

STATE OF MONTANA  
STATE HIGHWAY COMMISSION

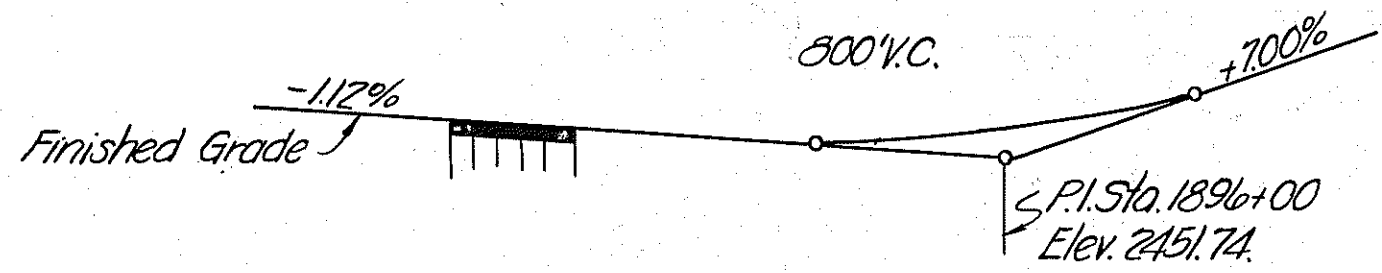
BRIDGE PLANS & QUANTITIES  
FEDERAL AID PROJECT NO. 247 F (I) UNIT 2  
JORDAN-CIRCLE HIGHWAY  
MC CONE COUNTY

LIST OF DRAWINGS

| SHEET NO. | DWG. NO.     | TITLE                    | STATION                                                              |
|-----------|--------------|--------------------------|----------------------------------------------------------------------|
| 1         | 1812         | GENERAL LAYOUT           | 1890 + 85.0                                                          |
| 2         | 1813         | GENERAL LAYOUTS          | 1939 + 67.5<br>2112 + 78.0<br>2129 + 48.5                            |
| 3         | 1813A        | GENERAL LAYOUTS          | 2206 + 00.0<br>2209 + 64.0<br>2234 + 62.5<br>2331 + 90.0 2332 + 72.5 |
| 4         | R24TT9       | STANDARD TIMBER TRESTLE  |                                                                      |
| 5         | R24TT25      | " "                      |                                                                      |
| 6         | R24TTDETAILS | STANDARD TRESTLE DETAILS |                                                                      |
| 7         | TT 100       | STANDARD ICE BREAKER     |                                                                      |
| 8         | SP 11        | STANDARD STOCK PASS      |                                                                      |

| BRIDGE QUANTITIES         |                      |                             |                               |                                 |                         |     |     |     |     |                              |
|---------------------------|----------------------|-----------------------------|-------------------------------|---------------------------------|-------------------------|-----|-----|-----|-----|------------------------------|
| STATION                   | LENGTH<br>IN<br>FEET | STRUCTURAL<br>STEEL<br>LBS. | TREATED<br>LUMBER<br>M.F.B.M. | UNTREATED<br>LUMBER<br>M.F.B.M. | TREATED<br>TIMBER PILES |     |     |     |     | GRAVEL<br>BALLAST<br>CU.YDS. |
|                           |                      |                             |                               |                                 | 20'                     | 25' | 30' | 35' | 40' |                              |
| MAJOR STRUCTURES          |                      |                             |                               |                                 |                         |     |     |     |     |                              |
| 1890+85.0                 | 125                  | 2750                        | 55.55                         | 2.80                            |                         | 14  | 20  |     | 34  |                              |
| 1939+67.5                 | 123                  | 1400                        | 52.44                         | 2.75                            |                         | 19  | 6   | 12  | 33  |                              |
| 2112+78.0                 | 57                   |                             | 20.62                         | 1.51                            | 2                       | 6   | 20  |     | 16  |                              |
| 2129+48.5                 | 85                   |                             | 33.26                         | 2.06                            | 1                       | 5   | 10  | 10  | 23  |                              |
| 2206+00.0                 | 85                   |                             | 35.70                         | 2.03                            |                         | 2   | 2   | 16  | 23  |                              |
| 2209+64.0                 | 76                   |                             | 26.61                         | 1.86                            | 2                       | 2   | 19  | 10  | 21  |                              |
| 2234+62.5                 | 95                   | 2950                        | 44.40                         | 2.22                            | 2                       |     | 2   | 7   | 20  |                              |
| 2331+90.0                 | 75                   |                             | 28.46                         | 1.86                            | 2                       | 2   | 4   | 20  | 20  |                              |
| TOTAL MAJOR<br>STRUCTURES | 721                  | 7100                        | 297.04                        | 17.09                           | 9                       | 50  | 63  | 95  | 196 |                              |
| MINOR STRUCTURES          |                      |                             |                               |                                 |                         |     |     |     |     |                              |
| 2376+00.0                 | (R28-H7)II           |                             | 7.17                          | 0.26                            | 16                      |     |     |     | 4   |                              |
| 2425+00.0                 | (R28-H7)I            |                             | 7.17                          | 0.26                            | 16                      |     |     |     | 4   |                              |
| TOTAL MINOR<br>STRUCTURES | 22                   |                             | 14.34                         | 0.52                            | 32                      |     |     |     | 8   |                              |
| TOTAL ALL<br>STRUCTURES   | 743                  | 7100                        | 311.38                        | 17.61                           | 41                      | 50  | 63  | 95  | 204 |                              |

Made by D.W.B. A-27-39 Checked by H.M.K. A-27-39



Note: Finished grade of bridge shall be on a straight line between elevations shown at centerlines of end bents.

NOTES

**SPECIFICATIONS:** Montana State Highway Commission Standard Specifications for Road and Bridge Construction, revised April, 1935; Design Specifications for Highway Structures revised July, 1935, and Special Provisions shall govern unless otherwise noted.

**DETAILS:** Structures shown on these sheets shall be built in accordance with details shown on Dwg. No. E24-TT19, No. E24-TT25 and No. E24-TT Details with modifications shown hereon. Ice breakers for bridges as shown shall be built in accordance with details on Dwg. No. TT-100.

**GRAVEL BALLAST:** Gravel ballast shall be placed by bridge contractor. It shall meet requirements for top course gravel surfacing, except that crushing will not be required.

**PILE PENETRATION:** In case 8 ft. of pile penetration cannot be obtained by ordinary driving, the contractor shall do the necessary shooting to obtain the required penetration, or he shall excavate and set the piles 6 ft. deep and strike the piles with the pile hammer to bring them to a firm bearing. No additional compensation shall be allowed for such work.

**EXCAVATION:** Payment for all excavation necessary to the driving and cutting off of piles and to the placing of caps, stringers, backing plank, bracing and ice breakers shall be included in the unit price bid for treated lumber.

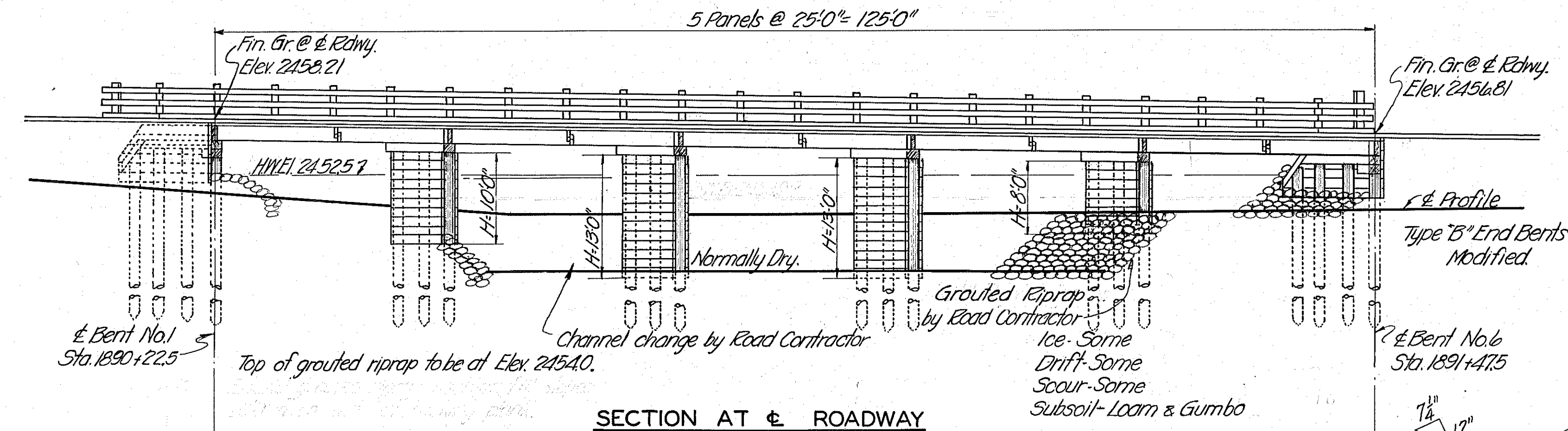
**FINISHED GRADE:** Finished plan grade of bridges is 0.5 ft. above profile grade shown on road plans.

**ROUTED RIPRAP:** At points where riprap is shown carried into channel changes, extend riprap 50 ft. from E. Rdwy. in each direction, turn back and key 3 ft. into bank.

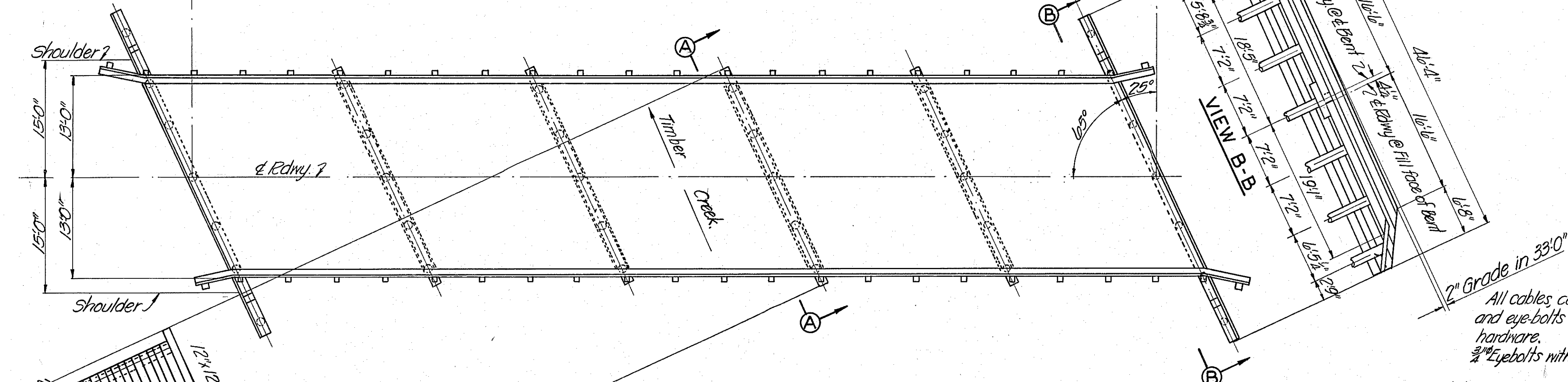
**STOCKPASS:** At Sta. 2376+00 and Sta. 2425+00 a Standard Stock Pass 7 ft. high with a 28 ft. roadway (E28-H7) shall be constructed in accordance with details shown on Dwg. No. SP11.

**STEEL NOSE PLATES:** Steel nose plates on ice breakers shall be paid for as structural steel.

\*THIS CONTRACT: NH0002 (393) EXISTING TIMBER BRIDGE RAIL REPLACED WITH T101 RAIL SEE DWG. NO. 18750

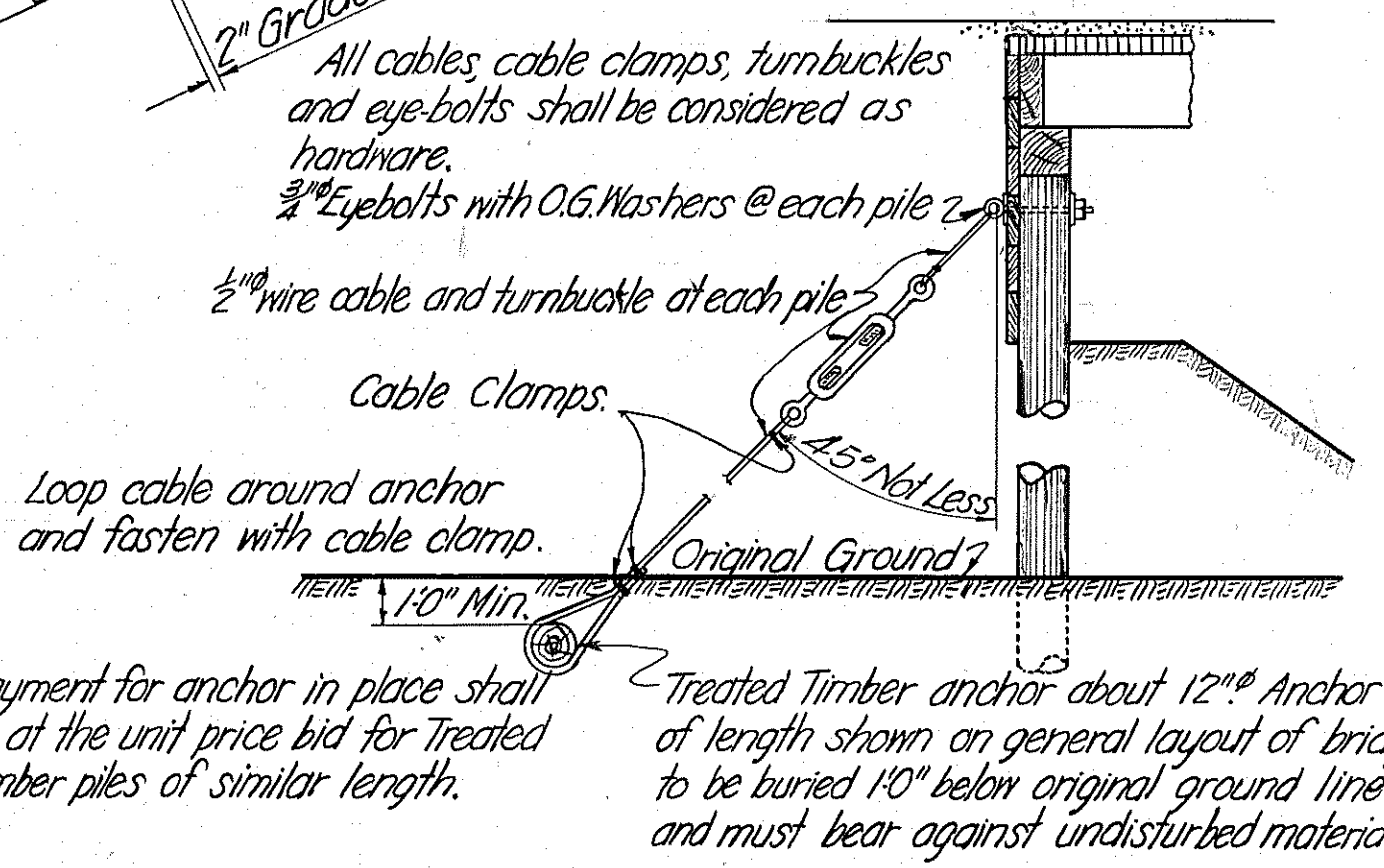
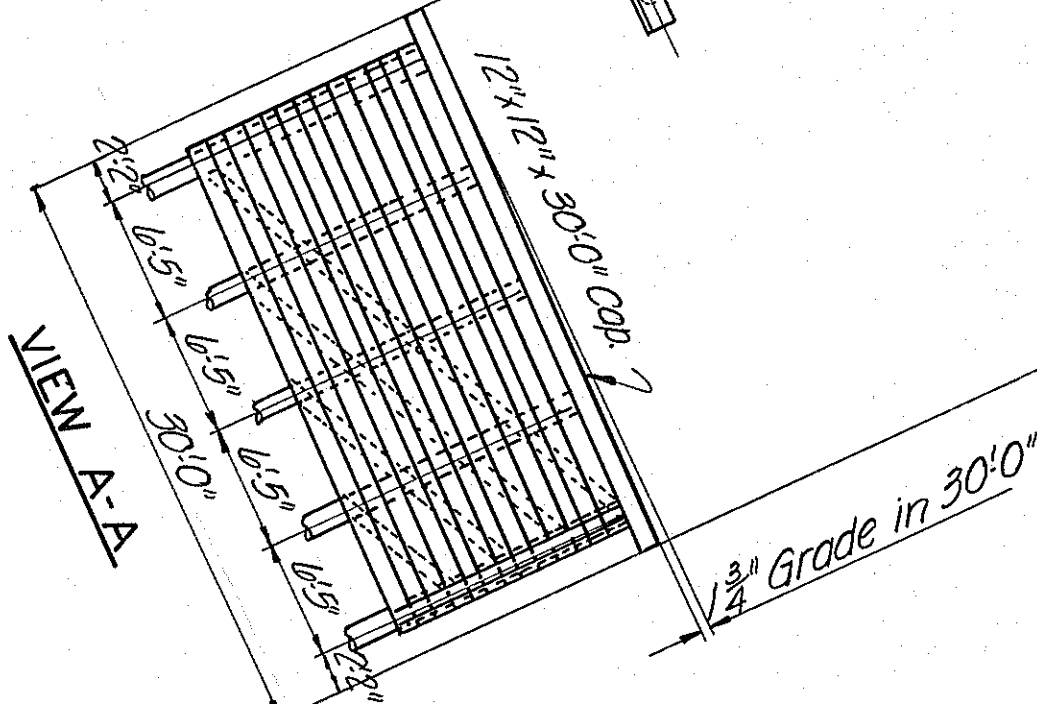


SECTION AT ROADWAY



| PILING       |     |     |     |     |     |     |
|--------------|-----|-----|-----|-----|-----|-----|
| STATION      | 20' | 25' | 30' | 35' | 40' | 45' |
| 1890+850     |     | 14  |     | 20  |     |     |
| 1939+675     |     | 19  | 6   | 12  |     |     |
| 2112+780     | 2   | 6   | 20  |     |     |     |
| 2129+485     | 1   | 5   | 10  | 10  |     |     |
| 2206+000     |     | 2   | 2   | 16  | 12  |     |
| 2209+640     | 2   | 2   | 19  | 10  |     |     |
| 2234+625     | 2   |     | 2   | 7   | 7   | 20  |
| 2351+900     | 2   | 2   | 4   | 20  |     |     |
| 2376+00 15.5 | 16  |     |     |     |     |     |
| 2425+00      | 16  |     |     |     |     |     |
| Total        | 41  | 50  | 63  | 95  | 19  | 20  |

BRIDGE AT STA. 1890+850 (Alignment Tangent Bearing N89°33'E) Name on markers: TIMBER CREEK.



DETAIL OF PILE ANCHOR Scale: 1/4" = 1'-0"

| REFERENCES     |                                       |
|----------------|---------------------------------------|
| DWG. NO.       | DESCRIPTION                           |
| 1813           | Other Bridges on F.A.P. No. 247 F(1)2 |
| 1813A          | " " " " " " " "                       |
| E24-TT19       | Standard Timber Trestle               |
| E24-TT25       | Standard Timber Trestle               |
| E24-TT Details | Standard Trestle Details              |
| TT100          | Standard Ice Breaker                  |
| SP11           | Standard Stock Pass                   |

STATE OF MONTANA  
STATE HIGHWAY COMMISSION

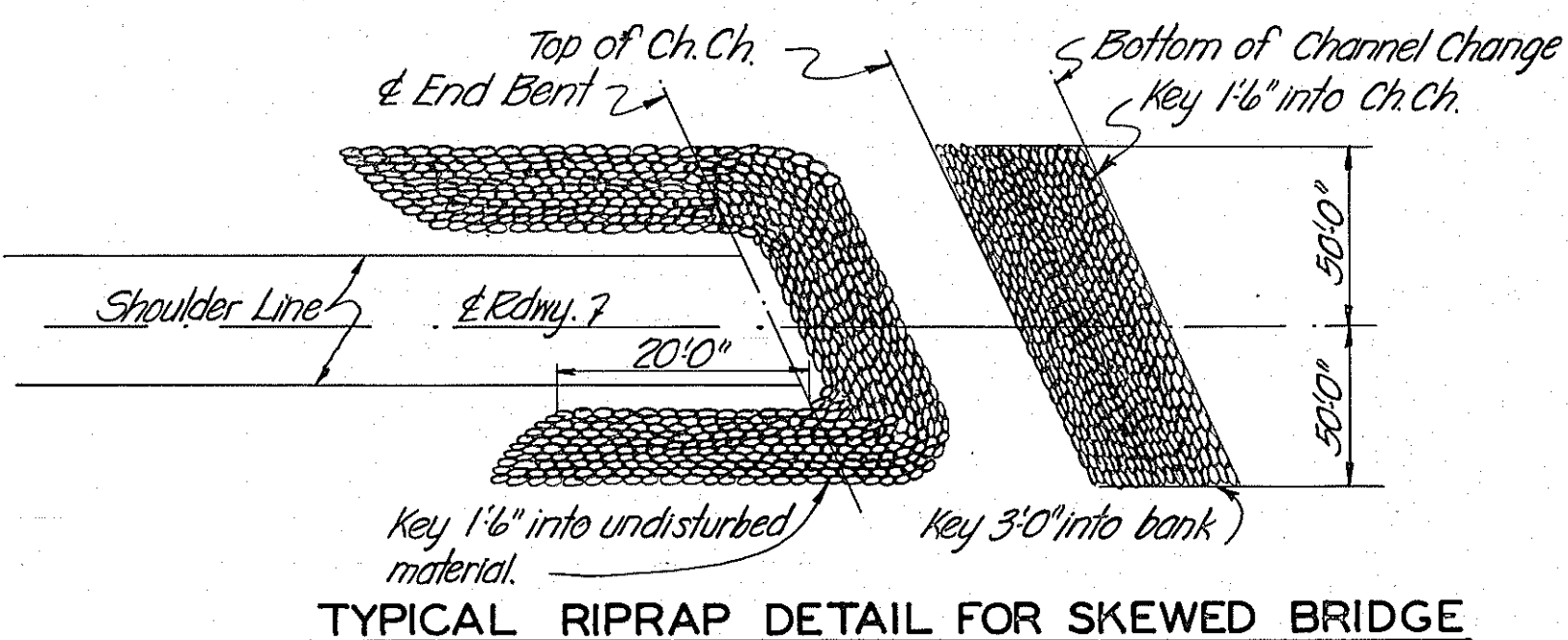
BRIDGE AT STA. 1890+850

FED AID PROJ. NO. 247 F(1) UNIT 2  
M<sup>C</sup> CONE COUNTY  
GENERAL LAYOUT  
Scale: 1" = 10'-0" except as noted.

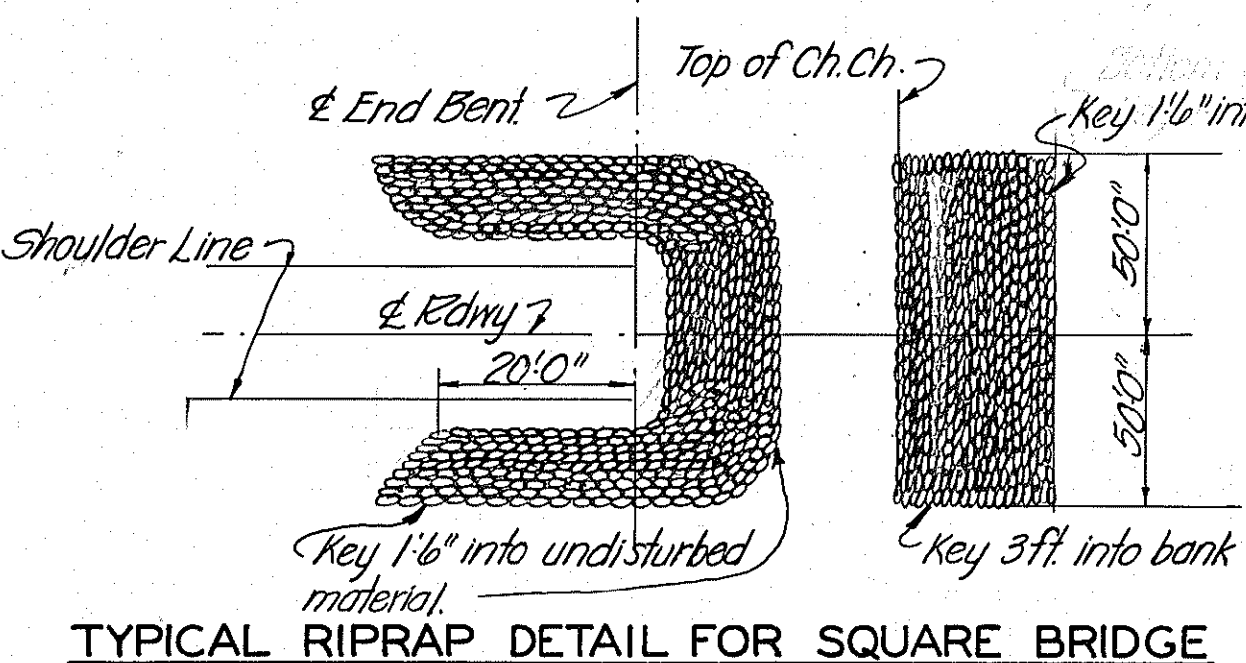
APPROVED BY: *B. J. Osburn*  
BRIDGE DESIGNING ENGINEER

FILE NO. 755 DRAWING NO. 1812

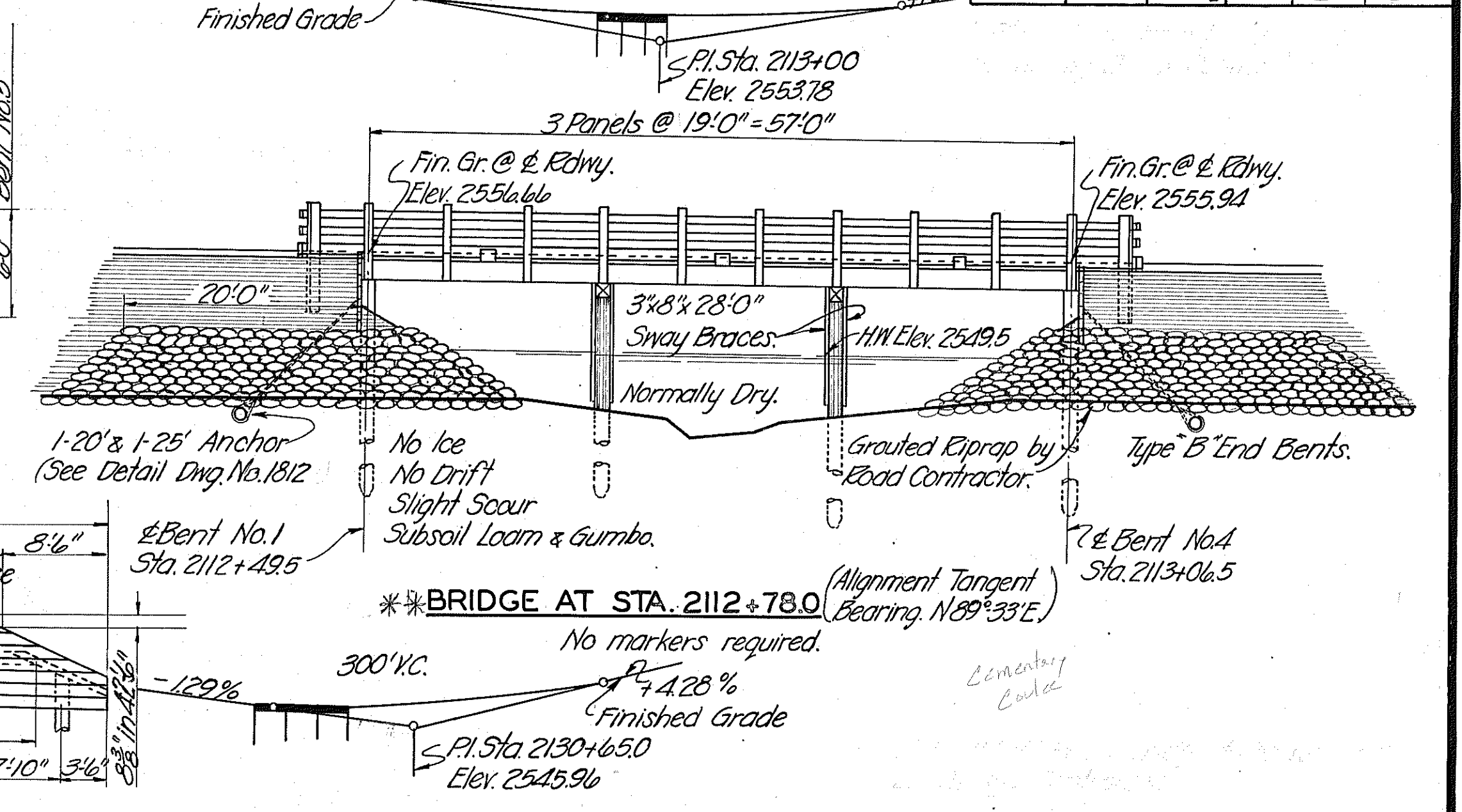
|             |        |         |
|-------------|--------|---------|
| DESIGNED BY | BY     | 10-3-38 |
| DRAWN BY    | LGH    | 4-25-39 |
| TRACED BY   | TCE    | 4-25-39 |
| CHECKED BY  | R.L.H. | 4-25-39 |
| REVISED BY  | BY     |         |



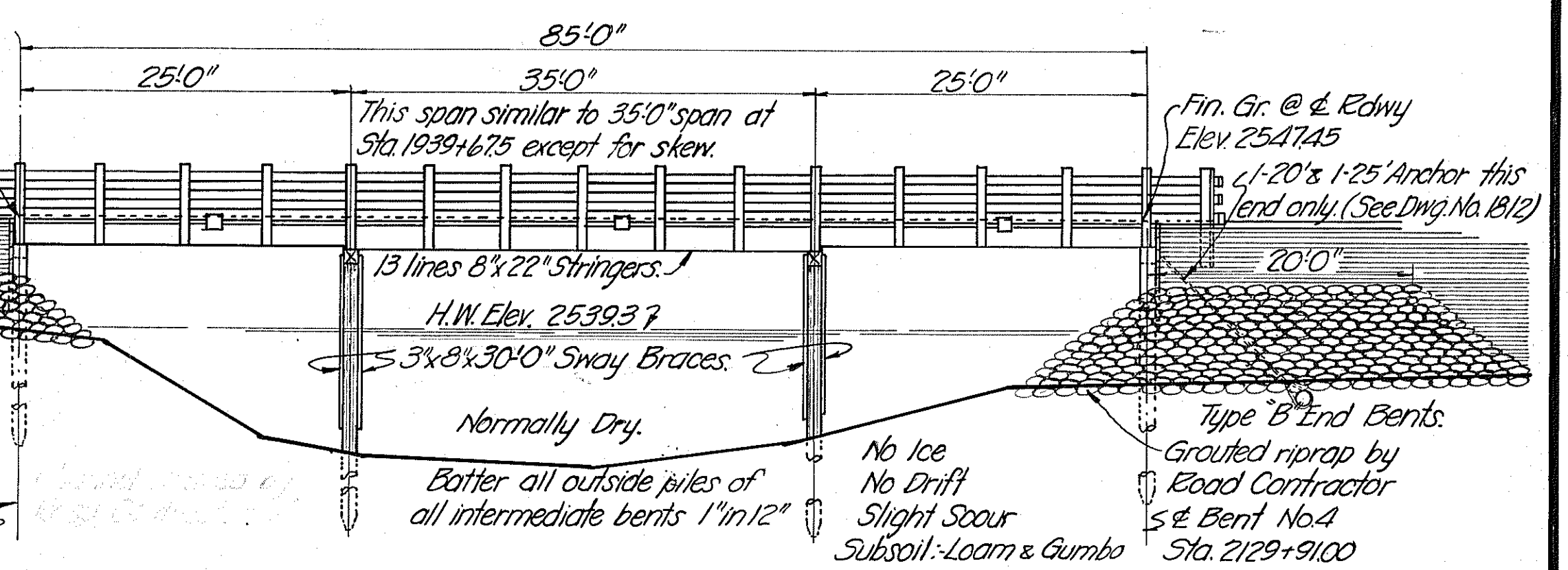
TYPICAL RIPRAP DETAIL FOR SKEWED BRIDGE



TYPICAL RIPRAP DETAIL FOR SQUARE BRIDGE



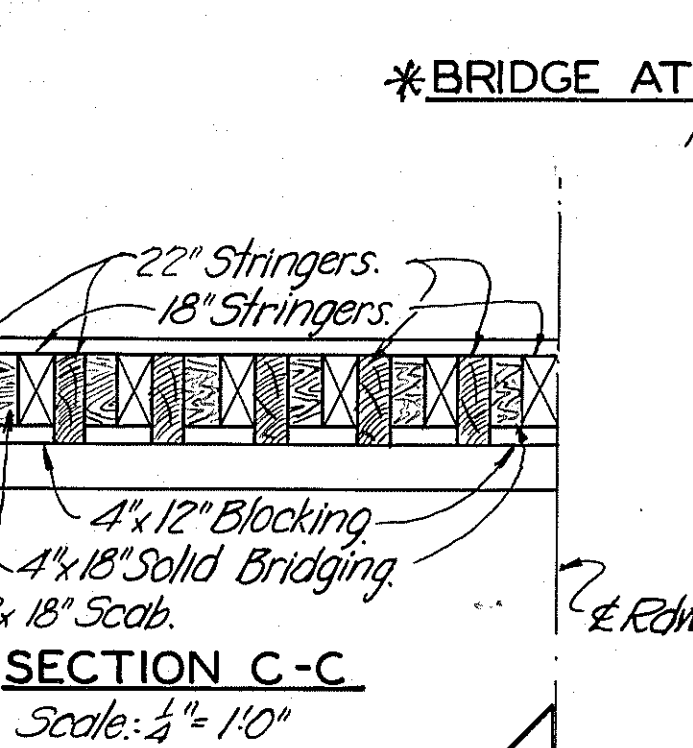
VIEW A-A



\* BRIDGE AT STA. 2129+48.5 (Alignment Tangent)  
Bearing N 89° 33' E  
No markers required

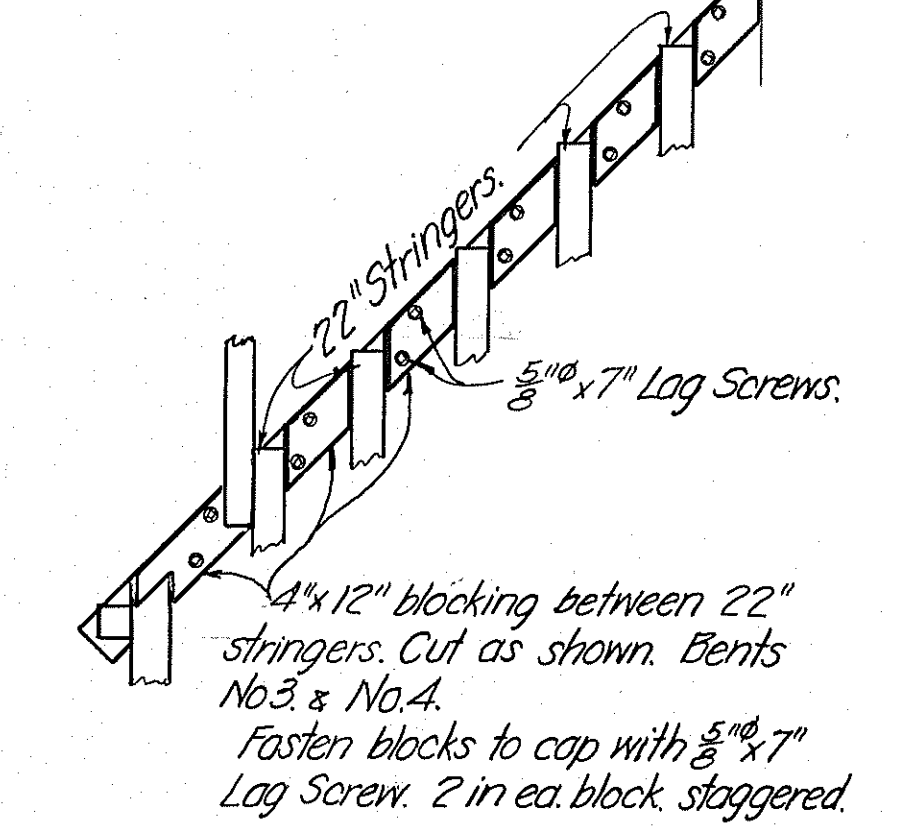
\* THIS CONTRACT: NH0002(393)  
EXISTING TIMBER BRIDGE RAIL REPLACED  
WITH T101 RAIL. SEE DWG. NO. 18750

\*\* THIS CONTRACT: NH0002 (699)  
EXISTING BRIDGE RAIL UPGRADED TO W740.  
SEE DWG. NO. 19733 THRU 19739



SECTION C-C  
Scale:  $\frac{1}{4}" = 1'-0"$

Note: For notes, riprap details, and table of pile lengths see Eng. No. 1812



PLAN OF BLOCKING  
Scale:  $\frac{1}{4}'' = 1'-0''$

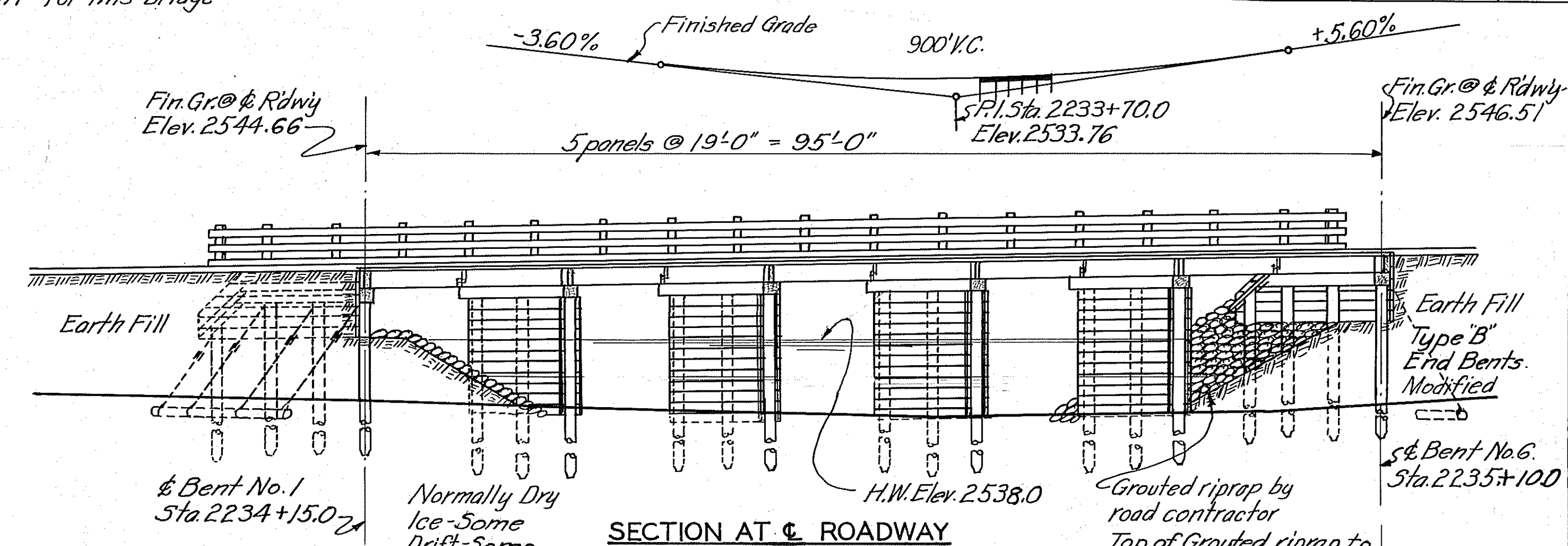
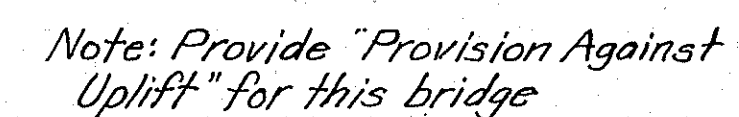
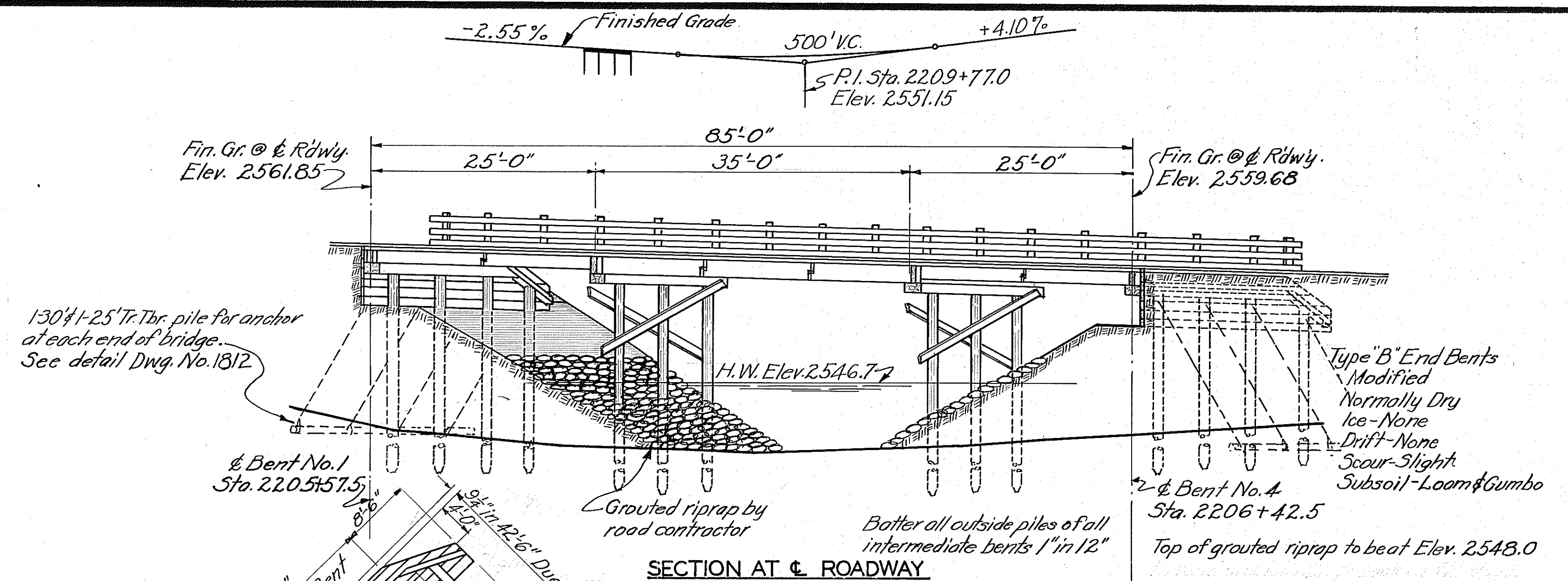
**STATE OF MONTANA**  
**STATE HIGHWAY COMMISSION**

BRIDGES AT STAS.  $\begin{cases} 1939 + 67.5 \\ 2112 + 78.0 \\ 2129 + 48.5 \end{cases}$

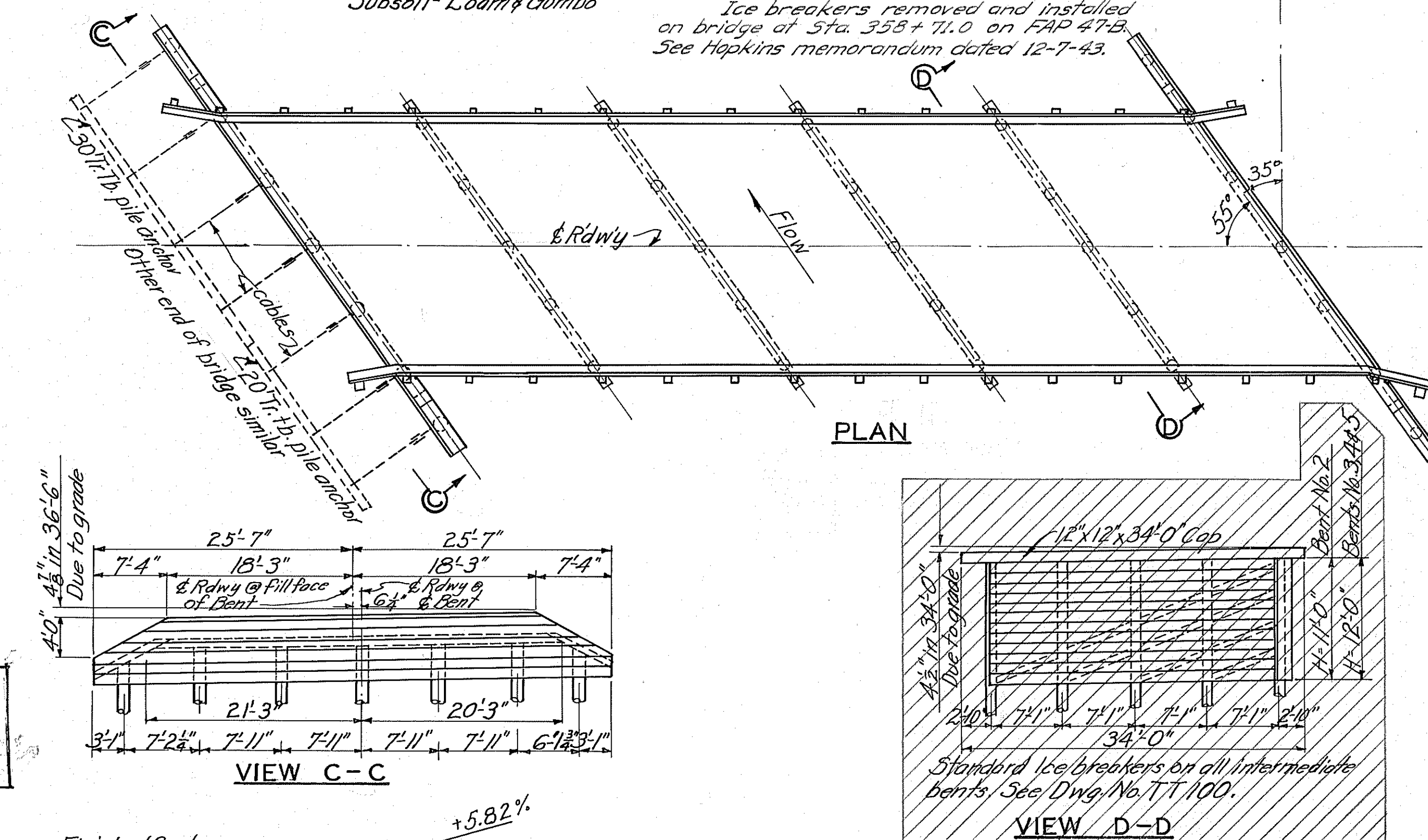
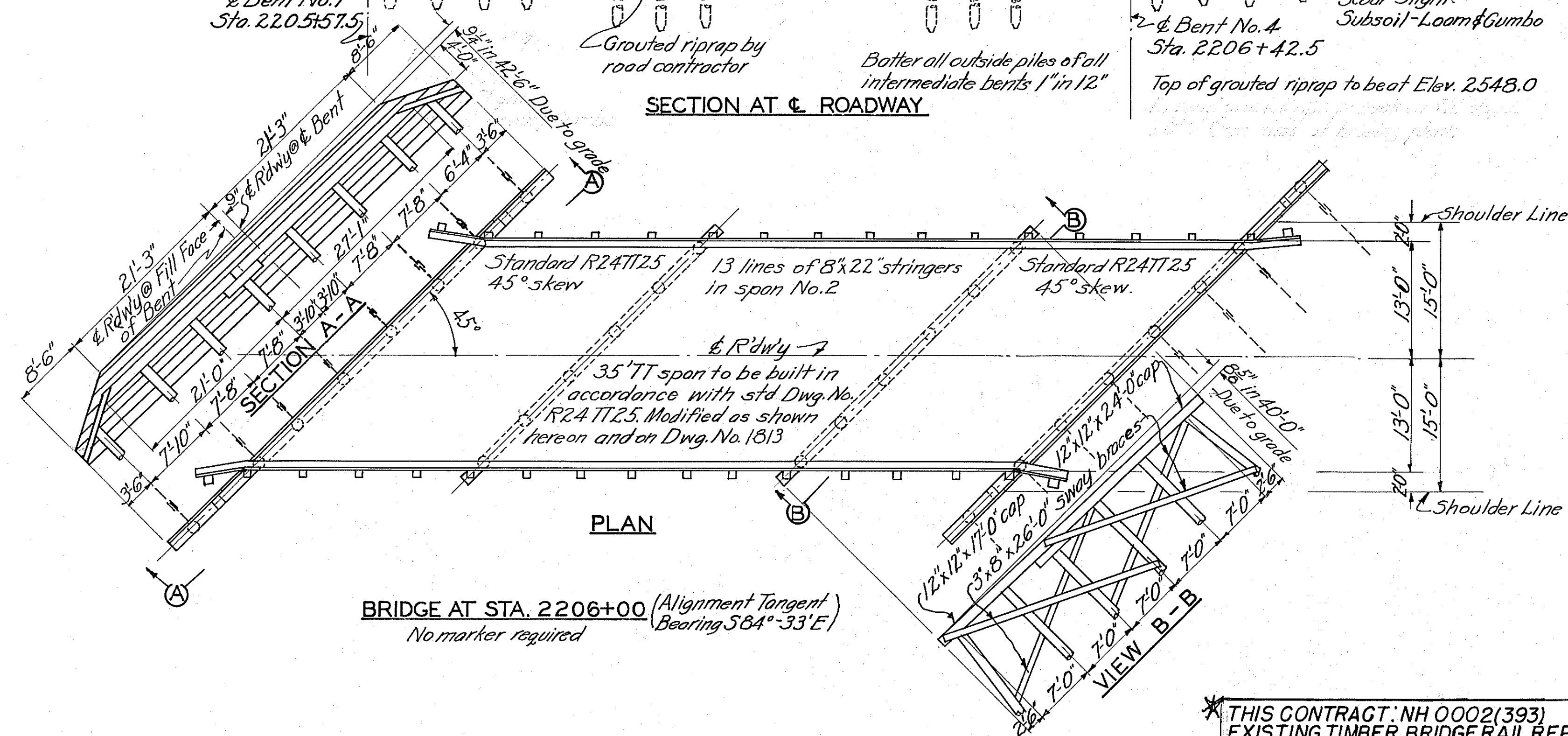
FED. AID PROJ. NO. 247 F(1) UNIT 2  
M<sup>o</sup> CONE COUNTY  
GENERAL LAYOUTS  
Scale: 1" = 10'-0" except as noted.

APPROVED BY B. J. Omburn  
BRIDGE DESIGNING ENGINEER  
FILE NO. 755 DRAWING NO. 1813

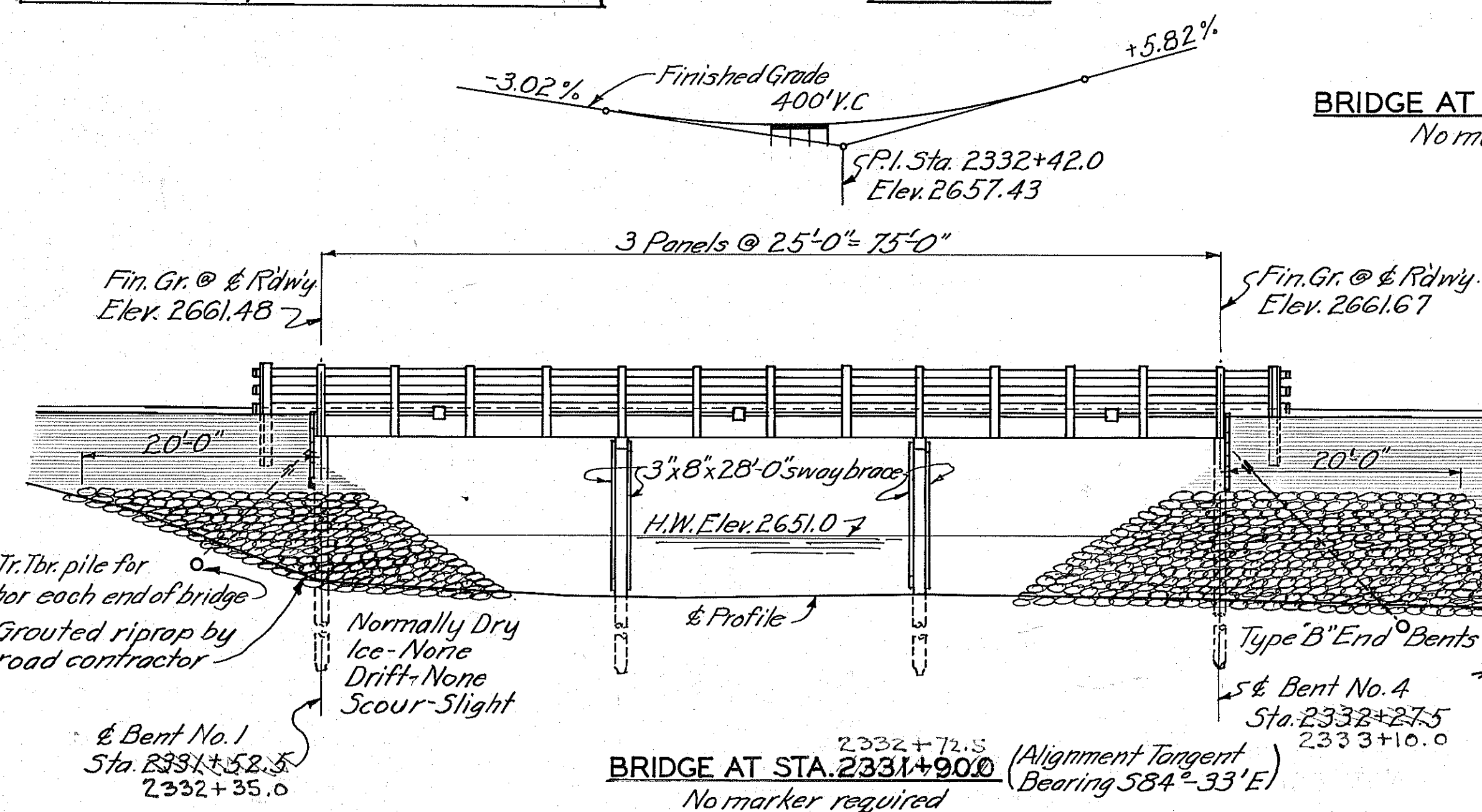
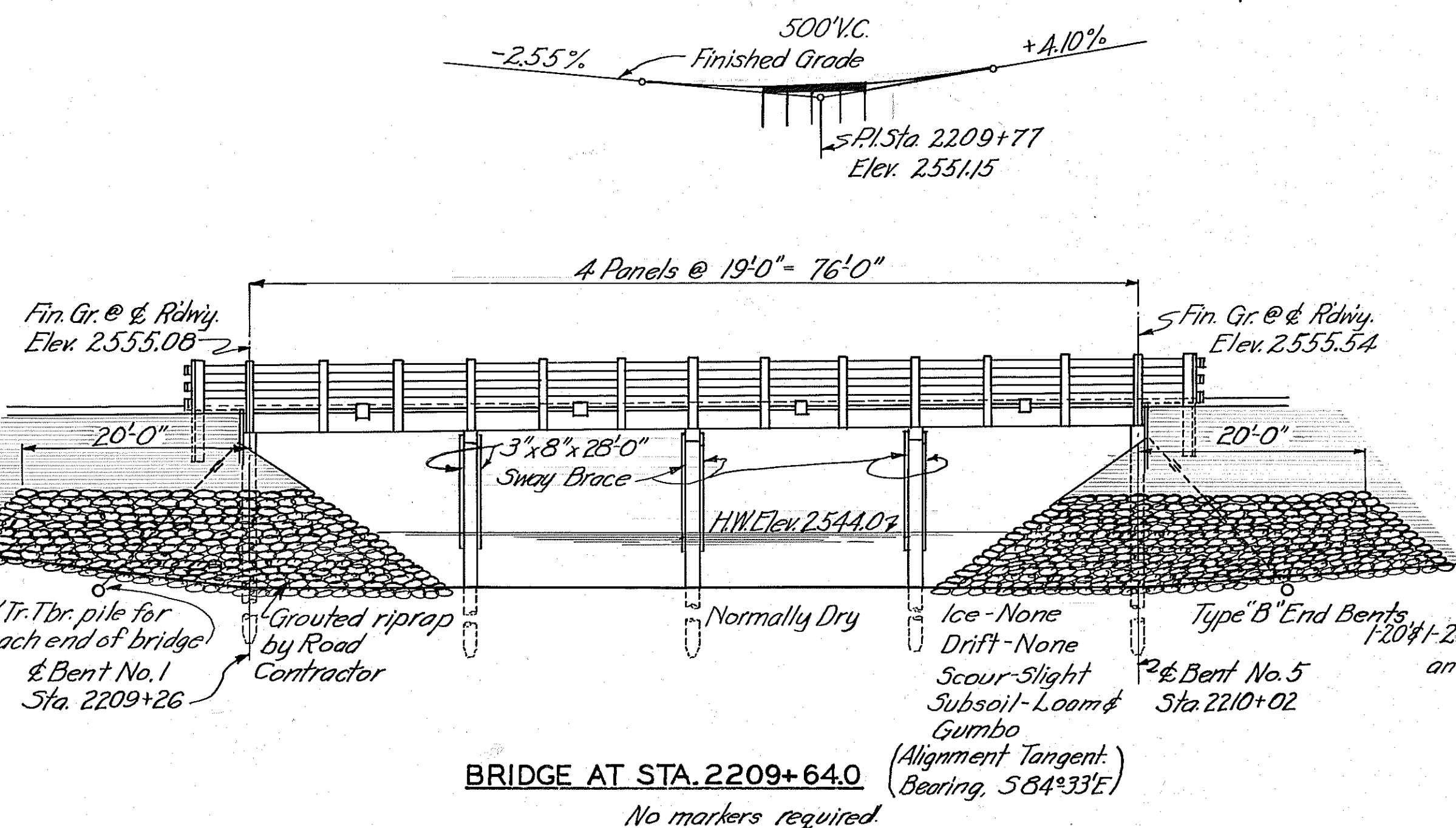
|          |    |        |
|----------|----|--------|
| DESIGNED | BY |        |
| DRAWN    | BY | M.B.   |
| TRACED   | BY | T.C.B. |
| CHECKED  | BY | A.L.H. |
| REVISED  | BY |        |
| REVISED  | BY |        |



NOTE~  
Ice breakers removed and installed  
on bridge at Sta. 358+71.0 on FAP 47-B.  
See Hopkins memorandum dated 12-7-43.



\* THIS CONTRACT: NH 0002(393)  
EXISTING TIMBER BRIDGE RAIL REPLACED  
WITH T101 RAIL. SEE DWG. NO. 18750  
NEW SWAY BRACING AND SEE  
DWG. NO. 18753 FOR DETAILS.



**NOTES**

**FINISHED GRADE**- *Finished Grade of bridges shown on this sheet shall be on a straight line between elevations shown at center lines of end bents.*

**RIPRAP**- *For riprap details see Dwg. No.18/2*

**NOTES & PILE LENGTHS**- *For other notes and table of pile lengths, see Dwg. No. 18/2.*

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BRIDGES AT STAS.  $\left\{ \begin{array}{l} 2206+00.0 \\ 2209+64.0 \\ 2234+62.5 \\ 2331+90.6 \\ 2332+72.5 \end{array} \right.$

FED. AID PROJ. NO. 247 F(1) UNIT 2

MCONE COUNTY  
GENERAL LAYOUT  
Scale: 1"=10'-0"

APPROVED BY: B. J. Omburn \_\_\_\_\_  
BRIDGE DESIGNING ENGINEER

FILE NO. 755 DRAWING NO. 1813A

|          |    |        |         |
|----------|----|--------|---------|
| DESIGNED | BY |        |         |
| DRAWN    | BY | M.B.   | 4-24-39 |
| TRACED   | BY | D.W.B. | 4-29-39 |
| CHECKED  | BY | R.L.H. | 4-29-39 |
| REVISED  | BY |        |         |
| REVISED  | BY |        |         |