing.
2. Hydrostatic pressure.
3. Since the lime cliffs are full of crevices, holes, etc., and may be cavernous in places, the extra weight of the water may have caused some shift in the immediate terrain.
4. There is a possibility of heaving of the bottom when certain stratas are wet and softened.

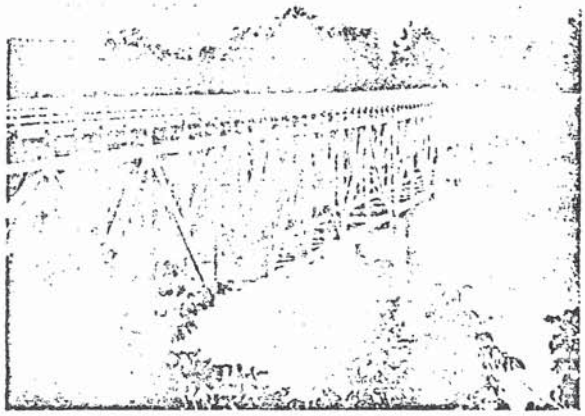


Fig. 6: June 9, 1932

Careful observations also indicate that possibly the whole cliff on the Mercer County side may be slowly moving toward the lake. Knowing the cause of such a phenomenon would be a real satisfaction to the engineer's curiosity even though it might be of little value as far as the present bridge is concerned. If the bridge should completely fail, a suspension bridge from cliff to cliff would apparently be the only solution due to the great depth of the water; but at that, this might not be a permanent solution if one cliff is tending to slide into the lake.

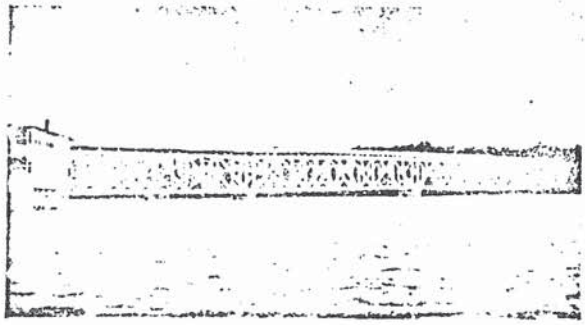


Fig. 7: March 28, 1943

Transportation Cabinet
Division of Operations

TC 71-118
Rev. 1/96

BRIDGE INSPECTION REPORT

Reviewed By:
Review Date:

Two Yr ☐ Substd ☐ Underwater ☑ In-Depth ☐ Fracture Critical ☐

Project No: 84-0152-B00005 NBI-Location: KY 152 over Herrington Lake - Mercer County

Structure Description: Five Span Steel Truss

Milepoint: 18.55 Inspectors Initials: AAC

Inspector's Signature: [signature] Date: 12/15/2009

58	DECK	
1	Structural Condition	
2	Wearing Surface	
3	Joints	
4	Drains	
5	Expansion Devices	
6	Curbs, Sidewalks, Medians	
7	Railings	
8	Lighting and/or Utilities	

59	SUPERSTRUCTURE	
1	Stringers, Girders, Beams	
2	Floor Beams	
3	Trusses - Main Members	
3a	Trusses - Bracing, Portals	
4	Bearing Devices	
5	Alignment/Structural Members	
6	Deflection/Vibration under load	
7	Debris on Members	

59A	PAINT CONDITION		
Color:		Date Painted:	

60	SUBSTRUCTURE	
1	Abutments, Wingwalls	
2	Piers and/or Bents:	
3	Alignment and/or Settling	
4	Scour, Erosions	
5	Debris on Seats, Caps	
6	Protection Systems	
7	Abutments, Wingwalls (S.Z.D.)	N
8	Piers /or Bents (S.Z.D.)	5
9	Alignment or Settling Due to Scour	

61	CHANNEL/CHANNEL PROTECTION	
1	Channel Scour	
2	Embankment Erosion	
3	Drift	
4	Channel Alignment	
5	Vegetation	
6	Erosion	
7	Rip-Rap	

62	CULVERT RETAINING WALLS	
1	Barriers	
2	Wingwalls, Headwalls	
3	Debris	
4	Scour Under Footings (Underwater)	
5	Erosion At Wingwalls (Underwater)	
6	Drainage Adequacy (Underwater)	

10 INVENTORY ROUTE VERTICAL CLEARANCES

Over ft in. 36. TRAFFIC SAFETY

Under ft in.

71	WATER ADEQUACY	
72.	APPROACH ROADWAY ALIGNMENT	

113	SCOUR CRITICAL BRIDGE RATING	8

108 WEARING SURFACE/PROTECTIVE SYSTEM

Type Membrane Protection

OVERLAY ☐ Yes ☒ No Date:

TYPE: LATEX ☒ P.C.C. ☐ ASPHALT ☐

DEPTH OF ASPHALT

RECOMMENDED LOAD CAPACITIES (tons) I II III IV GROSS

FIELD POSTINGS NE SW I II III IV GROSS

Additional Comments

The piers in fair condition with only minor defeciencies noted.

Stantec

STANTEC UNDERWATER BRIDGE INSPECTION FORM

1. Bridge Number: 84-0152-B00005 **2. Date** Tuesday, December 15, 2009

County: Mercer **3. Stantec Project No:** 175569090

Description: KY 152 over Herrington Lake **4. Weather** **Temperature:** 20

Water Body: Herrington Lake ☐ Sunny ☑ Partly Cloudy ☐ Other

5. Supervisor: AAC **Crew:** TCB, FJB, JAG ☐ Cloudy ☑ Windy

Visitors: **Arrive:** **Depart:**

Visitors **Arrive:** **Depart:**

6. Bridge Type:

☐ Continuous Plate Girder ☐ Suspension ☐ Reinforced Concrete Beam

☑ Steel Truss ☐ Wood Truss ☐ Other

7. Element Type:

☑ Reinforced Concrete ☐ Closed Web ☐ Open Web ☐ Steel Piles

☐ Masonry ☐ Timber Piles ☐ Other

8. Foundation Type

☐ Pile with pile cap ☐ Pile without pile cap Pier founded on rock ☐ or soil ☐

☐ Caisson ☑ Spread footing ☐ Other

9. Previous Report Available ☑ **Dates of Report:** 1990,1995,2000

Originator: FMSM

10. Construction or As-Built Plans and/or Reports Available ☑ **Dates:** unknown

11. Water surface reference point on Pier or Bridge

Bottom of Pier 2

Reference Point Elevation: 756.4 **Distance to Water** 19.5 **Water Elevation:** 736.9

12. Pictures Taken

1. Pier 2
2. Pier 3
3. Planview Looking Downstream
4. Planview Looking Upstream

Stantec

STANTEC UNDERWATER BRIDGE INSPECTION FORM

Bridge Number: 84-0152-B00005

Date: Tuesday, December 15, 2009

13. Cross Sections:

	5'	10'	25'	50'	100'
☑ Upstream	☐	☑	☐	☑	☐
☑ Downstream	☐	☑	☐	☑	☐

GPS Data 12/16/2009

View Point L to R Looking: ☑ Upstream ☐ Downstream

Benchmark Location: _____

Benchmark Coordinates Northing _____ Easting _____ Elevation _____

14. Scour:

a. Scour pockets or troughs ☑ No ☐ Yes _____

b. Footing or Foundation Element Exposed ☑ No ☐ Yes _____

c. Scour increased since last inspection ☑ No ☐ Yes ☐ No Previous Report Available

d. Comments: _____

15. Pier/Element Conditions: (see field notes for detailed description)

☑ Biological Growth very light ☐ Zebra Mussel Growth _____

☐ Spalling _____ ☑ Honeycombing _____

☐ Scaling _____ ☐ Reinforcing Steel Exposed _____

☑ Vertical Cracks ☑ Hairline ☐ Measurable See notes

☐ Horizontal Cracks ☐ Hairline ☐ Measurable _____

☐ Impact Damage ☐ Minor ☐ Major _____

☐ Pier Faces not Inspected List Piers _____

Reason for not inspecting _____

☐ Other: _____

16. Heavy debris located around element ☑ No ☐ Yes, elements _____

17. Bottom Conditions:

☑ Silt ☐ Gravel ☐ Boulders ☐ Clay ☑ Debris

☐ Sand ☐ Cobbles ☐ Bedrock, type _____

Debris:

☑ Sticks ☐ Tree Limbs ☐ Trees ☐ Timbers ☐ Steel Beam

☑ Construction Debris ☐ Waste Concrete ☐ Other: _____

Stantec

STANTEC UNDERWATER BRIDGE INSPECTION FORM

Bridge Number: 84-0152-B00005

Date: Tuesday, December 15, 2009

18. Inspection Method

☑ Surface Supplied Air ☐ Scuba ☐ Wading ☐ Other

19. Bridge Access

a. **Boat:** ☐ Skiff ☐ Whaler ☐ Jonboat ☐ Monark ☑ Other: Lobell

Ramp: ☑ Concrete ☐ Gravel ☐ Dirt ☐ None ☑ Ramp fee $10.00

Locked Through ☑ No ☐ Yes

Distance from ramp to bridge: 0.25 **Travel time:** 5 miles

Comments / Directions:

b. **Bank/Shore:** ☐ Grass ☐ Rock ☐ Gravel ☐ Dirt/Mud ☐ Other

20. Boat Traffic

a. **Recreational:** ☐ Heavy ☐ Moderate ☑ Light ☐ N/A

b. **Fishing:** ☐ Heavy ☐ Moderate ☑ Light ☐ N/A

c. **Barge:** ☐ Heavy ☐ Moderate ☑ Light ☐ N/A

Comments:

21. Water Conditions:

Temperature: 40 Degrees F **Visibility:** 8.0

Current: ☐ Heavy ☐ Moderate ☐ Light ☑ None

22. General Comments (Include any unusual conditions encountered):

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

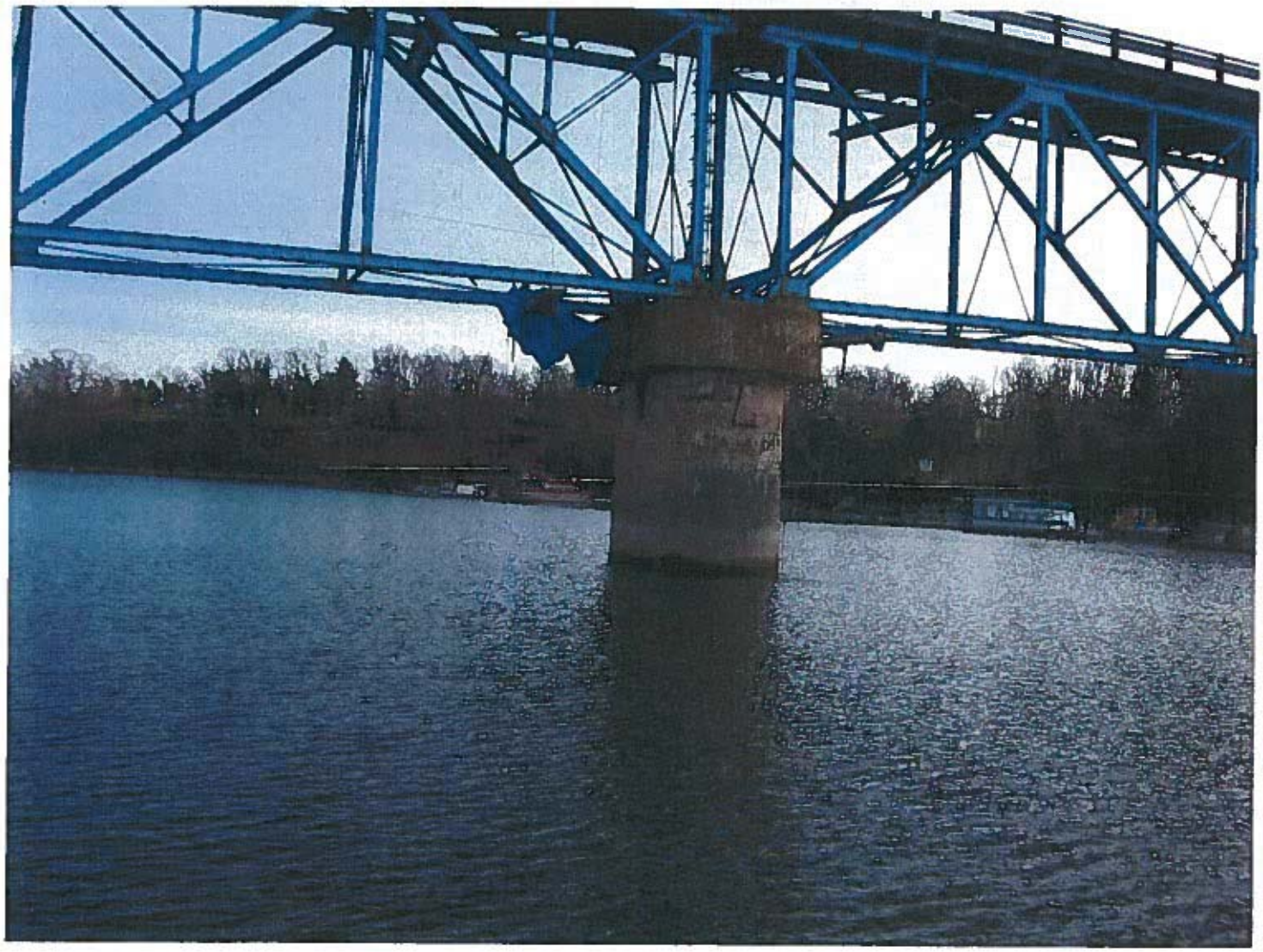
Description Planview Looking Upstream Crew AAC, TCB, FJB, JAG

Photos

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

Description Pier 3 Crew AAC, TCB, FJB, JAG



Photos

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

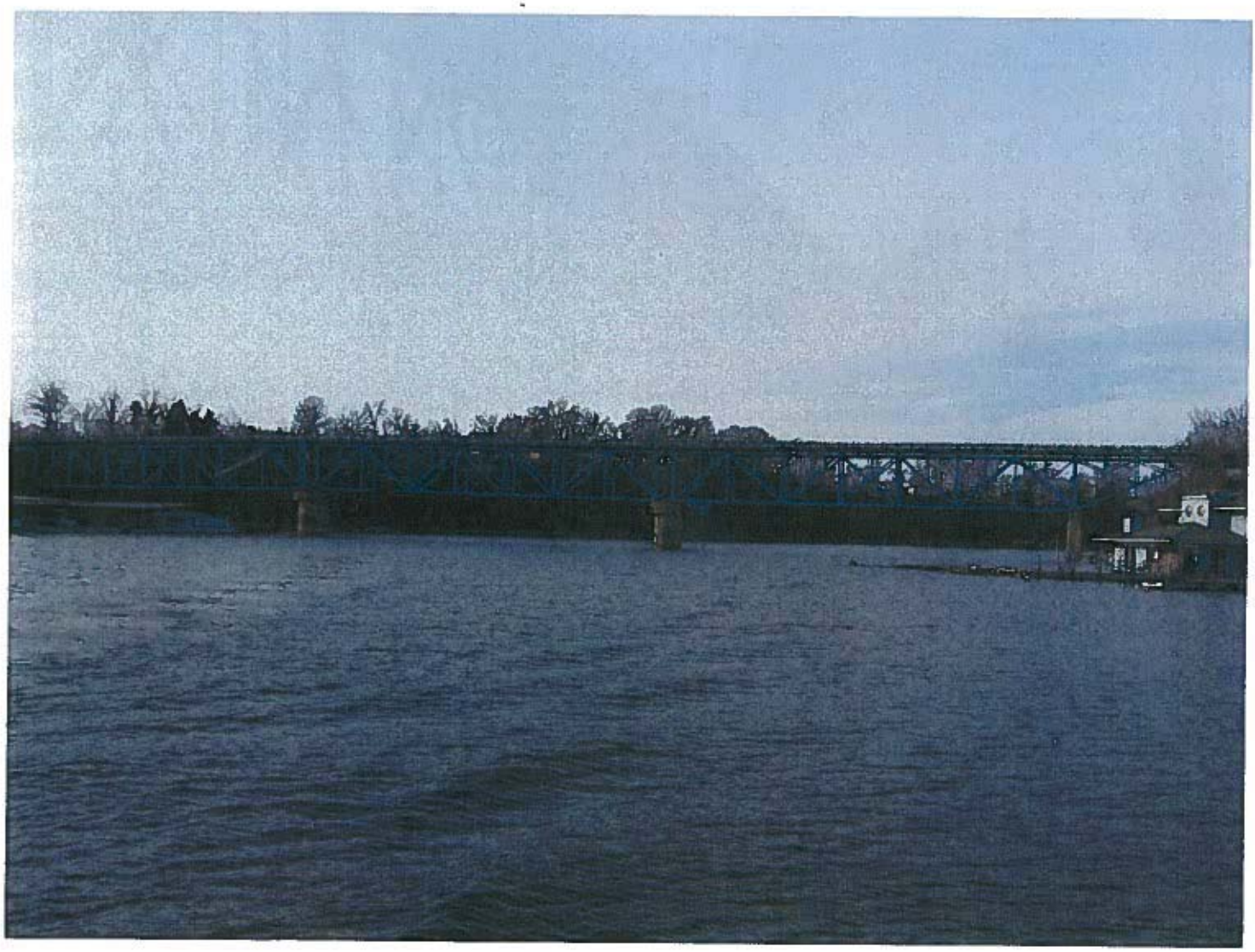
Description Pier 2 Crew AAC, TCB, FJB, JAG

Photos

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

Description Planview Looking Downstream Crew AAC, TCB, FJB, JAG



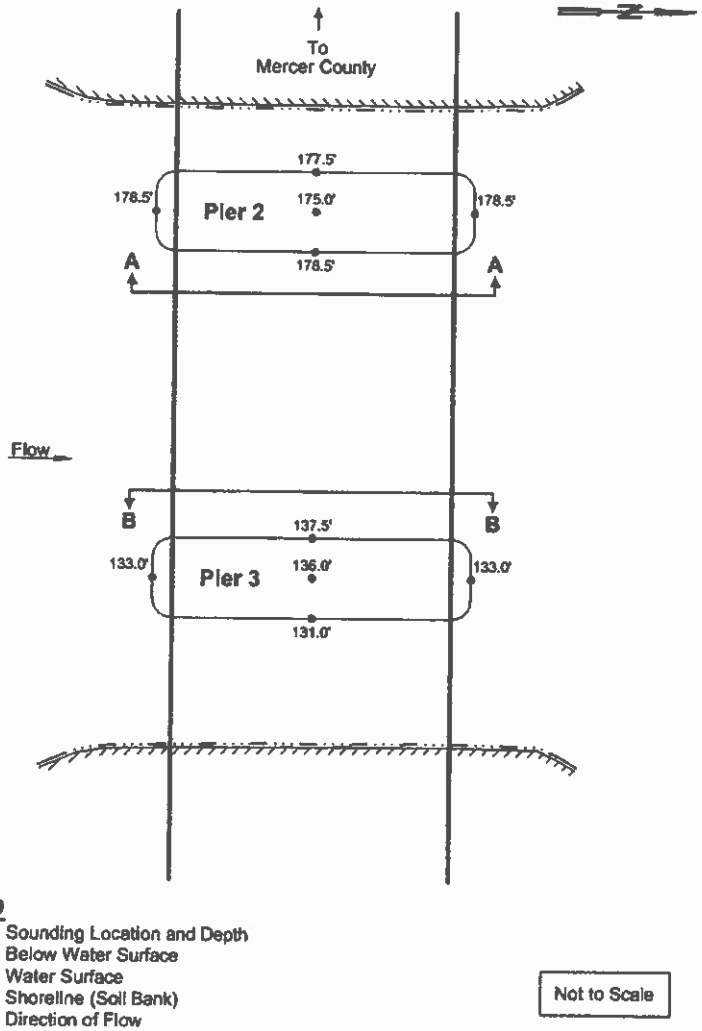
Photos

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

Description Planview Crew AAC, TCB, FJB, JAG

NOTE: All depths refer to depth below water surface at time of inspection



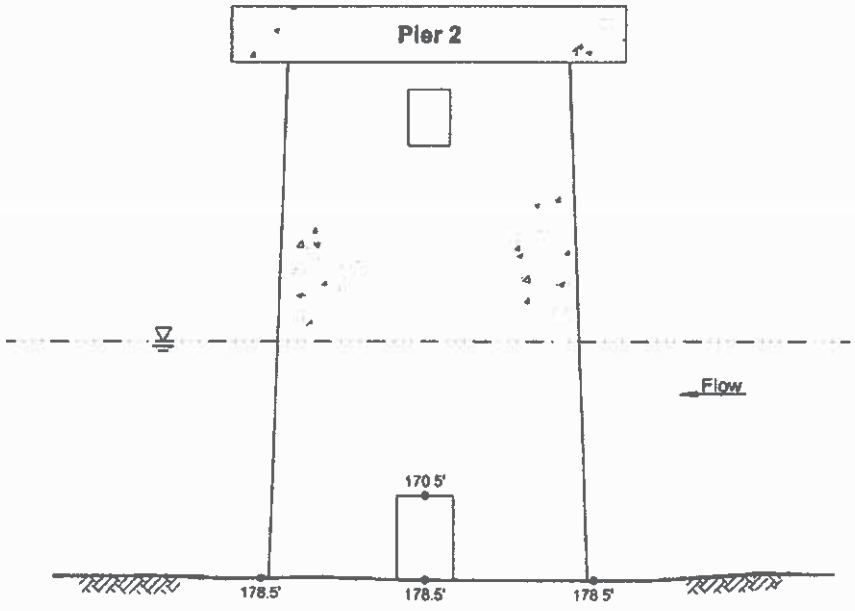
Plan View

Stantec

Structure 84-0152-B00005 Element Pier 2 Date 12/15/2009

Individual Pier Rating _____

NOTE: All depths refer to depth below water surface at time of inspection



LEGEND

- 12.3' — Sounding Location and Depth Below Water Surface
- Water Surface
- Flow — Direction of Flow
- Concrete
- Soil Channel Bottom

Not to Scale

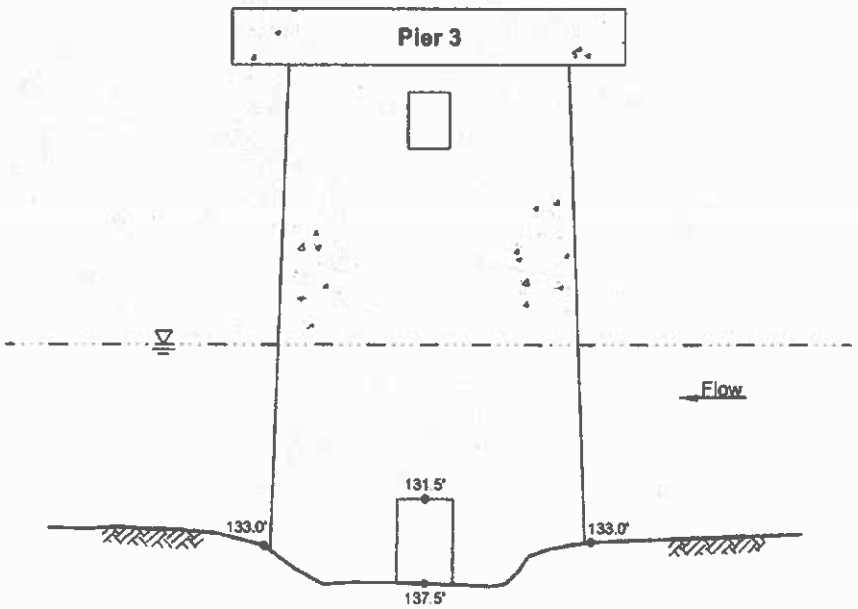
Section A-A

Stantec

Structure 84-0152-B00005 Element Pier 3 Date 12/15/2009

Individual Pier Rating _____

NOTE: All depths refer to depth below water surface at time of inspection



LEGEND

- 12.3' — Sounding Location and Depth Below Water Surface
- Water Surface
- Flow — Direction of Flow
- Concrete
- Soil Channel Bottom

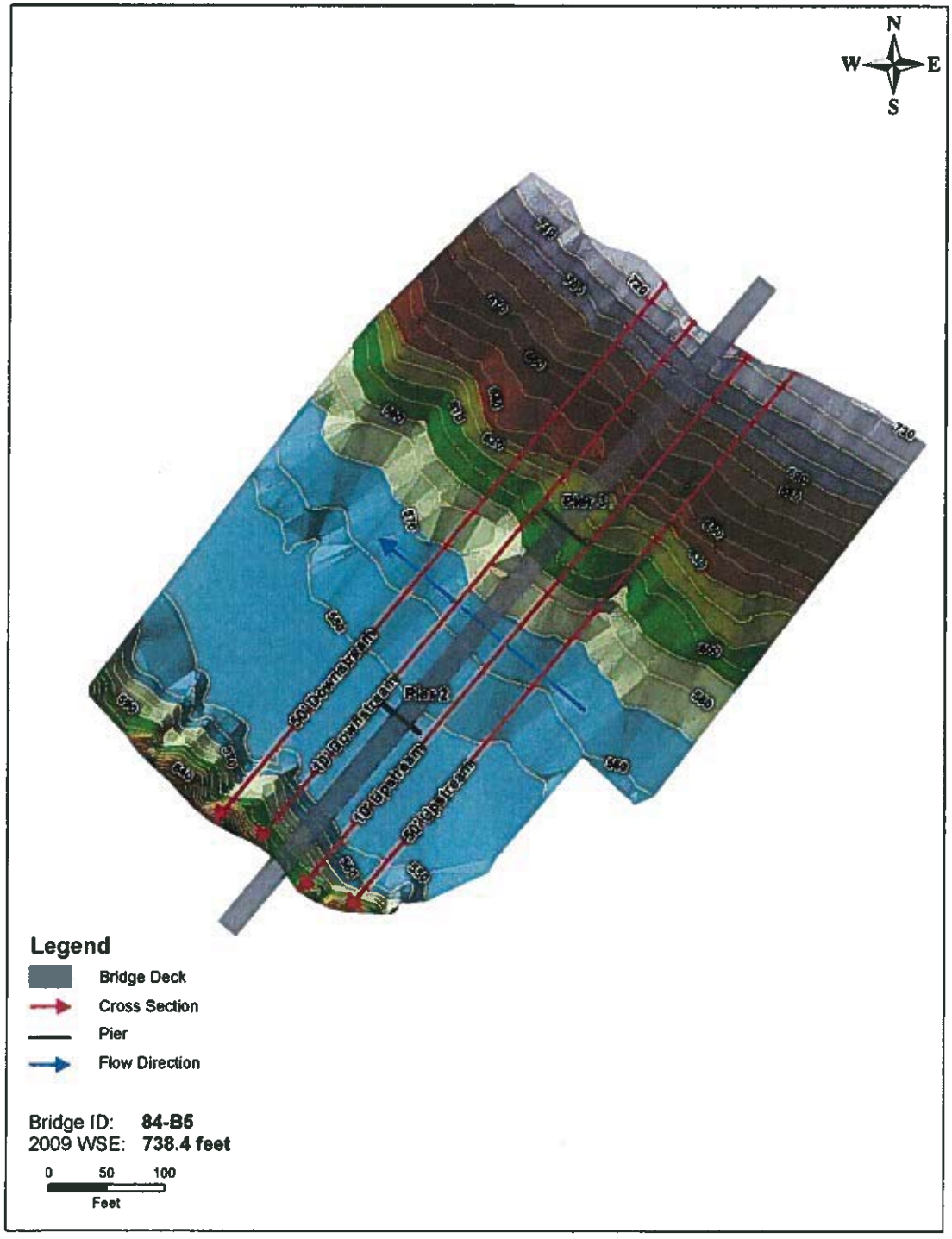
Not to Scale

Section B-B

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

Description Hydrographic Survey Overview Crew AAC, TCB, FJB, JAG



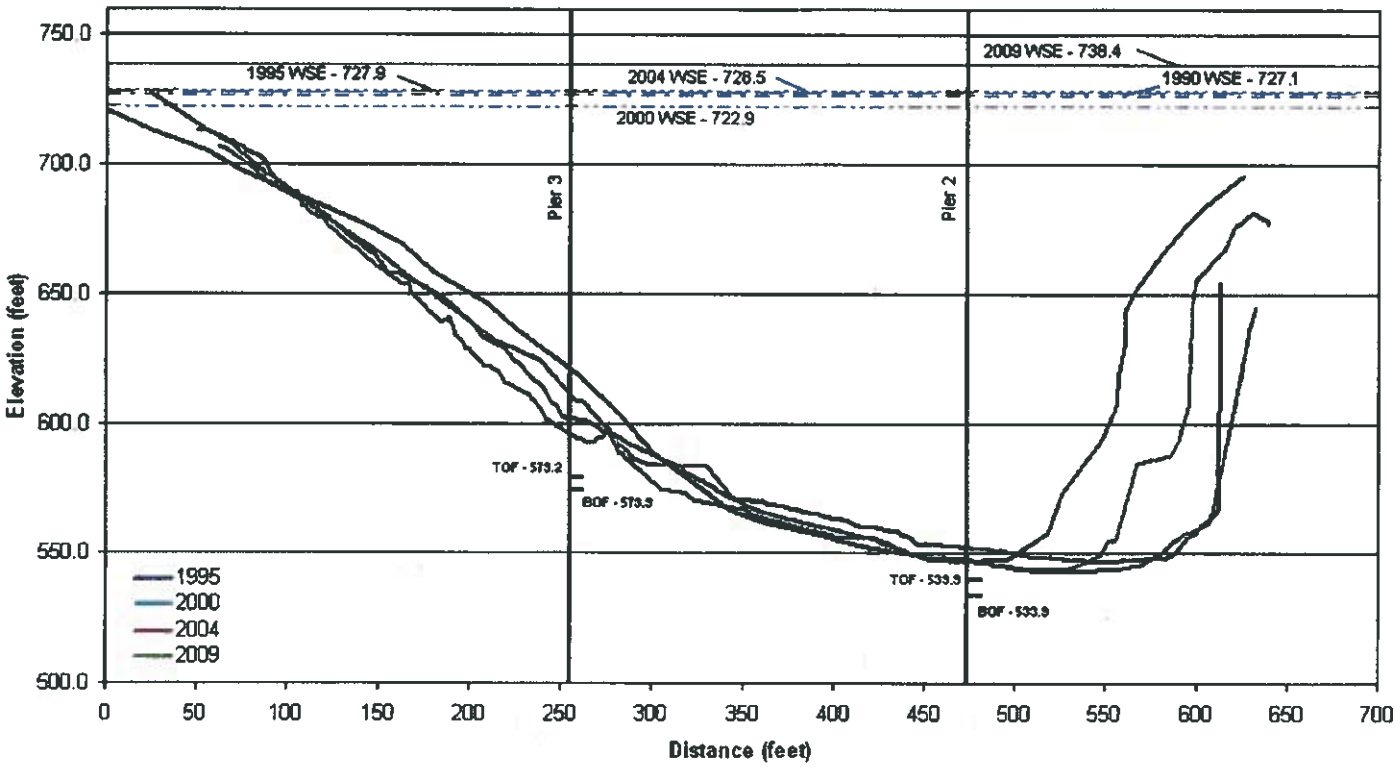
Cross Sections

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

Description 50 Ft. Upstream Crew AAC, TCB, FJB, JAG

Cross Section Profile
50ft Upstream of Bridge 84-B5



View Aspect: Facing Upstream

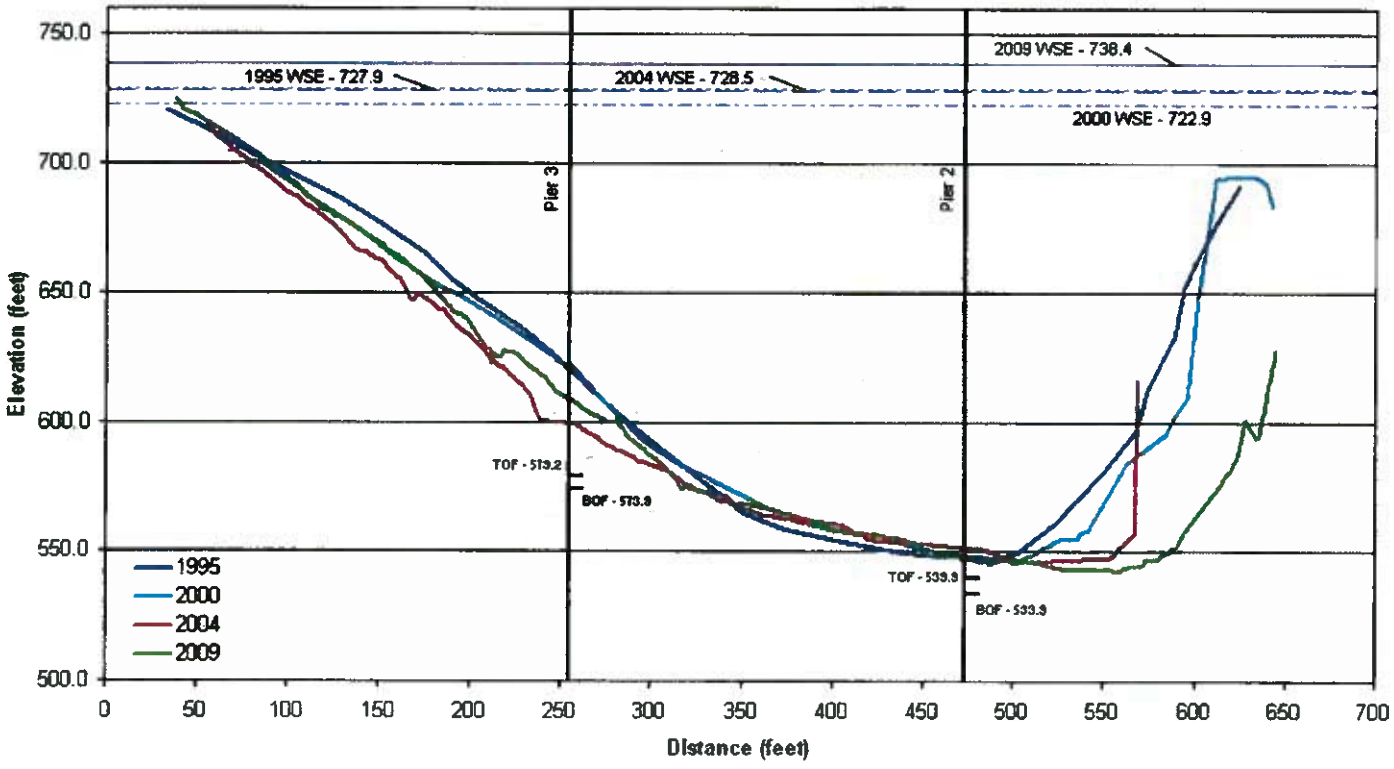
Cross Sections

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

Description 10 Ft. Upstream Crew AAC, TCB, FJB, JAG

Cross Section Profile
10ft Upstream of Bridge 84-B5



View Aspect: Facing Upstream

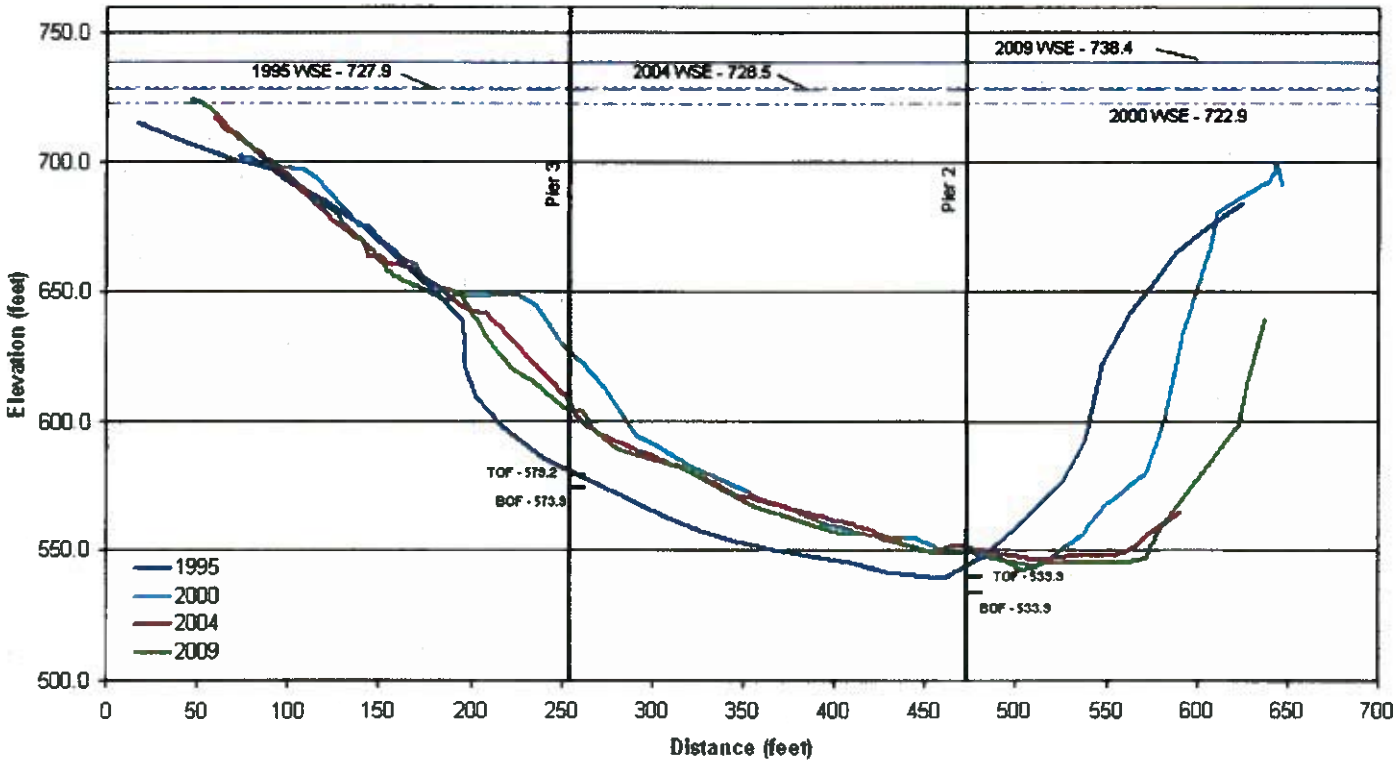
Cross Sections

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

Description 10 Ft. Downstream Crew AAC, TCB, FJB, JAG

Cross Section Profile
10ft Downstream of Bridge 84-B5



View Aspect: Facing Upstream

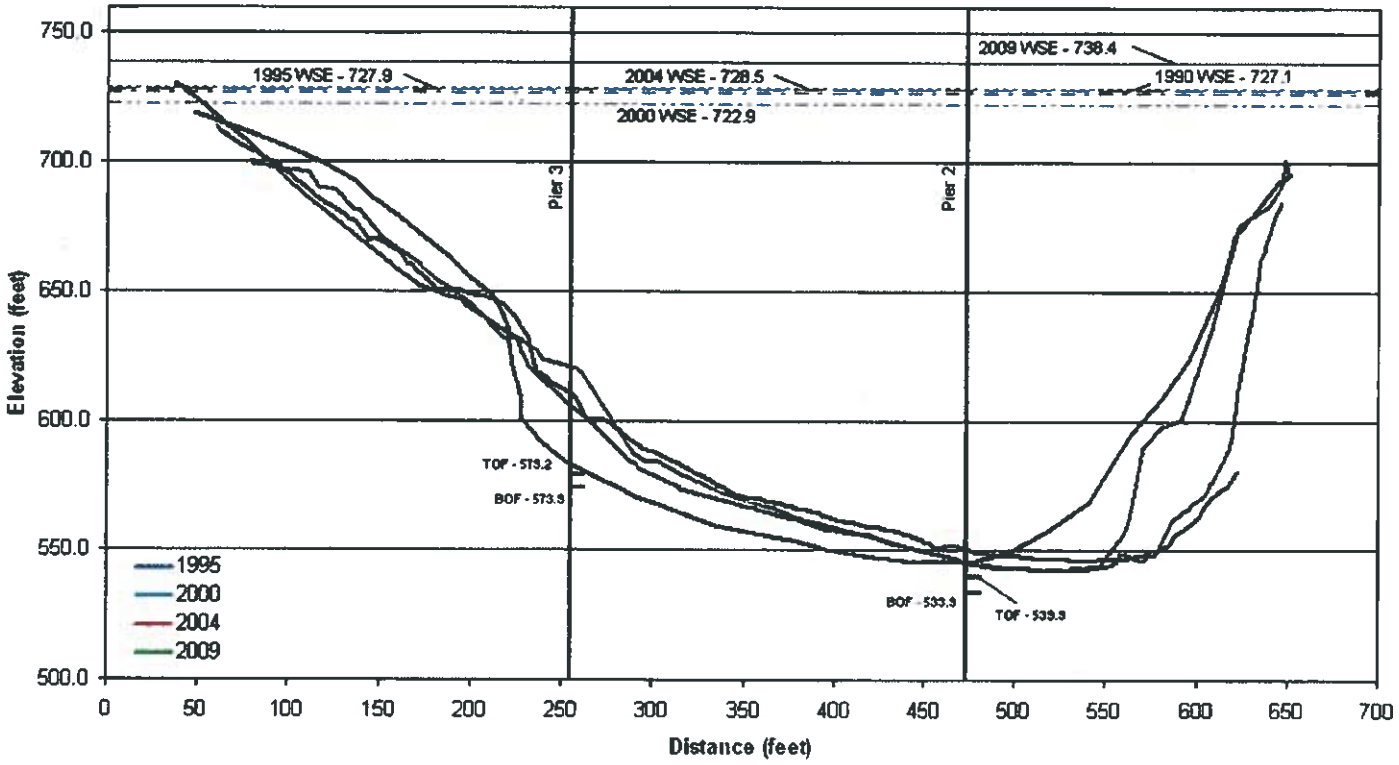
Cross Sections

Stantec

Structure 84-0152-B00005 County Mercer Date 12/15/2009

Description 50 Ft. Downstream Crew AAC, TCB, FJB, JAG

Cross Section Profile
50ft Downstream of Bridge 84-B5



View Aspect: Facing Upstream

Cross Sections

Stantec Structure

84-0152-B00005 County Mercer Date 12/15/2009

Crew AAC, TCB, FJB, JAG

KY 152 over Herrington Lake

Pontis Underwater Only

Item - 210 Qty - 70 LF
Condition State - 3 = 70 LF

General Notes (All Piers)
1. There is light scaling located from the water surface to 25' below the water surface (bws).
2. There is moderate biological growth located from the surface to 3' below the surface, growth is light from 3' to 34' and very light from 34' to the bottom.
3. The bottom material consists of soft silt.
4. There is honeycombing on all faces of the pier located at every cold joint and appears to get worse from the surface to 115' bws.
5. The outside and inside of the piers is in fair condition, with section loss located at the cold joints.
6. There is a opening on the east face of Pier 2 measuring approximately 4'W and 4'T extending from the bottom. The top of the opening is 170.5' and the bottom at 178.5 feet bws. The concrete located at this opening is approximately 2.5' thick. Does not have a grate covering it.

Pier 2 (Outside of Pier)

1. There is honeycombing at the following locations: 1'W x 1'T x 6"D middle east face 87' bws, 3.5"W x 6"T x 4"D middle of the east face 8' bws, 2.5"W x 6"T x 4"D 7' North of SE corner 8.5' bws, 2'T x 2'W x 4"D center of the East face 66' bws, 1'W x 4"T x 3"D 54' bws on the Northeast corner, 1'W x 4"T x 4"D center of the south face 100' bws, 6"T x 2"W x 4"D SE cornere 65' bws.

Pier 2 (Inside of Pier)
1. There are several tie wires are exposed throughout the inside of the pier.
2. The two cross beams below 115' appear to be in good condition.
3. There is a 4"T by 6"D area of honeycombing located at the cold joint 20' below the water surface along the East and North faces. Aggregate can be removed with ease.
4. There are crossbeams with honeycombing at the joints up to 3" deep located at the following depths;10, 51', 90' and 134'.
5. The bottom material consists of soft silt with some construction debris. There is a steel grate extending out of the silt bottom approximately 1.5'.

Stantec Structure 84-0152-B00005 County Mercer Date 12/15/2009

Crew AAC, TCB, FJB, JAG

KY 152 over Herrington Lake

Pier 3 (Outside of Pier)

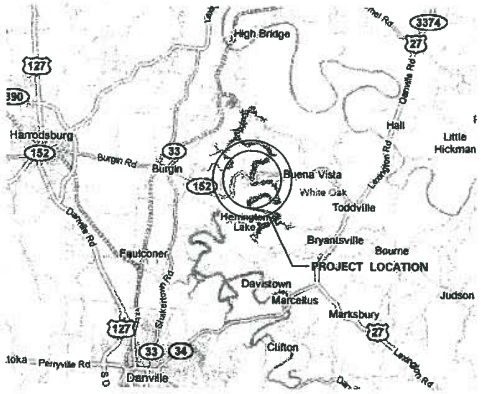
1. There is an opening in the concrete located on the East face bottom. The top of the opening is located 112.0', with the bottom of the opening located 118' bws. There is a rebar grate covering the opening, the opening is 4'W and 6'T. There is rebar covering the opening.
2. There is minor honeycombing and light scaling located on the west face in isolated areas with measurments less then 1" in section depth.
3. There is a 1'W by 2"T by 2"D area of honeycombing located 43' bws on the NE corner.
4. The bottom material consists of silt with construction debris
5. There is a steel grate on the bottom in the SE corner. The grate may be an old access hatch grate from the top of the pier.

Pier 3 (Inside of Pier)

1. There is exposed rebar located 11' bws on the East face.
2. There is a steel grate on the bottom in the SE corner. The grate may be an old access hatch grate from the top of the pier. The grate was covered with soft silt.
3. There is an opening in the concrete located on the West face bottom. The top of the opening is located 131.5'bws, the bottom of the opening is located 137.5' bws. There is not a grate covering the opening The opening is 4' wide and 6' tall.
4. There is a 9"T by 4"W by 1"D area of spalling located 11' bws on the West face.
5. There is a 2'diameter by 2.5' deep hole located on the NE face. The top of the hole is located 137' bws, the bottom is located 139' bws. The hole is not formed and aggregate can be removed.
6. There is a 2'T by 7"W by 1"D area of spalling located 43' bws on the Northeast face.
7. There is a 2'T by 6"W by 1"D area of honeycombing located 11' bws on the South face.
8. There are cross beams located below the water surface at the following depths; 4.0, 40', 76'and 106'.
9. The bottom material consists of soft silt with some construction debris.

TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

MERCER COUNTY
HARRODSBURG-LANCASTER ROAD, KY 152
OVER HERRINGTON LAKE



ESTIMATE OF QUANTITIES

BID ITEM CODE		03296			21969NN	22020NN						98435		
	BID ITEM	Exp. Joint Replacement 4"	Bridge Handrail/ Guardrail Repair	Reinforce Bridge Guardrail	Bearing Replacement	Repair Beam	Floor Beam Bearing Repair	Cross-Bracing Repair	Lower Lateral Bracing Repair	Lacing Bar Repair	Repair Truss Member	Jack & Support Bridge Span	Reinforce Truss Members	Reinforce Truss Joints
	UNIT	L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	L.S.	L.F.	EA.
Substructure	Abutment #7	20			2	2								
	Pier #6		10											
	Pier #5						2							
	Pier #4	20					4							
	Pier #3	20					4							
	Pier #2						2							
	Abutment #1	20												
Superstructure				1596				6	21	1000	40	1	2393	126
BRIDGE TOTALS		80	10	1596	2	2	12	6	21	1000	40	1	2393	126

INDEX OF SHEETS

SPECIAL NOTES

SPECIAL PROVISIONS

STANDARD DRAWINGS

BBP-001-11	Elastomeric Bearing Pads for Prestressed Beams
BBP-002-04	Bearing Details
BJE-001-11	Neoprene Expansion Dams and Armored Edges

SPECIFICATIONS

2004 Standard Specifications for Road and Bridge Construction.

2002 AASHTO Standard Specifications for Highway Bridges.

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

ROUTE: KY 152 | CROSSING: HERRINGTON LAKE

TITLE SHEET

BRIDGE NUMBER: FE02-084-0152-B00005N

PREPARED BY: Division of Structural Design
AMERICAN ENGINEERS, INC.

SHEET NO. S1
DRAWING 7230

GENERAL NOTES

SPECIFICATIONS: REFERENCES TO THE SPECIFICATIONS ARE TO THE CURRENT EDITION OF THE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION INCLUDING ANY CURRENT SUPPLEMENTAL SPECIFICATIONS. ALL REFERENCES TO THE AASHTO SPECIFICATIONS ARE TO THE CURRENT EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, WITH INTERIMS.

- SEE SPECIAL NOTES IN PROPOSAL

THE FOLLOWING ABBREVIATIONS MAY HAVE BEEN USE IN THE PREPARATION OF THESE PLANS:

bet.	Between
b.f.	Back Face
BOF	Bottom of Footing
bot.	Bottom
Brg.	Bearing
C to C	Center to Center
c.e.	Current Edition
C.Y.	Cubic Yard
Chd.	Chord
CL	Center Line
Cl.	Clear
Conc.	Concrete
Cu.	Cubic
Dwg.	Drawing
e.f.	Each Face
El.	Elevation
eq.	Equal
Est.	Estimate
Ext.	Exterior
F to F	Face to Face
f.f.	Front Face
f.s.	Far Side
fr.	Front
ft.	Feet
I.D.	Inside Diameter
in.	Inch
Int.	Interior
L	Left
LBS	Low Bridge Seat
LBS.	Pounds
M	Meter
MPH	Miles per Hour
n.s.	Near Side
O.D.	Outside Diameter
Opp.	Opposite
PC	Point of Curve
Perp.	Perpendicular
PI	Point of Intersection
PPC	Precast Prestressed Concrete
PPCDU	Precast Prestressed Concrete Deck Unit
PSI	Pounds per Square Inch
PT	Point of Tangent
R	Radius
R	Right
RCBC	Reinforced Concrete Box Culvert
RCDG	Reinforced Concrete Deck Girder
Req'd.	Required
RR	Railroad
Shld	Shoulder
spa.	Spaces
Sta.	Station
Std.	Standard
Str.	Straight
Tan	Tangent
Thru	Through
TOF	Top of Footing
Tot.	Total
Typ.	Typical
Vert.	Vertical
W.P.	Working Point
Yd.	Yard

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

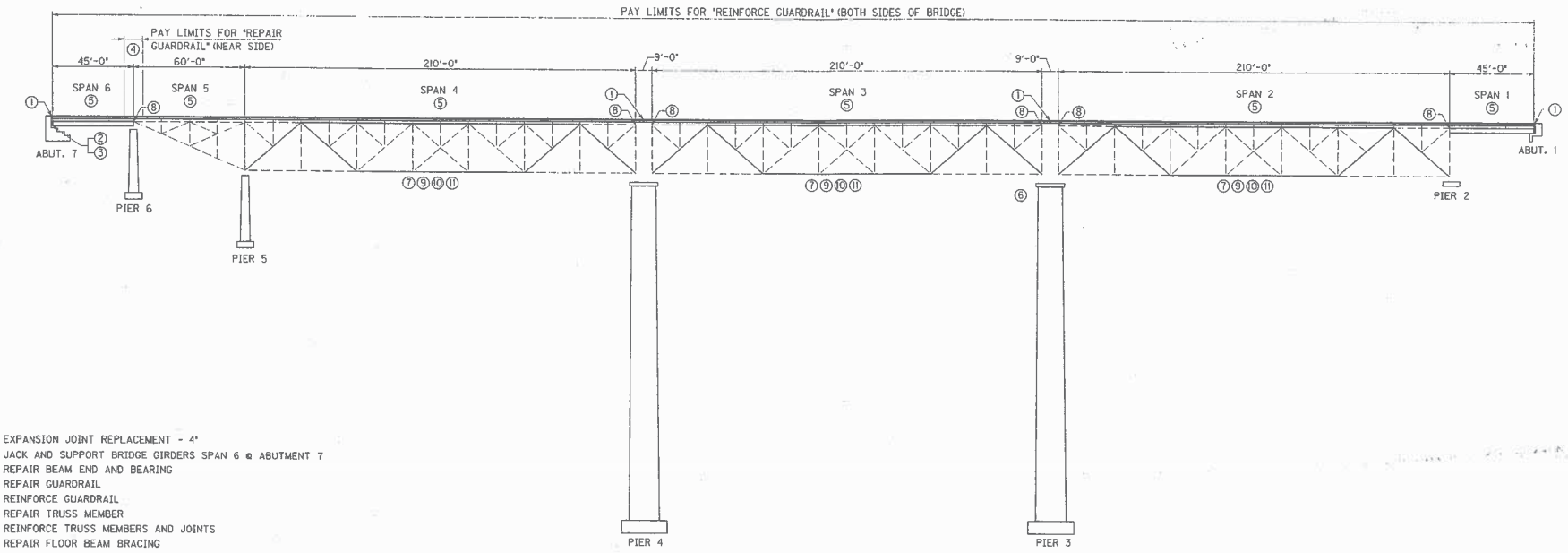
ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

GENERAL NOTES

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S2 DRAWING NO. 2230E

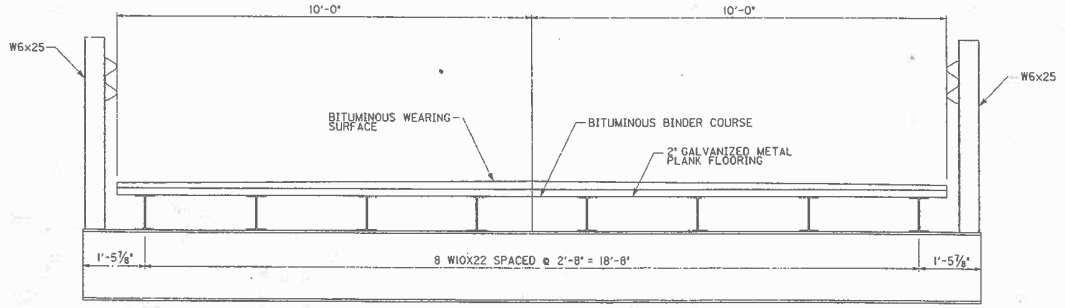
TO BUENA VISTA

TO BURGIN



① EXPANSION JOINT REPLACEMENT - 4"
② JACK AND SUPPORT BRIDGE GIRDERS SPAN 6 @ ABUTMENT 7
③ REPAIR BEAM END AND BEARING
④ REPAIR GUARDRAIL
⑤ REINFORCE GUARDRAIL
⑥ REPAIR TRUSS MEMBER
⑦ REINFORCE TRUSS MEMBERS AND JOINTS
⑧ REPAIR FLOOR BEAM BRACING
⑨ CROSS BRACING REPAIR
⑩ LOWER LATERAL BRACING REPAIR
⑪ LACING BAR REPAIR

ELEVATION
(FACING SOUTH)



EXISTING TYPICAL

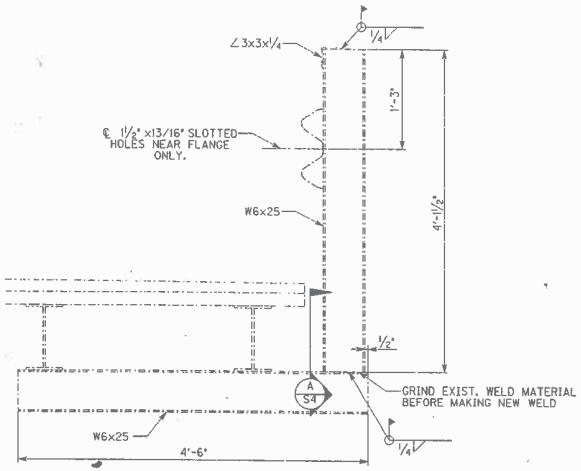
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

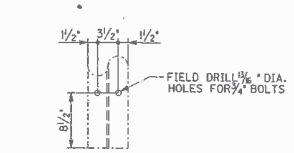
ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

LAYOUT

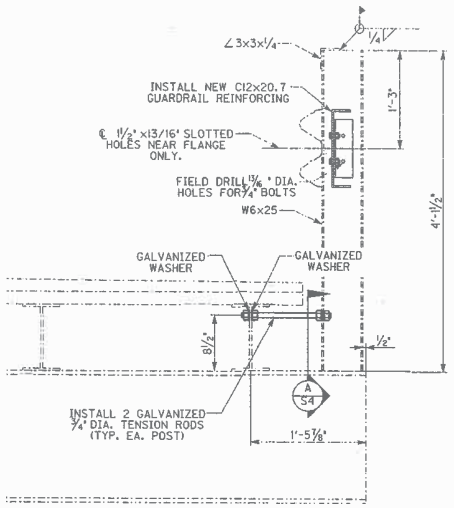
BRIDGE NUMBER	PREPARED BY	SHEET
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S3 DRAWING 2230

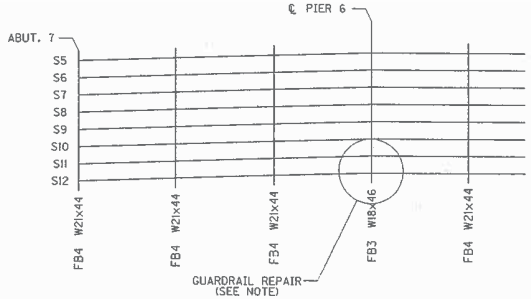


GUARDRAIL REPAIR



SECTION A S4
SCALE: N.T.S.

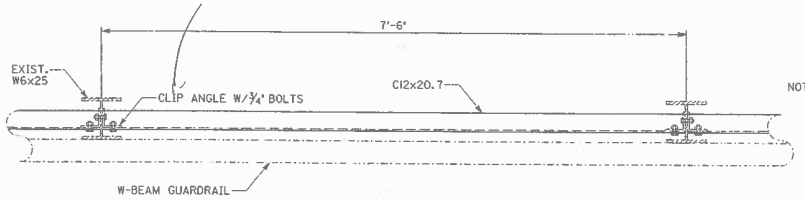




NOTE: GUARDRAIL REPAIR INCLUDES

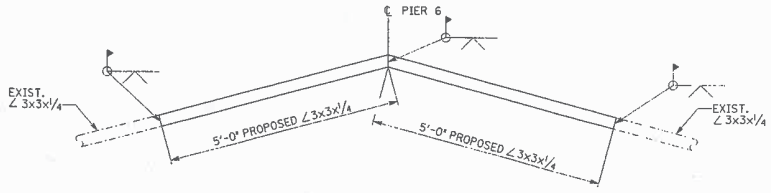
1. REWELD EXISTING GUARDRAIL POST TO FLOORBEAM.
2. REPLACE 10 LF OF GUARDRAIL.
3. REPLACE 10 LF OF ∠ 3x3x1/4

what size?



NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR 3/4" BOLTS. (TYP.)

GUARDRAIL REINFORCING
(TYPICAL BETWEEN POSTS)



Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

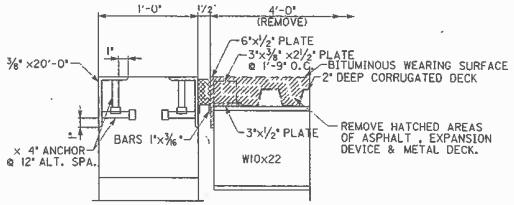
COUNTY: MERCER

ROUTE: KY 152

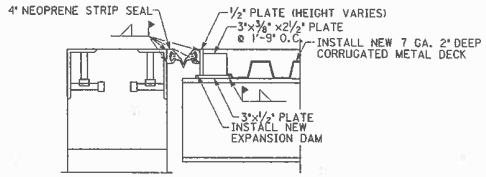
CROSSING: HERRINGTON LAKE

GUARDRAIL DETAILS

BRIDGE NUMBER	PREPARED BY	SHEET
FE02-084-0152-B00005N	Division of Structural Design AMERICAN ENGINEERS, INC.	S4
		DRAWING 2230

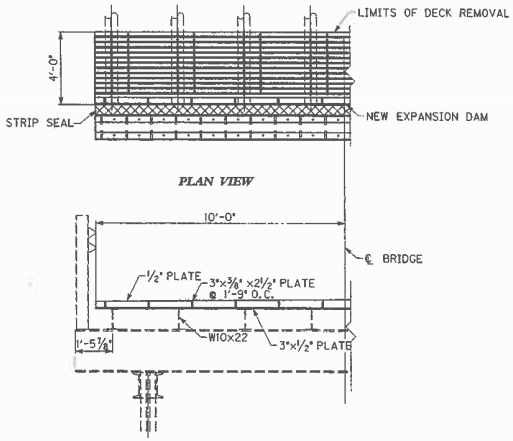


EXISTING SECTION

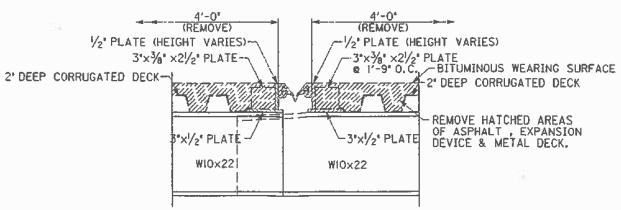


PROPOSED SECTION

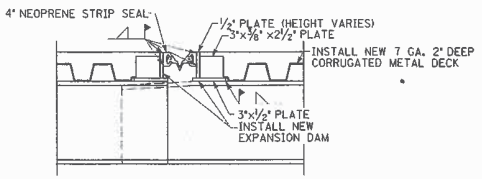
EXPANSION JOINT REPLACEMENT
ABUTMENT 7



SECTION – EXPANSION JOINT REPLACEMENT
ABUTMENT 7

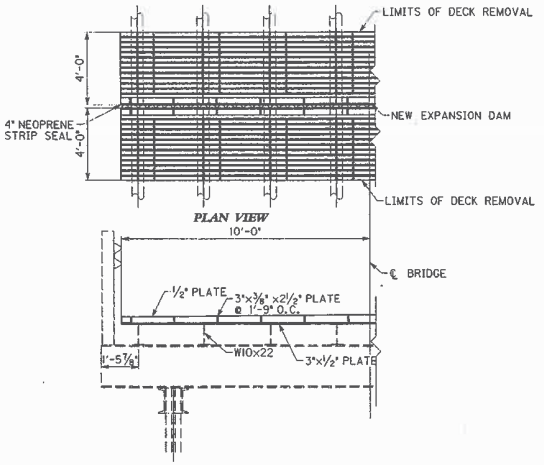


EXISTING SECTION

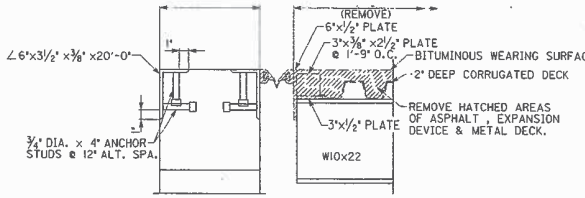


PROPOSED SECTION

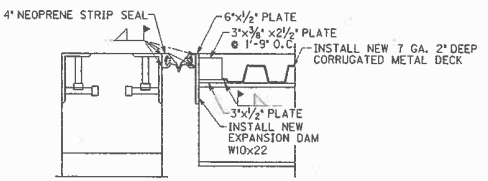
EXPANSION JOINT REPLACEMENT
PIERS 3 & 4



SECTION –EXPANSION JOINT REPLACEMENT
PIERS 3 & 4

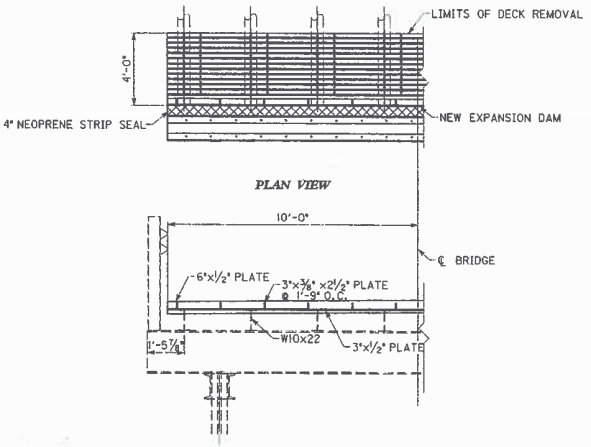


EXISTING SECTION



PROPOSED SECTION

EXPANSION JOINT REPLACEMENT
ABUTMENT 1



SECTION – EXPANSION JOINT REPLACEMENT
ABUTMENT 1

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

EXPANSION JOINT REPLACEMENT

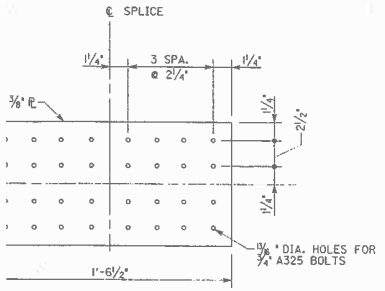
BRIDGE NUMBER	PREPARED BY	SHEET
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S5 DRAWING 2230

K AND SUPPORT BRIDGE GIRDERS

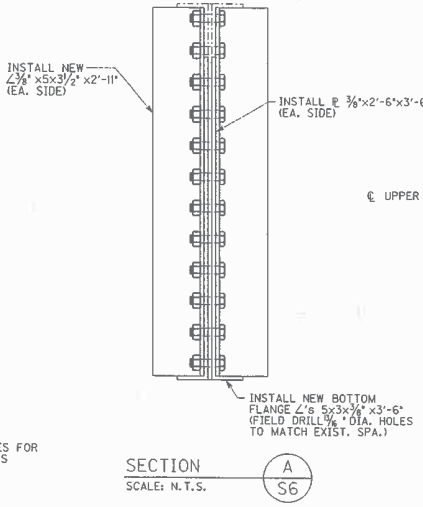
OVE EXISTING BEARING PAD, RING STIFFENER, FILLER PLATE, BOTTOM FLANGE ANGLES.

AN AND PREPARE EXISTING STEEL

TALL NEW WEB REINFORCING ℙ , TOM FLANGE, BEARING STIFFENER BEARING PAD

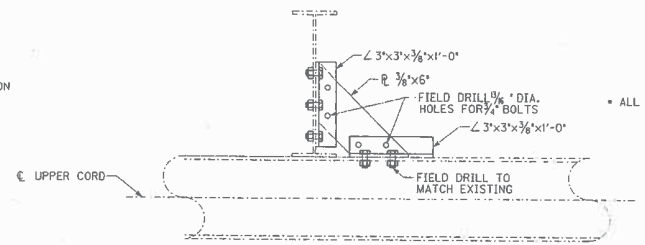


SPLICE DETAIL



SECTION A S6
SCALE: N.T.S.

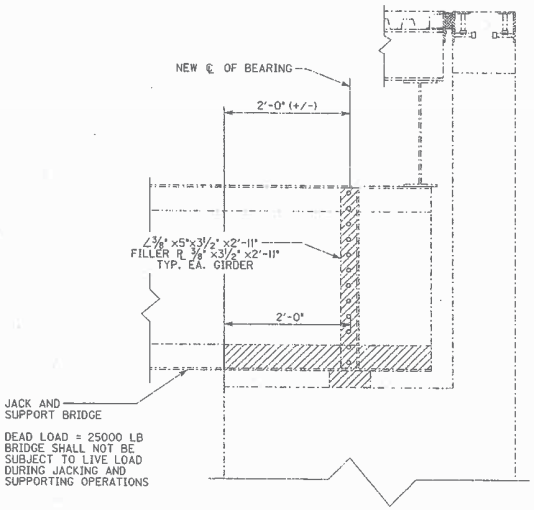
EXISTING SECTION



PROPOSED SECTION

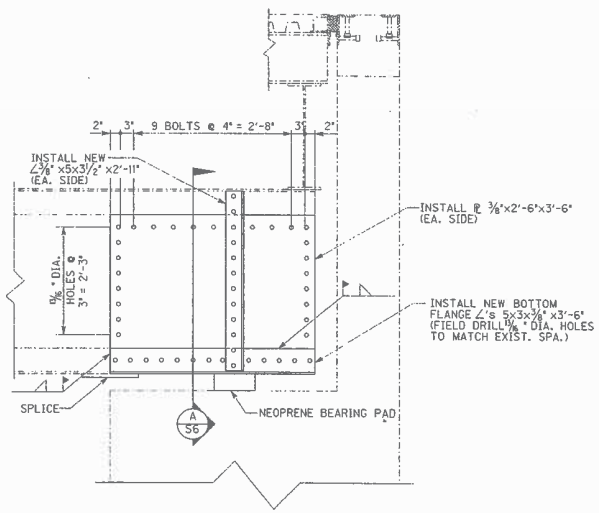
FLOOR BEAM BRACING REPAIR

12 LOCATIONS

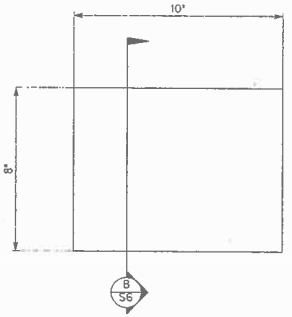


* REMOVED HATCHED PORTION OF BEAM AND BEARING DEVICE

EXISTING PLAN



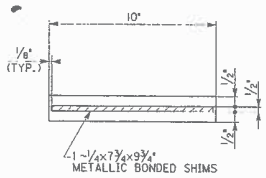
PROPOSED PLAN



(OPTIONAL)

BEARING PAD

(2 REQUIRED)



SECTION B S6
SCALE: N.T.S.

REPAIR BEAM

BOTH GIRDERS SPAN 6 TO BE REPAIRED

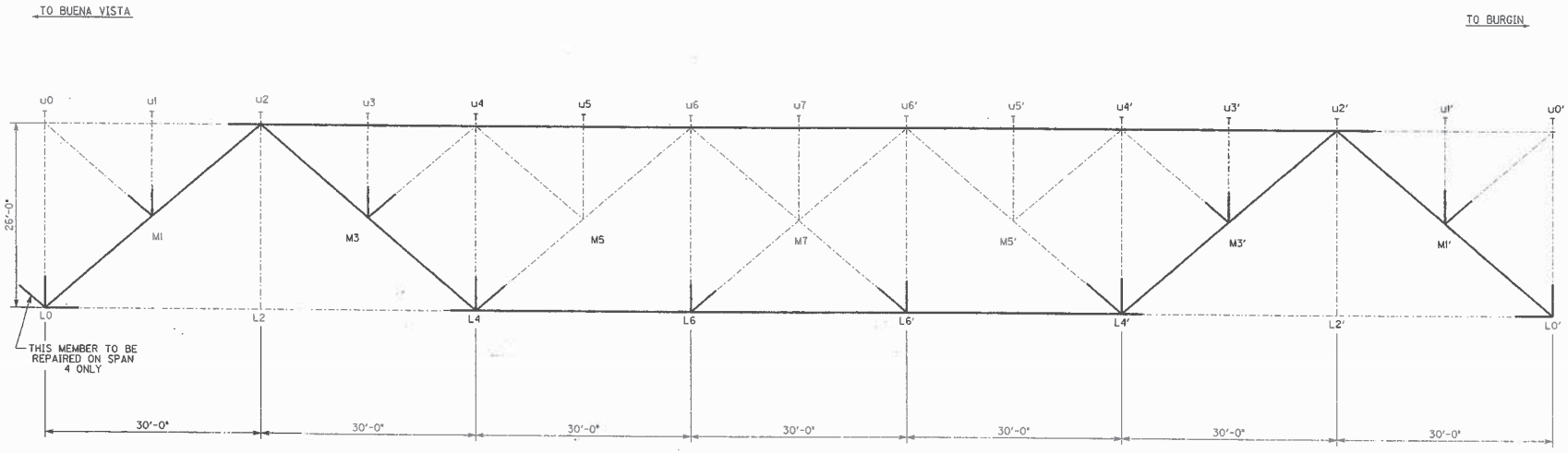
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

REPAIR BEAM

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S6 DRAWING NO. 2230



TYPICAL JOINT NUMBERING
FOR SPANS 2, 3 & 4

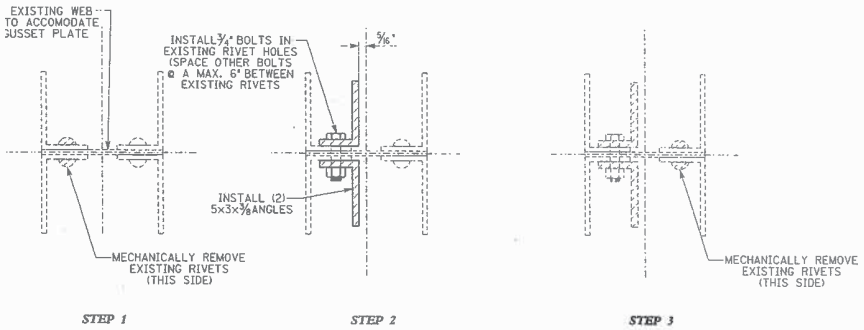
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

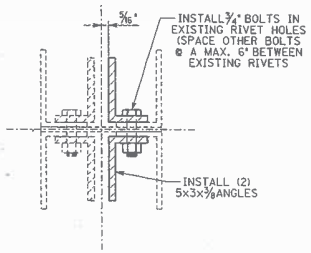
ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

TYPICAL JOINT NUMBERING

BRIDGE NUMBER	PREPARED BY	SHEET #
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S7 DRAWING: 2230



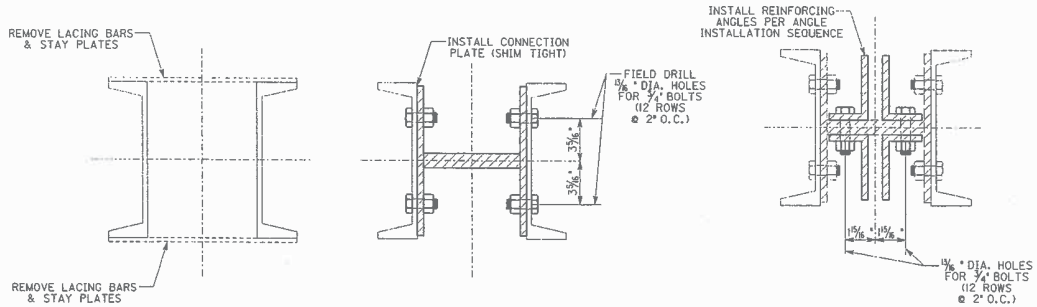
STEP 1 *STEP 2* *STEP 3*



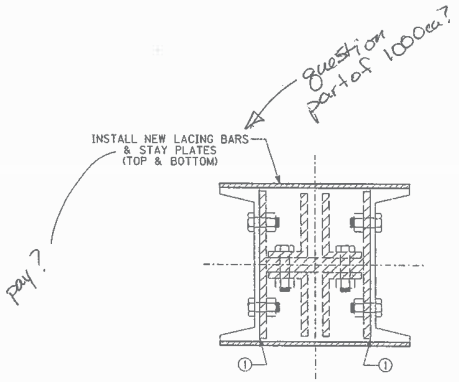
STEP 4

BOTTOM CHORD REINFORCING ANGLE INSTALLATION SEQUENCE

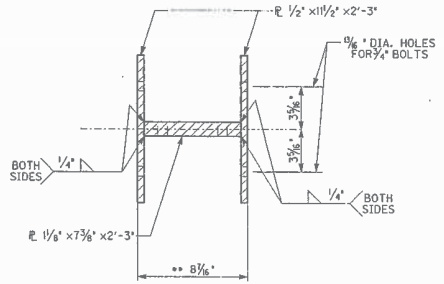
(BETWEEN L4 AND L4')



STEP 1 *STEP 2* *STEP 3*



STEP 4



CONNECTION BEAM DETAIL

BUILD UP MEMEBER FOR L0, L0'

① FILLER P MAY BE NECESSARY TO PROVIDE THE MINIMUM 1⅛" EDGE CLR. WHEN USING THE EXISTING RIVET HOLES

** FIELD VERIFY BEFORE ORDERING MATERIALS

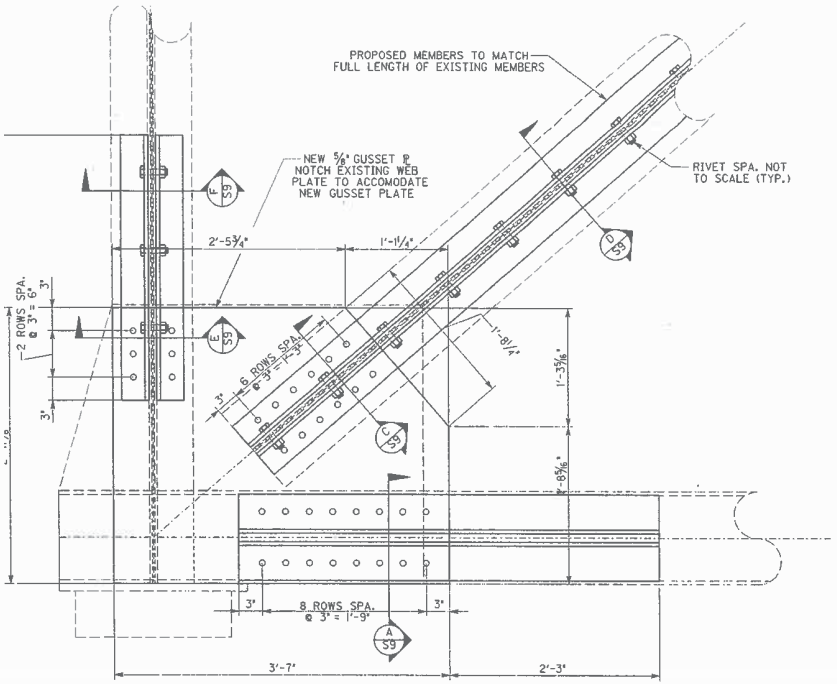
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

ROUTE: **KY 152** | ORDERING: **HERRINGTON LAKE**

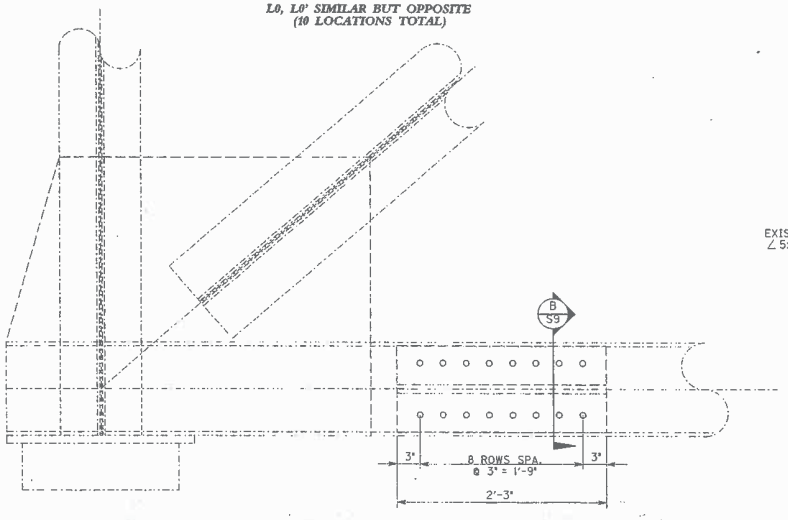
INSTALLATION SEQUENCE

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design / *AMERICAN ENGINEERS, INC.*	S8
		DRAWING NO. 2230

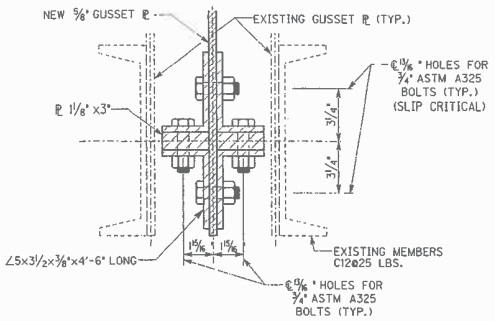


VIEW BETWEEN EXISTING GUSSET ℄

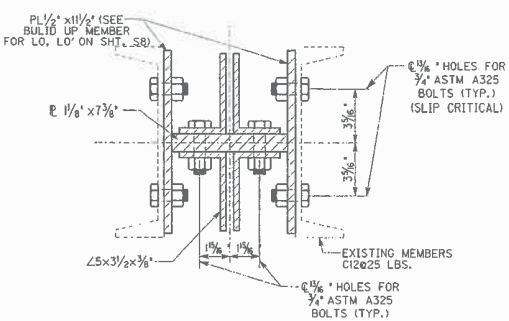
L0, L0' SIMILAR BUT OPPOSITE (10 LOCATIONS TOTAL)



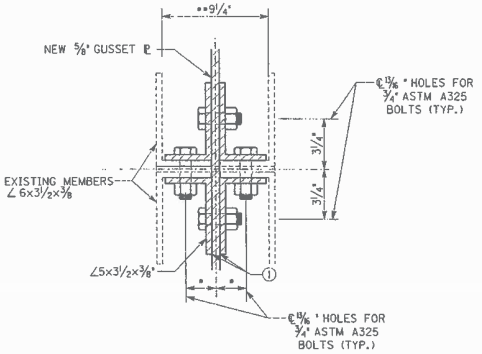
OUTSIDE FACIA



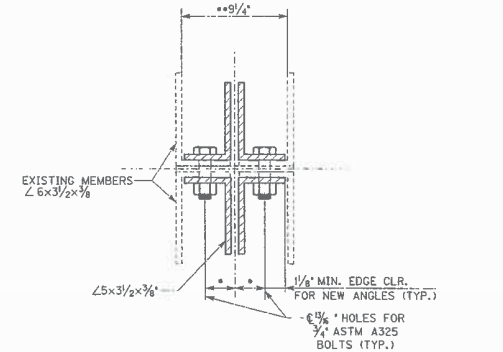
SECTION A S9
SCALE: N.T.S.



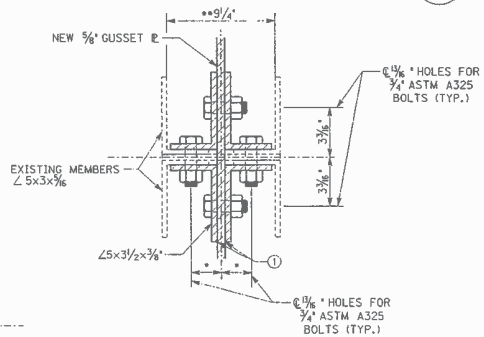
SECTION B S9
SCALE: N.T.S.



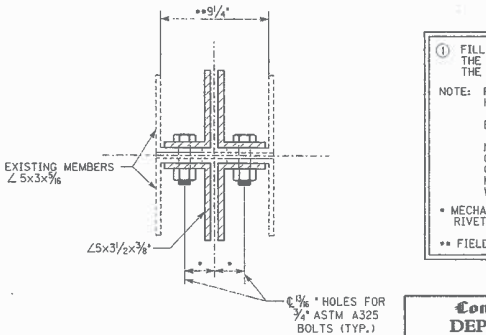
SECTION C S9
SCALE: N.T.S.



SECTION D S9
SCALE: N.T.S.



SECTION E S9
SCALE: N.T.S.



SECTION F S9
SCALE: N.T.S.

① FILLER ℄ MAY BE NECESSARY TO PROVIDE THE MINIMUM 1 1/8" EDGE CLR. WHEN USING THE EXISTING RIVET HOLES

NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR 3/4" BOLTS. (TYP.)

EXISTING RIVET SPACING IS UNKNOWN

NEW A325 BOLTS ARE TO BE SPA. AT A MAX OF 6". USE EXISTING RIVET HOLES AND SPA. OTHER BOLTS BETWEEN EXISTING RIVET AT A MAX. OF 6" WHERE POSSIBLE. FIELD DRILL WHERE NECESSARY.

* MECHANICALLY REMOVE EXISTING RIVETS AND REPLACE W/ 3/4" A325 BOLTS

** FIELD VERIFY BEFORE ORDERING MATERIALS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

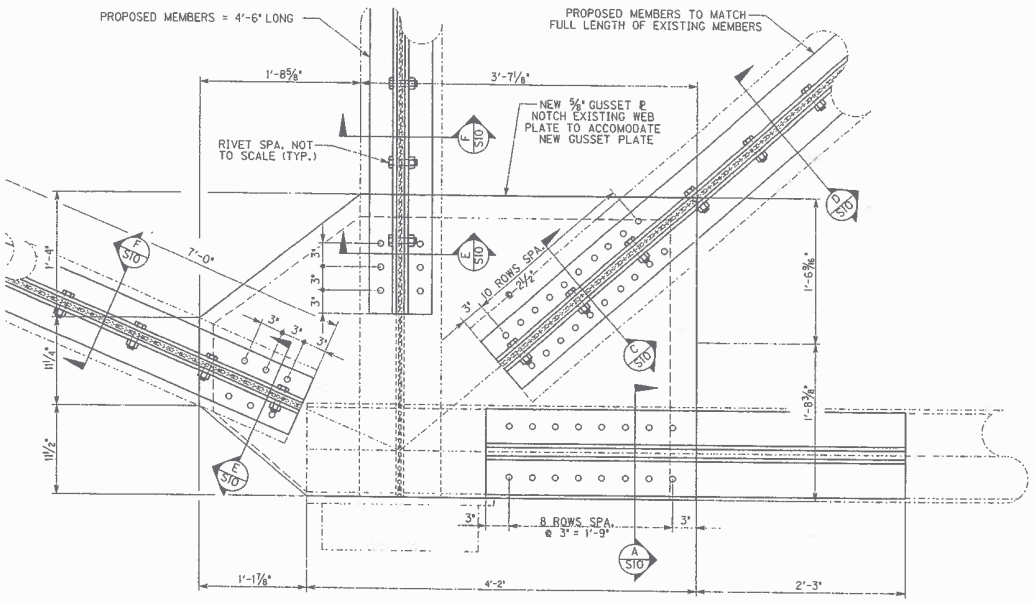
COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

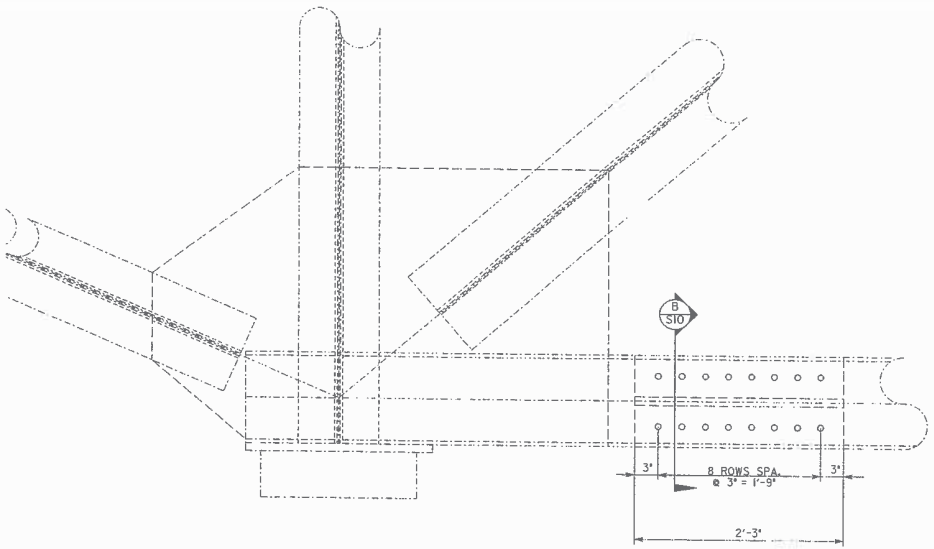
L0, LO' REPAIR DETAILS

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design / *AMERICAN ENGINEERS, INC.*	S9

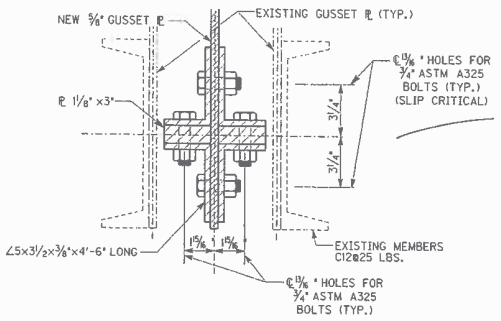
DRAWING NO. 2230



VIEW BETWEEN EXISTING GUSSET ℄

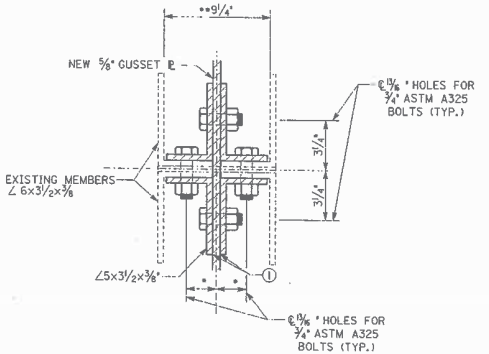


OUTSIDE FACIA

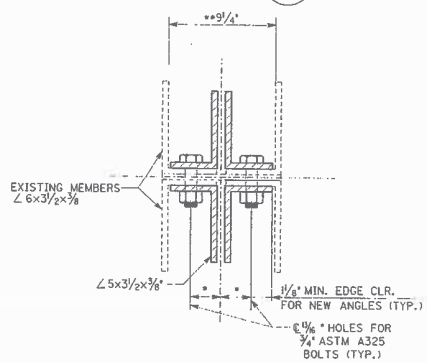


SECTION A S10
SCALE: N.T.S.

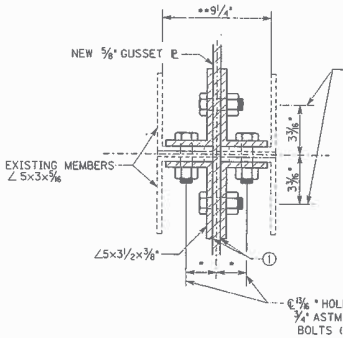
SECTION B S10
SCALE: N.T.S.



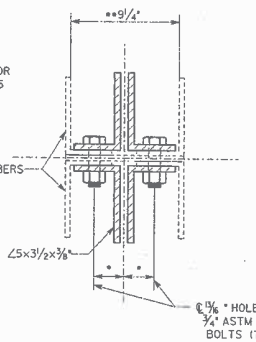
SECTION C S10
SCALE: N.T.S.



SECTION D S10
SCALE: N.T.S.



SECTION E S10
SCALE: N.T.S.



SECTION F S10
SCALE: N.T.S.

① FILLER ℄ MAY BE NECESSARY TO PROVIDE THE MINIMUM ⅛" EDGE CLR. WHEN USING THE EXISTING RIVET HOLES

NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR ¾" BOLTS. (TYP.)

EXISTING RIVET SPACING IS UNKNOWN

NEW A325 BOLTS ARE TO BE SPA. AT A MAX. OF 6". USE EXISTING RIVET HOLES AND SPA. OTHER BOLTS BETWEEN EXISTING RIVET AT A MAX. OF 6" WHERE POSSIBLE. FIELD DRILL WHERE NECESSARY.

* MECHANICALLY REMOVE EXISTING RIVETS AND REPLACE W/ ¾" A325 BOLTS

** FIELD VERIFY BEFORE ORDERING MATERIALS

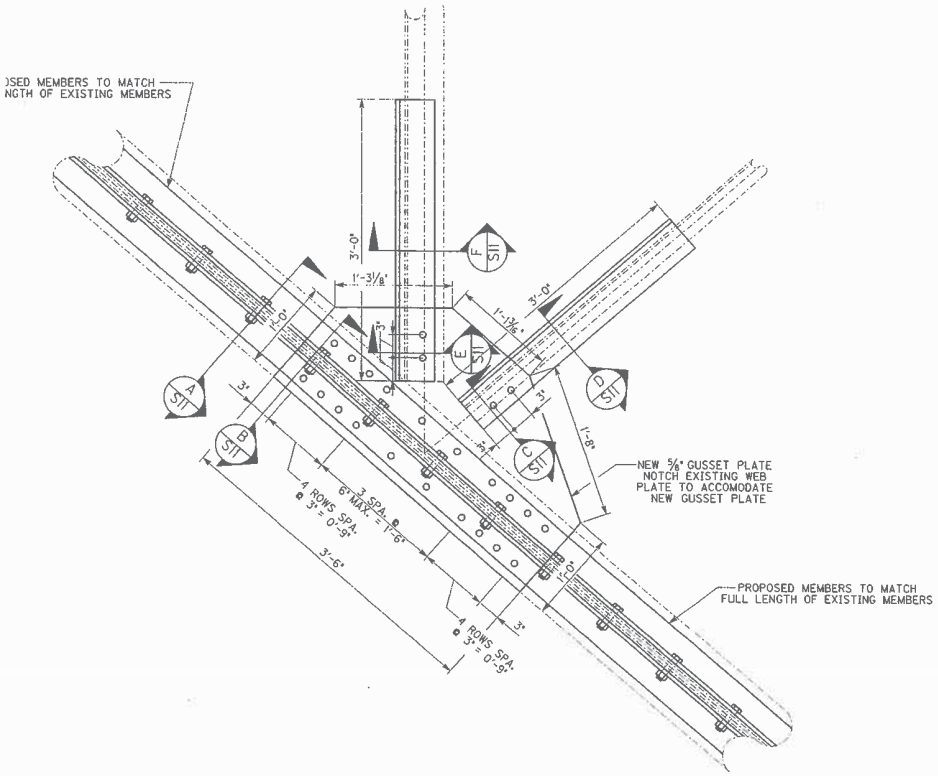
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

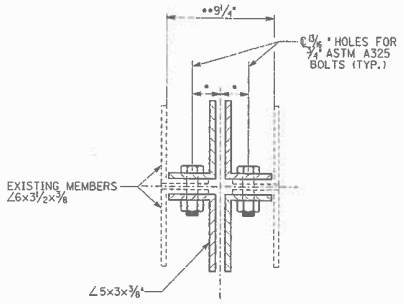
LO SPAN 4 REPAIR DETAILS

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design AMERICAN ENGINEERS, INC.	S10 DRAWING NO. 2230

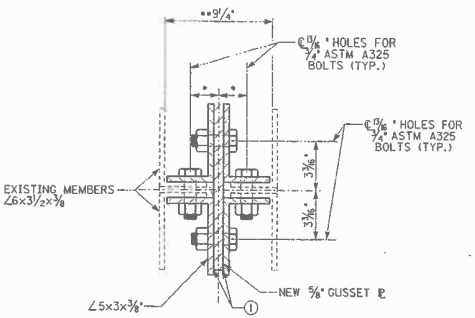


REPAIR DETAIL

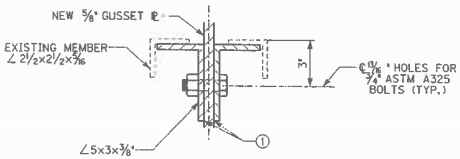
M3, M1', M1 & M3' SIMILAR BUT OPPOSITE
(24 LOCATIONS TOTAL)



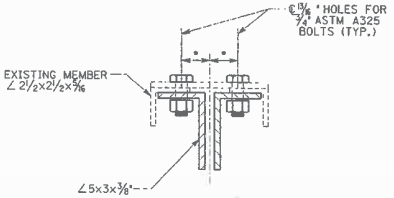
SECTION A S11
SCALE: N.T.S.



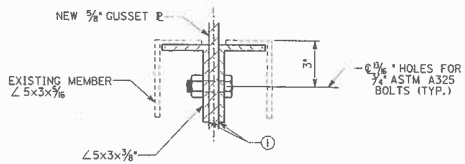
SECTION B S11
SCALE: N.T.S.



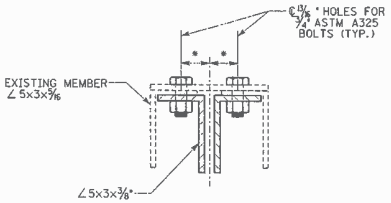
SECTION C S11
SCALE: N.T.S.



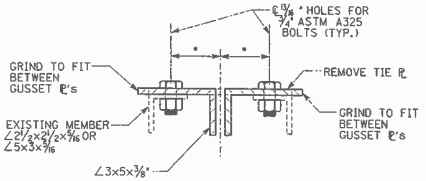
SECTION D S11
SCALE: N.T.S.



SECTION E S11
SCALE: N.T.S.



SECTION F S11
SCALE: N.T.S.



OPTIONAL SECTION D&F S11
SCALE: N.T.S.

① FILLER PL MAY BE NECESSARY TO PROVIDE THE MINIMUM 1 1/8" EDGE CLR. WHEN USING THE EXISTING RIVET HOLES

NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR 3/4" BOLTS. (TYP.)

EXISTING RIVET SPACING IS UNKNOWN

* MECHANICALLY REMOVE EXISTING RIVETS AND REPLACE W/ 3/4" A325 BOLTS

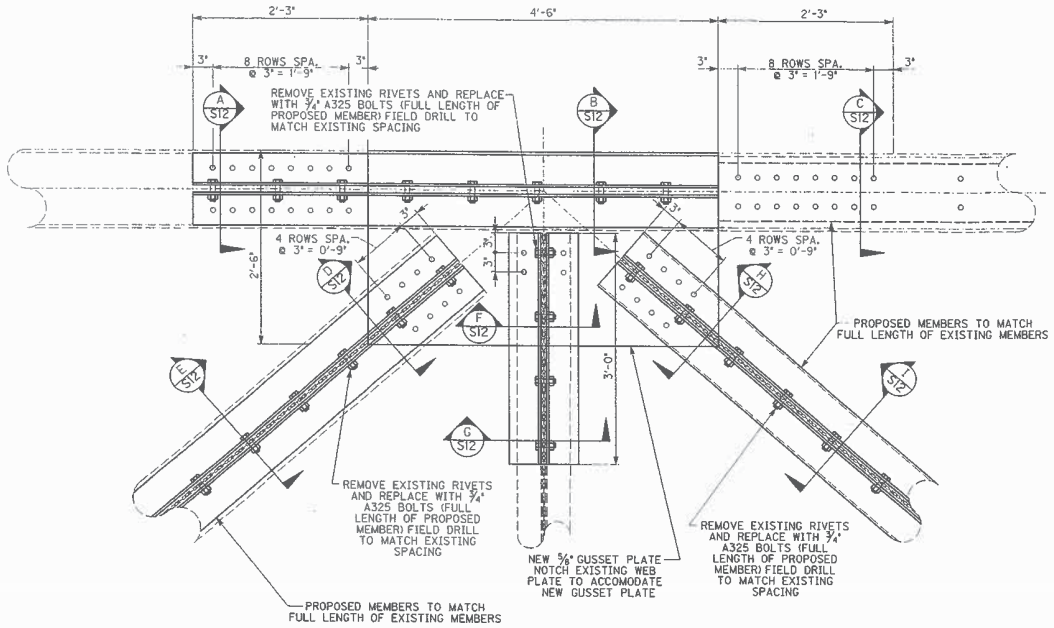
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

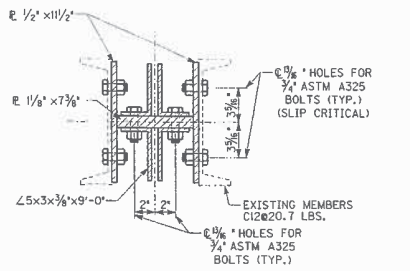
ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

M3, M1' REPAIR DETAILS

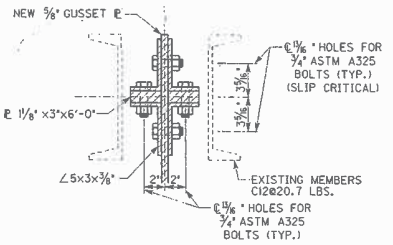
BRIDGE NUMBER	PREPARED BY	SHEET NO
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S11 DRAWING NO 22305



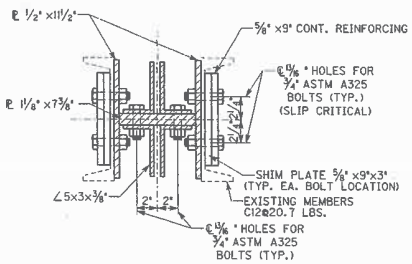
REPAIR DETAIL
SHOWING VIEW BETWEEN EXISTING GUSSET PLS U2, U2'
(12 LOCATIONS TOTAL)



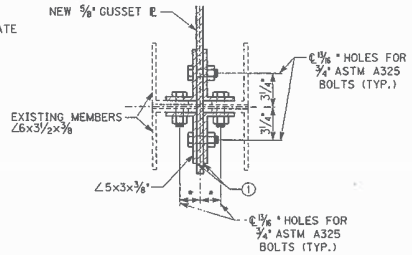
SECTION A S12
SCALE: N.T.S.



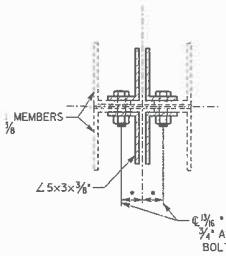
SECTION B S12
SCALE: N.T.S.



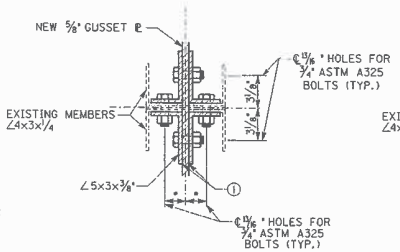
SECTION C S12
SCALE: N.T.S.



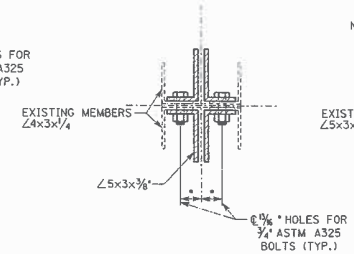
SECTION D S12
SCALE: N.T.S.



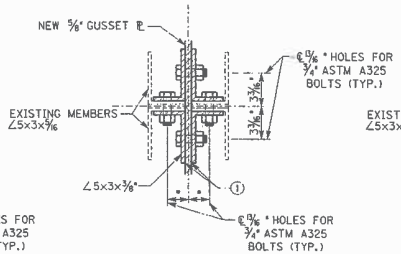
SECTION E S12
SCALE: N.T.S.



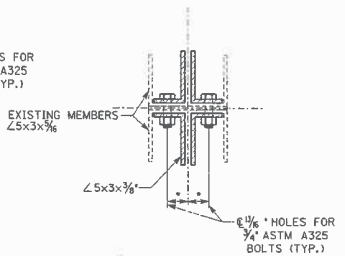
SECTION F S12
SCALE: N.T.S.



SECTION G S12
SCALE: N.T.S.



SECTION H S12
SCALE: N.T.S.



SECTION I S12
SCALE: N.T.S.

① FILLER ℄ MAY BE NECESSARY TO PROVIDE THE MINIMUM 1⅛" EDGE CLR. WHEN USING THE EXISTING RIVET HOLES

NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR ¾" BOLTS. (TYP.)

EXISTING RIVET SPACING IS UNKNOWN

• MECHANICALLY REMOVE EXISTING RIVETS AND REPLACE W/ ¾" A325 BOLTS

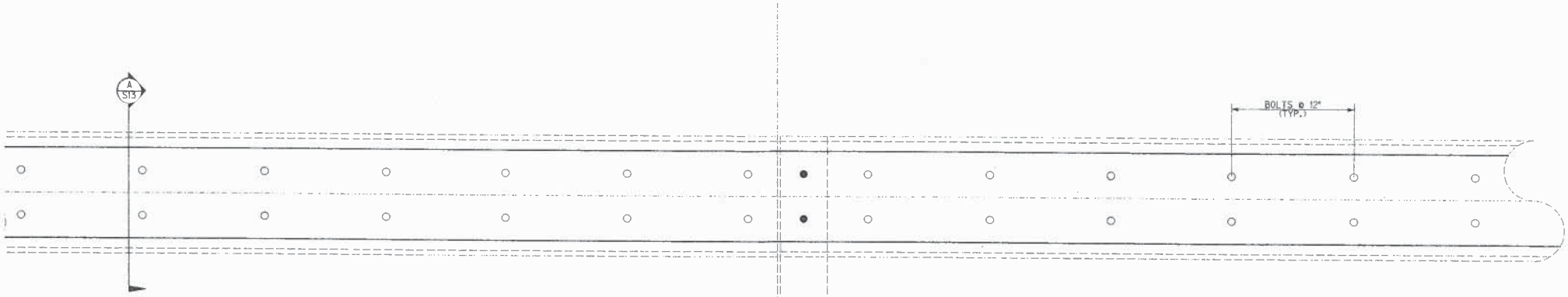
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

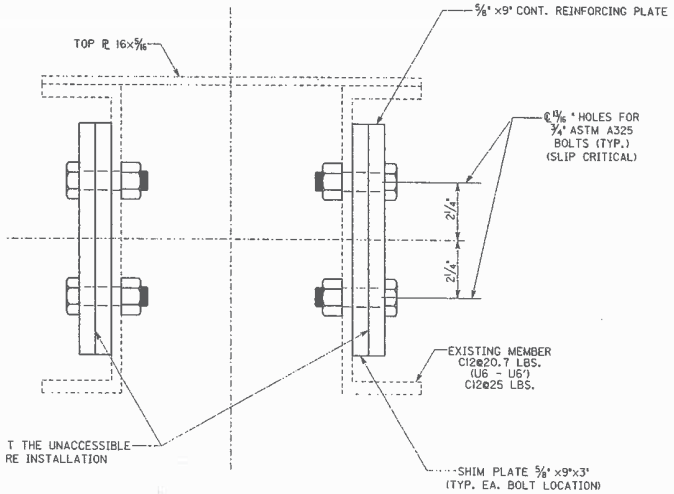
COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

U2, U2' REPAIR DETAILS

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S12 DRAWING NO. 22308





SECTION A S13
SCALE: N.T.S.

REINFORCING DETAIL
U3, U5, U7, U5', U3'
(24 LOCATIONS TOTAL)

NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR 3/4" BOLTS. (TYP.)

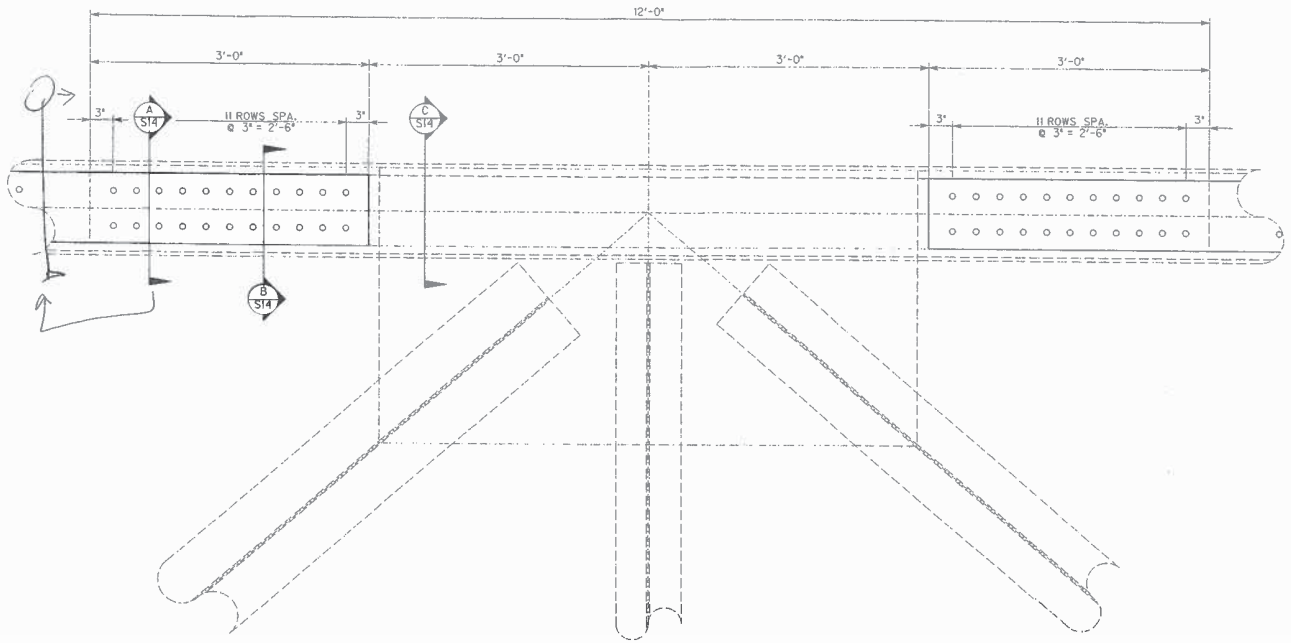
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

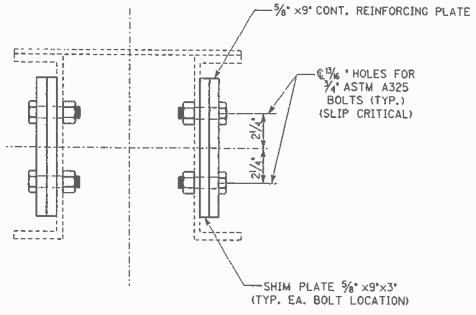
U3, U3' REINFORCING DETAILS

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S13 DRAWING NO. 22305

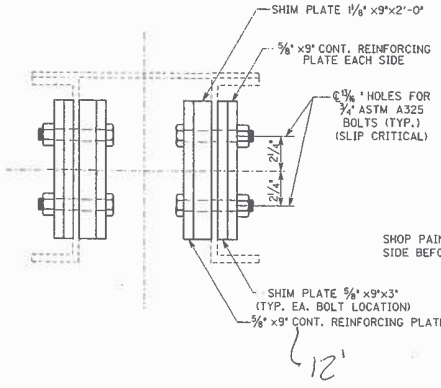


REINFORCING DETAIL

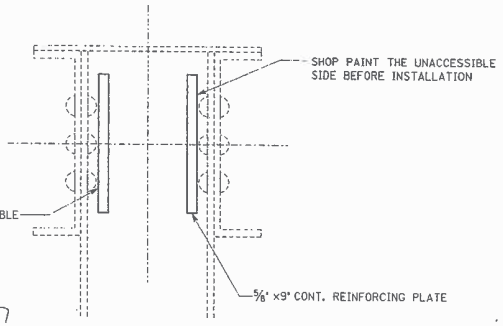
U4, U6, U6', U4'
(16 LOCATIONS TOTAL) ← 24?



SECTION A S14
SCALE: N.T.S.



SECTION B S14
SCALE: N.T.S.



SECTION C S14
SCALE: N.T.S.

NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR 3/4" BOLTS. (TYP.)

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: MERCER

ROUTE: KY 152

CROSSING: HERRINGTON LAKE

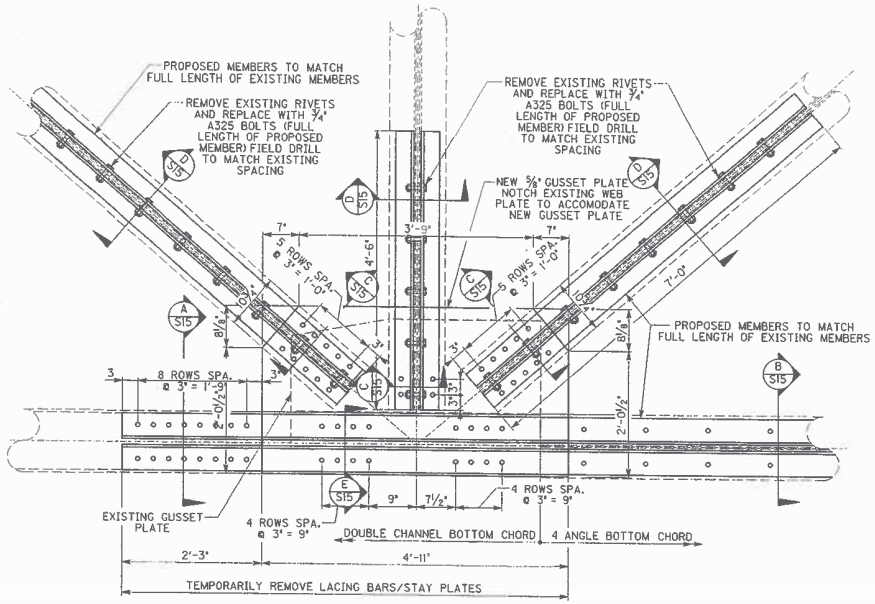
U4, U4' REINFORCING DETAILS

BRIDGE NUMBER: FE02-084-0152-B00005N

PREPARED BY: Division of Structural Design
AMERICAN ENGINEERS, INC.

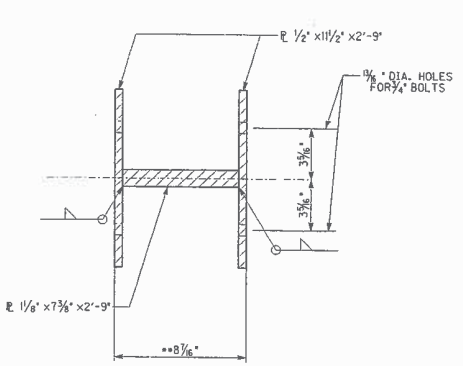
SHEET NO: S14

DRAWING NO: 2230

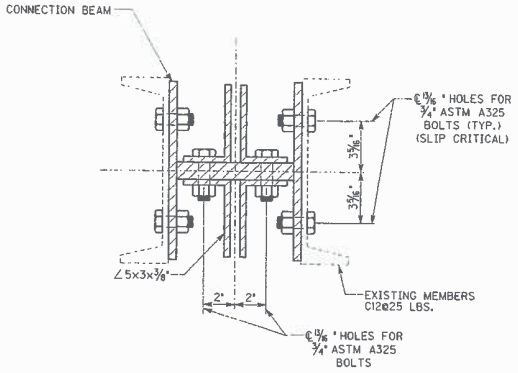


REPAIR DETAIL

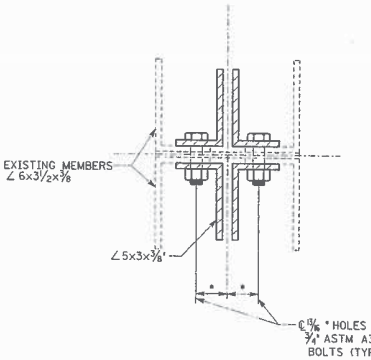
L4, L4' SIMILAR BUT OPPOSITE (12 LOCATIONS TOTAL)



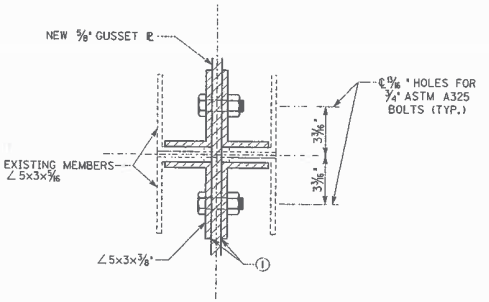
CONNECTION BEAM DETAIL



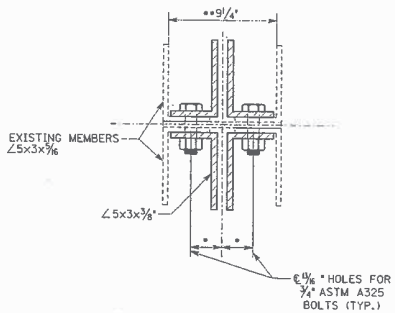
SECTION A / SCALE: N.T.S. / S15



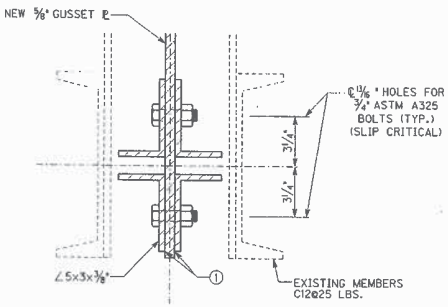
SECTION B / SCALE: N.T.S. / S15



SECTION C / SCALE: N.T.S. / S15



SECTION D / SCALE: N.T.S. / S15



SECTION E / SCALE: N.T.S. / S15

① FILLER ℄ MAY BE NECESSARY TO PROVIDE THE MINIMUM 1½" EDGE CLR. WHEN USING THE EXISTING RIVET HOLES

NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR 3/4" BOLTS. (TYP.)

.EXISTING RIVET SPACING IS UNKNOWN

* MECHANICALLY REMOVE EXISTING RIVETS AND REPLACE W/¾" A325 BOLTS

** FIELD VERIFY BEFORE ORDERING MATERIALS

Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

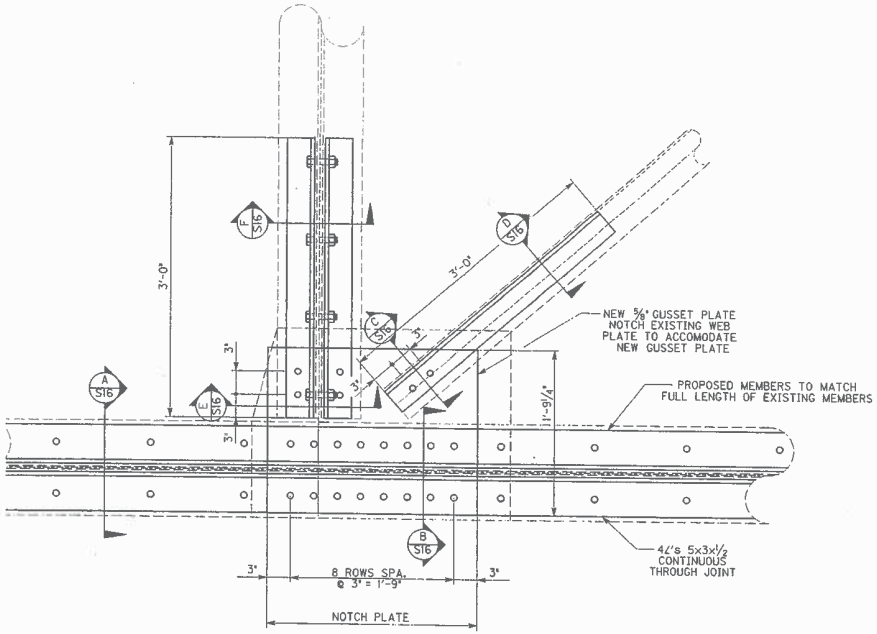
COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

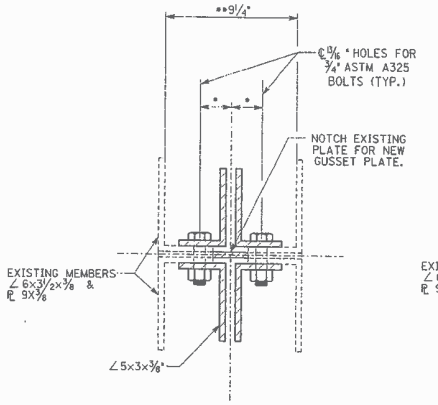
L4, L4' REPAIR DETAILS

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design — AMERICAN ENGINEERS, INC.	S15

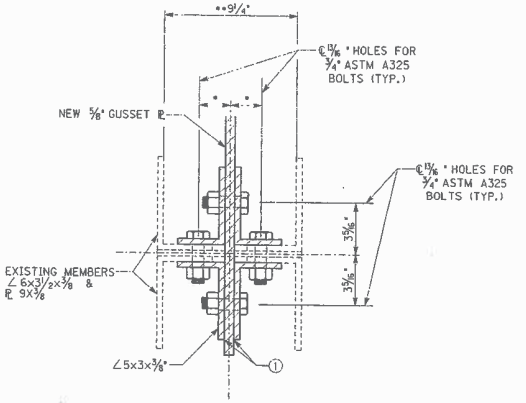
DRAWING NO. 2230E



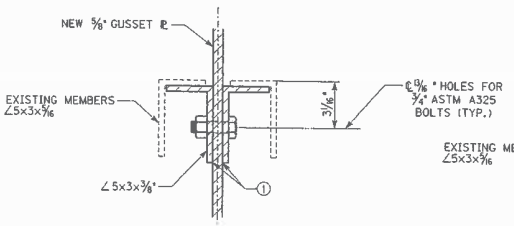
REPAIR DETAIL
SHOWING VIEW BETWEEN EXISTING GUSSET P/S L6, L6' SIMILAR BUT OPPOSITE (12 TOTAL LOCATIONS)



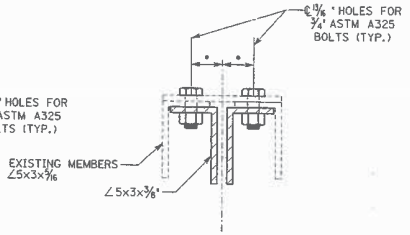
SECTION A S16
SCALE: N.T.S.



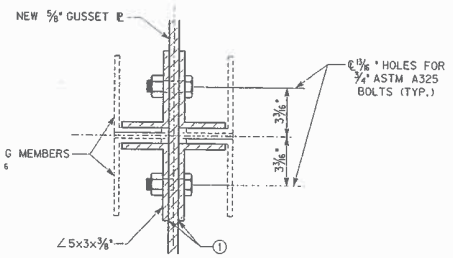
SECTION B S16
SCALE: N.T.S.



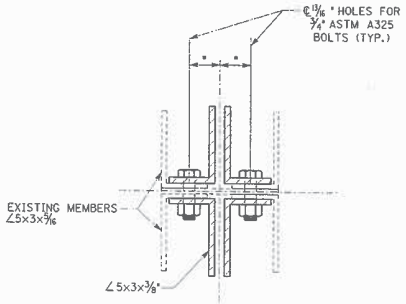
SECTION C S16
SCALE: N.T.S.



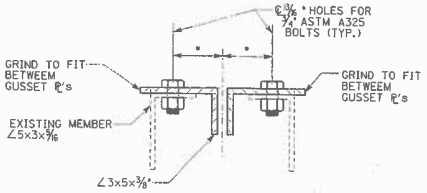
SECTION D S16
SCALE: N.T.S.



SECTION E S16
SCALE: N.T.S.



SECTION F S16
SCALE: N.T.S.



OPTIONAL SECTION D S16
SCALE: N.T.S.

① FILLER ℄ MAY BE NECESSARY TO PROVIDE THE MINIMUM 1 1/8" EDGE CLR. WHEN USING THE EXISTING RIVET HOLES

NOTE: FIELD DRILL NEW 13/16" DIA. HOLES FOR 3/4" BOLTS. (TYP.)

EXISTING RIVET SPACING IS UNKNOWN

* MECHANICALLY REMOVE EXISTING RIVETS AND REPLACE W/ 3/4" A325 BOLTS

** FIELD VERIFY BEFORE ORDERING MATERIALS

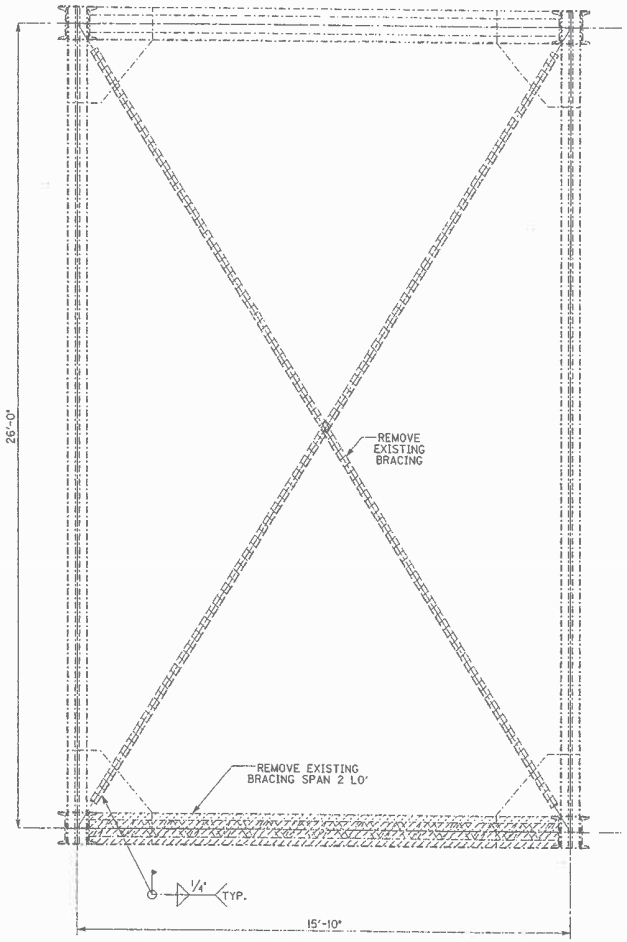
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

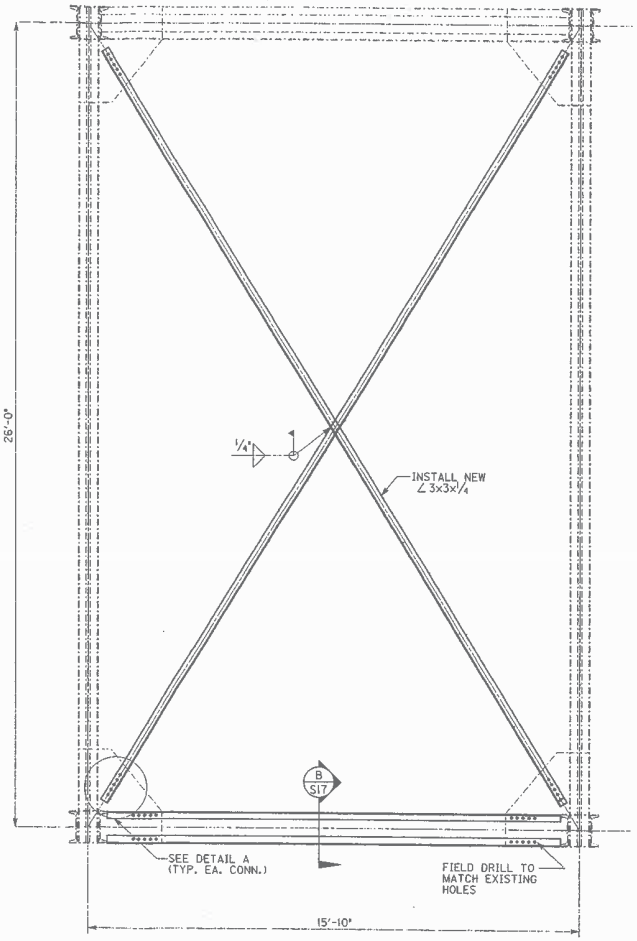
ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

L6, L6' REPAIR DETAILS

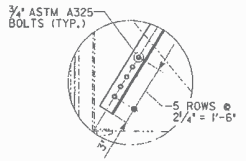
BRIDGE NUMBER	PREPARED BY	SHEET NO
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S16 DRAWING NO. 22305



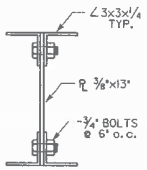
EXISTING SECTION



PROPOSED SECTION



DETAIL A



SECTION B S17
SCALE: N.T.S.

NOTE: FIELD DRILL NEW 1 1/16" DIA. HOLES FOR 3/4" BOLTS. (TYP.)

CROSS BRACING AT PIERS

(6 LOCATIONS TOTAL)

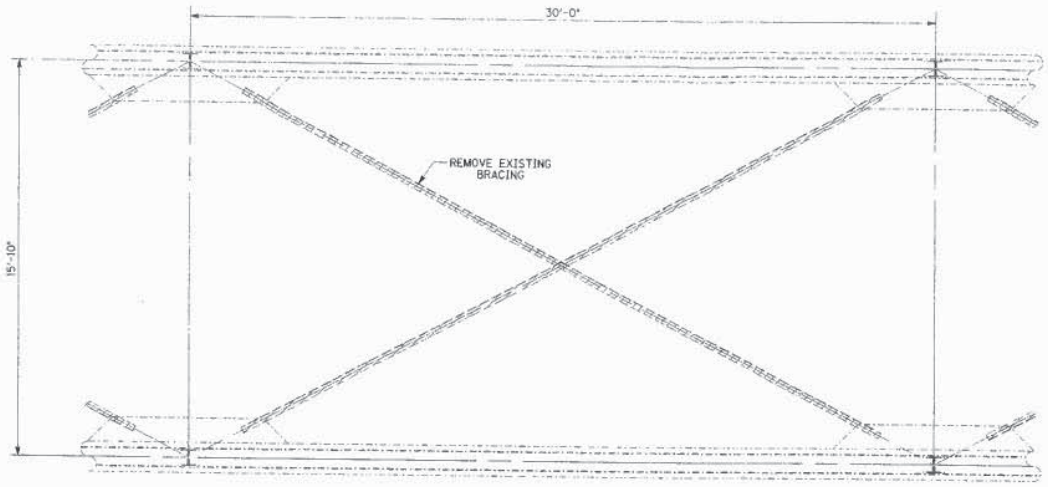
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

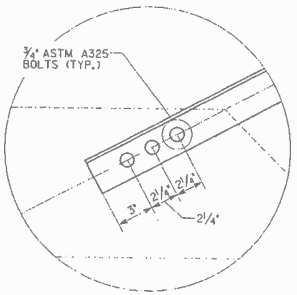
ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

BRACING REPAIR

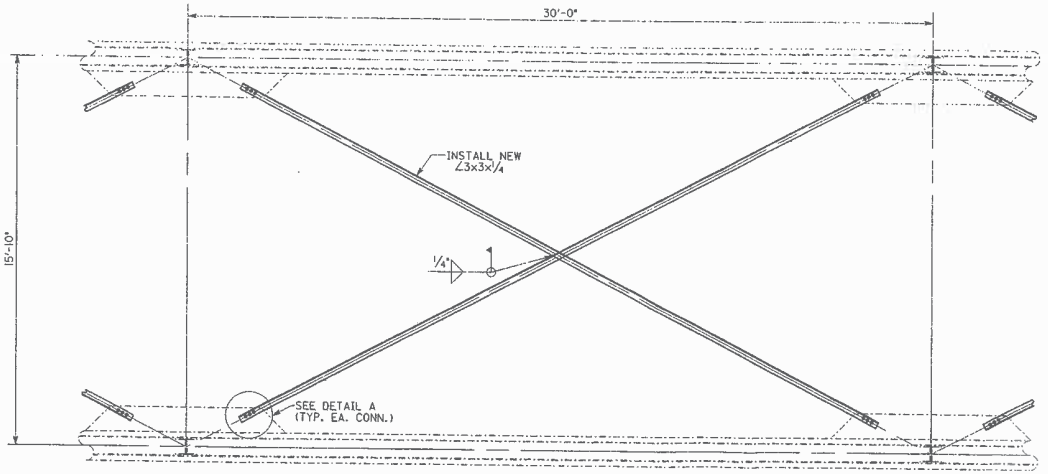
BRIDGE NUMBER	PREPARED BY	SHEET
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S1 DRAWING 223



EXISTING PLAN



DETAIL A



PROPOSED PLAN

LOWER LATERAL BRACING REPAIR

TYPICAL SPAN 2, 3 & 4
(21 LOCATIONS)

NOTE: FIELD DRILL NEW 7/8" DIA. HOLES FOR ¾" BOLTS. (TYP.)

* MECHANICALLY REMOVE EXISTING RIVETS AND REPLACE W/ 3/4" A490 BOLTS

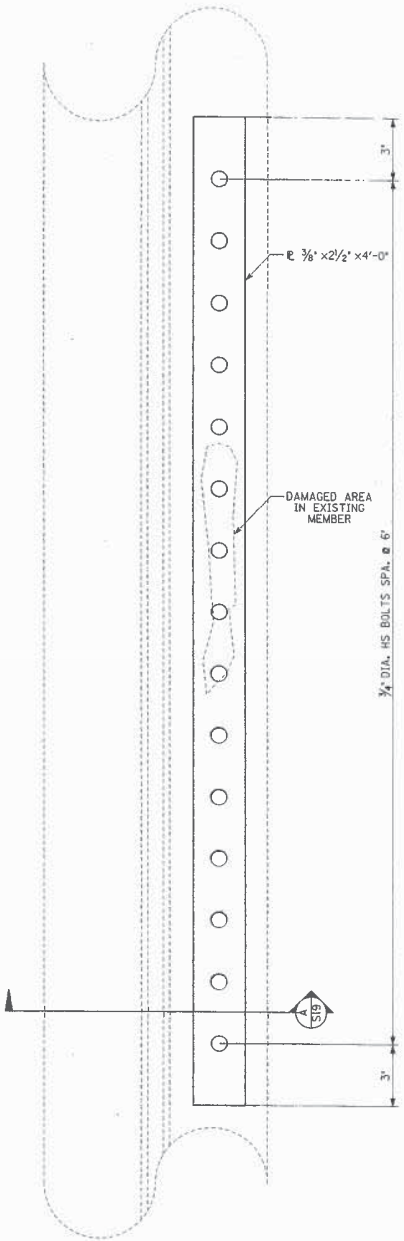
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

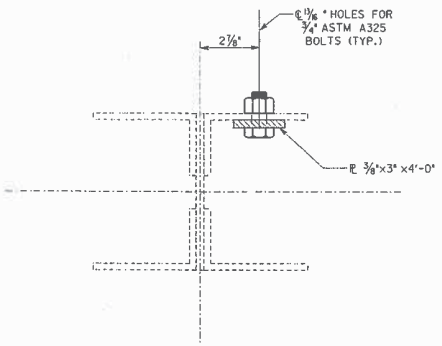
COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

LOWER LATERAL BRACING REPAIR

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S18 DRAWING NO. 2230





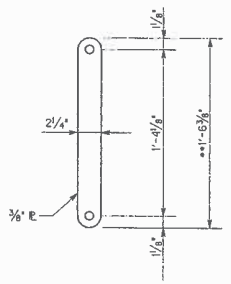
SECTION A S19
SCALE: N.T.S.

MEMBER PATCHING DETAIL

(REPAIR TRUSS MEMBER)

NOTE: PROVIDE 40 PATCHES. INSTALLATION LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

INSTALLED QUANTITY MAY BE INCREASED OR DECREASED AT THE ENGINEERS DISCRETION.



LACING BAR DETAIL

NOTE: PROVIDE 1000 LACING BARS. INSTALLATION LOCATIONS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

INSTALLED QUANTITY MAY BE INCREASED OR DECREASED AT THE ENGINEERS DISCRETION.

NOTE: FIELD DRILL NEW 1⅜" * DIA. HOLES FOR ¾" BOLTS. (TYP.)
**FIELD VERIFY BEFORE ORDERING MATERIALS

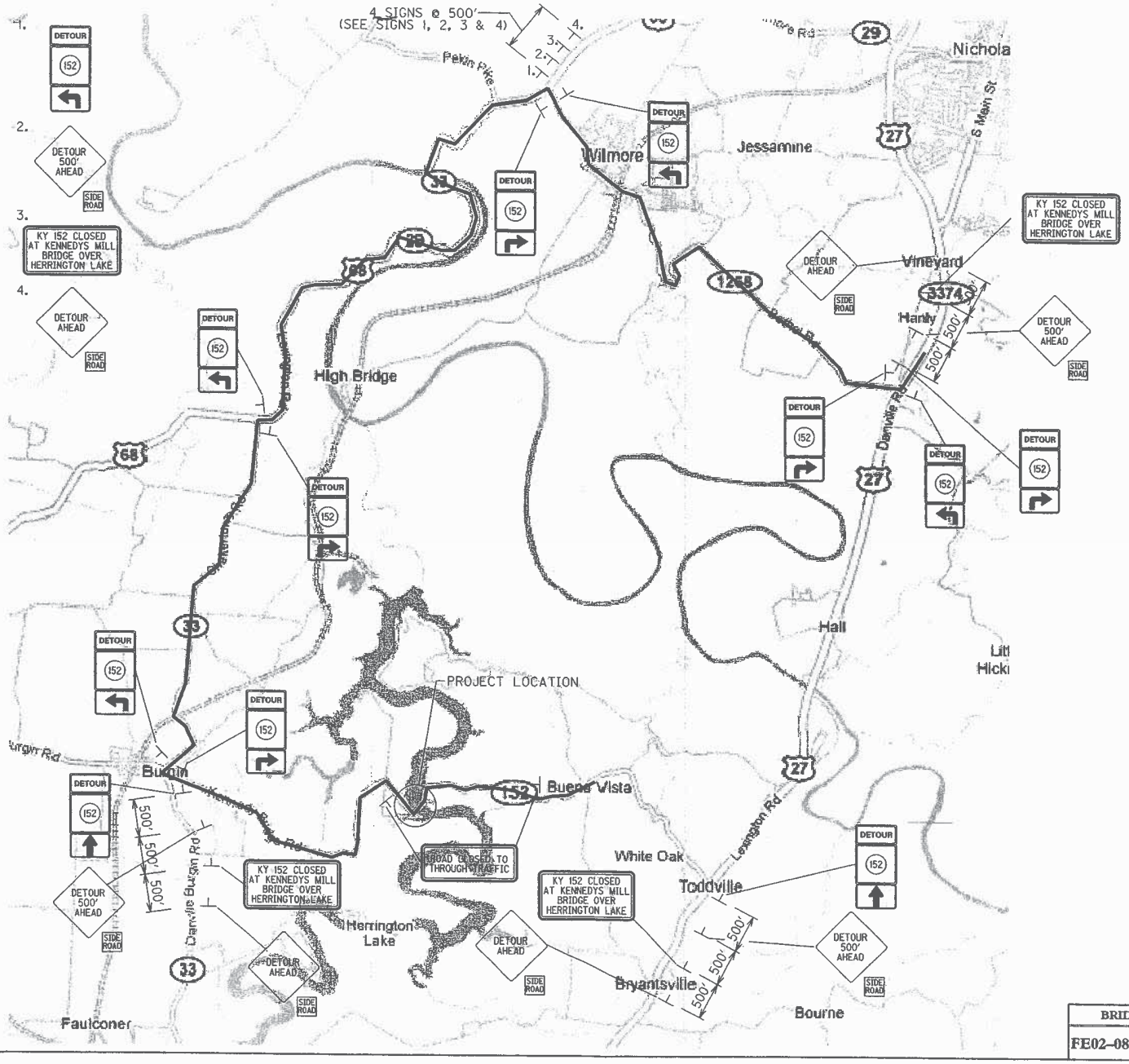
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

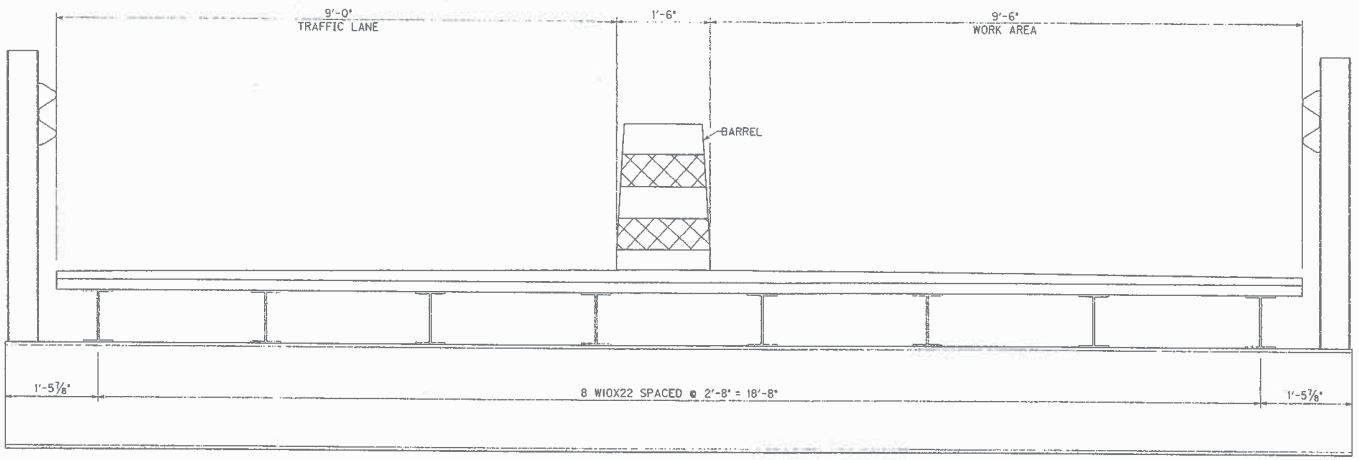
ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

MEMBER PATCHING DETAIL

BRIDGE NUMBER	PREPARED BY	SHEET NO
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S19 DRAWING NO 2230

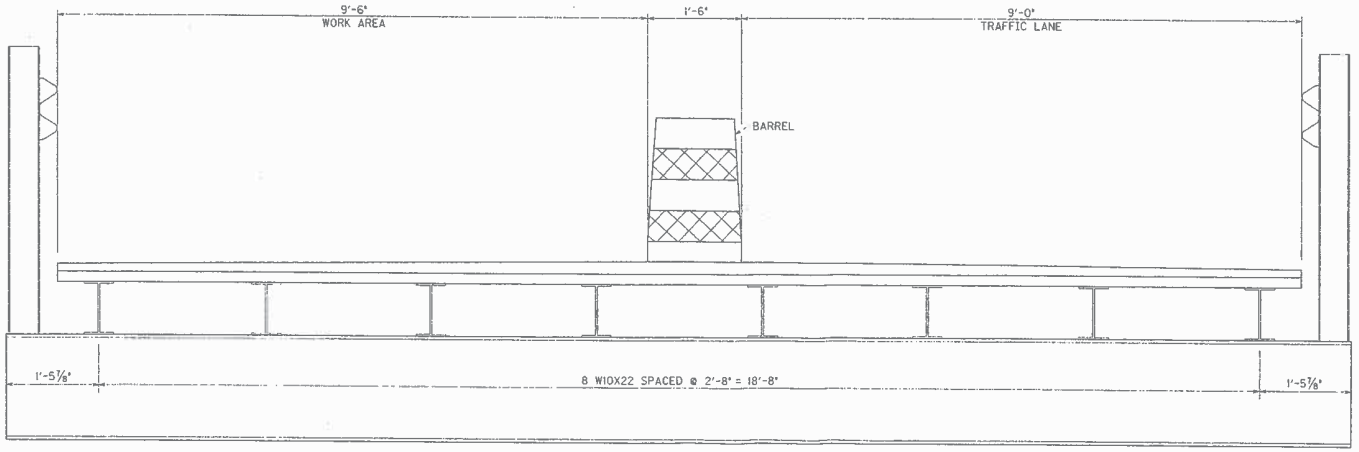


Commonwealth of Kentucky DEPARTMENT OF HIGHWAYS	
COUNTY MERCER	
ROUTE KY 152	CROSSING HERRINGTON LAKE
DETOUR ROUTE	
BRIDGE NUMBER FE02-084-0152-B00005N	PREPARED BY Division of Structural Design AMERICAN ENGINEERS, INC.
	SHEET NO S20 DRAWING NO 22305



PHASE I

remove this sheet



PHASE II

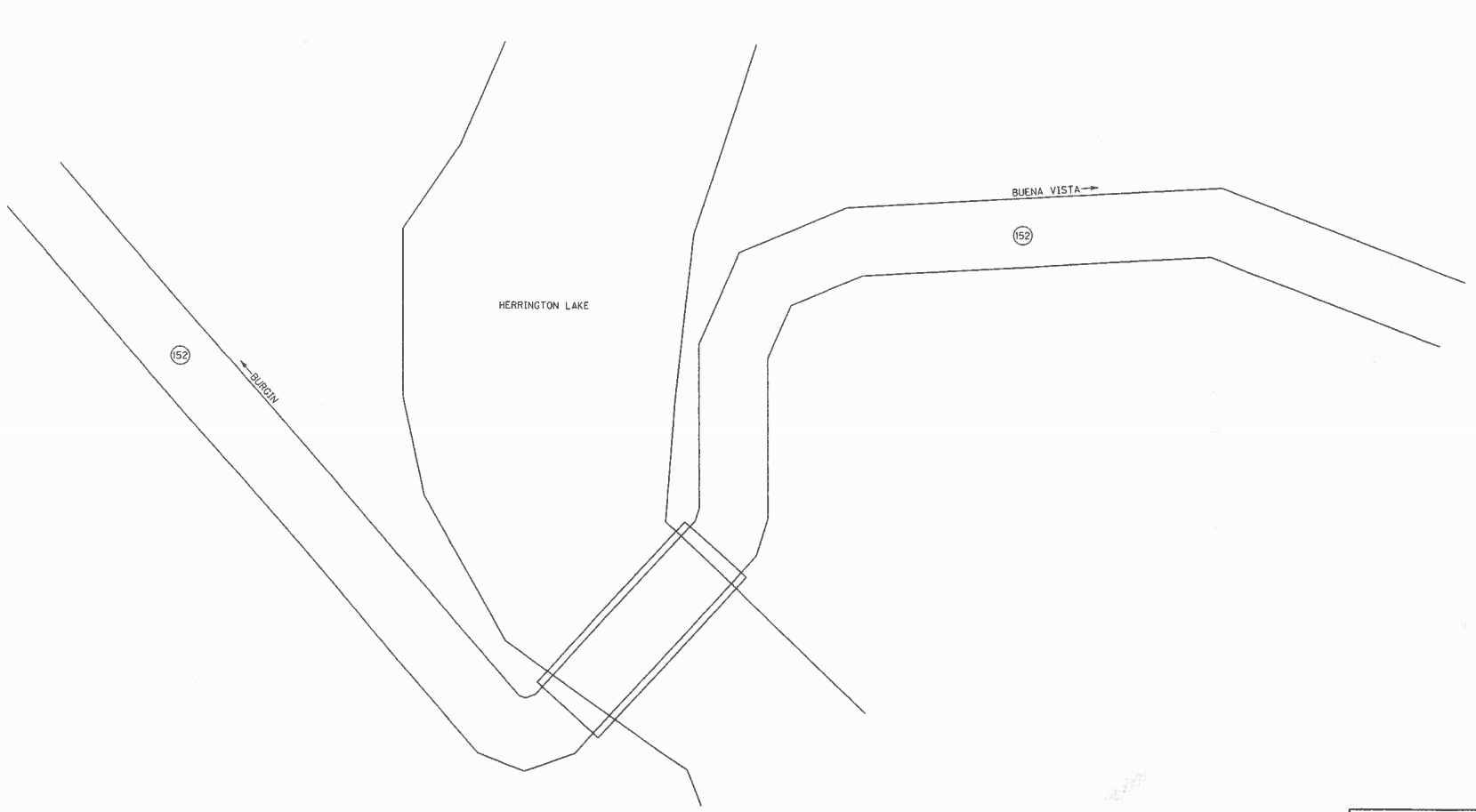
Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

COUNTY: **MERCER**

ROUTE: **KY 152** | CROSSING: **HERRINGTON LAKE**

MAINTENANCE OF TRAFFIC - PHASING PLAN

BRIDGE NUMBER	PREPARED BY	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design *AMERICAN ENGINEERS, INC.*	S21
		DRAWING NO. 22305



Commonwealth of Kentucky
DEPARTMENT OF HIGHWAYS

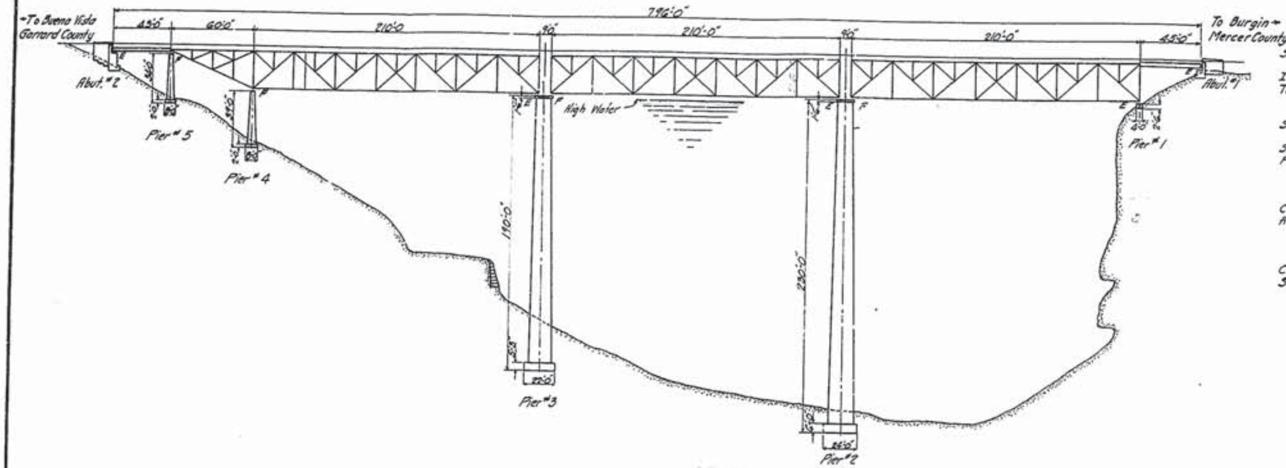
COUNTY: MERCER

ROUTE: KY 152

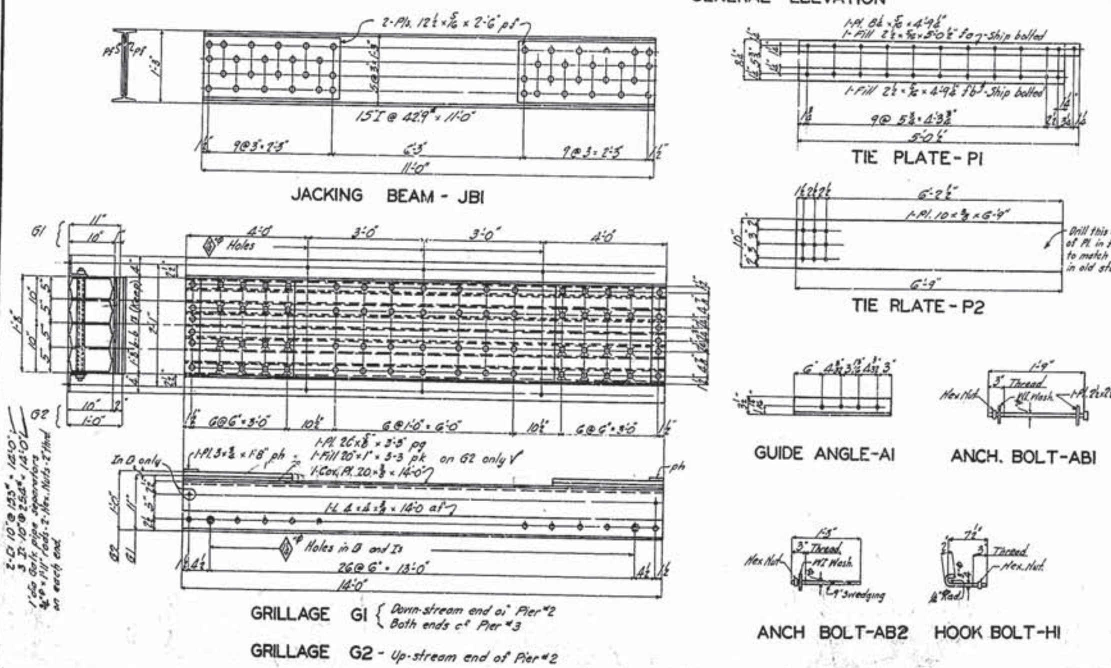
CROSSING: HERRINGTON LAKE

VICINITY MAP

BRIDGE NUMBER	PREPARED BY:	SHEET NO.
FE02-084-0152-B00005N	Division of Structural Design AMERICAN ENGINEERS, INC.	S22 DRAWING NO. 2230



GENERAL ELEVATION



JACKING BEAM - JB1

TIE PLATE - P1

TIE PLATE - P2

GUIDE ANGLE-A1

ANCH. BOLT-AB1

GRILLAGE G1 { Down-stream end of Pier #2 / Both ends of Pier #3

GRILLAGE G2 - Up-stream end of Pier #2

ANCH BOLT-AB2

HOOK BOLT-H1

FED. ROAD DIST.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				

GENERAL NOTE

SPECIFICATIONS- Kentucky State Highway Department. Standard 1932 with adopted amendments.
INSPECTION - State Highway Department, Frankfort, Ky.
TEST REPORT ON STRUCTURAL STEEL- The State Highway Commission shall be furnished certified copies of mill test reports, showing that structural steel shapes for this work meet requirements of the Specifications.
SHOP CLEANING- All steel to be thoroughly cleaned of rust, loose mill scale, dirt, oil or grease, and all other foreign substances.
SHOP PAINTING - No shop paint required.
FIELD CLEANING AND PAINTING All new steel to be thoroughly cleaned and given one coat of Red Lead or Basic Sulphate Blue Lead paint, followed by one coat each of No.1 and No.2 White Lead paint in the order named. Paint on old steel that is damaged by repair work to be replaced.
CONCRETE - All to be Class 'A'
REINFORCEMENT- To be deformed bars. Dimensions from face of concrete are clear distances. Dimensions for bar spacing are center to center of bars. Bars shall be wired at all intersections and held in correct position by precast mortar or concrete blocks, spaced not more than 50 diameters of supported bar.
CORNERS - All exposed corners to be chamfered 7/8"
SHEET LEAD To be commercial grade. Payment will be made for sheet lead at the contract unit price per pound complete in place. as specified.

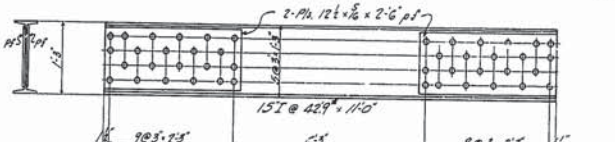
SPECIAL NOTE

Work to be done consists of encasing Pier #5 and jacking ends of spans on Piers #2 and #3 and replacing old shoes with Grillages G1 and G2. All traffic on bridge to be stopped during jacking operations.

The following suggested order of procedure may be varied by the contractor, who shall assume all responsibility for safety of bridge and do any additional work he may think necessary, in order to complete the work required by plans and specifications. The cost of any additional work to be included in the unit bid prices. The unit bid prices shall include all costs for complete acceptable work.

SUGGESTED ORDER OF PROCEDURE

1. Remove handrail above pier.
2. Cut loose L bracing between vert. posts at bottom and at X, drill post Ls for Struts S1, and bolt S1 in place, on both spans over pier.
3. Cut out lacing in posts as shown, mark and drill new holes, and place pls. P1 and P2.
4. Cut off and drill brac. Ls, then rivet up P1, P2, S1, and brac.
5. Remove shoe Ls and burn Anch. Bolts off as noted, and check top of pier for uniform seat for G1 or G2.
6. Place JB1, jacking sill and jacks. land G1 or G2 as reqd. across end of pier outside of old shoes, then raise spans just enough to remove old shoes, and slide new grillage into place. Bolt guide Ls A1 in place before lowering jacks to insure proper placing of grillage
7. Wedge up grillage and place sheet lead in position shown. Use ⅛" thickness of lead under each end of each grillage.
8. Remove jacks and anchor grillages to pier. Rivet guide Ls A1.
9. Repeat jacking operation at other end of S1 and repeat entire operation at other pier.

Any parts of the present bridge, not included in proposed work, that are temporarily removed or changed to complete the proposed work shall be replaced in as good condition as before removal or change at the full expense of the Contractor.

REQUIRED LIST - STRUCT. STEEL

Mark	No.	Description
S1	4	Jacking Strut
JB1	1	Jacking Beam
G1	3	Grillage
G2	1	"
P1	8	Tie Pls.
A1R	8	Guide Ls
A1L	8	" "
AB1	16	Anchor Bolts
AB2	8	" "
H1	10	Hook Bolts (2-extra)
P2	8	Tie Plates
16	16	28 x ½ lead Sheets 3'-0 long (soft grade)

Note- All Rivets ¾"
All Open holes 13/16" unless noted.

ESTIMATE OF QUANTITIES

Structural Steel	182500	Lb.
Sheet Lead	1000	"
Reinforcing Steel	46600	"
Concrete Class 'A'	49.0	Cu.Yd.
Structure Excavation, Unclassified	10.0	Cu.Yd.

Repairs to Kennedys Mill Bridge Sheet #1 of 3

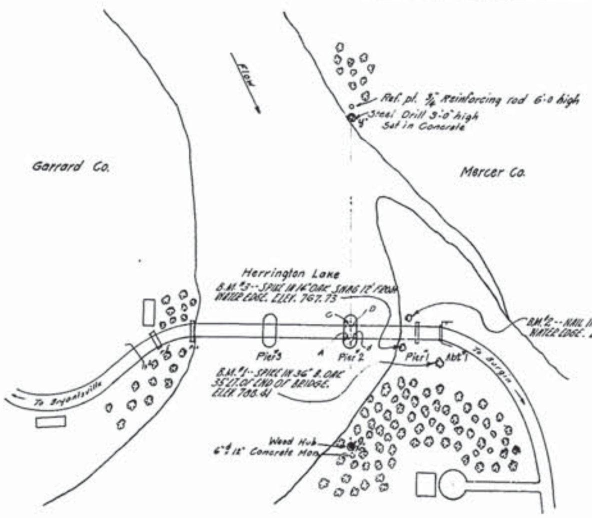
COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG - LANCASTER ROAD
STATION PROJECT NO.
Approved: Chairman - 5493

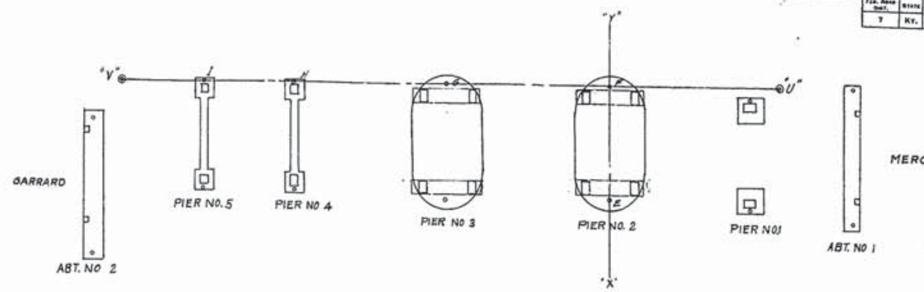
Designed by R.A.B. Date 12-32
Traced by R.A.B. Date 12-32
Checked by H. Griffith Date 12-32
Revised Date

MF 3492-1

BRIDGE

FED. ROAD DIV.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KY.				





NOTE: On the line was sighted from wood hub marked "X" across top of Pier No. 2 to the steel drill marked "Y". Drill holes in top of pier on this line and set copper plugs in concrete grout of places shown by small circles on plan and mark with a center punch to be exactly on the line.
Set a new concrete monument properly centered at "U" and sight across Piers 2, 3, 4 & 5 to a new monument set at "V". On this line copper plugs are to be set at small circles shown on plans and center marked. These plugs are to serve for alignment also as bases to set level rod when taking elevations. On opposite side of piers copper plugs are to be set for elevation readings.
FUTURE READINGS: Measure distances from line of sight to plugs and record distance as right or left of line as run from "X" to "Y" and "U" to "V".
Each date of observation read the thermometer and record the temperature.

Special Observations Pier No 2					Elevations													
Date	A	B	C	D	Abt No 1		Pier No 1		Pier No 2		Pier No 3		Pier No 4		Pier No 5		Abt No 2	
					Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right
3-7-34	4.97	5.36	4.50	5.77														
2-5-36	4.39	5.94	3.98	6.29	786.33	786.33	761.44	761.47	763.62	763.49	761.71	761.60	761.41	761.47	786.45	786.44	786.26	786.26
3-5-36	4.35	5.98	3.95	6.32														
4-6-36	4.35	5.98	3.95	6.32														
11-27-36	4.38	5.95	3.93	6.34														
12-20-37	4.28	6.05	3.80	6.47														
1-18-38	4.04	6.29	3.65	6.62														
2-4-38	4.15	6.18	3.75	6.52														
2-17-38	4.15	6.18	3.72	6.55														
3-16-38	4.20	6.13	3.75	6.52														
4-7-38	4.20	6.13	3.75	6.52														
11-14-38	4.20	6.13	3.74	6.58														
12-20-38	4.12	6.21	3.64	6.63														
1-20-39	4.12	6.21	3.62	6.65														
2-20-39	4.10	6.23	3.62	6.65														
5-2-39	4.10	6.23	3.63	6.64														
1-15-40	3.88	6.45	3.44	6.73														
1-26-42	3.90	6.43	3.48	6.79														
3-15-43	3.95	6.38	3.50	6.77														
3-18-43	3.90	6.43	3.40	6.87														
11-18-43	3.99	6.34	3.47	6.80														
2-24-44	3.74	6.59	3.37	6.90														
2-6-45	3.77	6.56	3.30	6.97	786.33	786.33	761.48	761.50	763.81	763.63	761.83	761.74	761.58	761.56	786.50	786.49	786.31	786.29
12-2-45	3.93	6.40	3.38	6.89	786.34	786.36	761.48	761.50	763.80	763.64	761.83	761.77	761.55	761.55	786.49	786.48	786.29	786.27
3-6-46	3.89	6.44	3.41	6.86	786.34	786.36	761.48	761.50	763.80	763.65	761.83	761.78	761.56	761.56	786.50	786.47	786.31	786.29
1-27-47	3.81	6.52	3.32	6.95	786.35	786.36	761.48	761.50	763.79	763.65	761.84	761.78	761.57	761.56	786.53	786.52	786.34	786.32
3-24-47	3.87	6.46	3.42	6.85	786.34	786.35	761.47	761.50	763.83	763.66	761.84	761.79	761.58	761.57	786.53	786.51	786.31	786.31
3-9-48	3.84	6.49	3.27	7.00	786.33	786.34	761.48	761.50	763.86	763.69	761.87	761.84	761.60	761.63	786.54	786.53	786.34	786.33

Date	Temperature	Line "X"-"Y" Rt. or Lft. of Points at				Line "U"-"V" Right or Left of Points at							
		E		F		F		G		H		I	
		Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.
3-15-50	55°	0.0	1/2"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-27-50	80°		1/4										
10-27-50	72°	0.0	0.0	1/4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-11-51	54°	7/8	0.0	1/2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-14-51	65°	0.0	0.0	0.0	0.0	1/8	•	1/12"		0.0	0.0	0.0	0.0
12-16-52	45°	0.0	1/8"	0.0	1/8"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-23-53	22°	0.0	0.10"	0.0	0.1"	0.0	0.0	0.08		0.0	0.0	0.0	0.0
6-16-54	92°	0.0	0.05	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-21-54	30°	0.0	11/16"	0.0	10/16"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-17-55	42°	0.0	1/2"	0.0	3/8"	0.0	0.0	1/4"	0.0	0.0	0.0	0.0	0.0
2-18-55	55°	0.0	1 1/4"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
* 3-8-55	44°	Point "Y" under water.				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3-25-55	43°	"	"	"	"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4-25-55	61°	0.0	9/16"	0.0	1/4"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-13-55	75°	0.0	1 5/16	0.0	3/4"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6-15-55	72°	0.0	15/16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7-18-55	85°	0.0	7/8"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8-16-55	83°	0.0	7/8"	0.0	0.0	0.0	0.0	0.0	3/16	0.0	0.0	0.0	0.0
10-3-55	65°	0.0	1"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-21-55	60°	0.0	7/8"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11-21-55	50°	0.0	15/16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12-19-55	36°	0.0	7/8"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1-20-56	38°	0.0	9/16"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
* 2-21-56	36°	Point "Y" Under Water				0.0	1/8"	0.0	0.0	0.0	0.0	0.0	0.0
* 3-19-56	32°	Point "Y" Under Water				0.0	1/16"	1/16"	0.0	0.0	0.0	0.0	0.0
* 4-11-56	40°	Point "Y" Under Water				0.0	1/16"	1/8"	0.0	0.0	0.0	0.0	0.0
5-18-56	65°	0.0	1/8"	0.0	1/4"	0.0	1/16"	1/16"	0.0	0.0	0.0	0.0	0.0
6-19-56	84°	0.0	1 1/8"	0.0	1/8"	0.0	1/16"	1/4"	0.0	0.0	0.0	0.0	0.0
7-13-56	60°	0.0	1 5/16	0.0	1/8"	0.0	1/8"	1/4"	0.0	0.0	0.0	0.0	0.0
8-10-56	83°	0.0	1"	0.0	3/16"	0.0	1/4"	0.0	0.0	0.0	0.0	0.0	0.0
9-21-56	65°	0.0	1 3/16	0.0	1/2"	0.0	1/16"	1/4"	0.0	0.0	0.0	0.0	0.0

Date	Elevations													
	Abt No. 1		Pier No. 1		Pier No. 2		Pier No. 3		Pier No. 4		Pier No. 5		Abt. No. 2	
	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left
3-15-50	786.38	786.36	761.60	761.60	763.77	763.91	761.88	761.94	761.72	761.69	786.65	786.65	792.60	792.60
6-27-50	786.36	786.35	761.50	761.49	763.72	763.86	761.80	761.87	761.56	761.57	786.57	786.58	792.63	792.63
10-27-50	786.35	786.37	761.50	761.49	763.78	763.87	761.79	761.89	761.53	761.47	786.55	786.56	792.65	792.63
4-11-51	786.37	786.36	761.50	761.48	763.76	763.87	761.78	761.85	761.58	761.54	786.57	786.63	792.61	792.60
11-14-51	786.36	786.36	761.50	761.48	763.73	763.88	761.78	761.80	761.56	761.55	786.62	786.62	792.60	792.60
12-16-52	786.36	786.37	761.50	761.49	763.74	763.88	761.79	761.87	761.54	761.53	786.53	786.51	792.60	792.61
12-23-53	786.37	786.35	761.50	761.50	763.75	763.90	761.81	761.83	761.53	761.53	786.53	786.55	792.62	792.61
6-16-54	786.38	786.36	761.50	761.50	763.76	763.90	761.82	761.81	761.61	761.56	786.53	786.56	792.67	792.62
12-21-54	786.388	786.375	761.50	761.50	763.748	763.828	761.793	761.857	761.570	761.555	786.501	786.545	792.615	792.611
1-17-55	786.389	786.373	761.50	761.50	763.736	763.847	761.760	761.800	761.494	761.464	786.526	786.535	792.618	792.614
2-18-55	786.393	786.385	761.50	761.502	763.721	763.912	761.791	761.872	761.511	761.471	786.526	786.525	792.605	792.605
* 3-8-55	786.344	786.354	761.50	761.488	763.727	763.905	761.747	761.926	761.482	761.626	786.508	786.519	792.595	792.589
3-25-55	786.365	786.353	761.50	761.50	763.718	763.875	761.738	761.845	761.468	761.490	786.543	786.557	792.627	792.625
4-25-55	786.360	786.350	761.50	761.489	763.710	763.860	761.723	761.820	761.454	761.489	786.495	786.500	792.580	792.574
5-13-55	786.376	786.354	761.50	761.499	763.709	763.86	761.722	761.802	761.479	761.485	786.530	786.542	792.610	792.620
6-15-55	786.366	786.352	761.50	761.499	763.719	763.869	761.740	761.821	761.476	761.482	786.519	786.538	792.615	792.618
7-18-55	786.377	786.362	761.50	761.489	763.749	763.929	761.749	761.931	761.480	761.491	786.527	786.549	792.628	792.624
8-16-55	786.391	786.380	761.50	761.488	763.721	763.936	761.752	761.946	761.462	761.498	786.521	786.536	792.607	792.607
10-3-55	786.384	786.373	761.50	761.500	763.729	763.920	761.739	761.930	761.474	761.510	786.538	786.549	792.607	792.607
10-21-55	786.388	786.377	761.50	761.500	763.759	763.90	761.799	761.891	761.510	761.506	786.526	786.546	792.605	792.606
11-21-55	786.385	786.372	761.50	761.50	763.757	763.873	761.829	761.840	761.493	761.506	786.539	786.55	792.627	792.628
12-19-55	786.389	786.379	761.50	761.50	763.759	763.90	761.788	761.890	761.511	761.504	786.526	786.544	792.616	792.618
1-20-56	786.387	786.379	761.50	761.50	763.759	763.898	761.797	761.898	761.510	761.506	786.530	786.546	792.609	792.611
* 2-21-56	786.355	786.368	761.50	761.50	763.867	763.875	761.819	761.838	761.582	761.523	786.513	786.542	792.617	792.613
* 3-19-56	786.36	786.35	761.50	761.50	763.73	763.90	761.85	761.90	761.58	761.51	786.55	786.57	792.59	792.59
* 4-11-56	786.35	786.35	761.50	761.50	763.77	763.89	761.83	761.86	761.60	761.53	786.52	786.55	792.63	792.62
5-18-56	786.35	786.35	761.50	761.49	763.79	763.89	761.87	761.86	761.65	761.56	786.51	786.53	792.60	792.59
6-19-56	786.364	786.379	761.50	761.498	763.758	763.923	761.790	761.935	761.542	761.646	786.522	786.544	792.617	792.615
7-13-56	786.377	786.367	761.50	761.486	763.76	763.906	761.804	761.904	761.577	761.570	786.529	786.529	792.606	792.604
8-10-56	786.38	786.37	761.50	761.49	763.79	763.92	761.88	761.93	761.65	761.61	786.53	786.55	792.61	792.61
9-21-56	786.39	786.37	761.50	761.49	763.78	763.90	761.86	761.90	761.66	761.58	786.53	786.54	792.61	792.61

NOTE: * OBSERVATIONS MADE DURING EXTREME HI-WATER. E.O.S.
THIS LINE RESERVED FOR FIELD RECORDER. E.D.S.
(SEE SHEET #3 FOR ADDITIONAL OBSERVATION DATA.)

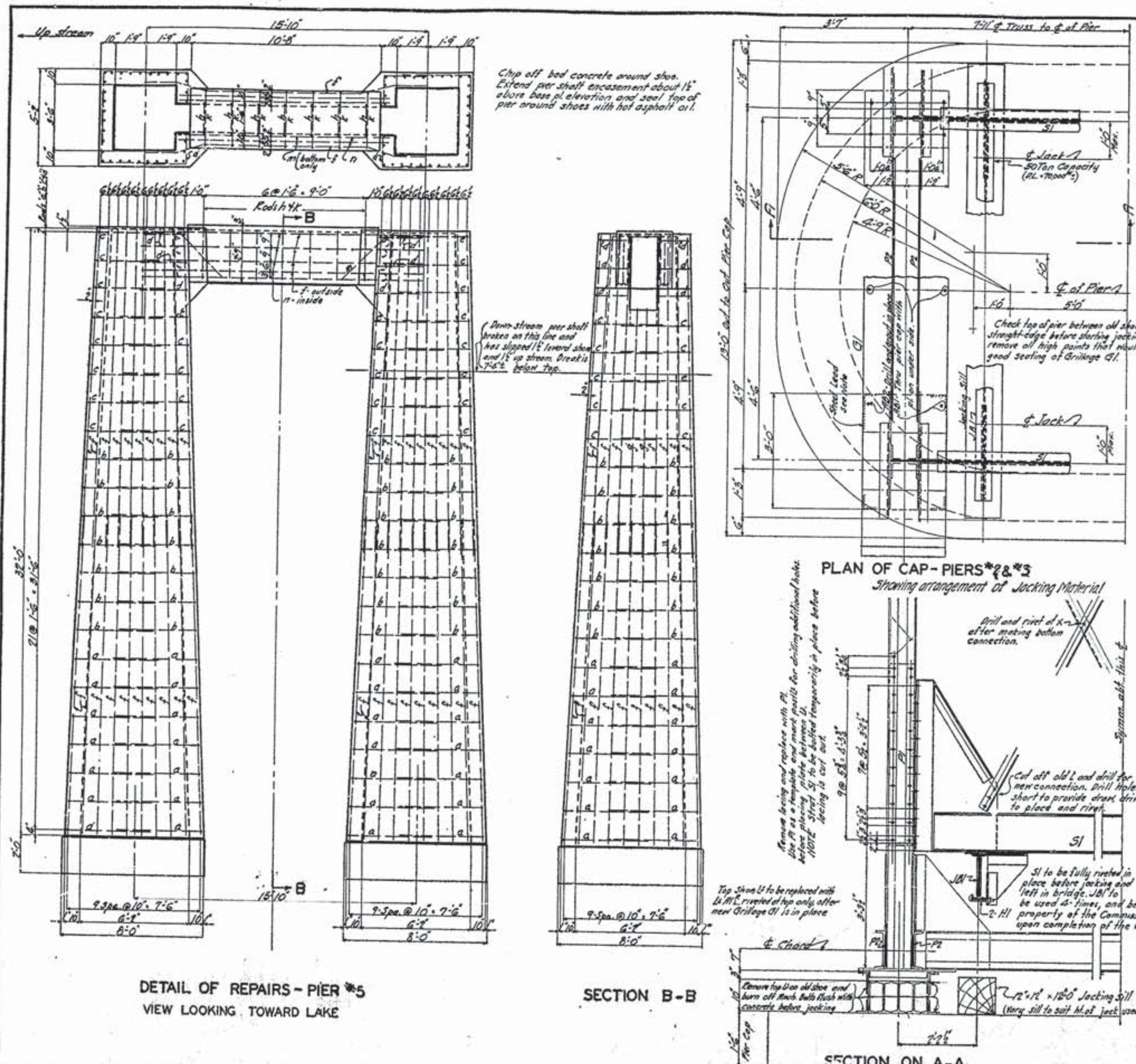
SHEET #2 OF 3

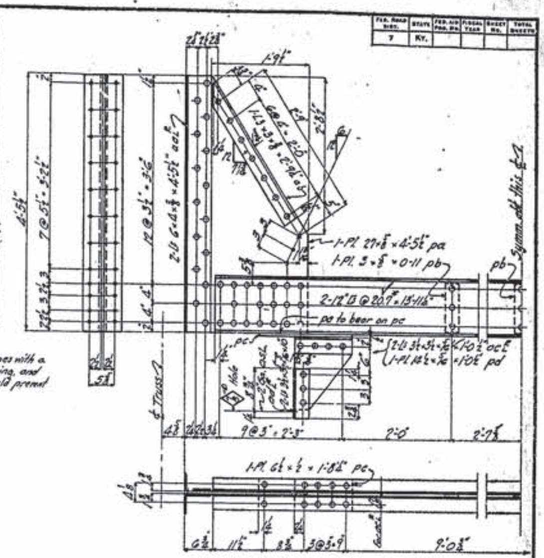
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

MERCER-GARRARD
BURGIN-BUENA VISTA

84-92-1

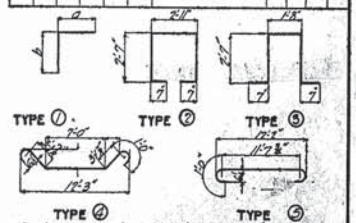
5493





JACKING STRUT S1 - 4 - REQ'D.

BILL OF SHAPES AND REINFORCEMENT										
Mark	Type	No	Size	Length Ft.	Length In.	Location	a Ft.	a In.	b Ft.	b In.
a	1	56	⅝"□	9	5	Col. Shafts	4	9	4	9
b	1	56	"	8	7	" "	4	4	4	4
c	1	52	"	7	9	" "	3	11	3	11
d	1	12	"	4	1	" "	2	6	1	8½
f	Str	166	⅝"□	17	0	" "				
g	"	4	"	13	0	" "				
h	3	7	½"□	9	1	Stirrups - Cross Bm.				
k	2	7	"	7	10	" " "				
m	4	4	⅝"□	15	3	Long. Reinf. " "				
n	5	16	"	13	8	" " " "				



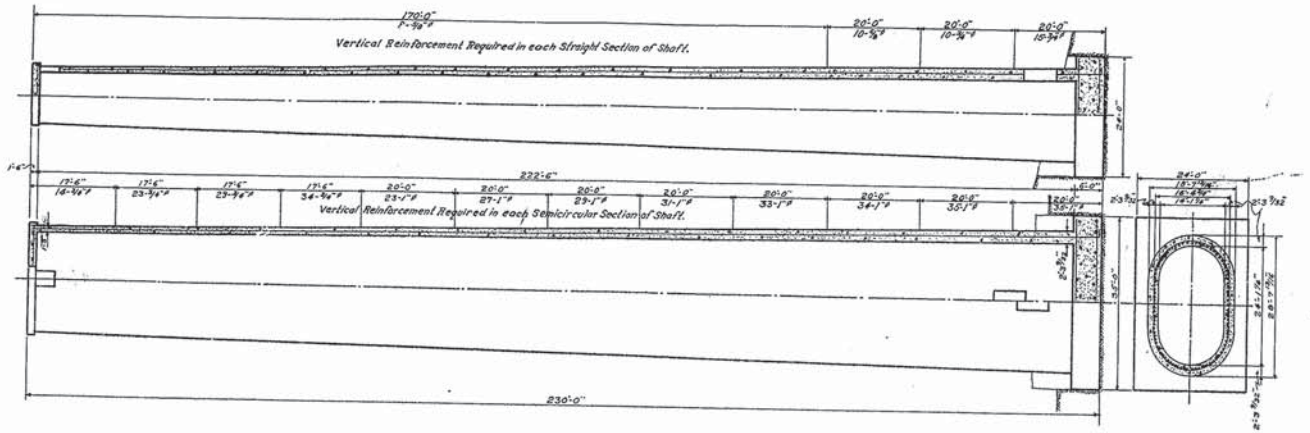
Repairs to Kennedys Mill Bridge Sheet #2 of 2

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG - LANCASTER ROAD
STATION PROJECT NO.
MP 84-92-1
5493

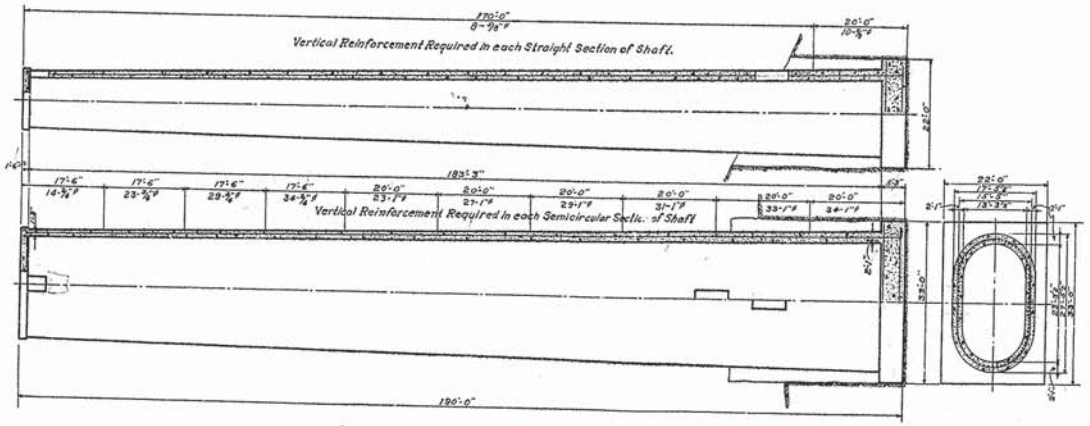
Fed. Road Dist.	State	Fed. Aid Proj. No.	Fiscal Year	Sheet No.	Total Sheets
7	Ky.				

DESIGNED BY F.B.D. DATE 10-33 REVISED
TRACED BY F.B.D. DATE 10-33 REVISED
CHECKED BY A. Griffith DATE 10-33 REVISED

BRIDGE



PIER-2

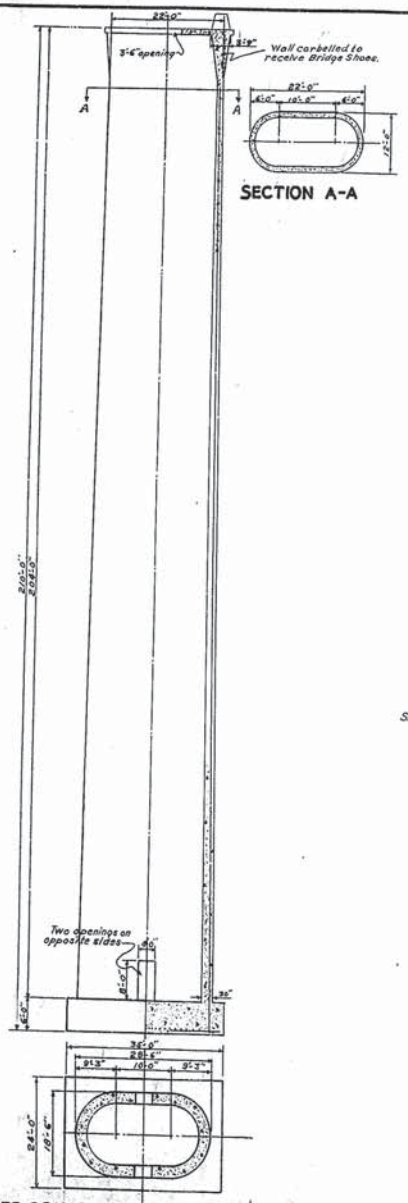


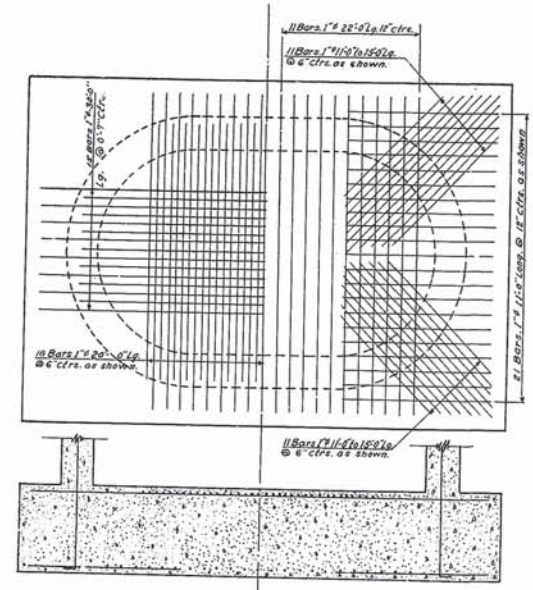
PIER-3

BRIDGE OVER DIX RIVER SHEET A-

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER - GARRARD COS.
HARRODSBURG - LANCASTER
STATION 84-92-1 ROAD PROJECT NO.
BRIDGE NO. 5493

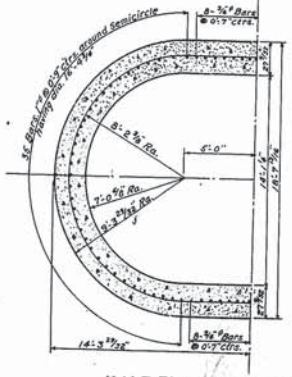
File under MERCER COUNTY



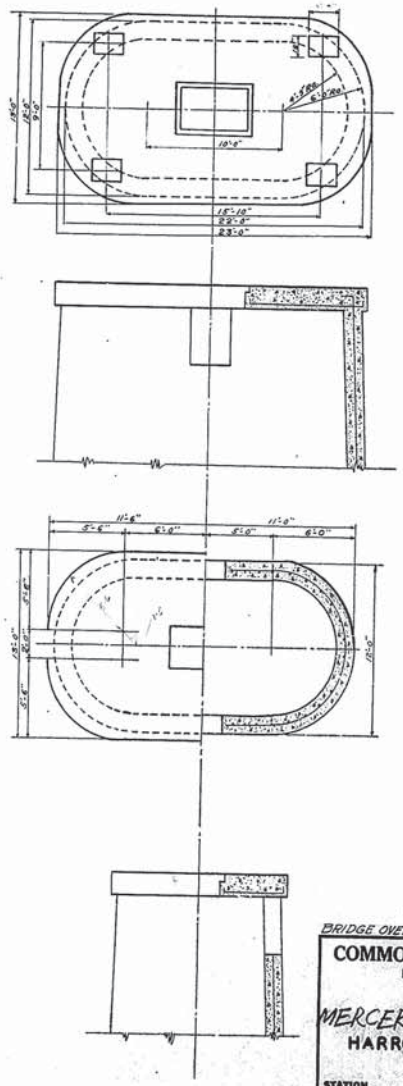


HALF PLAN & SECTION
Showing Steel in Top of Foundation Slab.

HALF PLAN & SECTION
Showing Steel in Bottom of Foundation Slab.

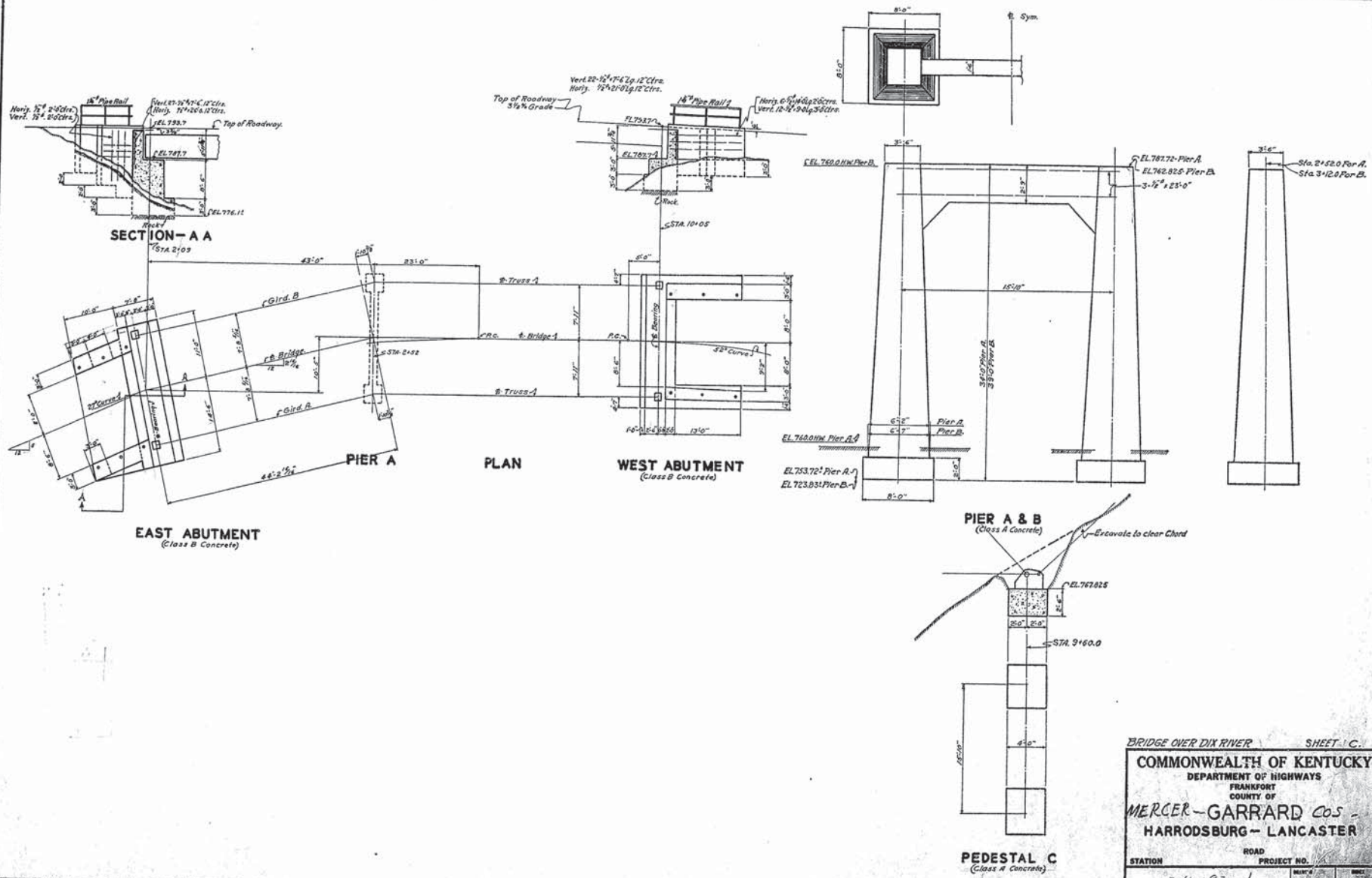


HALF PLAN OF SHAFT AT BASE



BRIDGE OVER DIX RIVER SHEET 8

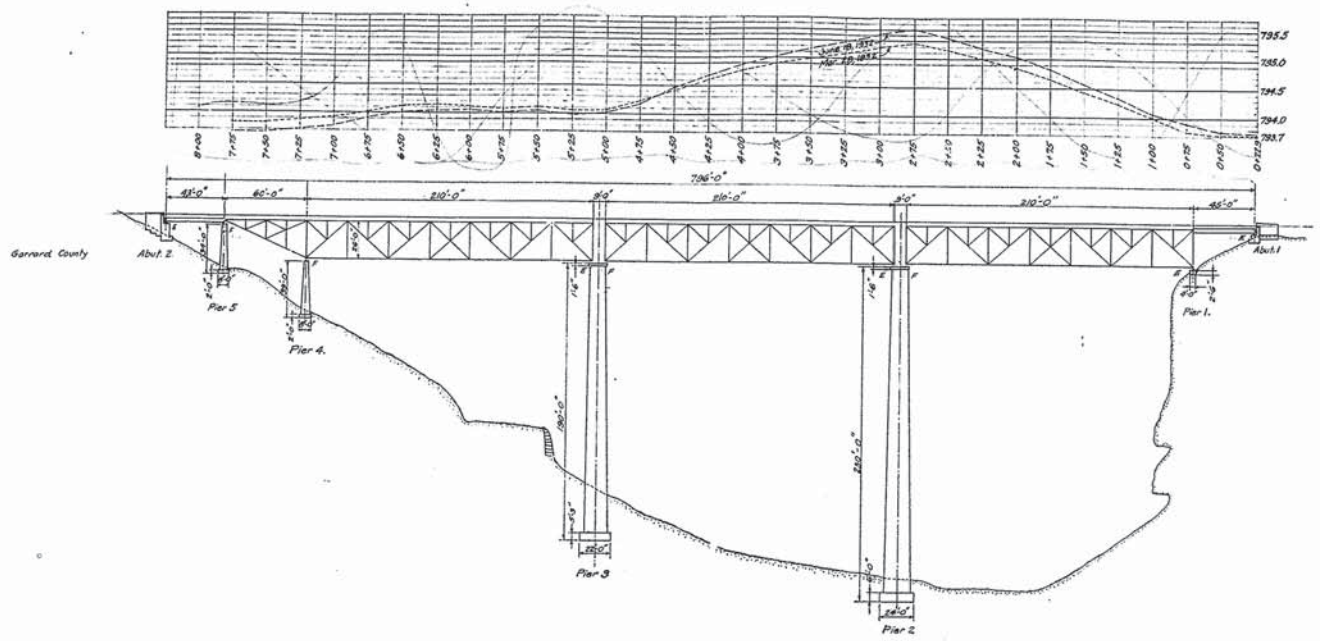
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER - GARRARD Cos.
HARRODSBURG — LANCASTER
ROAD
STATION PROJECT NO.
84-92-1
SECTION NO. 6493

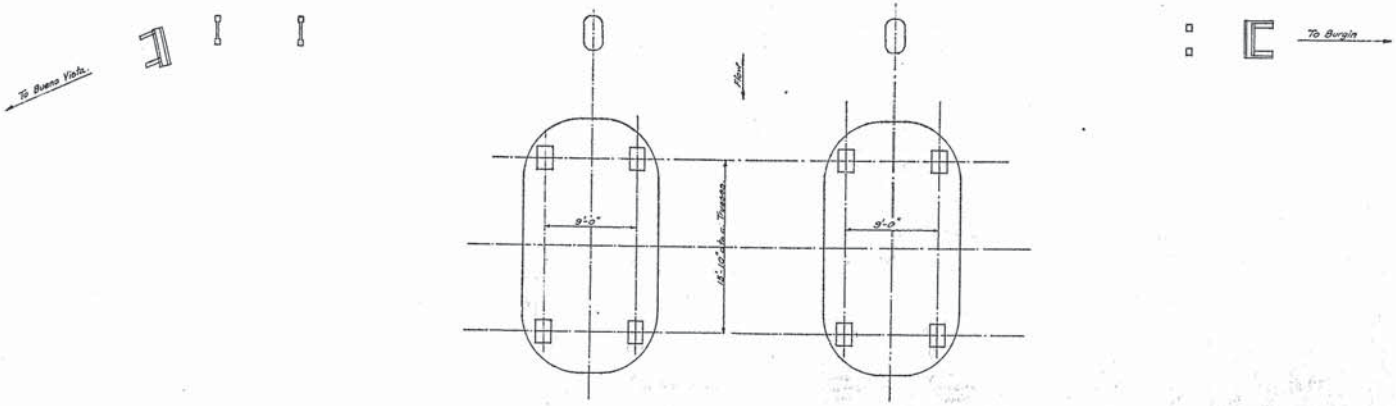


BRIDGE OVER DIX RIVER SHEET 1 C.

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER—GARRARD COS.
HARRODSBURG—LANCASTER
ROAD

STATION	PROJECT NO.	SHEET NO.	SHEET
84-92-1	5-193		



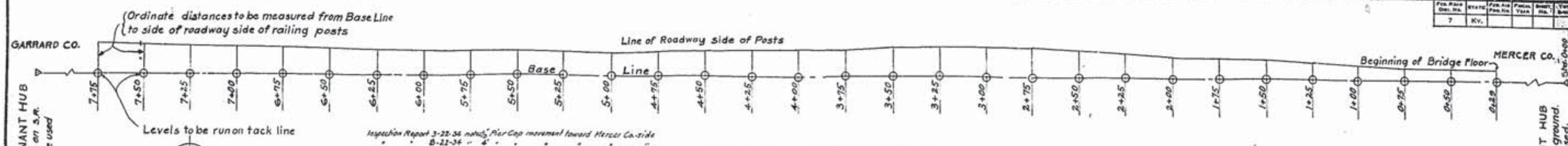


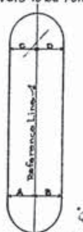
Repairs to Kennedy's Mill Bridge

SHEET D

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT
FRANKFORT
COUNTY OF
Mercer - Garrard
Kennedy Mill
ROAD
STATION
PROJECT NO.
84-72-1

7	KY.				





PIER Nº 2

Probably in error → MERCER COUNTY

"C or D" appear to be a/ in error →

Inspection Report 3-22-34 noted ½" Pier Cap movement toward Mercer Co.-side
" " 8-22-34 " ¼" " " " " " "

SPECIAL OBSERVATION

DATE	A	B	C	D	DATE	A	B	C	D	DATE	A	B	C	D	DATE	A	B	C	D
3-7-34	4.47	5.36	4.50	5.77	1-26-42	3.90	6.43	3.48	6.79										
2-5-36	4.34	5.94	3.98	6.29	3-18-43	3.90	6.43	3.40	6.87										
3-5-36	4.35	5.98	3.95	6.32	11-18-43	3.99	6.34	3.47	6.80										
4-6-36	4.35	5.98	3.95	6.32	2-24-44	3.99	6.34	3.47	6.80										
11-27-36	4.38	5.95	3.93	6.34	2-8-45	3.77	6.56	3.30	6.97										
12-20-37	4.28	6.05	3.80	6.47															
1-18-38	4.04	6.29	3.65	6.62															
2-4-38	4.15	6.18	3.76	6.52															
2-17-38	4.15	6.18	3.72	6.55															
3-16-38	4.20	6.13	3.75	6.52															
4-7-38	4.20	6.13	3.75	6.52															
11-14-38	4.20	6.13	3.74	6.53															
12-20-38	4.12	6.21	3.64	6.63															
1-20-39	4.12	6.21	3.62	6.65															
2-20-39	4.10	6.23	3.62	6.65															
6-2-39	4.10	6.23	3.63	6.64															
1-15-40	3.88	6.45	3.44	6.73															
3-15-43	3.95	6.38	3.50	6.77															

TABLE OF OBSEPVATIONS

STATION	OBSERVATION No. Date		OBSERVATION No. 2 Date 4-17-34		OBSERVATION No. 3 Date 5-1-34		OBSERVATION No. 4 Date 5-16-34		OBSERVATION No. 5 Date 6-1-34	
	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.
0+22.9			793.73	1.09	793.73	1.08	793.73	1.10	793.75	1.07
+50			793.75	1.22	793.76	1.23	793.76	1.22	793.77	1.23
+75			793.82	1.20	793.43	1.18	793.83	1.20	793.83	1.19
1+			794.73	1.45	794.14	1.44	794.14	1.45	794.14	1.43
+25			794.42	1.72	794.43	1.73	794.43	1.77	794.43	1.73
+50			794.68	1.97	794.69	1.97	794.69	1.99	794.69	1.95
+75			794.97	2.17	794.98	2.14	794.97	2.18	794.98	2.15
2+00			795.22	2.35	795.24	2.32	795.24	2.36	795.24	2.32
+25			795.44	2.60	795.46	2.60	795.44	2.63	795.45	2.57
+50			795.66	2.89	795.68	2.89	795.66	2.94	795.66	2.90
+75			795.83	3.09	795.85	3.10	795.83	3.16	795.83	3.11
3+00			795.77	3.23	795.79	3.24	795.77	3.27	795.79	3.22
+25			795.60	3.16	795.63	3.16	795.61	3.19	795.62	3.12
+50			795.43	2.99	795.45	2.98	795.44	3.00	795.46	2.85
+75			795.28	2.81	795.31	2.81	795.28	2.86	795.30	2.78
4+00			795.07	2.72	795.12	2.71	795.11	2.72	795.12	2.67
+25			794.83	2.61	794.88	2.61	794.88	2.61	794.87	2.55
+50			794.57	2.47	794.61	2.44	794.61	2.45	794.52	2.36
+75			794.29	2.40	794.34	2.32	794.32	2.35	794.33	2.30
5+00			794.07	2.05	794.11	2.06	794.11	2.07	794.10	1.88
+25			794.02	2.17	794.06	2.18	794.05	2.17	794.05	2.08
+50			794.07	2.26	794.11	2.29	794.09	2.26	794.09	2.18
+75			794.05	2.43	794.10	2.47	794.08	2.45	794.08	2.37
6+00			794.07	2.49	794.11	2.45	794.10	2.44	794.10	2.35
+25			794.06	2.56	794.11	2.55	794.09	2.52	794.08	2.44
+50			794.00	2.59	794.04	2.63	794.03	2.62	794.03	2.53
+75			793.92	2.74	793.97	2.78	793.95	2.77	793.95	2.67
7+00			793.79	2.85	793.84	2.90	793.83	2.87	793.82	2.76
+25			793.73	2.94	793.77	2.98	793.77	2.96	793.76	2.83
+50			793.68	3.06	793.72	3.10	793.71	3.13	793.70	3.03
+75			793.69	3.24	793.73	3.30	793.73	3.28	793.71	3.22

STATION	OBSERVATION No. 6 Date 6-15-34		OBSERVATION No. 7 Date 7-3-34		OBSERVATION No. 8 Date 7-16-34		OBSERVATION No. 9 Date 8-3-34		OBSERVATION No. 10 Date 8-15-34	
	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.
0+22.9	793.74	1.08	793.74	1.07	793.74	1.06	793.74	1.06	793.74	1.06
+50	793.57	1.24	793.77	1.22	793.77	1.22	793.78	1.21	793.77	1.21
+75	793.83	1.21	793.84	1.19	793.84	1.18	793.82	1.18	793.83	1.18
1+	793.15	1.46	794.14	1.45	794.15	1.45	794.14	1.44	794.15	1.44
+25	794.44	1.75	794.44	1.76	794.44	1.75	794.43	1.73	794.43	1.72
+50	794.70	2.00	794.71	1.98	794.70	1.99	794.69	1.97	794.70	1.98
+75	794.99	2.19	795.00	2.19	794.99	2.17	794.98	2.16	794.99	2.17
2+00	795.25	2.37	795.26	2.37	795.26	2.36	795.24	2.35	795.25	2.35
+25	795.45	2.63	795.46	2.65	79_.46	2.64	795.44	2.60	795.45	2.60
+50	795.68	2.99	795.68	2.96	795.68	2.95	795.66	2.93	795.68	2.92
+75	795.85	3.15	795.84	3.16	795.86	3.16	795.83	3.16	795.84	3.11
3+00	795.80	3.29	795.81	3.28	795.82	3.27	795.79	3.32	795.80	3.29
+25	795.64	3.20	795.66	3.18	795.65	3.19	795.64	3.21	795.64	3.20
+50	795.46	3.03	795.47	3.00	795.46	3.00	795.45	3.05	795.46	3.02
+75	795.31	2.89	795.32	2.84	795.33	2.86	795.31	2.90	795.31	2.86
4+00	795.11	2.76	795.12	2.76	795.13	2.70	795.11	2.78	795.12	2.73
+25	794.88	2.62	794.88	2.60	794.89	2.59	794.87	2.63	794.88	2.59
+50	794.61	2.47	794.61	2.47	794.63	2.44	794.61	2.48	794.61	2.45
+75	794.32	2.38	794.32	2.38	794.34	2.38	794.31	2.42	794.34	2.38
5+00	794.10	2.06	794.09	2.05	794.12	2.06	794.09	2.12	794.11	2.07
+25	794.05	2.20	794.05	2.18	794.07	2.17	794.04	2.23	794.06	2.19
+50	794.09	2.31	794.09	2.30	794.11	2.28	794.09	2.33	794.10	2.30
+75	794.09	2.49	794.08	2.50	794.10	2.46	794.09	2.50	794.09	2.47
6+00	794.10	2.48	794.12	2.49	794.12	2.45	794.10	2.52	794.11	2.46
+25	794.09	2.58	794.10	2.58	794.11	2.54	794.09	2.58	794.10	2.55
+50	794.02	2.66	794.04	2.68	794.05	2.63	794.02	2.67	794.04	2.64
+75	793.95	2.82	793.96	2.83	793.97	2.78	793.94	2.86	793.96	2.80
7+00	793.82	2.91	793.84	2.93	793.84	2.90	793.81	2.93	793.84	2.90
+25	793.75	2.99	793.76	3.02	793.77	2.99	793.76	3.02	793.77	2.97
+50	793.69	3.11	793.71	3.14	793.71	3.12	793.70	3.16	793.72	3.12
+75	793.71	3.29	793.72	3.32	793.73	3.28	793.71	3.30	793.72	3.30

STATION	OBSERVATION No. 11 Date 9-5-34		OBSERVATION No. 12 Date 9-17-34		OBSERVATION No. 13 Date 10-17-34		OBSERVATION No. 14 Date 11-1-34		OBSERVATION No. 15 Date 2-5-36		OBSERVATION No. 16 Date 3-5-36	
	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.
0+22.9	793.75	1.05	793.74	1.05	793.75	1.05	793.76	1.05	Elevations	1.06		1.06
+50	793.77	1.20	793.76	1.21	793.78	1.21	793.77	1.21	not taken	1.22	See	1.22
+75	793.82	1.13	793.83	1.18	793.83	1.18	793.82	1.19	because	1.20	note	1.21
1+	794.14	1.45	794.15	1.44	794.14	1.44	794.14	1.45	bridge floor	1.47	2-5-36	1.47
+25	794.44	1.75	794.44	1.74	794.43	1.73	794.42	1.76	had been	1.78		1.78
+50	794.70	1.99	794.70	1.78	794.70	1.98	794.70	2.00	surface	2.02		2.02
+75	795.00	2.20	794.99	2.19	794.98	2.18	794.99	2.21	treated.	2.23		2.23
2+00	795.25	2.40	795.26	2.37	795.24	2.37	795.24	2.40		2.44		2.44
+25	795.46	2.65	795.46	2.66	795.45	2.64	795.45	2.76		2.71		2.70
+50	795.69	2.98	795.67	2.96	795.67	2.95	795.67	2.97		3.02		3.08
+75	795.85	3.19	795.85	3.20	795.86	3.18	795.83	3.21		3.25		3.26
3+00	795.80	3.33	795.80	3.32	795.80	3.31	795.79	3.34		3.36		3.37
+25	795.66	3.25	795.66	3.22	795.66	3.19	795.63	3.25		3.26		3.26
+50	795.47	3.08	795.48	3.06	795.47	3.04	795.45	3.04		3.05		3.08
+75	795.30	2.89	795.30	2.87	795.32	2.85	795.30	2.90		2.87		2.87
4+00	795.11	2.81	795.10	2.76	795.13	2.74	795.09	2.77		2.74		2.74
+25	794.88	2.66	794.87	2.63	794.88	2.65	794.85	2.72		2.61		2.61
+50	794.61	2.50	794.61	2.47	794.61	2.50	794.57	2.50		2.41		2.44
+75	794.33	2.42	794.32	2.41	794.32	2.42	794.30	2.46		2.32		2.38
5+00	794.11	2.13	794.10	2.09	794.11	2.11	794.08	2.14		1.97		1.94
+25	794.05	2.25	794.06	2.21	794.06	2.18	794.03	2.26		2.08		2.12
+50	794.09	2.37	794.07	2.30	794.09	2.30	794.07	2.32		2.30		2.20
+75	794.08	2.52	794.07	2.49	794.09	2.49	794.07	2.54		2.40		2.40
6+00	794.10	2.51	794.09	2.49	794.11	2.50	794.08	2.53		2.37		2.39
+25	794.08	2.61	794.08	2.58	794.10	2.57	794.07	2.62		2.43		2.48
+50	794.02	2.71	794.01	2.66	794.04	2.67	794.01	2.71		2.62		2.66
+75	793.95	2.88	793.94	2.79	793.96	2.81	793.96	2.86		2.66		2.72
7+00	793.82	3.01	793.81	2.92	793.84	2.95	793.81	2.97		2.76		2.81
+25	793.76	3.02	793.75	3.00	793.77	3.01	793.76	3.02		3.02		2.84
+50	793.71	3.18	793.69	3.12	793.71	3.18	793.71	3.15		3.04		3.04
+75	793.72	3.35	793.70	3.30	793.75	3.28	793.73	3.32		3.22		3.22

STATION	OBSERVATION No. 17 Date 4-6-36		OBSERVATION No. Date 6-8-36		OBSERVATION No. Date 6-5-36	
	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.
0+22.9		1.06		1.06		1.07
+50	See	1.22	See	1.22	See	1.22
+75	note	1.21	note	1.20	note	1.21
1+00	2-5-36	1.48	2-5-36	1.48	2-5-36	1.49
+25		1.78		1.78		1.80
+50		2.02		2.02		2.02
+75		2.23		2.23		2.24
2+00		2.44		2.44		2.45
+25		2.70		2.70		2.70
+50		3.03		3.05		3.06
+75		3.26		3.26		3.28
3+00		3.37		3.37		3.37
+25		3.25		3.25		3.25
+50		3.08		3.08		3.10
+75		2.87		2.87		2.88
4+00		2.75		2.75		2.75
+25		2.61		2.61		2.60
+50		2.44		2.46		2.44
+75		2.35		2.35		2.36
5+00		1.92		1.92		1.90
+25		2.12		2.12		2.16
+50		2.20		2.20		2.18
+75		2.40		2.40		2.39
6+00		2.39		2.39		2.39
+25		2.48		2.48		2.49
+50		2.56		2.56		2.67
+75		2.72		2.72		2.70
7+00		2.81		2.81		2.80
+25		2.84		2.84		2.85
+50		3.04		3.04		3.05
+75		3.22		3.22		3.22

OBSERVATION No. Date		OBSERVATION No. Date		OBSERVATION No. Date		OBSERVATION No. Date		OBSERVATION No. Date		OBSERVATION No. Date		OBSERVATION No. Date		OBSERVATION No. Date		OBSESERVATION No. Date		OBSERVATION No. Date	
Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.	Elev.	Ord.

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT
FRANKFORT
COUNTY OF

GARRARD-MERCER

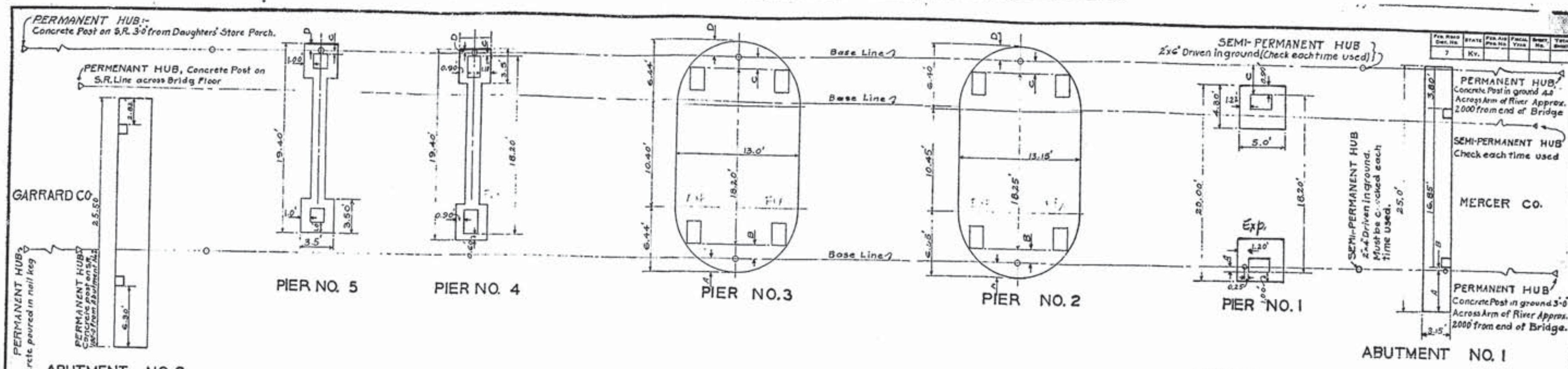
BURGIN-BUENA VISTA

ROAD

STATION

PROJECT NO. SHEET F

5493



NOTE – All elevations are given in terms of U.S.G.S. Datum begining with date 2-5-36.

TABLE OF OBSERVATIONS

OBSERVATION NO 1 DATE

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.83	0.34			787.73	787.73
PIER NO. 1	0.11		3.23		762.78	762.84
PIER NO. 2	0.54	2.16	0.89	1.64	764.93	764.80
PIER NO. 3	0.95	1.65	1.36	1.17	763.09	763.08
PIER NO. 4			0.28	0.34	762.83	762.84
PIER NO. 5			0.35	1.48	787.89	787.88
ABUT. NO. 2					787.72	787.68

OBSERVATION NO. 2 DATE 4-17-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.93	0.24	4.15		787.72	787.72
PIER NO. 1	0.22		3.25		762.79	762.84
PIER NO. 2	0.59	2.11	0.88	1.65	764.92	764.80
PIER NO. 3	0.96	1.60	1.40	1.13	763.09	763.06
PIER NO. 4			0.30	0.32	762.86	762.88
PIER NO. 5			0.36	1.48	787.86	787.85
ABUT. NO. 2					787.68	787.64

OBSERVATION NO. 3 DATE 5-1-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.90	0.27	4.15		787.73	787.73
PIER NO. 1	0.16		3.25		762.79	762.84
PIER NO. 2	0.51	2.19	0.88	1.65	764.94	764.83
PIER NO. 3	0.92	1.64	1.40	1.13	763.11	763.09
PIER NO. 4			0.30	0.32	762.85	762.89
PIER NO. 5			0.36	1.48	787.89	787.88
ABUT. NO. 2					787.71	787.68

OBSERVATION NO 4 DATE 5-16-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.90	0.27	4.15		787.73	787.73
PIER NO. 1	0.16		3.25		762.78	762.84
PIER NO. 2	0.48	2.22	0.85	1.68	764.94	764.82
PIER NO. 3	0.88	1.68	1.42	1.11	763.11	763.07
PIER NO. 4			0.30	0.32	762.85	762.90
PIER NO. 5			0.36	1.48	787.90	787.89
ABUT. NO. 2					787.71	787.67

OBSERVATION NO 5 DATE 6-1-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.90	0.27	4.15		787.74	787.74
PIER NO. 1	0.16		3.25		762.80	762.84
PIER NO. 2	0.48	2.22	0.85	1.68	764.97	764.82
PIER NO. 3	0.88	1.68	1.42	1.11	763.11	763.10
PIER NO. 4			0.30	0.32	762.87	762.90
PIER NO. 5			0.36	1.48	787.88	787.86
ABUT. NO. 2					787.69	787.65

OBSERVATION NO 6 DATE 6-15-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.90	0.27	4.15		787.73	787.73
PIER NO. 1	0.24		3.25		762.80	762.84
PIER NO. 2	0.54	2.16	0.83	1.70	764.96	764.86
PIER NO. 3	0.95	1.61	1.39	1.14	763.11	763.11
PIER NO. 4			0.30	0.32	762.86	762.90
PIER NO. 5			0.36	1.48	787.87	787.87
ABUT. NO. 2					787.69	787.66

OBSERVATION NO 7 DATE 7-3-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.88	0.29	4.15		787.72	787.73
PIER NO. 1	0.20		3.25		762.79	762.85
PIER NO. 2	0.42	2.28	0.82	1.71	764.99	764.86
PIER NO. 3	0.91	1.65	1.41	1.12	763.14	763.14
PIER NO. 4			0.31	0.31	762.91	762.94
PIER NO. 5			0.36	1.48	787.89	787.88
ABUT. NO. 2					787.70	787.68

OBSERVATION NO 8 DATE 7-16-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.91	0.26	4.15		787.73	787.73
PIER NO. 1	0.13		3.27		762.79	762.85
PIER NO. 2	0.52	2.18	0.80	1.73	764.98	764.86
PIER NO. 3	0.91	1.65	1.38	1.15	763.13	763.13
PIER NO. 4			0.31	0.31	762.91	762.94
PIER NO. 5			0.36	1.48	787.89	787.88
ABUT. NO. 2					787.70	787.69

OBSERVATION NO 9 DATE 8-3-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.90	0.27	4.15		787.73	787.73
PIER NO. 1	0.13		3.27		762.80	762.85
PIER NO. 2	0.42	2.28	0.84	1.69	764.99	764.85
PIER NO. 3	0.92	1.64	1.45	1.08	763.11	763.11
PIER NO. 4			0.35	0.27	762.88	762.89
PIER NO. 5			0.36	1.48	787.88	787.87
ABUT. NO. 2					787.69	787.67

OBSERVATION NO 10 DATE 8-15-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.86	0.31	4.15		787.74	787.73
PIER NO. 1	0.16		3.27		762.80	762.85
PIER NO. 2	0.50	2.20	0.76	1.77	764.99	764.85
PIER NO. 3	0.93	1.63	1.40	1.13	763.12	763.12
PIER NO. 4			0.30	0.32	762.88	762.90
PIER NO. 5			0.36	1.48	787.88	787.87
ABUT. NO. 2					787.69	787.68

OBSERVATION NO 11 DATE 9-5-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.15		787.73	787.74
PIER NO. 1	0.20		3.27		762.80	762.85
PIER NO. 2	0.50	2.20	0.82	1.71	765.00	764.87
PIER NO. 3	0.93	1.63	1.45	1.08	763.12	763.13
PIER NO. 4			0.38	0.24	762.88	762.90
PIER NO. 5			0.36	1.48	787.87	787.86
ABUT. NO. 2					787.70	787.67

OBSERVATION NO 12 DATE 9-17-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.15		787.73	787.72
PIER NO. 1	0.20		3.27		762.81	762.86
PIER NO. 2	0.50	2.20	0.82	1.71	764.97	764.86
PIER NO. 3	0.95	1.61	1.43	1.10	763.14	763.12
PIER NO. 4			0.33	0.29	762.88	762.89
PIER NO. 5			0.36	1.48	787.87	787.85
ABUT. NO. 2					787.69	787.65

OBSERVATION NO 13 DATE 10-17-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.15		787.73	787.72
PIER NO. 1	0.19		3.27		762.79	762.85
PIER NO. 2	0.48	2.22	0.81	1.72	764.96	764.87
PIER NO. 3	0.92	1.64	1.43	1.10	763.13	763.11
PIER NO. 4			0.34	0.28	762.87	762.89
PIER NO. 5			0.36	1.48	787.90	787.88
ABUT. NO. 2					787.72	787.67

OBSERVATION NO 14 DATE 11-1-34

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.15		Assumed Elevations 787.74	787.74
PIER NO. 1	0.19		3.27		762.81	762.86
PIER NO. 2	0.48	2.22	0.76	1.77	764.96	764.85
PIER NO. 3	0.92	1.64	1.43	1.10	763.14	763.10
PIER NO. 4			0.34	0.28	762.85	762.88
PIER NO. 5			0.36	1.48	787.90	787.88
ABUT. NO. 2					787.72	787.67

OBSERVATION NO 15 DATE 2-5-36

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17	--	U.S.G.S. Elevations 786.33	786.33
PIER NO. 1	0.19	—	3.27	—	761.44	761.47
PIER NO. 2	0.39	2.31	0.67	1.86	763.62	763.49
PIER NO. 3	0.93	1.63	1.41	1.12	761.71	761.68
PIER NO. 4	—	—	0.28	0.34	761.41	761.47
PIER NO. 5	—	—	0.32	1.51	786.45	786.44
ABUT. NO. 2	—	—	—	—	786.28	786.26

OBSERVATION NO 16 DATE 3-5-36

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17	-	786.32	786.32
PIER NO. 1	0.20	—	3.27	-	761.43	761.50
PIER NO. 2	0.41	2.29	0.71	1.82	763.64	763.51
PIER NO. 3	0.95	1.61	1.42	1.11	761.74	761.74
PIER NO. 4	—	—	0.28	0.34	761.52	761.50
PIER NO. 5	—	—	0.35	1.49	786.48	786.46
ABUT. NO. 2	—	—	—	—	786.28	786.26

OBSERVATION NO 17 DATE 4-6-36

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17	—	786.31	786.31
PIER NO. 1	0.20	—	3.27	—	761.48	761.46
PIER NO. 2	0.41	2.29	0.70	1.83	763.64	763.52
PIER NO. 3	0.95	1.61	1.32	1.11	761.74	761.70
PIER NO. 4	—	—	0.28	0.34	761.52	761.53
PIER NO. 5	—	—	0.35	1.49	786.49	786.46
ABUT. NO. 2	—	—	—	—	786.28	786.26

OBSERVATION NO DATE 5-8-36

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION 5-8-36 Lt at A-B	Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17		786.32	786.32
PIER NO. 1	0.20		3.27		761.42	761.45
PIER NO. 2	0.41	2.29	0.70	1.83	763.66	763.53
PIER NO. 3	0.95	1.61	1.42	1.11	761.78	761.76
PIER NO. 4			0.28	0.34	761.55	761.55
PIER NO. 5			0.35	1.49	786.48	786.47
ABUT. NO. 2					786.30	786.27

OBSERVATION NO DATE 6-5-36

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17		786.32	786.32
PIER NO. 1	0.20		3.27		761.43	761.45
PIER NO. 2	0.40	2.30	0.69	1.84	763.70	763.54
PIER NO. 3	0.96	1.60	1.40	1.10	761.81	761.78
PIER NO. 4			0.28	0.34	761.61	761.61
PIER NO. 5			0.35	1.49	786.46	786.45
ABUT. NO. 2					786.27	786.25

OBSERVATION NO DATE

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17			
PIER NO. 1	0.20		3.27			
PIER NO. 2	0.92	2.28	0.71	1.82		
PIER NO. 3	0.93	1.63	1.40	1.13		
PIER NO. 4			0.30	0.32		
PIER NO. 5			0.35	1.49		
ABUT. NO. 2						

OBSERVATION NO DATE 12-16-37

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17	—	786.32	786.32
PIER NO. 1	0.20	—	3.27	—	761.43	761.50
PIER NO. 2	0.38	2.32	0.69	1.84	763.69	763.55
PIER NO. 3	0.95	1.61	1.41	1.12	761.73	761.72
PIER NO. 4	—	—	0.30	0.32	761.47	761.51
PIER NO. 5	—	—	0.36	1.48	786.48	786.46
ABUT. NO. 2	—	—	—	—	786.30	786.28

OBSERVATION NO DATE 1-18-38

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17	-	786.33	786.32
PIER NO. 1	0.19	—	3.27	-	761.45	761.52
PIER NO. 2	0.36	2.34	0.67	1.86	763.71	763.59
PIER NO. 3	0.94	1.62	1.40	1.13	761.79	761.77
PIER NO. 4	—	—	0.29	0.33	761.50	761.55
PIER NO. 5	—	—	0.35	1.49	786.46	786.46
ABUT. NO. 2	—	—	—	—	786.27	786.25

OBSERVATION NO DATE 2-17-38

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17	-	786.30	786.32
PIER NO. 1	0.20	—	3.27	-	761.44	761.47
PIER NO. 2	0.39	2.31	0.66	1.87	763.70	763.58
PIER NO. 3	0.98	1.59	1.39	1.14	761.73	761.76
PIER NO. 4	—	—	0.30	0.34	761.49	761.57
PIER NO. 5	—	—	0.34	1.50	786.42	786.41
ABUT. NO. 2	—	—	—	—	786.21	786.21

OBSERVATION NO DATE 3-16-38

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.17	-	786.28	786.30
PIER NO. 1	0.19	—	3.27	-	761.49	761.48
PIER NO. 2	0.38	2.32	0.67	1.86	763.73	763.61
PIER NO. 3	0.96	1.61	1.38	1.15	761.77	761.80
PIER NO. 4	—	—	0.30	0.34	761.52	761.56
PIER NO. 5	—	—	0.34	1.50	786.43	786.43
ABUT. NO. 2	—	—	—	—	786.22	786.20

Probably in error

OBSERVATION NO DATE 4-7-38

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.17	—	786.29	786.31
PIER NO. 1	0.20	—	3.27	—	761.44	761.48
PIER NO. 2	0.38	2.32	0.67	1.86	763.72	763.60
PIER NO. 3	0.97	1.60	1.38	1.15	761.75	761.78
PIER NO. 4	—	—	0.30	0.34	761.50	761.55
PIER NO. 5	—	—	0.34	1.50	786.43	786.42
ABUT. NO. 2	—	—	—	—	786.21	786.20

OBSERVATION NO 26 DATE 11-14-38 (This observation may be in error)

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.17	—	786.32	786.32
PIER NO. 1	0.20	—	3.27	—	761.43	761.49
PIER NO. 2	0.42	2.28	0.63	1.90	763.76	763.59
PIER NO. 3	0.97	1.60	1.38	1.15	761.82	761.79
PIER NO. 4	—	—	0.30	0.34	761.60	761.56
PIER NO. 5	—	—	0.34	1.50	786.49	786.49
ABUT. NO. 2	—	—	—	—	786.30	786.28

OBSERVATION NO DATE 12-20-38 (Observation O.K.)

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.17	—	786.30	786.30
PIER NO. 1	0.20	—	3.27	—	761.47	761.49
PIER NO. 2	0.37	2.33	0.66	1.87	763.72	763.59
PIER NO. 3	0.93	1.63	1.45	1.08	761.82	761.76
PIER NO. 4	—	—	0.33	0.31	761.57	761.58
PIER NO. 5	—	—	0.34	1.50	786.46	786.45
ABUT. NO. 2	—	—	—	—	786.27	786.26

OBSERVATION DATE 1-20-39

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.17	—	786.31	786.32
PIER NO. 1	0.20	—	3.27	—	761.46	761.47
PIER NO. 2	0.35	2.35	0.64	1.89	763.75	763.59
PIER NO. 3	0.94	1.63	1.41	1.12	761.82	761.77
PIER NO. 4	—	—	0.26	0.38	761.60	761.57
PIER NO. 5	—	—	0.34	1.50	786.48	786.47
ABUT. NO. 2	—	—	—	—	786.28	786.27

OBSERVATION NO DATE 2-20-39

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.17	—	786.31	786.33
PIER NO. 1	0.20	—	3.27	—	761.44	761.45
PIER NO. 2	0.39	2.31	0.68	1.85	763.70	763.58
PIER NO. 3	0.93	1.69	1.41	1.12	761.81	761.77
PIER NO. 4	—	—	0.26	0.38	761.56	761.57
PIER NO. 5	—	—	0.34	1.50	786.48	786.47
ABUT. NO. 2	—	—	—	—	786.27	786.27

OBSEVATION NO DATE 5-2-39

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.17	—	786.31	786.31
PIER NO. 1	0.20	—	3.27	—	761.44	761.47
PIER NO. 2	0.35	2.35	0.64	1.89	763.82	763.59
PIER NO. 3	0.93	1.63	1.40	1.13	761.83	761.78
PIER NO. 4	—	—	0.26	0.38	761.57	761.58
PIER NO. 5	—	—	0.34	1.50	786.46	786.45
ABUT. NO. 2	—	—	—	—	786.26	786.24

OBSERVATION NO DATE 1-5-40

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.18	—	786.31	786.31
PIER NO. 1	0.20	—	3.27	—	761.48	761.50
PIER NO. 2	0.34	2.36	0.63	1.90	763.76	763.64
PIER NO. 3	0.89	1.67	1.41	1.12	761.83	761.81
PIER NO. 4	—	—	0.25	0.39	761.60	761.60
PIER NO. 5	—	—	0.34	1.50	786.42	786.48
ABUT. NO. 2	—	—	—	—	786.29	786.25

OBSERVATION NO DATE 3-15-40

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.94	0.23	4.17	—	786.29	786.31
PIER NO. 1	0.20	—	3.27	—	761.44	761.48
PIER NO. 2	0.33	2.37	0.62	1.91	763.73	763.61
PIER NO. 3	0.93	1.64	1.40	1.13	761.78	761.80
PIER NO. 4	—	—	0.28	0.39	761.57	761.58
PIER NO. 5	—	—	0.34	1.50	786.50	786.60
ABUT. NO. 2	—	—	—	—	786.30	786.30

OBSERVATION NO DATE 1-26-42

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1	3.95	0.22	4.17	—	786.33	786.33
PIER NO. 1	0.20	—	3.27	—	761.48	761.50
PIER NO. 2	0.32	2.38	0.63	1.90	763.72	763.60
PIER NO. 3	0.97	1.59	1.43	1.10	761.78	761.73
PIER NO. 4	—	—	0.31	0.31	761.47	761.48
PIER NO. 5	—	—	0.36	1.48	786.46	786.46
ABUT. NO. 2	—	—	—	—	786.32	786.31

OBSERVATION NO DATE 3-18-43

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1					786.31	786.32
PIER NO. 1					761.47	761.50
PIER NO. 2					763.78	763.64
PIER NO. 3					761.83	761.77
PIER NO. 4					761.55	761.57
PIER NO. 5					786.48	786.48
ABUT. NO. 2					786.30	786.28

OBSERVATION NO DATE 11-18-43

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1					786.31	786.31
PIER NO. 1					761.47	761.50
PIER NO. 2					763.79	763.64
PIER NO. 3					761.82	761.78
PIER NO. 4					761.57	761.52
PIER NO. 5					786.50	786.49
ABUT. NO. 2					786.30	786.30

OBSERVATION NO DATE 2-21-44

LOCATION	A Ft	B Ft	C Ft	D Ft	ELEVATION Lt at A-B	ELEVATION Rt at C-D
ABUT. NO. 1					786.32	786.32
PIER NO. 1					761.48	761.50
PIER NO. 2					763.81	763.63
PIER NO. 3					761.82	761.79
PIER NO. 4					761.57	761.53
PIER NO. 5					786.51	786.51
ABUT. NO. 2					786.33	786.33

BENCH MARKS

GARRARD CO. SIDE		MERCER CO. SIDE	
B.M.#1	A R.R. Spike in a 14" Cedar Lt. Sta 8+50 Elev. 794.89	B.M.#1	Spike in 36" B.Oak 35.0' Lt. of end of Bridge Elev. 788.41
B.M.#2		B.M.#2	Nail in 18" B.Oak 20.0 from water edge Elev. 765.43
B.M.#3	A R.R. Spike in 6" Cedar Lt. Pier No. 5 Elev. 763.36	B.M.#3	Spike in 14" Oak snag 12.0' from water edge Elev. 767.73

COMMONWEALTH OF KENTUCKY
STATE HIGHWAY DEPARTMENT
FRANKFORT
COUNTY OF
GARRARD-MERCER
BURGIN - BUENA VISTA
ROAD
STATION
PROJECT NO. SHEET 9 E
5493

DATE	ANGLE	LINE X-Y RT. OR LEFT OF POINTS AT				LINE U-V RIGHT OR LEFT OF POINTS AT						ELEVATIONS											
		E		F		F		G		H		I		ABUT #1		PIER #1		PIER #2		PIER #3		PIER #4	
		RT.	LT.	RT.	LT.	RT.	LT.	RT.	LT.	RT.	LT.	RT.	LT.	RT.	LT.	RT.	LT.	RT.	LT.	RT.	LT.	RT.	LT.
10-16-56	75°	0.0	2"	0.0	4"	0.0	1/4"	3/4"	0.0	0.0	0.0	0.0	0.0	786.39	786.37	761.50	761.49	763.78	763.90	761.84	761.90	761.63	761.56
11-7-56	68°	0.0	3/4"	0.0	4"	0.0	3/8"	0.0	0.0	0.0	0.0	0.0	0.0	786.39	786.38	761.50	761.49	763.77	763.92	761.83	761.92	761.61	761.58
12-6-56	68°	0.0	3/4"	0.0	4"	0.0	1/2"	1/2"	0.0	0.0	0.0	0.0	0.0	786.38	786.39	761.50	761.49	763.77	763.91	761.85	761.90	761.55	761.53
1-21-57	52°	0.0	3/4"	0.0	3/4"	0.0	1/2"	1/2"	0.0	0.0	0.0	0.0	0.0	786.38	786.36	761.50	761.49	763.78	763.89	761.83	761.88	761.62	761.55
2-15-57	34°	0.0	1/4"	0.0	1/4"	POINTS UNDER WATER								786.375	786.36	761.50	761.489	763.768	763.899	761.828	761.881	761.609	761.569
3-18-57	36°	UNDER WATER				0.0	3/4"	1/2"	0.0	0.0	0.0	0.0	0.0	786.370	786.36	761.50	761.49	763.78	763.90	761.83	761.89	761.57	761.56
4-4-57	80°	0.0	1/2"	0.0	1/2"	0.0	1/2"	1/2"	0.0	0.0	0.0	0.0	0.0	786.38	786.35	761.50	761.50	763.76	763.91	761.80	761.89	761.55	761.57
4-12-57	68°	0.0	1/2"	0.0	3/4"	0.0	1/2"	3/4"	0.0	0.0	0.0	0.0	0.0	786.37	786.35	761.50	761.49	763.78	763.91	761.82	761.91	761.59	761.58
8-19-57	88°	0.0	1/2"	0.0	3/4"	0.0	3/4"	3/4"	0.0	0.0	0.0	0.0	0.0	786.39	786.37	761.50	761.49	763.79	763.91	761.84	761.82	761.58	761.56

ABUT #2	
RT.	LT.
786.54	786.55
786.54	786.54
786.52	786.52
786.54	786.54
786.53	786.54
786.51	786.54
786.53	786.54
786.55	786.57
792.61	792.61
792.62	792.62
792.63	792.63
792.63	792.62
792.60	792.60
792.60	792.61
792.62	792.63

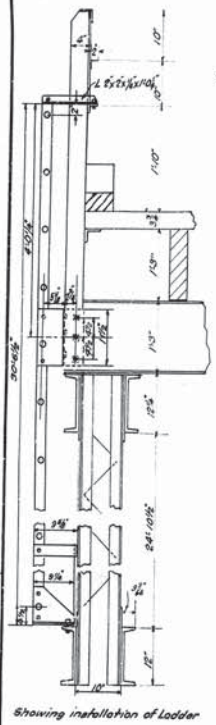
			FISCAL YEAR	SHEET NO.	TOTAL SHEETS
			19		

SHEET # 3 OF 3

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

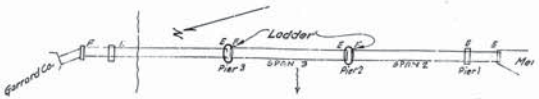
MERCER-GARRARD
BURGIN-BUENA VISTA

M.P. 84-92-1	5493	



Showing installation of Ladder

Note: Place Ladder on North East Post of Spans 2 and 3



PLAN OF BRIDGE

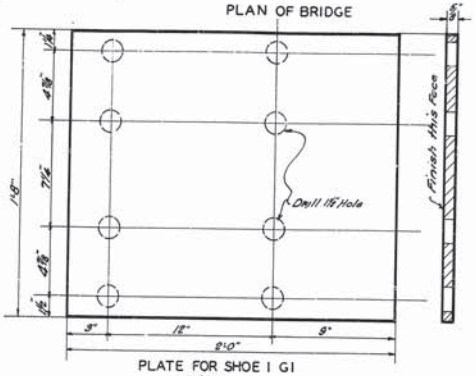
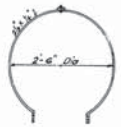


PLATE FOR SHOE 1 G1
Make 1



Safety Hoop
(Make 12)

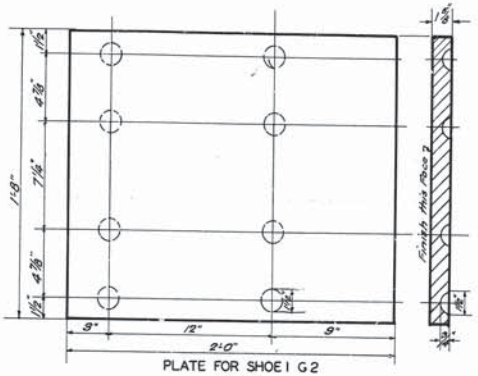
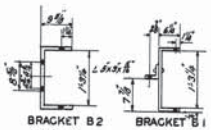


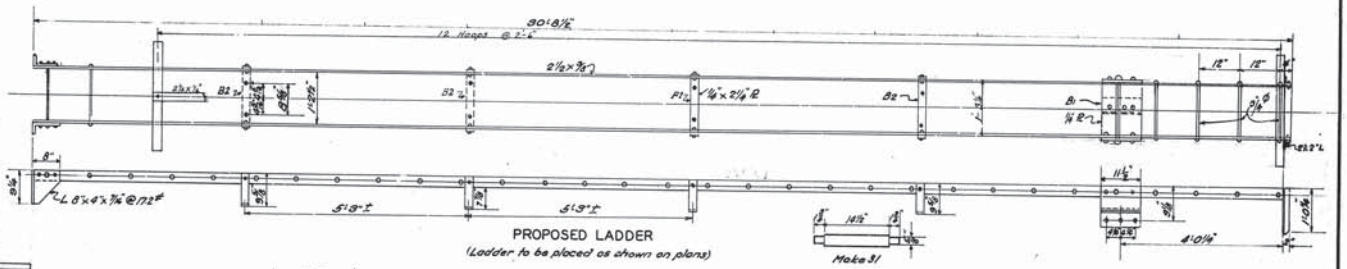
PLATE FOR SHOE 1 G2
Make 1

BILL OF MATERIAL

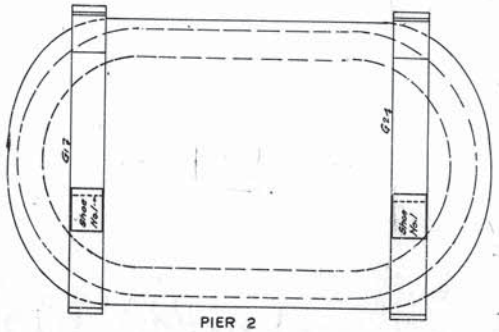
STRUCTURAL STEEL

2 Ladders Complete See Detail
1 Plate for Shoe 1 G1
1 Plate for Shoe 1 G2
12- 3/8"x1 1/2" Machine Bolts
12- Lock Washers for 3/8" Bolts

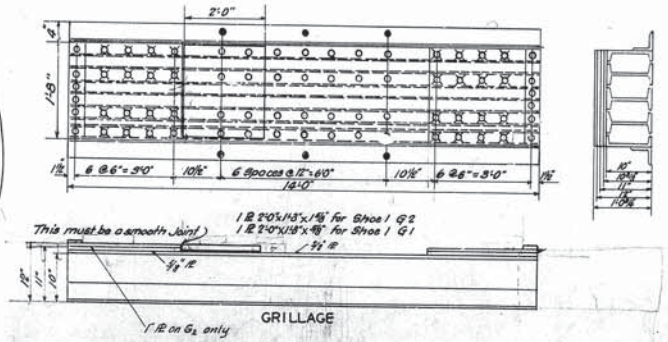




PROPOSED LADDER
(Ladder to be placed as shown on plans)



PIER 2



GRILLAGE

ESTIMATE OF QUANTITIES

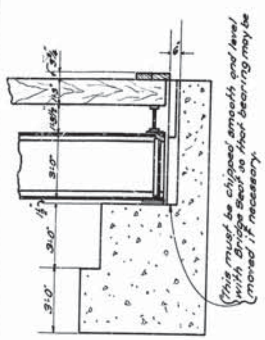
Structural Steel 732 Lbs

Rivets 5/8" Ø
Open Holes 11/16" Ø

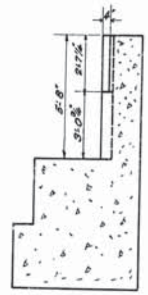
Sheet 1 of 2

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
KENNEDY'S MILL BRIDGE REPAIRS
ROAD
STATION PROJECT NO.
BRIDGE NUMBER 84-92-1
DRAWING NO. 6317

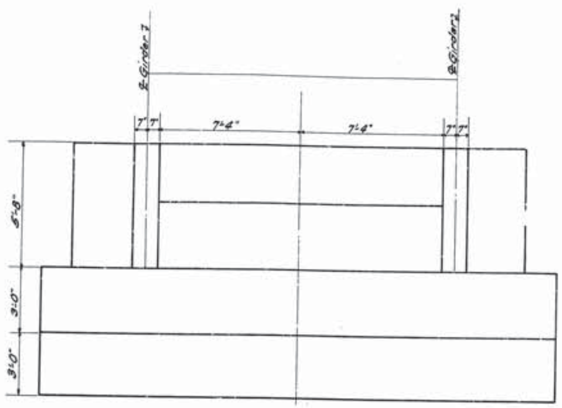
[redacted]



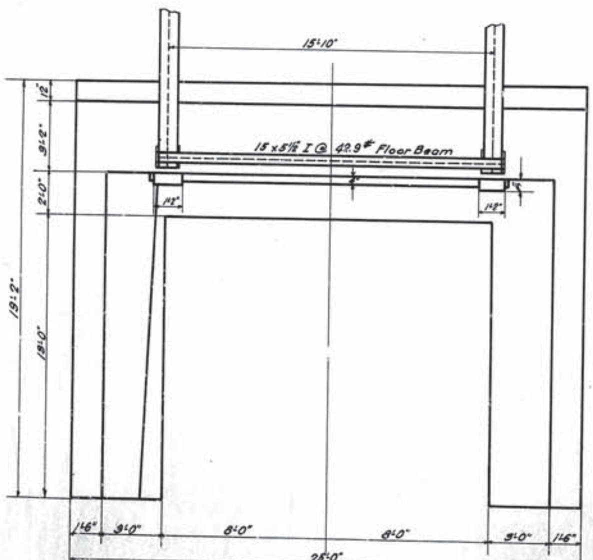
SECTION AT GIRDER



SECTION ON ℄



FRONT ELEVATION



PLAN

GENERAL NOTE

SPECIFICATIONS: Kentucky Department of Highways 1938 Standard, with Amendments.

TEST REPORT OF STRUCTURAL STEEL: The State Highway Department shall be furnished a certified copy of mill test reports, showing that structural steel for this work meets the requirements of the Specifications.

SHOP CLEANING: All new steel to be thoroughly cleaned of rust, loose mill scale, dirt, grease and all other foreign substances.

SHOP PAINTING: None required.

FIELD CLEANING AND PAINTING: All new steel to be thoroughly cleaned and given one coat of red lead or basic sulphate blue lead paint followed by one coat each of No 1 and No 2 White Lead Paint in the order named. Plates under shoes not to be painted. All paint damaged on the old steel during repairs shall be repainted as above.

SHOES AND JACKING WORK: Jack up the north end of Span No. 2 and install Plates IG1 and IG2 under shoes. Jacking work to be in accordance with Drawing 5493 (2 Sheets) or similar. The contractor shall furnish all necessary jacking beams and the jacking method used by the contractor shall be approved by the engineer. The dead load reaction of one shoe is approximately 35 Tons. Remove the auxiliary plates (not shown on plan) and place a piece of plywood 2'0"x1'8" under each shoe and allow enough weight to mark the rivet heads. Use these boards as templates for boring and fitting the new plates for IG1 and IG2. Any other method of assuring correct fabrication and fitting of plates may be used by the contractor if approved by the engineer. Holes or recesses must be large enough to allow the new plates to be firmly seated on the grillages. At no place must the new plates be allowed to ride on the old rivet heads. If there are any burrs on the old shoe plates, they are to be removed so the bridge shoe is free to slide from this new plate back onto the old plate.
A heavy coat of graphite cup grease is to be placed under each of the shoes before the work is completed. Clean and grease Shoe at Pier No. 1.

STEEL LADDERS: Install ladders as per sketch. If the ladders are installed first it will materially assist the work on the shoes.

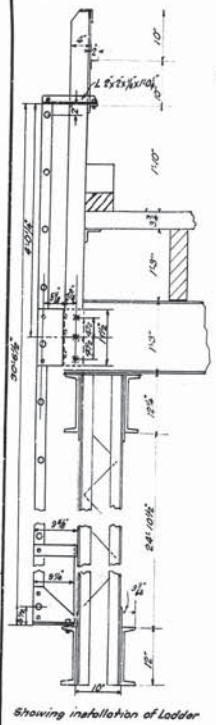
WORK ON ABUTMENT NO. 1. Chip a Vertical Recess in the concrete parapet wall 14" wide and 6" deep behind each plate girder. Chip a horizontal recess along the top of the concrete parapet immediately behind the end Floor beam, 4" deep and 2'-7¼" wide. The chipping is to permit the bridge to move 6" toward the Mercer County side.

LUMP SUM BID PRICE: A lump sum bid price shall be submitted by the contractor for all of the above work. The lump sum bid price submitted by the contractor shall be full compensation for all materials, fabricating, erecting, cutting, drilling, reaming, welding, fitting, Jacking, equipment and tools, all work and labor, and all incidentals necessary to complete the work in accordance with plans and specifications.
Payment for the work will be made at the contract lump sum bid price when all work is completed in a satisfactory manner in accordance with plans and specifications.
The contractor shall replace at his own expense any part of the bridge that may be temporarily removed or changed to complete the proposed work or that may be damaged during repair operations and shall assume all responsibility for safety of the bridge in completing the work required.

TRAFFIC: Vehicular or pedestrian traffic shall not be permitted on the bridge during jacking operations. The contractor shall furnish necessary watchman and flagman and take all necessary precautions for his work. The District Engineer shall be notified in advance of closing bridge to traffic during jacking operations.

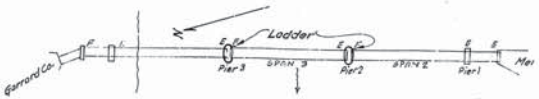
Sheet 2 of 2

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
KENNEDY'S MILL BRIDGE REPAIRS
ROAD
STATION — PROJECT NO.
BRIDGE NUMBER 84-92-1 — DRAWING NO. 8317



Showing installation of Ladder

Note: Place Ladder on North East Post of Spans 2 and 3



PLAN OF BRIDGE

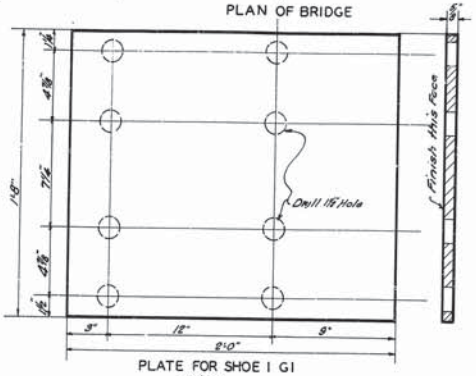
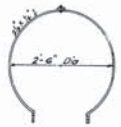


PLATE FOR SHOE 1 G1
Make 1



Safety Hoop
(Make 12)

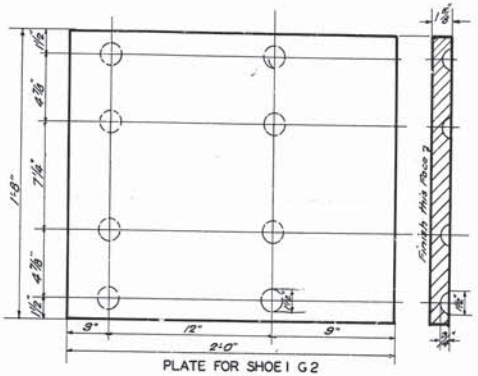
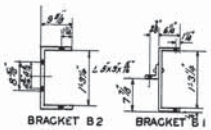


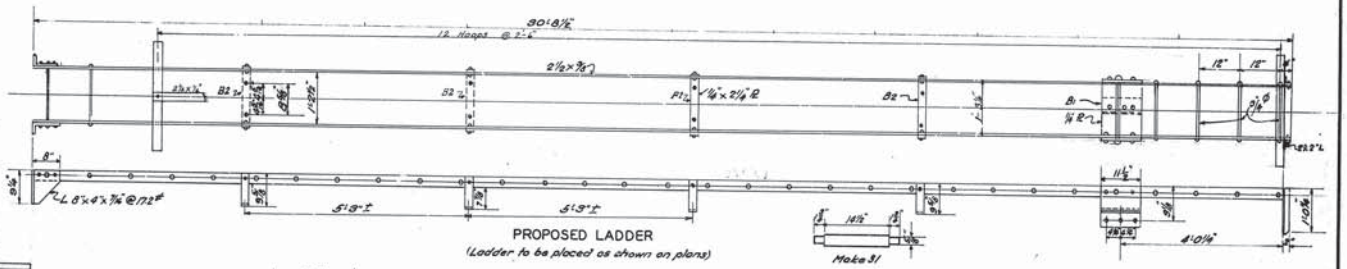
PLATE FOR SHOE 1 G2
Make 1

BILL OF MATERIAL

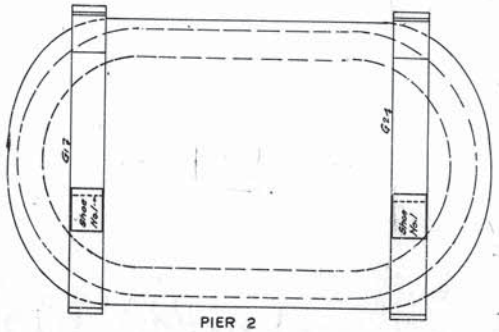
STRUCTURAL STEEL

2 Ladders Complete See Detail
1 Plate for Shoe 1 G1
1 Plate for Shoe 1 G2
12- 3/8"x1 1/2" Machine Bolts
12- Lock Washers for 3/8" Bolts

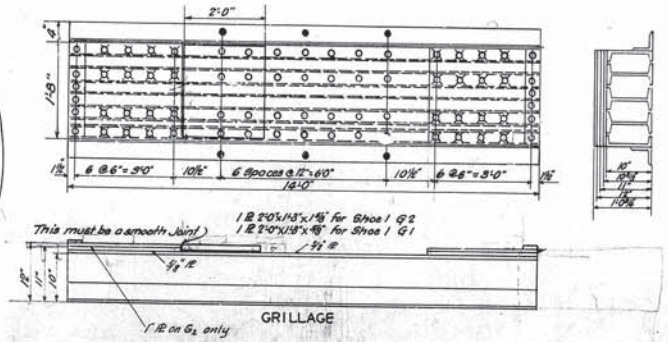




PROPOSED LADDER
(Ladder to be placed as shown on plans)



PIER 2



GRILLAGE

ESTIMATE OF QUANTITIES

Structural Steel 732 Lbs

Rivets 5/8" Ø
Open Holes 11/16" Ø

Sheet 1 of 2

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
KENNEDY'S MILL BRIDGE REPAIRS
ROAD
STATION PROJECT NO.
BRIDGE NUMBER 84-92-1
DRAWING NO. 6317

[redacted]

UPDATE DATE
LETTING DATE 9-13-91

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	LOCATION
2	GENERAL NOTES
3	LAYOUT &QUANTITES
4	ABUTMENT DETAIL
5	FLOOR DETAILS
6	PIER 4
7-9	STRUCTURAL STEELS
10-11	JOINT DETAILS

SPECIAL NOTES

FOR MAINTENANCE OF TRAFFIC
FOR GALVANIZED METAL PLANK FLOORS
FOR CLEANING AND PAINTING
FOR HIGH STRENGTH BOLTS, WASHERS AND NUTS

STANDARD DRAWINGS

TSC-260-07	MISC. TRAFFIC CONTROL DEVICES
TSC-26:-04	MISC. TRAFFIC CONTROL DEVICES
RBR-001-08	STEEL BEAM GUARDRAIL (W BEAM)
RBR-005-07	GUARDRAIL COMPONENTS
RBR-015-02	GUARDRAIL POSTS
RBR-050	END TREAMENT TYPE 7
BHS-007-02	STEEL W BEAM GUARDRAIL (SINGLE FACE A)

PLANS PREPARED BY COOPERATED JOINT DESIGN SECTION
DATE
DATE
DATE
REVISED
REVISED
REVISED

FINAL CHECK
DATE 9/91

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

PLANS OF PROPOSED PROJECT

MERCER COUNTY

BRIDGE REPAIRS
MP 084 0152 018.551

LAYOUT MAP

REPAIRS TO KENNEDYS MILL BRIDGE
OVER HERRINGTON LAKE SHEET 1 OF 11

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD
PROJECT NO. MP 084 0152 018.551

PLAN APPROVED 8/30 1991 BY C.T. Duncan
DIRECTOR OF BRIDGES

PLAN APPROVED 8/30 1991 BY O.J. Newman
STATE HIGHWAY ENGINEER

DRAWING NO. 22305

GENERAL NOTE

SPECIFICATIONS

ALL REFERENCES TO THE STANDARD SPECIFICATIONS ARE TO THE 1991 EDITION OF THE KENTUCKY DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

ALL REFERENCES TO THE AASHTO SPECIFICATIONS ARE TO THE 1989 EDITION OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES WITH INTERIMS THRU 1990.

CAPACITY

CAPCITY: ONE 10 TON TRUCK BASED ON STRESSES IN TRUSS MEMBERS.

CONCRETE

CLASS 'A' CONCRETE SHALL BE USED THROUGHOUT.

MATERIALS DESIGN SPECIFICATIONS

FOR CLASS 'A' REINFORCED CONCRETE
F'C = 3500 PSI

FOR STEEL REINFORCEMENT
FY = 60000 PSI

STRUCTURAL STEEL MATERIALS

ALL STRUCTURAL STEEL FURNISHED SHALL CONFORM TO ASTM SPECIFICATIONS A36-81A.

REINFORCEMENT

DIMENSIONS SHOWN FROM THE FACE OF CONCRETE TO BARS ARE CLEAR DISTANCES UNLESS OTHERWISE SHOWN. SPACING OF BARS IS FROM CENTER TO CENTER OF BARS.

EPOXY COATED REINFORCING STEEL

ALL REINFORCING BARS DESIGNATED BY SUFFIX (E) IN THE PLANS SHALL BE EPOXY COATED IN ACCORDANCE WITH SECTION 811.10 OF THE STANDARD SPECIFICATIONS.

BEVELED EDGES

ALL EXPOSED EDGES SHALL BE BEVELED 7/8" UNLESS OTHERWISE SHOWN.

BILL OF INCIDENTAL MATERIALS

THE QUANTITIES SHOWN IN THE BILL OF INCIDENTAL MATERIALS ARE APPROXIMATE ONLY AND THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ENOUGH MATERIAL TO COMPLETE THE WORK IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE COST OF FURNISHING AND PLACING THESE ITEMS SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR GALVANIZED METAL PLANK FLOORING.

PAYMENT FOR STRUCTURAL STEEL

THE LUMP SUM BID FOR STRUCTURAL STEEL SHALL BE FULL PAYMENT FOR ALL STRUCTURAL STEEL, WELDING AND WELDING MATERIALS, DRAINS, PAINT, AND ALL LABOR AND MATERIALS NECESSARY TO ERECT THE STEEL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE APPROXIMATE WEIGHT OF STRUCTURAL STEEL SHOWN IN THE ESTIMATE OF QUANTITIES DOES NOT INCLUDE OVERRUN OR WELD MATERIAL.

HIGH STRENGTH BOLT CONNECTIONS

UNLESS OTHERWISE PROVIDED ON THE PLANS, ALL FIELD CONNECTIONS SHALL BE 3/4" DIAMETER HIGH STRENGTH BOLTS. OPEN HOLES SHALL BE 15/16" DIAMETER. ALL JOINTS ARE DESIGNED AS FRICTION TYPE CONNECTIONS. TIGHTENING SHALL BE DONE WITH PROPERLY CALIBRATED WRENCHES.

DIMENSIONS

DIMENSIONS ARE FOR A NORMAL TEMPERATURE OF 60 DEGREES FAHRENHEIT. LAYOUT DIMENSIONS ARE HORIZONTAL MEASUREMENTS.

PROHIBITED FIELD WELDING

EXCEPT AS SHOWN ON THE PLANS, NO WELDING OF ANY NATURE SHALL BE PERFORMED ON THE LOAD CARRYING MEMBERS OF THE BRIDGE WITHOUT THE WRITTEN CONSENT OF THE DIRECTOR, DIVISION OF BRIDGES, OR HIS AUTHORIZED REPRESENTATIVE, AND THEN ONLY IN THE MANNER AND AT THE LOCATIONS DESIGNATED IN THE AUTHORIZATION.

WELDING SPECIFICATIONS

ALL WELDING AND WELDING MATERIALS EXCEPT FOR REINFORCEMENT, SHALL CONFORM TO "JOINT SPECIFICATION ANSI/A .4TO/AWS D1.5-88 BRIDGE WELDING CODE".

CLEANING EXISTING STEEL

ALL AREAS OF EXISTING STEEL THAT ARE TO BE IN CONTACT WITH NEW STEEL, INCLUDING AREAS UNDER BOLT HEADS, SHALL BE CLEANED OF ALL DIRT, RUST, PAINT, AND OTHER FOREIGN MATTER BEFORE INSTALLING THE NEW STEEL. THE COST OF THIS CLEANING IS TO BE INCIDENTAL TO THE LUMP SUM BID FOR STRUCTURAL STEEL.

PAINTING DAMAGED AREAS

ALL AREAS OF NEW OR EXISTING STRUCTURAL STEEL ON WHICH THE PAINT HAS BEEN DAMAGED BY THE CONTRACTOR WITH WELD BURNS OR BY OTHER MEANS SHALL BE CLEANED AND SPOT PAINTED USING THE SAME COATS OF PAINT SPECIFIED FOR EXISTING STEEL. THE COST OF THIS TOUCH UP PAINTING IS TO BE INCIDENTAL TO THE LUMP SUM BID FOR STRUCTURAL STEEL.

EXISTING REINFORCING STEEL

THE COST OF CUTTING, BENDING AND CLEANING EXISTING REINFORCING STEEL IS TO BE INCIDENTAL TO THE LUMP SUM BID FOR REMOVE CONCRETE MASONRY.

BONDING NEW CONCRETE TO OLD CONCRETE

NEW CONCRETE SHALL BE BONDED TO OLD CONCRETE AS SHOWN ON PLANS WITH A TWO-COMPONENT EPOXY RESIN SYSTEM CONFORMING TO SECTION 833 OF THE SPECIFICATIONS. THE COST OF THIS WORK, INCLUDING ALL LABOR, TOOLS AND MATERIALS, IS TO BE INCIDENTAL TO THE UNIT PRICE BID FOR CLASS 'A' CONCRETE.

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.

CLOSING BRIDGE TO TRAFFIC

THE BRIDGE MAY BE CLOSED TO TRAFFIC BETWEEN LABOR DAY (1991) AND MEMORIAL DAY (1992) DURING RECONSTRUCTION. ALL DETOUR SIGNING AND SIGNING FOR BRIDGE CLOSURE SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIAL NOTES FOR MAINTENANCE OF TRAFFIC. THE CONTRACTOR SHALL NOTIFY THE DISTRICT OFFICE TWO WEEKS PRIOR TO CLOSING THE BRIDGE. THE BRIDGE SHALL NOT BE CLOSED TO TRAFFIC UNTIL THE CONTRACTOR HAS OBTAINED A REASONABLE AMOUNT OF MATERIAL FOR ITS RECONSTRUCTION AS JUDGED BY THE ENGINEER.

REMOVE EXISTING BRIDGE FLOORING

THE EXISTING METAL PLANK FLOORING, BITUMINOUS MATERIAL, STEEL ROADWAY STRINGERS AND STRINGER RISERS, FLOOR BEAMS, GUARDRAIL, AND GUARDRAIL POSTS SHALL BE REMOVED. ALL MATERIAL THUS REMOVED INCLUDING THE STEEL STRINGERS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE RIGHT-OF-WAY. THE COST OF THIS WORK IS TO BE INCLUDED IN THE LUMP SUM BID FOR REMOVE EXISTING BRIDGE FLOORING.

REMOVAL OF CONCRETE MASONRY

THIS WORK INCLUDES REMOVING THE CONCRETE AS SHOWN ON THE PLANS AND ALL TEMPORARY PATCHING AND SHORING AND DISPOSING OF THIS MATERIAL OFF THE RIGHT-OF-WAY. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR REMOVE CONCRETE MASONRY.

GALVANIZED METAL PLANK FLOORS WITH A BITUMINOUS WEARING SURFACE

SEE THE SPECIAL NOTES FOR THIS ITEM.

GALVANIZED METAL

GALVANIZED METAL SHALL BE LOADED, HAULED, AND HANDLED IN SUCH A MANNER THAT THE GALVANIZING WILL NOT BE DAMAGED. ALL DAMAGED AND ABRADED SURFACES SHALL BE REGALVANIZED OR REPAIRED AS APPROVED BY THE ENGINEER. DAMAGED SPELTER COATING INCLUDING AREAS AROUND BOLTS MAY BE REPAIRED, IF APPROVED, BY THOROUGHLY WIRE BRUSHING THE DAMAGED AREA AND REMOVING ALL LOOSE AND CRACKED SPELTER COATING, AFTER WHICH THE CLEANED AREA SHALL BE PAINTED WITH TWO COATS OF ZINC OXIDE-ZINC DUST PAINT CONFORMING TO THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-P-641B, TYPE 2.

ELASTOMERIC BEARING PADS

THE MATERIAL SPECIFICATIONS FOR ELASTOMERIC BEARING PADS SHALL CONFORM TO THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES EXCEPT THAT THE REQUIREMENT OF THE LOW TEMPERATURE TEST IS WAIVED AND A DUROMETER HARDNESS OF 50 OR 60 IS REQUIRED.

GUARDRAIL

THE UNIT PRICE BID FOR GUARDRAIL STEEL 'W' BEAM, SINGLE FACE SHALL INCLUDE ALL ITEMS NECESSARY TO INSTALL THE POST AND GUARDRAIL AT THE ENDS OF THE STEEL 'W' BEAM GUARDRAIL, SINGLE FACE A SECTIONS. THE UNIT PRICE BID FOR GUARDRAIL STEEL 'W' BEAM, SINGLE FACE BR SHALL INCLUDE ALL ITEMS NECESSARY TO INSTALL THE GUARDRAIL THROUGH THE BRIDGE.

STUD WELDING

STUDS SHALL BE WELDED IN ACCORDANCE WITH AWS SPECIFICATIONS.

UPDATE DATE
LETTING DATE

DESIGNED BY _____ CHECKED BY _____ DATE _____
DETAILED BY L.T. Fowler CHECKED BY S.E. Goodpaster DATE 7-91
CHECKED BY GRAPHICS SECTION CHECKED BY _____ DATE _____

REVISED DATE
REVISED DATE
REVISED DATE

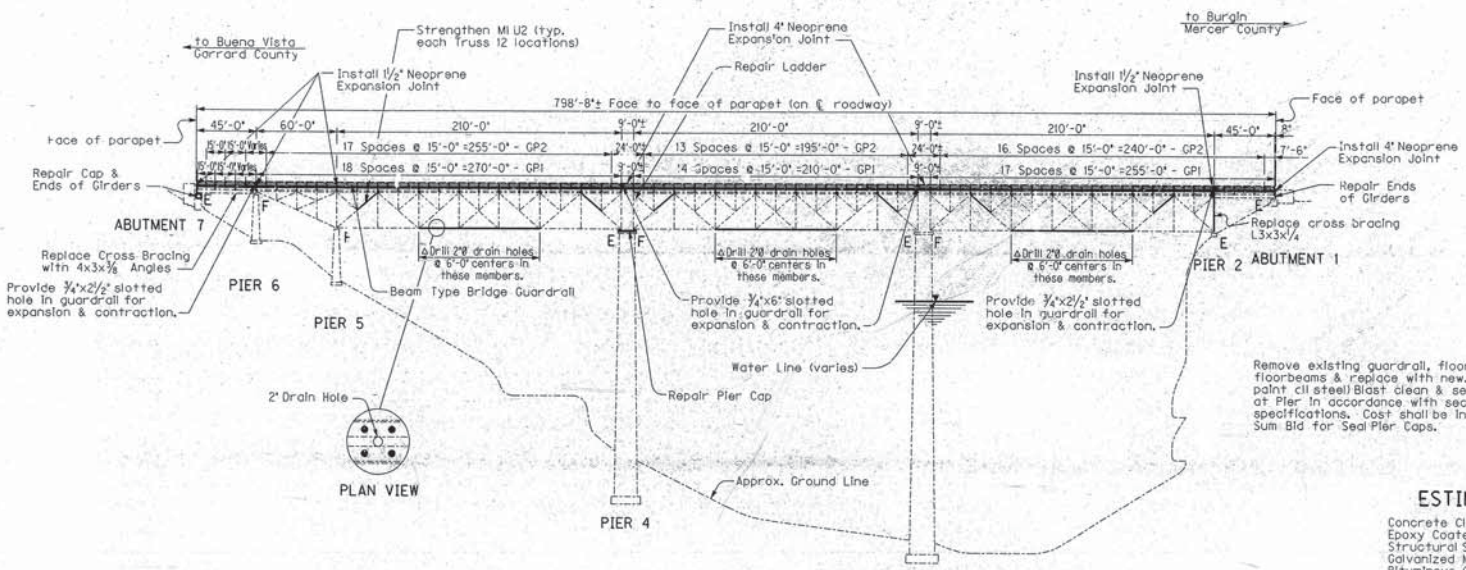
Sheet 2

Repairs to Kennedys Mill Bridge over Herrington Lake

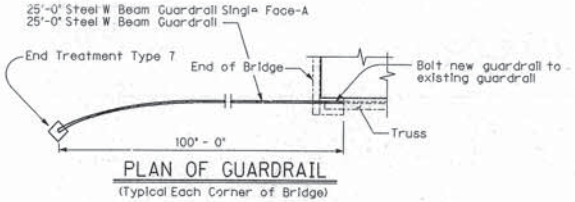
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD

STATION	P.E. PROJECT NO.	
CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO. 22305

GENERAL NOTE



ELEVATION



PLAN OF GUARDRAIL
(Typical Each Corner of Bridge)

ESTIMATE OF QUANTITIES

Concrete Class "A"	19.0 C.Y.
Epoxy Coated Steel Reinforcement	2190 Lbs.
Structural Steel ①	1 L.S.
Galvanized Metal Plank Flooring	16000 S.F.
Bituminous Concrete Class I	270 Tons
Remove Concrete Masonry	14 C.Y.
Guardrail Steel W Beam Single Face BR	1600 L.F.
Guardrail Steel W Beam Single Face A	100 L.F.
Guardrail Steel W Beam Single Face	100 L.F.
Remove Existing Bridge Flooring	1 L.S.
Cleaning & Painting	1 L.S.
Seal Pier Cap	1 L.S.
End Treatment Type 7	4 Each
Elastomeric Bearing Pads	4 Each
Drain Holes	42 Each
Demobilization	1 L.S.
Detour Signing	1 L.S.

① Approximate weight of Structural Steel is 260,000 lbs.

② Estimated weight of Cleaning and Painting is 360 Tons.

BILL OF INCIDENTAL MATERIALS

No.	Description
12800	½" Øx 1¼" Nelson Threaded Stud with Hex Nut and Washer
3	1½" Preformed compression joint seal 20'-0" long
3	4" Strip seal and extrusion 20'-0" long

Sheet 3

Repairs to Kennedys Mill Bridge over Herrington Lake

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD

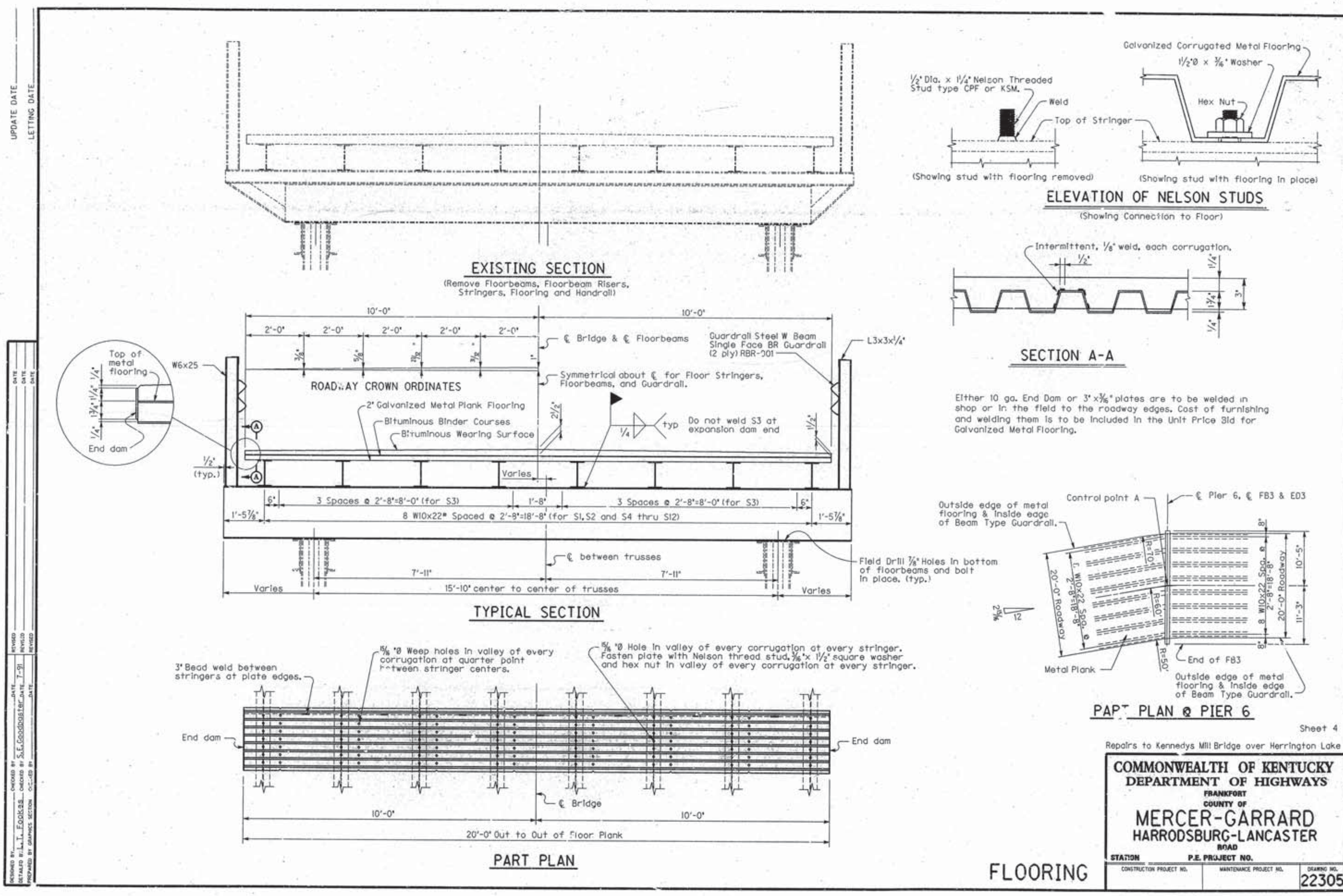
STATION	P.E. PROJECT NO.	
CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO. 22305

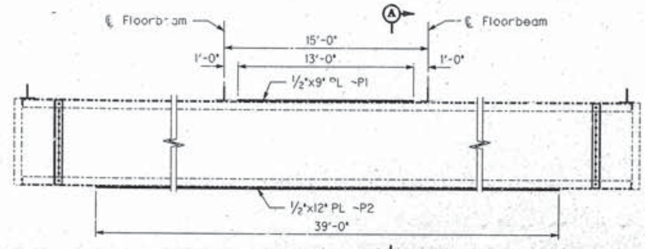
LAYOUT

UPDATE DATE
LETTING DATE

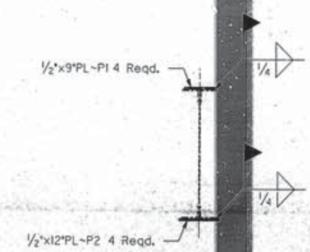
DESIGNED BY [illegible] DATE
DETAILED BY [illegible] CHECKED BY S.E. Goodpaster DATE 7-91
PREPARED BY GRAPHICS SECTION CHECKED BY DATE

REVISED DATE
REVISED DATE
REVISED DATE


EXISTING SECTION
(Remove Floorbeams, Floorbeam Risers, Stringers, Flooring and Handrail)
10'-0"
2'-0"
ROADWAY CROWN ORDINATES
℄ Bridge & ℄ Floorbeams
Symmetrical about ℄ for Floor Stringers, Floorbeams, and Guardrail.
Guardrail Steel W Beam Single Face BR Guardrail (2 ply) RBR-301
L3x3x¼"
W6x25
Top of metal flooring
End dam
½" (typ.)
2" Galvanized Metal Plank Flooring
Bituminous Binder Courses
Bituminous Wearing Surface
Do not weld S3 at expansion dam end
typ
Varies
6"
1'-8"
3 Spaces @ 2'-8"=8'-0" (for S3)
8 W10x22" Spaced @ 2'-8"=18'-8" (for S1, S2 and S4 thru S12)
1'-5⅞"
℄ between trusses
7'-11"
15'-10" center to center of trusses
Field Drill ⅞" Holes in bottom of floorbeams and bolt in place. (typ.)
TYPICAL SECTION
3" Bead weld between stringers at plate edges.
⅝"Ø Weep holes in valley of every corrugation at quarter point between stringer centers.
⅝"Ø Hole in valley of every corrugation at every stringer. Fasten plate with Nelson thread stud, ⅜"x 1½" square washer and hex nut in valley of every corrugation at every stringer.
End dam
℄ Bridge
20'-0" Out to Out of Floor Plank
PART PLAN
Galvanized Corrugated Metal Flooring
1½"Ø x 3/16" Washer
½" Dia. x 1¼" Nelson Threaded Stud type CPF or KSM.
Weld
Top of Stringer
Hex Nut
(Showing stud with flooring removed)
(Showing stud with flooring in place)
ELEVATION OF NELSON STUDS
(Showing Connection to Floor)
Intermittent, ⅛" weld, each corrugation.
½"
3"
SECTION A-A
Either 10 ga. End Dam or 3"x3/16" plates are to be welded in shop or in the field to the roadway edges. Cost of furnishing and welding them is to be included in the Unit Price Bid for Galvanized Metal Flooring.
Outside edge of metal flooring & inside edge of Beam Type Guardrail.
Control point A
℄ Pier 6, ℄ FB3 & ED3
R=70'
R=60'
R=50'
8 W10x22 Spa. @ 2'-8"=18'-8"
20'-0" Roadway
10'-5"
11'-3"
End of FB3
Metal Plank
PART PLAN @ PIER 6
Sheet 4
Repairs to Kennedys Mill Bridge over Herrington Lake
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD
STATION
P.E. PROJECT NO.
CONSTRUCTION PROJECT NO.
MAINTENANCE PROJECT NO.
DRAWING NO.
22305
FLOORING
DESIGNED BY
DETAILED BY L.T. Fookes
CHECKED BY S.E. Goodpaster
DATE 7-91
PREPARED BY GRAPHICS SECTION
REVISED
UPDATE DATE
LETTING DATE



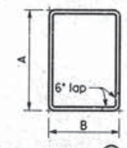
GIRDER ELEVATION
(Span 1 and Span 6)



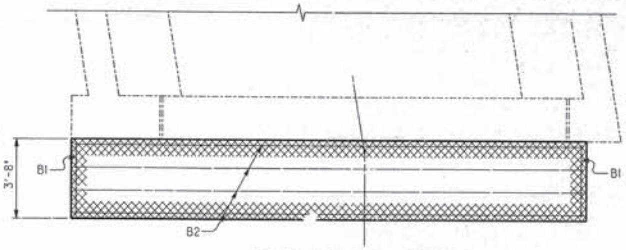
SECTION A-A

BILL OF REINFORCEMENT~ABUT. 7

MARK	TYPE	NO.	SIZE	LENGTH FT.	LENGTH IN.	LOCATION	A E FT.	A E IN.	B F FT.	B F IN.	C G FT.	C G IN.	D H FT.	D H IN.
B1e	14	21	4	12	6	Cap	2	7¾	3	4				
B2e	Str	10	6	25	2	Cap								
B3e	Str	26	8	2	0	Dowel								



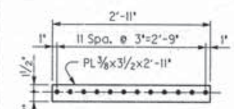
TYPE 14



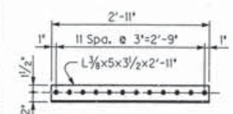
PLAN OF CAP~ABUT. 7

NOTE: Any concrete in poor condition shall also be removed and replaced with new concrete.

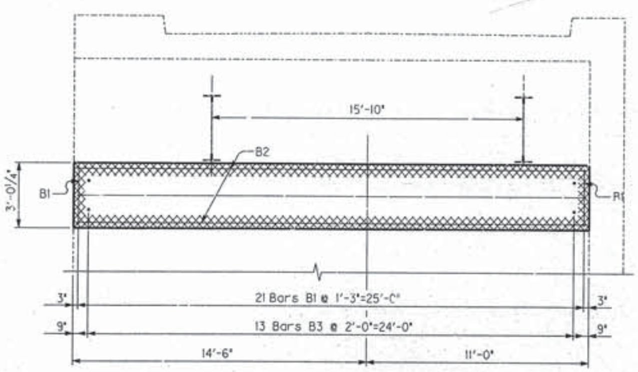
Remove cross-hatched portion of existing concrete. Clean and straighten any vertical reinforcement and allow to bond with new concrete.



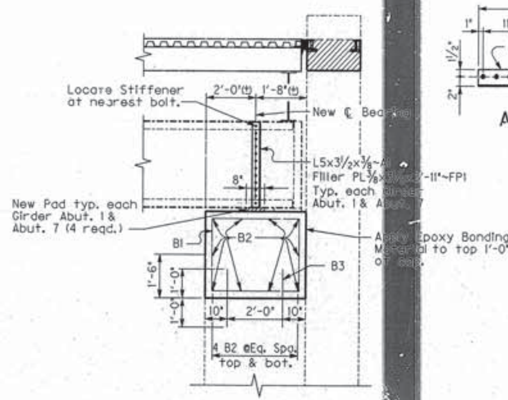
FP1~8 Reqd.



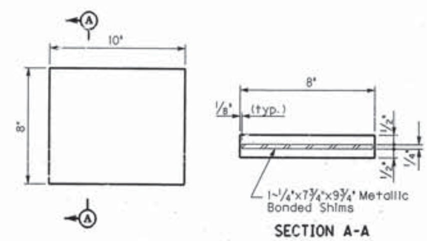
A1~8 Reqd.



ELEVATION~ABUT. 7



TYPICAL SECTION
Note: concrete details apply to Abut. 7 only



SECTION A-A

BEARING PAD
(4 Reqd.)

Sheet 5

Repairs to Kennedys Mill Bridge over Herrington Lake

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT

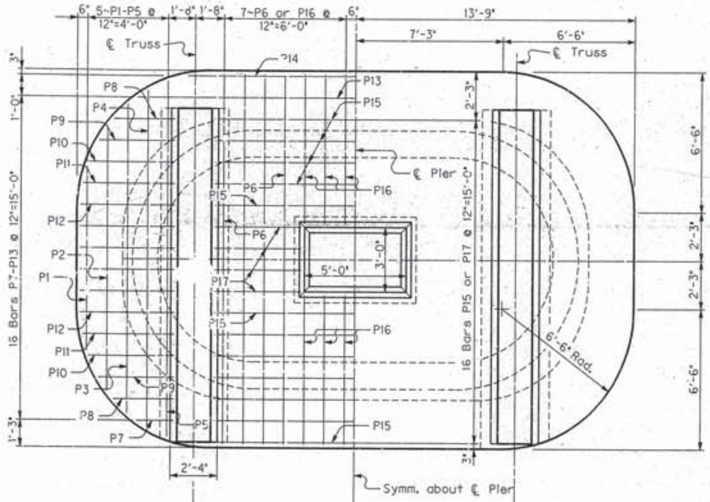
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD

STATION | P.E. PROJECT NO.
CONSTRUCTION PROJECT NO. | MAINTENANCE PROJECT NO. | DRAWING NO. 22305

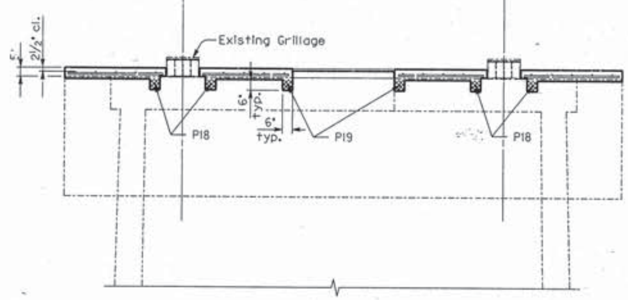
ABUTMENTS 1&7

DESIGNED BY ___ CHECKED BY ___ REVISED ___ DATE ___
DETAILED BY L.T. Fookes CHECKED BY S.E. Goodpaster DATE 7-91 REVISED ___ DATE ___
PREPARED BY GRAPHICS SECTION CHECKED BY ___ DATE ___ REVISED ___ DATE ___

UPDATE DATE ___
LETTING DATE ___



PLAN OF CAP



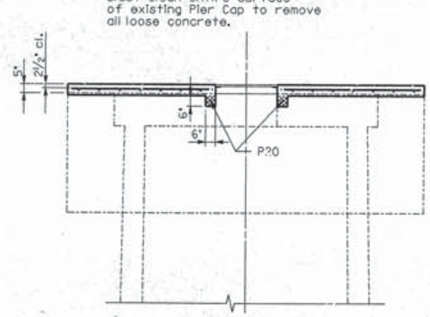
ELEVATION OF CAP

NOTE: Existing reinforcement in the area where old concrete is removed shall be cleaned and left to bond with new concrete.

NOTE: Any concrete in poor condition shall also be removed and replaced with new concrete.

NOTE: After new concrete has cured, blast clean and coat the top of the entire cap in accordance with section 731 of the specification. This slurry shall extend to the existing grillage. This work including all materials shall be incidental to the lump sum bid for Seal Pier Cap.

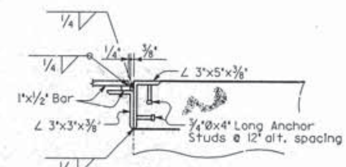
NOTE:
Blast clean entire surface of existing Pier Cap to remove all loose concrete.



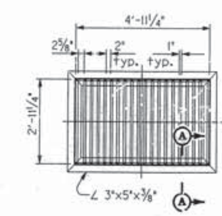
END ELEVATION

BILL OF REINFORCEMENT

MARK	TYPE	NO.	SIZE	LENGTH FT.	LENGTH IN.	LOCATION	A E FT.	A E IN.	B F FT.	B F IN.	C G FT.	C G IN.	D H FT.	D H IN.
P1e	Str	2	8	9	1	Cap								
P2e	Str	2	8	12	3	Cap								
P3e	Str	2	8	14	3	Cap								
P4e	Str	2	8	15	7	Cap								
P5e	Str	2	8	16	4	Cap								
P6e	Str	8	8	17	2	Cap								
P7e	Str	2	5	1	5	Cap								
P8e	Str	4	5	2	7	Cap								
P9e	Str	4	5	3	1	Cap								
P10e	Str	4	5	3	9	Cap								
P11e	Str	4	5	4	0	Cap								
P12e	Str	12	5	4	2	Cap								
P13e	Str	1	5	21	6	Cap								
P14e	Str	1	5	16	6	Cap								
P15e	Str	12	5	13	7	Cap								
P16e	Str	12	8	6	11	Cap								
P17e	Str	8	5	4	2	Cap								
P18e	Str	4	8	15	2	Cap								
P19e	Str	2	8	3	8	Cap								
P20e	Str	2	5	5	8	Cap								



SECTION A-A



PLAN OF MANHOLE

Sheet 6

Repairs to Kennedys Mill Bridge over Herrington Lake

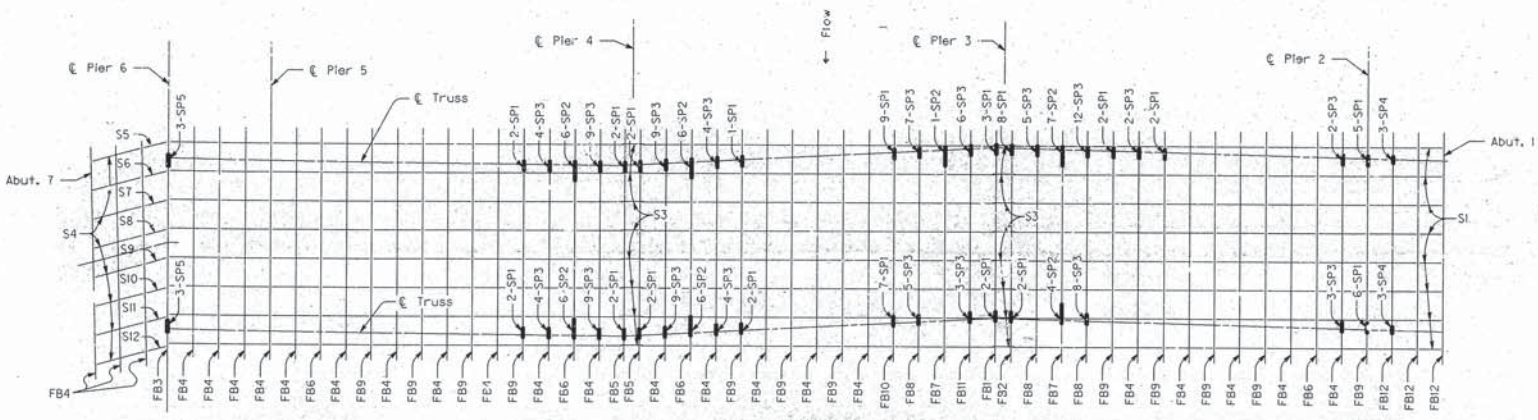
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD

STATION | P.E. PROJECT NO.
CONSTRUCTION PROJECT NO. | MAINTENANCE PROJECT NO. | DRAWING NO. 22305

PIER 4

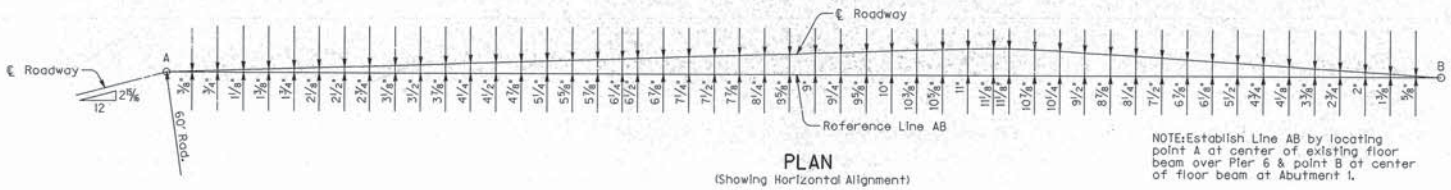
DESIGNED BY ___ CHECKED BY ___ DATE ___ REVISED ___ DATE ___
DETAILED BY L.T. Fookes CHECKED BY S.E.Goodpaster DATE 7-91 REVISED ___ DATE ___
PREPARED BY GRAPHICS SECTION CHECKED BY ___ DATE ___ REVISED ___ DATE ___

UPDATE DATE
LETTING DATE



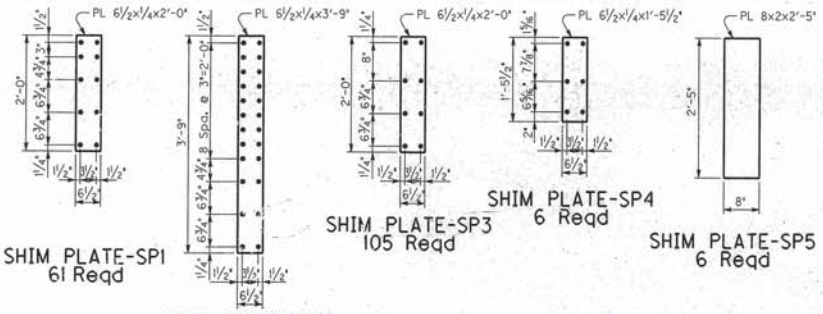
FRAMING PLAN
(Flooring Removed)

All Stringers are S2 unless noted.



PLAN
(Showing Horizontal Alignment)

NOTE: Establish Line AB by locating point A at center of existing floor beam over Pier 6 & point B at center of floor beam at Abutment 1.



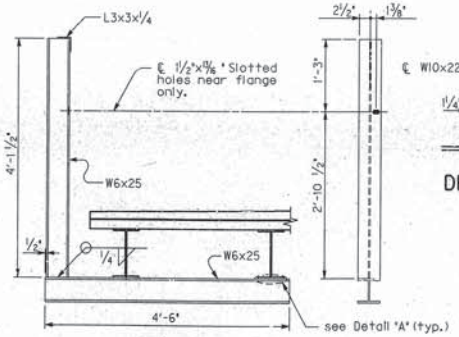
SHIM PLATE-SP1
61 Reqd

SHIM PLATE-SP2
36 Reqd

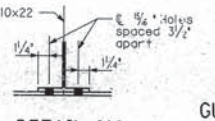
SHIM PLATE-SP3
105 Reqd

SHIM PLATE-SP4
6 Reqd

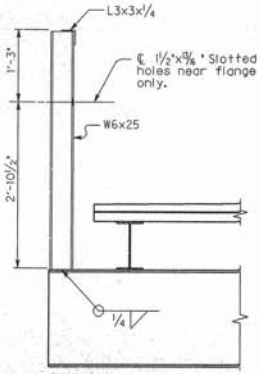
SHIM PLATE-SP5
6 Reqd



GUARDRAIL POST - GP2
104 Reqd



DETAIL 'A'



GUARDRAIL POST - GP1
110 Reqd

STRUCTURAL STEEL

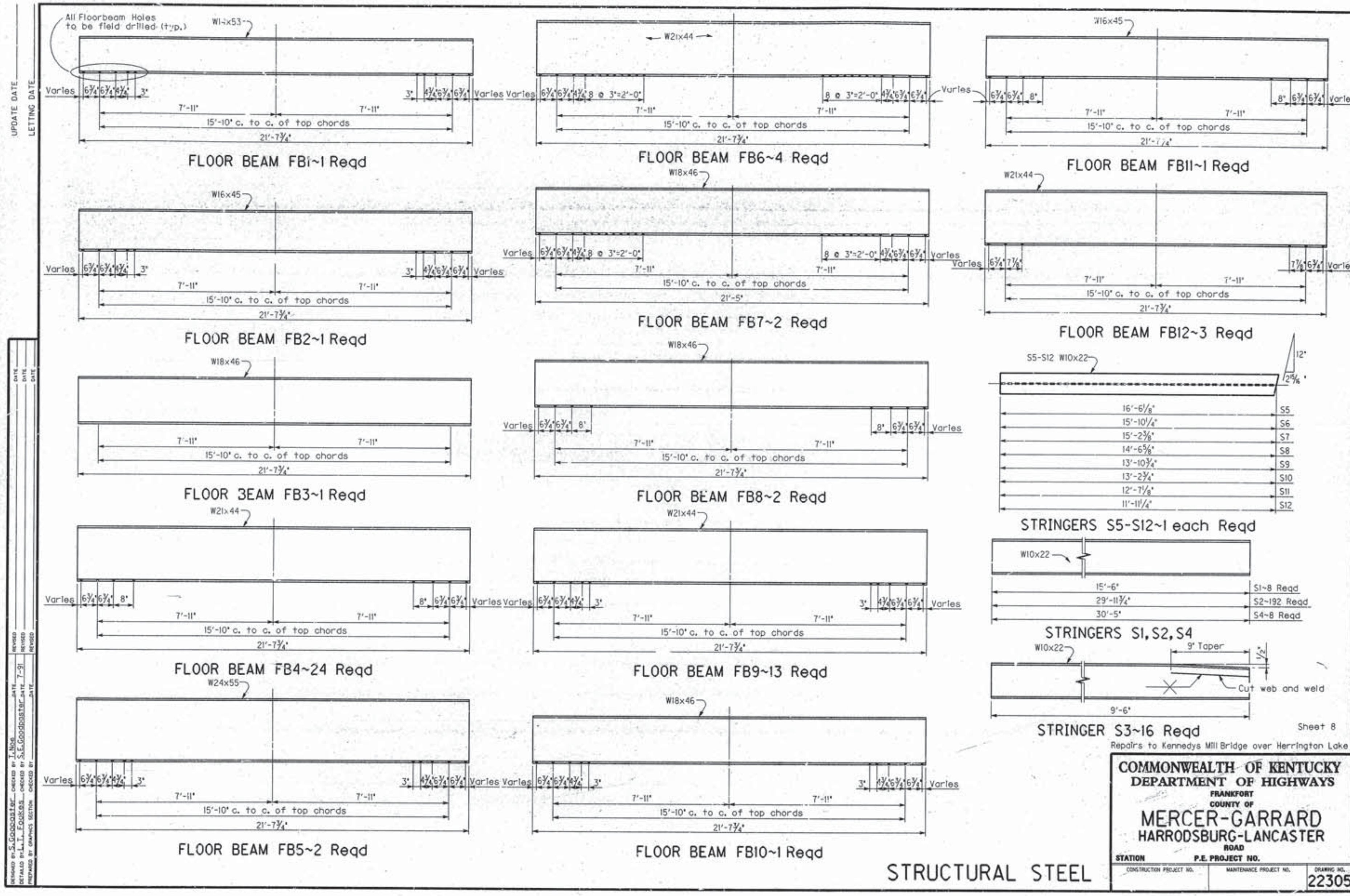
Sheet 7

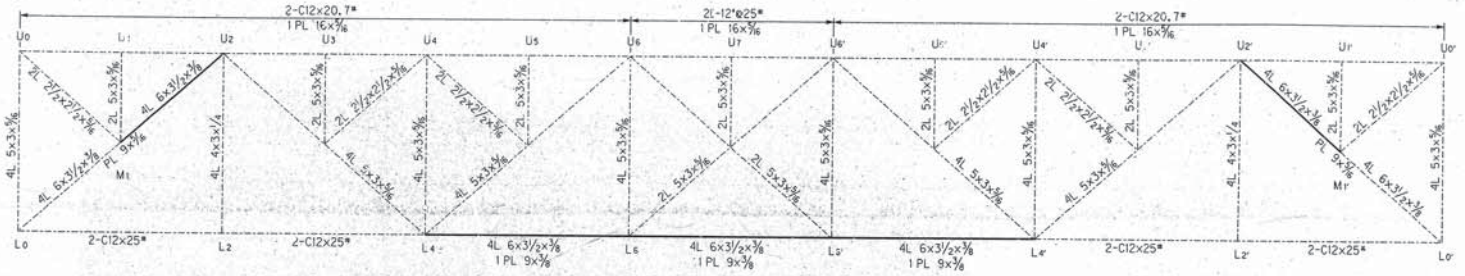
Repairs to Kennedys Mill Bridge over Herrington Lake

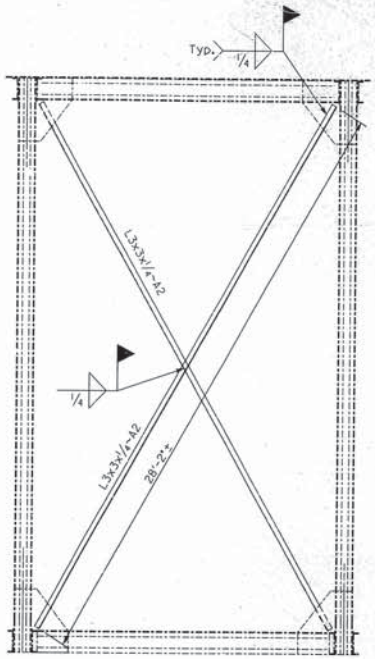
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD

STATION	P.E. PROJECT NO.		
CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO. 22305	

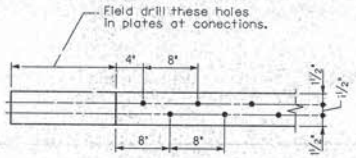
UPDATE DATE
LETTING DATE
DESIGNED BY
DETAILED BY L.T. Eagles CHECKED BY S.E. Goodpaster DATE 7-91 REVISED
PREPARED BY GRAPHICS SECTION CHECKED BY DATE REVISED
DATE
DATE


All Floorbeam Holes to be field drilled (typ.)
FLOOR BEAM FB1~1 Reqd
FLOOR BEAM FB2~1 Reqd
FLOOR 3EAM FB3~1 Reqd
FLOOR BEAM FB4~24 Reqd
FLOOR BEAM FB5~2 Reqd
FLOOR BEAM FB6~4 Reqd
FLOOR BEAM FB7~2 Reqd
FLOOR BEAM FB8~2 Reqd
FLOOR BEAM FB9~13 Reqd
FLOOR BEAM FB10~1 Reqd
FLOOR BEAM FB11~1 Reqd
FLOOR BEAM FB12~3 Reqd
15'-10" c. to c. of top chords
21'-7¾"
21'-5"
7'-11"
Varies
8 @ 3"=2'-0"
W14x53
W16x45
W18x46
W21x44
W24x55
S5-S12 W10x22
16'-6⅛" S5
15'-10¼" S6
15'-2⅜" S7
14'-6⅝" S8
13'-10¾" S9
13'-2¾" S10
12'-7⅛" S11
11'-11¼" S12
STRINGERS S5-S12~1 each Reqd
W10x22
15'-6" S1~8 Reqd
29'-11¾" S2~192 Reqd
30'-5" S4~8 Reqd
STRINGERS S1, S2, S4
9' Taper
Cut web and weld
9'-6"
STRINGER S3~16 Reqd
Sheet 8
Repairs to Kennedys Mill Bridge over Herrington Lake
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD
STATION
P.E. PROJECT NO.
CONSTRUCTION PROJECT NO.
MAINTENANCE PROJECT NO.
DRAWING NO.
22305
STRUCTURAL STEEL
UPDATE DATE
LETTING DATE
DESIGNED BY S.Goodpaster CHECKED BY T.Noe
DETAILED BY L.T. Fookes CHECKED BY S.E.Goodpaster DATE 7-91
PREPARED BY GRAPHICS SECTION CHECKED BY

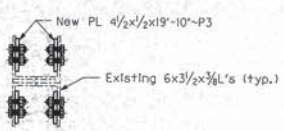




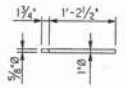
CROSS BRACING AT PIER 2



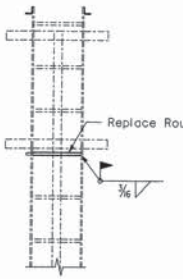
NOTE: Attach only one stiffener Plate at a time.



DETAIL M1-U2 STRENGTHENING



LADDER ROUND



LADDER

LADDER AT PIER 4

Sheet 9

Repairs to Kennedys Mill Bridge over Herrington Lake

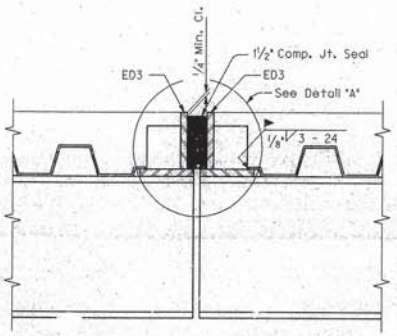
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD

STATION | P.E. PROJECT NO. | CONSTRUCTION PROJECT NO. | MAINTENANCE PROJECT NO. | DRAWING NO. 22305

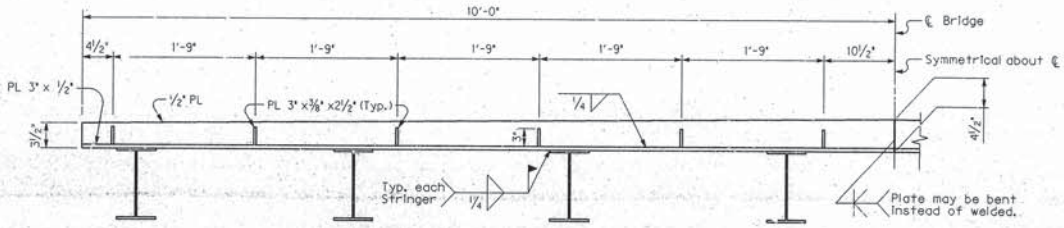
STRUCTURAL STEEL

UPDATE DATE
LETTING DATE

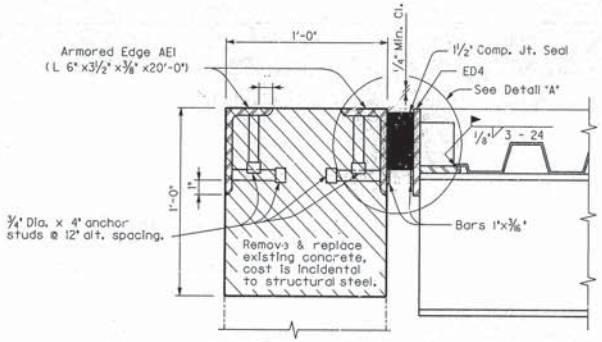
DESIGNED BY: DATE
DETAILED BY: L.J. Fookes CHECKED BY: DATE
PREPARED BY GRAPHICS SECTION CHECKED BY: DATE
REVISED DATE
REVISED DATE
REVISED DATE



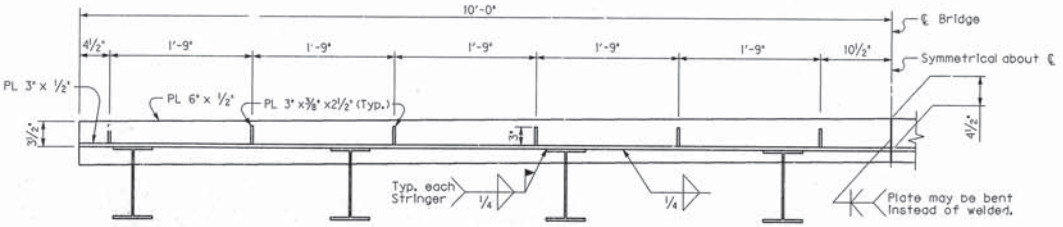
PART SECTION AT PIERS 2,5&6



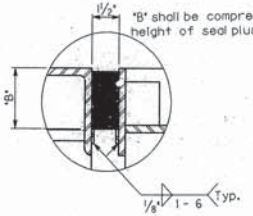
EXPANSION DAM ED3~6 Reqd



PART SECTION AT ABUTMENT 7



EXPANSION DAM ED4~1 Reqd



DETAIL "A"

Note: The ends of the Joint Seal shall be sealed to prevent the entrance of water and foreign material.

NOTE: The cost of furnishing and placing the preformed compressive joint seal shall be incidental to the Lump Sum Bid for Structural Steel.

Note: Take care to not damage any existing reinforcing steel. Clean and straighten all reinforcing steel for reuse. Cost of concrete removal and clearing & straighting steel is included in the unit price bid for Remove Concrete Masonry.

NOTE:
The cost of Armored Edge shall be included in the Lump Sum Bid for Structural Steel.

JOINT DETAILS

Sheet 10

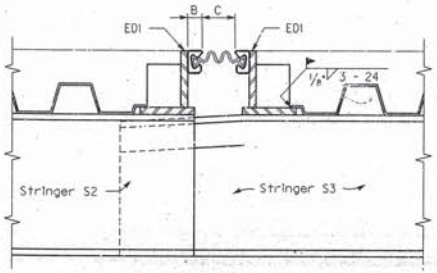
Repairs to Kennedys Mill Bridge over Herrington Lake

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD

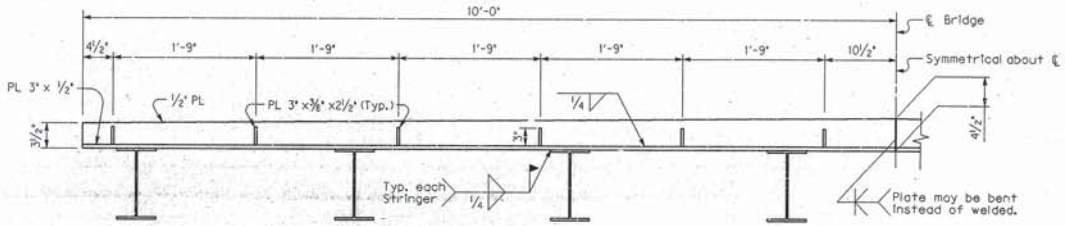
STATION	P.E. PROJECT NO.	
CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.	DRAWING NO. 22305

UPDATE DATE
LETTING DATE

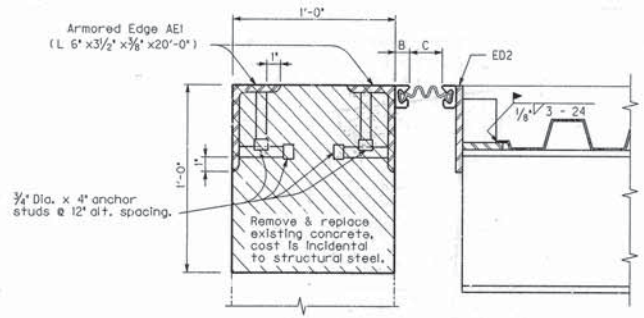
DESIGNED BY ... DATE ...
DETAILED BY L.T. FOORD JR. CHECKED BY S.E. GOODRUM DATE 7-91 REVISED
PREPARED BY DRAWING SECTION CHECKED BY ... DATE ... REVISED
DATE
DATE



PART SECTION AT PIERS 3&4



EXPANSION DAM ED1~4 Reqd



PART SECTION AT ABUTMENT 1

Note: The ends of the Joint Seal shall be sealed to prevent the entrance of water and foreign material.

NOTE: The cost of furnishing and placing the preformed compressive joint seal and extrusion shall be incidental to the Lump Sum Bid for Structural Steel.

Note: Take care to not damage any existing reinforcing steel. Clean and straighten all reinforcing steel for reuse. Cost of concrete removal and cleaning & straighting steel is included in the unit price bid for Remove Concrete Masonry.

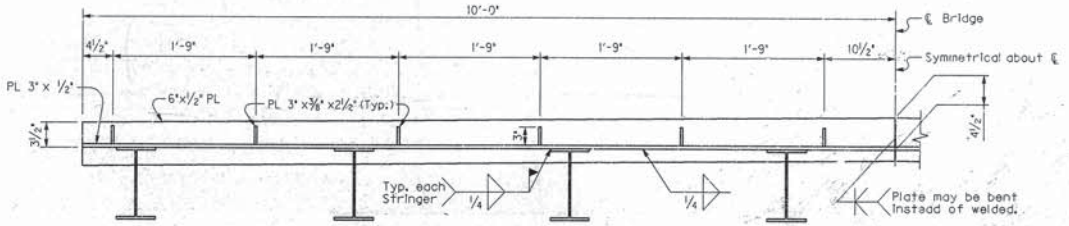
ALTERNATE NOEPRENE EXPANSION DAMS

TYPE	MODEL	SUPPLIER	A	B	C*
B	WABO STRIP SEAL Type A Extrusion With S-400 Seal	Watson Bowman Associates Inc.	2"	1½"	2"
B	STEEL FLEX Type SSA With 400 Seal	D. S. Brown Co.	2"	1½"	2½"
B	GEN STRIP CD Profile A Steel Extrusion With Gen Strip CD Seal	General Tire Co.	2"	1⅜"	2¼"
B	ONFLEX Type AM2 Extrusion With 40SEQ Seal	Structural Accessories Inc.	2"	1¼"	2"

*Joint Opening At 60° F.

Note:
Joint Openings Shall Be Adjusted For Each 10° Above or Below 60° F. Decrease or Increase Respectively by Increment Shown.

INCREMENT FOR 10° TEMPERATURE CHANGE				
— STEEL SPAN —				
180'-240'	241'-320'	321'-365'		
3/16"	1/4"	5/16"		
— CONCRETE SPAN —				
320'-420'	421'-560'	56 -700'		
3/16"	1/4"	5/16"		



EXPANSION DAM ED2~1 Reqd

NOTE
The cost of Armored Edge shall be included in the Lump Sum Bid for Structural Steel.

JOINT DETAILS

Sheet 11

Repairs to Kennedys Mill Bridge over Herrington Lake

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS
FRANKFORT
COUNTY OF
MERCER-GARRARD
HARRODSBURG-LANCASTER
ROAD

STATION | P.E. PROJECT NO.
CONSTRUCTION PROJECT NO. | MAINTENANCE PROJECT NO. | DRAWING NO. 22305

UPDATE DATE
LETTING DATE

DESIGNED BY _____ DATE _____ CHECKED BY S.E. Coordinator DATE 7-91
DETAILED BY L.T. Fowler DATE _____ CHECKED BY _____ DATE _____
PREPARED BY DRAWING SECTION CHECKED BY _____ DATE _____
REVISED
REVISED

35-101

101

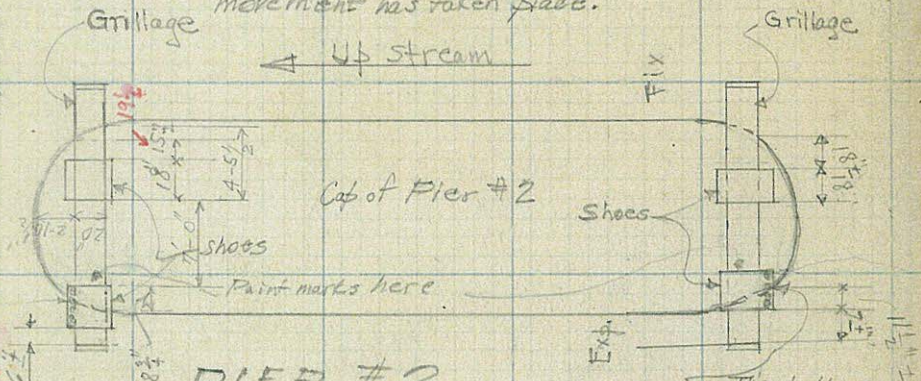
GARRARD-MERCER

2-3-38
J.T.M.

Kennedy Mill Bridge over
Harrington Lake.

No appearance that construction joints are opening on the Mercer face of Pier #2.

Threkeld taking measurements on long axis Pier today. He will notify Frankfort immediately if additional movement has taken place.



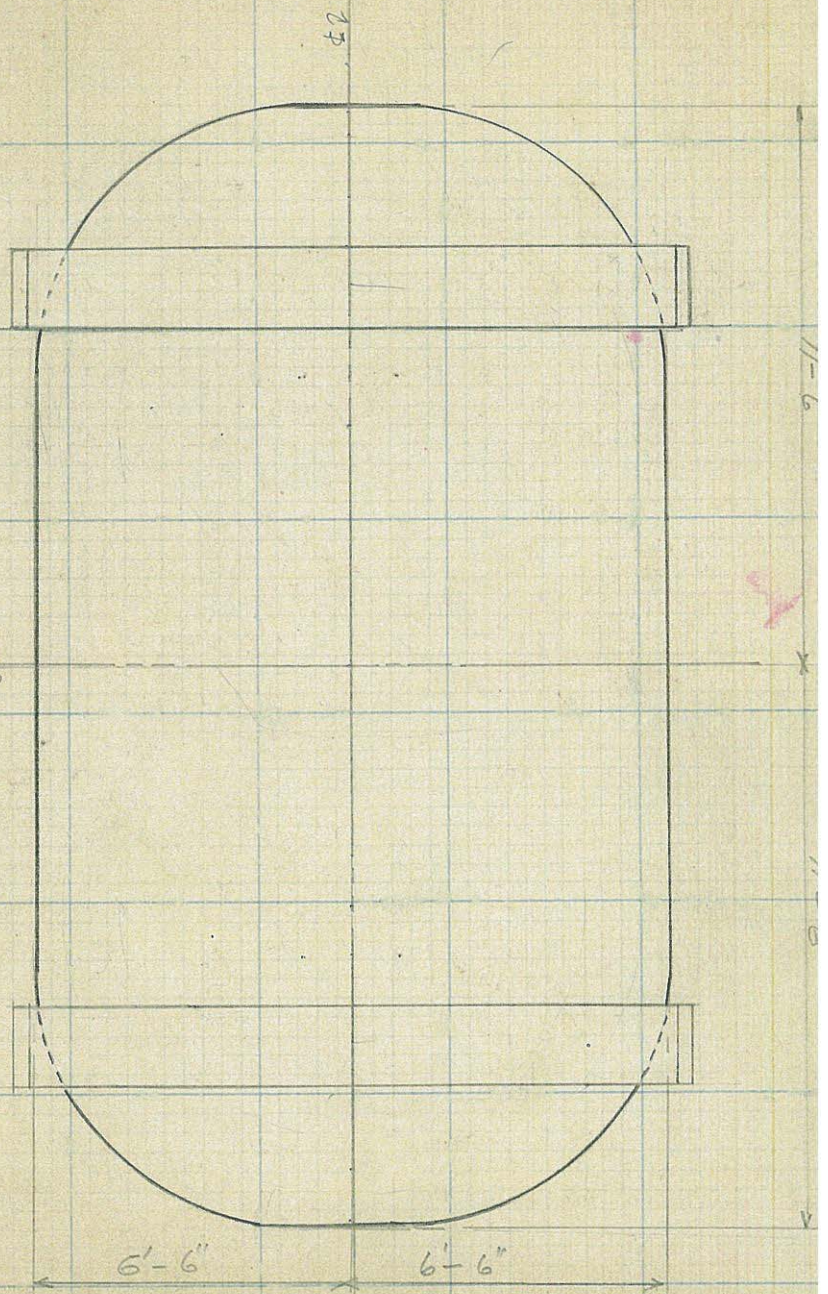
PIER #2

Movement of 2" to 3" towards Mercer side seen in paint marks on top of grillages.

Disintegration on top pier #4 both shoes. plenty of room on grillages Pier #3, channel span shoes hang over pier cap to second bolt. Upstream cap broken off & downstream cap cracked under grillages.

All steel needs cleaning & painting. Rust coming through last white coat - general throughout structure. All steel badly spattered with tar or asphalt from floor surfacing.

Mr. Daugherty & 2 others apparently not much alarmed over condition of bridge.



103

See letter of Apr 9 1932
from Wisconsin Bridge & Iron Co
Milwaukee Wis

3-	220'	Spans	420,000
2	45'	"	36 000
1	60	"	26 000
1.	Handrail	"	24 000
Extra Steel for Erection			20 000

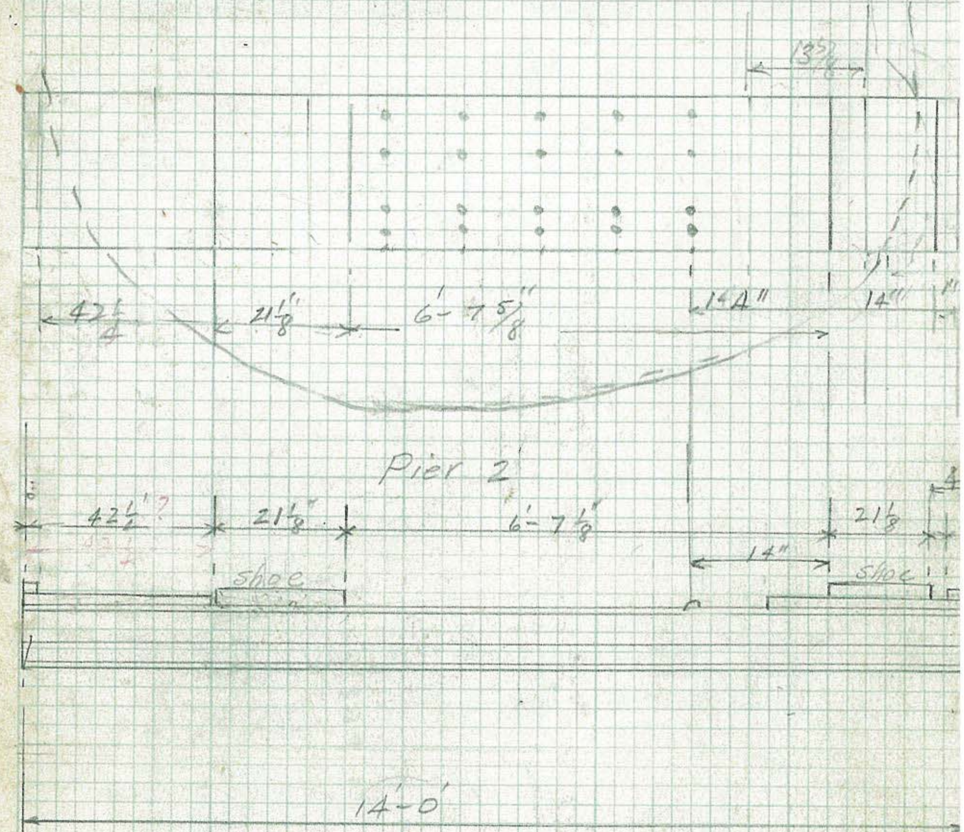
Kennedy's Mill Bridge 57-131

0+29 -	10⅞
+50	13¾
+75	13¾
1+00	16¾
1+25	21½
+50	24⅜
+75	27½
2+00	31⅛
2+25	34
+50	37½
2+75	41¼
at Pier 2	42⅛
7½' ahead 3-	42
3+25	40⅛
3+50	38½
3+75	35¾
4+00	34
4+25	32⅛
4+50	29¾
4+75	29
5+	26½
7+75 at end	39

Max. out of Line
2'-0"

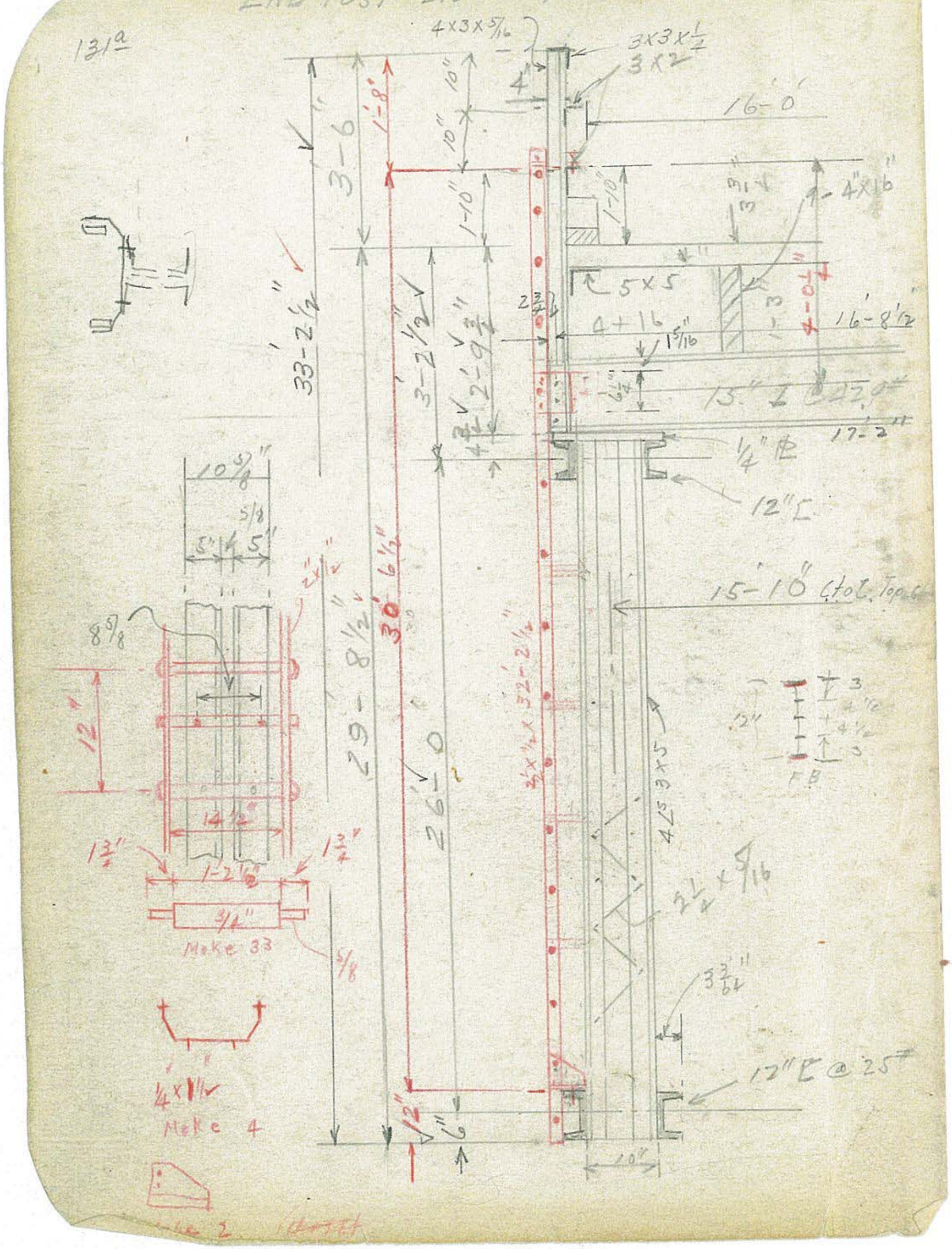
Feb 21 1944

Moved 9⅜ since painted   Hopgood



39-131a

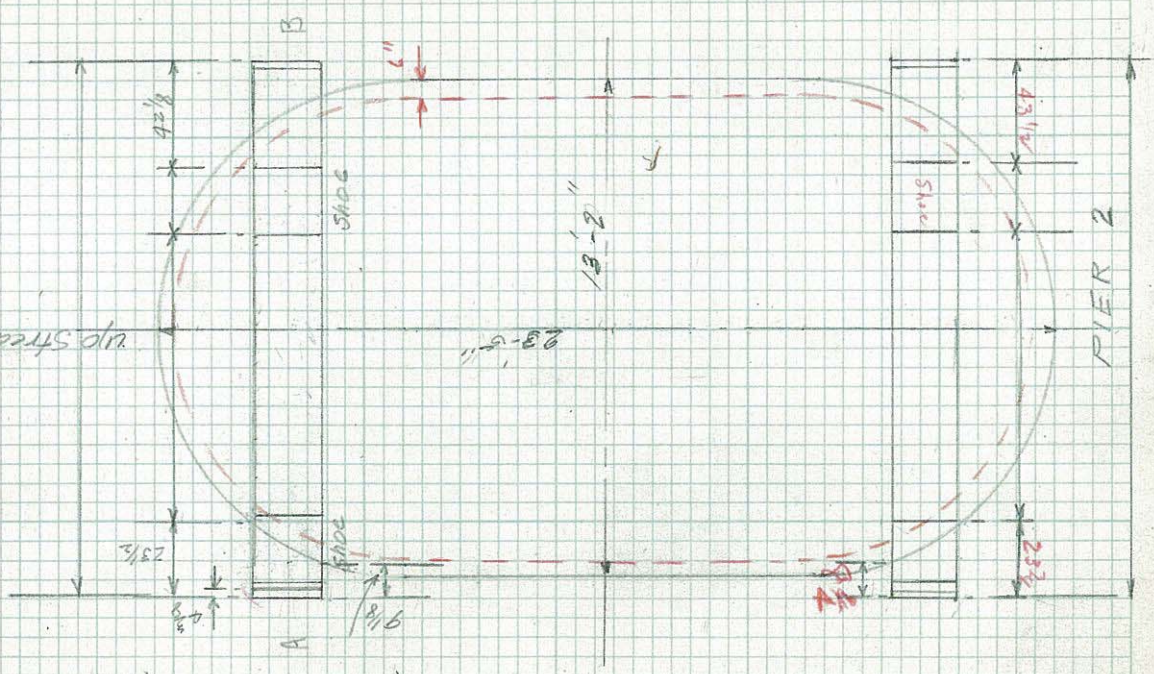
END POST 210'-0 Span at PIER 2



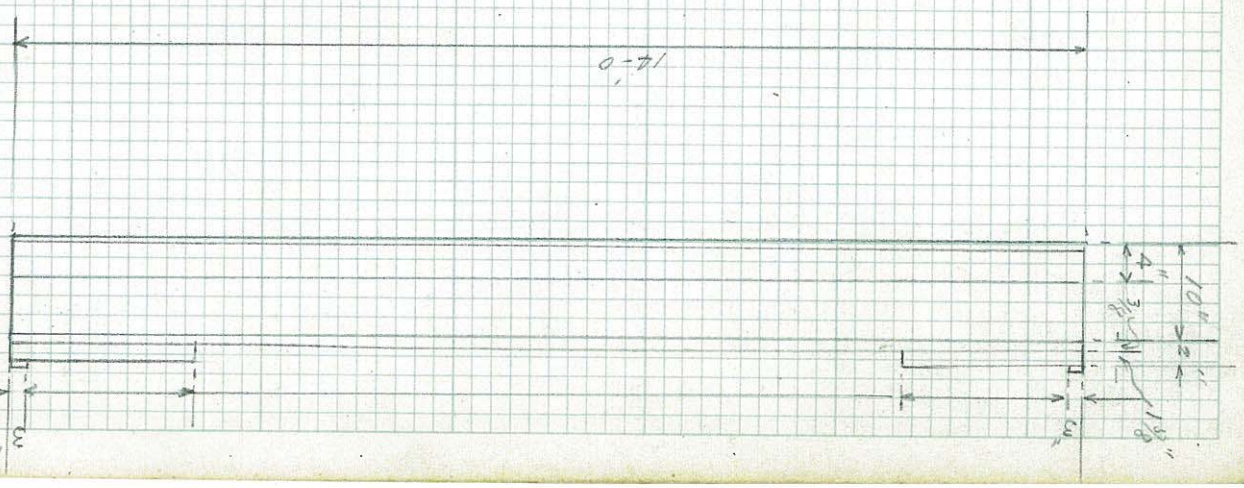
Feb 21 1942

Kennedy's Mill Bridge
Garrard-Mercer Counties
Over Herrington Lake (Dix. River)
Burgin-Bryantsville Road KY-152

Mercer Co.

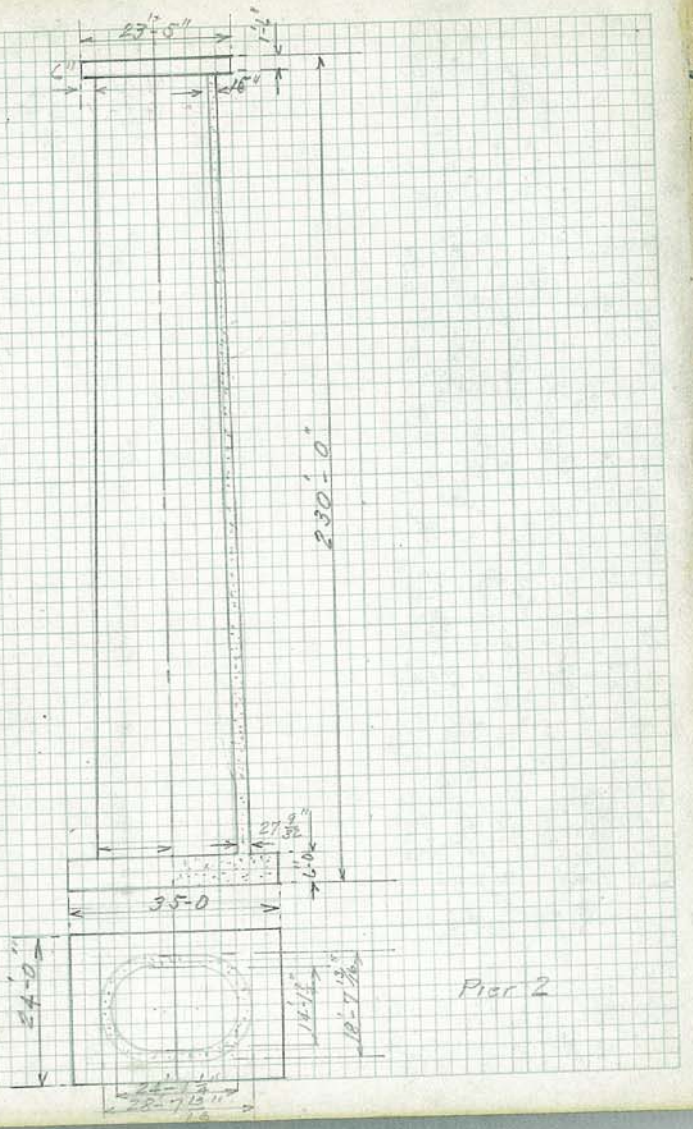


39.



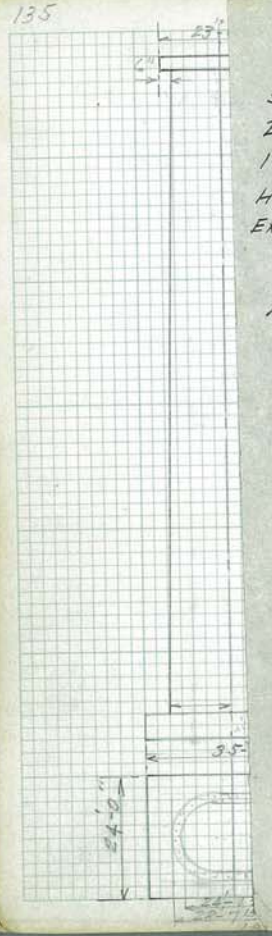
133

135



Pier 2

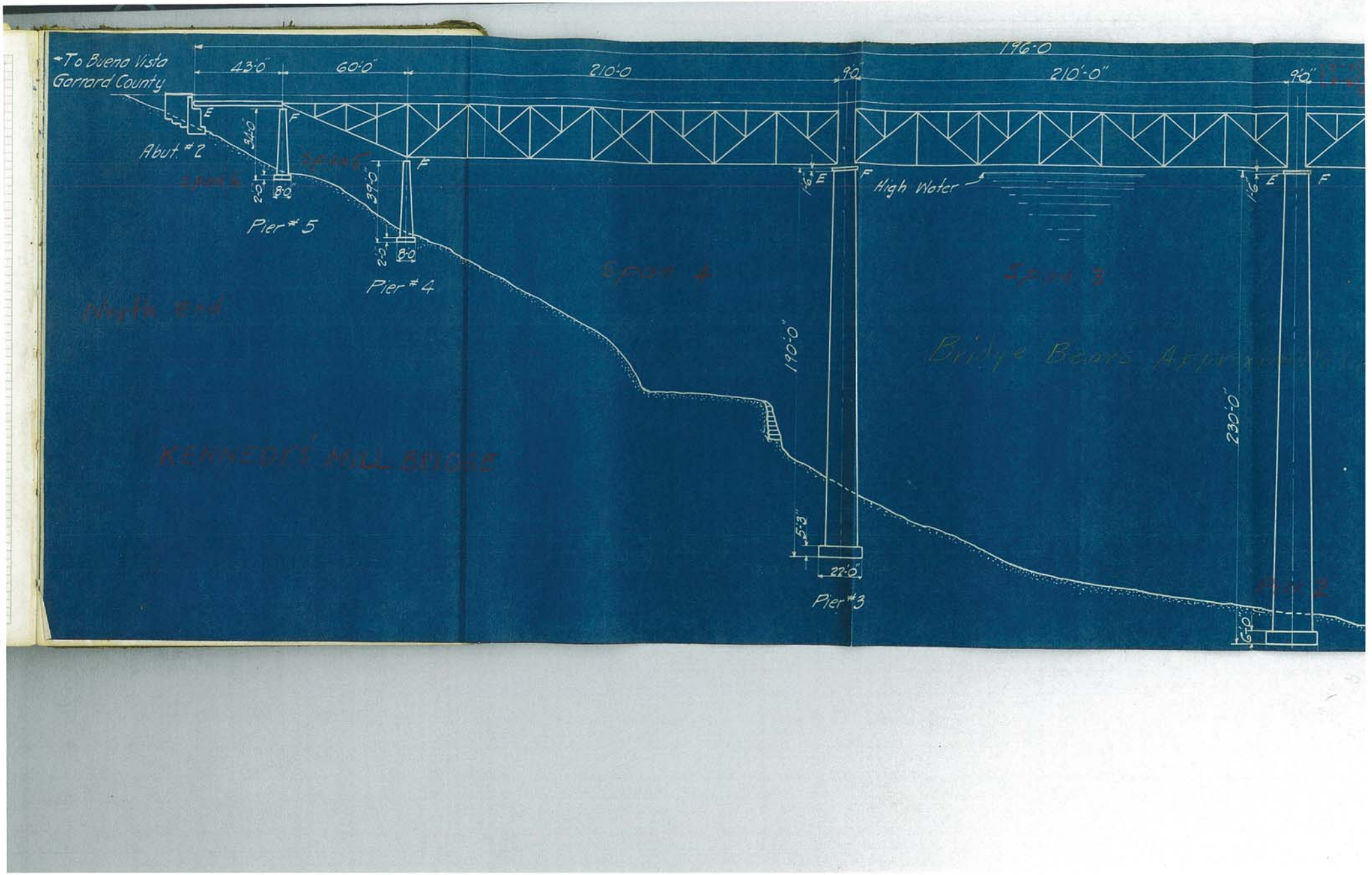
Bridge No
34-92-1 Mercer Co

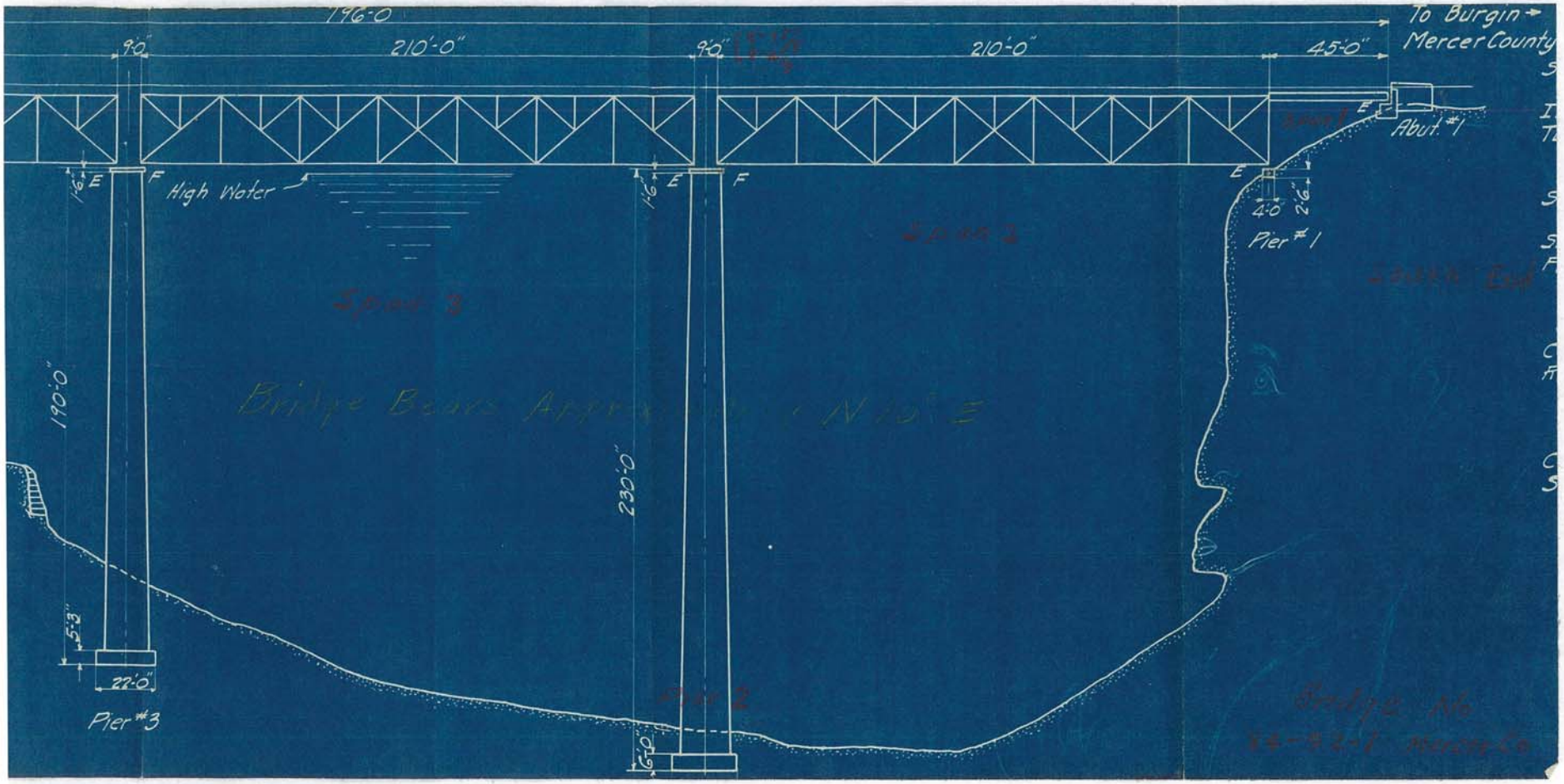


Weight of Bridge Steel.

3 - 220'	Spans	420 000
2 - 45	"	36 000
1 - 60	"	26 000
Handrail		24 000
Extra Steel for Erection		20 000

See Letter from Wisconsin Bridge & Iron Co. Milwaukee Wis. Apr 9 1932


To Bueno Vista
Garrard County
43'-0"
60'-0"
210'-0
90"
196'-0
210'-0"
90"
Abut. #2
34'-0"
E
F
Span 5
Span 4
Span 3
2'-0"
8'-0"
Pier #5
39'-0"
2'-2"
8'-0"
Pier #4
North End
190'-0"
High Water
1'-6"
Bridge Bears Azimuth
230'-0"
KENNEDY'S MILL BRIDGE
5'-3"
22'-0"
Pier #3
Pier 2
6'-0"


196-0
9'0"
210'-0"
9'0"
210'-0"
45'-0"
To Burgin →
Mercer County
Abut. #1
E
F
High Water
1'6"
1'6"
4'0"
2'6"
Pier #1
Span 3
Span 2
Span 1
South End
Bridge Bears Approx. N 15° E
0.061"
0.082"
5'3"
22'0"
Pier #3
Pier #2
3'0"
Bridge No
14-82-1 Mercer Co

59

3 | 420.000 # 3 Trusses
140,000 # One Truss
5 500 Handrail
52,800 Stringers
70,400 Floor

4 | 268,700

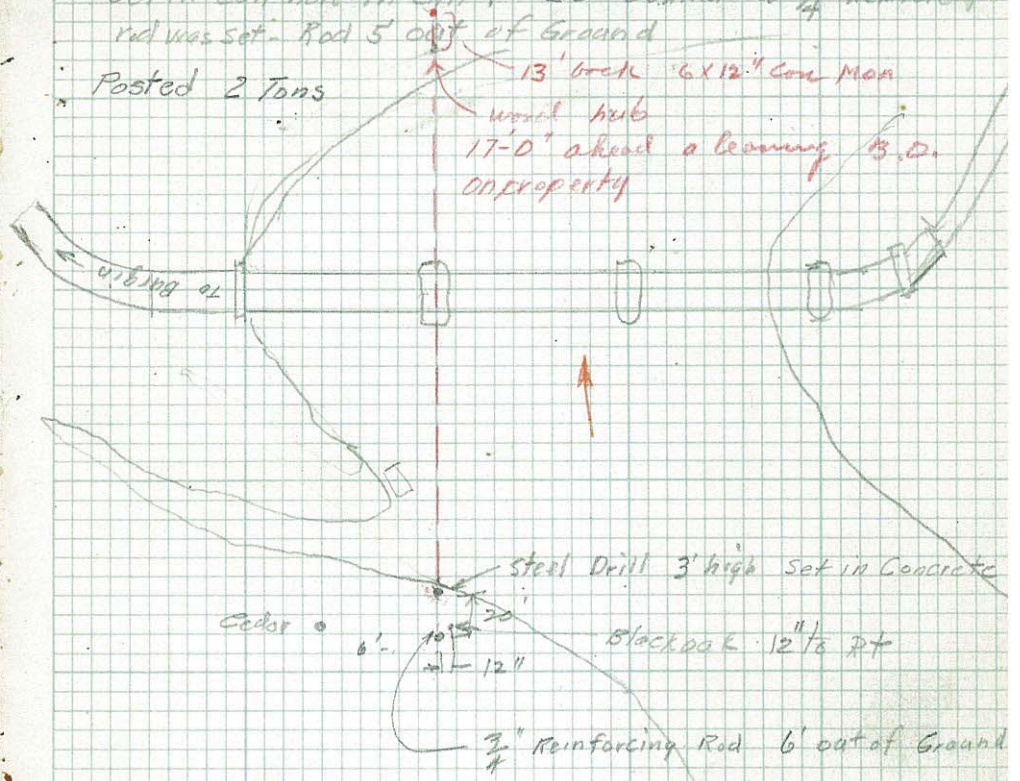
2000 | 67,175 # on one Shoe

33.5 Tons on one Shoe

Kennedy Mill Bridge Mar 14 44

Reference Points Set in cliff Drill Bit 3' Long Set in Con hole in Cliff, 20' behind a 3/4" Reinforcing rod was set. Rod 5 out of Ground

Posted 2 Tons



Bridge No 84-92-1 Mercer Co