

ODOT District 8  
2023 In-Depth Element Level  
Inspection Report

December 1, 2023

Bridge No. HAM-75-0022L  
SFN: 3108791



Prepared for:



ODOT District 8  
505 SR 741  
Lebanon, Ohio 45036

PID No. 105475

Prepared by:

**TRANSYSTEMS**

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Cleveland, OH 44114

Project Number P402220026

**2023 IN-DEPTH ELEMENT LEVEL  
PHYSICAL CONDITION REPORT**

**of**

**BRIDGE NO. HAM-75-0022L**

**SFN: 3108791**

**CINCINNATI, OHIO**

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Inspected on:  
September 22, 2023

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Prepared for:

**OHIO DEPARTMENT OF TRANSPORTATION  
DISTRICT 8**

PID No. 105475

Final Report Submitted December 1, 2023

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## Table of Contents

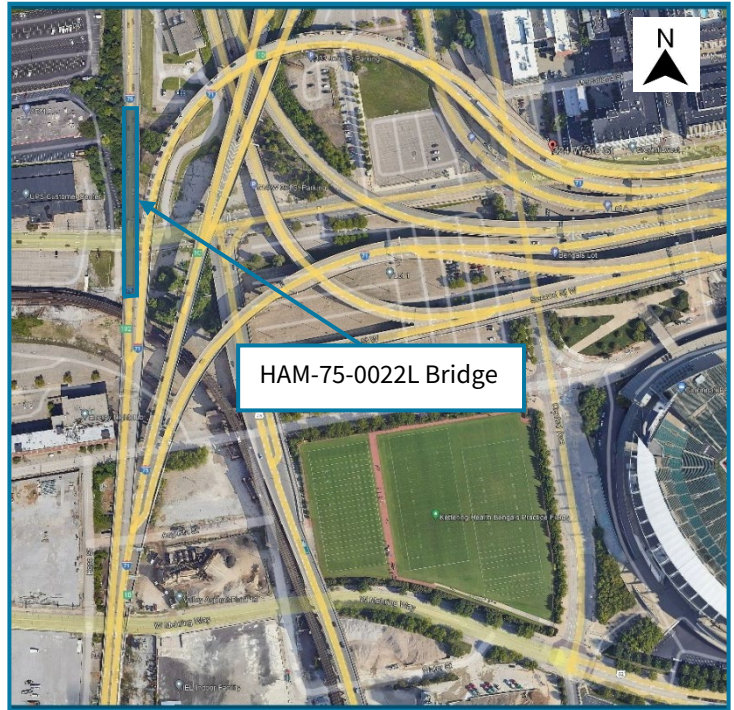
BRIDGE DESCRIPTION.....	1
RECENT MAINTENANCE HISTORY .....	2
INSPECTION SCOPE AND PROCEDURE .....	2
INSPECTION TEAM.....	2
CONDITION RATING .....	3
EXECUTIVE SUMMARY.....	4
INSPECTION FINDINGS .....	4
ITEM 58 – DECK SUMMARY.....	4
ITEM 59 – SUPERSTRUCTURE SUMMARY .....	8
ITEM 60 – SUBSTRUCTURE SUMMARY.....	11
APPROACH SUMMARY.....	14
SIGN/UTILITY ITEMS SUMMARY.....	15
ITEM 41 – OPERATIONAL STATUS .....	15
CONCLUSIONS AND RECOMMENDATIONS .....	16

APPENDIX A: ASSETWISE REPORT

APPENDIX B: SELECT PLAN SHEETS

### BRIDGE DESCRIPTION

HAM-75-0022L (SFN 3108791) is a six-span structure that carries two lanes of I-75 southbound traffic over West 3rd Street in Cincinnati, Ohio, on the north approach of the Brent Spence bridge (see [Location Map](#)). The structure is 428.3' long, was constructed in 1963, and rehabilitated in 2017. It is a six-span structure consisting of a variable-width reinforced concrete deck on five continuous steel plate girders supported by reinforced concrete substructure units. The substructure consists of six cap-and-column reinforced concrete piers and one reinforced concrete stub abutment. Steel cross frames are welded to the transverse stiffeners of the girders. Selected sheets from the design plans are attached in [Appendix B](#).



Location Map

In 2017, a major rehabilitation project was completed which consisted of multiple substructure units being patched and wrapped with a Fiber Reinforced Polymer (FRP) system. The bearings and expansion joints at both Pier 19A and Abutment A were replaced, and all steel within ten feet of each expansion joint location was cleaned and painted. All drainage downspouts and gaskets were replaced and cleaned. In 2018, cracks were arrested in the girder webs at welded crossframe locations in Spans 23A, 24A, and 25A.

The nomenclature for this bridge follows the convention set in the design plans with spans, substructure units, and crossframes labeled from south to north and girders labeled from west to east. The substructure units are numbered from Pier 19A to Abutment A, spans are numbered from Span 20A to Span 25A, and girders are labeled from A to E (see [Figure 1](#)).

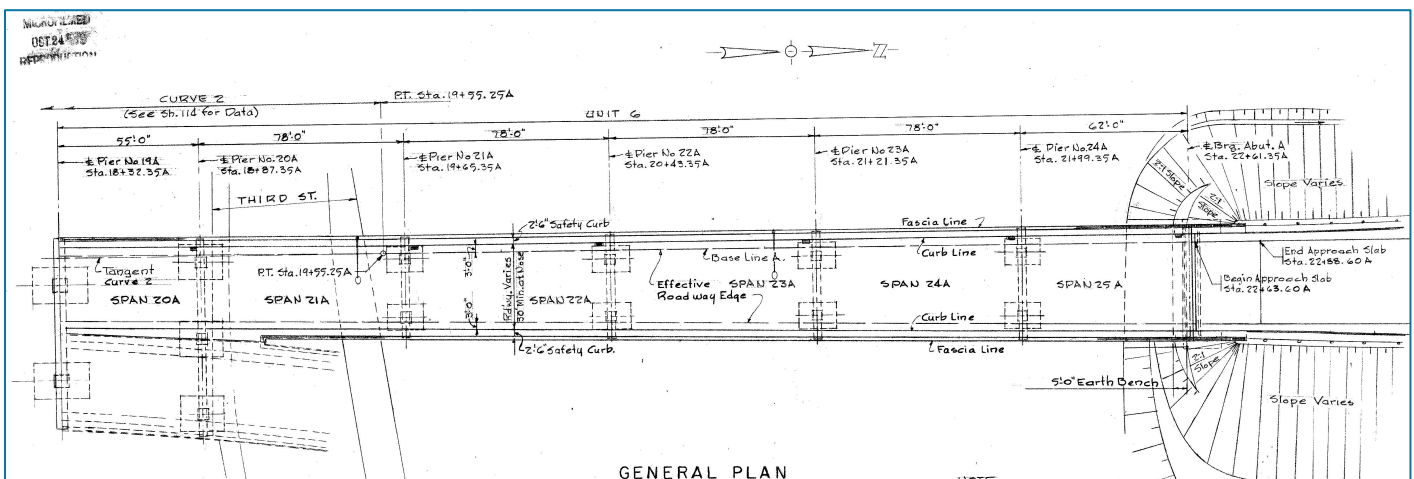


Figure 1 - HAM-75-0022L General Plan (taken from 1960 original plans)

## **RECENT MAINTENANCE HISTORY**

### **2009 Rehabilitation**

- Placed micro-silica concrete overlay on deck.
- Structure drainage system was cleaned out.
- Sealed Pier 19A with epoxy-urethane sealer.

### **2017 Rehabilitation**

- Patched and wrapped concrete substructure units with FRP.
- Replaced existing bearings at Pier 19A and Abutment A with elastomeric bearings.
- Replaced cross frames at Pier 19A.
- Cleaned and painted all steel within the first ten feet of Pier 19A and Abutment A
- Replaced and cleaned all drainage downspouts and gaskets.
- Replaced expansion joints at Pier 19A and Abutment A.

### **2018 Repairs**

- Arrested cracks in girders at welded cross frames in Spans 23A, 24A, and 25A.

## **INSPECTION SCOPE AND PROCEDURE**

Personnel from TranSystems Corporation and TRC Engineers, Inc. performed an in-depth element level inspection of the bridge during the day of September 22, 2023. Access to the structure was gained through the use of a 135-foot manlift, 24-foot extension ladder, and on foot. The manlift was used to gain hands-on access to the substructure, superstructure, and deck units associated with Spans 20A – 24A, while Span 25A and associated elements were inspected via extension ladders and on foot.

The inspection findings were recorded on bridge specific field inspection forms, and field sketches were created to document specific conditions. Inspection equipment utilized during the inspection included but was not limited to: chipping hammers, wire brushes, measuring tapes, 6 foot carpenter rules, and flashlights. Color digital photographs were taken of areas of deterioration, condition changes, typical details, and any immediate maintenance needs, if necessary.

## **INSPECTION TEAM**

The inspection team members are as follows:

- Kenny Wagner, PE, NBIS Team Leader – TranSystems
- Jacob Adamrovich, EI – TranSystems
- Lisa Brown, EI – TRC Engineers, Inc.

**CONDITION RATING**

State and federal guidelines for evaluating the condition of bridges have been developed to promote uniformity in the inspections performed by different teams and at different times. Condition ratings are used to describe the existing, in-place bridge as compared to the as-built condition. The following table was used as a guide in evaluating the condition of the various members of the bridge.

SUMMARY ITEMS (NBIS)	CONDITION	DEFECTS
9	Excellent	Excellent condition.
8	Very Good	No problems noted.
7	Good	Some minor problems.
6	Satisfactory	Structural elements show some minor deterioration.
5	Fair	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	Poor	Advanced section loss, deterioration, spalling or scour.
3	Serious	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	Critical	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	“Imminent” Failure	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.
0	Failed	Out of service - beyond corrective action.

The inspection of this bridge was performed in accordance with the following documents:

1. Manual of Bridge Inspection, Ohio Department of Transportation (ODOT), 2014.
2. Manual for Bridge Element Inspection, 2nd Edition, AASHTO, 2019 (rev 2022).
3. Manual for Condition Evaluation of Bridges, 2nd Edition, AASHTO, 2011 (rev 2016).
4. Bridge Inspector’s Reference Manual, U. S. Department of Transportation, 2022 NBIS (rev 2023).
5. National Bridge Inspection Standards, U.S. Department of Transportation, 2022.
6. Manual for Bridge Evaluation, AASHTO, 2018 (3rd edition with 2020 and 2022 Interim Revisions).
7. Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation’s Bridges, Federal Highway Administration, 1995 with Latest Revisions.
8. Ohio Manual of Uniform Traffic Control Devices (OMUTCD), ODOT, 2012 (rev 2011).

## EXECUTIVE SUMMARY

The HAM-75-0022L Bridge is in SATISFACTORY CONDITION [6-NBIS] overall. Significant findings include:

- Isolated spalls with exposed reinforcement in the deck underside
- One broken anchor bolt at the northeast corner of the Girder E bearing at Pier 22A (previously noted)
- Fire damage at the Abutment A backwall between Girders C and D causing a 3' long area of distortion to the bottom flange member of the end crossframe (newly noted)

The overall item ratings can be summarized in Table 1:

Bridge Condition Summary Ratings		
ITEM	RATING	TYPICAL NOTES
DECK	6	Hairline cracks with efflorescence, isolated spalls with exposed reinforcement, and minor delaminations
SUPERSTRUCTURE	6	Paint failure throughout, minor surface and laminate corrosion, and crack arrest hole repairs
SUBSTRUCTURE	6	Isolated spalls with exposed reinforcement and hairline cracking

Table 1 – Bridge Condition Summary Ratings

## INSPECTION FINDINGS

### ITEM 58 – DECK SUMMARY

The deck is in SATISFACTORY CONDITION [6-NBIS] overall with isolated spalls with exposed reinforcement, delaminations, and cracks with efflorescence in the underside of the deck (see Photo 1). The wearing surface exhibits hairline longitudinal and transverse cracks in all spans. Both bridge railings have hairline transverse and longitudinal cracks, minor spalls and delaminations, minor impact scrapes, and concrete patches throughout. The strip seal expansion joints typically have loosely packed debris along the entire width, but no signs of water leakage.



Photo 1 – Isolated delamination/spall with exposed reinforcement and adjacent typical hairline transverse cracks in the deck underside (looking up and south between Girders B and C in Span 23A).

### ELEMENT 12 – REINFORCED CONCRETE DECK

The reinforced concrete deck is in SATISFACTORY condition [6-NBIS] with isolated spalls and exposed reinforcement, isolated minor delaminations, and typical hairline transverse cracks with efflorescence in the underside of the deck (see Photo 2). The transverse cracks are typically spaced 4'-6' apart in all spans but were predominantly noted in the interior bays. Numerous isolated spalls are present throughout the deck underside. There are four (4) spalls in Span 21A, two (2) in Span 22A, three (3) in Span 23A, and four (4) in Span 24A (see Photo 3). Minimal section loss of less than 1/16" is typical to the exposed reinforcement at all spall locations. Some of the most notable locations include:

- A 3' long by 2' wide by up to 4" deep spall with one longitudinal and five transverse reinforcing bars exposed in the east overhang underside of Span 22A near the first crossframe from Pier 21A (see Photo 4).

- An 8' wide by 8' long by up to 1" deep area of spalling and delamination is present between Girders B and C in Span 23A. One transverse reinforcing bar is exposed and has minimal section loss (see Photo 5).

There are full depth concrete patches at the deck drains and expansion joints, all of which are in good condition overall.



Photo 2 - Typical transverse cracks throughout the deck underside in the interior bays in Span 24A (looking northwest).



Photo 3 - 24" wide by 12" long by 1" deep spall with exposed reinforcement in the deck underside between Girders D and E in Span 24A (looking south).



Photo 4 - 36" long by 24" wide by 4" deep spall with exposed reinforcement in the east overhang in Span 22A (looking west).



Photo 5 - 8' long by 8' wide by 1" deep spall with exposed reinforcement and surrounding delaminations in the deck underside between Girders B and C in Span 23A (looking south).



## **ELEMENT 510 – WEARING SURFACE**

The integral concrete deck wearing surface is in GOOD condition [7-NBIS] overall (see Photo 6) with isolated delaminations, minor spalls, and hairline longitudinal and transverse cracks throughout. There is a 6" diameter spall in the right lane of Span 22A near Pier 21A and a 1' by 1' spall previously patched in the right lane of Span 22A near midspan. There are six minor areas of delamination based on the 2020 ODOT Concrete Wearing Surface Delamination Report (available from the District).



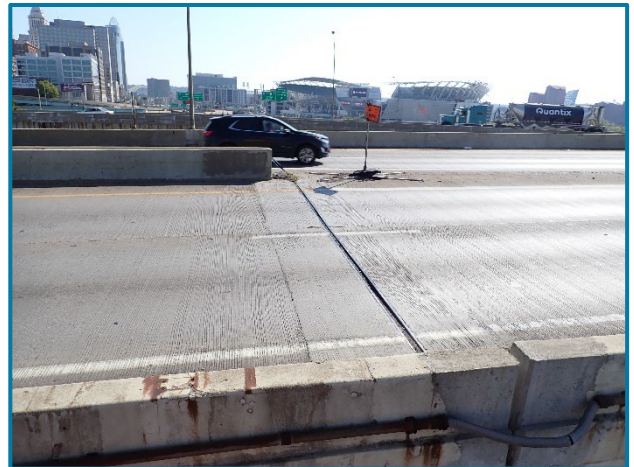
*Photo 6 – Typical wearing surface (looking west in Span 24A at midspan).*

## **ELEMENT 300 – STRIP SEAL EXPANSION JOINT**

The expansion joints (located at Abutment A and Pier 19A) are in GOOD condition [7-NBIS] overall (see Photo 7) with minor debris impaction throughout the entire length of the joint. The expansion joints were replaced in 2017 and no signs or indications of water leakage were noted at the time of inspection. No joint opening measurements were taken at deck level.

## **ELEMENT 331 – REINFORCED CONCRETE BRIDGE RAILING**

The reinforced concrete bridge railings are in SATISFACTORY condition [6-NBIS] overall with isolated minor spalls, isolated minor delaminations, and full height hairline vertical and transverse cracks throughout. There is a 5' long by 1' high by 1" deep spall on the left railing near midspan of Span 22A (see Photo 8). Both railings have concrete patches near Pier 19A and Abutment A as well as at isolated locations throughout. The concrete patches are in good condition overall.



*Photo 7 – Typical expansion joint at Pier 19A (looking east).*



*Photo 8 – Shallow spall on the interior face of the west railing in Span 22A at midspan (looking west).*

## ELEMENT 815 - DRAINAGE

The bridge deck drainage is in SATISFACTORY condition [6-NBIS]. The deck level scuppers at Piers 22A and 23A were noted to be 100% clogged with debris accumulated over top (see Photo 9). The gaskets for the drainage downspout on Column 1 of Pier 23A are bulging and/or completely cracked causing leakage at the base (see Photo 10). There is minor corrosion at the end of the drainage downspout at Abutment A between Girders A and B.



Photo 9 – Clogged scupper in the west shoulder on the top of deck at Pier 23A (looking southwest).



Photo 10 – Bulging and cracked drainage coupling gasket at the base of Column 1 on the south face of Pier 23A (looking northwest).

## ITEM 59 – SUPERSTRUCTURE SUMMARY

The superstructure is in SATISFACTORY CONDITION [6-NBIS] overall with typical areas of surface and minor laminate corrosion throughout the girders and bearings, arrested cracks in the girder webs at intermediate crossframe locations, pack rust between rocker bearings and masonry plates, and typical protective coating failure throughout.

### ELEMENT 107 – STEEL OPEN BEAMS/GIRDERS

The steel plate girders are in SATISFACTORY condition [6-NBIS] overall. There is typical freckling and minor surface corrosion throughout the girder webs and flanges, particularly noted the most significant at the fascia girders. Laminate corrosion is present on the bottom flange of the exterior girders and the bottom flange of Girder E adjacent to the timber falsework between HAM-75-0022L and HAM-71-0000L. While most instances of laminate corrosion only exhibit minor section loss, there is an isolated area of up to 1/8" deep section loss on the west edge of the bottom flange of Girder E in Span 20A (see Photo 11). Inspectors attempted to remove the timber falsework



Photo 11 – Laminate corrosion with up to 1/8" section loss in the bottom flange of Girder E in Span 20A near Pier 20A (looking east).



Photo 13 – Typical crack arrest hole in the web of Girder C near top flange (looking west in Span 23A at midspan).

in order to gain access to the east face transverse stiffeners of Girder E in Span 20A, however it could not be removed at the time of inspection. Therefore, the previously noted corrosion holes at this location were not accessible and not verified. There are typical cracks in the web of Girder C in Spans 23A-25A that have been previously repaired with arrest holes. These cracks and arrest holes are present at the weld between the web and transverse stiffener near the top flange at the midspan crossframe locations. There were no indications of crack propagation beyond the arrest holes at the time of inspection (see Photo 12).

### ELEMENT 310 – ELASTOMERIC BEARING

### ELEMENT 311 – MOVABLE BEARING

### ELEMENT 313 – FIXED BEARING

The bearing devices are in SATISFACTORY condition [6-NBIS] overall with surface corrosion and isolated locations of pack rust between the rockers and masonry plates (see Photo 13). Areas of surface corrosion are most prominent at the fascia bearings. There is up to 1/4" thick



Photo 12 – 1/4" thick pack rust between the masonry plate and rocker bearing of Girder E at Pier 20A (looking southwest).

pack rust between the rocker and the northeast corner of the masonry plate at Girder E in Span 20A. The northeast anchor bolt at the Girder C bearing at Pier 22A remains broken (see Photo 14).

## **ELEMENT 515 – STEEL PROTECTIVE COATING**

The steel protective coating is in CRITICAL condition [2-NBIS]. As part of the 2017 expansion joint replacement at Pier 19A and Abutment A, the end 10' of the existing girders were cleaned and painted. The protective coating at these locations is in good condition overall (see Photo 15). Otherwise, the protective coating system is ineffective or has completely failed throughout all steel members. Chalking, peeling, and cracking paint is typically widespread throughout the interior bearings, crossframes, and girders (see Photo 16). The system has failed notably on the fascia girders, exhibiting completely exposed steel and areas of minor surface corrosion.



*Photo 14 – One broken anchor bolt at the northeast corner of the Girder C bearing at Pier 22A (looking southwest).*



*Photo 15 – Typical steel protective coating condition of the girder ends at Pier 19A (looking southeast).*



*Photo 16 – Typical steel protective coating condition of all steel members in Span 21A (looking southwest).*

## **ALIGNMENT (no associated element)**

Alignment is in good condition without any problems in vertical or horizontal alignment noted through visual inspection.

## DIAPHRAGMS AND CROSSFRAMES (no associated element)

The diaphragms and crossframes are in satisfactory condition with only minor surface corrosion and paint failure throughout (see [Photo 17](#)). The end crossframes at Pier 19A were replaced with jacking diaphragms and the end crossframes at Abutment A were cleaned and painted when the joints were replaced in 2017. There is a newly noted isolated 3' long area of damage along the bottom horizontal member of the end crossframe between Girders C and D at Abutment A (see [Photo 18](#)). The damage appears to have been caused by a fire set on the abutment seat.



Photo 17 – Typical crossframe with minor surface corrosion and paint failure (looking south in Span 21A between Girders D and E).



Photo 18 – Fire damage to the end crossframe between Girders C and D at Abutment A (looking northwest).

## FATIGUE (no associated element)

The fatigue details of the bridge are in good condition overall. The cracks in the weld between the web and transverse stiffeners of Girder C in Spans 23A-25A were previously repaired with arrest holes and there are no signs of crack propagation beyond the repairs at any location (see [Photo 19](#)).



Photo 19 – Typical crack arrest hole repairs in east face web of Girder C at the midspan crossframe connection (looking west in Span 23A).

## ITEM 60 – SUBSTRUCTURE SUMMARY

The substructure is in SATISFACTORY CONDITION [6-NBIS] overall with spalls typically 1" deep or less and exposed reinforcement, minor delaminations, and isolated areas of hairline cracking throughout. There is one stub abutment and six cap-and column piers that make up the substructure units. All piers have two columns apart from Pier 20A having three columns. The substructure units at Pier 19A and 20A also support a portion of Bridge HAM-71-0000L (SFN 3105946). The FRP wrap that was installed on the cap and columns of Pier 19A in 2017 is in good condition overall with only two isolated areas of failing sealant noted.



Photo 20 – Spalls with exposed reinforcement on the south face of Column 1 at Pier 22A (looking north).

## ELEMENT 205 – REINFORCED CONCRETE COLUMN

The reinforced concrete pier columns are in SATISFACTORY condition [6-NBIS]. At Pier 19A, Column 2, the FRP wrap is beginning to tear at the bottom southwest corner. Typically, there are isolated minor spalls with exposed reinforcement and hairline cracking throughout. Locations of isolated spalling are as follows:

- Pier 22A, Column 1 – Multiple spalls up to 3' high by 16" wide by 1/2" deep with five exposed reinforcing bars with minor section loss typical on the south face about 12' below the pier cap (see Photo 20).
- Pier 23A, Column 1 - 6" diameter by 1" deep spall near the drainage support bracket on the south face of Column 1 about 15' above the ground line (see Photo 21).
- Pier 23A, Column 2 - 20" diameter by 1" deep spall on the north face of Column 2 about 3' above ground line (see Photo 22).



Photo 21 – 6" diameter spall near the drainage support bracket on the south face of Column 1 at Pier 23A (looking north about 15' above the ground).



Photo 22 – 20" diameter by 1" deep spall on the north face of Column 2 at Pier 23A (looking south near the base).

## ELEMENT 215 – REINFORCED CONCRETE ABUTMENT

The reinforced concrete abutment is in SATISFACTORY condition [6-NBIS] with isolated spalls, delaminations, and hairline cracking throughout. At the time of the inspection there was a vagrant encampment with people present. Concrete patches between Girders A and B and Girders D and E are delaminated and isolated hairline vertical cracks are typical throughout (see Photo 23). There is a 12" long by 6" wide by 1" deep spall below the bearing of Girder C and a 4" long by 2" wide by 1" deep spall and hairline crack below the bearing of Girder D (see Photo 24). There were no instances of loss of bearing area or exposed reinforcement noted at any of the spall locations. Concrete debris is piled up on the abutment seat and bottom flange of Girder C in front of the backwall. There is discoloration in the backwall between Girders C and D caused by a suspected fire at this location (see Element 830 – Abutment Backwall).



Photo 23 – Isolated vertical hairline crack in the abutment seat below Girder B in Span 25A (looking north at the south face of Abutment A).



Photo 24 – Shallow edge spall on the Abutment A bearing seat at Girder D (looking north).

## ELEMENT 234 – REINFORCED CONCRETE PIER CAP

The reinforced concrete pier caps are in SATISFACTORY condition [6-NBIS] with isolated spalls and hairline horizontal and vertical cracks throughout. The horizontal hairline cracks are typically located near the top portion of the caps with isolated vertical cracks beginning to develop. The south face of Pier Cap 21A exhibits a 1' high by 2' wide by 2" deep spall with one exposed reinforcing bar between Girders D and E (see Photo 25). There is a 10' wide by 1' long area of delamination, cracking and rust staining on the underside of the Pier 19A cap between Girders A and B (see Photo 26).



Photo 25 – 2' wide by 1' high by 2" deep spall with exposed reinforcement on the south face of the Pier 21A cap between Girders D and E (looking north).



Photo 26 – Area of delamination, cracking, and rust staining on the underside of the Pier 19A cap (looking east at the west end of the cap).

## **ELEMENT 830 – ABUTMENT BACKWALL**

The Abutment A backwall is in FAIR condition [5-NBIS] with isolated spalls, delaminations, and hairline cracking throughout. There are minor delaminations throughout the concrete patches between Girders A and B and between Girders D and E. A 2' diameter by 1" deep spall is present behind the bearing of Girder A. There is discoloration in the backwall between Girders C and D caused by a suspected fire. Hairline vertical and horizontal cracks are present throughout the discolored area and concrete debris is piled up on the abutment seat and bottom flange of Girder C in front of the backwall (see Photo 27).



*Photo 27 – Fire damage with discoloration and cracking on the Abutment A backwall between Girders C and D (looking northwest).*

## **WINGWALLS (no associated element)**

The wingwalls at Abutment A are in good condition with no notable deficiencies.

## **SLOPE PROTECTION (no associated element)**

The slope protection at Abutment A is in good condition overall with minor erosion beneath the downspout between Girders A and B.



## APPROACH SUMMARY

The north approach is in SATISFACTORY CONDITION [6-NBIS] overall. The south end of this structure connects to HAM-71-0000L, therefore there is no south approach for this bridge.

### ELEMENT 321 – REINFORCED CONCRETE APPROACH SLABS

The north approach slab is in SATISFACTORY condition [6-NBIS]. The condition of the approach slab is based on previous inspections and findings since the actual approach slab is not visible for inspection. It is covered with a new asphalt wearing surface overlay (see Photo 28). Previous cracks and patches are covered, and no new deficiencies were noted in the new asphalt wearing surface.



Photo 28 – New asphalt wearing surface overlay on the north approach slab (looking southwest).

### APPROACH WEARING SURFACE (no associated element)

The asphalt approach wearing surface is new and is in very good condition with no deficiencies noted.



Photo 29 – Impact damage to the approach guardrail at the transition to the concrete railing on the west side of the north approach (looking west). Note the spall at the end of the concrete railing.

### APPROACH GUARDRAIL (no associated element)

The approach guardrail is in fair condition. The metal guardrail at the connection to the concrete railing at the northwest corner of the bridge is torn with crumpling, bending, and twisting (see Photo 29). The damage appears to have gotten worse since the previous inspection as there is only a small portion of the guardrail at the top that is still connected to the concrete railing. Adjacent to the railing impact damage, there is a full width by full height by 3' long spall with exposed and deformed reinforcement on the end of west approach railing (see Photo 29).

### EMBANKMENT (no associated element)

The north approach embankment is in good condition overall with no deficiencies noted.



Photo 30 – “No Trespassing” sign partially detached and hanging upside down on the north face of Column 1 at Pier 24A (looking south).

## SIGN/UTILITY ITEMS SUMMARY

The signs and utilities are in good condition with no significant deficiencies noted.

### SIGNS AND SUPPORTS (no associated element)

There is only one mile marker sign present on this bridge at deck level. The sign is located atop the east railing near Pier 23A in Span 23A and has no defects. The “No Trespassing” sign at Pier 24A on the north face of Column 1 is partially detached and hanging upside down (see Photo 30).

### UTILITIES (no associated element)

The utilities on the structure are in good condition with no significant deficiencies noted. The utilities include conduit attached to the exterior face of Girder A along the full length of the bottom flange (see Photo 31) and an abandoned electrical conduit running through the webs of all girders in Span 20A. There are three light poles mounted to the west railing throughout the structure with no defects noted.



Photo 31 – Conduit along the exterior bottom flange of Girder A (looking northeast).

## ITEM 41 – OPERATIONAL STATUS

The bridge remains OPEN WITH NO RESTRICTIONS [A-NBIS].

## CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of the 2023 in-depth element level inspection, the HAM-75-0022L Bridge (SFN 3108791) is in SATISFACTORY CONDITION [6-NBIS] overall. There are minor spalls, delaminations, and hairline cracking throughout the concrete wearing surface and railings. The strip seal expansion joints are in good condition overall with only minor debris impaction along the entire width of the roadway. The underside of deck has typical hairline transverse and longitudinal cracks with efflorescence and isolated spalls/delaminations with exposed reinforcement. Isolated scuppers are clogged with debris and one downspout gasket is broken and leaking. The girders typically exhibit freckling and minor surface corrosion throughout. There are crack arrest holes in the web of Girder C throughout Spans 23A-25A with no indications of crack propagation beyond the repair areas. There is minor surface corrosion throughout all bearing devices and some pack rust. The northeast anchor bolt at the Girder C bearing at Pier 22A is sheared off. The steel protective coating is in critical condition and is either ineffective or has completely failed. The substructure units are in satisfactory condition overall with isolated minor spalls with exposed reinforcement, isolated delaminations, and hairline cracking throughout.

The four categories of recommendations for the HAM-75-0022L Bridge are as follows:

- **Priority Work:**  
(Within 1 Year Period)                      Work which should be performed as soon as possible to address deficiencies which affect the capacity of the structure or public safety.
- **Rehabilitation/Evaluation:**  
(Within 5 Year Period)                      Recommendations for large-scale deficiencies which are extensive in nature and require engineering analysis.
- **Maintenance:**  
(As Scheduled)                              Recommendations that are minor in nature and can be easily repaired.
- **Monitoring:**  
(As Recommended)                        Regular field observation of defects which are not currently in need of repair but will require corrective action if deterioration continues.

**Priority Work:** None.

**Rehabilitation/Evaluation:** Deck

1. Patch the spalls and delaminations throughout the underside of the deck, concrete wearing surface, and railing.

Superstructure

2. Clean and paint the entire superstructure.
3. Replace the broken anchor bolt of the Girder C bearing at Pier 22A.

Substructure

4. Patch the spalls and delaminations throughout the substructure units.

Approach

5. Patch the spall at the north end of the west concrete approach railing.

**Maintenance:** Deck

6. Clean debris from clogged drainage scuppers in Spans 22A and 23A.
7. Remove debris from strip seal expansion joints at Pier 19A and Abutment A.
8. Repair/replace the broken drainage downspout gasket near the base of Column 1 at Pier 23A.

Superstructure

9. Remove the pack rust between the Girder E rocker bearing and masonry plate at Pier 20A.

Substructure

10. Fix the 'No Trespassing' sign.
11. Remove concrete debris and any fire debris at Abutment A.

Approach

12. Replace the west guardrail at the north approach.

**Monitoring:**

13. Continue to monitor the crack arrest hole repairs in the web of Girder C in Spans 23A-25A.

# Appendix A

Assetwise Report

**TRANSYSTEMS**

Inspector: Adamrovich,Jake

Inspection Date: 09/22/2023

Structure Number: 3108791

Facility Carried: SB IR 75

### Ohio Bridge Inspection Summary Report

### HAM-00075-0022L (3108791)

2: District 15000 - CINCINNATI (HAM county)  
District 08

5A: Inventory Route 1 00075

21: Major Maint A/B 01 - State Highway Agency /  
225 Routine Main A/B 01 - State Highway Agency /  
221 Inspection A/B 01 - State Highway Agency /  
220: Inv. Location DISTRICT 08

7: Facility On SB IR 75  
6: Feature Ints THIRD STREET;CSRR  
9: Location .2 MI N OF OH-KY LINE  
Lat, Lon 39.0956228597157 , -84.5223551418043

#### Condition Structure Type

**58: Deck** **6 - Satisfactory Condition**  
58.01 Wearing Surface 7 - Good (1% distress)  
58.02 Joint 7- Good (no leaking)  
**59: Superstructure** **6 - Satisfactory Condition**  
59.01 Paint & PCS 2 - Critical PCS (30-40% corr.)  
**60: Substructure** **6 - Satisfactory Condition**  
**61: Channel** **N**  
**61.01 Scour** **N - Not Applicable**  
**62: Culverts** **N - Not Applicable**

43: Bridge Type 4 - Steel continuous  
02 - Stringer/Multi-beam or Girder  
N- Not Applicable  
45: Spans Main / Approach 6 / 0  
107: Deck Type 1 - Concrete Cast-in-Place  
408: Composite Deck U - Unknown  
414A Joint Type 1 8 - Elastomeric Strip Seal  
414B: Joint Type 2 N - None  
108A: Wearing Surface 2 - Integral Concrete (separate non-modified layer of concrete added to structural deck)  
2- MicroSilica

67.01 GA 6

#### Appraisal

Sufficiency Rating 98.0 SD/FO 0 - ND  
36: Rail, Tr, Gd, Term Std 1 1 1 N  
72: Approach Alignment 8 - Equal to present desirable criteria  
113: Scour Critical N - Not over waterway  
71: Waterway Adequacy N - Not Applicable

422: WS Date 07/01/2007  
423: WS Thick (in) 2.8  
482: Protective Coating 4 - Paint System B  
483: PCS Date 01/01/1978  
453: Bearing Type 1 2 - Rockers & Bolsters  
455: Bearing Type 2 C - Elastomeric (laminated)  
528: Foundn: Abut Fwd B - Cast-in-Place Reinforced Concrete Piles (14" diameter)  
533: Foundn: Abut Rear N - None (such as most Culverts)  
536: Foundn: Pier 1 2 - Cast-in-Place Reinforced Concrete Piles (Other diameter)  
539: Foundn: Pier 2 N - None (Such as most Culverts)

#### Geometric

48: Max Span Length (ft) 78.0  
49: Structure Length (ft) 428.3  
52: Deck Width, Out-To-Out (ft) 56.0  
424: Deck Area (sf) 23984.8  
32: Appr Roadway Width (ft) 48.0  
51: Road Width, Curb-Curb (ft) 50.0  
50A: Curb/SW Width: Left (ft) 0  
50A: Curb/SW Width: Right (ft) 0  
34: Skew (deg) 0  
33: Bridge Median 0 - No median  
54B: Min Vert Underclearance (ft) 20  
336A: Min Vert Clrnce IR Cardinal (ft) 99  
336B: Min V Clr IR Non-Cardinal (ft) 0  
578: Culvert Length (ft) 0

#### Age and Service

27: Year Built/ 106 Rehab 1963 / 0  
42A: Service On 1 - Highway  
42B: Service Under 4 - Highway - railroad  
28A: Lanes on 02  
28B: Lanes Under 04  
19: Bypass Length 0  
29: ADT 43721  
109: % Trucks (%) 16

#### Load Posting

41: Op/Post/Closed A - Open  
70: Posting 5 - Equal to or above legal loads  
70.01: Date  
70.02: Sign Type  
734: Percent Legal (%) 125  
704: Analysis Date 02/28/2022  
63: Analysis Method 8 - Load and Resistance Factor Rating (LRFR) rating report by rating factor (RF) method using HL-93 loadings.

#### Inspections

90: Routine Insp. 12 Months 09/22/2023  
92A: FCM Insp. N 0  
92B: Dive Insp. N 0  
92C: Special Insp. N 0  
92D: UBIT Insp. N 0  
92E: Drone Insp. N 0  
Inspector Adamrovich,Jake

**Inspector:** Adamrovich, Jake  
**Inspection Date:** 09/22/2023

**Structure Number:** 3108791  
**Facility Carried:** SB IR 75

Inspector: Adamrovich, Jake  
 Inspection Date: 09/22/2023

Structure Number: 3108791  
 Facility Carried: SB IR 75

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>12-Reinforced Concrete Deck</b>	3 - Mod.	15545	sq. ft.	3445	12000	100	0
	CS2: -There are several spalls up to 1" deep with exposed rebar in Spans 20A-25A. -There are transverse cracks with efflorescence spaced at 6' on average. -The concrete patches at the deck drains and expansion joints are in good condition. CS3: -A 8'L X 8'W X 1" deep area of delamination and spalling in Span 23A, Bay 2 with rebar exposed up to 2' L -There are isolated spalls with exposed rebar in the overhangs, including a 3'L X 2'W X 4"D spall with exposed rebar in the east deck overhang of Span 22A .						
<b>510-Wearing Surfaces</b>		14072	sq. ft.	8971	4925	176	0
	CS2: -A 1 sq. ft pothole patched with asphalt in Span 22A. -Isolated hairline longitudinal and transverse cracks throughout the wearing surface. CS3: -A 6" diameter spall is present in the right lane of Span 22A.						
<b>107-Steel Open Girder/Beam</b>	3 - Mod.	2142	ft.	100	1997	45	0
	CS2: -There is widespread freckling and minor surface corrosion throughout all girders. -There is laminating corrosion on the bottom flange of exterior girders with section loss typically less than 1/16". -There are multiple cracks in the web and transverse stiffener welds of Girder C in Spans 23A-25A, near the top flange at cross frame locations near midspan. All cracks have been repaired with arrest holes and no indications of crack propagation beyond the arrest holes were observed. CS3: -There is isolated section loss up to 1/8" deep in the bottom flange of Girder E of Span 21A adjacent to the timber falsework installed between HAM-75-0022L and HAM-71-0000L. -Previous inspections have noted multiple corrosion holes in Girder E transverse stiffeners in Span 20A; however, these defects were inaccessible for inspection due to the timber falsework.						
<b>515-Steel Protective Coating</b>		25864	sq. ft.	1150	919	16035	7760
	CS2: -The paint is peeling, chalking and flaking throughout except the 10' of the girder ends near the expansion joints at Pier 19A and Abutment A, which were cleaned and painted in 2017. CS3: -There is widespread exposure of the primer coat throughout. Paint is either ineffective or of limited effectiveness. CS4: -There are widespread areas of paint failure, exposed bare metal, and surface corrosion.						
<b>205-Reinforced Concrete Column</b>	3 - Mod.	13	each	2	8	3	0
	CS2: -Minor isolated spalls and hairline cracking typical throughout. -FRP is beginning to tear at the southwest corner of Column 2, Pier 19A. CS3: -On the south face of Column 1, Pier 22A, there are spalls with six exposed reinforcing bars with minor section loss. -At Pier 23A, there is a small spall near a drainpipe support on the south face of Column 1, and a 20" diameter spall on the north face of Column 2 near the ground line.						



Inspector: Adamrovich, Jake  
 Inspection Date: 09/22/2023

Structure Number: 3108791  
 Facility Carried: SB IR 75

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>215-Reinforced Concrete Abutment</b>	3 - Mod.	44	ft.	23	19	2	0
	CS2: -Isolated hairline cracking throughout, CS3: -12"L x 6"W x 1" deep spall below the bearing of Girder C. -4"L x 2"W x 1" deep spall below the bearing of Girder D.						
<b>234-Reinforced Concrete Pier Cap</b>	3 - Mod.	308	ft.	70	234	4	0
	CS2: -There are horizontal hairline cracks near the top of most caps and some vertical cracks developing from the horizontal cracks. CS3: -There is a spall with one exposed reinforcing bar on the south face of Pier Cap 21A. -There are cracks with rust staining on the south face of Pier Cap 19A.						
<b>300-Strip Seal Expansion Joint</b>	3 - Mod.	80	ft.	64	16	0	0
	CS2: -There is loosely-packed debris in the expansion joints at Pier 19A.						
<b>310-Elastomeric Bearing</b>	3 - Mod.	10	each	7	3	0	0
	CS2: -There is minor surface corrosion on isolated bearing plates.						
<b>311-Movable Bearing</b>	3 - Mod.	20	each	0	17	3	0
	CS2: -There is surface corrosion and laminating corrosion with no measurable section loss on all steel rocker bearings. CS3: -There is pack rust between the rocker and the masonry plate of Bearing E at Pier 20A with no indication of uplift						
<b>515-Steel Protective Coating</b>		20	sq. ft.	0	0	15	5
	CS3: -There is loss of pigment throughout the bearings. CS4: -There is paint failure with surface corrosion and exposed bare metal on several bearings.						
<b>313-Fixed Bearing</b>	3 - Mod.	5	each	2	2	1	0
	CS2: -The steel fixed bearings exhibit surface and laminating corrosion with no measurable section loss. CS3: -There is one broken anchor bolt at Bearing C at Pier 22A.						
<b>515-Steel Protective Coating</b>		5	sq. ft.	0	3	0	2
	CS2: -The paint on the fixed bearings is dulling. -Light and initiated freckled rust is present throughout the bearings. CS4: -There is paint failure with surface corrosion and exposed bare metal on fascia bearings.						
<b>321-Reinforced Concrete Approach Slab</b>	3 - Mod.	875	sq. ft.	513	362	0	0
	CS2: A new asphalt overlay was installed on top of the reinforced concrete approach slab. The quantities for this item are based on that of previous inspections.						
<b>331-Reinforced Concrete Bridge Railing</b>	3 - Mod.	858	ft.	0	858	0	0
	CS2: -Multiple concrete patches throughout the railings in good condition. -Vertical and transverse hairline cracks with efflorescence are typical throughout the railings with isolated small spalls and minor delaminations.						

Inspector: Adamrovich, Jake  
 Inspection Date: 09/22/2023

Structure Number: 3108791  
 Facility Carried: SB IR 75

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>815-Drainage</b>	3 - Mod.	8	each	7	1	0	0
CS2: There is a cracked and leaking gasket in the drainage pipe at the base of Column 1, Pier 23A.							
<b>830-Abutment Backwall</b>	3 - Mod.	42	ft.	19	15	8	0
CS2: -There are hairline cracks, spalling and delaminations throughout. -Dark soot staining with hairline cracking throughout the backwall between Girders C and D. CS3: -There is a 2' diameter x 1" deep spall behind the bearing of Girder A. -Concrete patches in Bays 1 and 4 are delaminating.							

**Inspector:** Adamrovich,Jake

**Structure Number:** 3108791

**Inspection Date:** 09/22/2023

**Facility Carried:** SB IR 75

ODOT District: District 08

**HAM-00075-0022L\_(3108791)**

Date Built: 07/01/1963

Major Maint: 01 - State Highway Agency

Facility Carried: SB IR 75

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 01 - State Highway Agency

Feature Inters: THIRD STREET;CSRR

Traffic Under: 4 - Highway - railroad

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 15000 - CINCINNATI (HAM county)

Location: DISTRICT 08

.2 MI N OF OH-KY LINE

Insp

Inspector

Adamrovich,Jake

Inspection Date 09/22/2023

Reviewer Not Approved

Resp B:

**Inspector Comments - Deck and Approach**

**Deck**

**Bridge Wearing Surface**

The bridge wearing surface was inspected visually from the boom lift. Isolated hairline longitudinal and transverse cracks are present throughout. There is a 6" diameter spall in the right lane of Span 22A.

**Bridge Railing**

The bridge railings were inspected visually from the boom lift. Concrete patches have been installed in multiple locations of both railings and are in good condition. Vertical and transverse hairline cracks with efflorescence are typical throughout the railing with isolated small spalls and minor delaminations.

**Deck Drainage**

In 2017 all scuppers on bridge were cleaned out and the drainage pipes were replaced. Previous inspections noted water spraying onto Abutment A and Girder A during storm events, however this was not observed during the 2023 inspection. There is a cracked and leaking drainpipe gasket at the base of Column 1 at Pier 23A.

**Expansion Joint**

The expansion joints were inspected visually from the boom lift. The expansion joints were replaced in 2017 (Pier 19A and Abutment A). There is loosely-packed debris in the expansion joint at Pier 19A.

**Approach**

**Approach Wearing Surface**

North approach wearing surface is new.

**Approach Guardrail**

A 36" long by 24" high by full width spall with exposed rebar is present on the west approach parapet where the old guardrail was previously connected. Impact damage to the metal guardrail at the connection to the concrete parapet at the northwest corner of the bridge.

**Inspector:** Adamrovich, Jake  
**Inspection Date:** 09/22/2023

**Structure Number:** 3108791  
**Facility Carried:** SB IR 75

## **Inspector Comments - General Appraisal**

### **Superstructure**

#### **Steel Open Girder/Beam**

There is widespread freckling and minor surface corrosion throughout all girders. There are multiple cracks in the web and transverse stiffener welds of Girder C in Spans 23A-25A, near the top flange at cross frame locations near midspan. All cracks have been repaired with arrest holes and no indications of crack propagation beyond the arrest holes were observed. There is isolated section loss up to 1/8" in the bottom flange of Girder E of Span 21A adjacent to the timber falsework installed between HAM-75-0022L and HAM-71-0000L.

#### **Diaphragm/X-Frames**

Paint failure and minor surface rusting is typical throughout. Crossframes at Pier 19A have been replaced with jacking frames, and crossframes at Abutment A have been repainted. There is an isolated 3' long area of fire damage along the bottom horizontal member of the crossframe between Girders C and D at Abutment A.

#### **Bearing Devices**

Original steel bearings at Pier 19A and Abutment A were replaced with elastomeric bearings in 2017. Minor surface corrosion and minor laminate corrosion is typical throughout all bearing types. There is one broken anchor bolt at Bearing C at Pier 22A. Pack rust is present between the rocker and masonry plate of Bearing E at Pier 20A; however, no uplift was observed.

#### **Protective Coating System**

Approximately 10' of all girder ends below the expansion joints at Pier 19A and Abutment A were cleaned and painted in 2017. The paint is peeling, chalking, and flaking throughout. There is widespread exposure of primer coat throughout. Paint is either ineffective or of limited effectiveness. Some areas of paint are failed with exposed bare metal and surface corrosion.

#### **Utilities**

Utility line runs along west fascia girder for full length of bridge. Abandoned electrical conduit runs through the webs of all girders in span 20A. No significant deficiencies were found with the light poles or the anchorage to the railings.

Inspector: Adamrovich, Jake  
Inspection Date: 09/22/2023

Structure Number: 3108791  
Facility Carried: SB IR 75

### Substructure

#### Reinforced Concrete Pier Cap

There are horizontal hairline cracks near the top of most caps and some vertical cracks developing from the horizontal cracks. There is a spall with one exposed reinforcing bar on the south face of Pier Cap 21A. There are cracks with rust staining on the south face of Pier Cap 19A.

#### Reinforced Concrete Column

There are minor isolated spalls and hairline cracks typically throughout.

#### Reinforced Concrete Abutment

Use caution during future inspections, as several needles were found Abutment A. Isolated hairline cracking is typical throughout. There is a 12" long by 6" wide by 1" deep spall below the bearing of Girder C and a 4" long by 2" wide by 1" deep spall below the bearing of Girder D.

#### Abutment Backwall

The top 2' +/- of the backwall was replaced during the joint replacement in 2017. Dark soot staining with hairline cracking throughout the backwall between Girders C and D. There are hairline cracks, spalls, and delaminations throughout. The concrete patches in Bays 1 and 4 are delaminating. There is an isolated spall behind the bearing of Girder A.

#### Wingwalls

No significant problems noted.

#### Slope Protection

Minor erosion at Abutment A at Bay 1 where downspout is draining.

### Culvert

N/A

### Inspector Comments - Waterway

#### Waterway Adequacy

N/A

### Channel

**Inspector:** Adamrovich,Jake

**Structure Number:** 3108791

**Inspection Date:** 09/22/2023

**Facility Carried:** SB IR 75

N/A

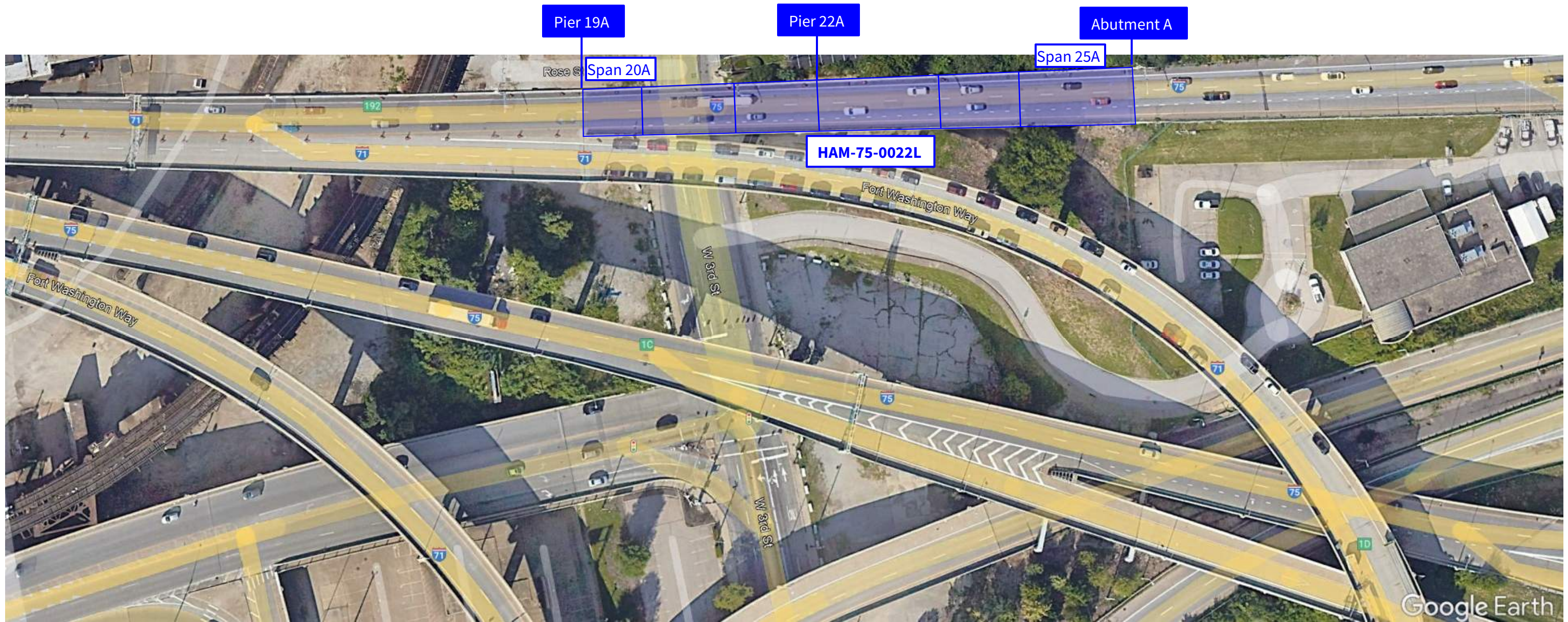
**Scour Critical**

N/A

# Appendix B

Select Plan Sheets

**TRANSYSTEMS**



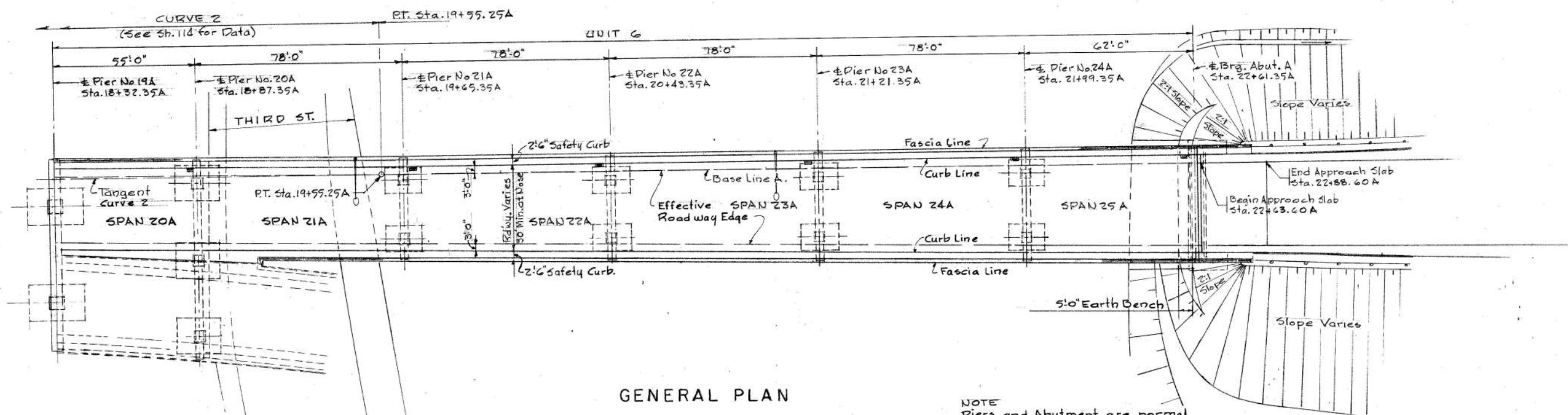
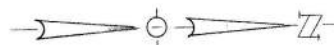
**HAM-75-0022L**

**Structure nomenclature**

Not to scale

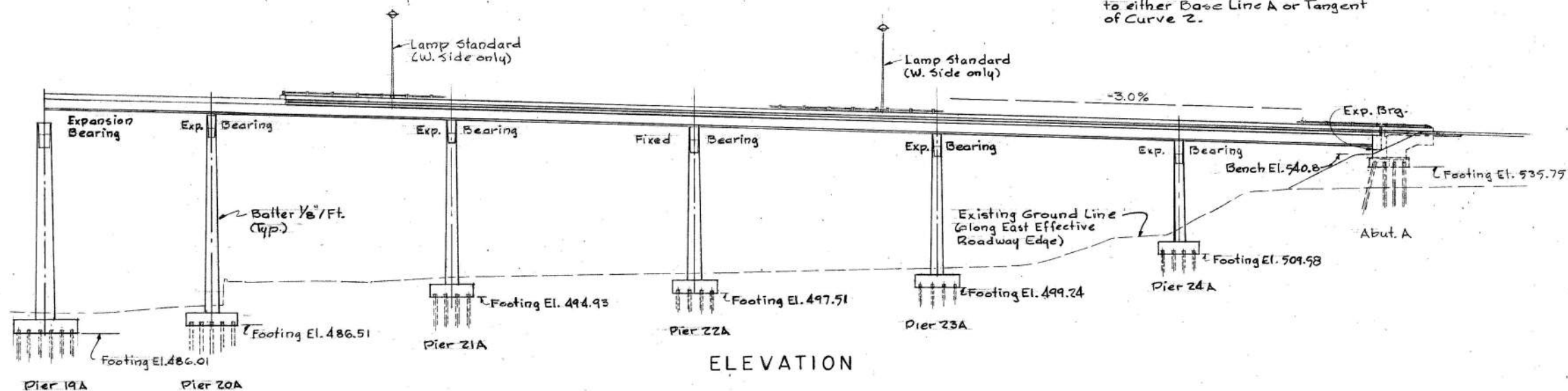


MAKING  
OCT 24 1959  
REPRODUCTION



GENERAL PLAN

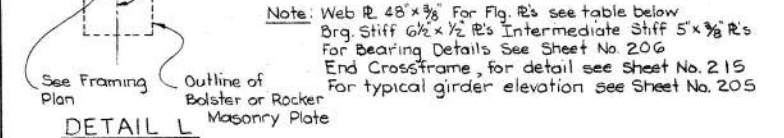
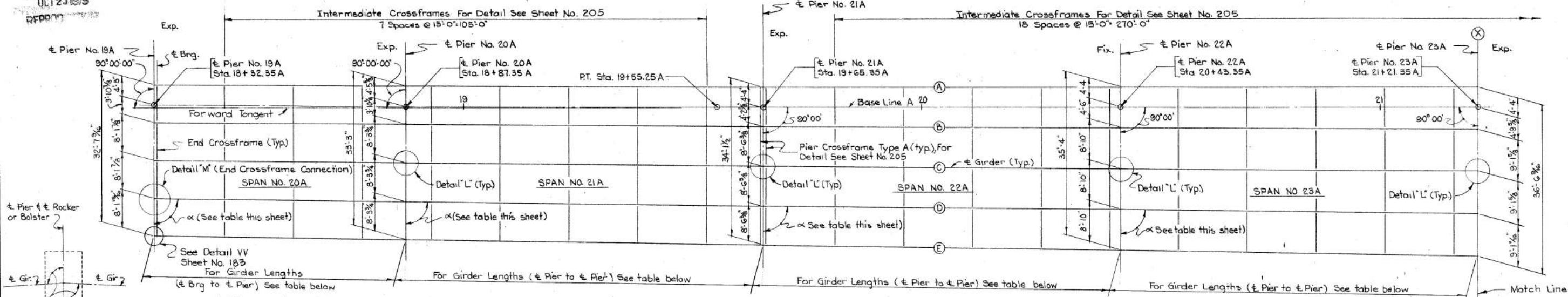
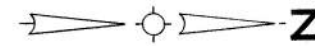
NOTE  
Piers and Abutment are normal  
to either Base Line A or Tangent  
of Curve 2.



ELEVATION

For Railing & Lighting Details See Sh. 255  
For General Notes see Sh. 97  
For Estimate of Quantities See Sh. 97

HAZELET & ERDAL CONSULTING ENGINEERS CINCINNATI, OHIO				
<b>GENERAL PLAN &amp; ELEVATION</b>				
<b>UNIT 6</b>				
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE
J.C.D.	G.J.T.		N.A.F.	10-13-60
6-9-59	9-23-60			



FRAMING PLAN UNIT NO. 6  
(Spans No. 20A thru 23A)

Girder	Span No. 20A	Spans No. 21A thru No. 24A	Span No. 25A
A, B & C	54'-4 1/2"	78'-0"	62'-0"
D	54'-4 1/2"	78'-0 1/2"	62'-0 1/2"
E	54'-4 3/4"	78'-0 1/8"	62'-0 1/8"

**GIRDER SPLICE WELDING PROCEDURE**

Raise the ends of girders in Span No. 21A, at Pier No. 20A, 1 3/8" and the ends of girders in Span No. 23A, at Pier No. 23A, 1 1/2".

Butt weld girder flanges and webs, at Piers No. 21A & 22A, using the sequence outlined in Note 'A' Sheet No. 181.

Weld all pier crossframes at Pier No. 21A into place.

Lower girders to their final positions.

Raise the ends of girders in Span No. 20A, at Pier No. 19A, 3/8" and the ends of girders in Span No. 24A, at Pier No. 24A, 1 3/8".

Butt weld girder flanges and webs, at Piers No. 20A & 23A, using the sequence outlined in Note 'A' Sheet No. 181.

Lower girders to their final positions.

Raise the ends of girders in Span No. 25A, at N. Abut., 1 1/2".

Butt weld girder flanges and webs at Pier No. 24A, using the sequence outlined in Note 'A' Sheet No. 181.

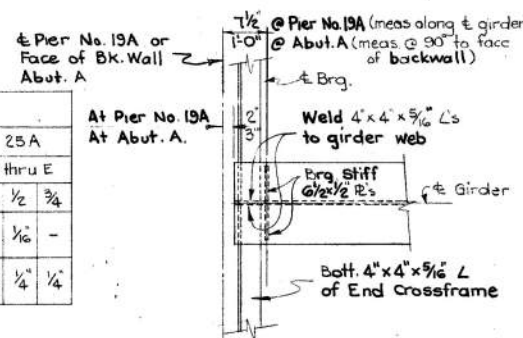
Lower girders to their final positions.

Girder	Piers No. 19A & 20A	Piers No. 21A thru 24A
A	89° 45' 07"	90° 00' 00"
B	89° 35' 29"	89° 46' 38"
C	89° 25' 51"	89° 33' 18"
D	89° 16' 12"	89° 19' 51"
E	89° 06' 36"	89° 06' 36"

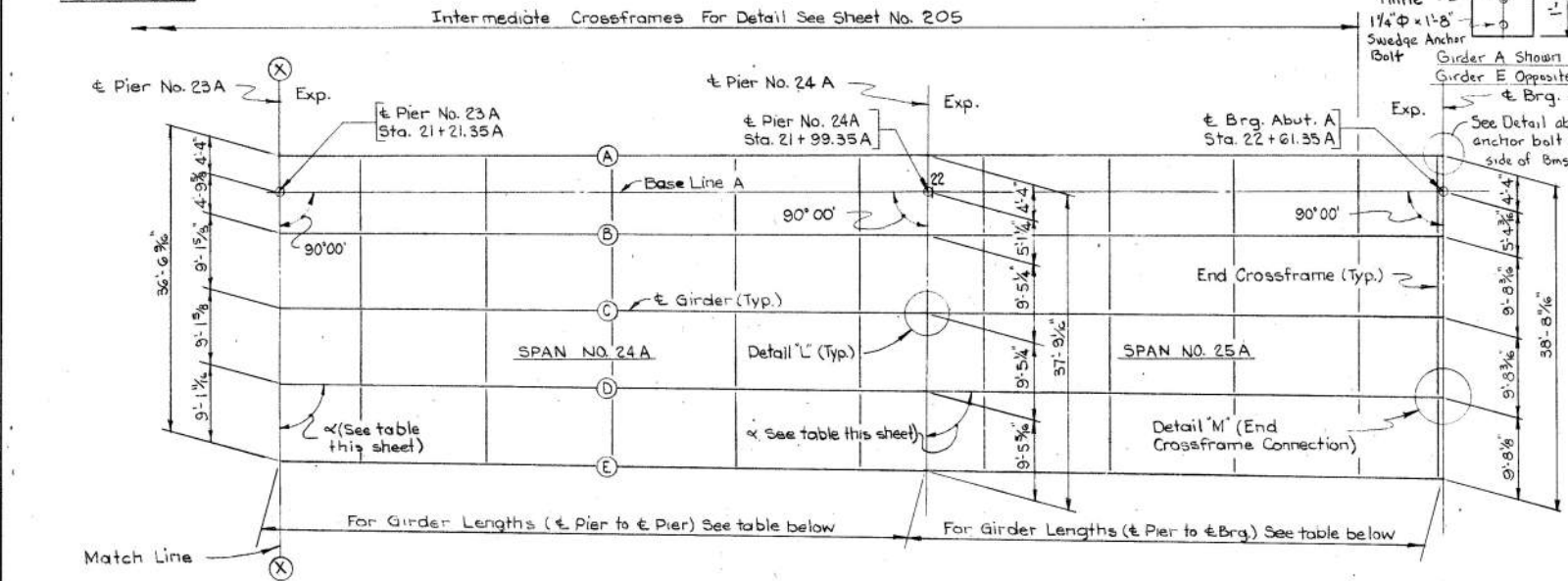
Note:  $\phi$ 's of Piers No. 19A thru 24A and  $\phi$  Brg. Abut. A are parallel.

Span No.	20A						21A						22A						23A						24A						25A																
	Girder		Location		Deflection due to weight of steel		Deflection due to remaining Dead Load		Girder		Location		Deflection due to weight of steel		Deflection due to remaining Dead Load		Girder		Location		Deflection due to weight of steel		Deflection due to remaining Dead Load		Girder		Location		Deflection due to weight of steel		Deflection due to remaining Dead Load																
20A	A thru E	1/4 1/2 3/4	- - -	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	21A	A thru E	1/4 1/2 3/4	- - -	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	22A	A thru E	1/4 1/2 3/4	- - -	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	23A	A thru E	1/4 1/2 3/4	- - -	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	24A	A thru E	1/4 1/2 3/4	- - -	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	25A	A thru E	1/4 1/2 3/4	- - -	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8	1/8 1/4 3/8

Girders for Unit No. 6 shall not be cambered.



DETAIL M  
(End Crossframe connection at Pier No. 19A, Span No. 20A)  
(Rotate thru 180° for connection at Abut. A, Span No. 25A)



FRAMING PLAN UNIT NO. 6  
(Spans No. 24A & No. 25A)

	Span No. 20A	Span No. 21A	Span No. 22A	Span No. 23A	Span No. 24A	Span No. 25A
Flg. R's Girders A thru E (Top & Bott.)	R100A 5" Brg.	R225-B 14" x 1 1/2"	R225-B 14" x 1"	R225-B 14" x 1 3/8"	R225-B 14" x 1"	R125-B 14" x 1 3/8"
Flg. to Web Weld (Top & Bott.)	1/2" Weld	5/16" Weld	3/8" Weld	5/16" Weld	3/8" Weld	5/16" Weld

TABLE OF FLANGE PLATES AND WELD SIZES

	Span No. 20A	Span No. 21A thru No. 24A	Span No. 25A
End Brg. Stiff.	45" Spacing (Max.)	48" Spacing (Max.)	42" Spacing (Max.)
Intermediate Stiffeners	36" Spacing (Max.)	45" Spacing (Max.)	36" Spacing (Max.)
End Brg. Stiff.	45" Spacing (Max.)	48" Spacing (Max.)	42" Spacing (Max.)

Note: Adjust intermediate stiffener spacing to conform to intermediate crossframe spacing.

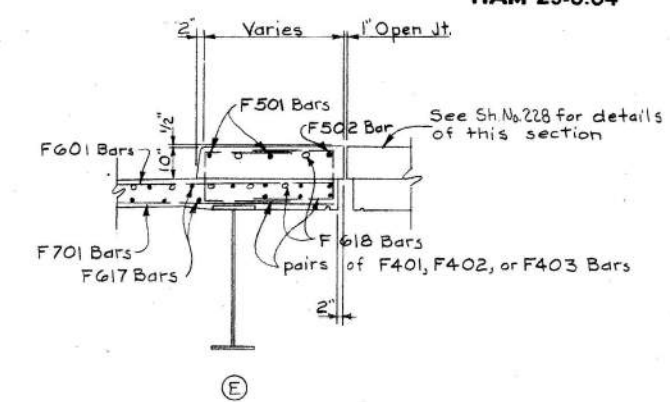
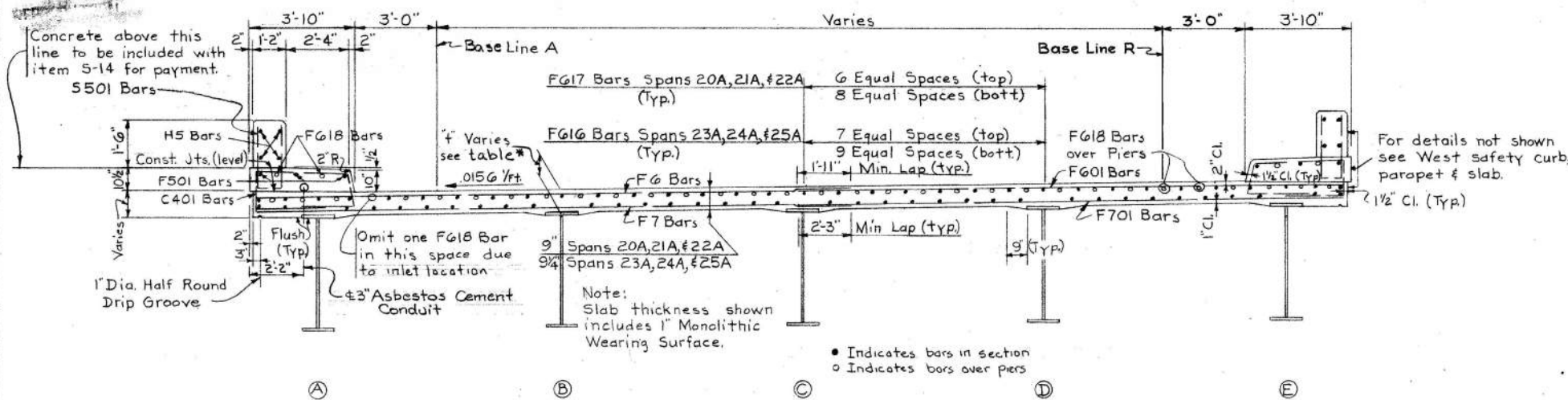
INTERMEDIATE STIFFENER SPACING

HAZLET & ERDAL  
CONSULTING ENGINEERS  
CINCINNATI, OHIO

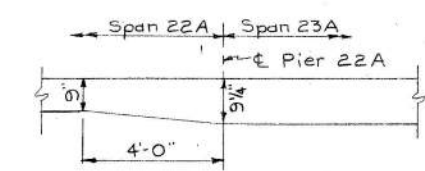
STRUCTURAL STEEL DETAILS  
UNIT NO. 6.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
M.K.K.	J.C.	J.H.O.	7/27/60	10-14-60	
2-15-60	5-1-60				

HAM-25-0.04



SECTION A-A



SECTION B-B

(Showing slab thickness transition between beams, see Section C-C)

TRANSVERSE SECTION C-C

(Drawn for Spans 23A, 24A, & 25A)

(Noted for Spans 20A, 21A, & 22A)

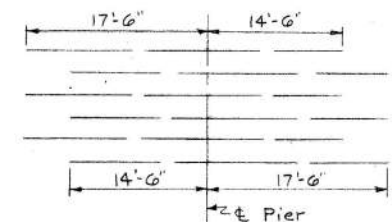


DIAGRAM SHOWING STAGGER OF FG18 BARS OVER PIERS

\* This is a nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

SLAB THICKNESS "t" (in.)						
Location	GIRDER	A	B	C	D	E
SPAN 20A	Brq. Pier 19A	10 3/4	10 1/4			
	1/4 Pt.	10 7/8	10 3/8			
	Span 20A	10 7/8	10 3/8			
SPAN 21A	1/4 Pt.	10 7/8	10 3/8			
	Span 21A	11 1/4	10 3/4			
	1/4 Pt.	10 3/4	10 1/2			
SPAN 22A	1/4 Pt.	11 1/4	10 3/4			
	Span 22A	11 1/8	10 5/8			
	1/4 Pt.	10 3/4	10 1/2			
SPAN 23A	1/4 Pt.	11 1/8	10 5/8			
	Span 23A	11 1/8	10 5/8			
	1/4 Pt.	11 1/8	10 5/8			
SPAN 24A	1/4 Pt.	11 1/8	10 5/8			
	Span 24A	11 1/8	10 5/8			
	1/4 Pt.	11 1/8	10 5/8			
SPAN 25A	1/4 Pt.	11 1/8	10 5/8			
	Span 25A	11 1/8	10 5/8			
	1/4 Pt.	11 1/8	10 5/8			
Brq. Abut. A	10 3/4	10 1/4				

NOTE:  
 For end finish details see sheet No. 207 to 215  
 For drainage details see sheet No. 246 to 249  
 For lighting details see sheet No. 265  
 For railing details and spacing of bars in parapet see sheet No. 252 to 263  
 Work this sheet with Sheet No. 226  
 Longitudinal bars are placed parallel to the curvature of the roadway.  
 Field bend or cut longitudinal bars where necessary to miss inlets.  
 For detail of conduit at expansion joint see Sh. No. 264

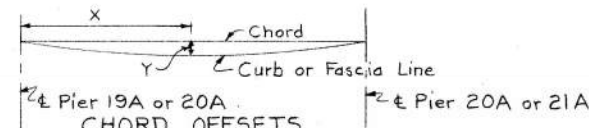
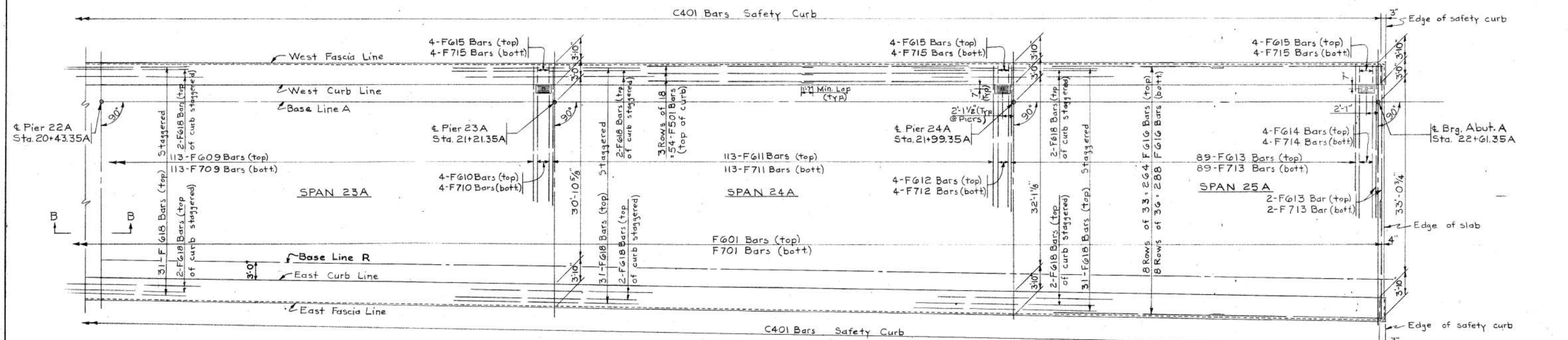
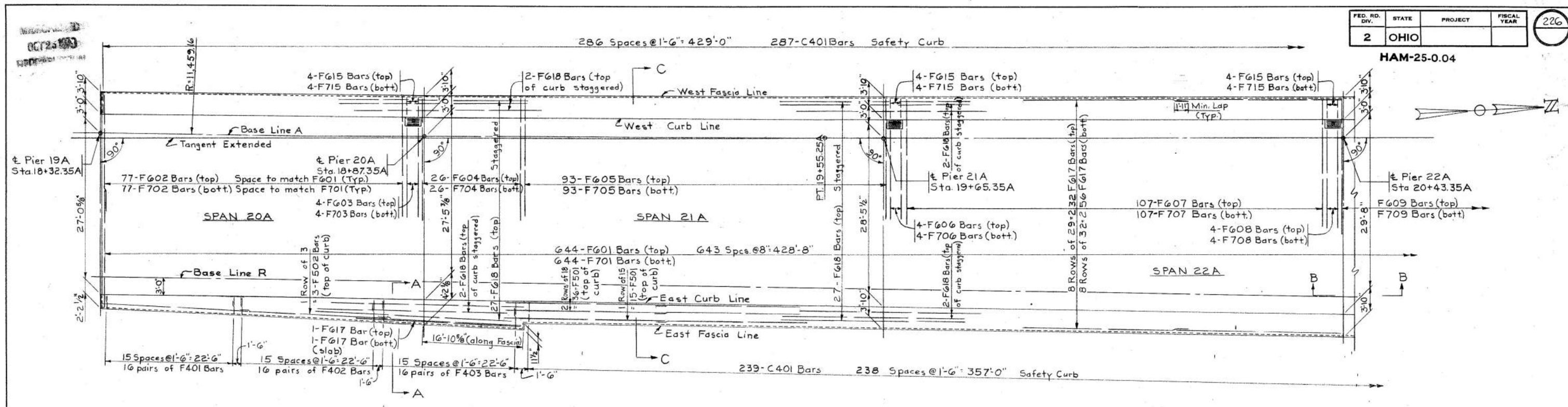
Note: t is measured from top of slab to bottom of flange plate along E girder. t values shall be adjusted as required if actual camber varies from values shown on Sh. No. 168 to 203 or if camber exists where no camber is specified.

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SUPERSTRUCTURE DETAILS  
 UNIT NO. 6.

DESIGNED	DRAWN	TRACED	CHECKED	REVISION DATE	REVISED
	T.E.M.		W.J.J.C.	N.A.S.	
	3-30-60		8-11-60	10-6-60	

HAM-25-0.04



SLAB PLAN UNIT G  
(Parapet not shown)

Work this sheet with Sheet No 227

CHORD OFFSETS

SPAN 20A		SPAN 21A	
W. Curb	W. Fascia	W. Curb	W. Fascia
Dist. Offset	Dist. Offset	Dist. Offset	Dist. Offset
X	Y	X	Y
9'-2 1/4"	9'-2 1/4"	13'-7 1/2"	13'-7 1/2"
18'-4 3/8"	18'-4 3/8"	27'-1 3/8"	27'-1 3/8"
27'-6 3/8"	27'-6 3/8"	40'-8 3/4"	40'-8 3/4"
36'-8 3/8"	36'-8 3/8"	54'-3 3/8"	54'-3 3/8"
45'-10 1/4"	45'-10 1/4"	67'-10 1/4"	67'-10 1/4"

TABLE OF CHORD LENGTHS

	W. CURB	W. FASCIA
SPAN 20A	55'-0"	55'-0"
SPAN 21A	78'-0"	78'-0"

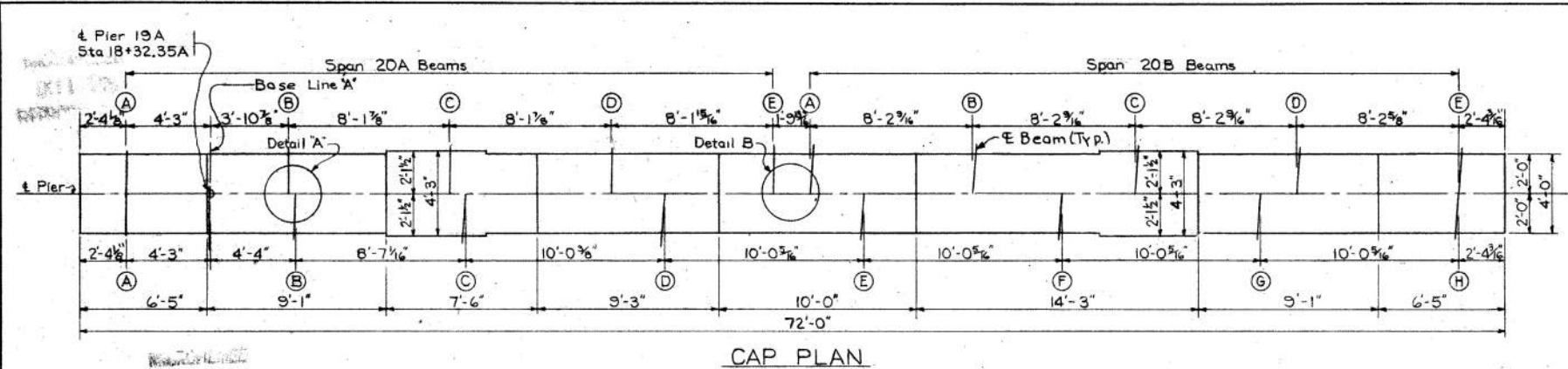
\* This point is radially opposite PT 19+55.25A

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CINCINNATI, OHIO

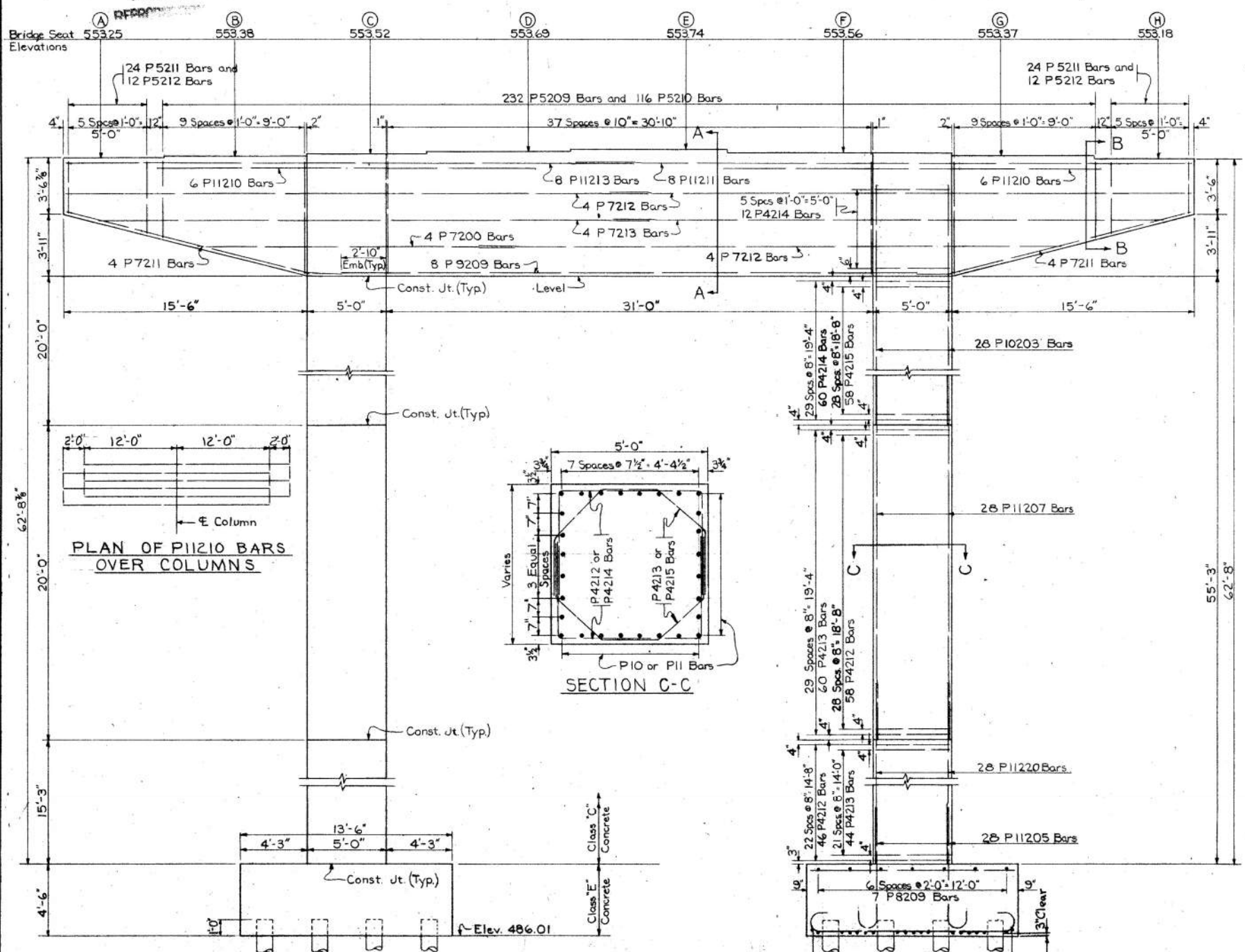
**SUPERSTRUCTURE DETAILS**  
UNIT NO. 6.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISION
	T.E.M.		W.W.C.	10-6-60	
	3-29-60		8-10-60		

HAM-25-04

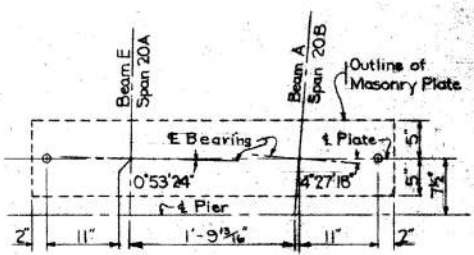
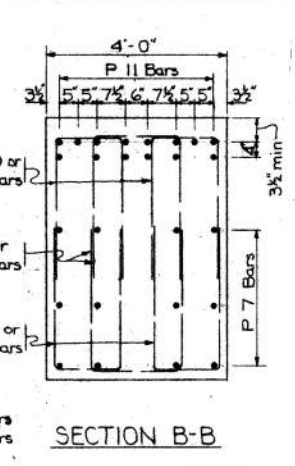
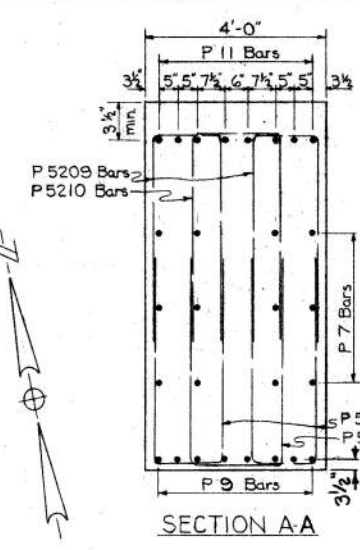


CAP PLAN

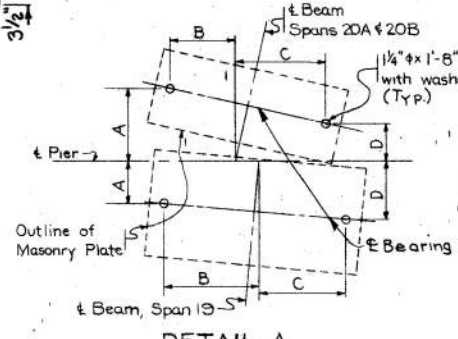


ELEVATION

Note: Dimensions and Reinforcement for footings and columns are typical. For connection of downspouts to Pier see Sh. No 246 to 269

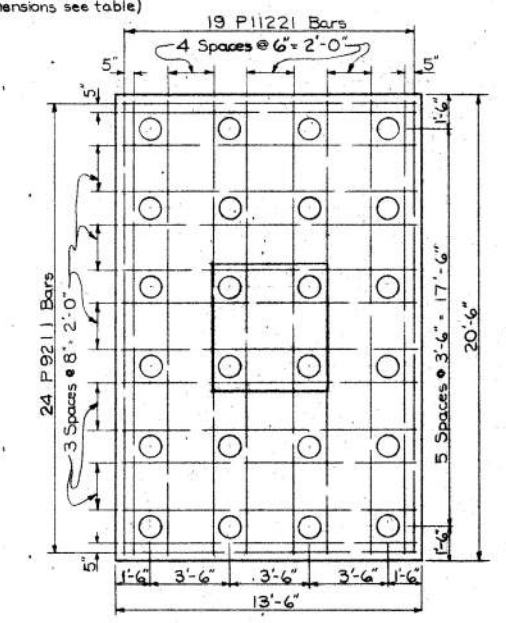
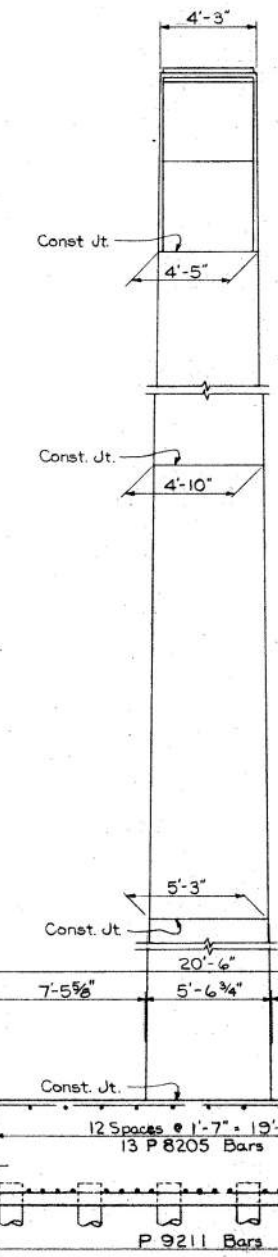


DETAIL B



DETAIL A (For dimensions see table)

Beam	Span No	A	B	C	D
A	19	7 5/8"	12 1/8"	11 1/8"	7 1/8"
B	19	7"	12 5/8"	11 1/8"	8"
C-H	19	6 5/8"	12 1/2"	11 3/8"	8 3/8"
A-B	20A	7 3/8"	10 3/8"	10 3/8"	7 3/8"
C	20A	7 5/8"	10 3/8"	10 3/8"	7 3/8"
D	20A	7 3/8"	10 3/8"	10 3/8"	7 3/8"
B-E	20B	8 3/8"	9 3/8"	11 1/8"	6 3/8"



FOOTING PLAN (Bottom Reinforcement Shown)

Notes:  
All piers shall be 12' cast in place reinforced concrete and shall be driven to a minimum bearing capacity of 40 tons per pier. Special care shall be taken in placing steel in the cap so that it will not interfere with the masonry plate anchor bolts.

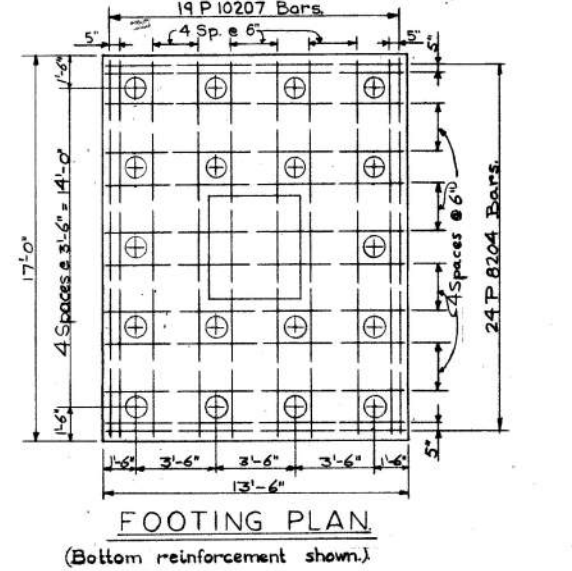
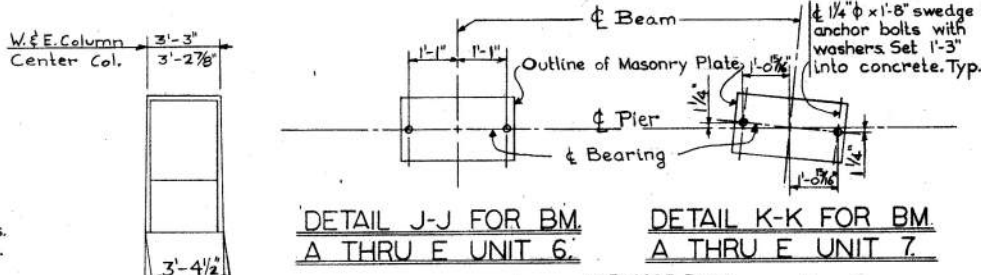
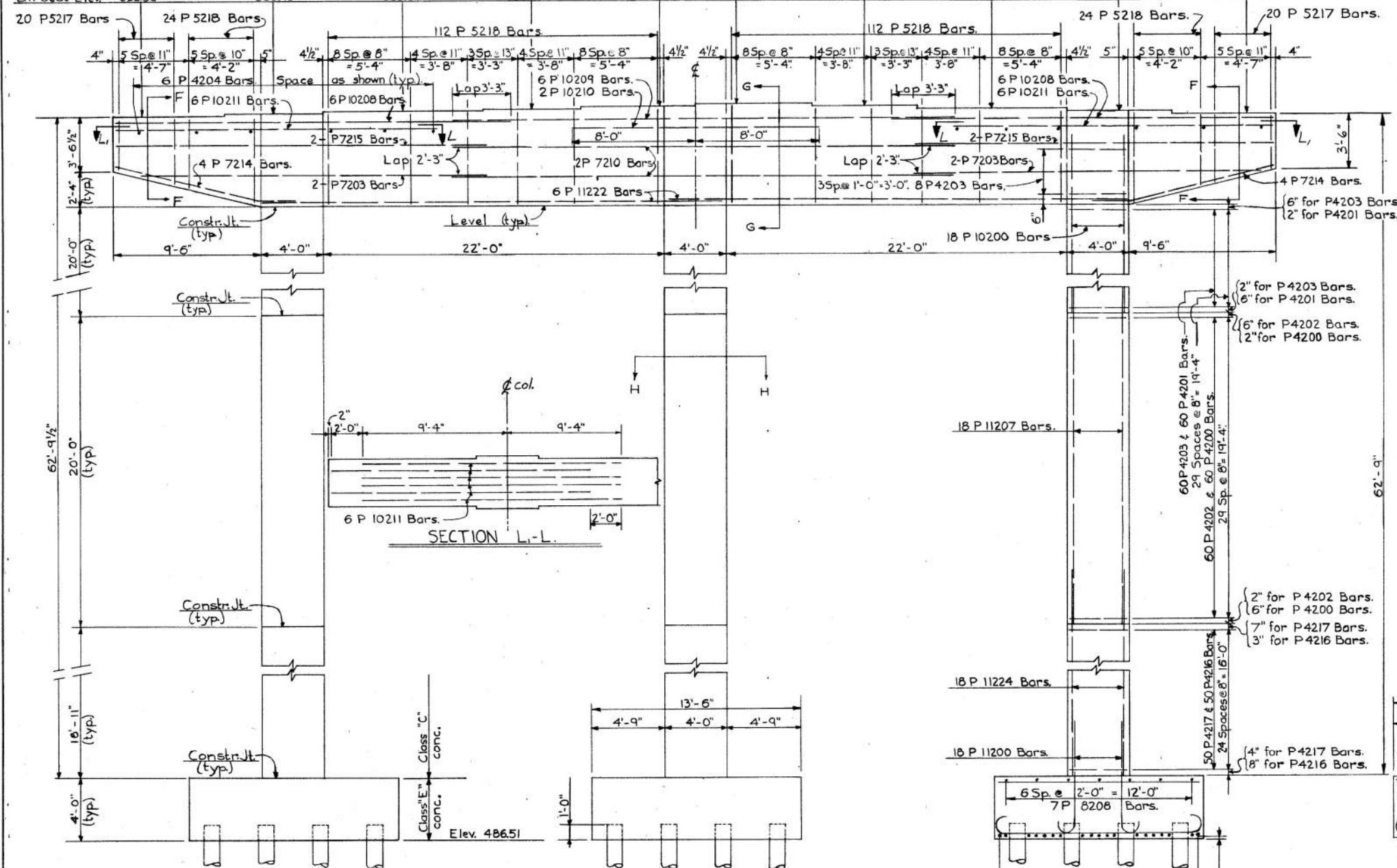
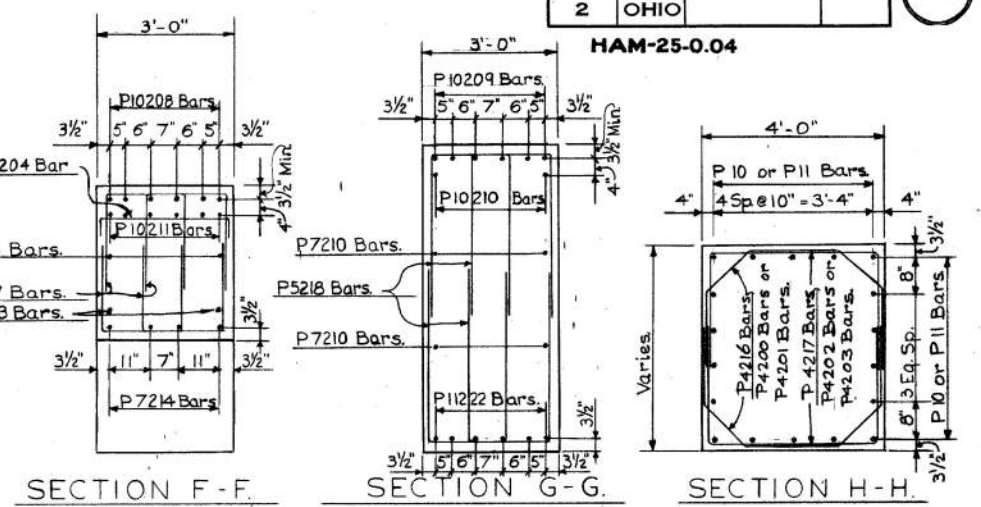
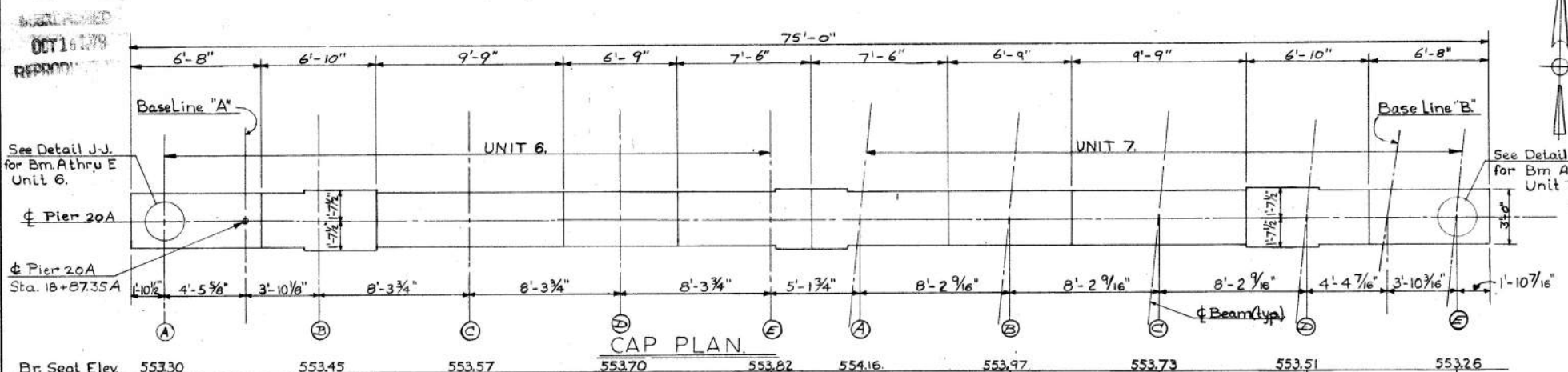
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CONSULTING ENGINEERS  
CINCINNATI, OHIO

PIER NO 19A

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
M.K.K.	T.R.G.		W.J.J.C.	7-16-60	

FED. RD. DIV.	STATE	PROJECT	FISCAL YEAR
2	OHIO	HAM-25-0.04	

130



**NOTES.**  
All piles shall be 12"  $\phi$  cast-in-place reinforced concrete and shall be driven to a minimum bearing capacity of 40 tons per pile.  
Special care shall be taken in placing steel in the pier cap so that it will not interfere with the masonry plate anchor bolts.

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<b>PIER NO 20A</b>				
DESIGNED M.K.K. 6-20-60	DRAWN W.N.T. 8-5-60	TRACED	CHECKED W.N.T. 8-9-60	REVIEWED DATE 7-16-60

Reinforcement and Dimensions for Footings and Columns are typical.

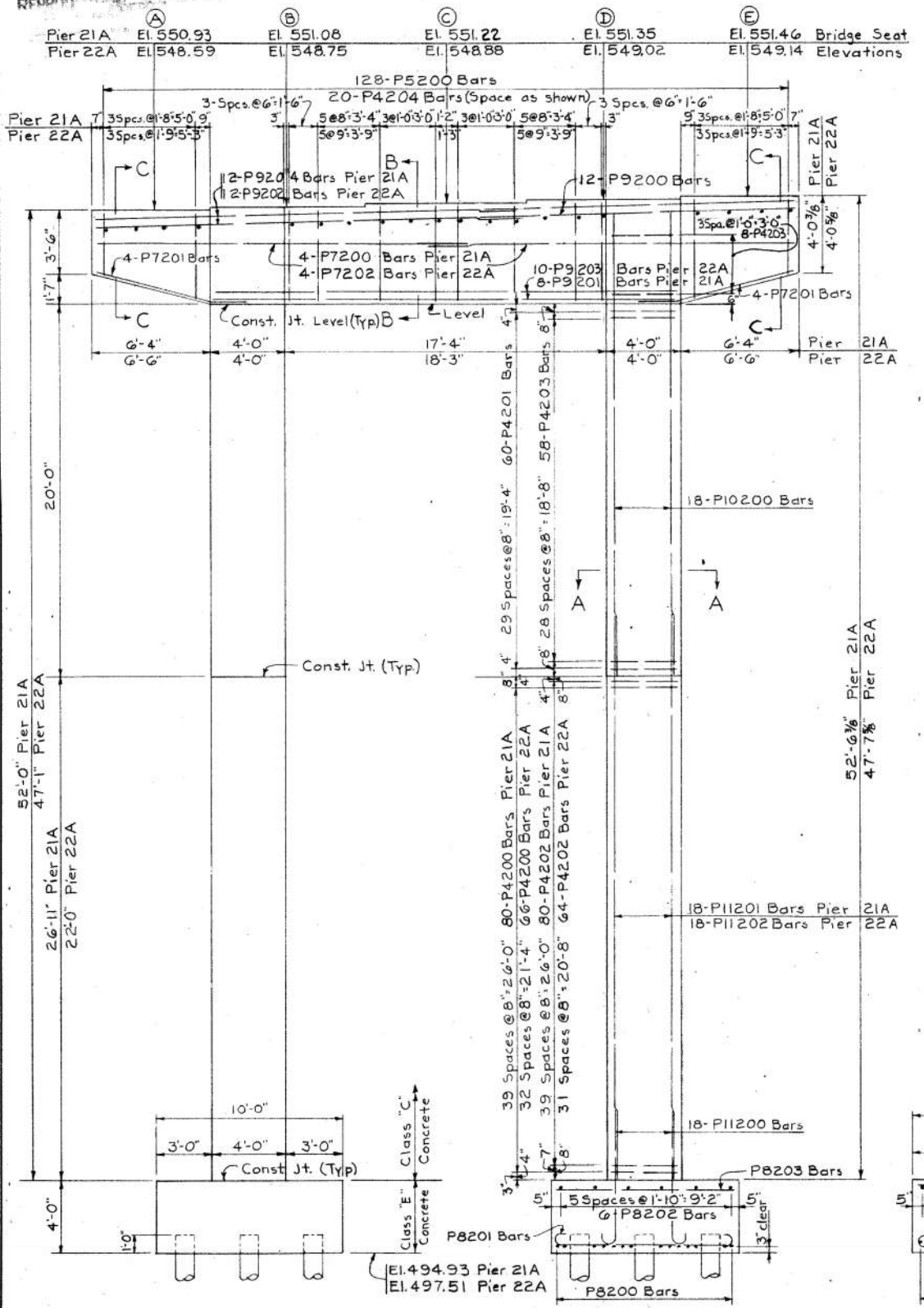
For connection of downspouts to Pier see Sh. No. 266 to 269

UNRECORDED  
 OCT 25 1960  
 RECORDED

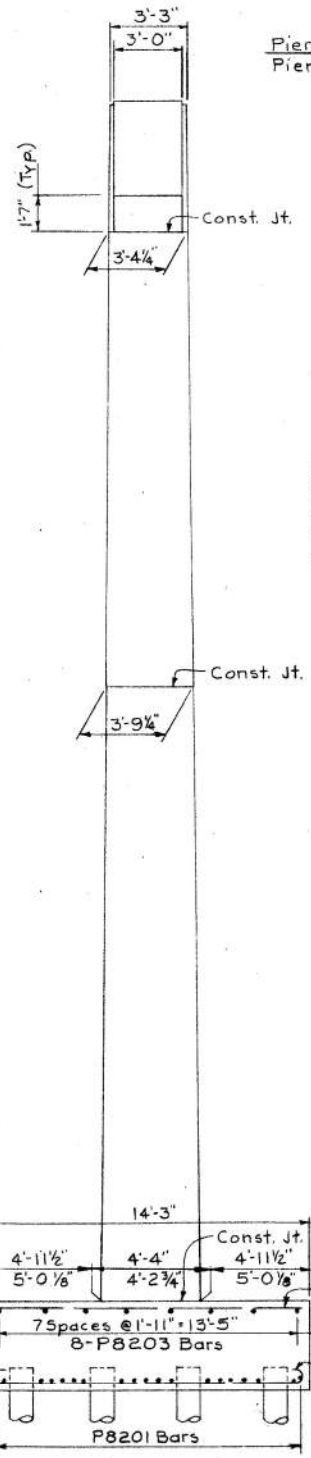
FED. RD. DIV.	STATE	PROJECT	FISCAL YEAR
2	OHIO		

131

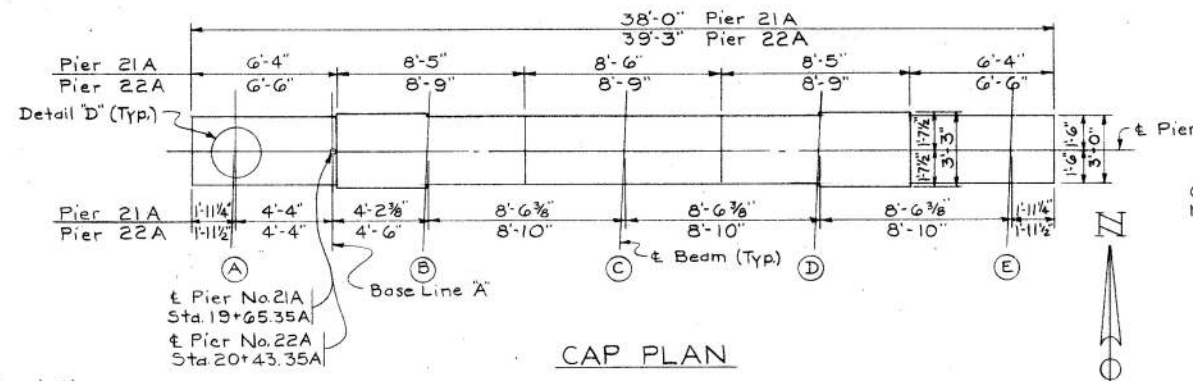
HAM-25-0.04



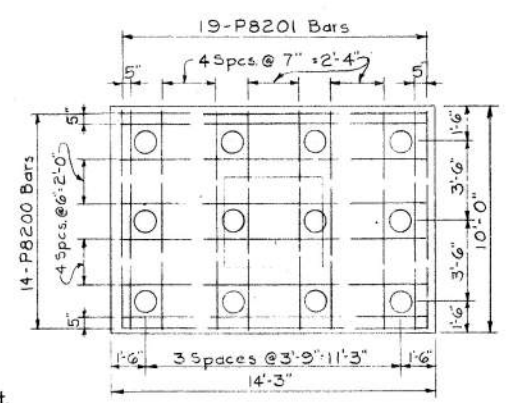
ELEVATION



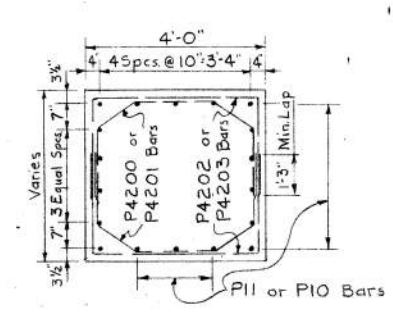
END ELEVATION



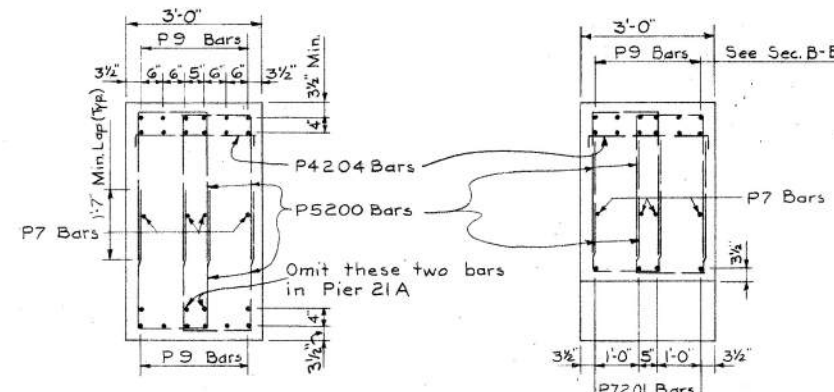
CAP PLAN



FOOTING PLAN  
 (Bottom Reinforcement Shown)



SECTION A-A



SECTION B-B

SECTION C-C

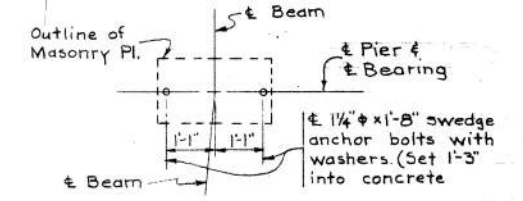
Notes:  
 All piles shall be 12" cast-in-place reinforced concrete and shall be driven to a minimum bearing capacity of 40 tons per pile.

Special care shall be taken in placing steel in the pier cap so that it will not interfere with the masonry plate anchor bolts.

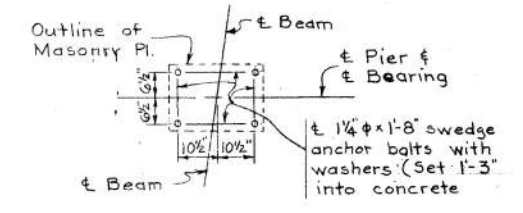
Dimensions, reinforcing, and piling, typ. for both piers unless noted otherwise.

For connection of downspouts to Piers see Sh. No. 266 to 269

For installation of electrical ground wires in Pier No. 22A see Sh. No. 265



DETAIL "D"  
 (Pier 21A)



DETAIL "D"  
 (Pier 22A)

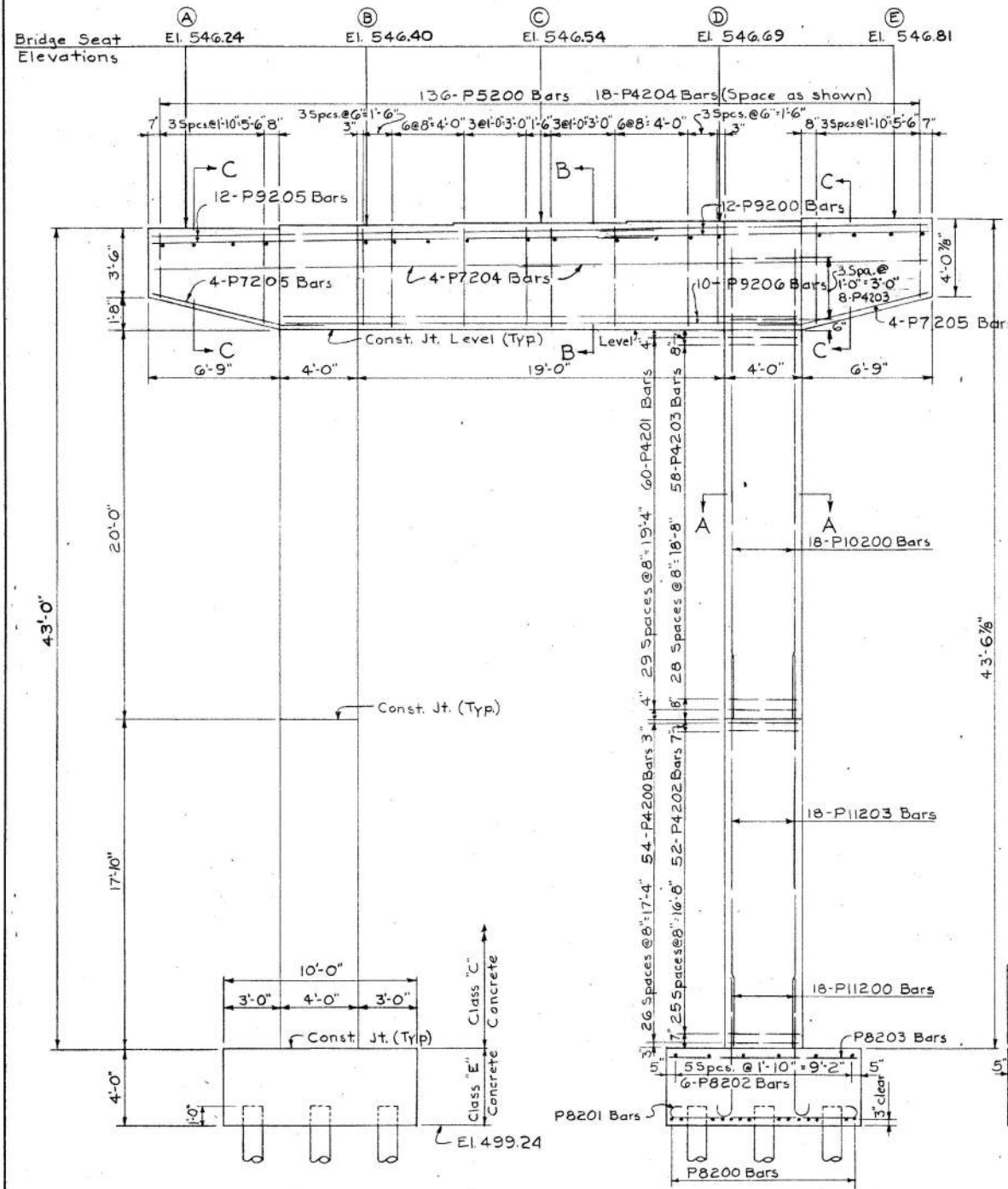
Reinforcement and dimensions for columns and footings are typical.

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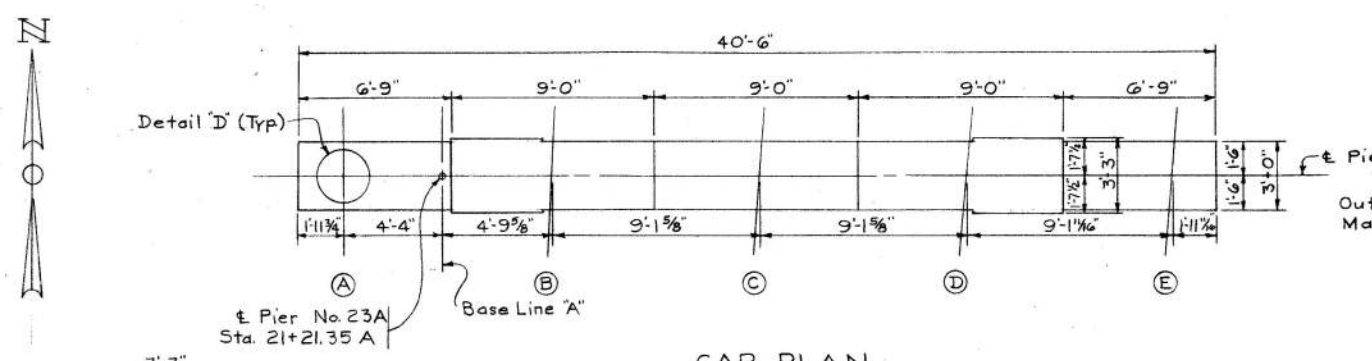
PIERS NO 21A & 22A

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
E.S.S.	T.E.M.		W.W.C.	9-16-60	
	5-2-60		5-11-60		

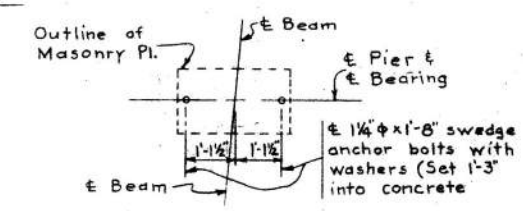
HAM-25-0.04



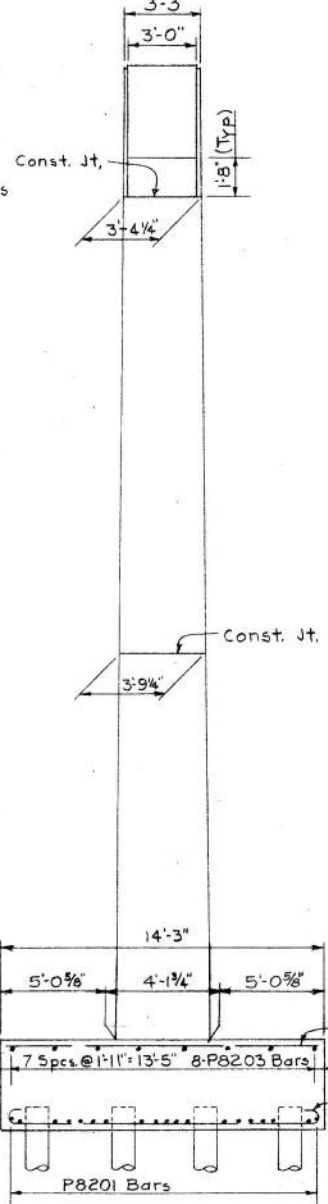
ELEVATION



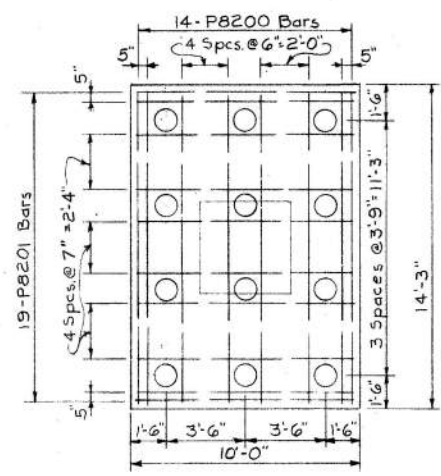
CAP PLAN



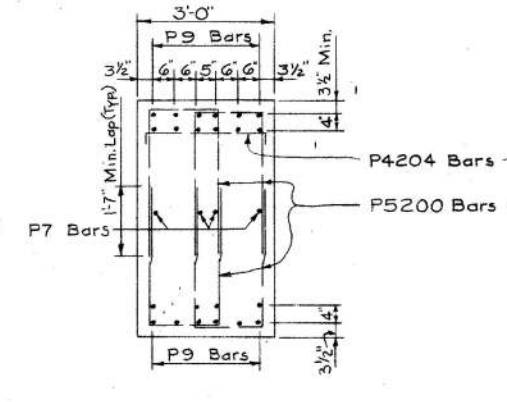
DETAIL "D"



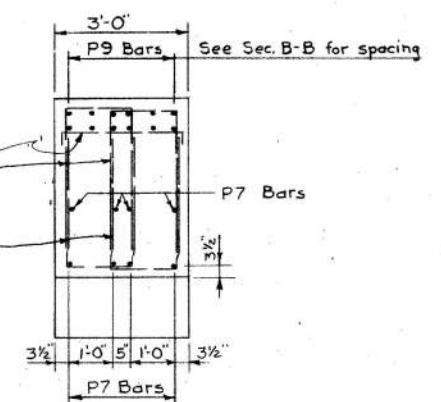
END ELEVATION



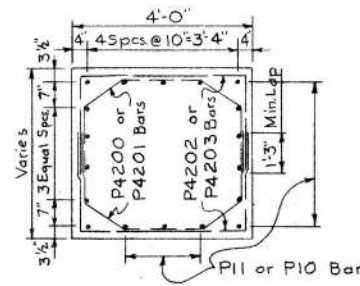
FOOTING PLAN  
(Bottom Reinforcement Shown)



SECTION B-B



SECTION C-C



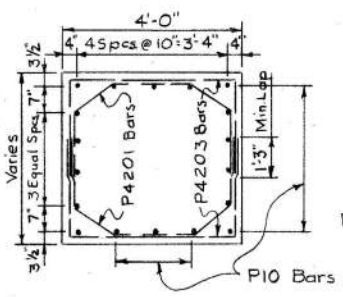
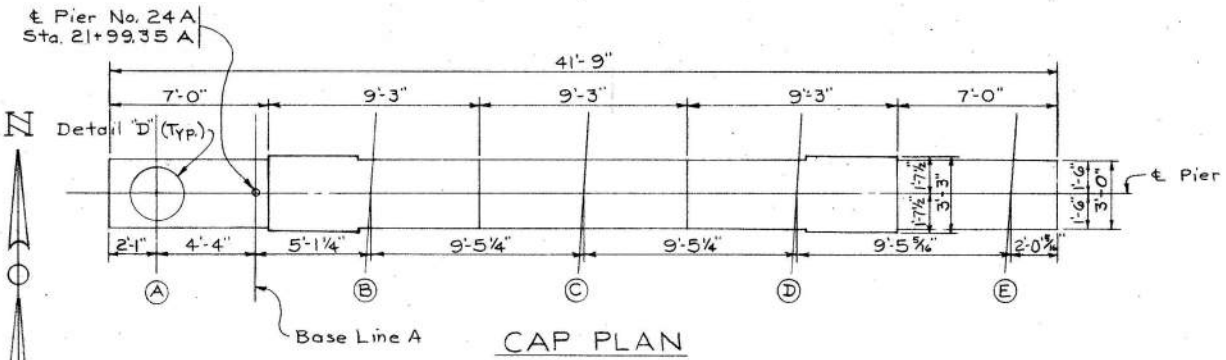
SECTION A-A

Notes:  
 All piles shall be 12" cast-in-place reinforced concrete and shall be driven to a minimum bearing capacity of 40 tons per pile.  
 Special care shall be taken in placing steel in the pier cap so that it will not interfere with the masonry plate anchor bolts.  
 For connection of downspout to Pier see Sh. No 266 to 269

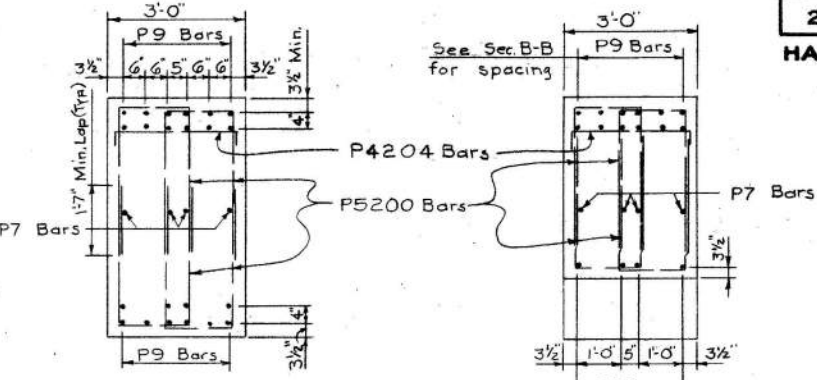
HAZLET & ERDAL CONSULTING ENGINEERS CINCINNATI, OHIO					
PIER NO 23A					
DESIGNED E.S.S.	DRAWN T.E.M. 5-4-60	TRACED	CHECKED M.W.C. 5-11-60	REVIEWED DATE A.A.Z. 9-16-60	REVISIONS



HAM-25-04

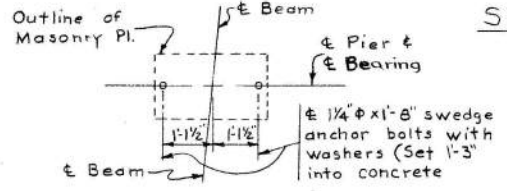


SECTION A-A



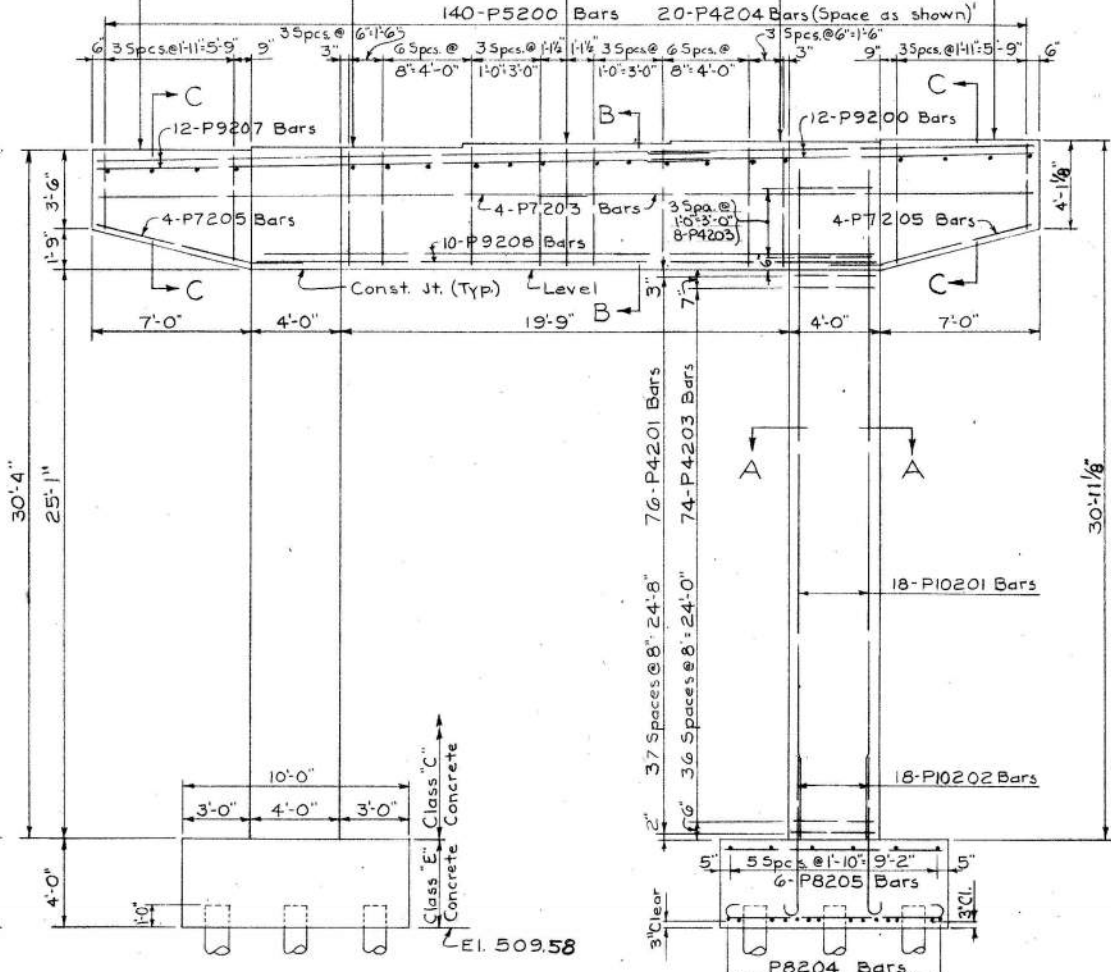
SECTION B-B

SECTION C-C

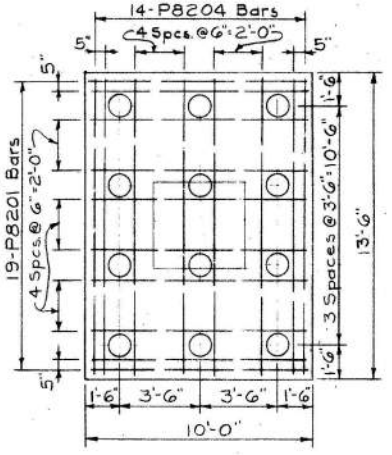


DETAIL "D"

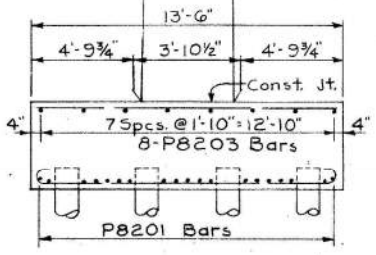
Bridge Seat Elevations: A: El. 543.91, B: El. 544.08, C: El. 544.22, D: El. 544.37, E: El. 544.50



ELEVATION



FOOTING PLAN  
(Bottom Reinforcement Shown)



END ELEVATION

Notes:  
All piles shall be 12" cast-in-place reinforced concrete and shall be driven to a minimum bearing capacity of 40 tons per pile.  
Special care shall be taken in placing steel in the pier cap so that it will not interfere with the masonry plate anchor bolts.  
For connection of downspout to Pier see Sh. No. 266 to 269

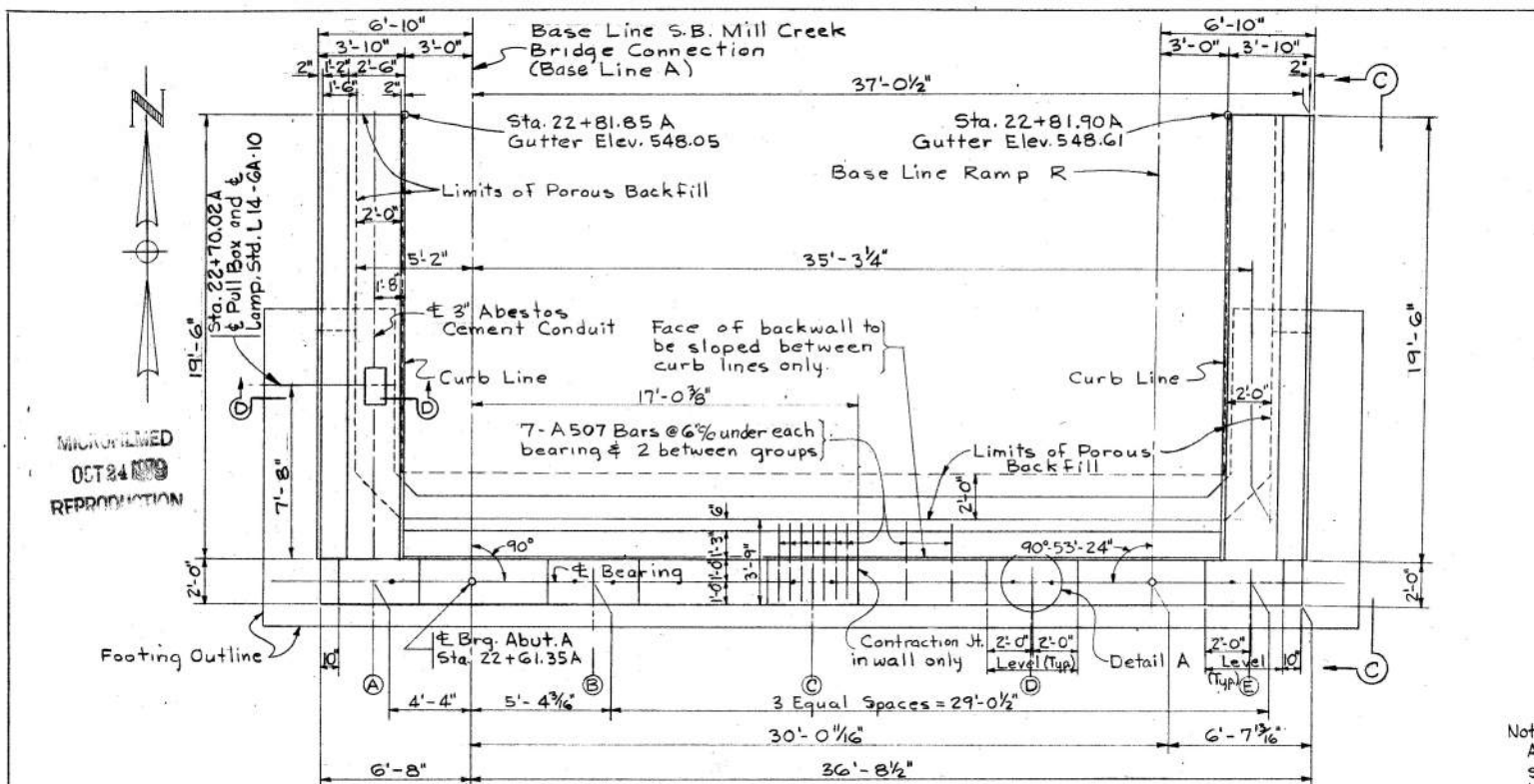
Reinforcement and dimensions for columns and footings are typical.

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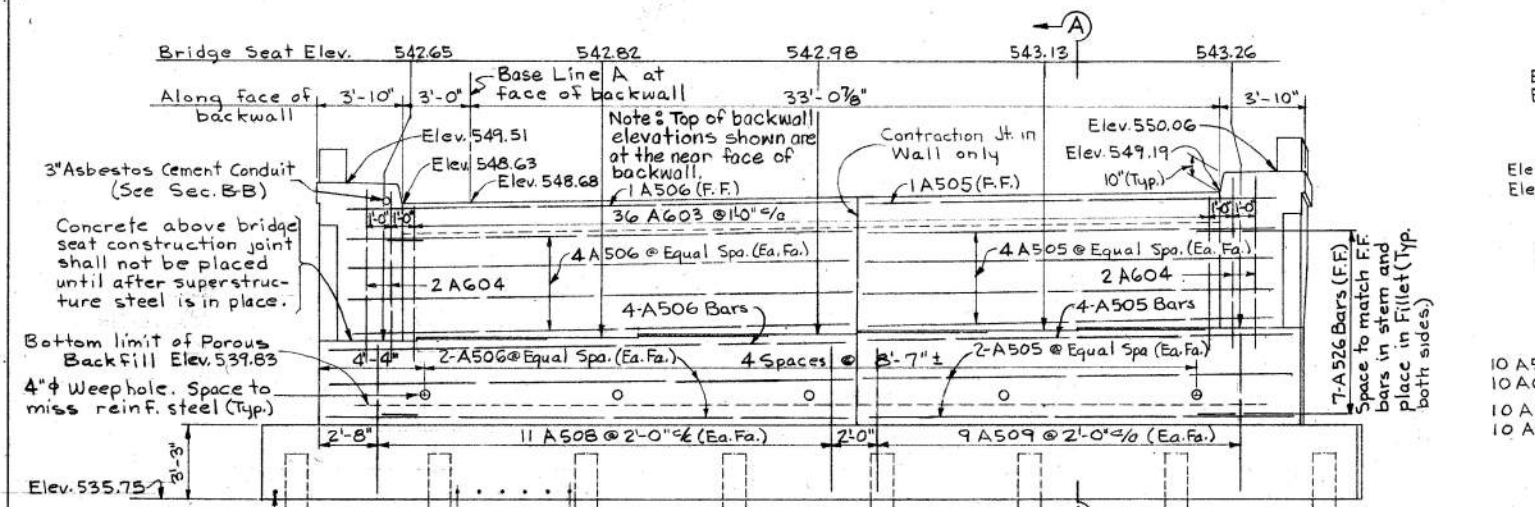
PIER NO 24A

DESIGNED E.S.S.	DRAWN T.E.M.	TRACED	CHECKED W.W.C.	REVIEWED DATE N.A.Z. 5-11-60	REVISION 9-16-60
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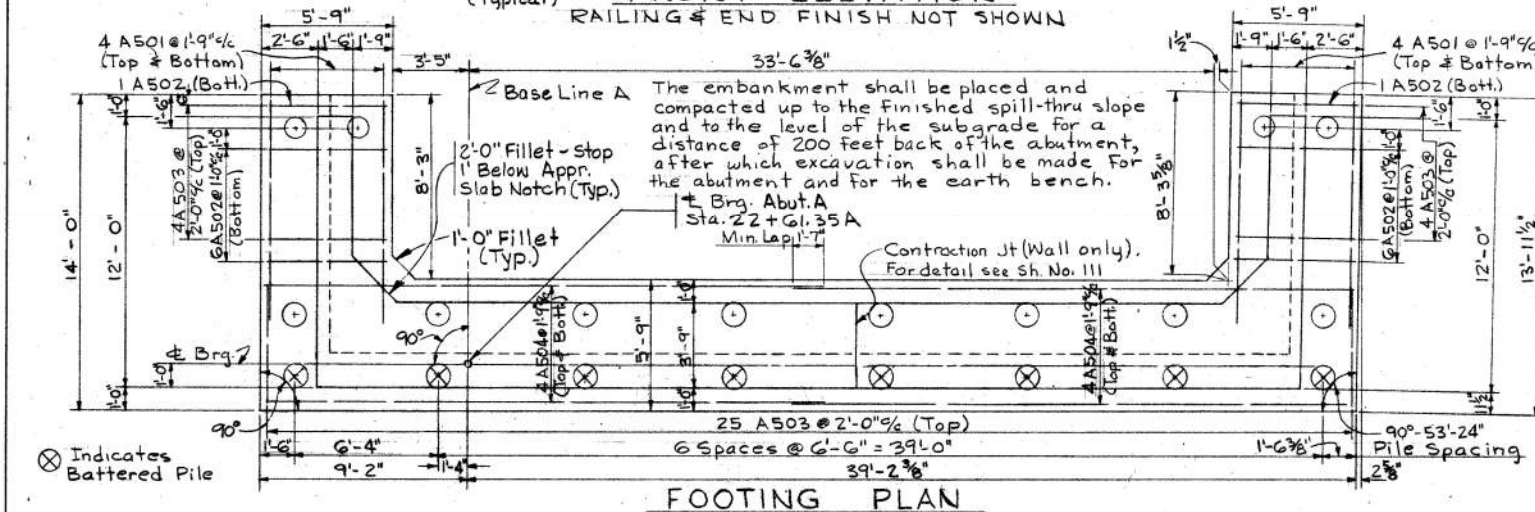
HAM-25-0.04



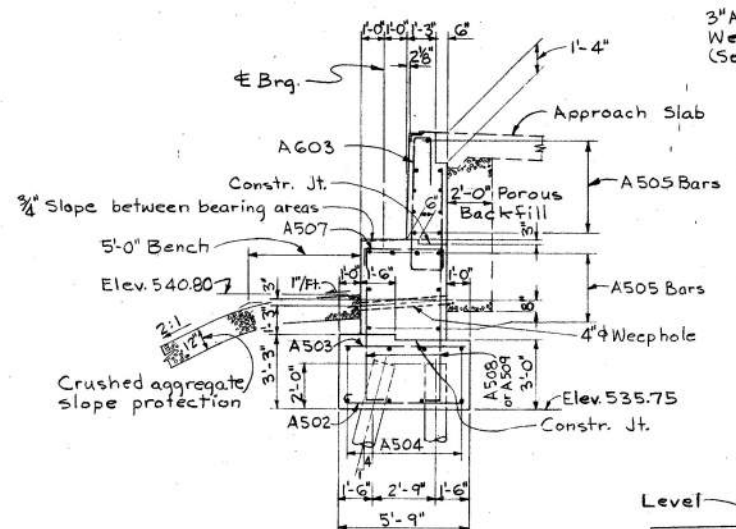
ABUTMENT PLAN  
RAILING & END FINISH NOT SHOWN



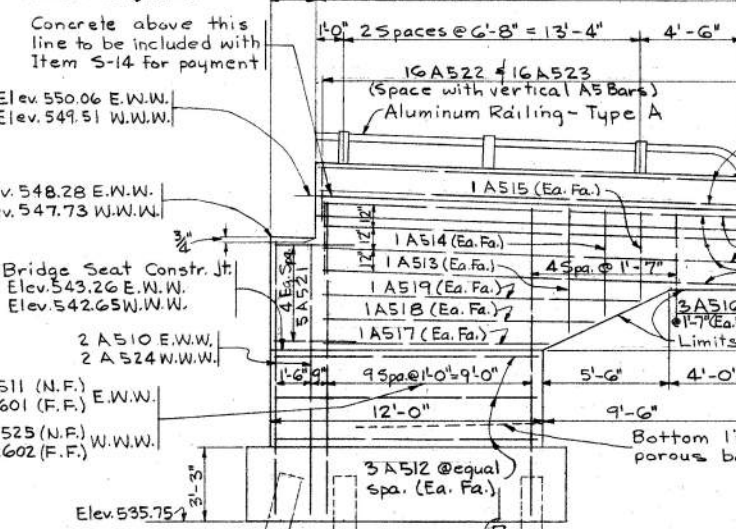
FRONT ELEVATION  
RAILING & END FINISH NOT SHOWN



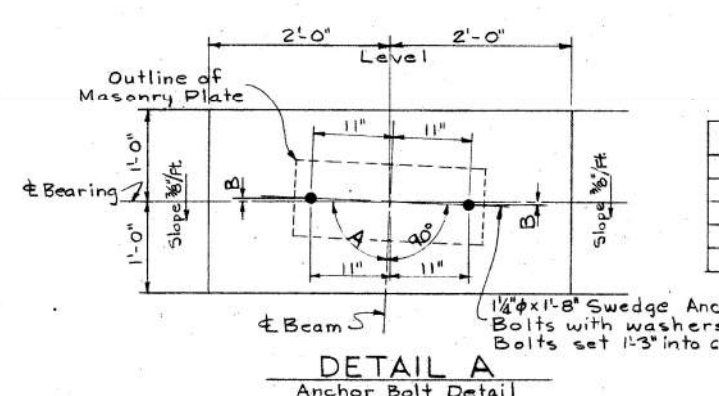
FOOTING PLAN



Notes:  
Aluminum pipe railing shall be continuous through first support on the end of wingwalls.



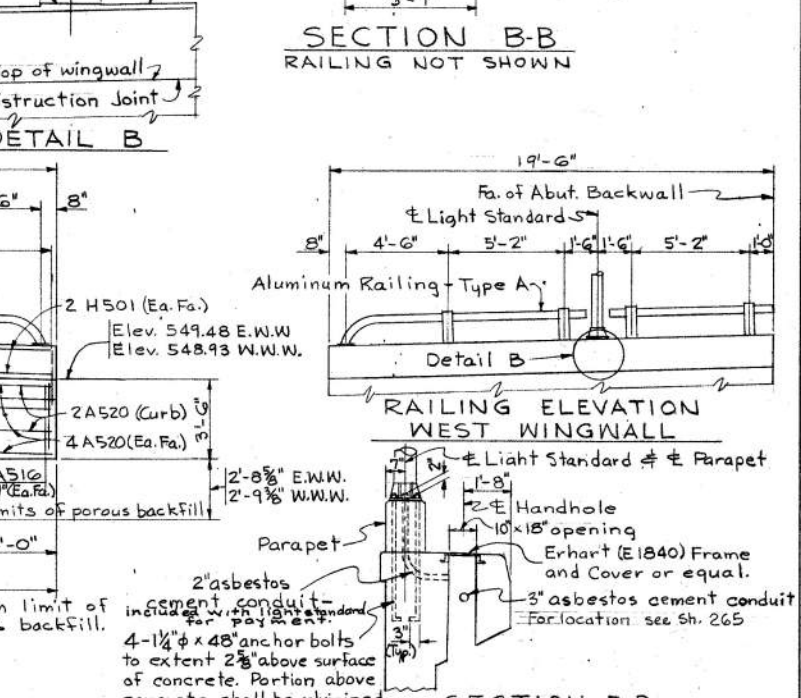
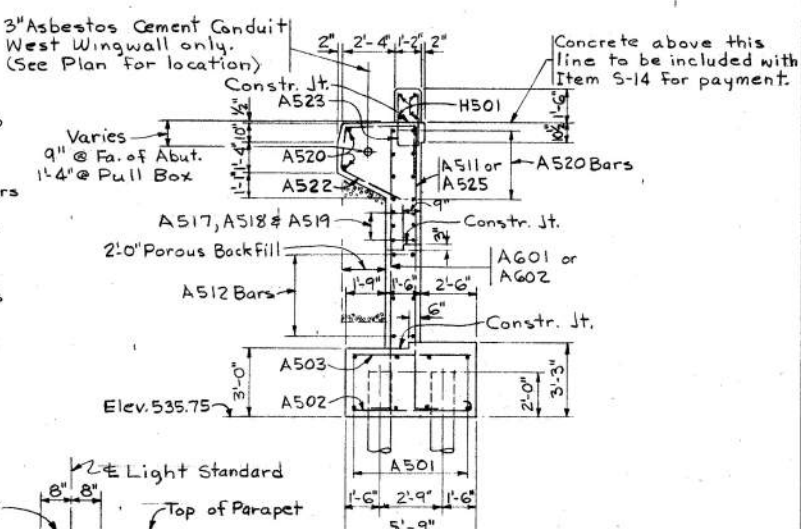
ELEVATION CC  
East Wingwall Shown, West Wingwall Opposite Hand Except as Noted.



Notes:  
Omit anchor bolt on fascia side of Brm. A and Brm. E.

Beam	Angle 'A'	Dim. 'B'
A	90°	0
B	89° 46'-39"	1/16"
C	89° 33'-18"	1/16"
D	89° 19'-56"	1/8"
E	89° 06'-36"	3/16"

N.F. denotes near face, F.F. - far face, Ea. Fa. - each face, E.W.W. - east wingwall, W.W.W. - west wingwall. For roadway and curb end finish details see Sheet No. 208. All piles shall be 12" cast-in-place reinforced concrete, and shall be driven to a minimum bearing capacity of 40 tons per pile. For railing details, see Std. Dwg. AR-1-57. Provide 3" clearance to reinforcing steel in footing, and 2" clearance to reinforcing steel in wall, minimum. Special care shall be taken in placing steel in the abutment seat so that it will not interfere with masonry plate anchor bolts. For lighting details see Sheet No. 265.



DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AGH	AGH		JVK	H.A.G.	3-24-60	9-9-60

ABUTMENT A

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CINCINNATI, OHIO