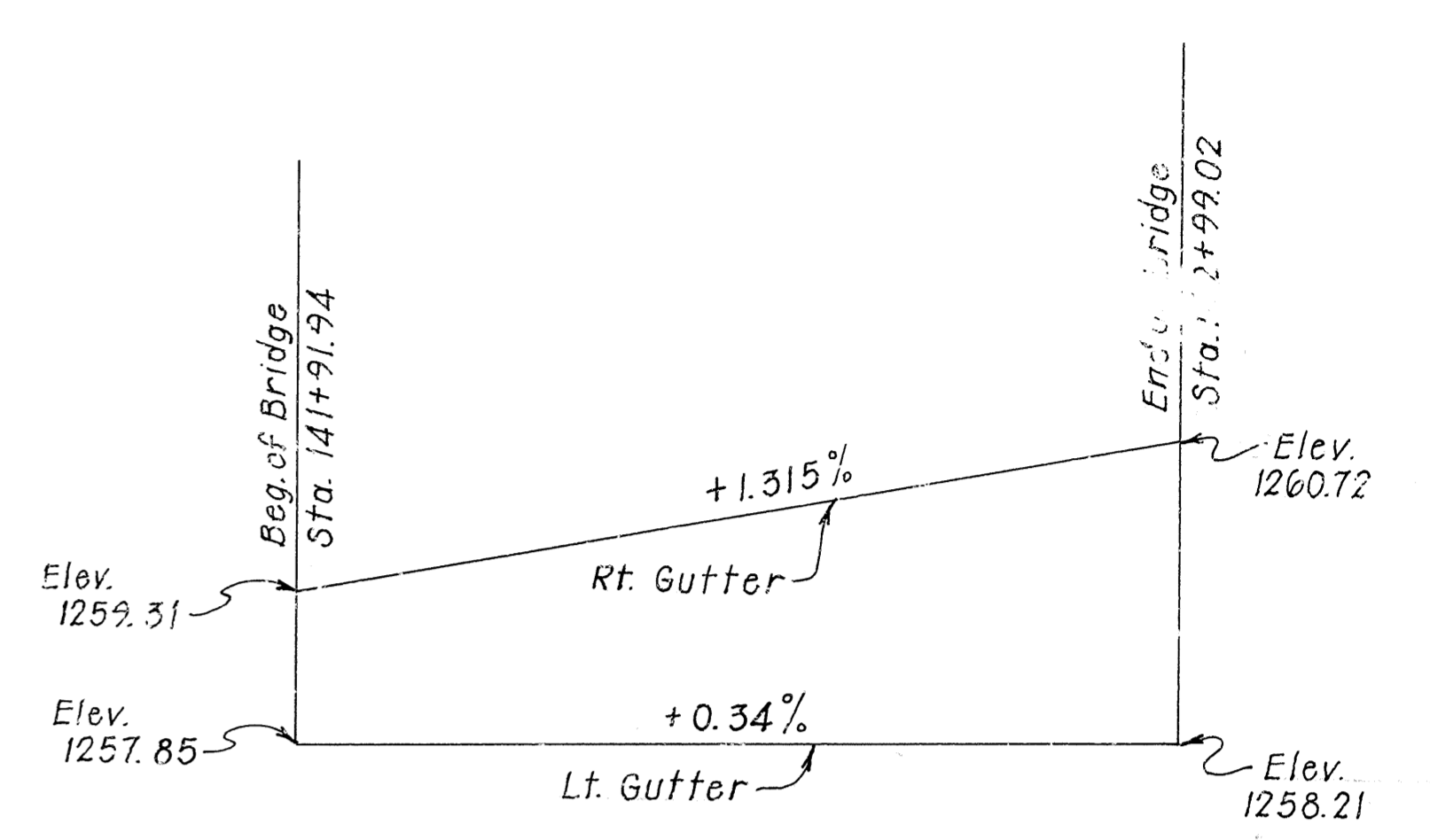


| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             |                     |       | JOB NO. 9582       | 3         | 80           |
|              |             |              |             |                     |       | 6341 LAYOUT        | 30621     |              |



### METHOD OF SUPERELEVATION TRANSITION

No SCALE

#### GENERAL NOTES

BENCH MARK: Chiseled square in SW corner of bridge of Smyrna Creek painted white 12' left of centerline Sta. 141+92, Elev. 1257.48.

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction, 1988 edition, with applicable supplemental specifications and special provisions.

DESIGN SPECIFICATIONS: AASHTO Standard Specifications for Highway Bridges, 1983 with current interim specifications.

LIVE LOADING: HS20 METHOD OF DESIGN: Load Factor

MATERIALS AND STRENGTHS:

|  |                 |
|--|-----------------|
| Class S (A5) Concrete (superstructure)   | f'c = 4,000 psi |
| Class S Concrete (substructure)          | f'c = 3,500 psi |
| Reinforcing Steel (A615 or A617, GR. 60) | Fy = 60,000 psi |
| Structural Steel (A588)                  | Fy = 50,000 psi |
| Structural Steel (A36)                   | Fy = 36,000 psi |

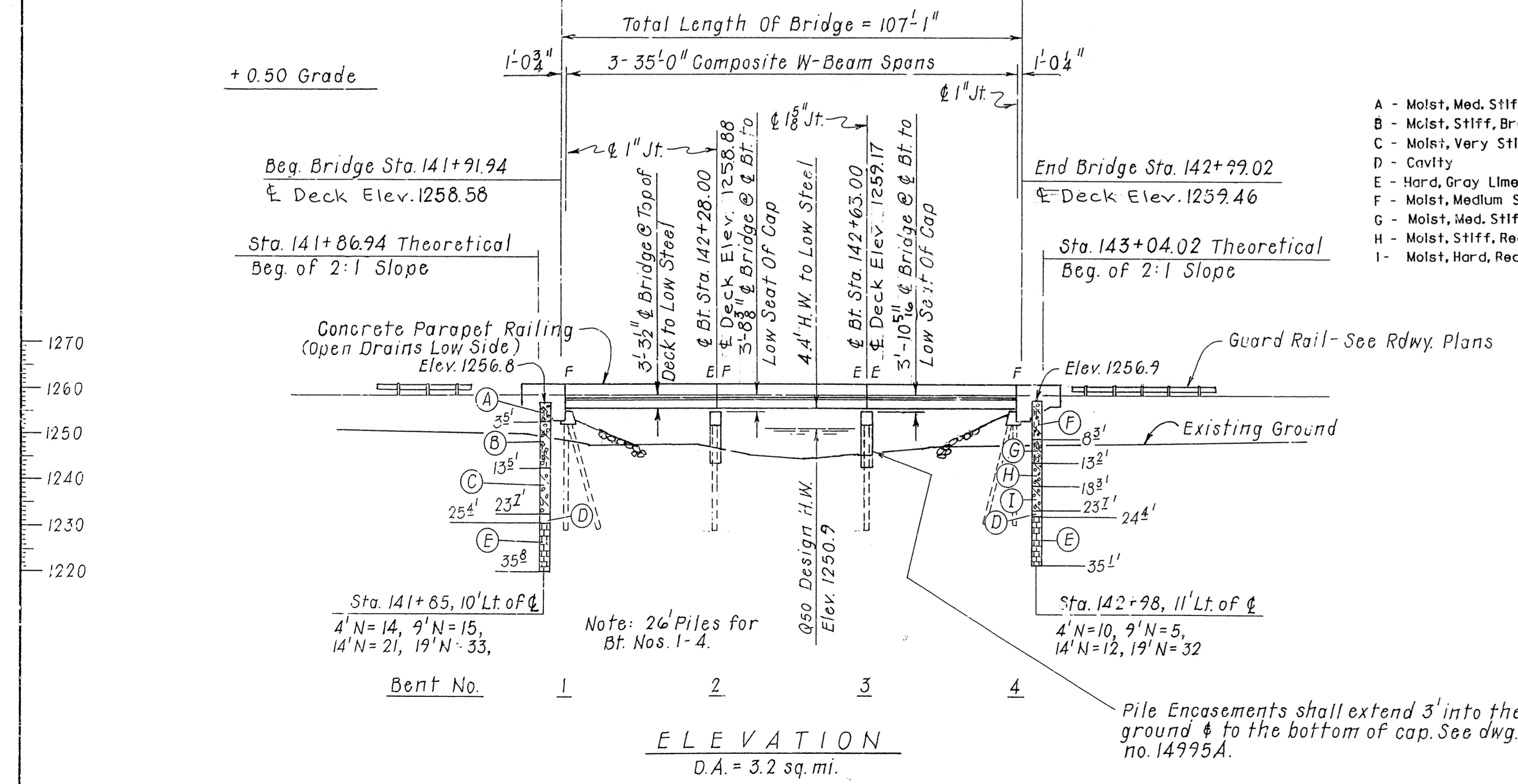
BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

STEEL PILING: Piling in Bents 1 thru 4 shall be HP10x42 and shall be driven with an approved air, steam, or diesel hammer to a min. safe bearing capacity of 55 tons per pile and into the material designated as hard, gray limestone as shown on the boring legend. Lengths shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the specifications. Piles in end bents to be driven after embankment to bottom of cap is in place.

BRIDGE DECK: The concrete bridge deck shall be given a time finish as specified for final finishing in subsection 802.20 for Class 5 Bridge Roadway Surface Finish.

#### BORING LEGEND

- A - Moist, Med. Stiff, Brown Silty Clay with Cherty Limestone Cobbles and Fragments
- B - Moist, Stiff, Brown and Gray Silty Clay with Cherty Limestone Fragments
- C - Moist, Very Stiff to Hard, Reddish Brown and Gray Cherty Clay
- D - Cavity
- E - Hard, Gray Limestone
- F - Moist, Medium Stiff to Stiff, Brown and Gray Silty Clay with Sandstone and Chert Fragments
- G - Moist, Med. Stiff, Brown and Gray Silty, Sandy Clay with Sandstone and Chert Fragments
- H - Moist, Stiff, Reddish Brown and Gray Cherty Clay
- I - Moist, Hard, Reddish Brown and Gray Cherty Clay



Overtopping Flood is due to Backwater from War Eagle Creek. Overtopping occurs during Q<sub>100</sub>, Elev. 1257.5.

\*\* Based on Smyrna Creek Watershed. See Table for stages of War Eagle Creek at this location.

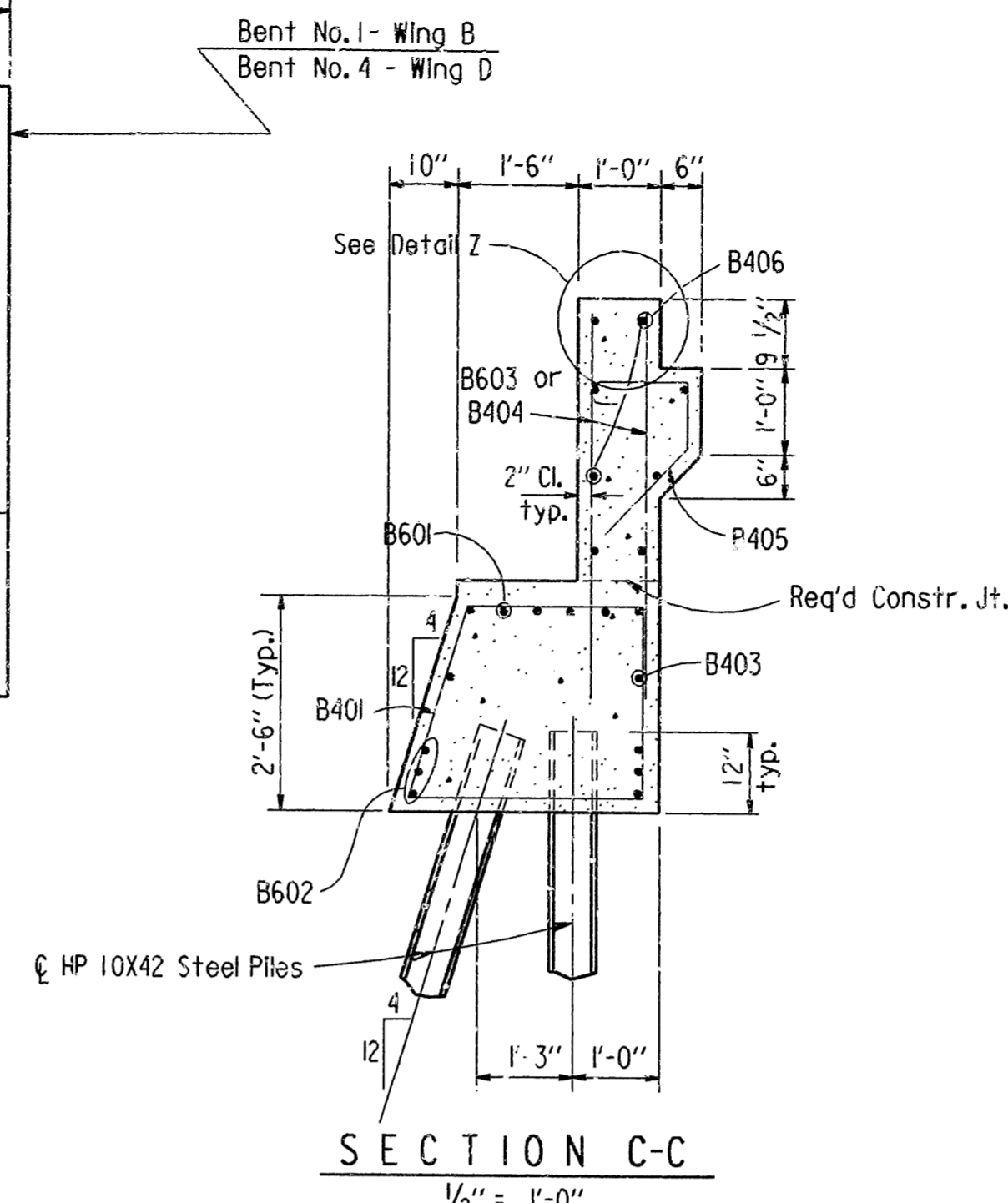
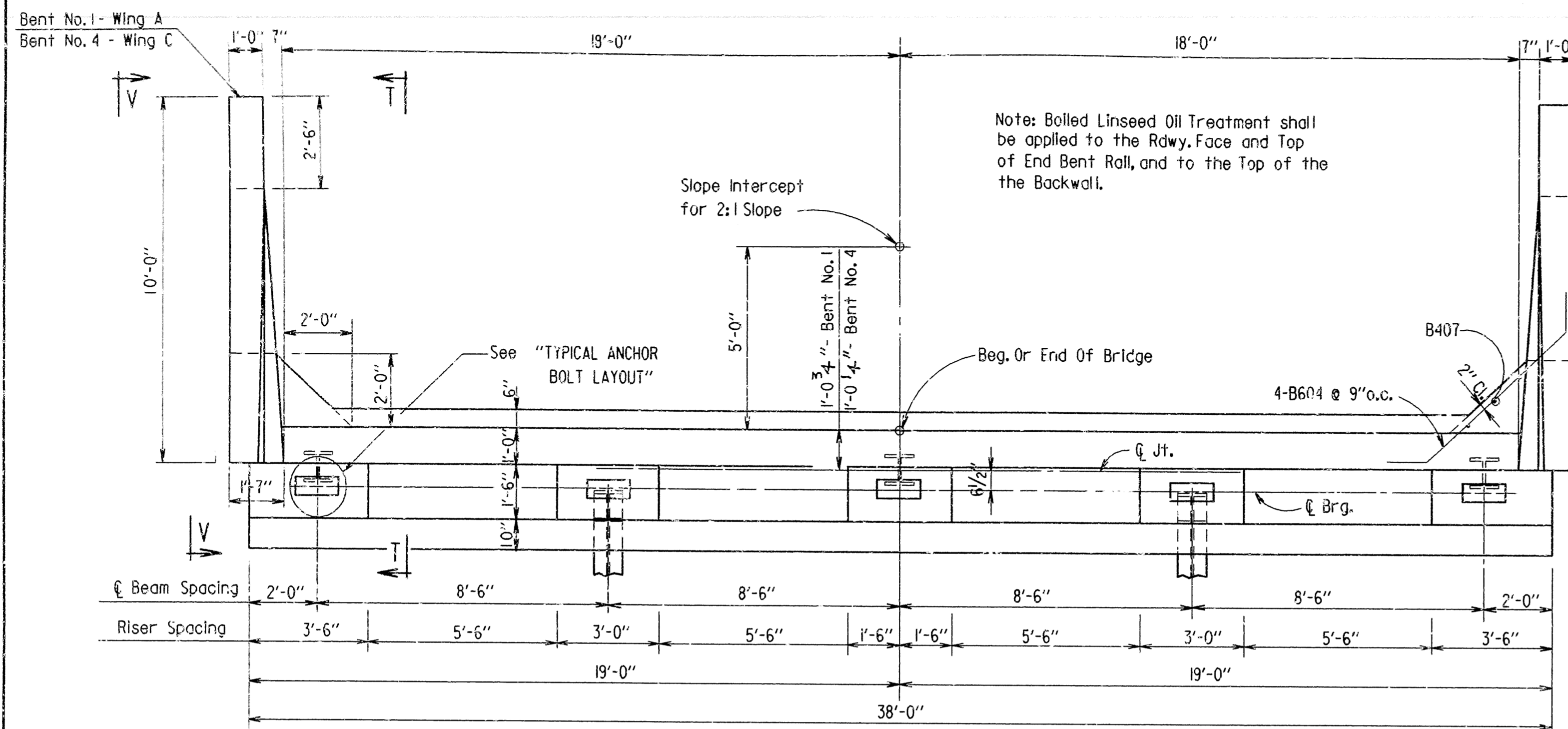
| Frequency | Stage Elev. |
|-----------|-------------|
| 50 year   | 1254.3      |
| 100 year  | 1257.3      |

LAYOUT OF BRIDGE OVER  
SMYRNA CREEK  
HOLMAN & SMYRNA CR. STRS. & APPRS.  
MADISON COUNTY  
ROUTE 23 SEC. 9  
ARKANSAS STATE HIGHWAY COMMISSION  
LITTLE ROCK, ARK.  
DRAWN BY: K.M.J. DATE: 10-13-88  
CHECKED BY: GEC DATE: 11-2-88  
DESIGNED BY: SML DATE: 8-25-88  
BRIDGE NO. 6341 DRAWING NO. 30621

\*\*DESIGN FLOOD  
Q50 = 2830 cfs  
Normal W.S. = Elev. 1250.9  
W.S. with Backwater = 1254.7

\*\*BASIC FLOOD  
Q100 = 3440 cfs  
Normal W.S. = 1251.2  
W.S. with Backwater = 1255.7

MIC.  
1-31-90



| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE     | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-----------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.      |                    |           |              |
|              |             |              |             | JOB NO.             |           | 9582               | 32        | 80           |
|              |             |              |             | 6341                | END BENTS |                    | 30622     |              |

### BAR LIST (ONE END B.T.)

| Mark | No. Req'd. | Length  | A      | B      | Pin Dia. | Bending Diagrams (Dimensions are out to out of bars.) |
|------|------------|---------|--------|--------|----------|---|
| B401 | 46         | 9'-11"  | 2'-2"  | 2'-11" | 2"       |   |
| B402 | 15         | 6'-6"   | 2'-2"  | 2'-11" | 2"       |   |
| B403 | 2          | 37'-8"  |        |        | Str.     |   |
| B404 | 66         | 4'-4"   |        |        | Str.     |   |
| B405 | 33         | 3'-11"  | 1'-2"  | 4 1/2" | 2"       |   |
| B406 | 8          | 38'-10" |        |        | Str.     |   |
| B407 | 6          | 3'-10"  |        |        | Str.     |   |
| B601 | 6          | 39'-0"  | 37'-8" | 6"     | 4 1/2"   |   |
| B602 | 6          | 37'-8"  |        |        | Str.     |   |
| B603 | 8          | 4'-8"   |        |        | Str.     |   |
| B604 | 8          | 7'-3"   | 5'-3"  | 1'-0"  | 4 1/2"   |   |

GENERAL NOTES

ALL CONCRETE SHALL BE CLASS "S" AND BE POURED IN THE DRY. ALL EXPOSED CORNERS TO BE CHAMFERED  $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.

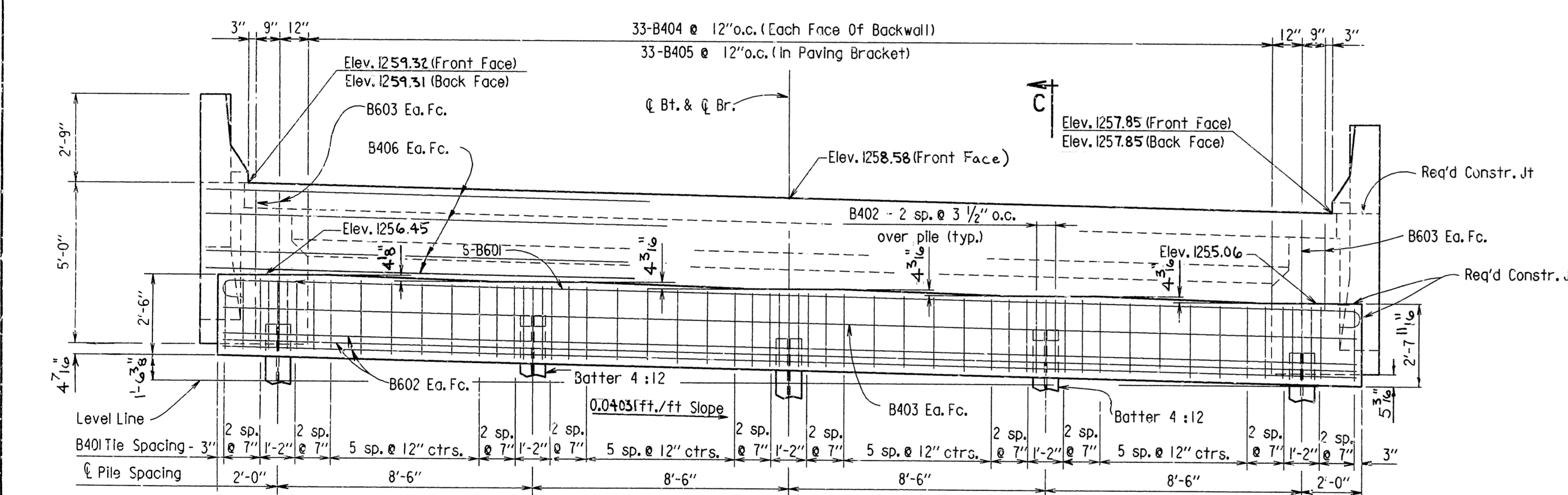
ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60.

BACKWALL SHALL NOT BE POURED BEFORE BEAMS ARE IN PLACE.

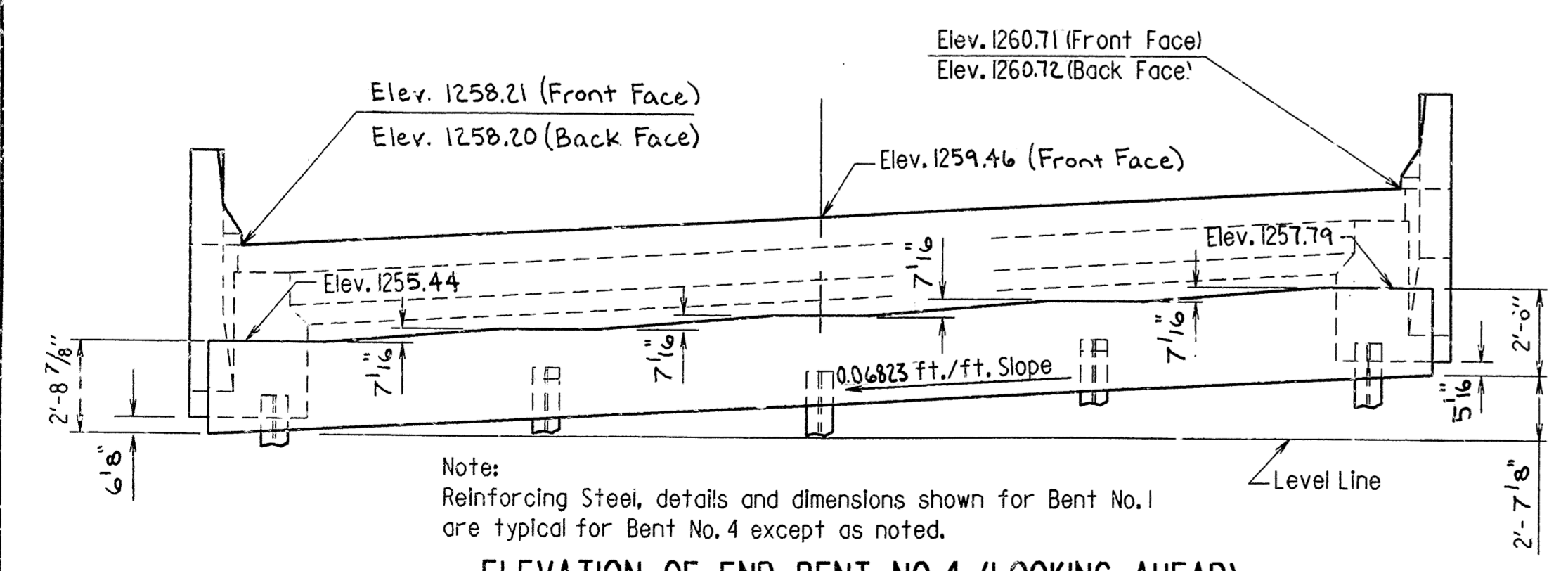
STRUCTURAL STEEL IN END BENTS SHALL BE ASTM A588 AND SHALL BE PAID FOR AS "STRUCTURAL STEEL IN BEAM BEAMS (A588)".

IF ANCHOR BOLTS ARE DRILLED INTO CAP, TOP REINFORCING BARS SHALL BE PROPERLY PLACED TO AVOID DAMAGE.

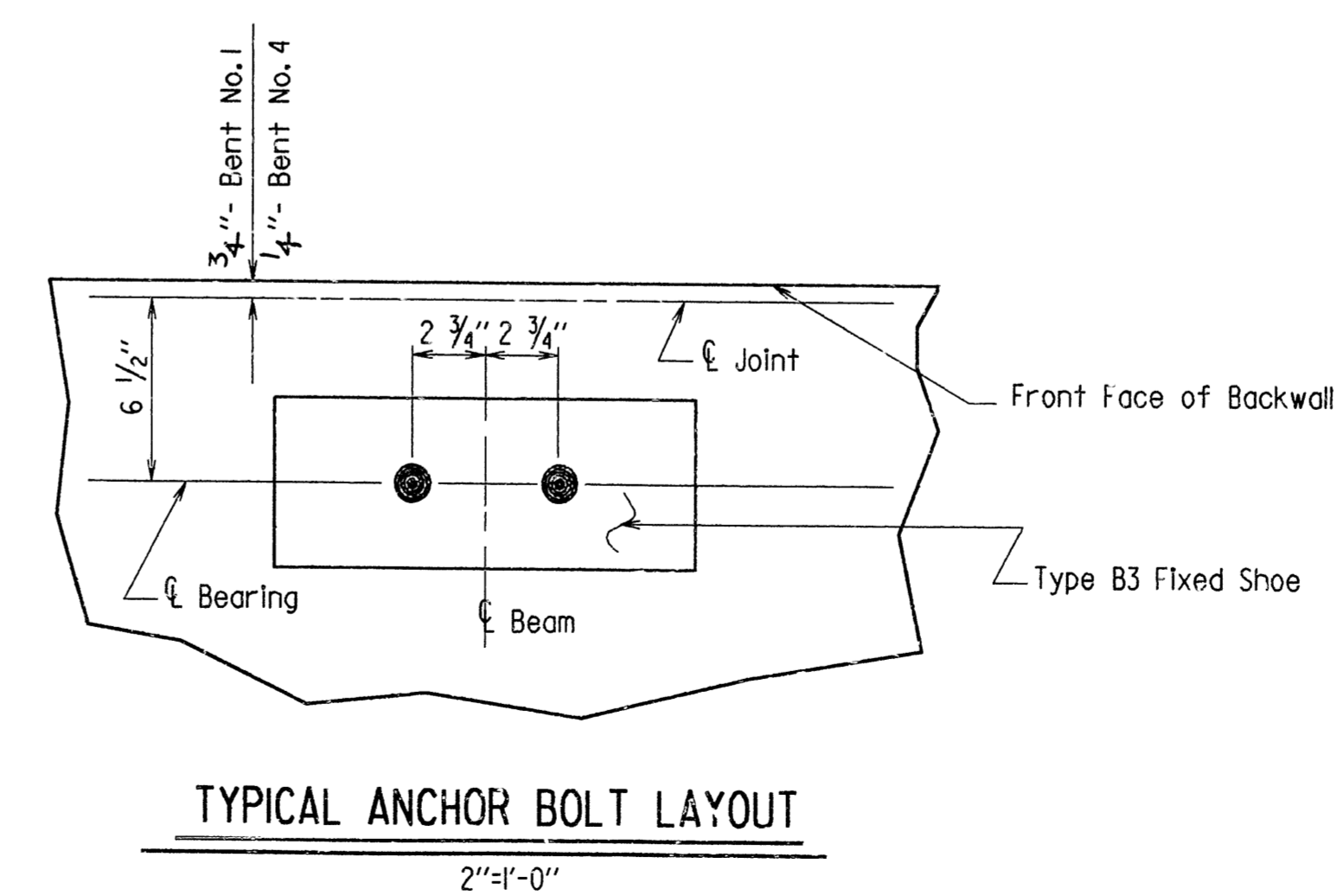
FOR ADDITIONAL INFORMATION, SEE LAYOUT.



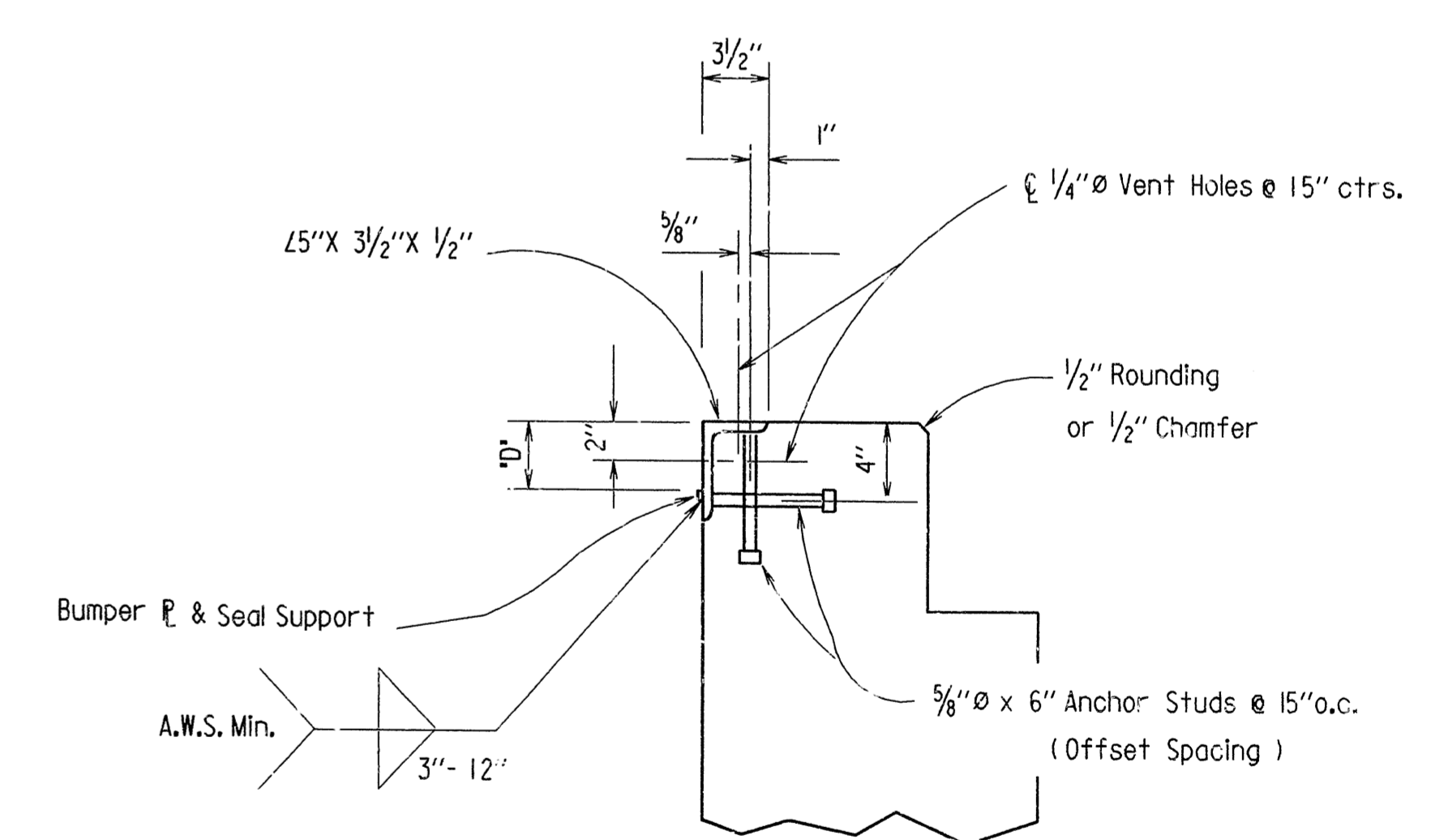
ELEVATION OF END BENT NO. 1 (LOOKING BACK)



ELEVATION OF END BENT NO. 4 (LOOKING AHEAD)



TYPICAL ANCHOR BOLT LAYOUT



DETAIL Z

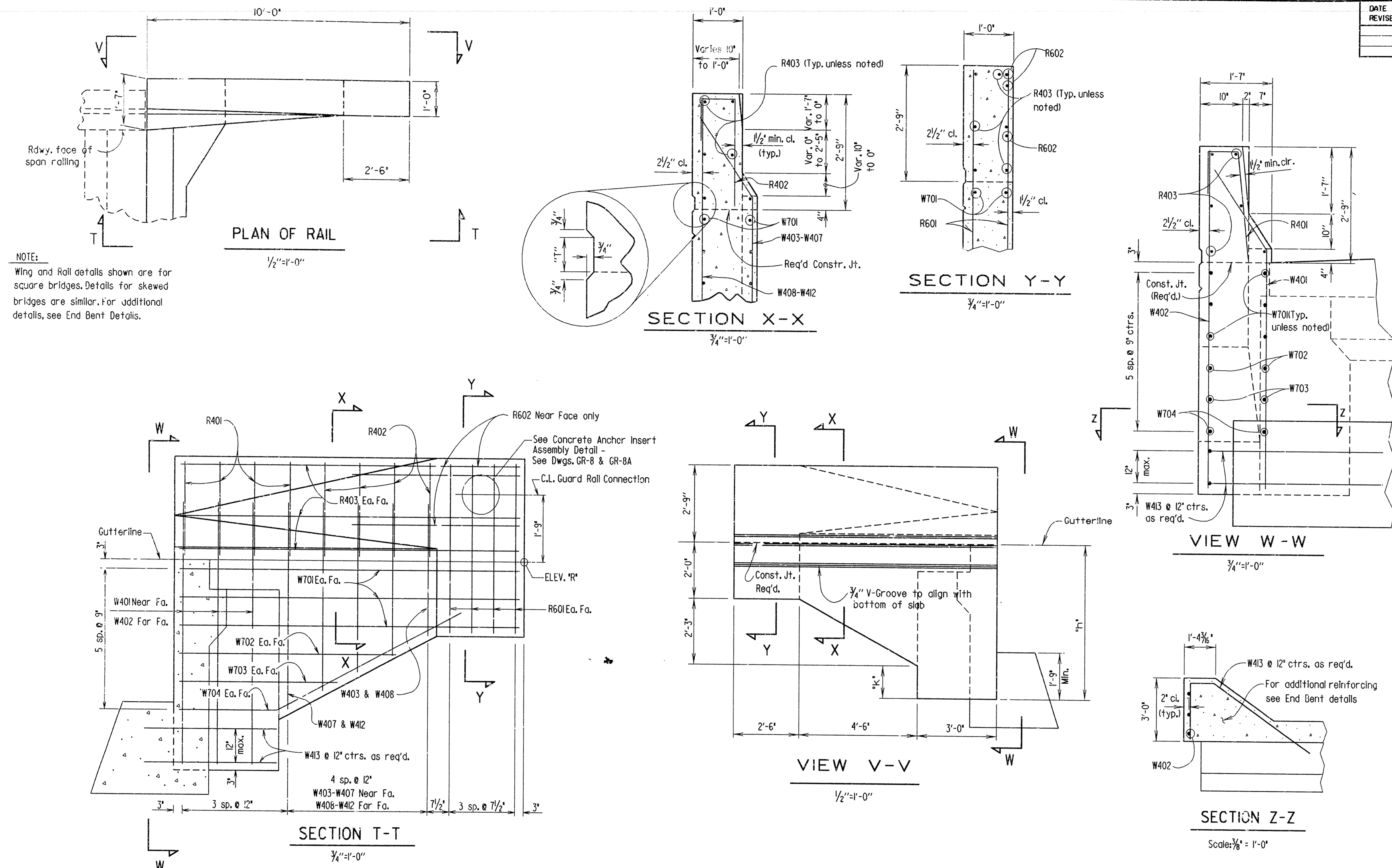
Note: For Joint Support Details & Dimension "D" see dwg. no. 14990H.

DETAILS OF END BENTS  
 SMYRNA CREEK  
 ROUTE 23 SEC. 9  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 5/18/89  
 CHECKED BY: GEC DATE: 6/6/89  
 DESIGNED BY: SML DATE: 4/12/89

BRIDGE NO. 6341 DRAWING NO. 30622

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE  | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.   |                    |           |              |
|              |             |              |             | JOB NO.             |        | 9582               | 33        | 80           |
|              |             |              |             | ①                   | 6341 - | STD. WING          |           | 30623        |

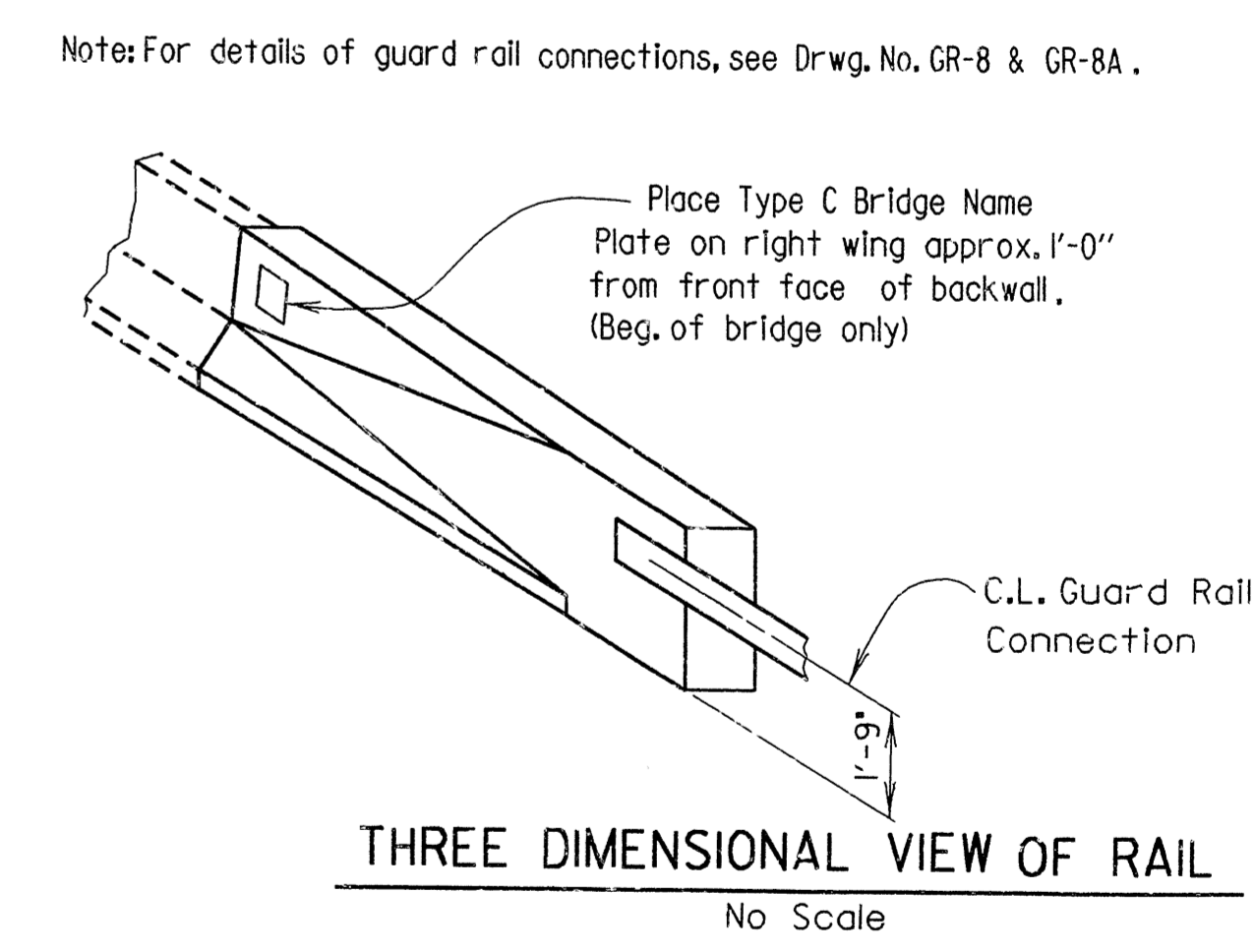


**BAR LIST (ONE WING & RAIL)**

| MARK          | NO. REQ'D.   | LENGTH                 | A                      | B     | PIN DIA. |
|---------------|--------------|------------------------|------------------------|-------|----------|
| R401          | 4            | 3'-11"                 |                        |       | 2"       |
| R402          | 4            | 4'-0"                  |                        |       | 2"       |
| R403          | 6            | 9'-8"                  |                        |       | Str.     |
| R601          | 8            | 4'-5"                  |                        |       | Str.     |
| R602          | 3            | 5'-0"                  |                        |       | Str.     |
| W401          | 3            | 6'-3"                  | 5'-1"                  | 1'-2" | 2"       |
| W402          | 3            | 7'-5"                  |                        |       | Str.     |
| W403-<br>W407 | 1 of<br>each | Var. 3'-5"<br>to 5'-5" | Var. 2'-3"<br>to 4'-3" | 1'-2" | 2"       |
| W408-<br>W412 | 1 of<br>each | Var. 4'-6"<br>to 6'-6" |                        |       | Str.     |
| W413          | 2            | 7'-11"                 | 1'-1"                  | 4'-3" | 2"       |
| W701          | 6            | 9'-8"                  |                        |       | Str.     |
| W702          | 2            | 6'-0"                  |                        |       | Str.     |
| W703          | 2            | 4'-6"                  |                        |       | Str.     |
| W704          | 2            | 8'-4"                  |                        |       | 5/4"     |

**BENDING DIAGRAMS**

Dimensions are out to out of bars.



Tabular Data By: TEB Date: 5/18/89  
 Checked By: GEC Date: 6/6/89

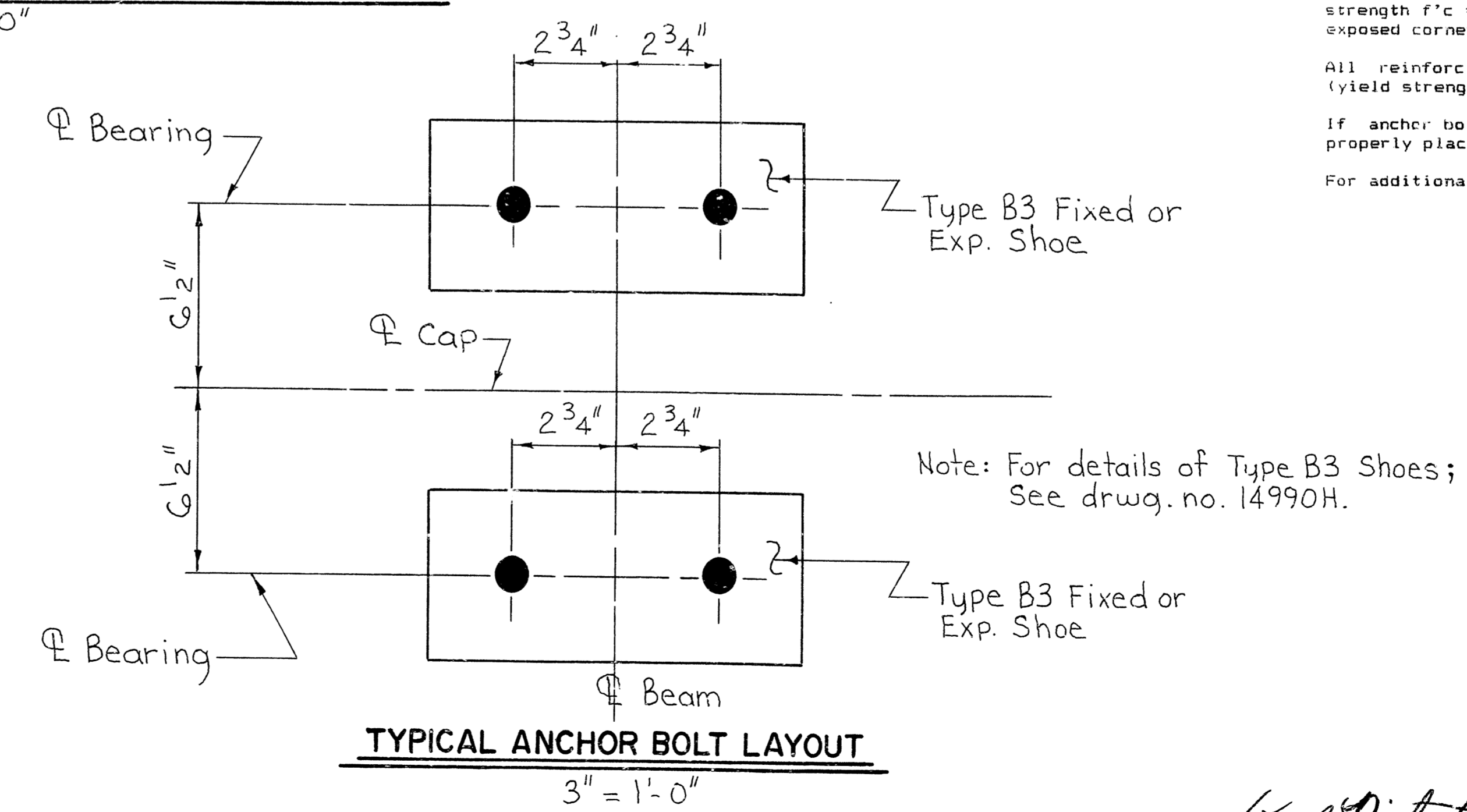
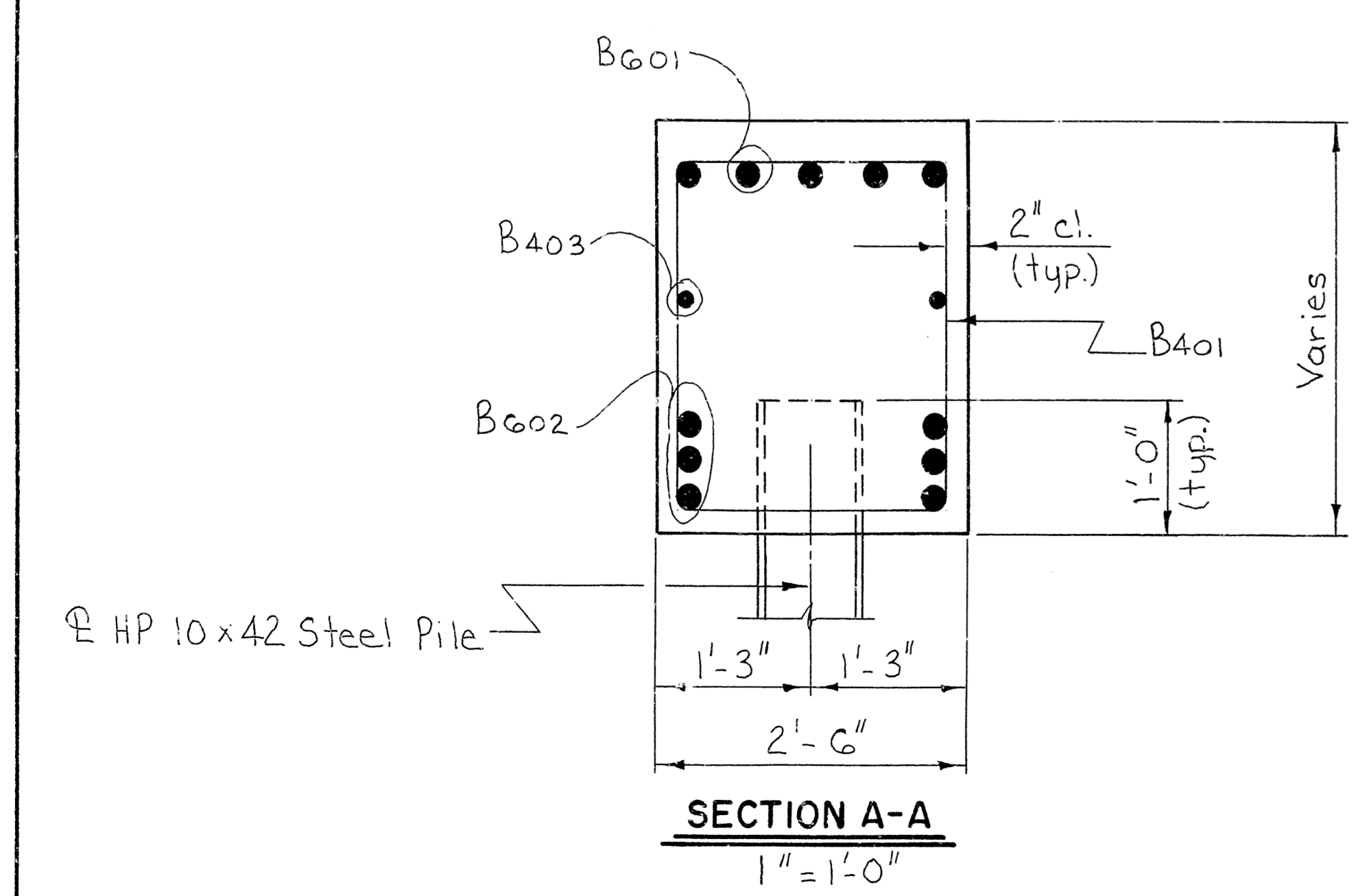
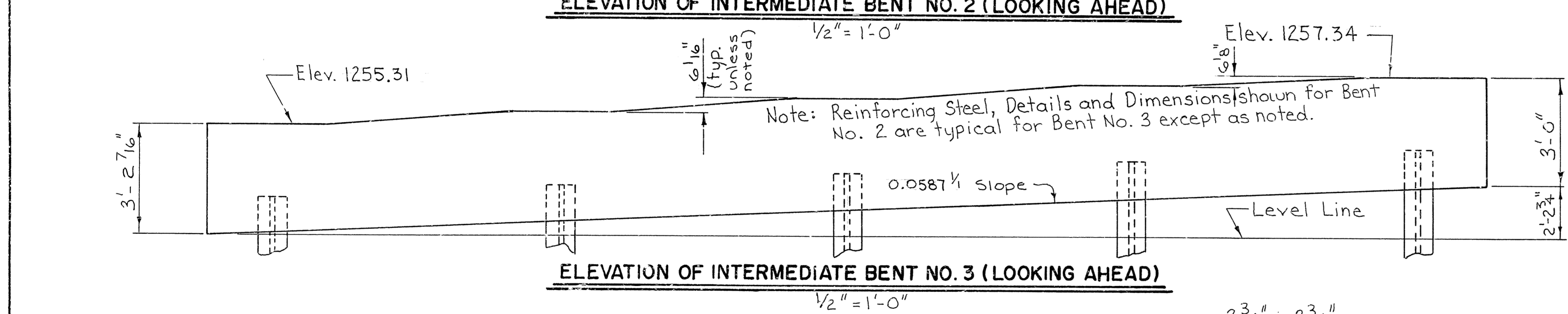
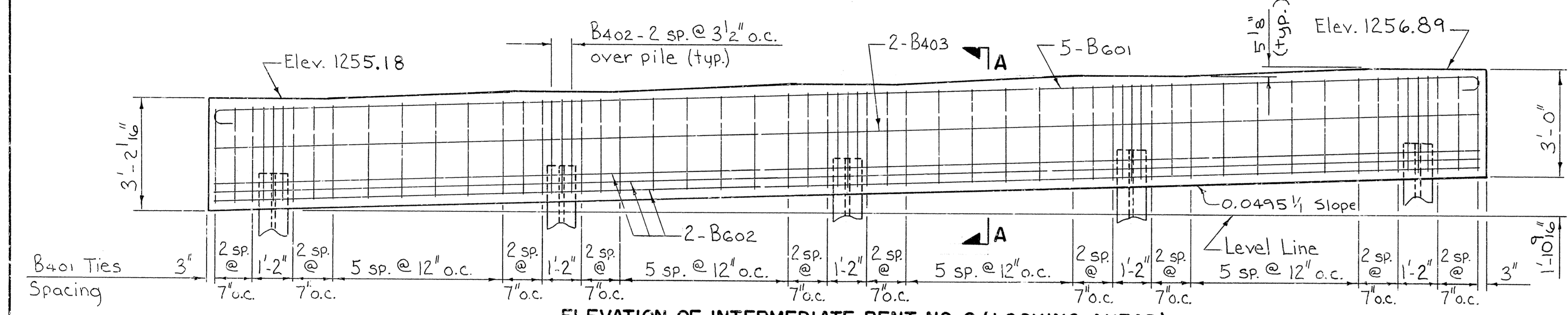
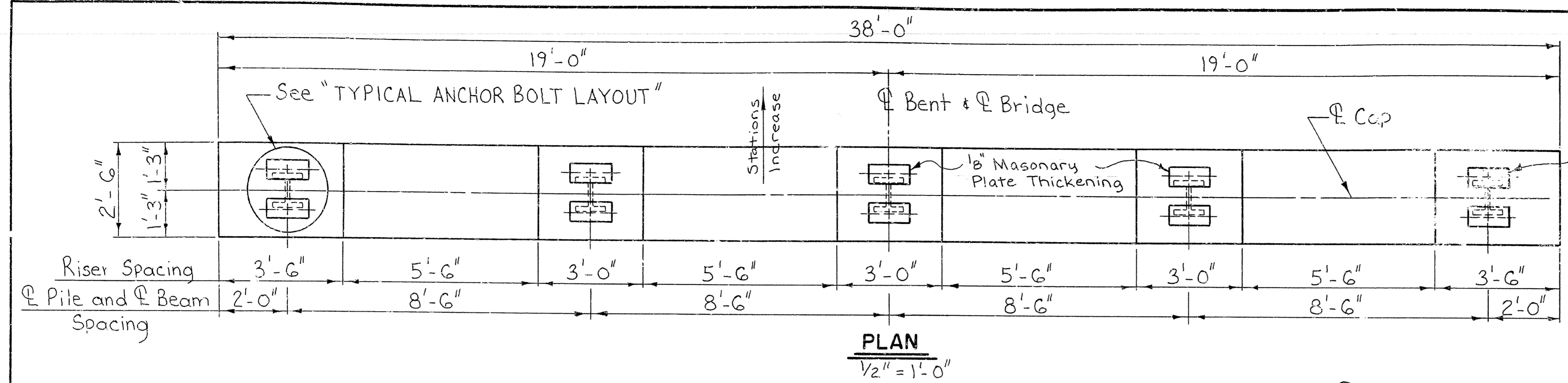
**STANDARD DETAILS  
FOR WING AND RAIL**

ROUTE 23 SEC. 9  
 ARKANSAS STATE HIGHWAY COMMISSION  
 LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: SEPT. 87  
 CHECKED BY: JAS DATE: SEPT. 87  
 DESIGNED BY: SML DATE: 4-12-89

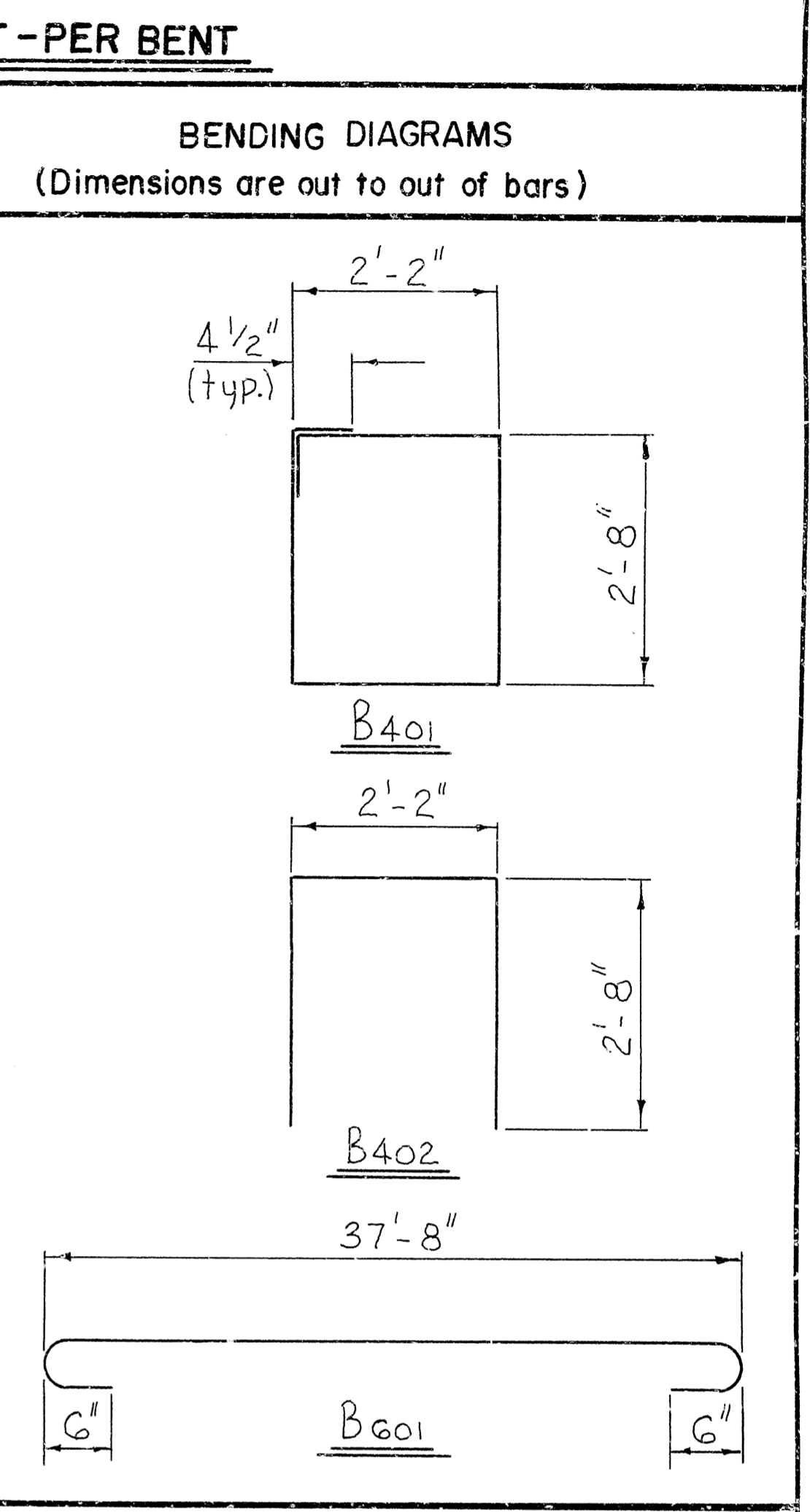
BRIDGE NO. 6341 DRAWING NO. 30623

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|-------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.  |                    |           |              |
|              |             |              |             |                     |       | JOB NO. 9582       | 34        | 80           |
|              |             |              |             |                     |       | 6341 BENT DTL'S.   | 30624     |              |



**BAR LIST - PER BENT**

| MARK | NUMBER REQUIRED | LENGTH | PIN. DIA. |
|------|-----------------|--------|-----------|
| B401 | 46              | 10'-0" | 2"        |
| B402 | 1               | 7'-4"  | 2"        |
| B403 |                 | 37'-8" | Str.      |
| B601 | 5               | 39'-0" | 4 1/2"    |
| B602 | 6               | 37'-8" | Str.      |



All concrete shall be Class "G" with a minimum 28 day compressive strength  $f'_c = 3,500$  psi. Concrete shall be poured in the dry and all exposed corners to be chamfered  $3/4$ " unless otherwise noted.

All reinforcing steel shall conform to ASTM A615 or A617, Grade 60 (yield strength = 60,000 psi.).

If anchor bolts are drilled into cap, top reinforcing bars shall be properly placed to avoid damage.

For additional information see layout.

**DETAILS OF**  
**INTERMEDIATE BENT NOS. 2 & 3**  
**SMYRNA CREEK**  
**ROUTE 23 SEC. 9**  
**ARKANSAS STATE HIGHWAY COMMISSION**  
**LITTLE ROCK, ARK.**  
 DRAWN BY: TEB DATE: 5/15/89  
 CHECKED BY: GEC DATE: 5-24-89 SCALE: AS SHOWN  
 DESIGNED BY: SML DATE: 4-12-89  
 BRIDGE NO. 6341 DRAWING NO. 30624

*Keral Pinkerton*  
 BRIDGE ENGINEER

Note: Balled Linsseed Oil Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail.

Note: At Contractor's Option, in lieu of providing bar S501 one #5 bar top & bottom may be substituted. Payment for Reinforcing will be based on the weight of bar S501.

| DATE REVISED | DATE FILMED | DATE REVISED | DATE FILMED | FED. ROAD DIST. NO. | STATE        | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|--------------|-------------|--------------|-------------|---------------------|--------------|--------------------|-----------|--------------|
|              |             |              |             | 6                   | ARK.         |                    |           |              |
|              |             |              |             | JOB NO.             |              | 9582               | 35        | 80           |
|              |             |              |             | 6341                | SPAN DETAILS |                    | 30625     |              |

## BAR LIST - PER SPAN

| MARK | NO. | REQ'D. | LENGTH | PIN. DIA. | Bending Diagrams<br>(Dimensions are out to out of bars.) |
|------|-----|--------|--------|-----------|--|
| S401 | 82  | 34'-6" | Str.   |           |  |
| S501 | 27  | 39'-4" | 3"     |           |  |
| S502 | 28  | 4'-4"  | Str.   |           |  |
| S601 | 56  | 38'-6" | Str.   |           |  |
| P401 | 60  | 6'-4"  | 2"     |           |  |
| P402 | 60  | 5'-7"  | 2"     |           |  |
| P403 | 30  | 11'-2" | Str.   |           |  |
| P404 | 24  | 5'-10" | 2"     |           |  |
| P405 | 24  | 3'-2"  | 2"     |           |  |
| P601 | 15  | 11'-2" | Str.   |           |  |

DETAIL Y  
N.T.S.

DETAIL Z  
N.T.S.

## ROADWAY SECTION AT MIDSPAN

1/2" = 1'-0"

### Expansion Device:

Rdwy. C 15 x 33.9  
Conn. L's 6" x 3/2" x 3/8" x 8"  
Detail Device 1/8" high & provide 1/4" Shims  
using 2- 1/8" & 1- 1/8" Es

5/8" x 8" Studs @ 12" o.c. (Top & Bottom)  
For Details of Bumper & Seal Support,  
see Drwg. No. 14990H.

Symm. Abt. &  
Except As Shown

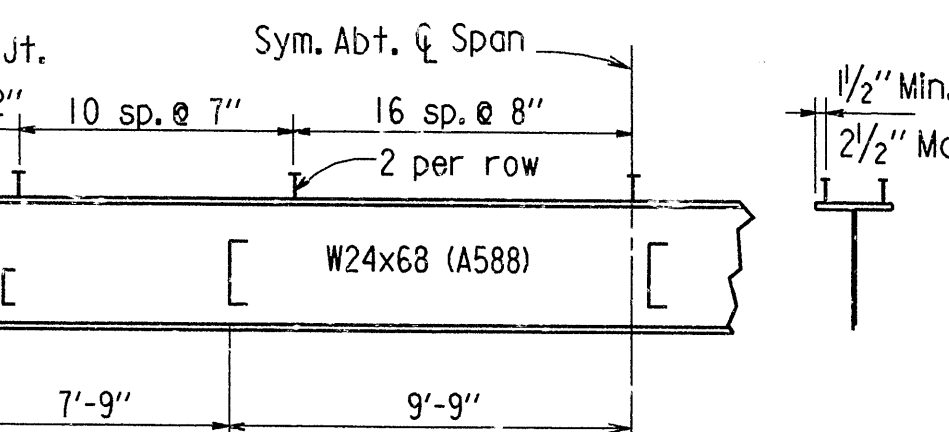
## VIEW AT JOINT

1/2" = 1'-0"

Note: Bolts in Diaphragm Connections shall be properly installed and tightened in accordance with Subsection 807.22 of the Standard Specifications.

## DIAPHRAGM CONNECTION AT EXTERIOR BEAMS

N.T.S.



## SPACING FOR 7/8" STUD SHEAR CONNECTORS & DIAPHRAGMS

N.T.S.

Note: Stud Shear Connectors shall be 4" long. 3/4" Studs may be used in place of the 7/8" Studs shown, at the ratio of 1.361-3/4" Studs in place of one 7/8" Stud. 7/8" Studs will be used as basis for measurement of structural steel in shear connectors. Maximum Stud spacing = 24".

## DETAILS OF 35'-0" COMPOSITE W-BEAM SPANS SMYRNA CREEK

ROUTE 23 SEC. 9  
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 5/18/89

CHECKED BY: GEC DATE: 6/6/89

DESIGNED BY: SML DATE: 4-4-89

BRIDGE NO. 6341

DRAWING NO. 30625

