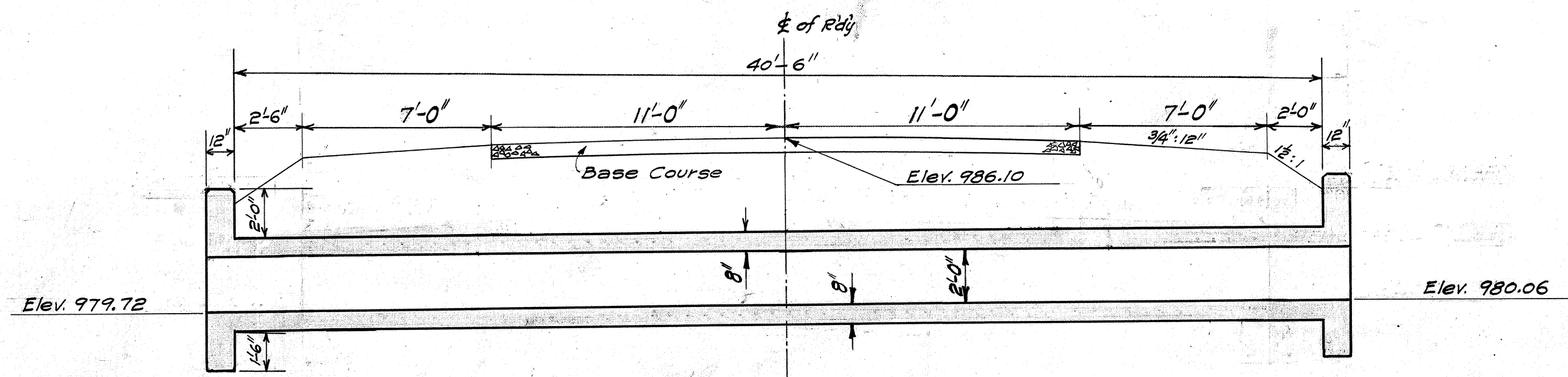
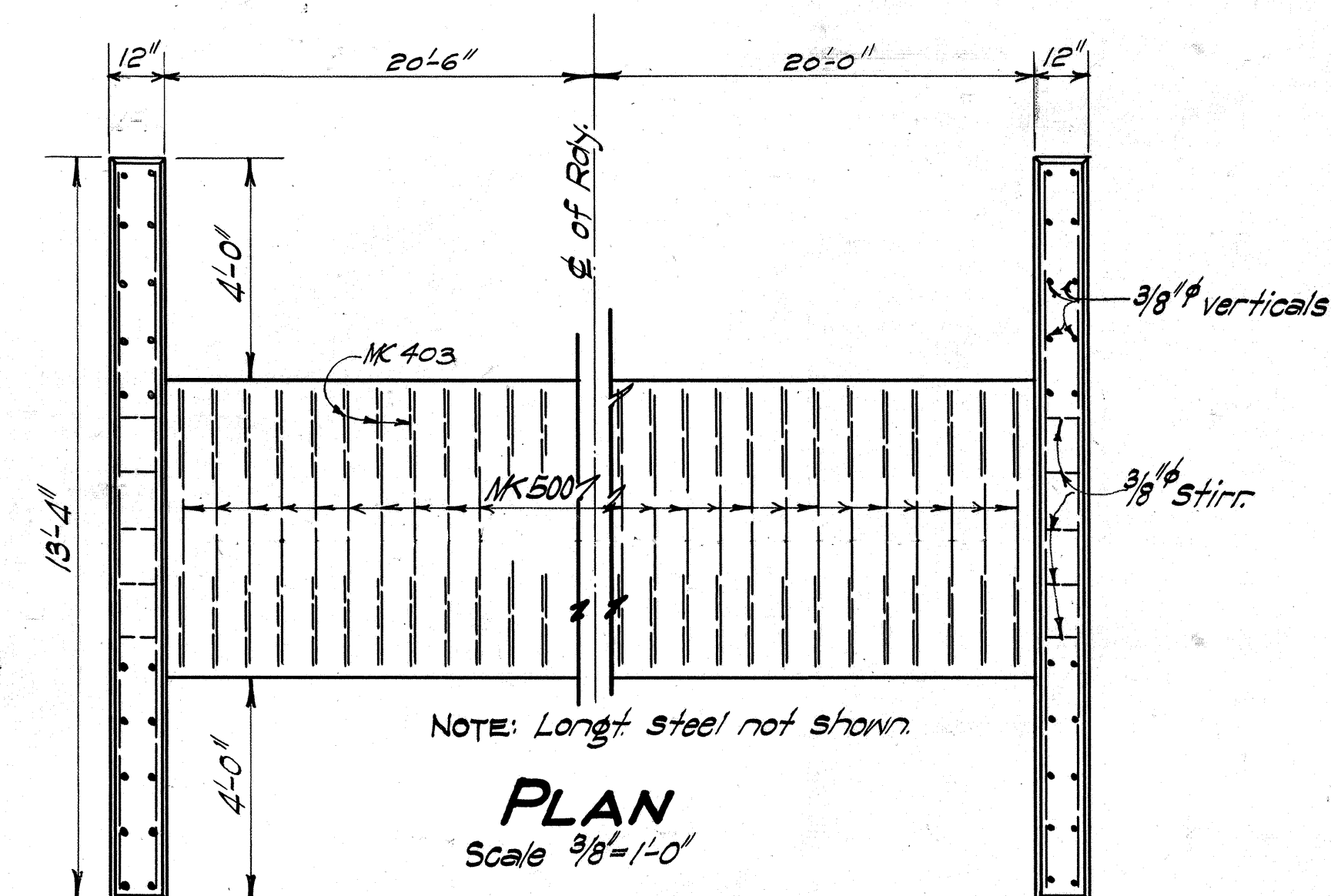


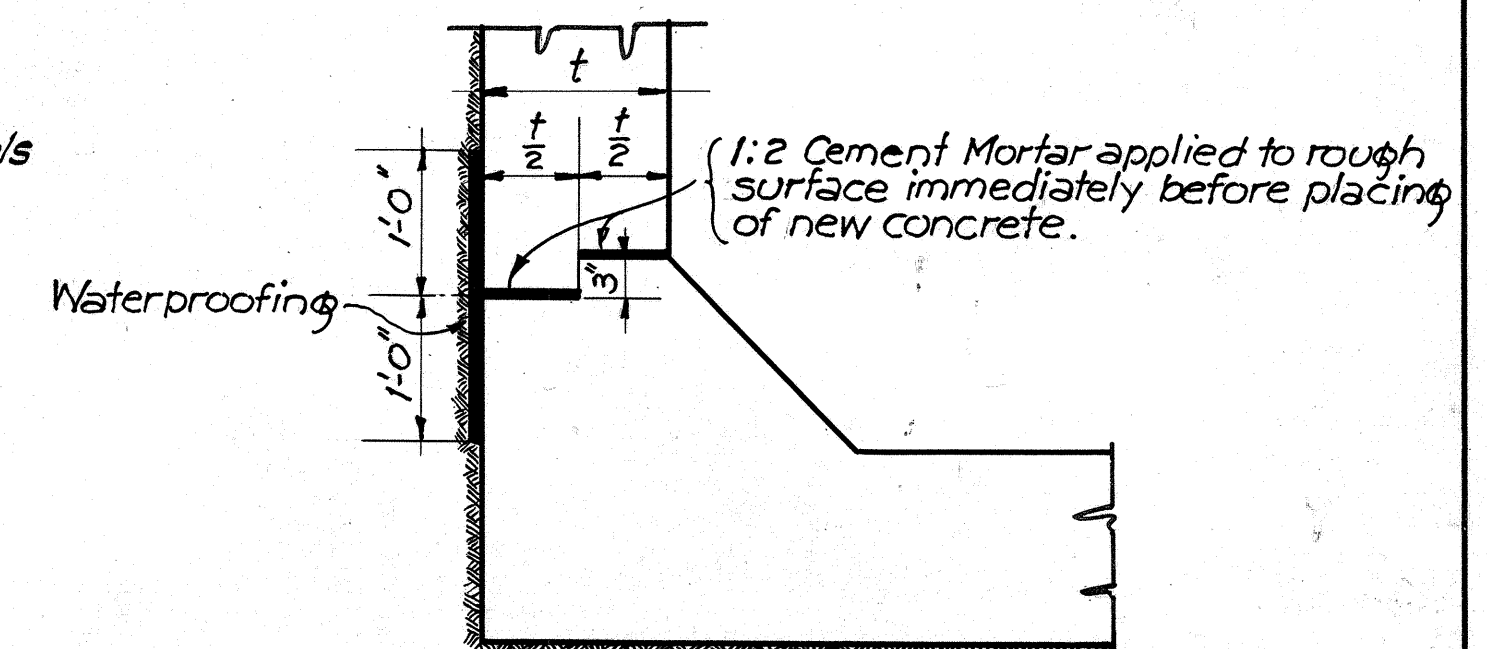


**LONGITUDINAL SECT. THRU CULVERT**



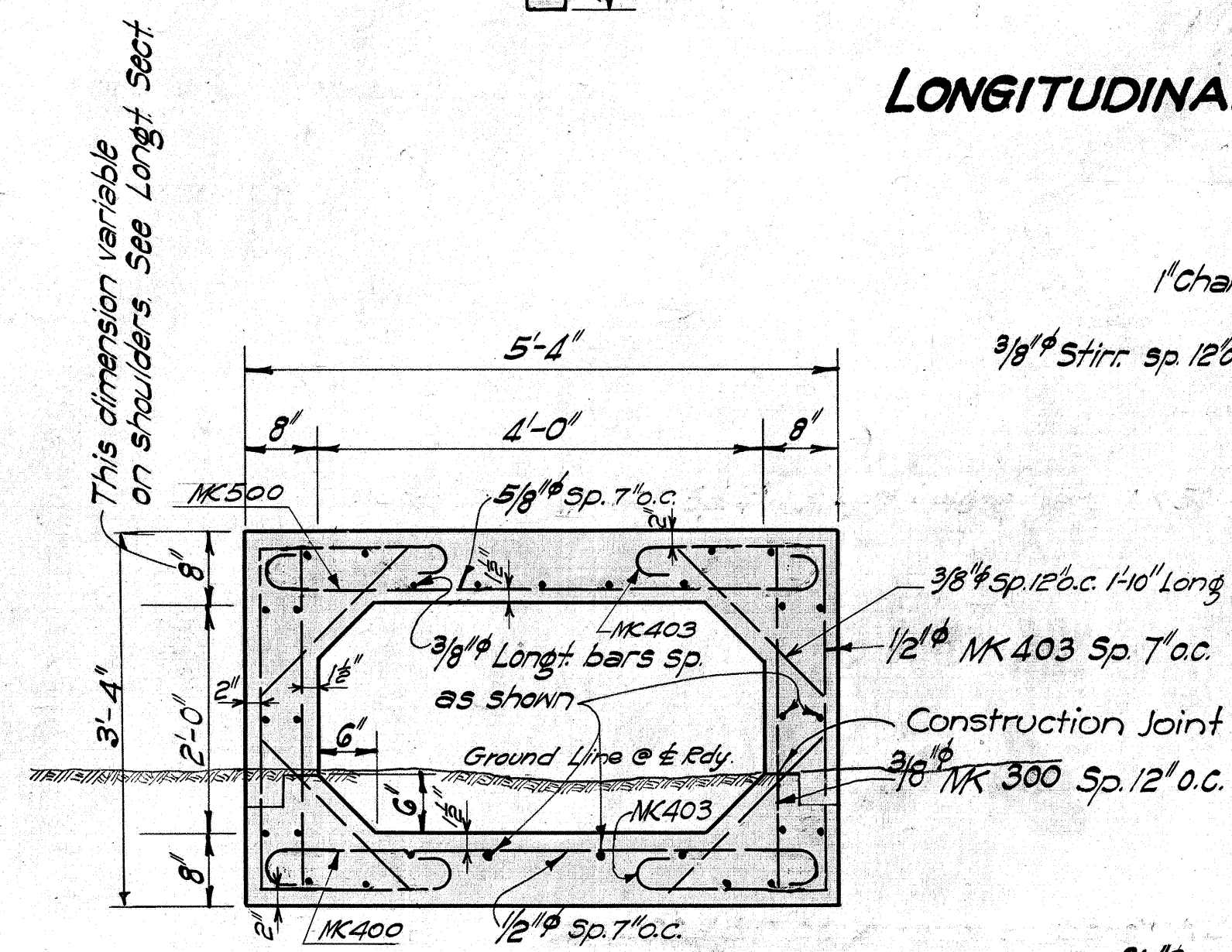
NOTE: Longit. steel not shown.

**PLAN**  
Scale 3/8"=1'-0"

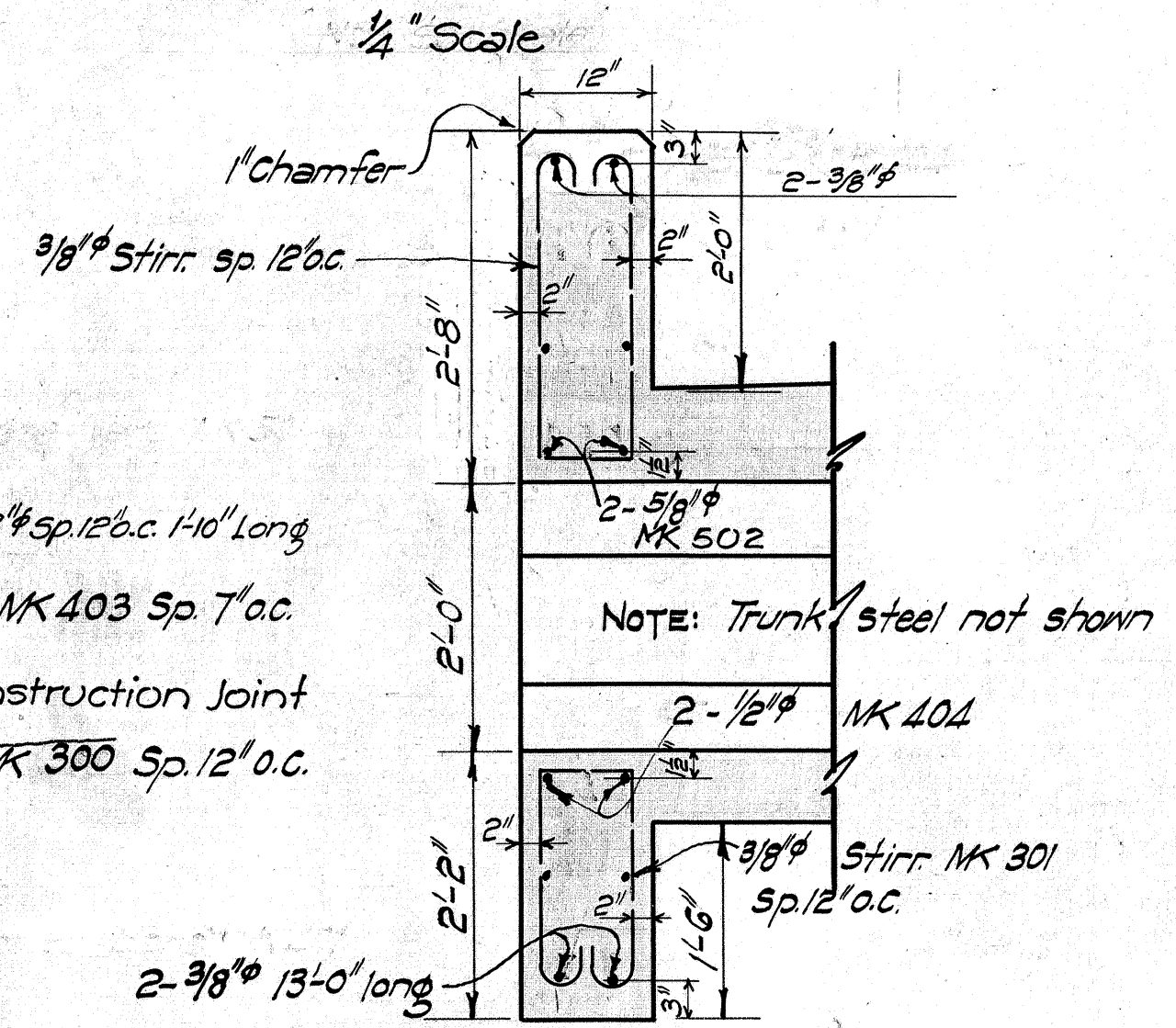


**CONSTRUCTION JOINT DETAIL**

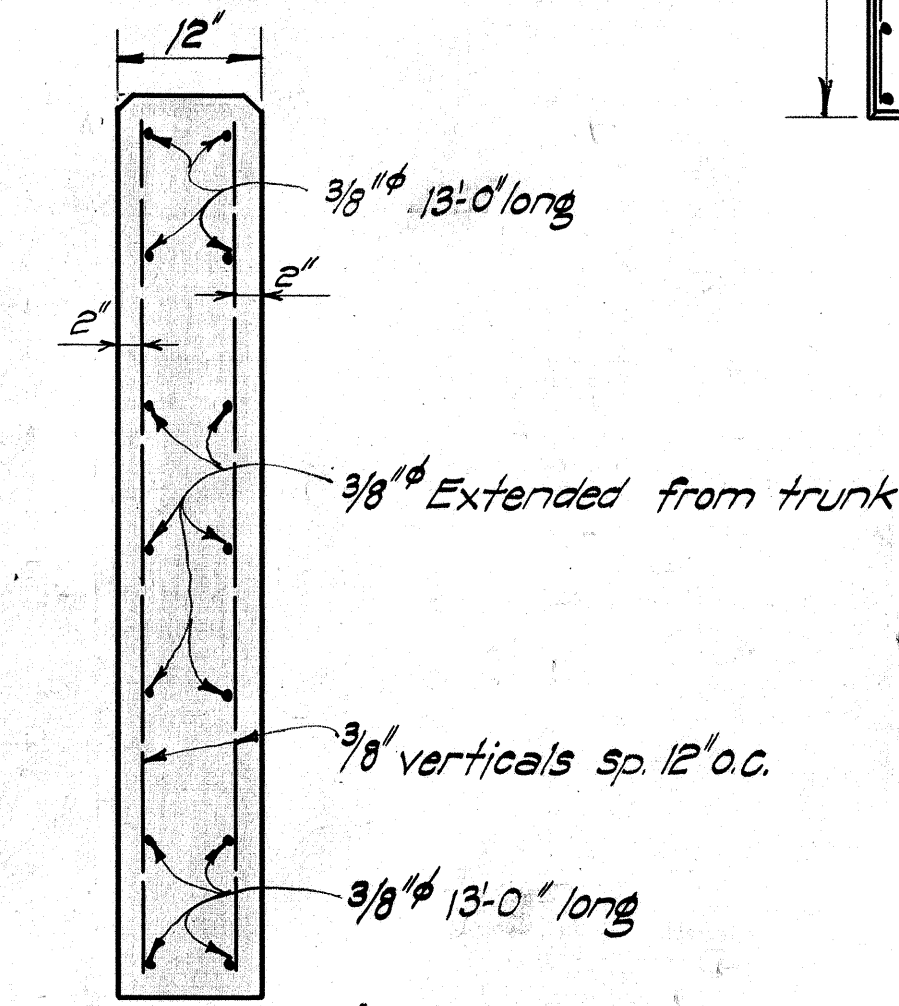
METHOD OF APPLYING WATERPROOFING :-  
FIRST: Mop surface 18" either side of joint with asphalt, 85-100 penetration, applied at 200°F.  
SECOND: Apply one layer of 2 ply roofing paper lapping 12" either side of joint, to hot asphalt; then mop entire surface with a thick coat of hot asphalt as specified above.  
GENERAL NOTES:- All construction joint to be constructed according to details shown on this sheet.  
Bottom construction joints in culverts to be placed at top of fillets only.



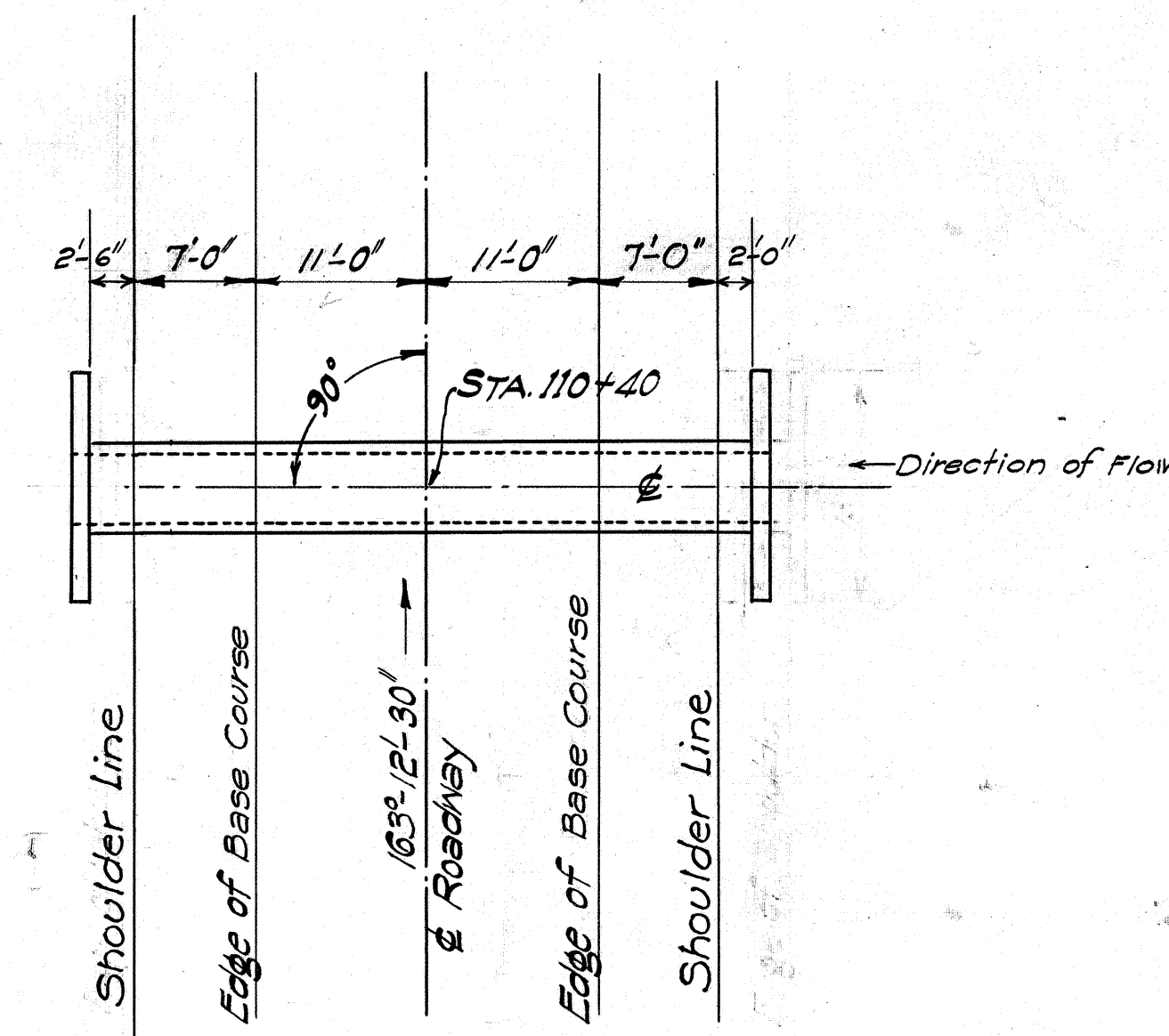
**TYPICAL SECT. THRU TRUNK**  
Scale 3/4"=1'-0"



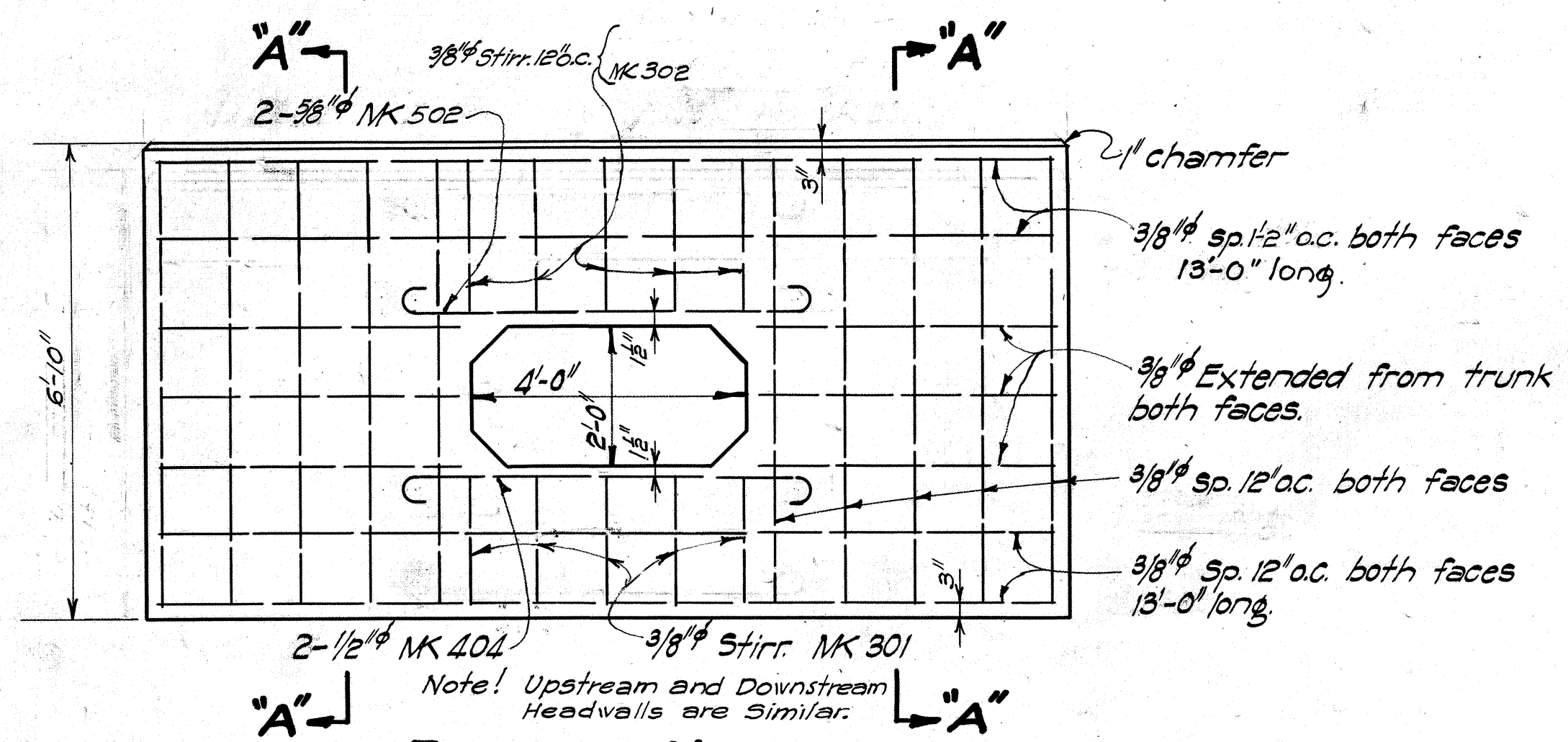
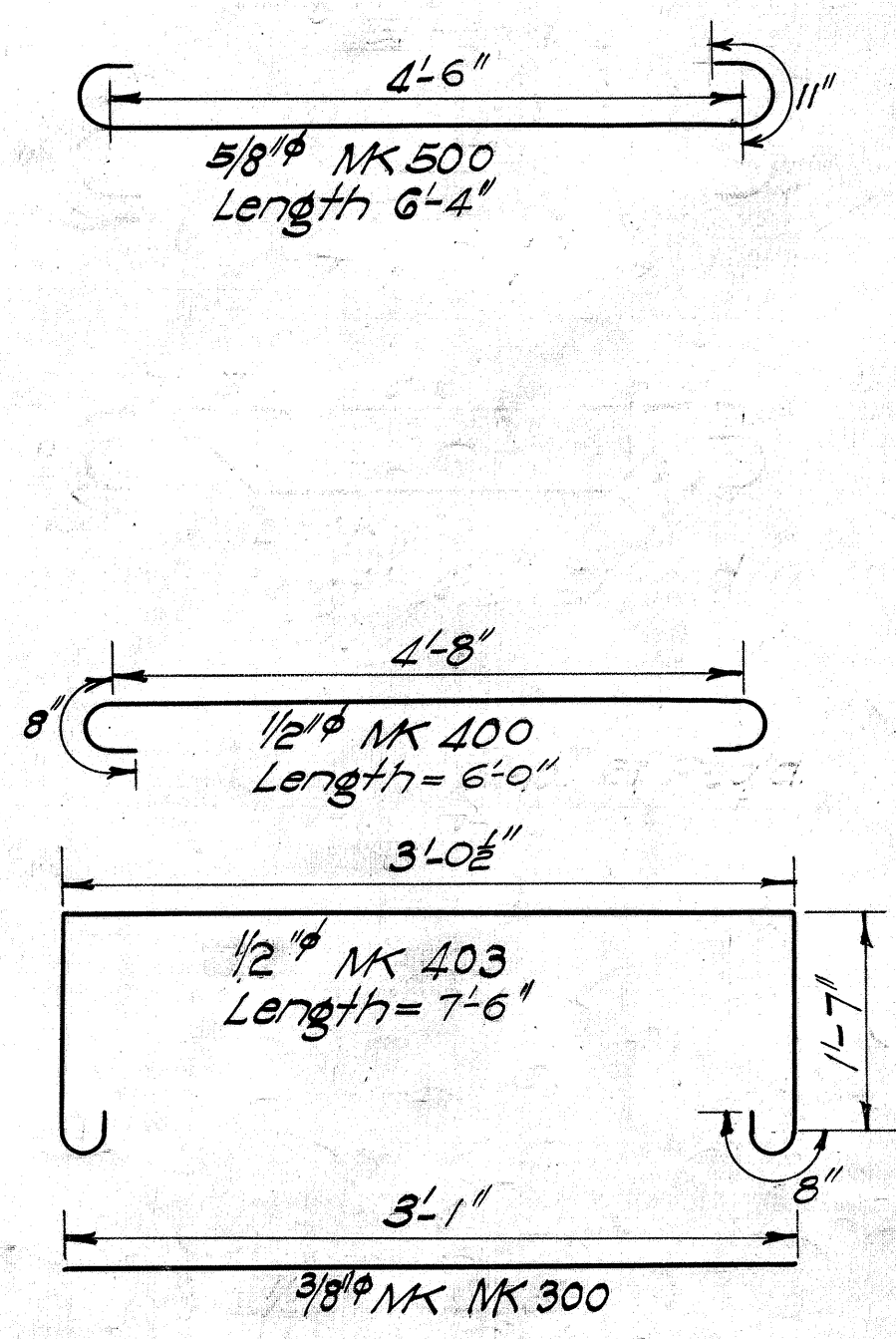
**SECT. THRU HEAD**  
Scale 3/4"=1'-0"



**SECT. 'A-A'**  
Scale 3/4"=1'-0"



**LAYOUT PLAN**  
Scale 1"=10'



**ELEV. OF HEADWALL**  
Scale 1/2"=1'-0"

**ESTIMATE OF QUANTITIES**

|                   |               |
|-------------------|---------------|
| Reinforcing Steel | 2404 lbs.     |
| Class 'A' Conc.   | 21.7 Cu. Yds. |
| Structure Exc.    | 2.5 Cu. Yds.  |
| Channel Exc.      | 3 Cu. Yds.    |

This structure was not built during construction.

TERRITORIAL HIGHWAY DEPARTMENT  
TERRITORY OF HAWAII  
**4'x2' CONC. BOX CULVERT**  
**STA. 110+40**  
**LINE "M"**  
Wahiawa-Maialua Rd. F.A.P. 21-B

The diagram illustrates a plan view of a road cross-section. Key features include:

- Property Line**: The outermost horizontal boundary.
- Shoulder Line**: A horizontal line defining the shoulder width.
- Edge of Base Course**: Two horizontal lines defining the base course width.
- Ditch Section**: A trapezoidal ditch with a bottom width of 19'-3 3/4" and side slopes of 1:1.75 on both sides. The top width at the ditch edge is 4'-0".
- Stationing**: The station number "Sta. 119+51" is indicated near the ditch.
- Angles and Slopes**: Various angles are noted, including 163° 12' 30" (direction of flow), 118° 12' 30", 15° 03 3/4", 9° 10 3/4", and 15° 03 3/4". Slopes are also indicated as 1:1.75 and 1:1.75.
- Dimensions**: Numerous linear dimensions are provided in feet and inches, such as 119'-100" (total length), 114'-0" (shoulder width), 7'-1 1/2" (ditch depth), and 11'-3 3/4" (ditch bottom width).
- Directional Indicators**: Arrows point towards "Honolulu" and "Waialua".
- Handwritten Notes**: "S:1" appears twice on the left margin, and "9x3.27" is written vertically next to the ditch section.

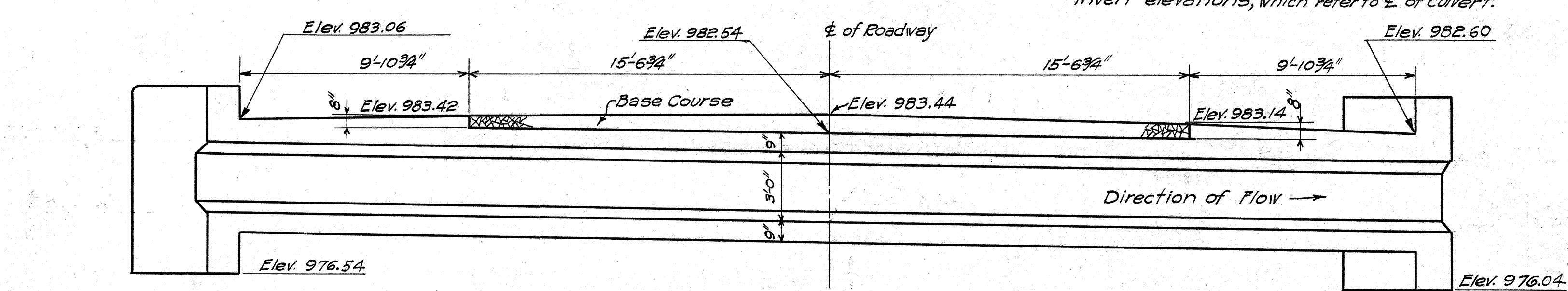
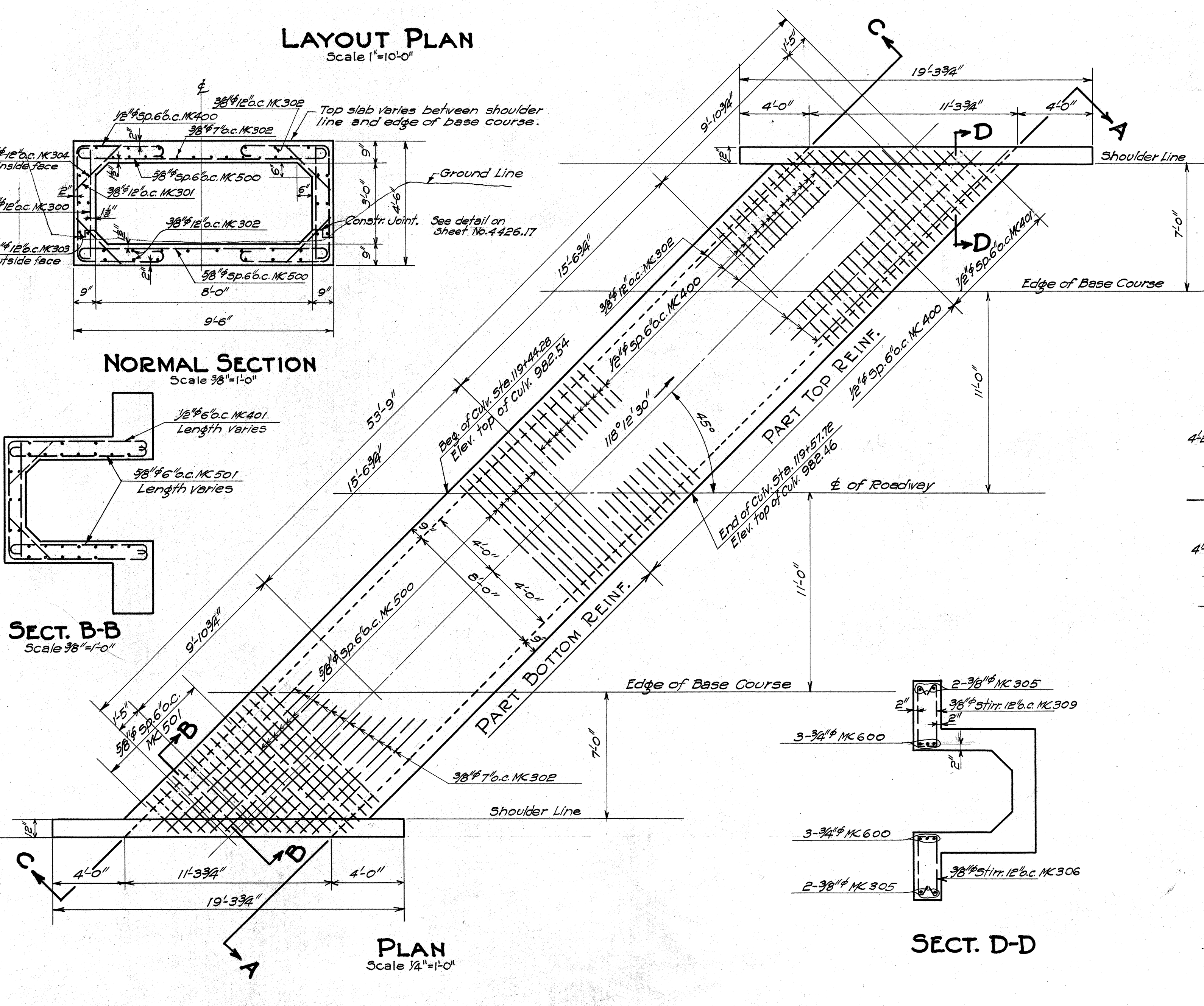
Technical drawing of a square frame structure. The frame is composed of four L-shaped sections joined at the corners. The dimensions and material specifications are as follows:

- Top horizontal section:  $\frac{1}{2} \times 60 \text{ c.c. MC 401}$ , Length Varies
- Right vertical section:  $\frac{3}{8} \times 60 \text{ c.c. MC 501}$ , Length Varies
- Bottom horizontal section:  $\frac{1}{2} \times 60 \text{ c.c. MC 401}$ , Length Varies
- Left vertical section:  $\frac{3}{8} \times 60 \text{ c.c. MC 501}$ , Length Varies

The drawing includes a detail view of a corner joint, showing the intersection of two sections with a cross-section of the material.

Technical drawing of a concrete foundation for a wall. The drawing shows a cross-section of the foundation with various reinforcement bars (rebar) and dimensions.

- Dimensions:**
  - Overall width: 9'-6"
  - Overall height: 9'-0"
  - Top slab thickness: 12"
  - Base course thickness: 12"
  - Foundation width (excluding top slab): 8'-0"
  - Foundation height (excluding top slab): 8'-0"
- Reinforcement:**
  - Top slab: #12 bars, 12" o.c. (on center) MK 302
  - Base course: #12 bars, 12" o.c. MK 302
  - Foundation top: #12 bars, 12" o.c. MK 301
  - Foundation bottom: #12 bars, 12" o.c. MK 302
  - Foundation sides: #10 bars, 12" o.c. MK 300
  - Foundation corners: #12 bars, 12" o.c. MK 303
- Notes:**
  - Top slab varies between shoulder line and edge of base course.
  - Ground Line
  - Constr. Joint.
  - See detail on sheet No. 4426.17



Structural drawing of a rectangular culvert with a central oval opening. The drawing shows reinforcement details including top and bottom bars (2-3/8" MK 305), stirrups (3/8" stirr. 12" o.c. MK 309), and side bars (3/8" 12" o.c. MK 307). It also indicates a shoulder line, elevation points (Elev. 985.10, 984.86, 976.54, 976.46), and a culvert elevation of 979.01. A note mentions "Long 4' bars from culvert wall".

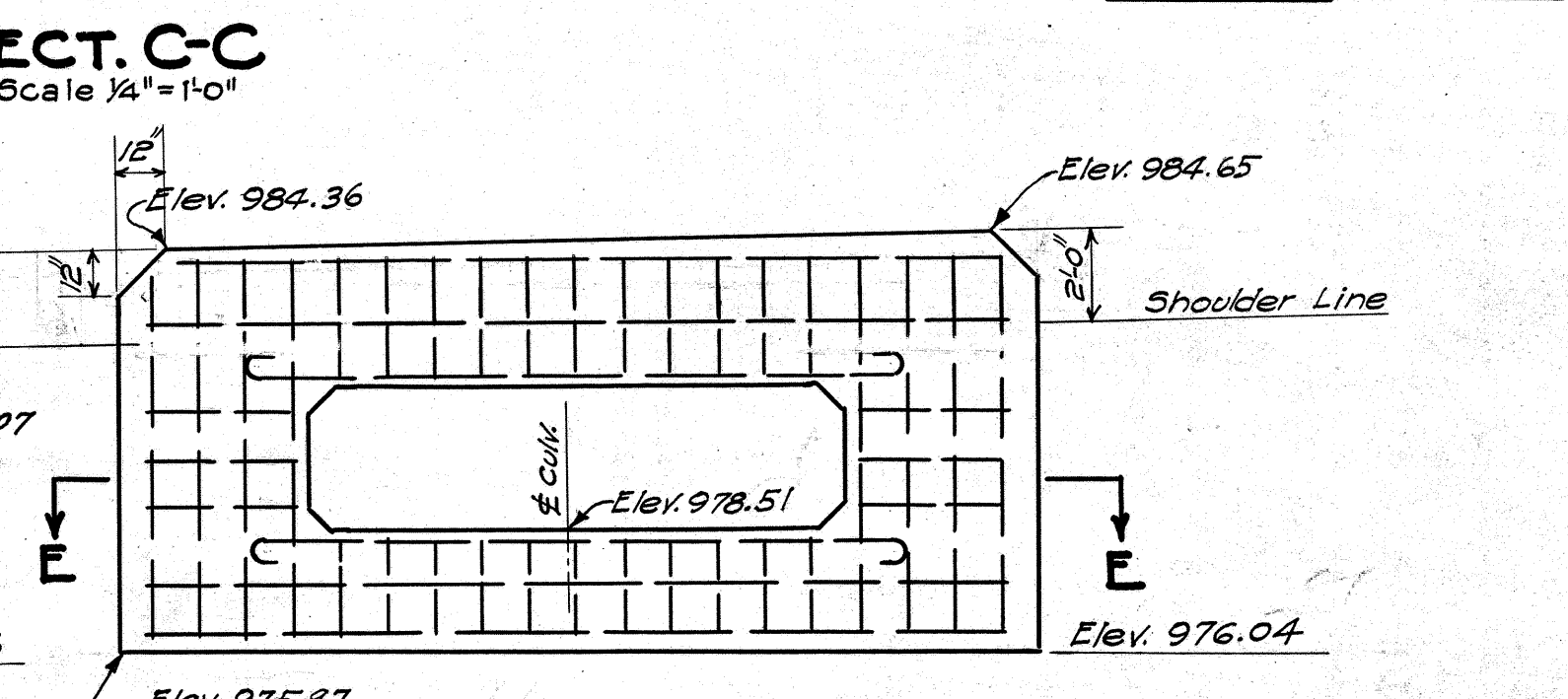
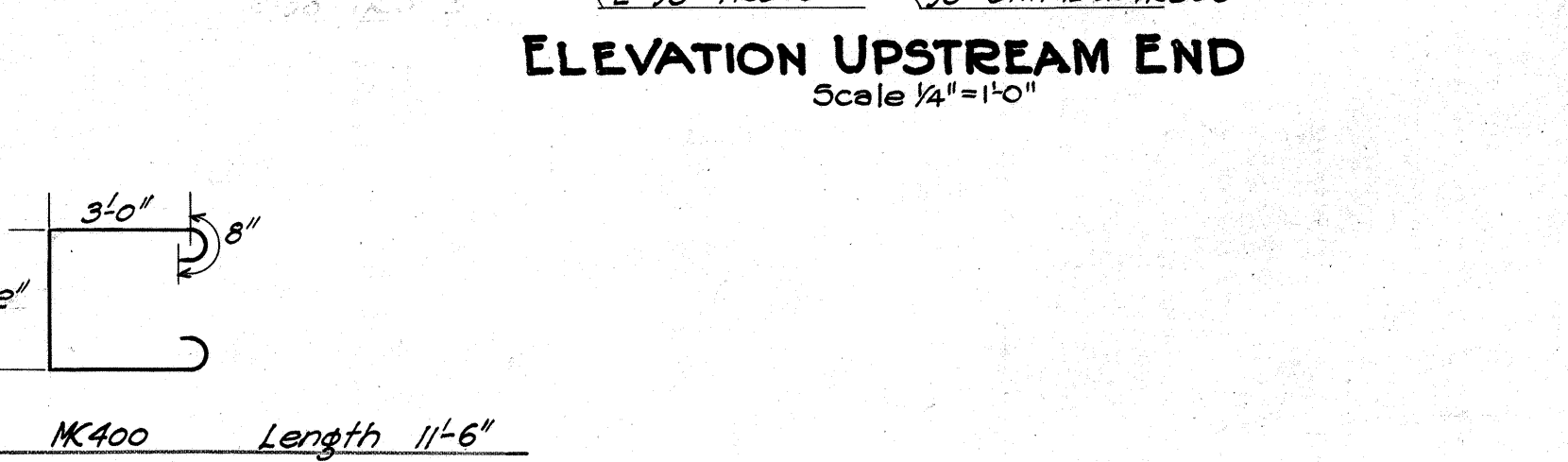
**ELEVATION UPSTREAM END**  
Scale  $\frac{1}{4}" = 1'-0"$

3'-0"

2'-0"

8"

MK400 Length 11'-6"



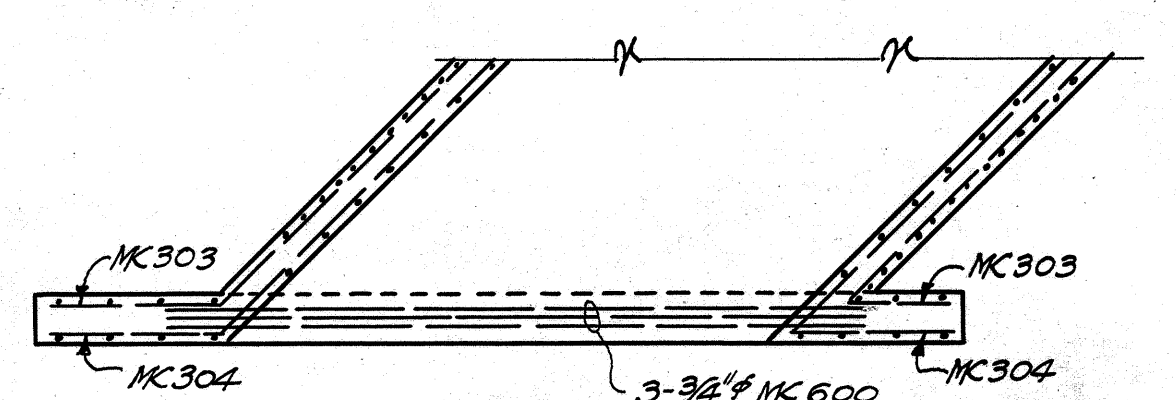
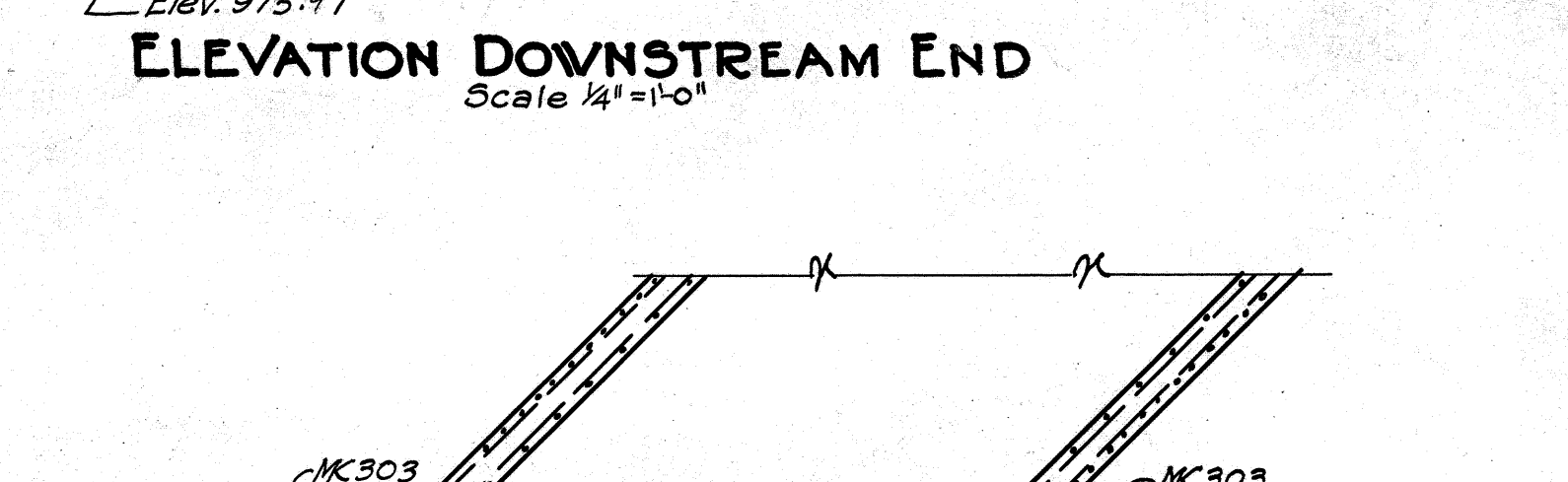
Elev. 975.47

**ELEVATION DOWNSTREAM END**

Scale 1/4" = 1'-0"

MK 303

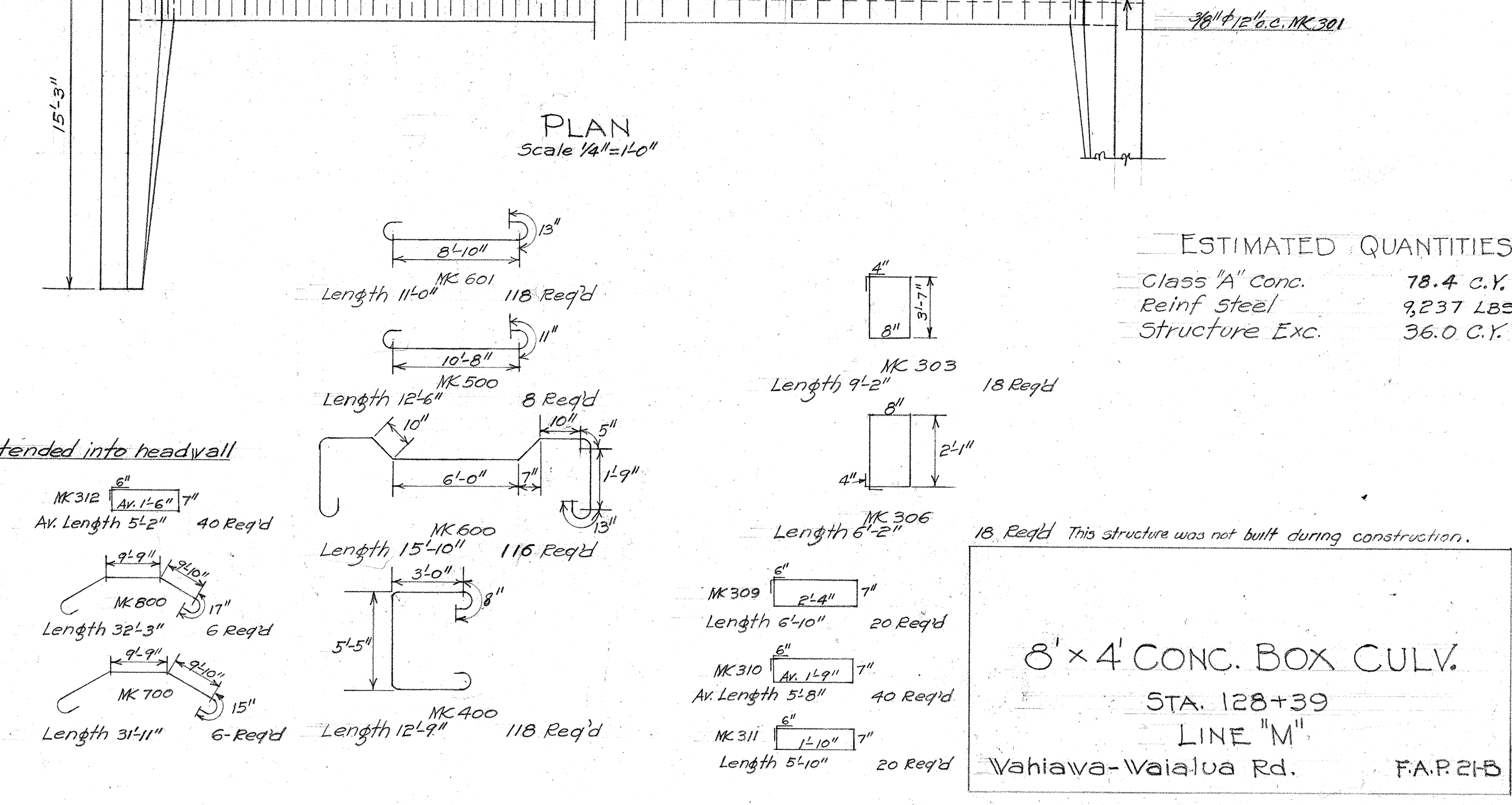
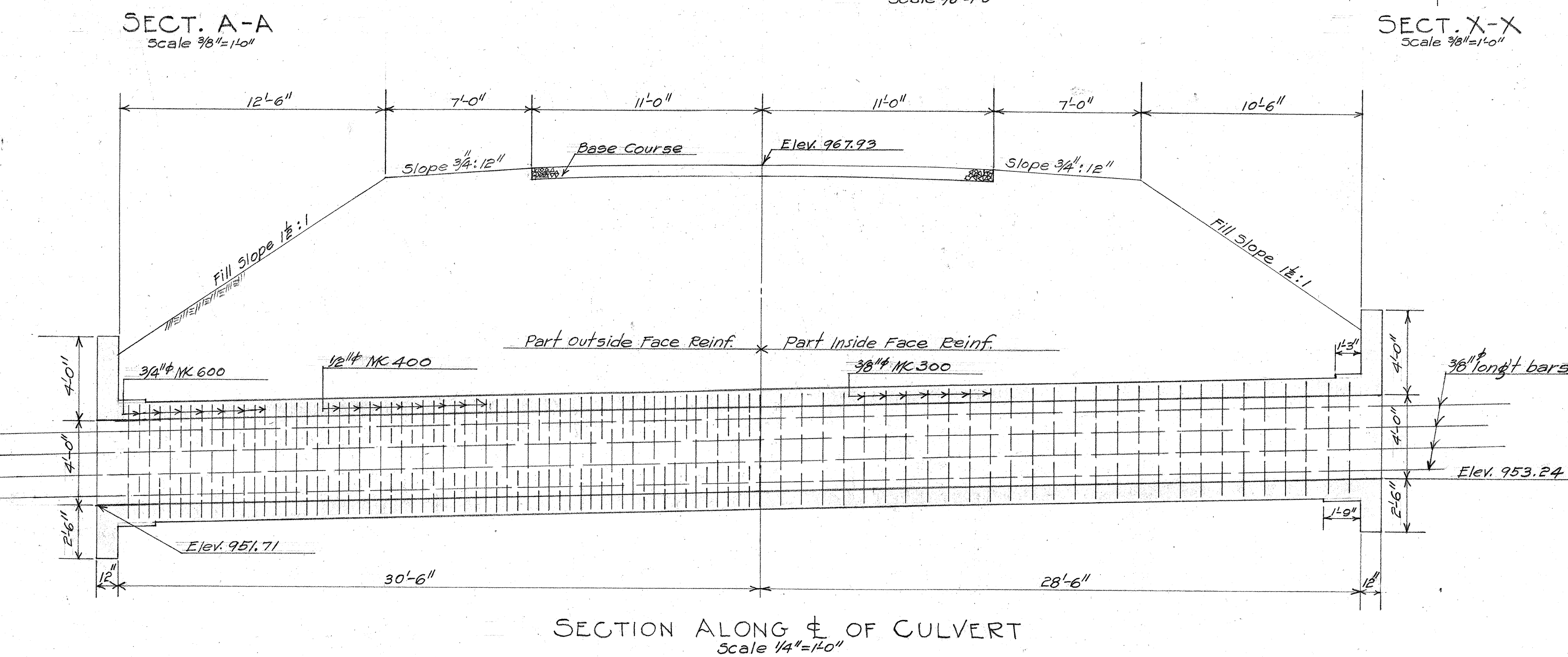
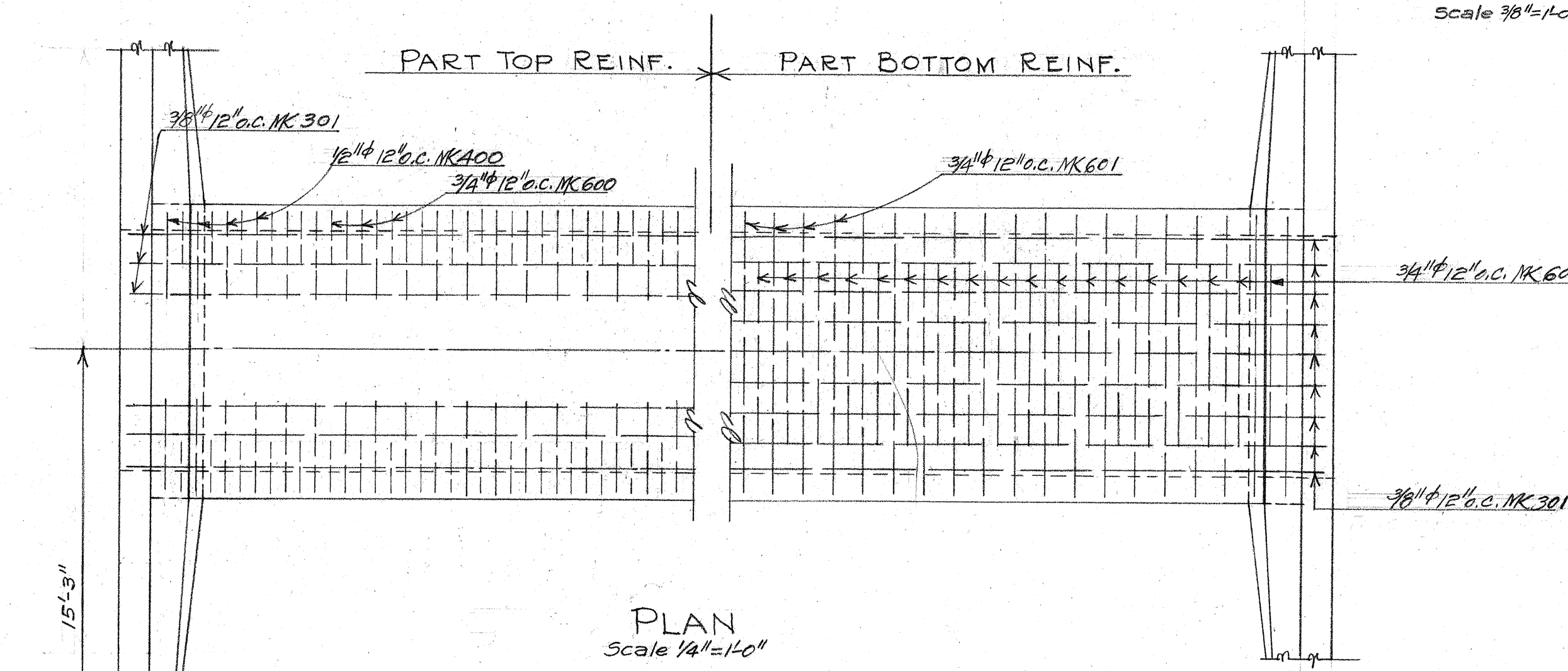
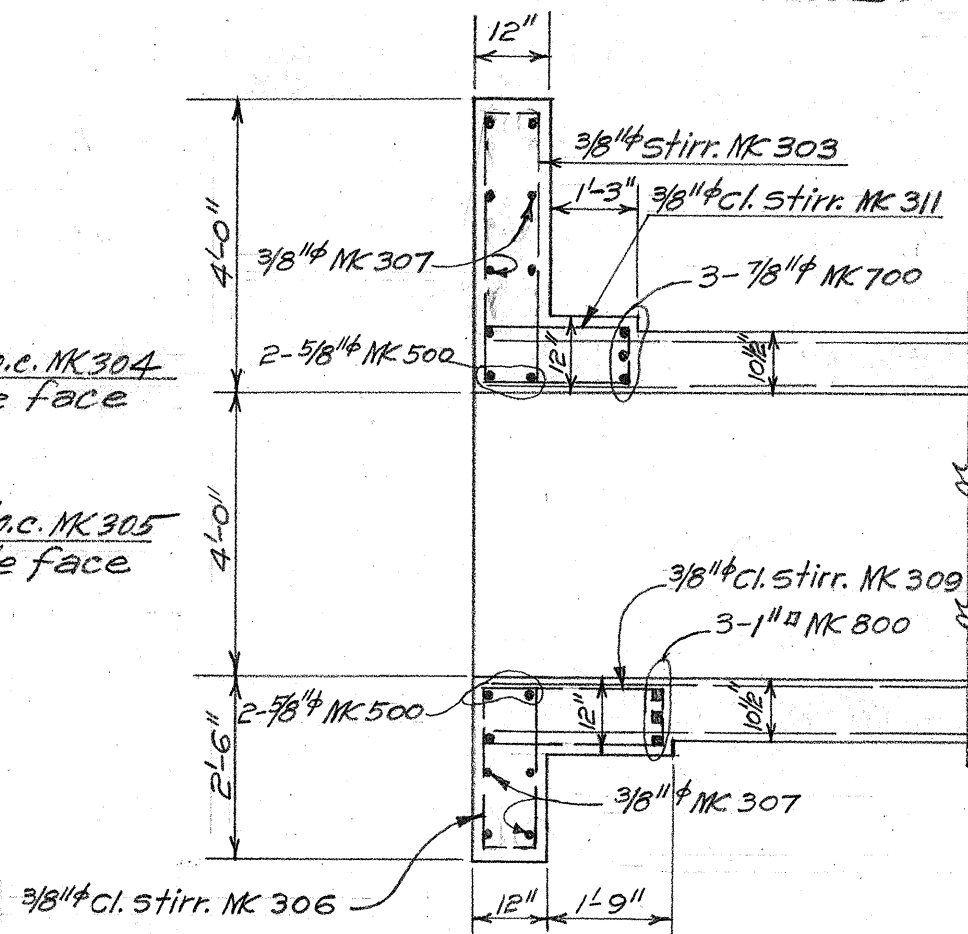
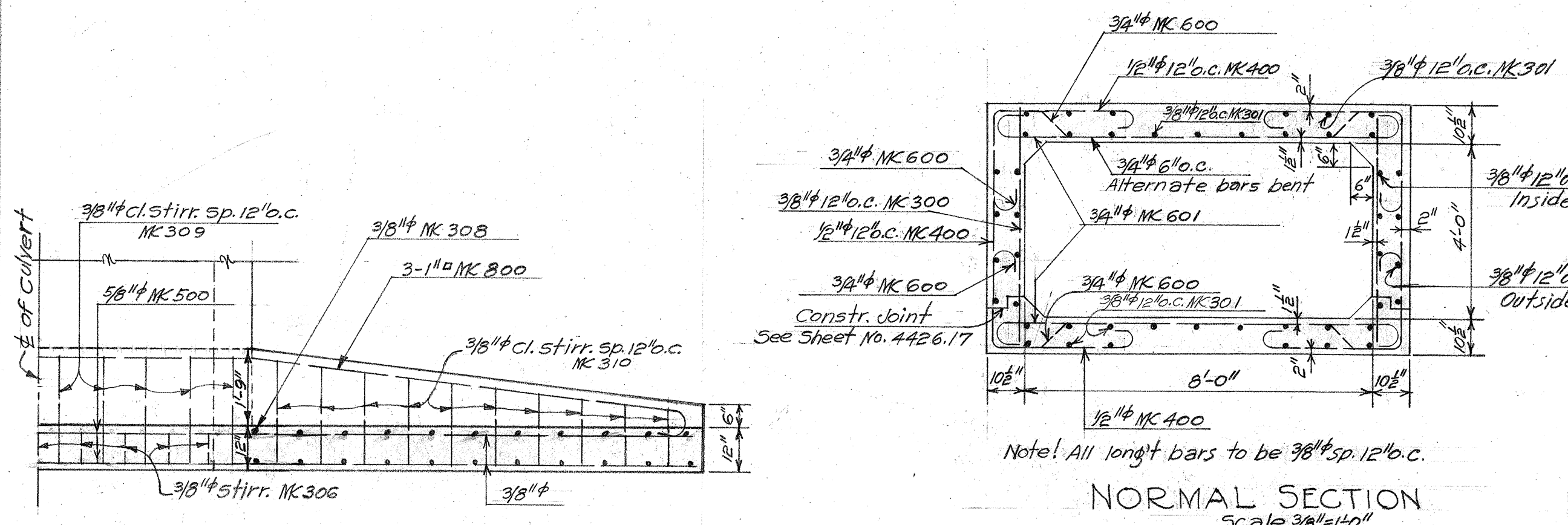
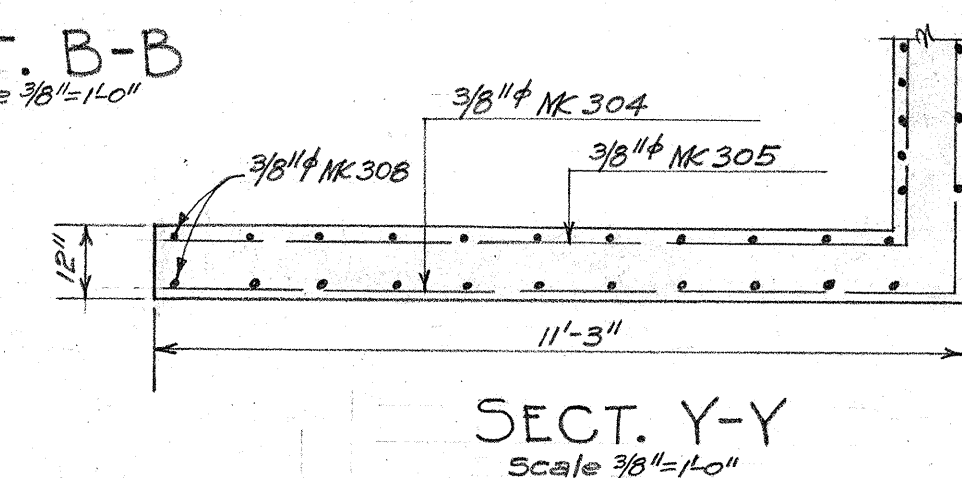
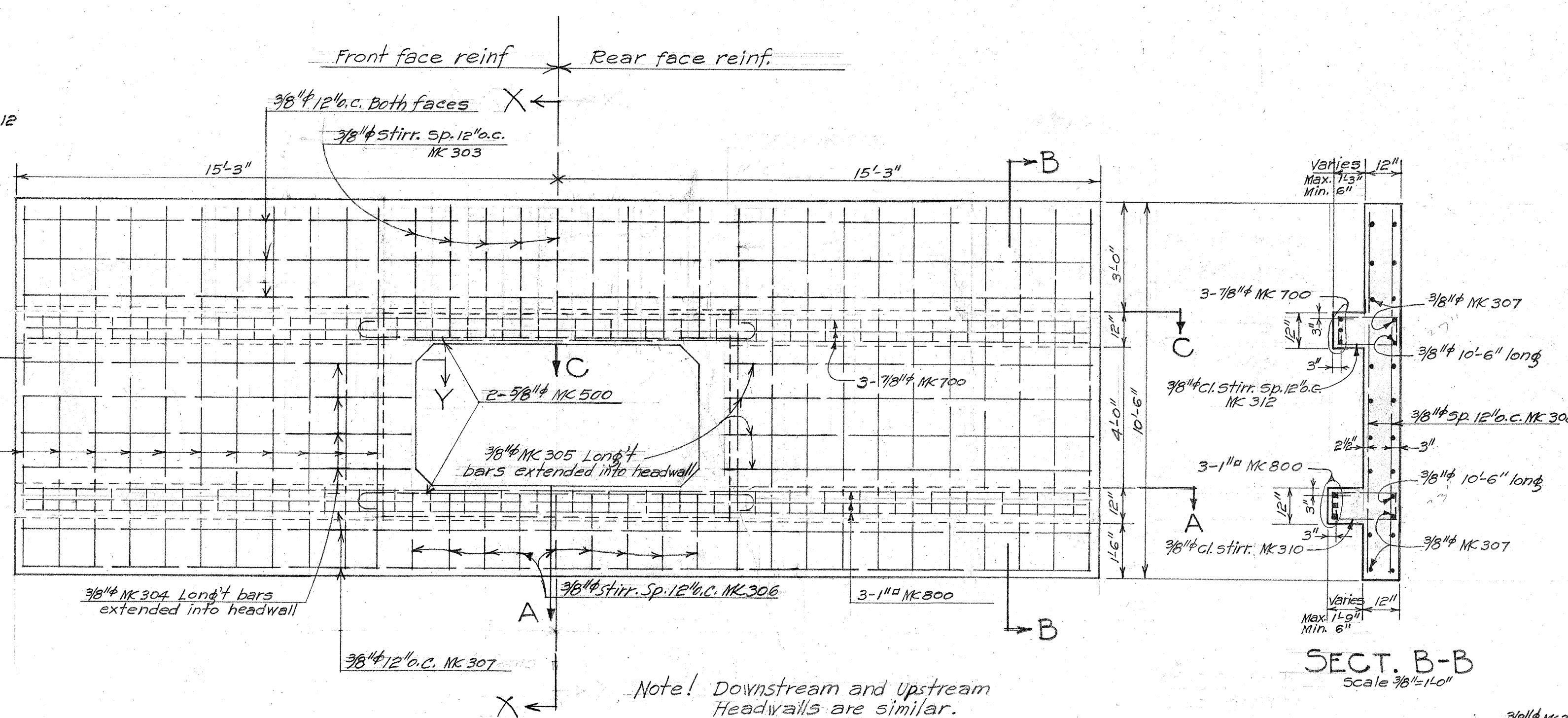
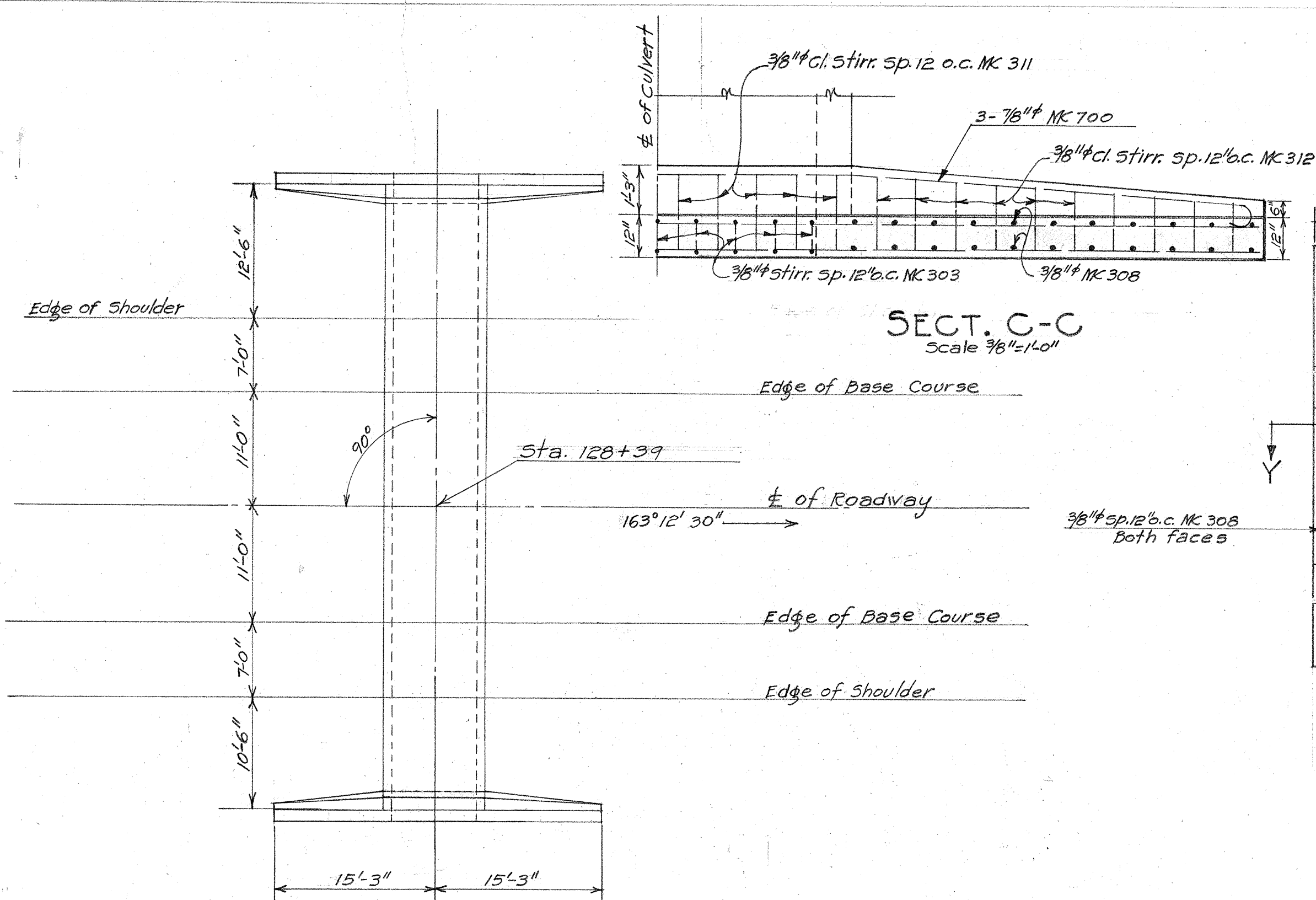
MK 302



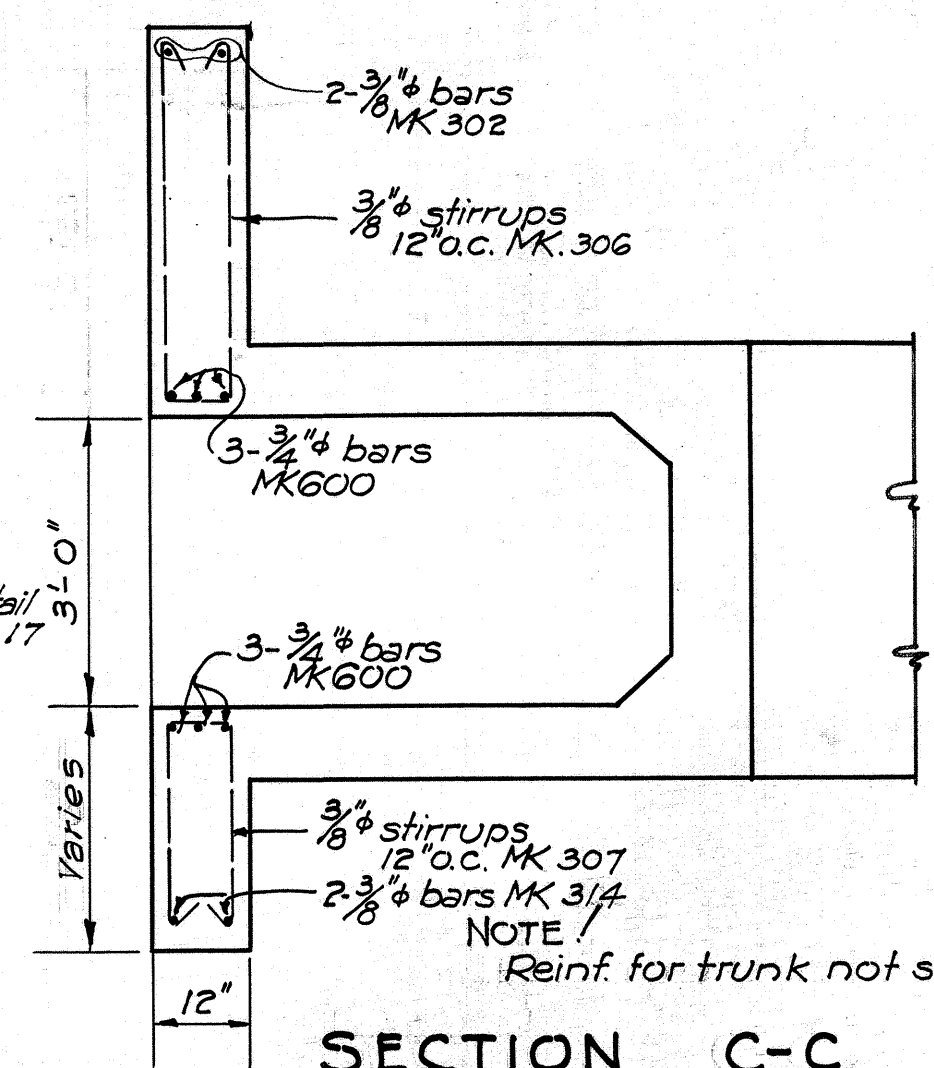
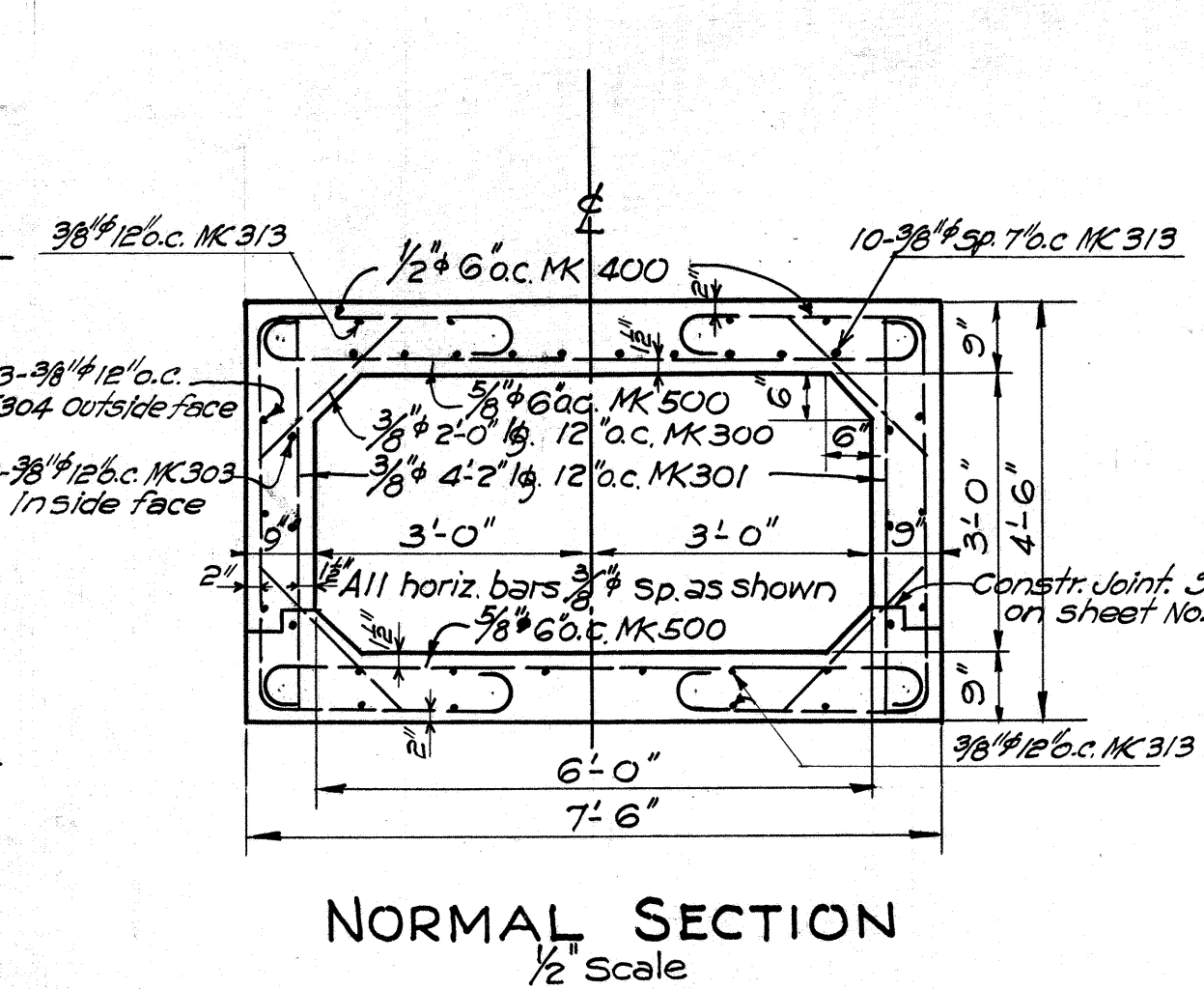
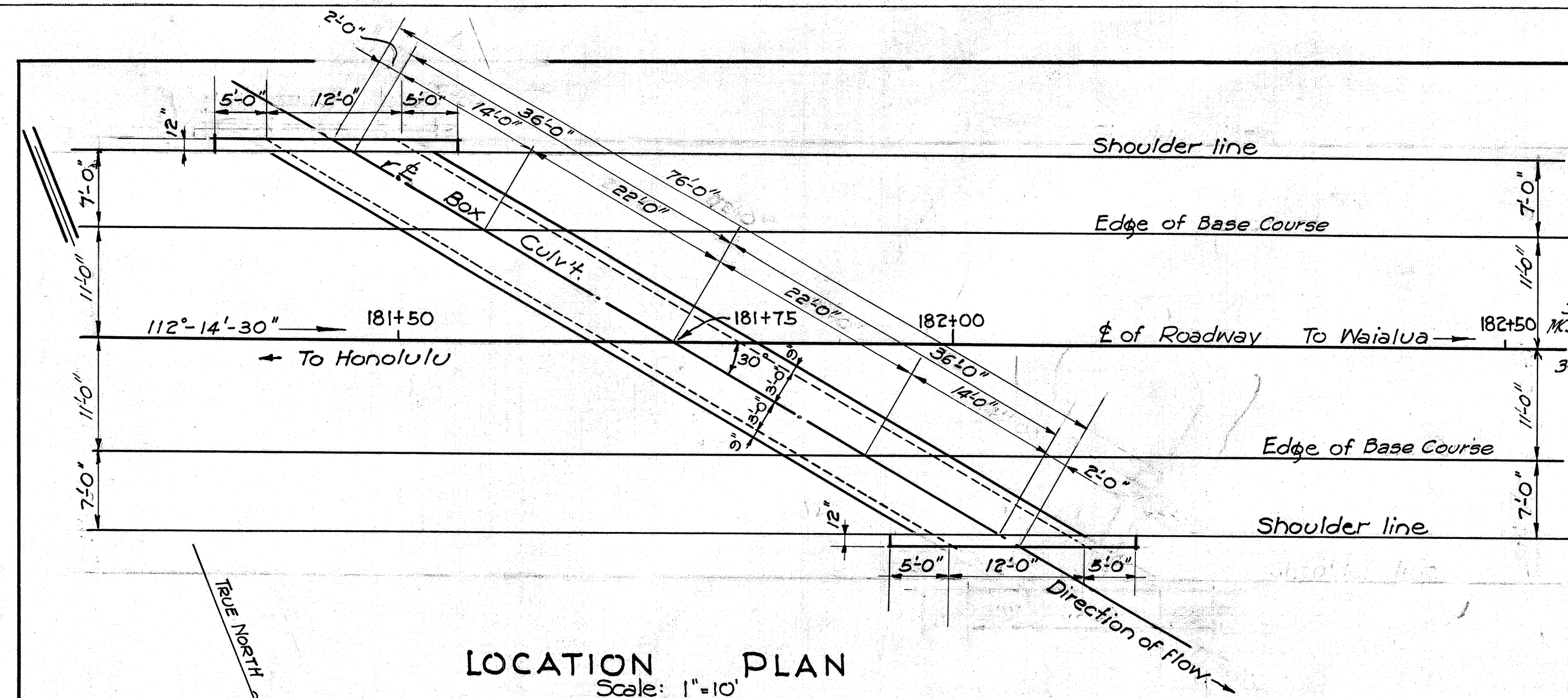
SECT. E-E  
Scale 1/4"=1'0"

*This structure was not built during construction.*

SHEET N<sup>o</sup> 1 OF 1 SHEETS

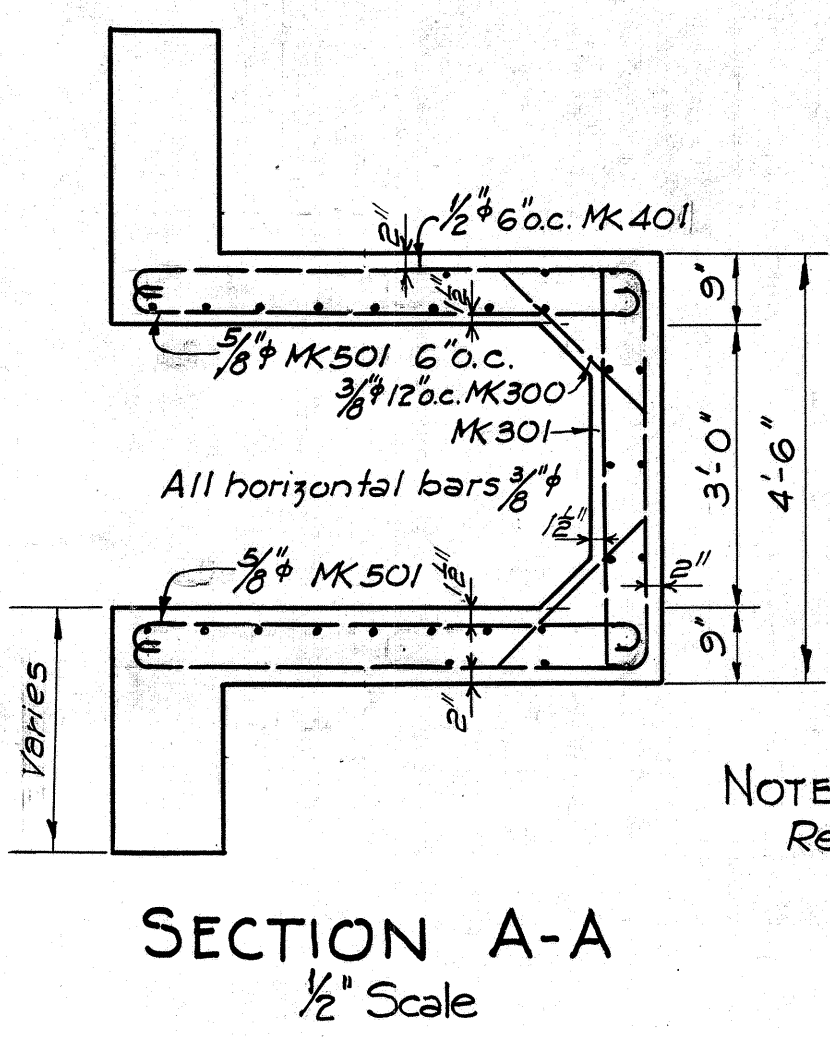
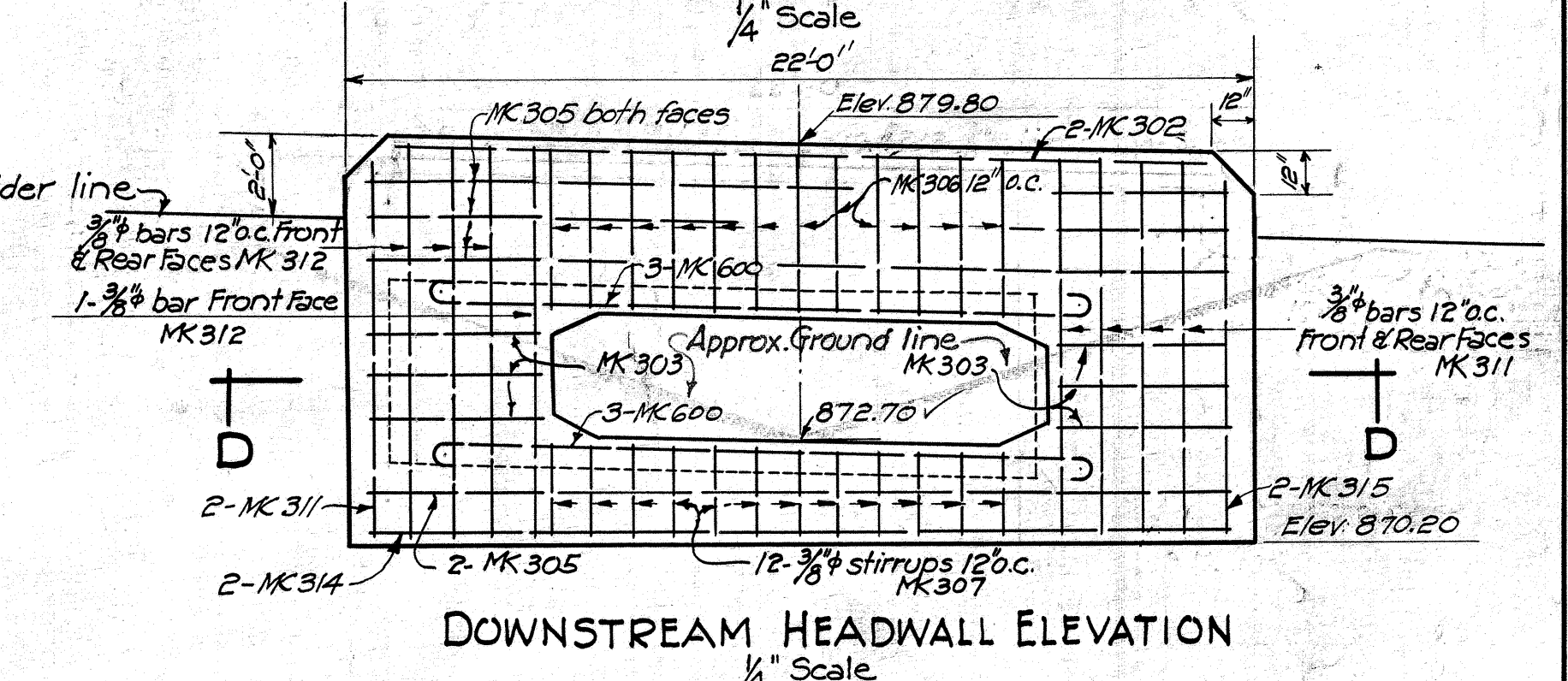
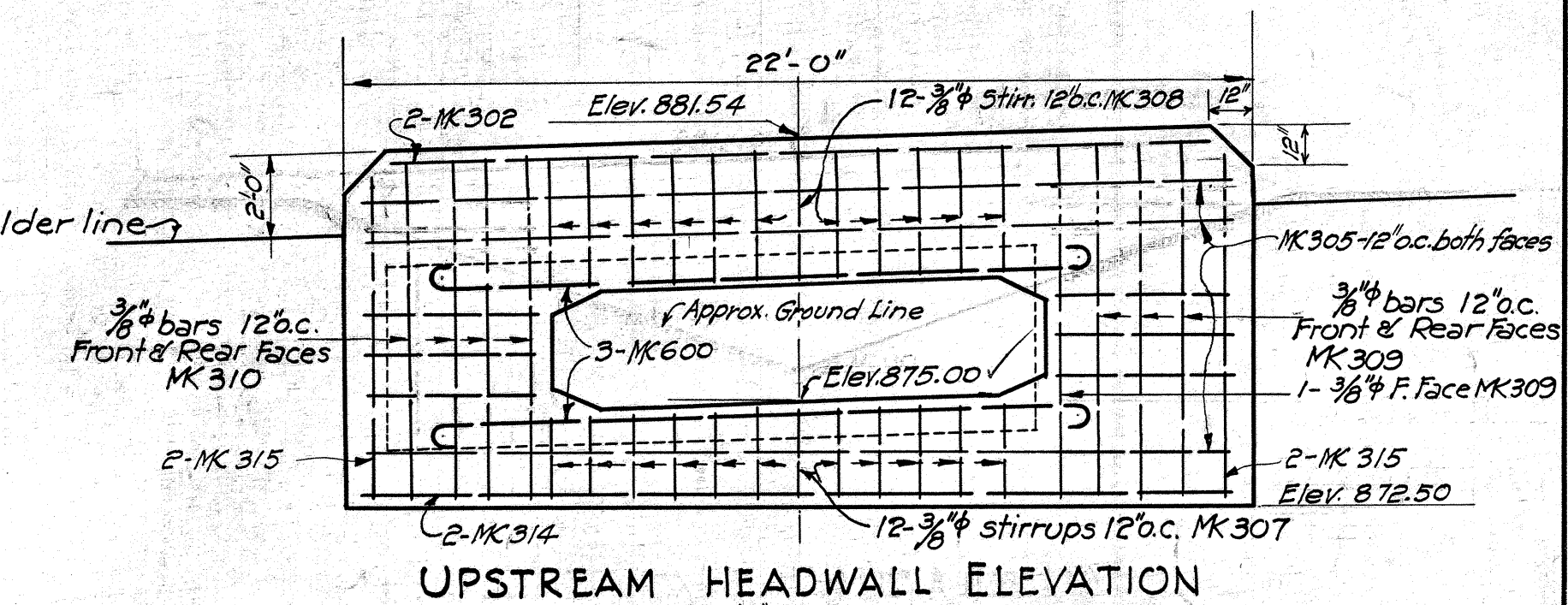
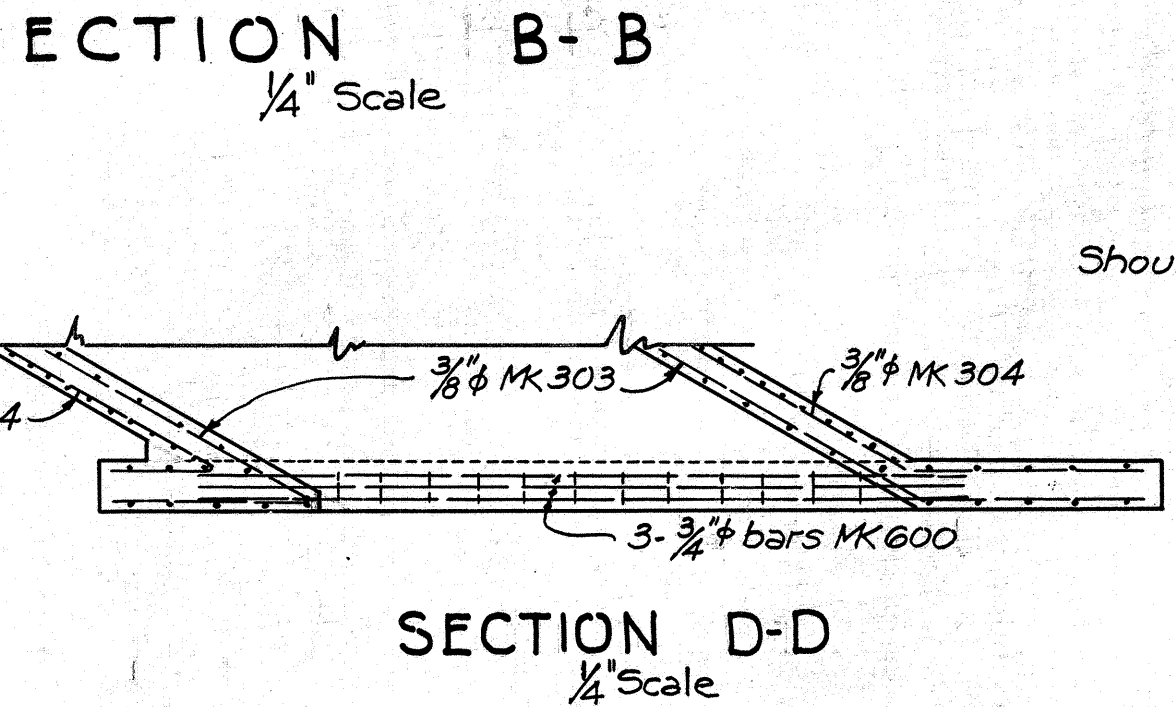
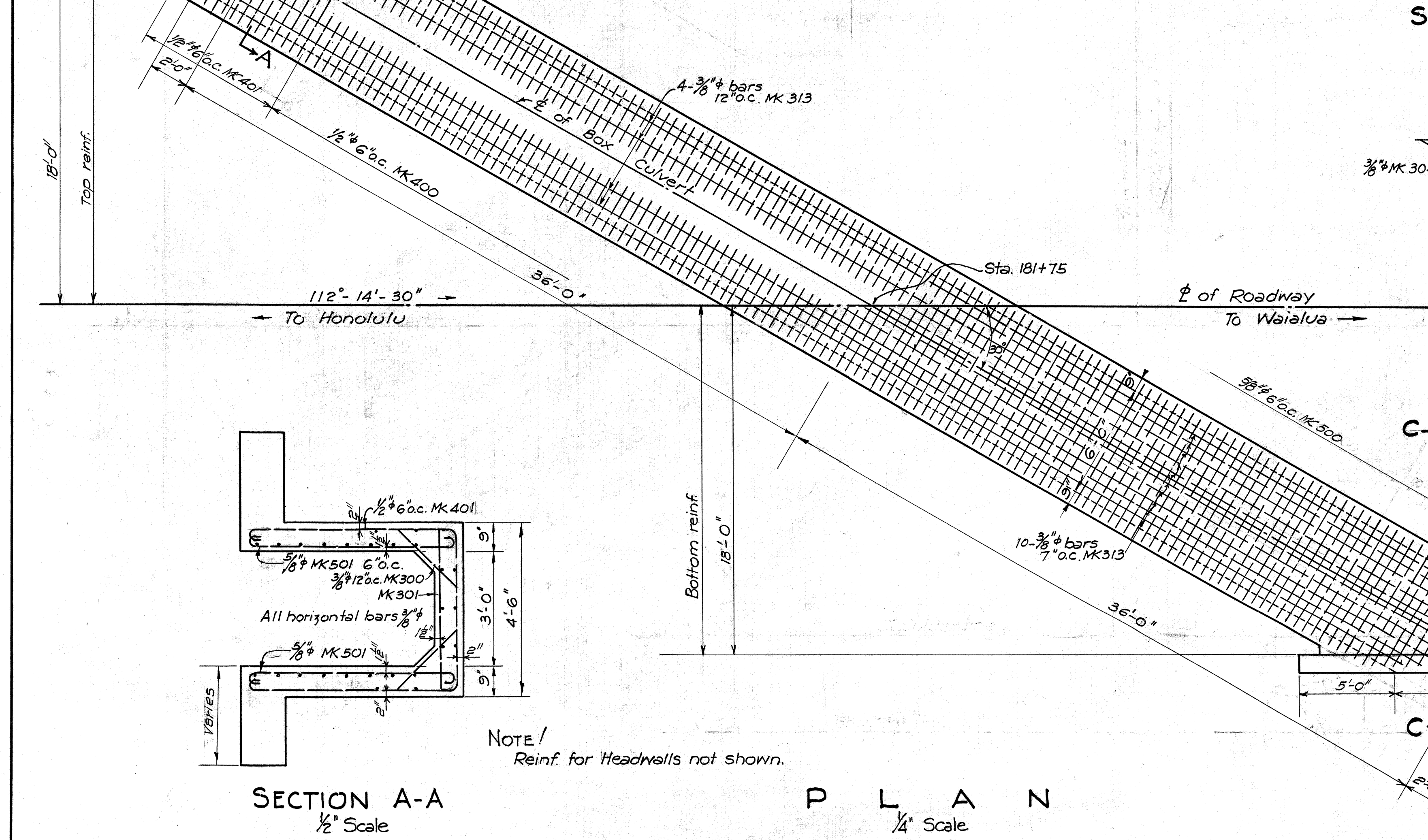
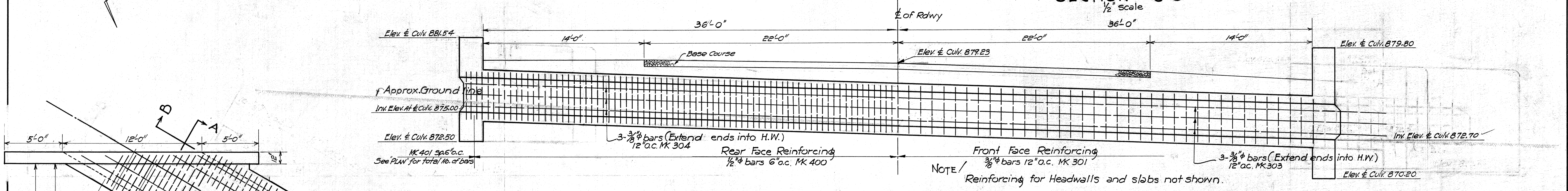


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW   | 21-B               | 1937        | 20        | 42           |



ESTIMATED QUANTITIES

|                       |       |      |
|-----------------------|-------|------|
| STRUCTURAL EXCAVATION | 86    | C.Y. |
| CHANNEL               | 50    | C.Y. |
| CLASS "A" CONCRETE    | 56    | C.Y. |
| REINF. STEEL          | 6,824 | lbs. |



TERRITORIAL HIGHWAY DEPARTMENT  
TERRITORY OF HAWAII

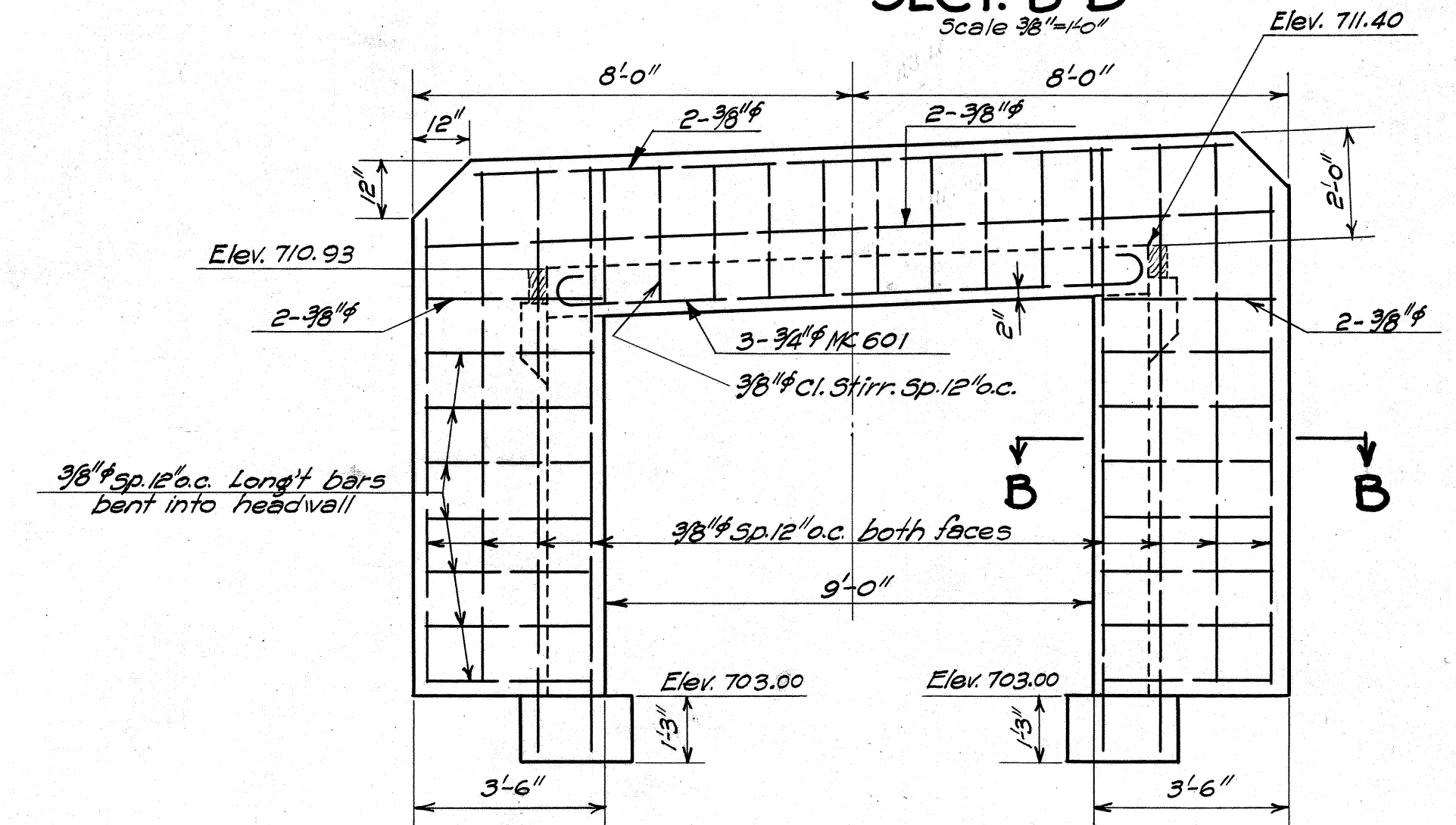
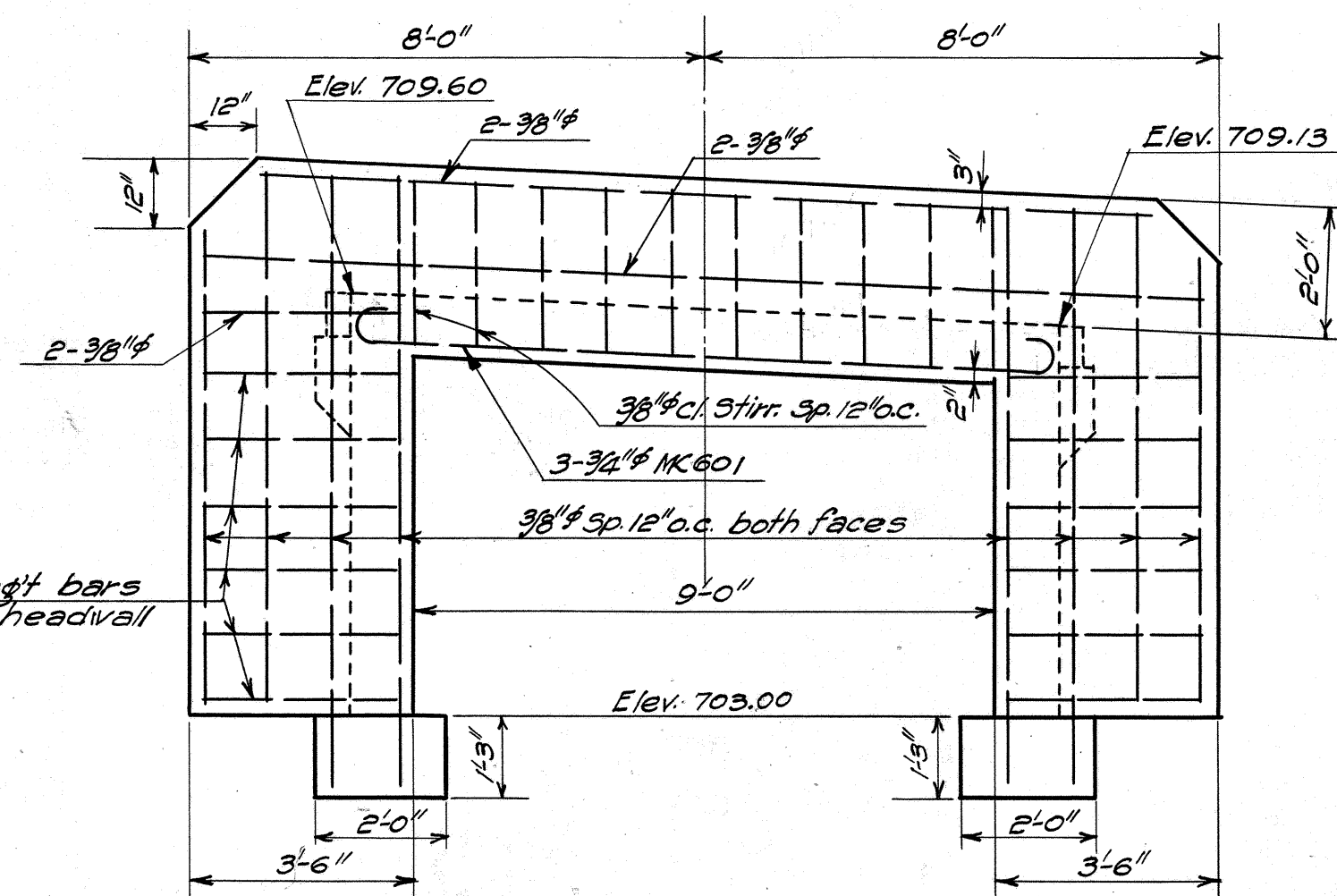
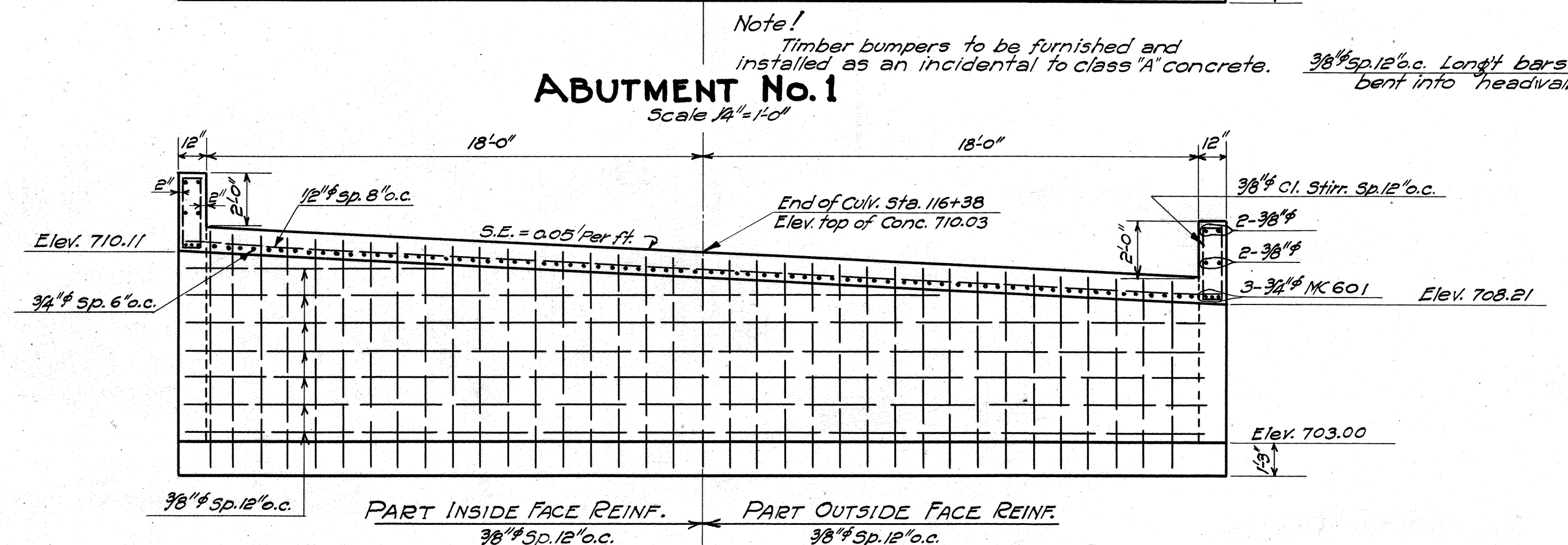
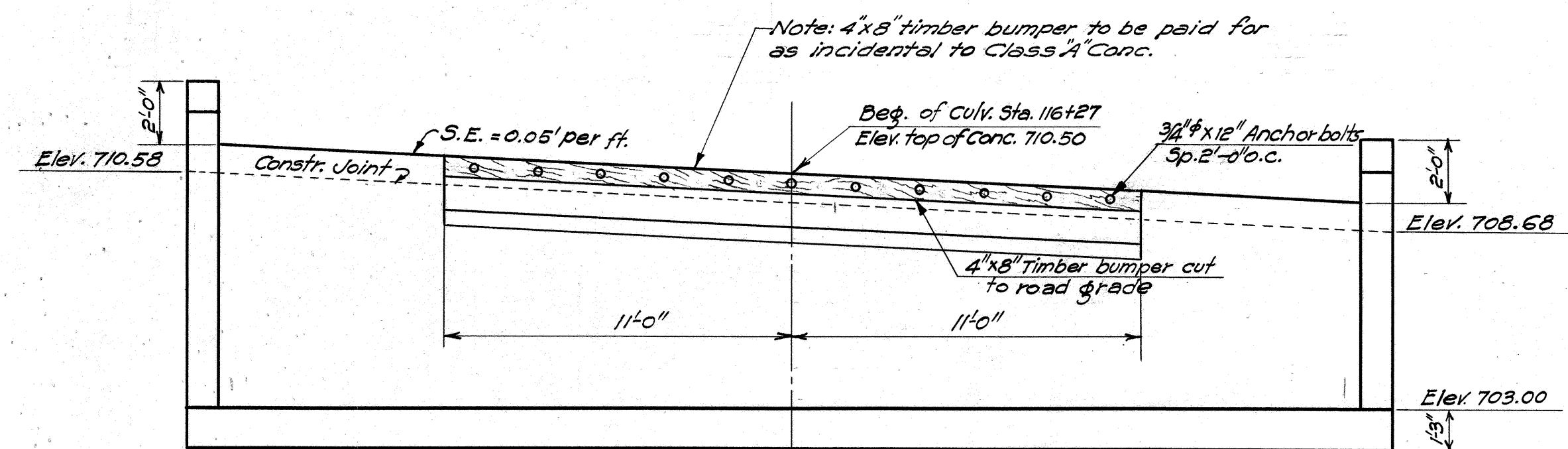
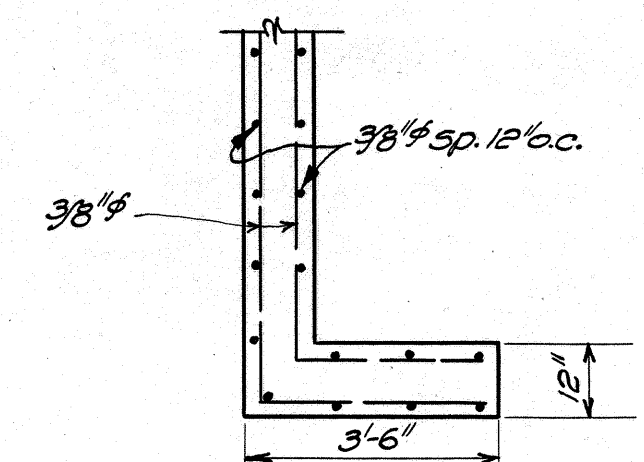
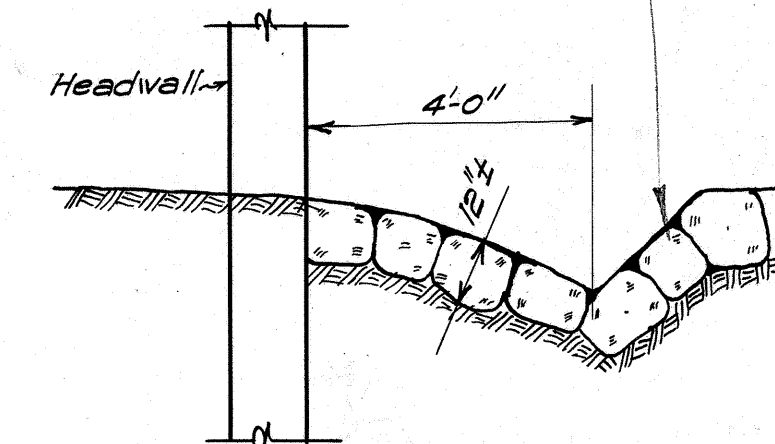
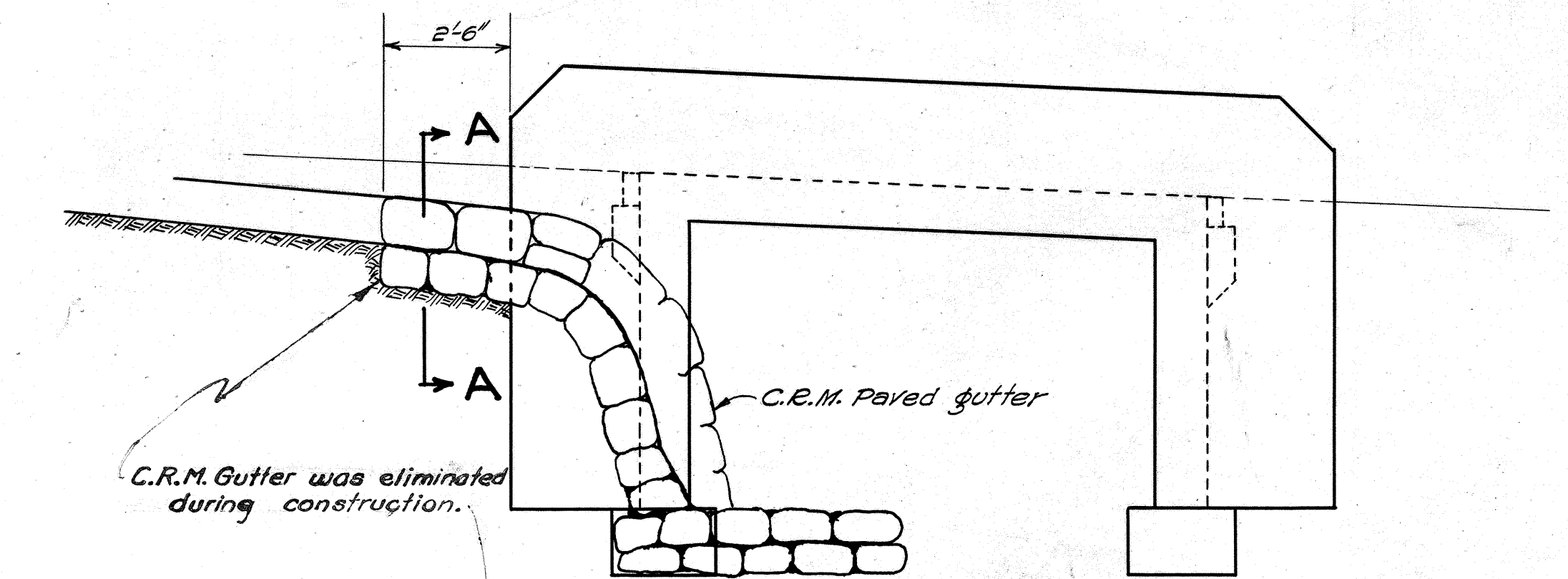
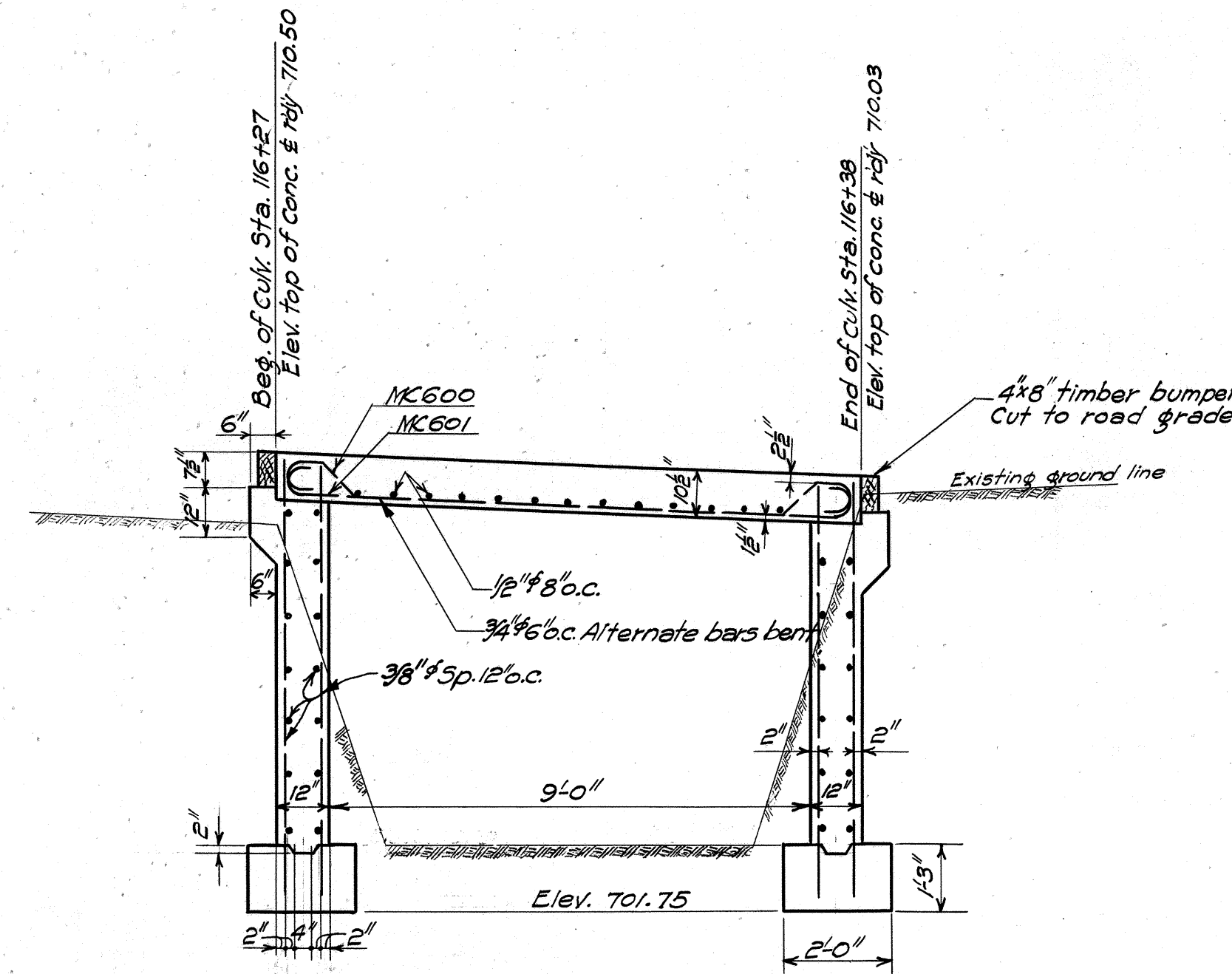
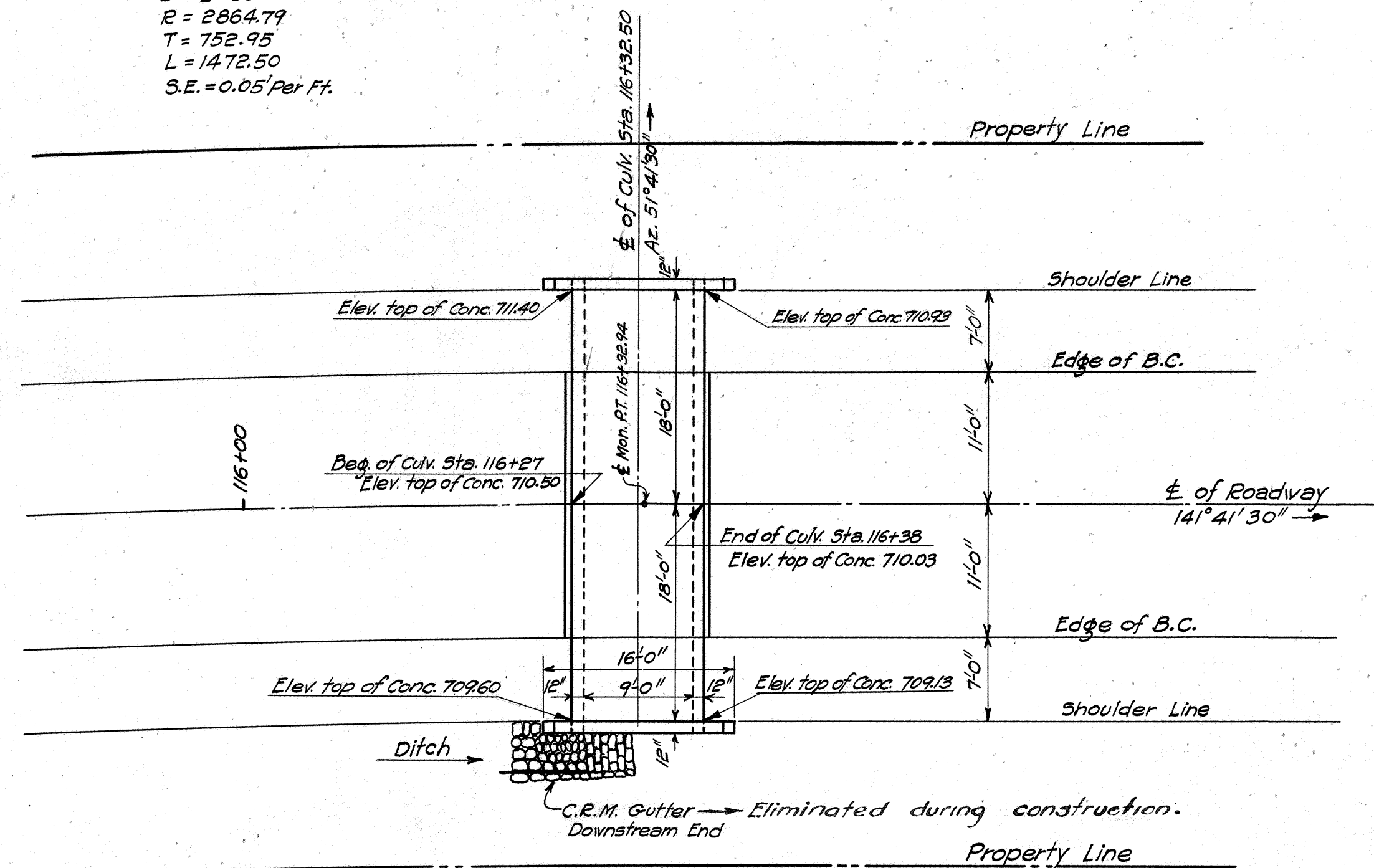
**6'X3' BOX CULVERT**  
AT STA. 181+75  
Wahiawa Waialua Road  
July 1936

F.A.P. 21-B

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW   | 21-B               | 1937        | 21        | 42           |

# CURVE DATA

$\Delta = 29^{\circ}27'$   
 $D = 2^{\circ}00'$   
 $R = 2864.79$   
 $T = 752.95$   
 $L = 1472.50$   
 $S.E. = 0.05 \text{ per ft.}$



## ESTIMATED QUANTITIES

|                       |               |
|-----------------------|---------------|
| Class A Concrete      | 45.0 Cu. Yds. |
| Reinf. Steel          | 2,875 LBS.    |
| Structural Excavation | 95 Cu. Yds.   |
| Channel Excavation    | 18 Cu. Yds.   |
| C. R. M. Paving       | 0 - Cu. Yds.  |

TERRITORIAL HIGHWAY DEPARTMENT  
 TERRITORY OF HAWAII  
**9'x6' FLAT SLAB CULVERT**  
 STA. 116+32.50  
 LINE P  
 WAHIAWA-WAIALUA ROAD F.A.P. 21-B  
 DATE: Sept 1937      SCALES: As noted

SHEET No 1 OF SHEETS

4426.21

|                       |            |
|-----------------------|------------|
| SURVEY PLOTTED BY     | DATE       |
| DESIGNED BY           | Sept. 1937 |
| DRAWN BY              |            |
| CHECKED BY            |            |
| QUANTITIES CHECKED BY |            |
| CHECKED BY            |            |
| ORIGINAL PLAN         |            |
| NOTE BOOK             |            |
| No.                   |            |