

#6011

4

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
TIFFIN — FOSTORIA ROADBRIDGE NO. SE-18-25
S.H. NO. 270 SEC. A-PART
SENECA COUNTY
LOUDON TOWNSHIP

| FED. RD. DIST. NO. | STATE | PROJECT | FISCAL YEAR |
|--------------------|-------|---------|-------------|
| 10 | OHIO | HI | 1940 |

SENECA COUNTY
S.H. 270 SEC. A-(PART)

CONVENTIONAL SIGNS

| | |
|----------------------|-----------|
| STATE LINE | ===== |
| COUNTY LINE | ----- |
| TOWNSHIP LINE | - - - - - |
| SECTION LINE | ----- |
| CENTER LINE | ----- |
| PROPERTY LINE | ----- |
| CITY OR VILLAGE LINE | ----- |
| FENCE LINE | x x x |
| STEAM RAILROAD | ===== |
| ELECTRIC RAILROAD | ----- |
| POLE LINE | o o o |
| GUARD RAIL | ----- |
| DRAIN PIPE, NEW | ----- |
| DRAIN PIPE, OLD | ----- |

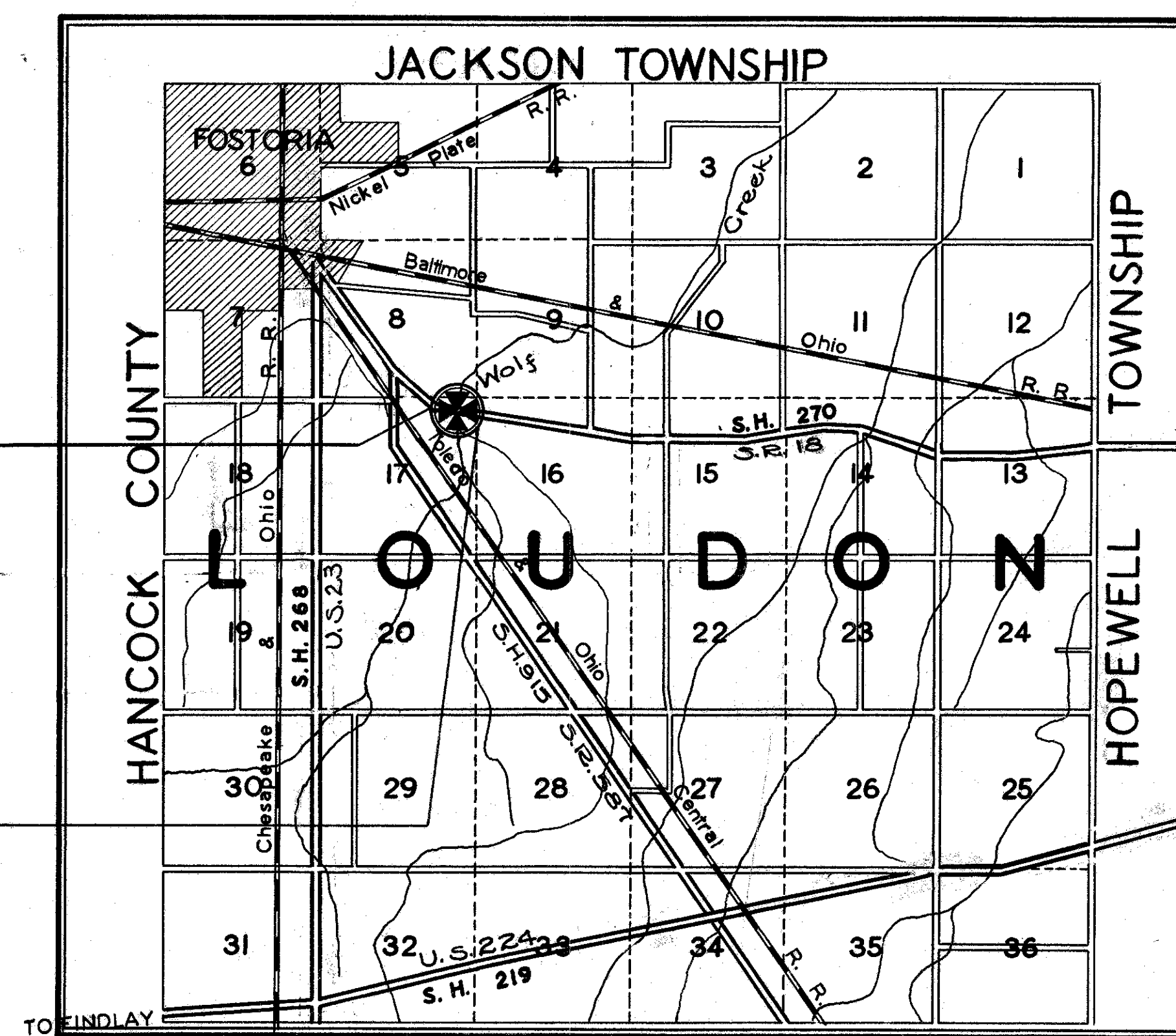
INDEX OF SHEETS

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| | |
|---|-------|
| STRUCTURE DETAILS (20 ft. Span & Under) | 7 |
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LINE DATA

Begin Project - Sta. 26+46.63
End Project - Sta. 48+90.63
Gross Length = Net Length = 2244.00 Lin. Ft.
(No Deductions) = 0.425 Miles.

Supplemental Specifications
NoneSta. 26+46.63
Beginning
of ProjectSta. 48+90.63
End of
Project

Delivery Point: Fostoria Length of Haul: 1 1/2 Miles.

LOCATION PLAN

SCALE: 1" = 4224'

PORTION TO BE IMPROVED

STATE HIGHWAYS
IMPROVED COUNTY ROADS
UNIMPROVED COUNTY ROADS

SCALES

PLAN 1" = 50'
PROFILE - VERTICAL 1" = 5'
PROFILE - HORIZONTAL 1" = 50'
CROSS SECTIONS 1" = 5'

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

| | | | |
|------------------------|-----------------------------------|------------------------|--------------------|
| E-5 No. 1 Dated 7-1-40 | I-8 C.B. 1-2 & 2-2 Dated 11-24-39 | A5-40 7-30-40 | MBD-36 Rev. 3-6-39 |
| S-27 R.C.3 " 3-1-39 | I-15 No. 1 Dated 10-1-39 | G-7.07 10-1933 | |
| I-1,2,3,4 & 5 " 3-1-39 | I-15 No. 2 Dated 10-1-39 | CSB-15-40 Rev. 7-26-40 | |

The Standard Specifications of The State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement. I hereby approve these plans and declare that the making of this improvement will not require that the Highway be closed to traffic and that a temporary road will be provided as shown on the plans and estimate.

The necessary R. & R. for this improvement will be provided by the State of Ohio.

Approved Harold G. Naper
Date 8-13-40 Resident District Deputy DirectorApproved T. E. Udorn
Date _____ Resident Division Deputy Director.Approved _____
Date _____ Chief Engineer, Bureau of Maintenance.Approved W. S. Hindman P.E. 2629
Date 8/29/40 Chief Engineer, Bureau of Bridges.Approved gl. Hogue P.E. 25
Date 8-30-40 Chief Engineer, Location & Right-of-WayApproved H. B. Jones
Date 8-30-40 First Asst. Director and Chief Engineer.Approved Carl A. Beatty
Date 8-30-40 Director of Highways.CONSTRUCTION
BUREAU
JUL 15 1955
GROUND PHOTOLABFILE SENeca-S.H. 270-A(P)
NO. DATE OF LETTING
CONTRACT NO.

SENECA COUNTY
S. H. 270 SEC. A

FOR DETAILS NOT SHOWN on these drawings reference shall be made to Standard Drawings CSD-15-40, revised 7/26/40, AS-40, revised 7/30/40, and MBD-36, revised 3/8/39.

EXISTING SUPERSTRUCTURE shall be removed when no longer required to maintain traffic, and piled at the disposal of the State.

EXISTING SUBSTRUCTURE to be removed where necessary to provide for new construction, the remaining abutments and wings to remain in place. All suitable material removed shall be used for fill as shown on Site Plan.

WELDING to be Class "A".

STEEL RAILING shall be painted in accordance with Item 5-8.
Painting included with railing for payment.

TWO WAY TRAFFIC shall be maintained over existing bridge. Contractor shall support existing roadway embankment and provide temporary guard rail at abutment excavation during construction of abutment to avoid interference with highway traffic. This work included with cofferdams and pumping for payment.

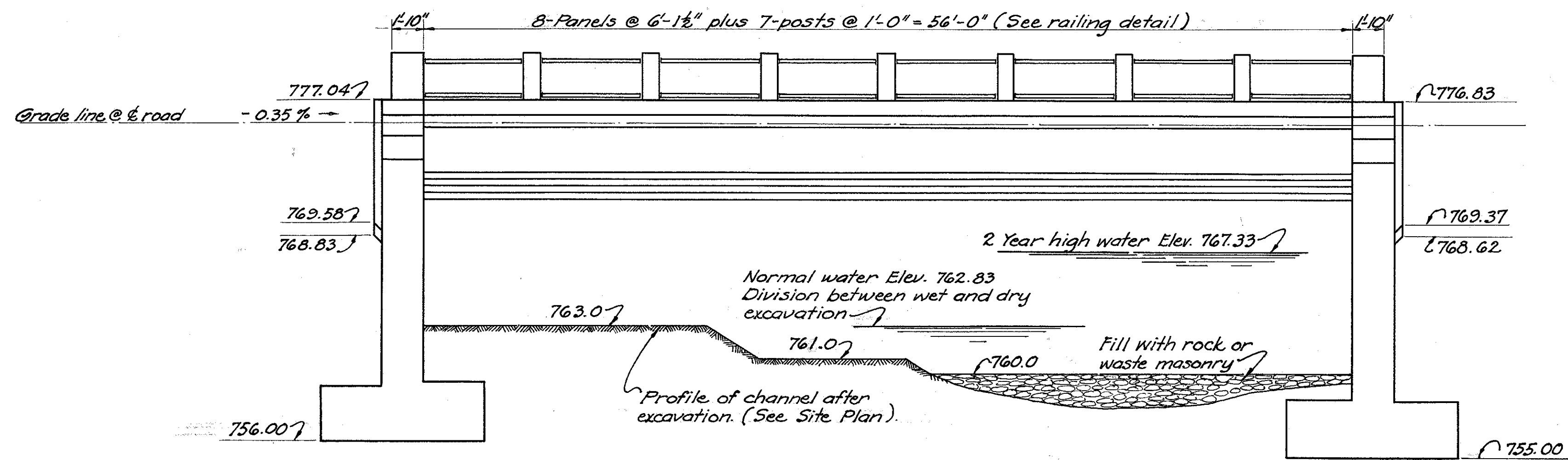
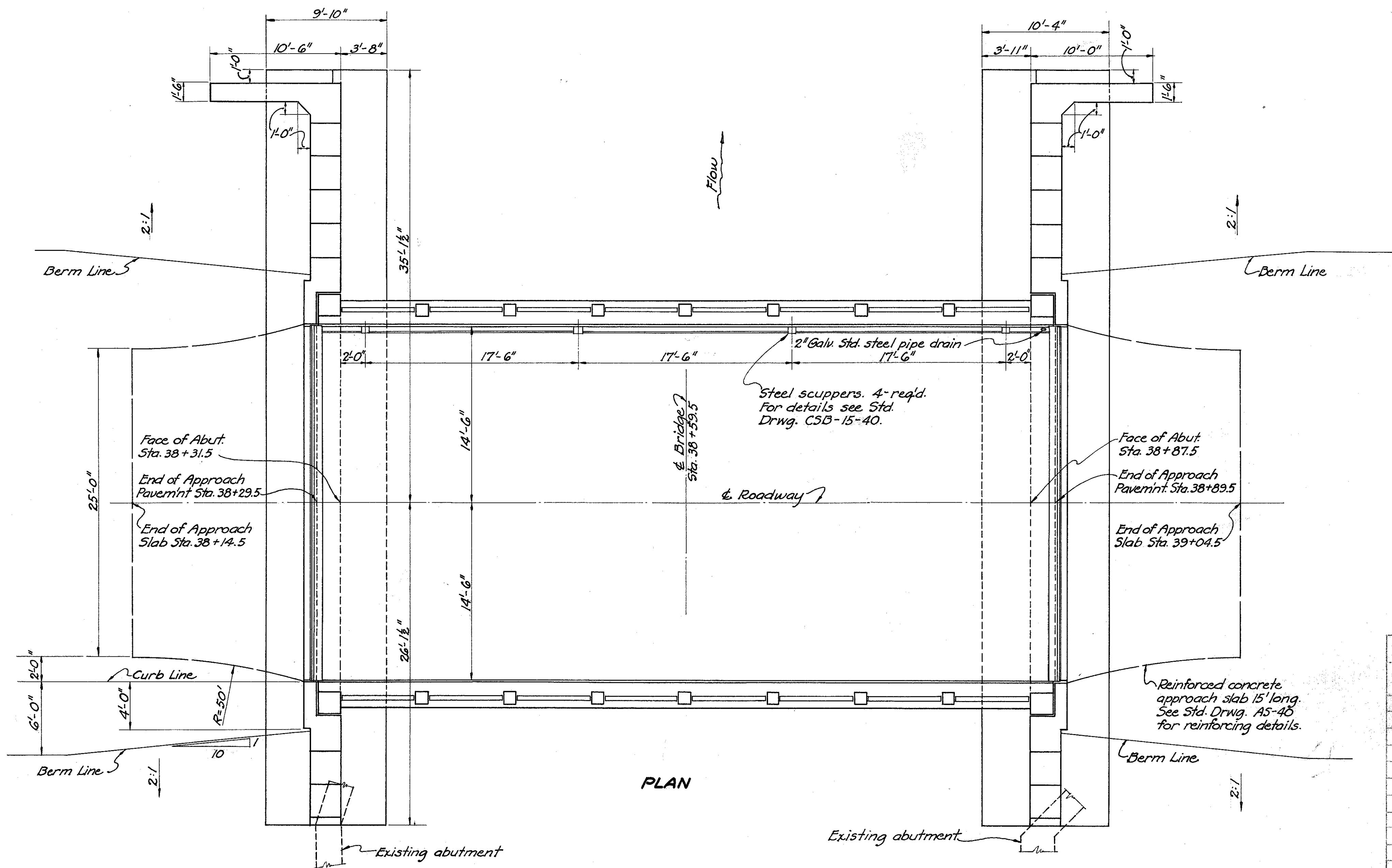
| Item No. | Item | West Abut. | East Abut. | Super. structure | General | Total | Unit | | |
|----------|--|------------|------------|------------------|---------|-------|----------|--|--|
| E-2 | Cofferdams and pumping | | | | Lump | Lump | Lump Sum | | |
| E-2 | Excavation for structures (wet) | 190 | 170 | | | 360 | Cu. Yds. | | |
| E-2 | Excavation for structures (dry) | 45 | 15 | | | 60 | Cu. Yds. | | |
| S-1 | Class "C" concrete, superstructure | | | 55 | | 55 | Cu. Yds. | | |
| S-1 | Class "E" concrete, walls | 82 | 84 | | | 166 | Cu. Yds. | | |
| S-1 | Class "E" concrete, footings | 75 | 79 | | | 154 | Cu. Yds. | | |
| S-3 | Type "B" waterproofing | 18 | 18 | | | 36 | Sq. Yds. | | |
| S-4 | Reinforcing steel | 7060 | 8190 | 9950 | 60 | 25260 | Lbs. | | |
| S-7 | Structural steel | | | 73000 | | 73000 | Lbs. | | |
| S-9 | Folded copper strip | 15 | 16 | | | 31 | Lin. Ft. | | |
| S-14 | Bridge railing (steel with concrete posts) | | | 119.3 | | 119.3 | Lin. Ft. | | |
| S-8 | Field painting of structural steel | | | 73000 | | 73000 | Lbs. | | |
| S-24 | Removal of existing structure | | | | Lump | Lump | Lump Sum | | |
| S-29 | Porous backfill | | | | 72 | 72 | Cu. Yds. | | |
| I-10 | Rockfill toe protection | | | | 33 | 33 | Cu. Yds. | | |

**GENERAL PLAN AND ELEVATION
NOTES AND ESTIMATED QUANTITIES.**

BRIDGE NO. SE-18-25
OVER WOLF CREEK

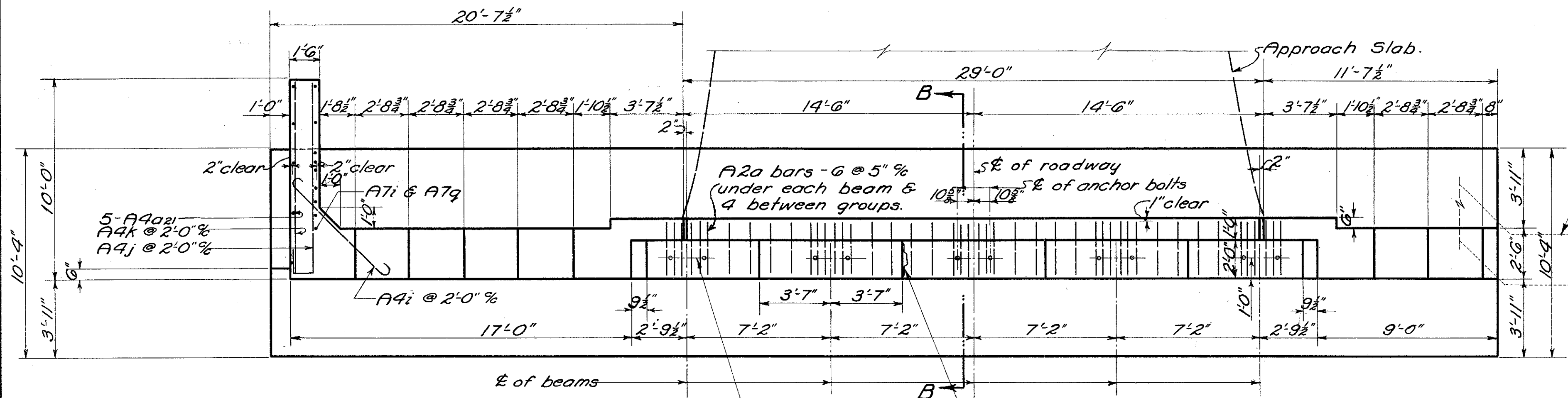
SENECA COUNTY S.H. 270
SECTION A STA. 38+59.5

| | | | | | | |
|----------|--------|--------|---------|----------|------|---------|
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED |
| J.W.W. | J.W.W. | J.E.P. | J.H.P. | 2020 | | |



ELEVATION

SENECA COUNTY
S.H. 270 SEC. A



% of 1 1/2" anchor bolts for bolsters. Drill holes 1 1/8" in dia. by 1'-0" deep. Place A2a bars to clear bolt holes. Use bolster N^o. F-75, Std. Drwg. CSB-15-40. Bolsters on East abutment only.

Contraction joint. Use 3"x8" key and 12" 24oz. copper strip. Copper to extend from top of footer to Approach Slab Seat. See Std. Drwg. MBD-36 for details.

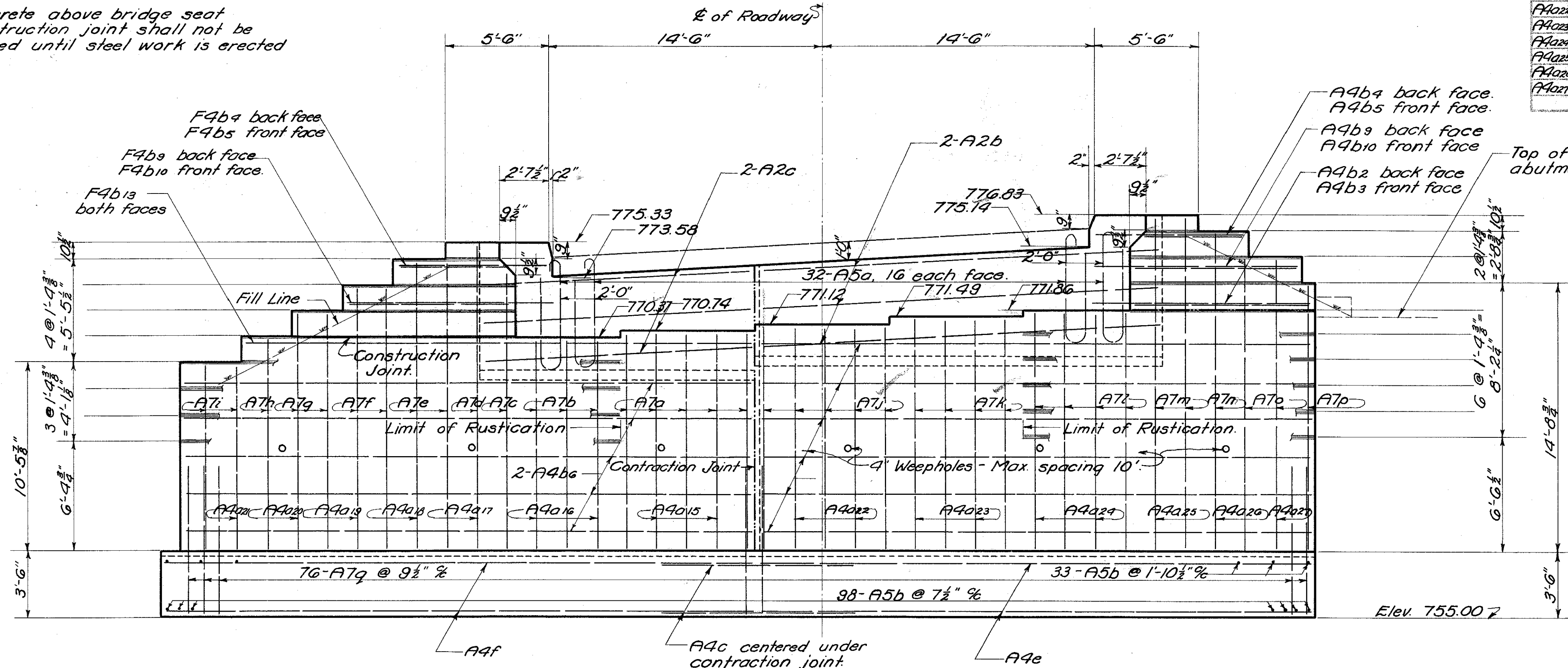
Chamfer all exposed edges 3/8" unless otherwise noted.

See general notes for latest revision dates on Std. Drwg's referred to on this sheet.

PLAN

For Rustication details see Std. Drwg. MBD-36.

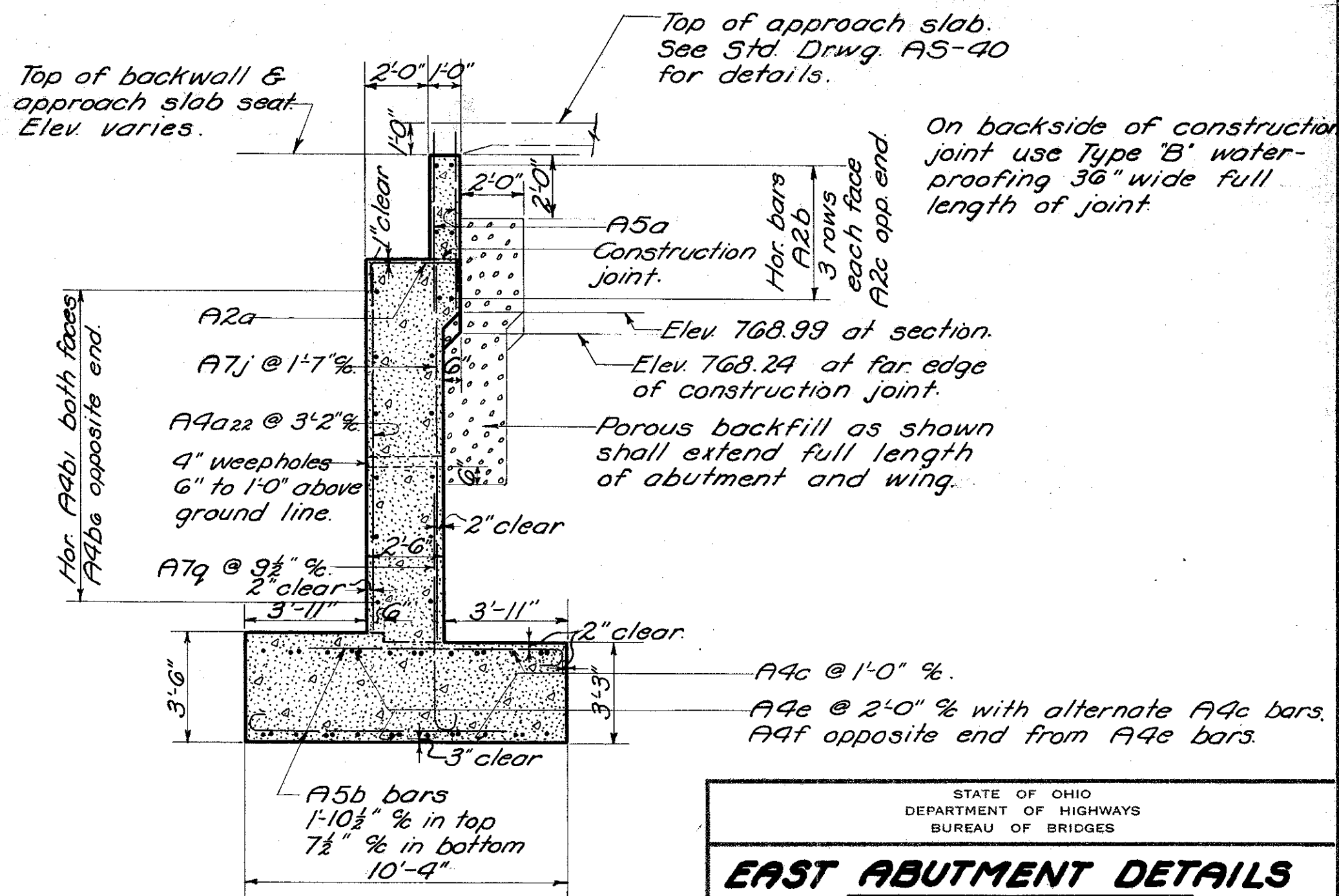
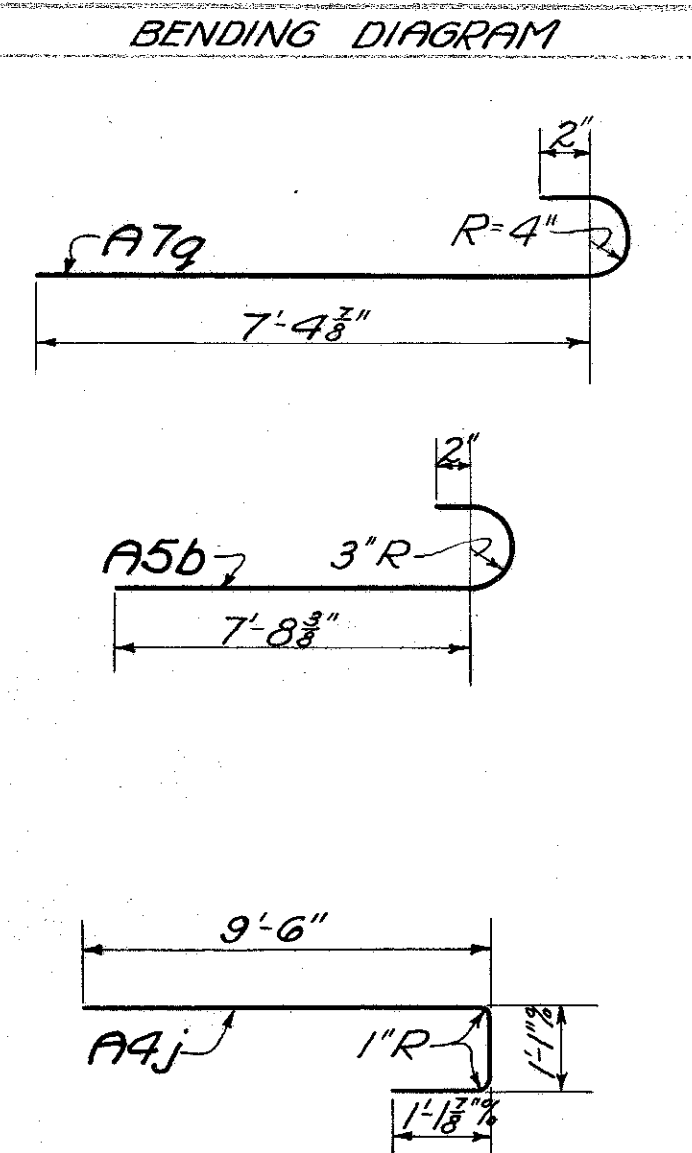
Concrete above bridge seat construction joint shall not be placed until steel work is erected



ELEVATION

Existing abutment. Remove portion necessary to construct new work. Cut old abutment on a vertical plane at end of new wall.

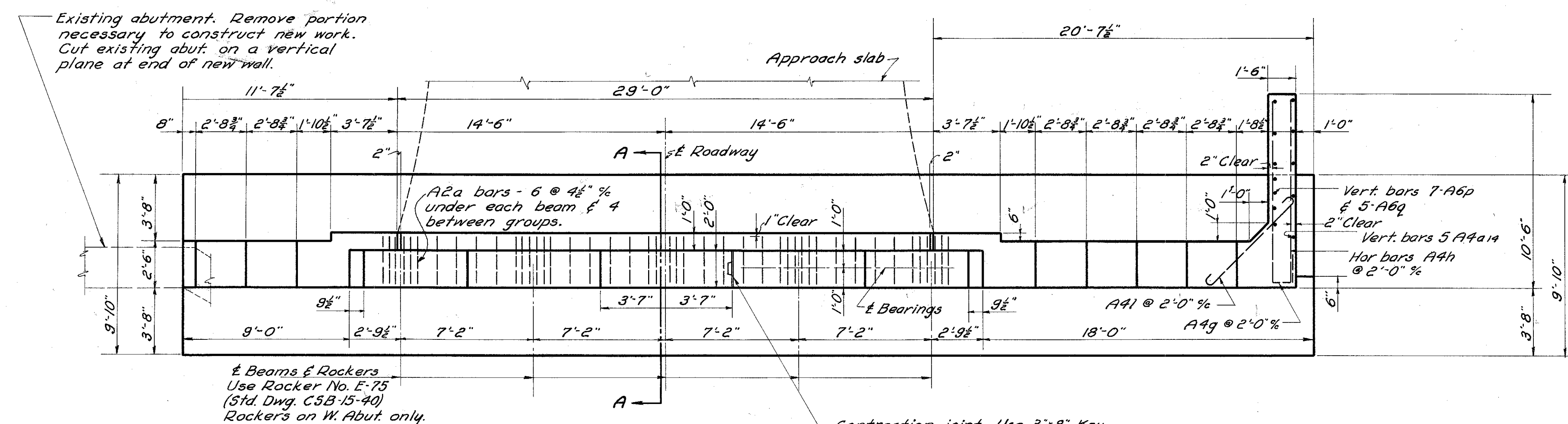
| REINFORCING STEEL LIST | | | | | | | | | | | |
|------------------------|------|-----|--------|--------|-------|--|------|----|--------|--------|-------|
| MARK | SIZE | NO | LENGTH | WEIGHT | SHAPE | MARK | SIZE | NO | LENGTH | WEIGHT | SHAPE |
| EAST ABUTMENT | | | | | | | | | | | |
| A7a | 1" | 5 | 12'-3" | 160 | Str. | A4b1 | 3/8" | 12 | 29'-0" | 360 | Str. |
| A7b | 1" | 3 | 11'-9" | 100 | Str. | A4b2 | 3/8" | 1 | 11'-3" | 10 | Str. |
| A7c | 1" | 1 | 14'-6" | 40 | Str. | A4b3 | 3/8" | 1 | 9'-3" | 10 | Str. |
| A7d | 1" | 1 | 16'-9" | 50 | Str. | A4b4 | 3/8" | 2 | 8'-0" | 20 | Str. |
| A7e | 1" | 2 | 16'-0" | 90 | Str. | A4b5 | 3/8" | 2 | 5'-9" | 10 | Str. |
| A7f | 1" | 2 | 14'-6" | 80 | Str. | A4b6 | 3/8" | 10 | 30'-0" | 310 | Str. |
| A7g | 1" | 2 | 13'-3" | 70 | Str. | A4b7 | 3/8" | 2 | 10'-9" | 20 | Str. |
| A7h | 1" | 1 | 12'-0" | 30 | Str. | A4b8 | 3/8" | 2 | 8'-6" | 20 | Str. |
| A7i | 1" | 10 | 10'-6" | 280 | Str. | A4b9 | 3/8" | 2 | 26'-9" | 60 | Str. |
| A7j | 1" | 5 | 12'-6" | 170 | Str. | A4c | 3/8" | 20 | 10'-0" | 210 | Str. |
| A7k | 1" | 4 | 13'-0" | 140 | Str. | A4e | 3/8" | 10 | 29'-0" | 300 | Str. |
| A7l | 1" | 4 | 13'-3" | 140 | Str. | A4f | 3/8" | 10 | 31'-0" | 320 | Str. |
| A7m | 1" | 2 | 18'-3" | 100 | Str. | A4i | 3/8" | 5 | 7'-9" | 40 | *Bt |
| A7n | 1" | 1 | 17'-6" | 50 | Str. | A4j | 3/8" | 5 | 11'-6" | 50 | Bt |
| A7o | 1" | 2 | 16'-0" | 90 | Str. | A4k | 3/8" | 5 | 9'-6" | 50 | Str. |
| A7p | 1" | 1 | 14'-9" | 40 | Str. | | | | | | |
| A7q | 1" | 81 | 8'-9" | 1,890 | Bt | A2a | 1/2" | 46 | 4'-9" | 150 | *Bt |
| A5a | 3/8" | 32 | 11'-6" | 550 | *Bt | A2b | 1/2" | 6 | 21'-0" | 80 | Str. |
| A5b | 3/8" | 131 | 8'-9" | 1,720 | Bt | A2c | 1/2" | 6 | 14'-0" | 60 | Str. |
| REPLACEMENT BARS | | | | | | | | | | | |
| A4a1 | 3/8" | 2 | 12'-0" | 20 | Str. | RE1 | 1" | 1 | 8'-0" | 20 | Str. |
| A4a2 | 3/8" | 2 | 11'-6" | 20 | Str. | RE6 | 3/8" | 1 | 7'-6" | 20 | Str. |
| A4a3 | 3/8" | 1 | 16'-6" | 20 | Str. | RE5 | 3/8" | 1 | 7'-0" | 10 | Str. |
| A4a4 | 3/8" | 1 | 15'-9" | 20 | Str. | RE4 | 3/8" | 1 | 6'-6" | 10 | Str. |
| A4a5 | 3/8" | 1 | 14'-3" | 10 | Str. | RE2 | 1/2" | 1 | 6'-0" | — | |
| A4a6 | 3/8" | 1 | 13'-0" | 10 | Str. | | | | | | |
| A4a7 | 3/8" | 6 | 10'-3" | 60 | Str. | | | | | | |
| A4a8 | 3/8" | 2 | 12'-3" | 30 | Str. | | | | | | |
| A4a9 | 3/8" | 2 | 12'-9" | 30 | Str. | | | | | | |
| A4a10 | 3/8" | 2 | 13'-0" | 30 | Str. | | | | | | |
| A4a11 | 3/8" | 1 | 18'-0" | 20 | Str. | | | | | | |
| A4a12 | 3/8" | 1 | 17'-3" | 20 | Str. | | | | | | |
| A4a13 | 3/8" | 1 | 15'-9" | 20 | Str. | | | | | | |
| | | | | | | * See West Abutment Details for bending diagram. | | | | | |



SECTION B-B

| | | | | | | | |
|--|--------|--------|---------|---------------|------|---------|--|
| STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES | | | | | | | |
| EAST ABUTMENT DETAILS | | | | | | | |
| BRIDGE N ^o . SE-18-25 over WOLF CREEK | | | | | | | |
| SENECA CO. | | | | S.H. 270 | | | |
| SECTION A. | | | | STA. 38+59.50 | | | |
| DESIGNED | DRAWN | TRACED | CHECKED | REVIEWED | DATE | REVISED | |
| J.W.W. | J.W.W. | M.C.B. | J.H.B. | J.H.B. | 2/20 | | |

SENECA COUNTY
S. H. 270 SEC. A



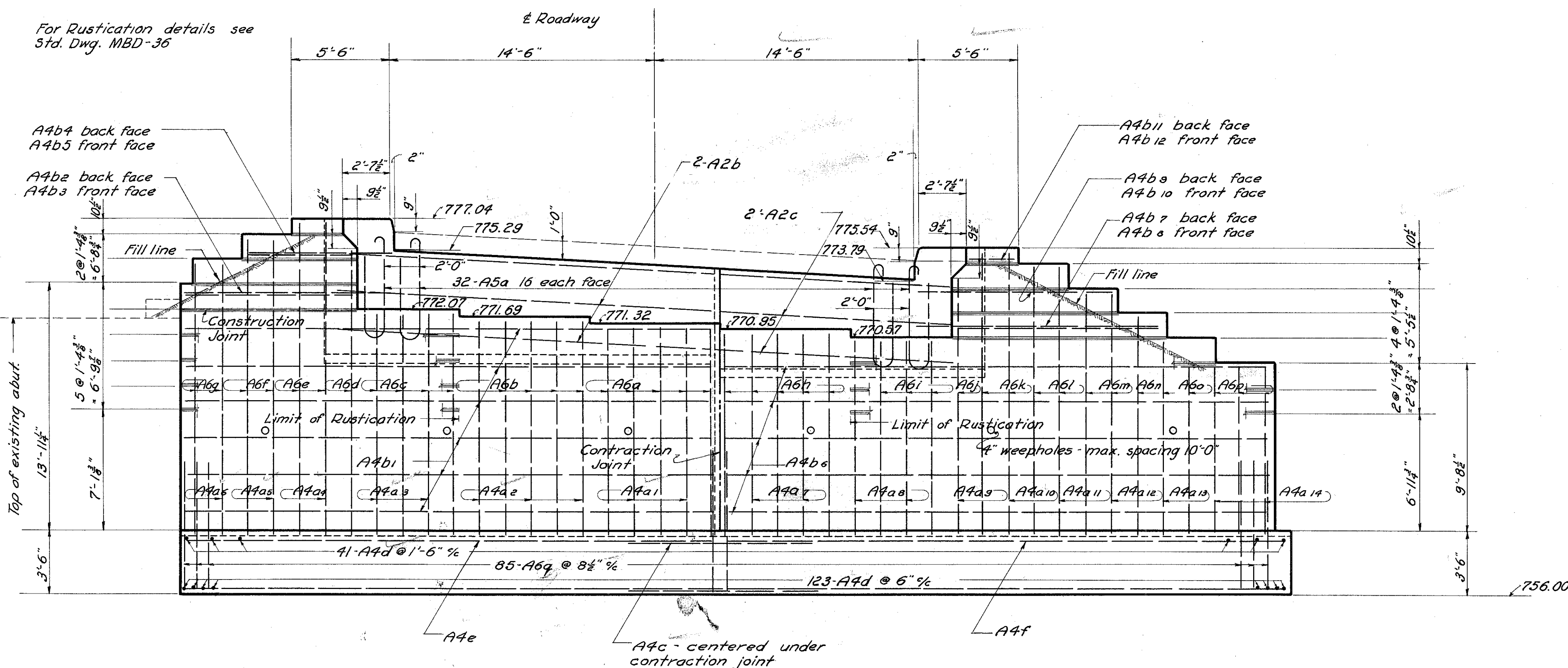
PLAN

Concrete above bridge seat construction joint shall not be placed until steel work is erected.

— Contraction joint. Use 3"x8" Key
 & 12", 24 oz. copper strip. Copper
 to extend from top of footer to
 approach slab seat. See Std. Dwg.
 MBD-36 for details.

Chamfer all exposed edges
 $\frac{3}{4}$ " unless otherwise noted.

See general notes for latest revision dates on Std. Dwg., referred to on this sheet.



ELEVATION

REINFORCING STEEL - WEST ABUTMENT

| Mark | Size | No. | Length | Weight | Mark | Size | No. | Length | Weight | | |
|-------|---------------------|-----|--------|--------|------|-------|---------------------|--------|--------|------|---|
| A6a | $\frac{5}{8}" \phi$ | 5 | 11'-9" | 120 | S | A9a11 | $\frac{5}{8}" \phi$ | 1 | 14'-9" | 20 | S |
| A6b | $\frac{5}{8}" \phi$ | 5 | 12'-3" | 130 | S | A9a12 | $\frac{5}{8}" \phi$ | 1 | 13'-9" | 10 | S |
| A6c | $\frac{5}{8}" \phi$ | 4 | 12'-6" | 100 | S | A9a13 | $\frac{5}{8}" \phi$ | 1 | 11'-0" | 10 | S |
| A6d | $\frac{5}{8}" \phi$ | 1 | 15'-3" | 30 | S | A9a14 | $\frac{5}{8}" \phi$ | 7 | 9'-6" | 70 | S |
| A6e | $\frac{5}{8}" \phi$ | 2 | 17'-6" | 70 | S | A9b1 | $\frac{5}{8}" \phi$ | 12 | 29'-0" | 360 | S |
| A6f | $\frac{5}{8}" \phi$ | 2 | 16'-3" | 70 | S | A9b2 | $\frac{5}{8}" \phi$ | 1 | 11'-3" | 10 | S |
| A6g | $\frac{5}{8}" \phi$ | 2 | 15'-6" | 60 | S | A9b3 | $\frac{5}{8}" \phi$ | 1 | 9'-3" | 10 | S |
| A6h | $\frac{5}{8}" \phi$ | 5 | 11'-6" | 120 | S | A9b4 | $\frac{5}{8}" \phi$ | 1 | 8'-0" | 10 | S |
| A6i | $\frac{5}{8}" \phi$ | 4 | 11'-3" | 90 | S | A9b5 | $\frac{5}{8}" \phi$ | 1 | 5'-9" | 10 | S |
| A6j | $\frac{5}{8}" \phi$ | 1 | 13'-9" | 30 | S | A9b6 | $\frac{5}{8}" \phi$ | 10 | 30'-0" | 310 | S |
| A6k | $\frac{5}{8}" \phi$ | 2 | 16'-3" | 60 | S | A9b7 | $\frac{5}{8}" \phi$ | 1 | 13'-6" | 10 | S |
| A6l | $\frac{5}{8}" \phi$ | 2 | 15'-3" | 60 | S | A9b8 | $\frac{5}{8}" \phi$ | 1 | 11'-3" | 10 | S |
| A6m | $\frac{5}{8}" \phi$ | 2 | 14'-0" | 50 | S | A9b9 | $\frac{5}{8}" \phi$ | 1 | 10'-9" | 10 | S |
| A6n | $\frac{5}{8}" \phi$ | 1 | 12'-6" | 30 | S | A9b10 | $\frac{5}{8}" \phi$ | 1 | 8'-6" | 10 | S |
| A6o | $\frac{5}{8}" \phi$ | 2 | 11'-3" | 50 | S | A9b11 | $\frac{5}{8}" \phi$ | 1 | 5'-0" | 10 | S |
| A6p | $\frac{5}{8}" \phi$ | 10 | 9'-9" | 200 | S | A9b12 | $\frac{5}{8}" \phi$ | 1 | 2'-6" | - | S |
| A6q | $\frac{5}{8}" \phi$ | 30 | 8'-0" | 1470 | B | A9c | $\frac{5}{8}" \phi$ | 20 | 10'-0" | 210 | S |
| | | | | | | A9d | $\frac{5}{8}" \phi$ | 164 | 8'-3" | 1410 | B |
| A5a | $\frac{3}{4}" \phi$ | 32 | 11'-6" | 550 | B | A9e | $\frac{5}{8}" \phi$ | 10 | 29'-0" | 300 | S |
| | | | | | | A9f | $\frac{5}{8}" \phi$ | 10 | 31'-0" | 320 | S |
| A9a1 | $\frac{5}{8}" \phi$ | 2 | 11'-6" | 20 | S | A9g | $\frac{5}{8}" \phi$ | 5 | 12'-0" | 60 | B |
| A9a2 | $\frac{5}{8}" \phi$ | 3 | 12'-0" | 40 | S | A9h | $\frac{5}{8}" \phi$ | 5 | 10'-0" | 50 | S |
| A9a3 | $\frac{5}{8}" \phi$ | 2 | 12'-3" | 30 | S | A9i | $\frac{5}{8}" \phi$ | 5 | 7'-9" | 40 | B |
| A9a4 | $\frac{5}{8}" \phi$ | 1 | 17'-3" | 20 | S | | | | | | |
| A9a5 | $\frac{5}{8}" \phi$ | 1 | 16'-6" | 20 | S | A2a | $\frac{1}{2}" \phi$ | 46 | 4'-9" | 150 | B |
| A9a6 | $\frac{5}{8}" \phi$ | 1 | 15'-3" | 20 | S | A2b | $\frac{1}{2}" \phi$ | 6 | 21'-0" | 80 | S |
| A9a7 | $\frac{5}{8}" \phi$ | 2 | 11'-3" | 20 | S | A2c | $\frac{1}{2}" \phi$ | 6 | 14'-0" | 60 | S |
| A9a8 | $\frac{5}{8}" \phi$ | 2 | 11'-0" | 20 | S | | | | | | |
| A9a9 | $\frac{5}{8}" \phi$ | 1 | 13'-6" | 10 | S | | | | | | |
| A9a10 | $\frac{5}{8}" \phi$ | 1 | 16'-0" | 20 | S | | | | | | |

Bending Diagrams

The figure displays bending diagrams for six different reinforcing steel bars, labeled A6q, A5a, A9d, A9g, A9i, and A2a. Each diagram illustrates the bar's profile, including straight lengths, bends, and radii.

- A6q:** A horizontal bar with a 2" radius bend at the left end. The straight length is 6'-9 1/2".
- A5a:** A horizontal bar with a 6" radius bend at the left end and a 3" radius bend at the right end. The straight length is 4'-0".
- A9d:** A horizontal bar with a 2" radius bend at the left end. The straight length is 7'-4 1/2".
- A9g:** A horizontal bar with a 1" radius bend at the right end. The straight length is 10'-0" ±.
- A9i:** A horizontal bar with a 2 1/2" radius bend at the left end and a 2 1/2" radius bend at the right end. The straight length is 5'-11".
- A2a:** A horizontal bar with a 1'-1 1/2" radius bend at the left end and a 1" radius bend at the right end. The straight length is 2'-8" ±.

On back side of construction joint use type "B" waterproofing 36" wide, full length of joint.

Top of backwalls &
approach slab seat
Elev. varies

— Top of approach slab. See
Std. Dwg. A5-40 for details.

Hor. A4b1 both faces
A4b6 opposite end

A2a _____
A6a @ 1'-5" c/c _____
A4a1 @ 2'-10" c/c _____
4" weep holes _____
6" to 1'-0" above
ground line

Elev. 769.20 at section
Elev. 768.45 opposite side of contraction joint.

-Porous backfill as shown shall extend full length of abutment & wing.

2" Clear

A4c @ 1'-0" %

A4e @ 2'-0" % with alternate A4c bars

A4f opposite end from A4e bars.

SECTION A-A

WEST ABUTMENT DETAILS

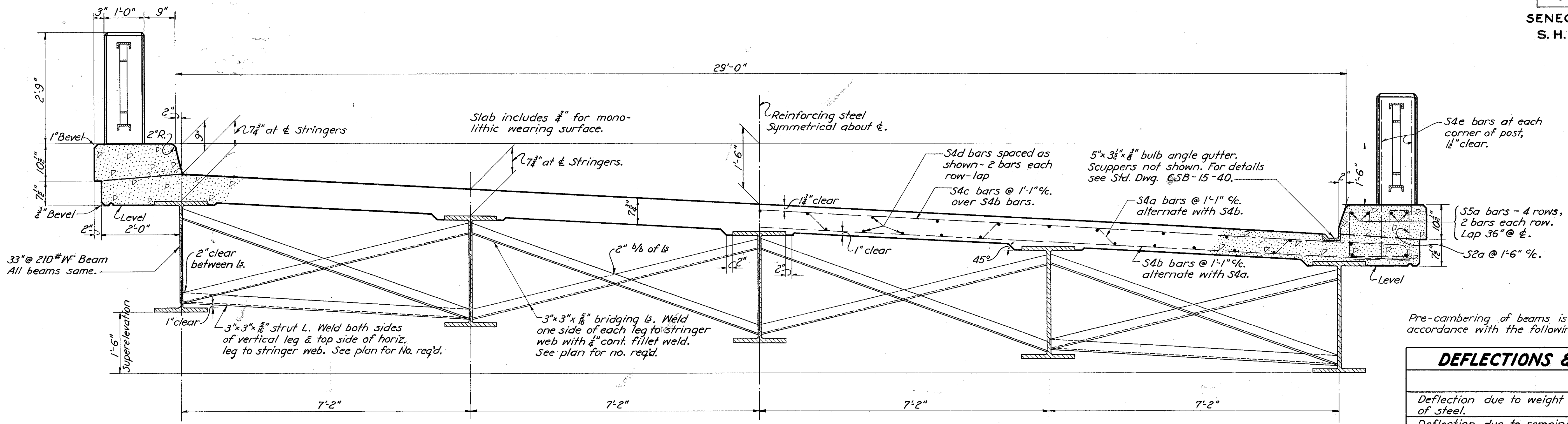
BRIDGE No. SE-18-25

OVER

WOLF CREEK

SENECA CO. S.H. 270
SEC. A STA. 38+59.5

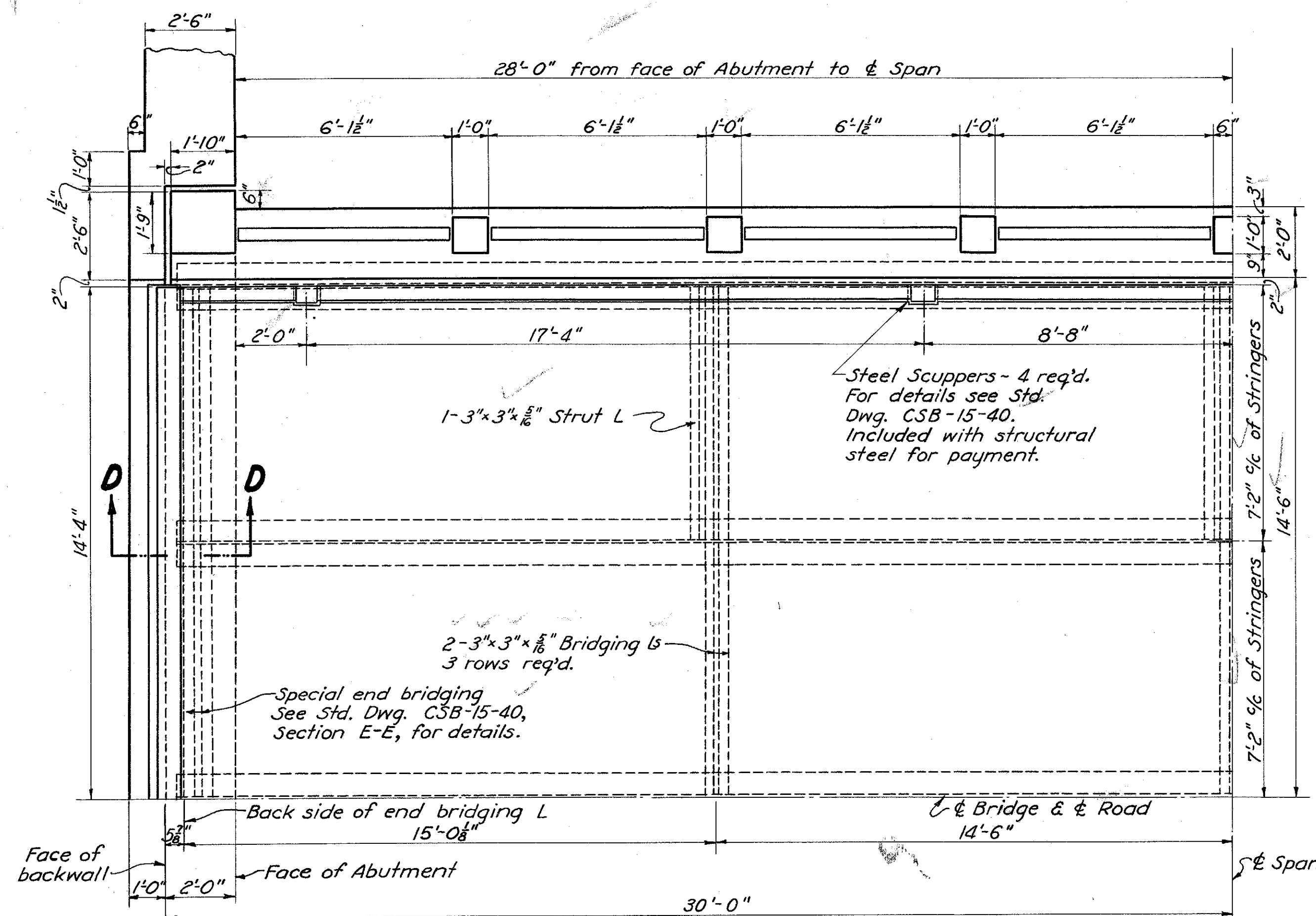
| | | | | | | |
|--------------------|-----------------|------------------|-------------------|--------------------|------|-------|
| DESIGNED J.W.W. | DRAWN J.W.W. | TRACED W.G.F. | CHECKED J.H.B. | REVIEWED S.W.O. | DATE | REVIS |
|--------------------|-----------------|------------------|-------------------|--------------------|------|-------|



TYPICAL TRANSVERSE SECTION

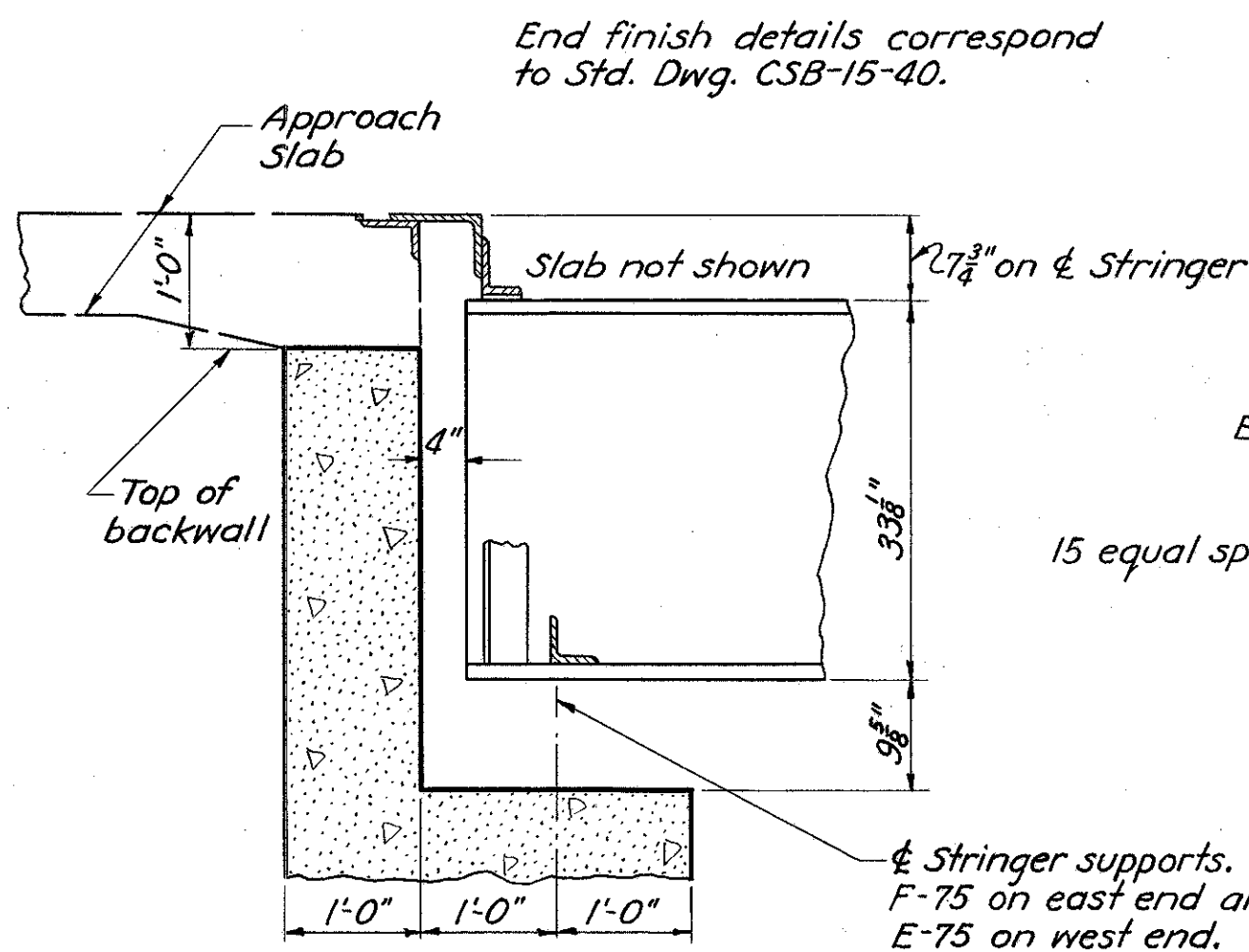
Pre-cambering of beams is required in accordance with the following table.

| DEFLECTIONS & CAMBER | | |
|--|---------------|--------------|
| | Outside Beams | Inside Beams |
| Deflection due to weight of steel. | 1/8" | 1/8" |
| Deflection due to remaining dead load. | 3/16" | 1/4" |
| Total required camber. | 1/2" | 5/8" |

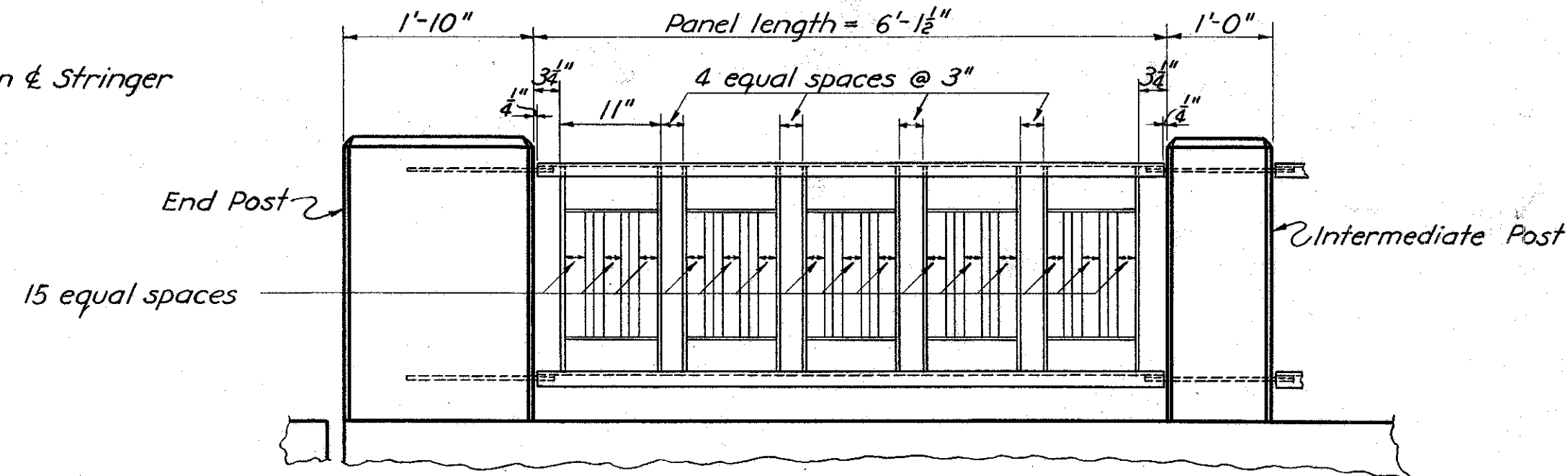


PLAN OF N.W. QUARTER OF SUPERSTRUCTURE

Plan symmetrical about centerline except following:
1. No bulb angle gutter or steel scuppers req'd on south side of bridge (see typical section above).
2. Provide 2" pipe gutter drain on N.E. corner (see Std. Dwg. CSB-15-40, Sec. D-D).



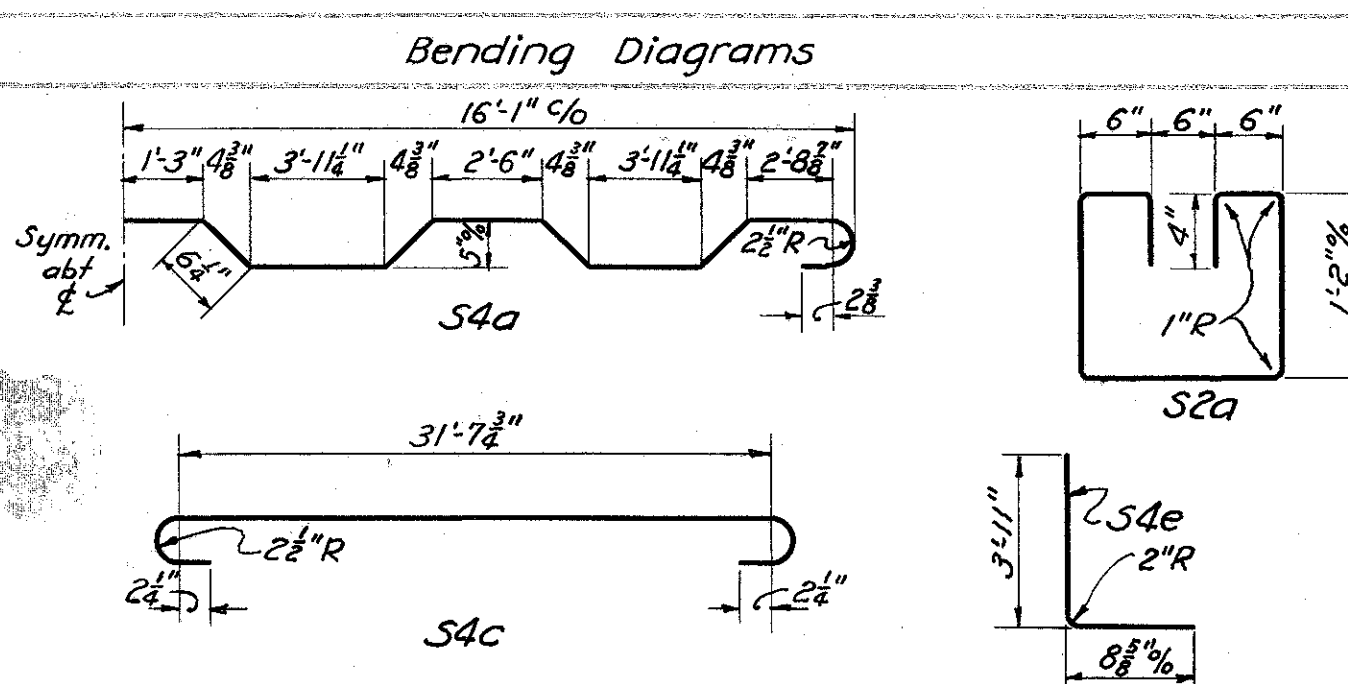
SECTION D-D



TYPICAL RAILING PANEL

See Std. Dwg. for details not shown

| REINFORCING STEEL - SUPERSTRUCTURE | | | | | |
|------------------------------------|------|-----|--------|--------|-------|
| Mark | Size | No. | Length | Weight | Shape |
| S5a | 3/8" | 16 | 31'-0" | 750 | Str. |
| S4a | 5/8" | 55 | 34'-9" | 2000 | Bt. |
| S4b | 5/8" | 54 | 32'-3" | 1820 | Str. |
| S4c | 5/8" | 54 | 33'-6" | 1890 | Bt. |
| S4d | 5/8" | 90 | 30'-9" | 2890 | Str. |
| S4e | 5/8" | 72 | 4'-6" | 340 | Bt. |
| S2a | 1/2" | 78 | 5'-0" | 260 | Bt. |



STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. SE-18-25
OVER WOLF CREEK

SENECA COUNTY
SEC. A

S. H. 270
STA. 36+59.5

DESIGNED: J.M.W. DRAWN: J.M.W. TRACED: G.W. CHECKED: J.W.C. REVIEWED: G.W. DATE: 1940

~ SUMMARY OF QUANTITIES ~

ROADWAY DRAINAGE "D"

| Sheet No. | Reference No. | | Pipe for Roadway Drainage | | Pipe for Roadway Drainage under Drives | Pipe for Roadway Drainage Outlets | Standard Catch Basins |
|--------------|---------------|-----|------------------------------|-----|---|--------------------------------------|--------------------------|
| | From | To | Lin. Ft. | | Lin. Ft. | Lin. Ft. | Each |
| | | | 8" | 12" | 12" | 12" | *1-2 |
| 3 | 1-D | 3-D | 398 | 434 | 63 | | 2 |
| 4 | 1-D | 3-D | | 25 | | 64 | 2 |
| | Totals | | 398 | 459 | 63 | 64 | 4 |

STRUCTURES - 20' SPAN AND UNDER "C"

| Sheet No. | Ref. No. | Station | Detail on Sheet No. | Structure Excavation Incl. Culverts | Pipe for Culverts - Lin. Ft. | Standard Catch Basins - Each |
|---------------|----------|---------|---------------------|-------------------------------------|------------------------------|------------------------------|
| 7 | 1-C | 33+00 | 7 | 18 | 12" 64 | *1-2 2 |
| Totals | | | | 18 | 64 | 2 |

RIP-RAP "R"

| Sheet No. | Reference No. | Type "A" Rip-Rap Grouted |
|-----------|--------------------|--------------------------------|
| 5 | From To 1-R 2-R | 59 Yds. 64 |
| Totals | | 64 |

EARTHWORK

| Sheet No. | Station | | Excavation | Embankment | Embankment 20% | Channel Excavation |
|----------------------|----------|----------|------------|------------|----------------|--------------------|
| | From | To | Cu. Yds. | Cu. Yds. | Cu. Yds. | Cu. Yds. |
| | 26+46.63 | 38+29.25 | 609 | 5777 | 6992 | |
| | 38+39.75 | 49+30.63 | 444 | 5791 | 6949 | |
| Total | Roadway | | 1,053 | 11,568 | 13,941 | |
| * Channel Excavation | | | | | | 3722 |

* Note: Material from Channel Excavation to be used to reduce borrow. $13881 - (1053 + 3722) = 9106 \text{ Cu.Yds Borrow}$

PAVEMENT COMPUTATIONS

| | |
|--|-------------------|
| Net length of Typical Section | = 215400 Lin. Ft. |
| Area of Pavement (22' wide) = $2154 \times 22 \div 9$ | 5265 Sq. Yds. |
| Area of 1-P | 39 Sq. Yds. |
| Area of 2-P | 39 Sq. Yds. |
| Total pavement area | = 5343 Sq. Yds. |
| Item B-20 - 5" Waterbound Macadam 1 st Base Course | 5343 Sq. Yds. |
| Item B-20 - 5" Waterbound Macadam 2 nd Base Course | 5343 Sq. Yds. |
| Item T-30 - Bituminous Material for Prime Coat (Applied at rate of 0.35 gals. per sq. yd. = 5343×0.35) | = 1870 Gals. |
| Item T-31 - Bituminous Surface Treatment - Bituminous Material (Applied at rate of 0.50 - 0.56 gals. per sq. yd. = 5343×0.53) | = 2832 Gals. |
| Item T-31 - Bituminous surface Treatment - Cover Aggregate - Size No. 46 (Applied at rate of 0.50 cu. ft. per sq. yd. = $5343 \times 0.50 \div 27$) | = 99 Cu. Yds. |
| Item T-31 - Bituminous Surface Treatment - Seal Coat - Bituminous Material (Applied at rate of 0.25 gals. per sq. yd.) = 5343×0.25 | = 1336 Gals. |
| Item T-31 - Bituminous Surface Treatment - Cover Aggregate - Size No. 6 (Applied at rate of 0.15 cu. ft. per sq. yd.) = $5343 \times 0.15 \div 27$ | = 30 Cu. Yds. |

WATER

58 M Gals (Emb.) + 2 M Gal. (Compaction in cuts) = 60 M Gal.

APPROACH SLABS

2- Approach Slabs 15' Long (Std. Dwg. AS-40) 87.8 Sq.Yds.

APPROACHES "A"

| Sheet No. | Reference No. | | Pipe for Drives-Lin. Ft. | Aggregate for Side Approaches | |
|-----------|---------------|-----|--------------------------|-------------------------------|------------|
| | From | To | 12" | Drives | Mail Boxes |
| 3 | 1-A | 5-A | 24 | 21.4 | 7.4 |
| 4 | 1-A | 2-A | 24 | 5.5 | |
| Totals | | | 48 | 26.9 | 7.4 |

TREES "T"

| | |
|--------------|-----------------------|
| Sheet No. | Remove Item E-9 |
| 4 | 5 |
| Totals | 5 |

GUARD RAIL "G"

| Sheet No. | Reference No. | | Guard Rail Lin. Ft. |
|--------------|------------------|-----|------------------------|
| | From | To | |
| 3 | 1-G | 2-G | 576 |
| 4 | 1-G | 5-G | 576 |
| Total 1/2 | | | 1152 |

REMOVAL OF EXISTING PAVEMENT

| Sheet No. | Station | | Width | G. Conc. Base 2" Bit. Conc. Surface Sq. Yds. |
|--------------|---------|---------|-------|---|
| | From | To | | |
| 3 | 26+4663 | 33+00 | 17.5 | 2243 |
| 4 | 33+00 | 33+32 | 17.5 | 63 |
| 4 | 33+32 | 43+9063 | 17.5 | 1950 |
| | Totals | | | 4256 |

GENERAL SUMMARY

| ITEM | DESCRIPTION | TOTAL UNIT |
|-----------------|--|---------------|
| ROADWAY | | |
| E-1 | Roadway Excavation (Unclassified) | 1053 Cu. Yds. |
| E-3 | Channel Excavation | 5722 Cu. Yds. |
| E-4 | Borrow (Contractor to furnish) | 9100 Cu. Yds. |
| E-8 | Removal & Disposal of 6" Concrete Base & 2" Bituminous Concrete Wearing Course. | 4250 Sq. Yds. |
| E-9 | Removal of Trees and Stumps | 5 Each |
| E-11 | Water (Estimated) | 60 MGals. |
| I-1 | 12" Pipe for Driveways | 48 Lin. Ft. |
| I-3 | 8" Pipe for Roadway Drainage | 398 Lin. Ft. |
| I-3 | 12" Pipe for Roadway Drainage | 459 Lin. Ft. |
| I-3 | 12" Pipe for Roadway Drainage Under Drives | 63 Lin. Ft. |
| I-3 | 12" Pipe for Roadway Drainage Outlets | 64 Lin. Ft. |
| I-8 | Standard No. 1-2 Catch Basins | 4 Each |
| I-9 | 8" 12" Stone Underdrain (French Drain) No. 2 | 500 Lin. Ft. |
| I-10 | Rip-rap - Type 'A' - (Grouted) | 64 Sq. Yds. |
| I-17 | Aggregate for Traffic Bound Side Approaches (60% No. 34, 40% No. 7) | 34.3 Cu. Yds. |
| I-15 | Std. strength flexible steel plate, tension type, Sec. I-15.03 or Steel beam type (without brackets) Sec. I-15.05, Guard Rail. | 1152 Lin. Ft. |
| I-17 | Aggregate for maintaining traffic | 600 Cu. Yds. |
| M-10 | Calcium chloride for maintaining traffic | 12 Tons |
| PAVEMENT | | |
| B-20 | 5" Waterbound Macadam - Base Course | 5343 Sq. Yds. |
| B-20 | 5" Waterbound Macadam - 2 nd Base Course | 5343 Sq. Yds. |
| T-30 | Bituminous Prime Coat M-5.15, RT-2 or RT-3 | 1870 Gals. |
| T-31 | Bituminous Material for Surface Treatment M-5.16, RT-6 | 2332 Gals. |
| T-31 | Aggregate, No. 46, for Surface Treatment | 99 Cu. Yds. |
| T-31 | Bituminous Material for Surface Treatment - Seal Coat M-5.16 RT-6 | 1336 Gals. |
| T-31 | Aggregate, No. 6, for Surface Treatment - Seal Coat | 30 Cu. Yds. |
| S-5 | 9" Reinforced Concrete Approach Slabs | 878 Sq. Yds. |

STRUCTURES-20' SPAN AND UNDER

| | | | |
|------|--|----|----------|
| E-2 | Excavation for Structures - Unclassified | 18 | Cu Yds. |
| S-27 | 12" Pipe for Roadway Culverts | 64 | Lin. Ft. |
| I-8 | Standard No. 1-2 Catch Basins | 2 | Each |

STRUCTURES OVER 20 FT. SPAN

For Quantities see Sheet No. 16

*Note: 500 Lin. Ft. of 8"x12" Stone Underdrain (French Drain) as above estimated is to be installed at direction of Engineer in charge of Project.