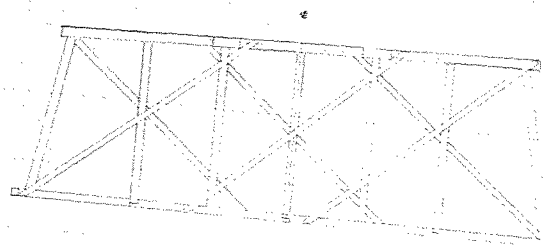
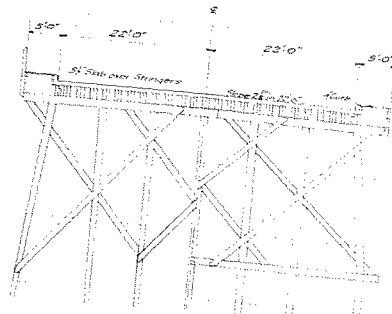


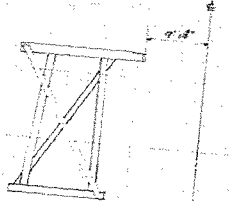
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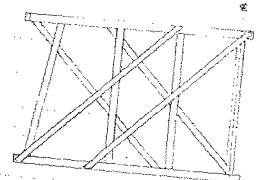
SPECIAL FRAMED BENT No. 28A



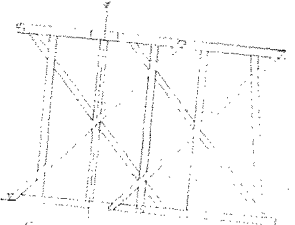
TYPICAL  
HALF SECTION  
PILE BENTS



SPECIAL FRAMED BENT No. 32



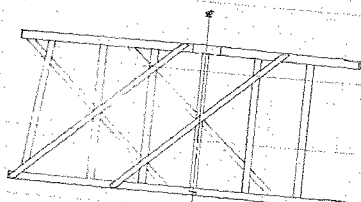
SPECIAL FRAMED BENT No. 29



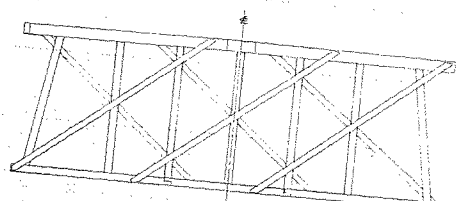
SPECIAL FRAMED BENT No. 27



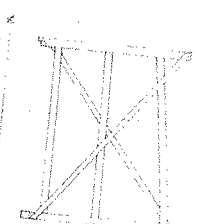
CITY OF SEATTLE  
Bench Mark - Square on N.E.  
corner Frank Seals, 10' Left  
Sta. 42+40 - Elevation 08265'



SPECIAL FRAMED BENT No. 33



SPECIAL FRAMED BENT No. 30

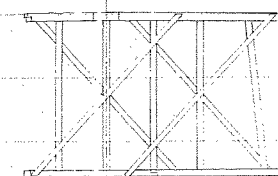
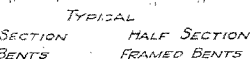


SPECIAL FRAMED BENT No. 28

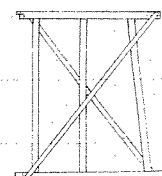
PROGRESS & FINAL ESTIMATE PROFILE  
STATE ROAD NO. 1  
FOURTH AVENUE SOUTH - VIADUCT  
BETWEEN OREGON ST. & DENVER ST.  
IN CITY OF SEATTLE  
KING COUNTY

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON  
Station 41+15.50 to 42+40.00  
Contract No. 1887 F.A. No. 1887-1-1  
Work Began January 28, 1934  
Resident Engineer R.M. Munnings  
District Engineer Geo. H. Shearer  
APPROVED: *[Signature]*  
DIRECTOR OF HIGHWAYS

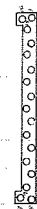
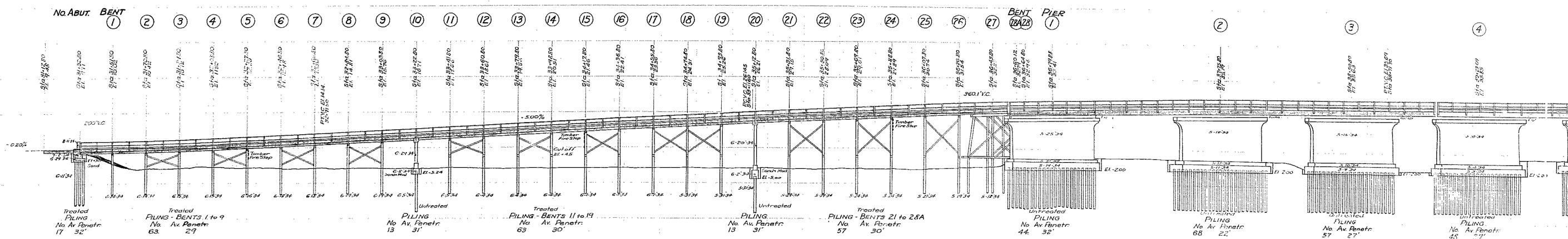
TO SEATTLE



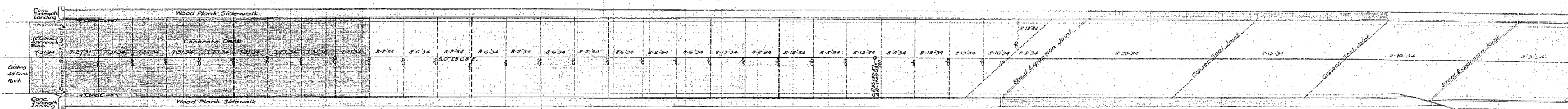
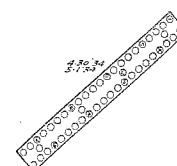
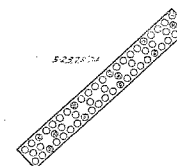
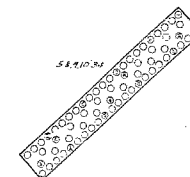
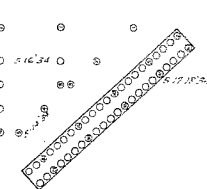
SPECIAL FRAMED BENT No. 27.



SPECIAL FRAMED BENT No. 28



*Note: All timber is creosoted treated except sidewalk plank, curb guard and timber fire stops which are zinc chloride treated.*



ITEM NO. 24  
N.P.R.R. Co. Bill, Bill No. 70830, April 1934  
Labor in connection with lining N.P. track over in connection  
with construction of 410 Avenue South Extension. Covered by  
Eastern R/W. 3542, December 30, 1933.  
Total Bill = \$44.19

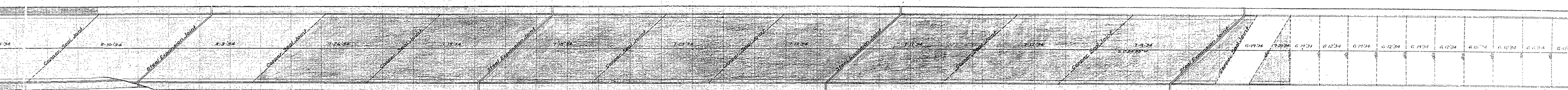
ITEM NO. 24  
O.W.R.R. & N. Co. Bill, Bill No. 8346.  
Cost of Relocating Trucks # 21 & # 27 at Argo,  
Washington on account of construction of Viaduct  
on 4th Avenue South.  
Total Bill: \$ 5238.70

ITEM NO. 24  
Postal Telegraph - Cable Co. Bill, Bill No. 9-PP-12  
To cost of regrading and handling wires to clear  
construction of 4th Avenue South Viaduct.

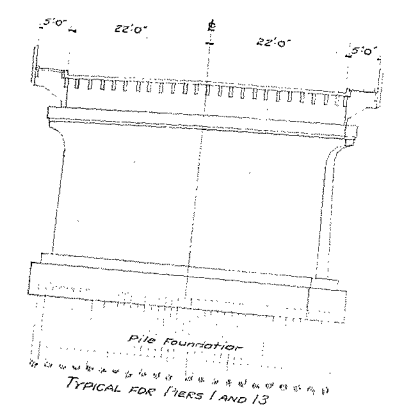
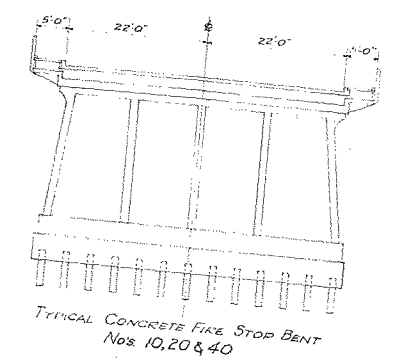
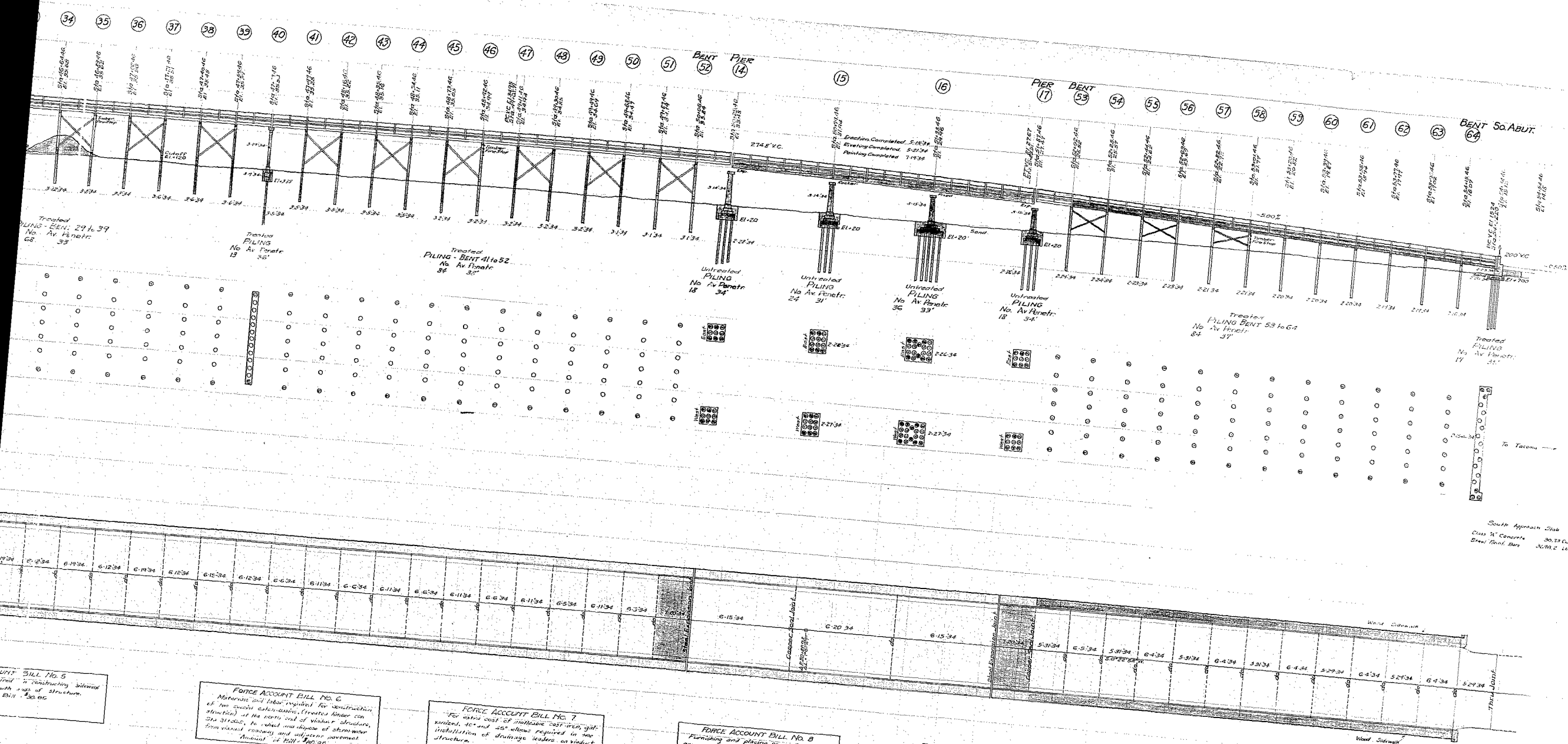
Total Bill = \$203.27

ITEM NO. 24  
N.P.R.R. Co. Bill, Bill No. 108531  
For expense in connection with work  
at 4th Avenue South Viaduct. Covered  
by Easement R/R. 3542, Dec. 20, 1933.  
Total = \$ 962.57

FORDS ACCOUNT BALANCE  
 For money received in payment of order made  
 to order of order of one Foster Telegraph and  
 Cable Co. 11/10/18.  
 Amount of bill \$100.00



**FORCE ACCOUNT BILL**  
 Materials and labor required  
 at two concrete water tanks (con-  
 struction) at the town and at  
 the school, to construct and dis-  
 seminate roadway, and adju-  
 stment of bill.



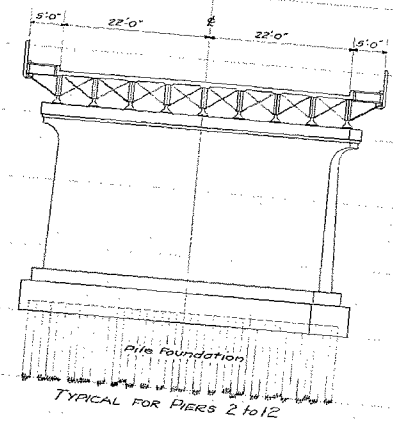
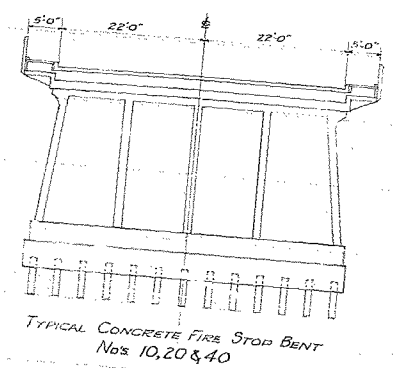
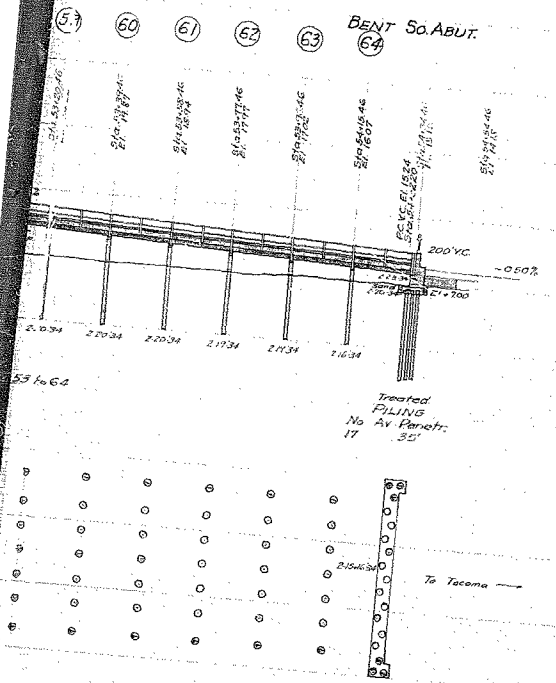
**UNIT BILL NO. 5**  
 "Constructing sidewalk  
 on top of structure."  
 Bill \$30.00

**FORCE ACCOUNT BILL NO. 6**  
 Materials and labor required for construction  
 of two concrete sidewalks (one on each side of  
 structure) at the north end of viaduct structure,  
 the bridge, to collect and dispose of stormwater  
 from viaduct roadway and adjacent pavement.  
 Amount of Bill \$80.25

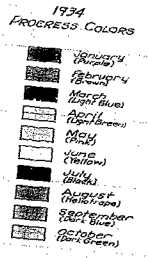
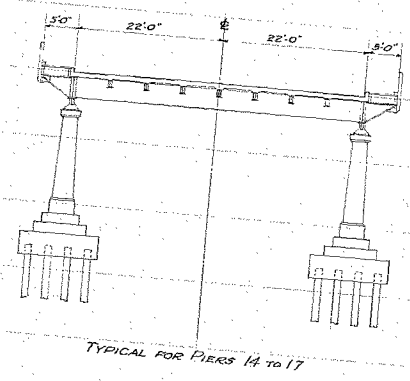
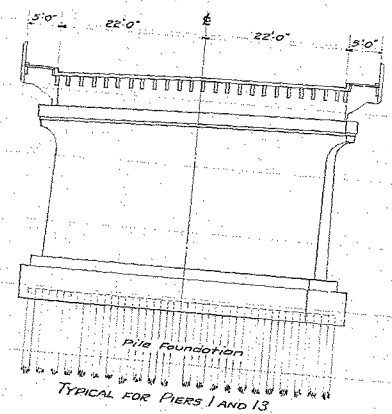
**FORCE ACCOUNT BILL NO. 7**  
 For extra cost of malleable cast-iron, gal-  
 vanized, 10" and 12" elbows required in the  
 installation of drainage leaders on viaduct  
 structure.  
 Amount of Bill \$73.17

**FORCE ACCOUNT BILL NO. 8**  
 Furnishing and placing composition curb  
 expansion joint filler between roadway  
 curbs at the expansion joints in the  
 superstructure, fourteen (14) in number,  
 size 6" x 12", thickness varying from 2 1/2"  
 to 3 1/2". Amount of Bill \$23.10

**FORCE ACCOUNT BILL NO. 9**  
 Repairs to railing on west side of structure  
 at Sta 53+25. Damage caused by collision  
 with railing.  
 Amount of Bill \$360.22



South Approach Slab  
Class "A" Concrete 30.79 Cu Yds  
Steel Rein. Bars 36,165 Lbs



| RECAPITULATION |                                               |      |                |                |
|----------------|-----------------------------------------------|------|----------------|----------------|
| No.            | ITEM                                          | UNIT | PAVING PORTION | BRIDGE PORTION |
| 1              | Structure Excavation                          | -    | -              | -              |
| 2              | Concrete Class "A"                            | -    | -              | -              |
| 3              | Concrete Class "B"                            | -    | -              | -              |
| 4              | Concrete Class "C"                            | -    | -              | -              |
| 5              | Steel Reinforcing Bars                        | -    | -              | -              |
| 6              | Structural Carbon Steel                       | -    | -              | -              |
| 7              | Cast Steel (Bearings and Rockers)             | -    | -              | -              |
| 8              | Cast Steel (Drainage Inlets)                  | -    | -              | -              |
| 9              | Steel Pipe (Galvanized)                       | -    | -              | -              |
| 10             | Chain Fabric (14 Ounce)                       | -    | -              | -              |
| 11             | Copper Seals (14 Ounce)                       | -    | -              | -              |
| 12             | Furnishing Piling (Treated)                   | -    | -              | -              |
| 13             | Driving Piles (Treated)                       | -    | -              | -              |
| 14             | Furnishing Piling (Untreated)                 | -    | -              | -              |
| 15             | Driving Piles (Untreated)                     | -    | -              | -              |
| 16             | Timber and Plank (Creosoted)                  | -    | -              | -              |
| 17             | Driving Test Piles                            | -    | -              | -              |
| 18             | Warning Beacons (Inst. Bull's Eye Reflectors) | -    | -              | -              |
| 19             | Canal (1 1/2" Galvanized)                     | -    | -              | -              |
| 20             | Backfilling                                   | -    | -              | -              |
| 21             | Traffic Markers                               | -    | -              | -              |
| 22             | Shifting and Rearranging Trackage System      | -    | -              | -              |
| 23             | Force Account                                 | -    | -              | -              |
| 24             |                                               | -    | -              | -              |

PROGRESS & FINAL ESTIMATE PROFILE  
STATE ROAD NO. 1  
FOURTH AVENUE SOUTH - VIADUCT  
BETWEEN OREGON ST. & DENVER ST.  
IN CITY OF SEATTLE  
KING COUNTY  
STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON

Scale: Horizontal 1 inch = 20 Feet Vertical 1 inch = 10 Feet  
Station 211+2.80 to 211+2.80 Sta. 211+2.80  
Contract No. 1831 R. A. McNEIL & Co. Inc. Contractors  
Work Report Approved: J. M. Patterson Work Completed October 11, 1934  
Resident Engineer: J. M. Patterson District Engineer: Geo. H. Shindler  
APPROVED: *R. A. McNeil*  
DIRECTOR OF HIGHWAYS

P  
810

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON

| FILE NO. | STATE | PROJECT | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|----------|-------|---------|-------------|-----------|--------------|
| 1        | WASH  | 150-D   | 1954        | 1         | 32           |

INDEX

Sheet 1 Title & Layout

- UNIT 1 (GRADING)  
2 Summary of Quantities & Roadway Section  
3 Plan & Profile Sta. 19+72.0 to Sta. 31+32.8  
4 " " " " 54+34.46 " " 70+00  
5 " " " " 70+00 " " 86+00  
6 " " " " 86+00 " " 100+26.38

- UNIT 2 (PAVING)  
7 Summary of Quantities & Details  
8 Roadway Sections  
9 Detail  
10 Detail Precast Concrete Railway Crossing  
11 Plan & Profile Sta. 0+68.0 to Sta. 16+00  
12 " " " " 16+00 " " 31+12.8  
13 " " " " 54+54.46 " " 70+00  
14 " " " " 70+00 " " 86+00  
15 " " " " 86+00 " " 100+89.22

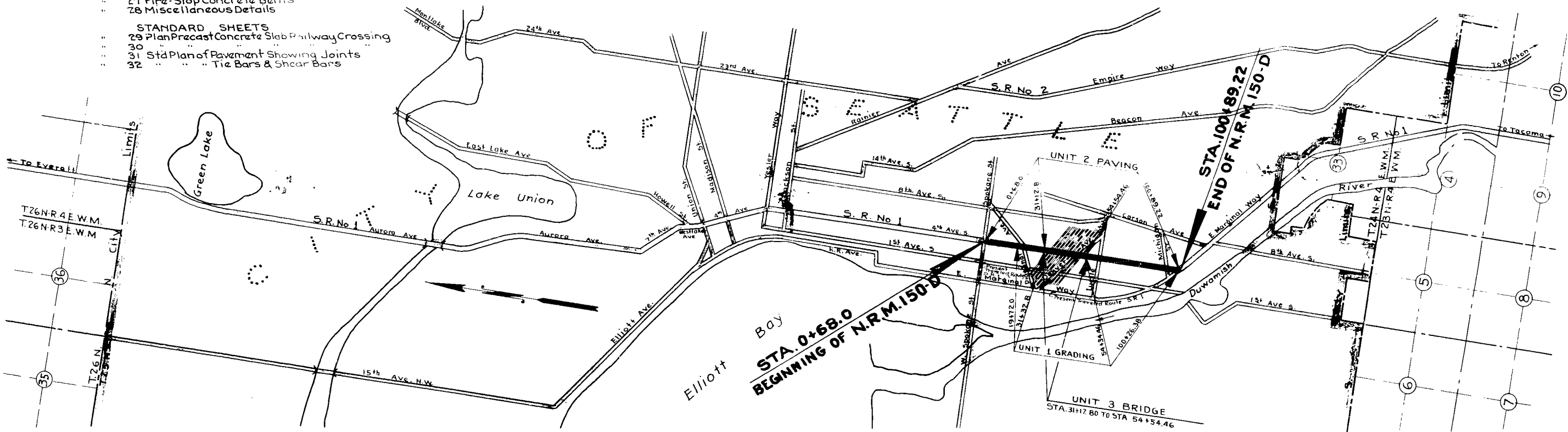
- UNIT 3 (VIADUCT)  
16 Plan & Profile Sta. 31+12.8 to Sta. 40+00  
17 " " " " 40+00 " " 54+54.46  
18 Location Map & Profile  
19 General Layout  
20 Layout of Timber Construction  
21 Timber Construction Details  
22 Layout of Steel Construction  
23 Steel Construction Details  
24 Approach Abutments and Slabs  
25 Main Piers  
26 Piers at Denver Ave.  
27 Fire-Stop Concrete Bents  
28 Miscellaneous Details

- STANDARD SHEETS  
29 Plan Precast Concrete Slab Railway Crossing  
30 " " " " " " " "  
31 Std Plan of Pavement Showing Joints  
32 " " " " Tie Bars & Shear Bars

STATE ROAD NO. 1  
FOURTH AVENUE SOUTH  
SPOKANE STREET TO EAST MARGINAL WAY  
IN CITY OF SEATTLE  
U. S. PUBLIC WORKS PROJECT NO. N. R. M. - 150 - D  
KING COUNTY

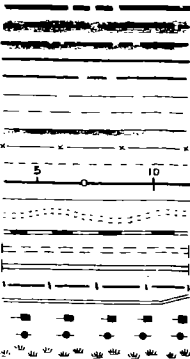
SCALE

PLAN 1 INCH = 50 FEET  
PROFILE HORIZ. 1 INCH = 50 FEET  
PROFILE VERT. 1 INCH = 10 FEET



CONVENTIONAL SIGNS

- State or National Line  
County Line  
City or Town Line  
Township Line  
Section Line  
1/4 Line  
1/8 Line  
Grant Line  
Fence Line  
Unfenced Line  
Base or Survey Line  
Right of Way Line  
Traveled Way  
Railroad  
Existing Culvert  
Proposed Culvert  
Guard Rail  
Retaining Wall  
Power Pole  
Telephone or Telegraph Poles  
Marsh



LAYOUT

| UNIT 1                   | UNIT 2                   | UNIT 3                   |
|--------------------------|--------------------------|--------------------------|
| GROSS LENGTH 1.525 MILES | GROSS LENGTH 1.897 MILES | GROSS LENGTH 0.443 MILES |
| EXCEPTIONS 0.436 "       | EXCEPTIONS 0.443 "       | EXCEPTIONS 0.000 "       |
| NET LENGTH 1.089 "       | NET LENGTH 1.454 "       | NET LENGTH 0.443 "       |

Approved Dec 16, 1953

*[Signature]*  
Director of Highways

RECOMMENDED FOR APPROVAL  
DISTRICT ENGINEER: Bureau of Public Roads

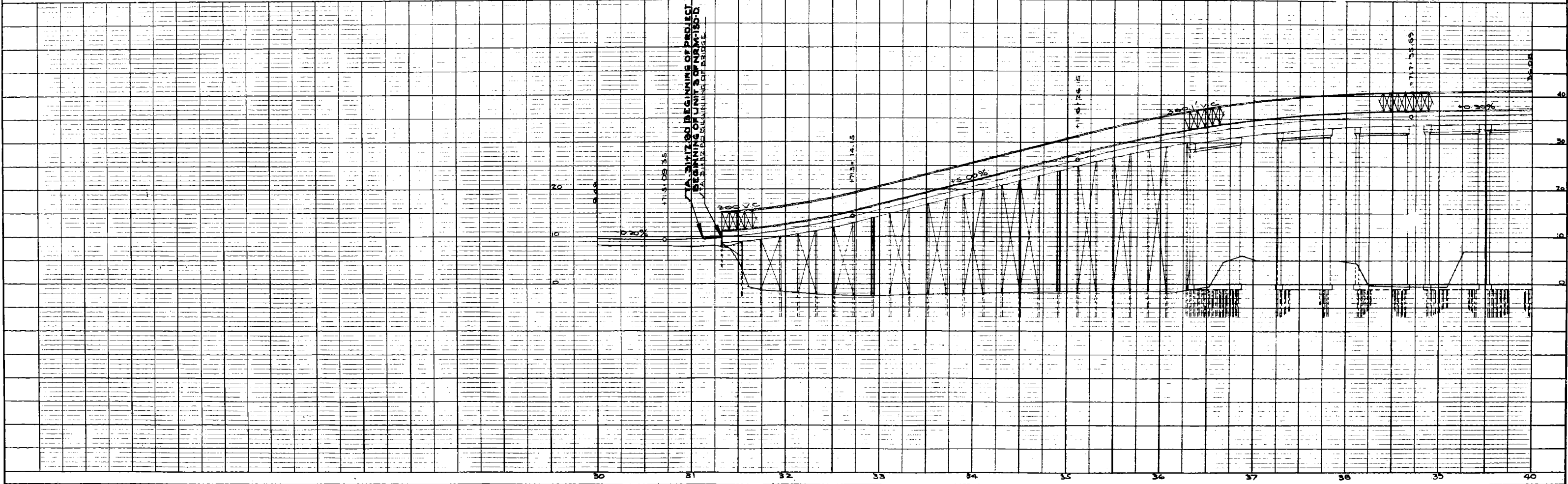
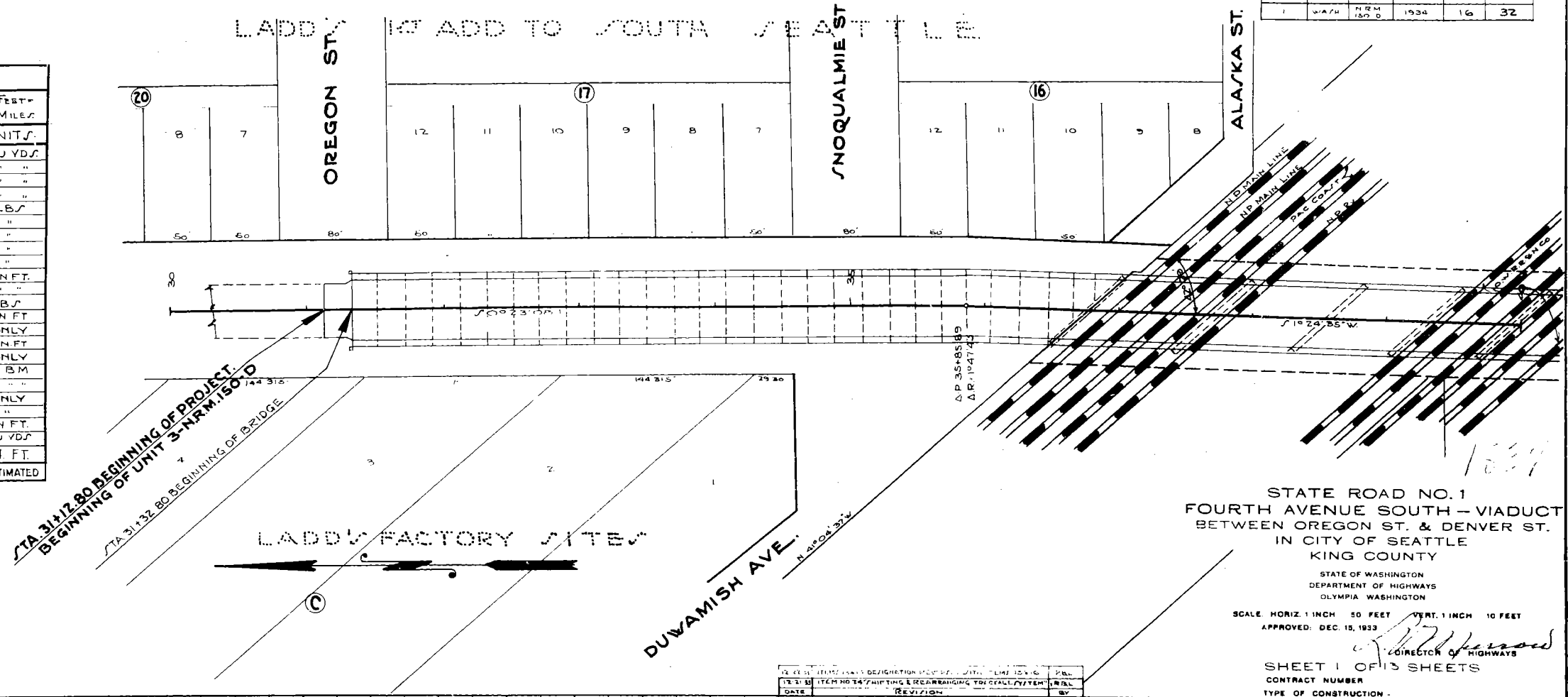
RECOMMENDED FOR APPROVAL  
CHIEF ENGINEER: Bureau of Public Roads

APPROVED  
DIRECTOR: Bureau of Public Roads

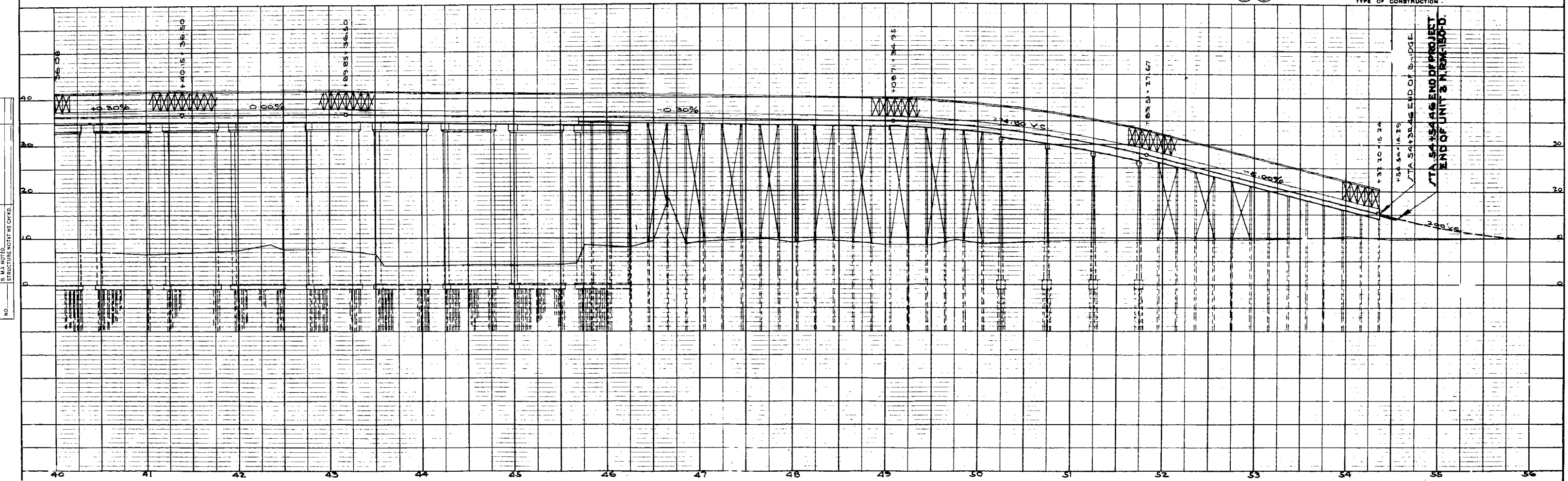
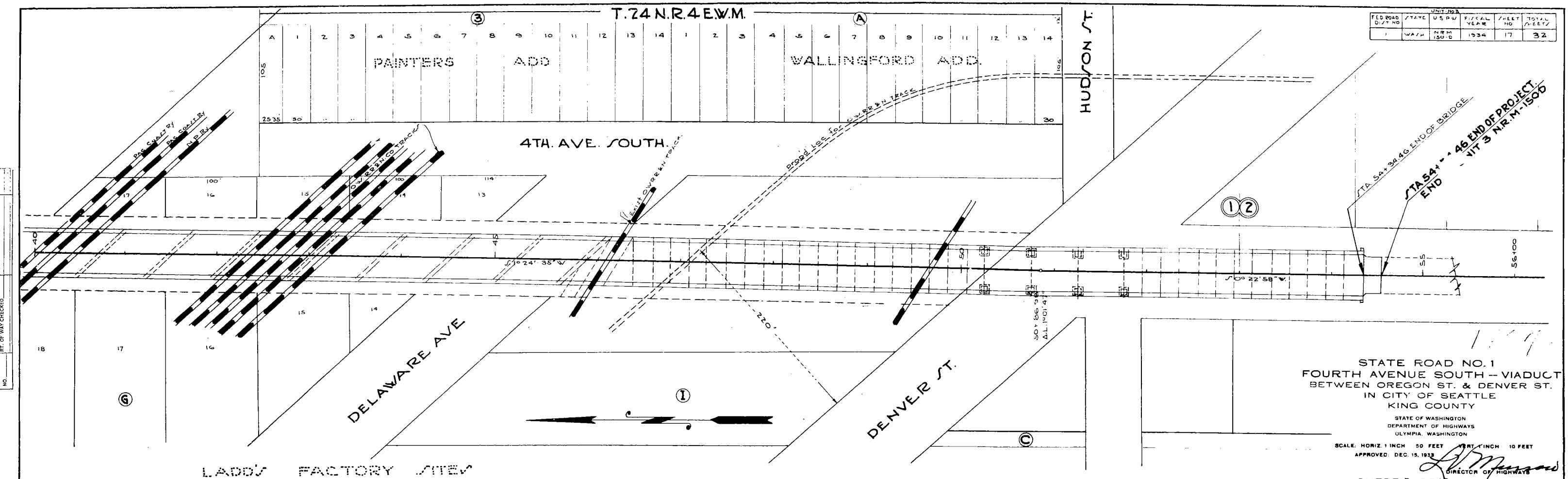
T. 24 N. R. 4. E.W.M.

| FED. ROAD DIST. NO. | STATE | UNIT NO. | U.S.P.W. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|----------|--------------------|-------------|-----------|--------------|
| 1                   | WA    | 150      | 1534               | 1934        | 16        | 32           |

| UNIT 3 OF NRM-150-D          |                                                 |                                 |           |
|------------------------------|-------------------------------------------------|---------------------------------|-----------|
| SUMMARY OF QUANTITIES        |                                                 |                                 |           |
| STA 31+12.80 TO STA 34+54.46 |                                                 | LENGTH 2341.66 FEET 0.443 MILES |           |
| ITEM NO.                     | ITEM                                            | QUANTITIES                      | UNITS     |
| 1                            | STRUCTURE EXCAVATION                            | 4000                            | CU YDS.   |
| 2                            | CONCRETE CLASS "A"                              | 2443                            | " "       |
| 3                            | " " "B"                                         | 2057                            | " "       |
| 4                            | " " "C"                                         | 1811                            | " "       |
| 5                            | STEEL REINFORCING BARS                          | 621500                          | LB.       |
| 6                            | STRUCTURAL SILICON STEEL                        | 1570000                         | " "       |
| 7                            | " " CARBON                                      | 254000                          | " "       |
| 8                            | CAST STEEL (BEARINGS & ROCKERS)                 | 50000                           | " "       |
| 9                            | " " (DRAINAGE INLETS)                           | 1200                            | " "       |
| 10                           | STEEL PIPE (GALVANIZED)                         | 400                             | LIN. FT.  |
| 11                           | CHAIN FABRIC (IN RAILINGS)                      | 4600                            | " "       |
| 12                           | COPPER SEALS (14 OZ)                            | 2500                            | LB.       |
| 13                           | FURNISHING PILING (TREATED)                     | 19000                           | LIN. FT.  |
| 14                           | DRIVING " (TREATED)                             | 468                             | ONLY      |
| 15                           | FURNISHING " (UNTREATED)                        | 29000                           | LIN. FT.  |
| 16                           | DRIVING " (UNTREATED)                           | 827                             | ONLY      |
| 17                           | TIMBER AND PLANK (CREOSOTED)                    | 482                             | M.B.M.    |
| 18                           | " " (ZINC CHLORIDE)                             | 81                              | " "       |
| 19                           | DRIVING TEST PILES                              | 12                              | ONLY      |
| 20                           | WARNING BEACONS (INCLUDING BULL EYE REFLECTORS) | 4                               | " "       |
| 21                           | CONDUIT (1 1/2 GALV.) WITH CABLE WIRING         | 500                             | LIN. FT.  |
| 22                           | BACKFILLING                                     | 350                             | CU YDS.   |
| 23                           | TRAFFIC MARKERS                                 | 6906                            | LIN. FT.  |
| 24                           | SHIFTING & REARRANGING TRackage SYSTEM          | \$5302.00                       | ESTIMATED |

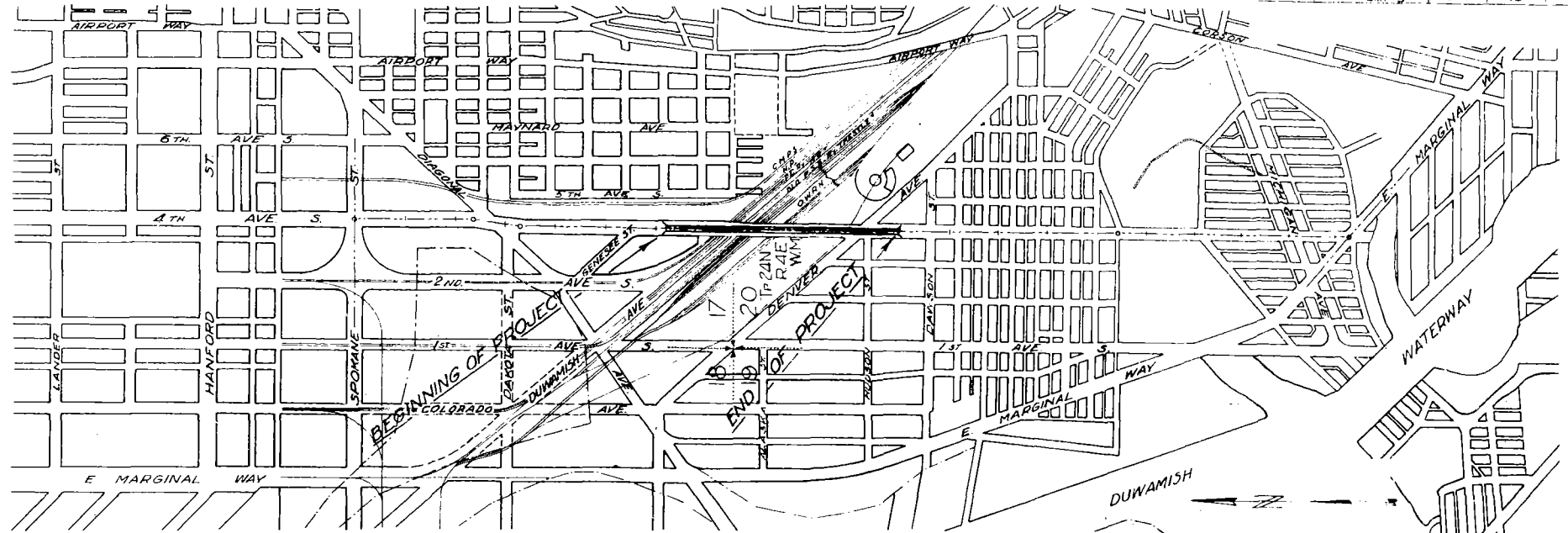


| UNIT NO. 3       |       |              |             |          |              |
|------------------|-------|--------------|-------------|----------|--------------|
| FED ROAD DIST NO | STATE | USPW         | FISCAL YEAR | SHEET NO | TOTAL SHEETS |
| 1                | WASH  | NRM<br>130.0 | 1934        | 17       | 32           |

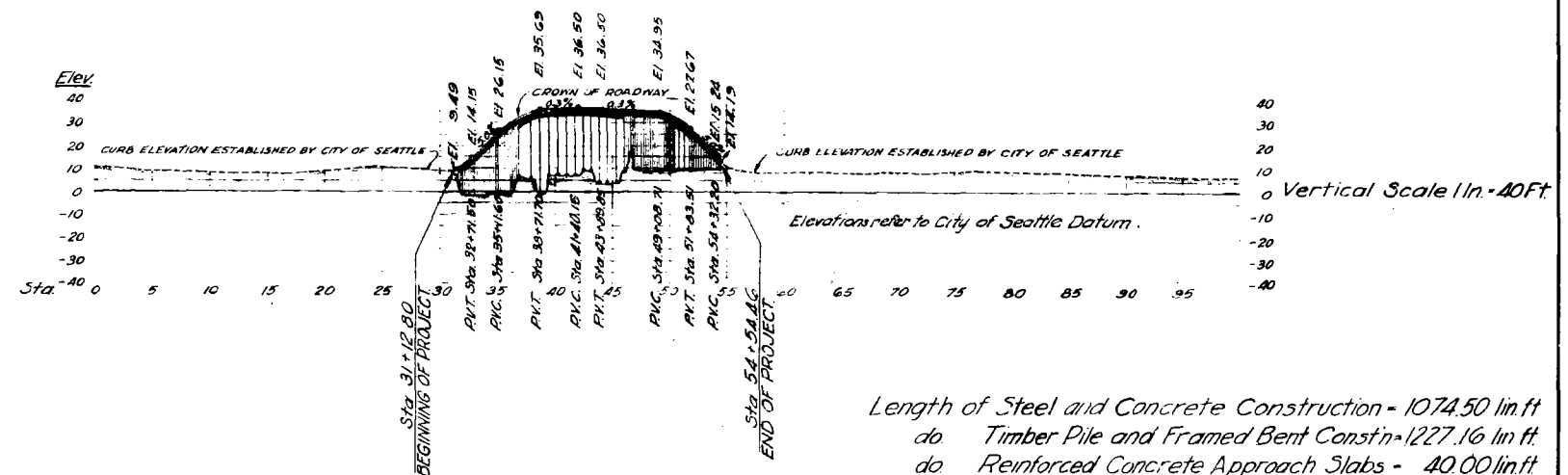


SEATTLE

| FED. ROAD DIST. No. | STATE | U.S. R.V. PROJ. No. | FISCAL YEAR | SHEET No. | TOTAL SHEETS |
|---------------------|-------|---------------------|-------------|-----------|--------------|
| 1                   | WASH. | NRM 150-D Unit 3    | 1934        | 18        | 32           |



Horizontal Scale 1 in. = 800 Ft



Length of Steel and Concrete Construction = 1074.50 lin ft  
do Timber Pile and Framed Bent Const'n = 1227.16 lin ft  
do Reinforced Concrete Approach Slabs = 40.00 lin ft  
do Project, all Reinforced Concrete Floor = 2341.66 lin ft

Width of Roadway, Curb to Curb = 44'-0"  
do Sidewalk, 2 @ 5'-0" = 10'-0"  
To Total Width = 54'-0"

| UNIT 3 OF NRM 150-D<br>SUMMARY OF QUANTITIES |                                                 |           |           |
|----------------------------------------------|-------------------------------------------------|-----------|-----------|
| ITEM No.                                     | DESCRIPTION                                     | QUANTITY  | UNITS     |
| 1                                            | Structure Excavation                            | 4000      | Cu.Yds.   |
| 2                                            | Concrete Class "A"                              | 2443      | Cu.Yds.   |
| 3                                            | Concrete Class "B"                              | 2057      | Cu.Yds.   |
| 4                                            | Concrete Class "C"                              | 1811      | Cu.Yds.   |
| 5                                            | Steel Reinforcing Bars                          | 621,500   | Lbs.      |
| 6                                            | Structural Silicon Steel                        | 1,570,000 | Lbs.      |
| 7                                            | Structural Carbon Steel                         | 254,000   | Lbs.      |
| 8                                            | Cast Steel (Bearings & Rockers)                 | 50,000    | Lbs.      |
| 9                                            | Cast Steel (Drainage Inlets)                    | 1,200     | Lbs.      |
| 10                                           | Steel Pipe (Galvanized)                         | 400       | Lin.Ft.   |
| 11                                           | Chain Fabric (In Railing)                       | 4,600     | Lin.Ft.   |
| 12                                           | Copper Seals (14 Oz.)                           | 2,500     | Lbs.      |
| 13                                           | Furnishing Piling (Treated)                     | 19,000    | Lin.Ft.   |
| 14                                           | Driving Piles (Treated)                         | 468       | Each      |
| 15                                           | Furnishing Piling (Untreated)                   | 29,000    | Lin.Ft.   |
| 16                                           | Driving Piles (Untreated)                       | 827       | Each      |
| 17                                           | Timber & Plank (Creosoted)                      | 482       | M.B.M.    |
| 18                                           | Timber & Plank (Zinc Chloride)                  | 81        | M.B.M.    |
| 19                                           | Driving Test Piles                              | 12        | Each      |
| 20                                           | Warning Beacons (Including Bullseye Reflectors) | 4         | Each      |
| 21                                           | Conduit (1 1/2" Galv.) with cable wiring        | 500       | Lin.Ft.   |
| 22                                           | Backfilling                                     | 350       | Cu.Yds.   |
| 23                                           | Traffic Markers                                 | 6906      | Lin.Ft.   |
| 24                                           | Shifting & Rearranging Trackage System          | \$53020   | Estimated |

APPROVED BY THE BOARD OF PUBLIC WORKS  
SEATTLE, WASHINGTON  
ATTN: SECRETARY

STATE ROAD NO. 1  
FOURTH AVENUE SOUTH - VIADUCT  
BETWEEN OREGON ST. & DENVER ST.  
IN CITY OF SEATTLE  
KING COUNTY

## LOCATION MAP AND PROFILE

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON

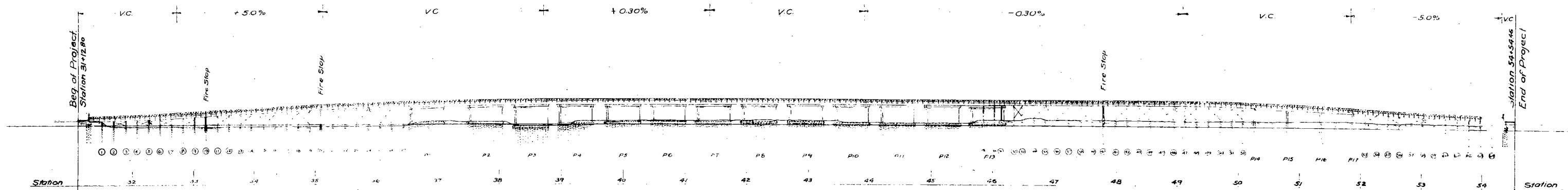
APPROVED: DEC. 12, 1934  
DIRECTOR OF HIGHWAYS

SHEET 3 OF 13 SHEETS

CONTRACT NUMBER  
TYPE OF CONSTRUCTION -

|          |                                                |        |
|----------|------------------------------------------------|--------|
| 12-22-35 | Item 13 & 14 Designation Reversed with 15 & 16 |        |
| 12-22-35 | ITEM No 24 TRackage REARRANGEMENT              | R.B.L. |
| DATE     | REVISION                                       | BY     |

| FED. ROAD DIST. NO. | STATE | U.S.R.W. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| 1                   | WASH. | WASH. 1934         | 1934        | 19        | 32           |



### ELEVATION

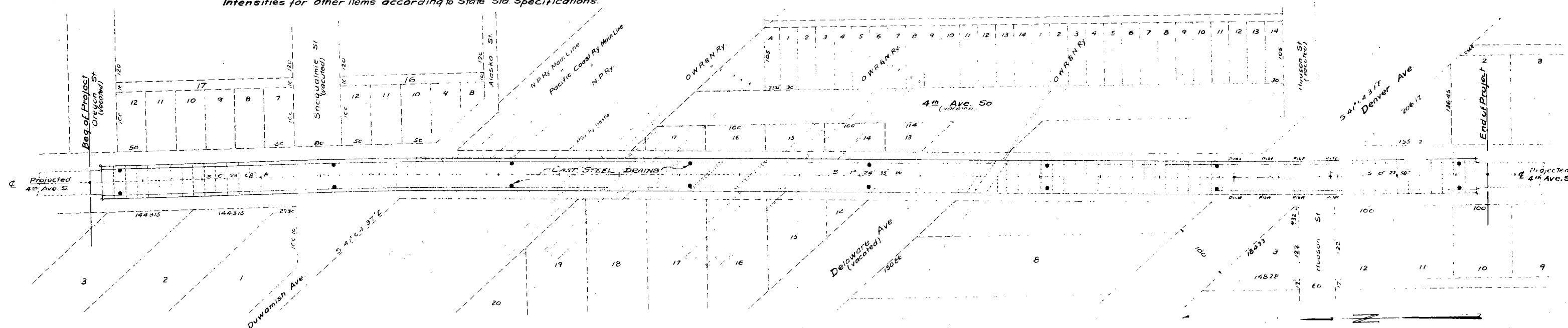
#### UNIT STRESSES, pounds per square inch,

On Carbon Structural Steel:-  
Tension, axial, on net section 18000  
Compr., " " gross " 18000-80%  
(max. 15000)

On Silicon Structural Steel:-  
Tension, axial, on net section 24000  
Compr., " " gross " 24000-105%  
(max. 18500)

Timbers under flexure, (without impact) 1400  
Concrete, Flexural compression,  $F_c$  1000  
Reinforcing Steel, in tension,  $F_s$  18000  
Intensities for other items according to State Std Specifications.

LIVE LOADING, H-20, State Standard.  
Impact, " " Specifications.



### PLAN

#### GENERAL NOTES:-

All materials & workmanship to conform to the State of Washington Standard Specifications.  
All timber and Planks to be Douglas Fir. See Std. Specifications, Sec. 42, for Grades.  
Sidewalk plank & Fire Stops to be pressure treated with 1 lb. zinc chloride.  
All timbers, other planking, etc. to receive an empty-cell creosote treatment of 8 lb./cu. ft.  
Piles under Abutments, under Fire-stop Bent # 40, and in Timber Bents shall receive a full-cell creosote treatment of 10 lb./cu. ft.  
See Special Provisions and Standard Specifications concerning treatments.  
Piles Supporting Piers and Fire-stops #10 and #20 to be untreated.  
All bolts, nuts, washers and nails used in timber fastenings to be galvanized.  
Concrete in structure roadway slabs, and bridging to be Class "A" maximum aggregate 1 1/2".  
" approach roadway slabs Class "A" " 3".  
" footings of piers, and abutments, Class "C" " 3".  
" shafts and walls of piers and abuts, Class "B" " 3".  
" fire-stop bents below coping, Class "B" " 3".  
" copings of piers and fire-stop bents, Class "B" " 1 1/2".  
Steel reinforcing bars to be deformed; intermediate grade steel, per Std. Specifications.  
Bars in slabs to be placed 1" clear from bottom, and 1 1/2" clear from top, of slabs.  
Hooks on ends of bars to be formed to radius of 3 diameters of bar, end tangent 6".  
All longitudinal girders and stringers to be of structural silicon steel, A.S.T.M. Std. Spec. A-94-29.

All other structural steel to be medium, open-hearth, per State Std. Specifications.  
All structural steel, except where set in concrete, to be painted as follows:-  
Shop coat, State Standard red lead, Formula A-1,  
First field coat " " gray, Formula B-2,  
Second " " " black, Formula C-1, except-  
Rail posts and L-rails to receive the two field coats of aluminum, Formula D-1.  
Wire fabric in railing to be of "chain-fabric" type, galvanized, unpainted, copper-bearing steel, No. 6 ga. wire, 2" mesh, securely attached to rails.  
All nail-holes left from construction operations in treated timbers to be filled by galvanized nails one size larger than construction nails.  
See Standard Specifications, Section 6, relative to materials.  
A BAR LIST showing reinforcing bars will be furnished the Contractor after awarding contract.

Horizontal and Vertical Scale 1 in. = 80 ft

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SEATTLE, WASHINGTON  
ATTEST: SECRETARY CHAIRMAN

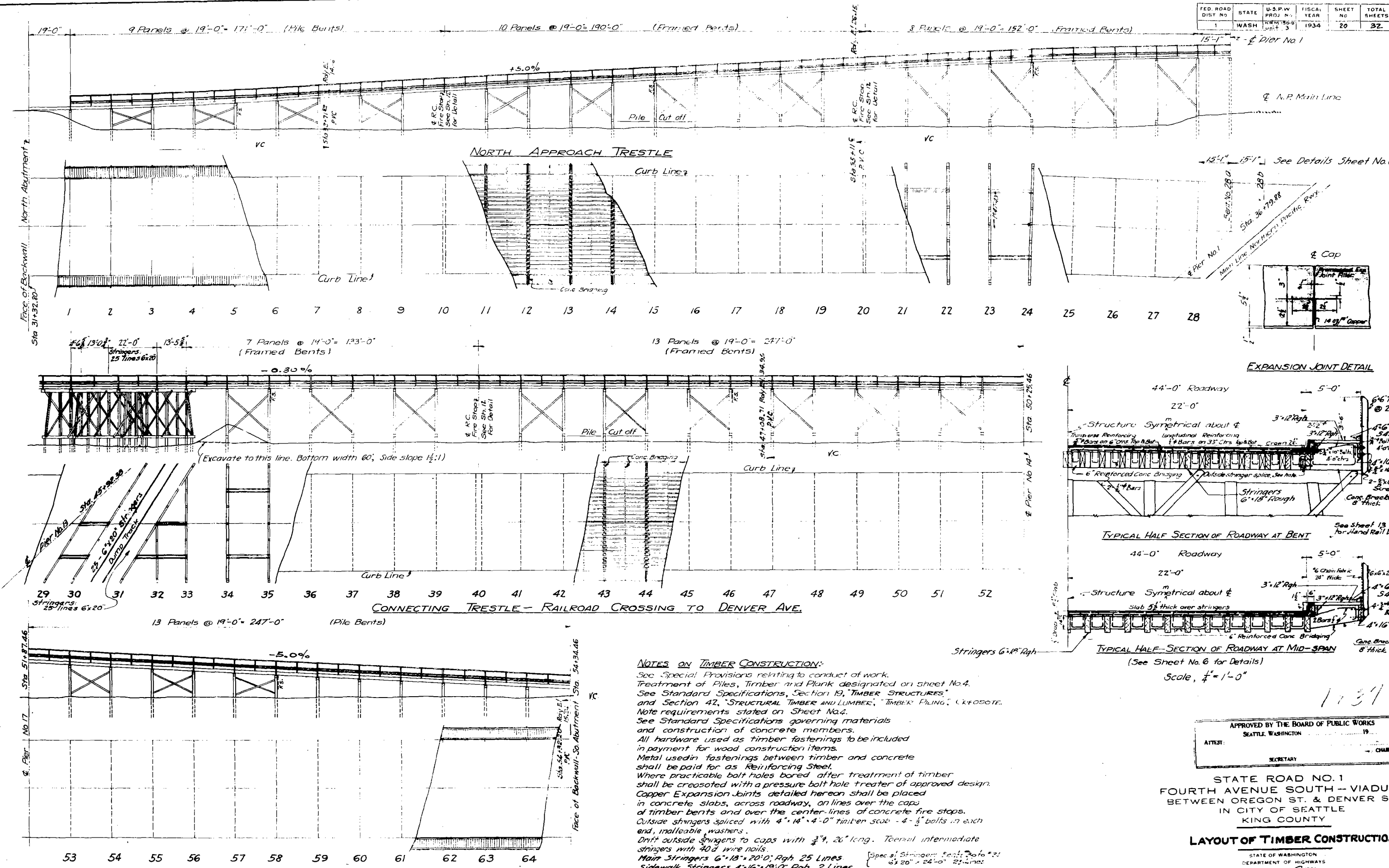
STATE ROAD NO. 1  
FOURTH AVENUE SOUTH -- VIADUCT  
BETWEEN OREGON ST. & DENVER ST.  
IN CITY OF SEATTLE  
KING COUNTY

#### GENERAL LAYOUT

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON  
APPROVED, DEC. 15, 1933  
DIRECTOR OF HIGHWAYS  
SHEET 4 OF 13 SHEETS  
CONTRACT NUMBER  
TYPE OF CONSTRUCTION

2-16-34 Approx. location Cast Steel Drains shown MSY  
12-22-33 Note regarding "Bar List" added MG  
Date Revision By

| FED. ROAD DIST. NO. | STATE | U.S.P.W. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| 1                   | WASH. | 1934               | 1934        | 20        | 32           |



#### NOTES ON TIMBER CONSTRUCTION:

See Special Provisions relating to conduct of work.  
 Treatment of Piles, Timber and Plank designated on sheet No. 4.  
 See Standard Specifications, Section 19, "TIMBER STRUCTURES,"  
 and Section 42, "STRUCTURAL TIMBER AND LUMBER," "TIMBER PILING," CRESOTE.  
 Note requirements stated on Sheet No. 4.  
 See Standard Specifications governing materials  
 and construction of concrete members.  
 All hardware used as timber fastenings to be included  
 in payment for wood construction items.  
 Metal used in fastenings between timber and concrete  
 shall be paid for as Reinforcing Steel.  
 Where practicable bolt holes bored after treatment of timber  
 shall be creosoted with a pressure bolt hole treater of approved design.  
 Copper Expansion Joints detailed hereon shall be placed  
 in concrete slabs, across roadway, on lines over the caps  
 of timber bents and over the center lines of concrete fire stops.  
 Outside stringers spliced with 4" x 14" x 4'-0" timber scab - 4-1/2" bolts in each  
 end, malleable washers.  
 Drift outside stringers to caps with 3/4" x 26" long. Tenon intermediate  
 stringers with 40d wire nails.  
 Main Stringers 6" x 18" x 20'-0" Rgh 25 Lines {Spec. 1, Stringers, Bent, Ref. 21  
 Sidewalk Stringers 4" x 16" x 19'-0" Rgh 2 Lines. 6" x 20" x 24'-0" 22 Lines.  
 Sidewalk Curb Stringers 3" x 12" x 19'-0" Rgh 2 Lines.

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 SECRETARY

STATE ROAD NO. 1  
 FOURTH AVENUE SOUTH - VIADUCT  
 BETWEEN OREGON ST. & DENVER ST.  
 IN CITY OF SEATTLE  
 KING COUNTY

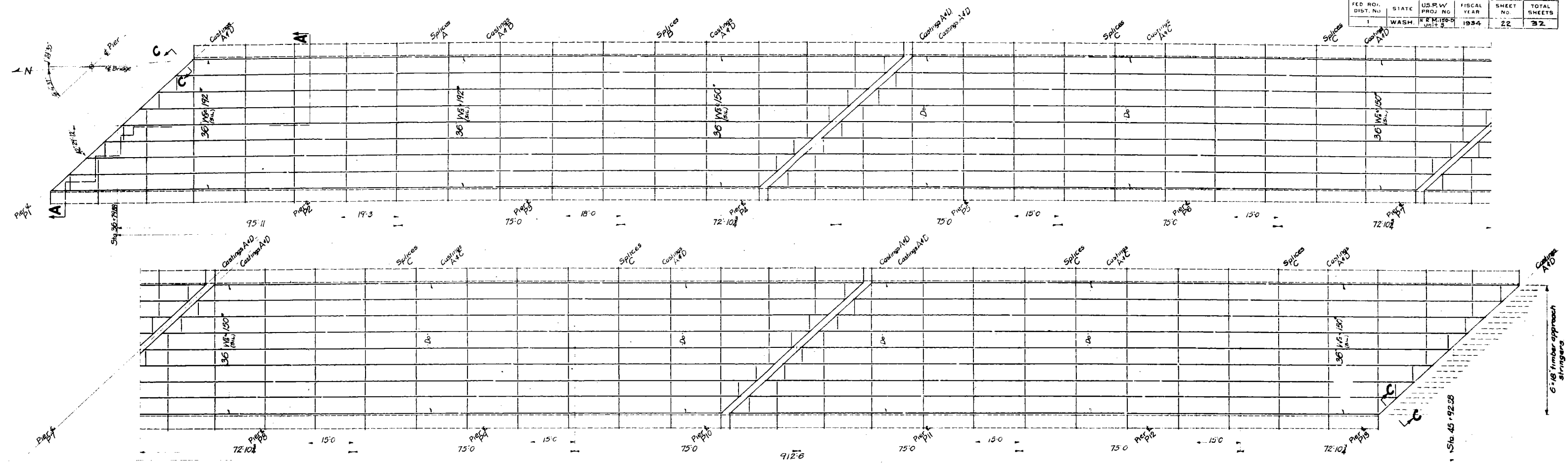
#### LAYOUT OF TIMBER CONSTRUCTION

STATE OF WASHINGTON  
 DEPARTMENT OF HIGHWAYS  
 OLYMPIA, WASHINGTON  
 APPROVED: DEC 15 1933  
 DIRECTOR OF HIGHWAYS  
 SHEET 5 OF 13 SHEETS  
 CONTRACT NUMBER  
 TYPE OF CONSTRUCTION

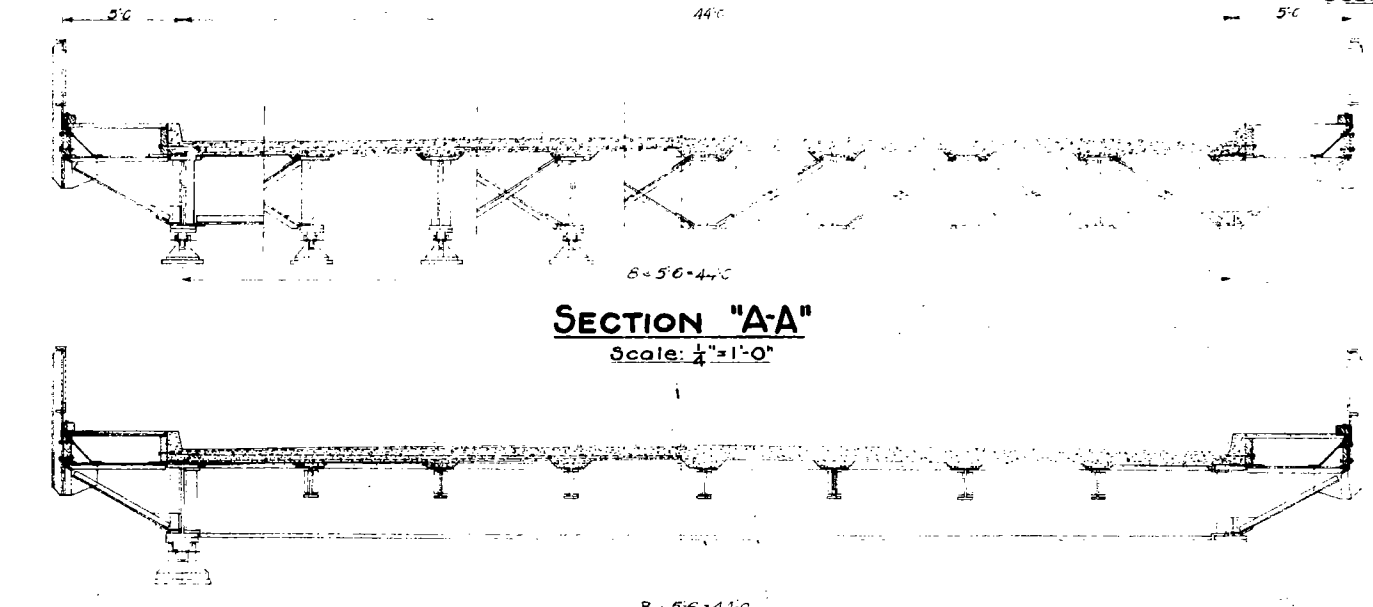
|          |                    |     |
|----------|--------------------|-----|
| 2-5-34   | Interp. April 1934 | MSW |
| 12-23-33 | Minor changes      | MG  |
| Date     | Revision           | By  |



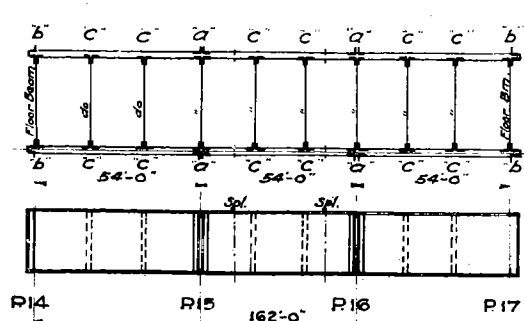
| FED. RD. DIST. NO. | STATE | U.S. F.W. PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|--------------------|-------|---------------------|-------------|-----------|--------------|
| 1                  | WASH. | R.E.M. 1200         | 1934        | 22        | 32           |



**STEEL PLAN ~ BENTS 1 TO 13 ~ STA. 36+79.88 TO STA. 45+92.38**  
Scale: 1/8" = 1'-0"

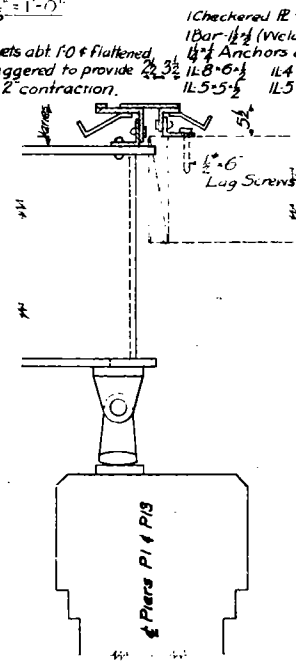


**SECTION "A-A"**  
Scale: 1/4" = 1'-0"



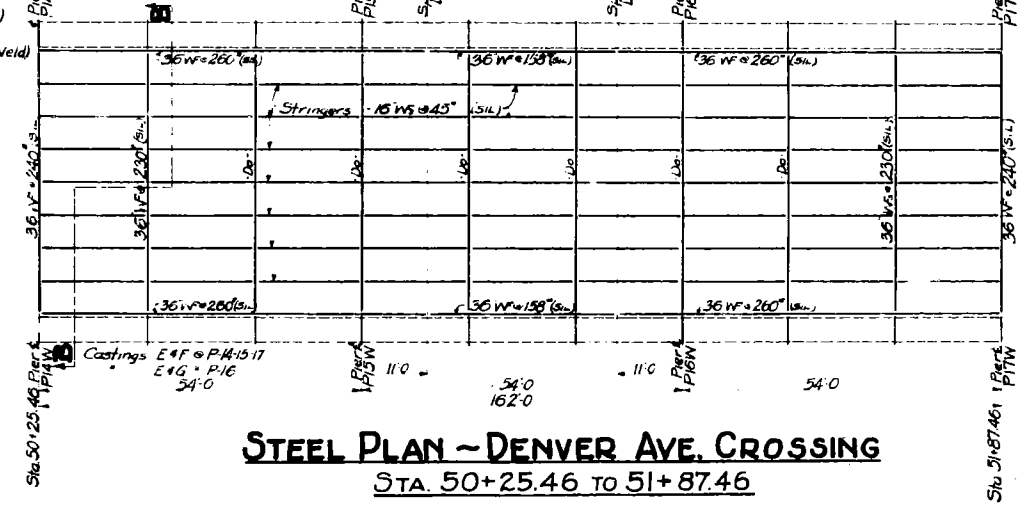
**SECTION "B-B"**  
Scale: 1/4" = 1'-0"

**GIRDER WEB STIFFENING DETAILS - DENVER AVE. CROSSING**



**SECTION "C-C"**

**NOTE**  
Longitudinal Girders & Beams are to be Cambered at the Mill to conform to Lines Established by the Engineer.  
Splices are to be Made Only When Axes of Adjacent Beams are in Line.



**STEEL PLAN ~ DENVER AVE. CROSSING**  
STA. 50+25.46 TO 51+87.46

For Details see Sheet # 8 & # 13  
For Handrail & Castings see Sheet # 13

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ATTEST: SECRETARY CHAIRMAN

STATE ROAD NO. 1  
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BETWEEN OREGON ST. & DENVER ST.  
IN CITY OF SEATTLE  
KING COUNTY

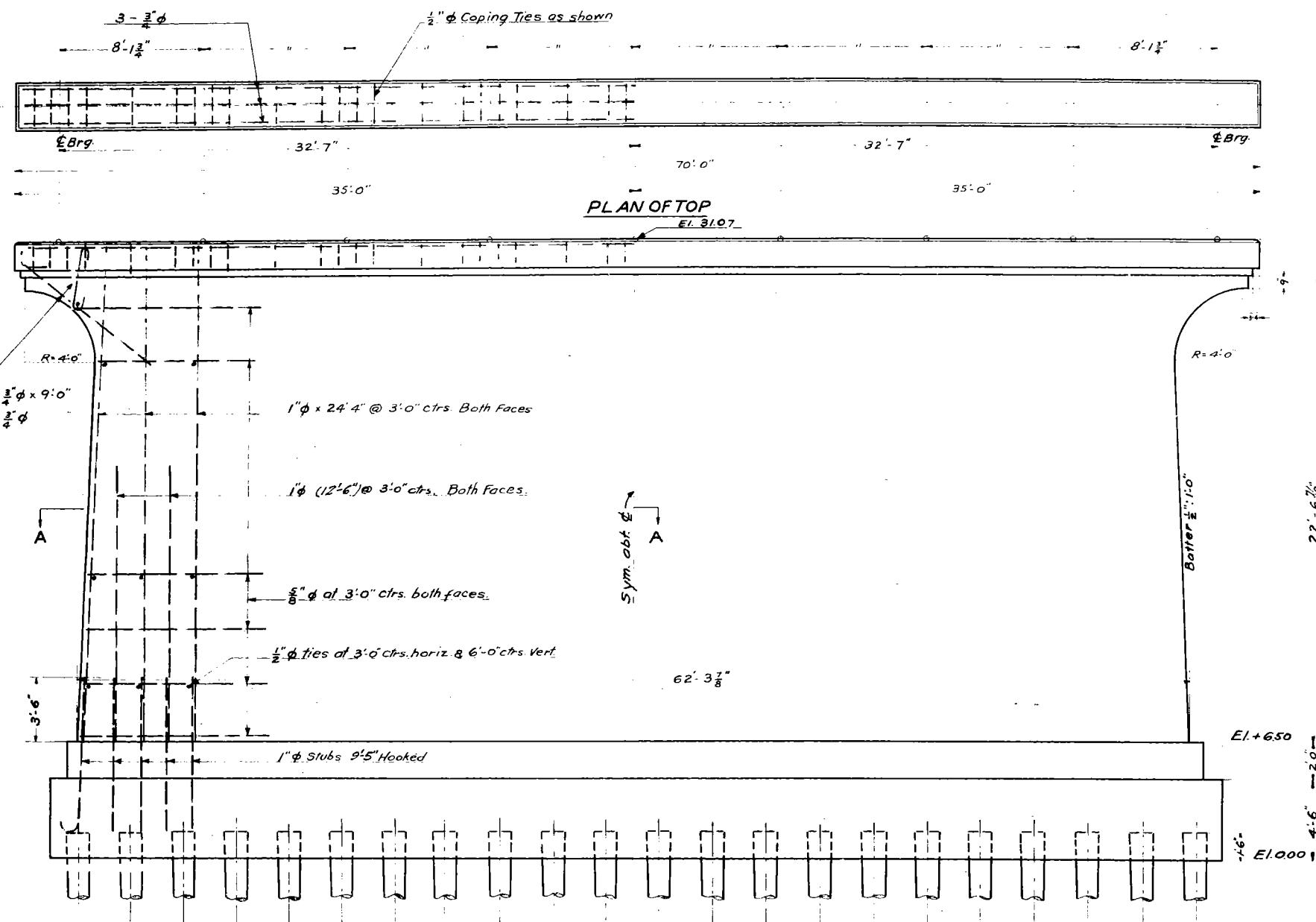
**LAYOUT OF STEEL CONSTRUCTION**

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON  
APPROVED: DEC. 15, 1933  
DIRECTOR OF HIGHWAYS  
SHEET 7 OF 13 SHEETS  
CONTRACT NUMBER  
TYPE OF CONSTRUCTION -

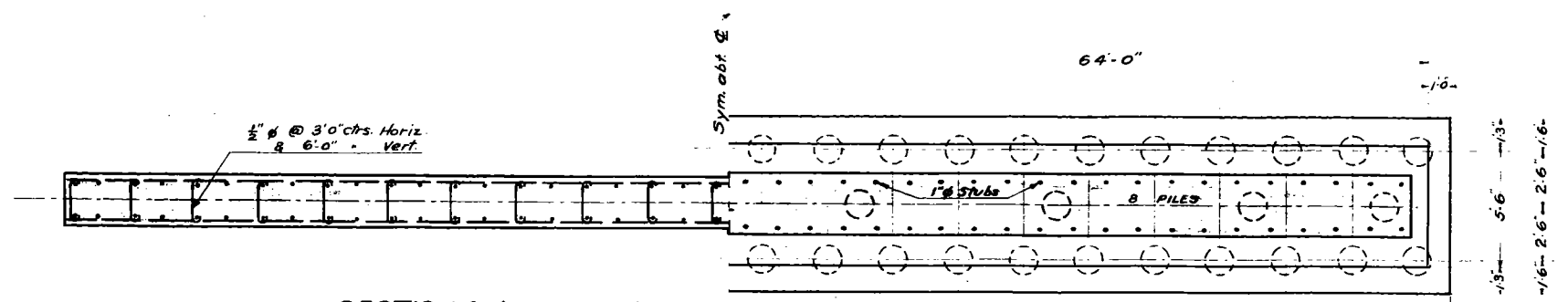
| DATE     | REVISION                  | BY     | CK. |
|----------|---------------------------|--------|-----|
| 1-5-34   | Added in rail brackets    | M.S.W. |     |
| 12-22-33 | Miscellaneous Corrections | R.M.M. |     |







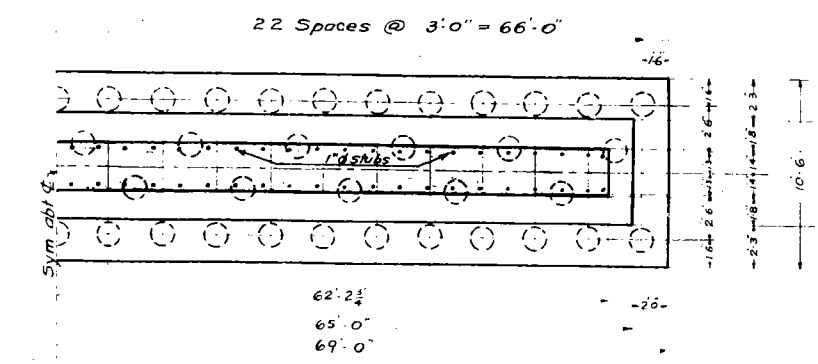
**ELEVATION**  
Scale: 1/4" = 1'-0"



**SECTION A-A**

# **PIER NO. 6**

**HALF FOOTING PLAN**  
Scale: 1/4" = 1'-0"  
TOTAL PILING 52



**HALF FOOTING PLAN**  
**PIER NO. 2**  
Scale: 3/16" = 1'-0"

**Notes:**  
Footing plan is typical for Piers No. 5, 8 & 11.  
Base and pedestal dimensions remain same for all. Number of piles vary, see tabulation below.

**DATA FOR PIERS NO. 1 TO 13 INCL.**

| DATA FOR PIERS NO.1 TO 13 INCL. |          |               |                |                 |                 |                    |           |              |           |           |                  |
|---------------------------------|----------|---------------|----------------|-----------------|-----------------|--------------------|-----------|--------------|-----------|-----------|------------------|
| PIER NO.                        | STA.     | ELEVATIONS    |                |                 | PIER DIMENSIONS |                    |           | NO. OF PILES |           |           | REMARKS          |
|                                 |          | TOP OF COPING | BOTTOM OF BASE | BOTTOM OF SHAFT | LENGTH OF SHAFT | SHAFT SIZE AT BASE | ONE ROW   | INNER ROW    |           |           |                  |
|                                 |          |               |                |                 | Under Coping    | LENGTH             | WIDTH     | Total        | OUTER ROW | INNER ROW |                  |
| 1                               | 36+79.88 | 28.13         | 0              | +6.5            | 19'-7 1/2"      | 62'-0 7/8"         | 2'-7 1/2" | 44           | 22        | 0         | See Footing Plan |
| 2                               | 37+75.80 | 29.91         | 0              | +6.5            | 21'-4 7/8"      | 62'-2 1/2"         | 2'-8"     | 68           | 23        | 22        |                  |
| 3                               | 38+50.80 | 30.40         | -2.0           | +4.5            | 23'-10 3/4"     | 62'-5 1/2"         | 2'-9"     | 57           | 22        | 13        |                  |
| 4                               | 39+23.69 | 30.64         | 0              | +6.5            | 22'-1 3/4"      | 62'-3 1/2"         | 2'-8 1/2" | 48           | 22        | 4         | See Footing Plan |
| 5                               | 39+98.89 | 30.84         | 0              | +6.5            | 22'-4 1/8"      | 62'-3 1/2"         | 2'-8 1/2" | 64           | 23        | 18        |                  |
| 6                               | 40+73.69 |               |                |                 | (See Detail)    |                    |           |              |           |           |                  |
| 7                               | 41+46.59 | 31.31         | 0              | +6.5            | 22'-9 3/4"      | 62'-4"             | 2'-8 1/2" | 48           | 22        | 4         | See Footing Plan |
| 8                               | 42+19.48 | 31.43         | 0              | +6.5            | 22'-11 1/8"     | 62'-4 1/2"         | 2'-8 1/2" | 64           | 23        | 18        |                  |
| 9                               | 42+94.48 | 31.45         | 0              | +6.5            | 22'-11 3/8"     | 62'-4 1/2"         | 2'-8 1/2" | 52           | 22        | 8         |                  |
| 10                              | 43+67.48 | 31.35         | 0              | +6.5            | 22'-10 1/4"     | 62'-4 1/2"         | 2'-8 1/2" | 48           | 22        | 4         | See Footing Plan |
| 11                              | 44+44.48 | 31.11         | 0              | +6.5            | 22'-7 1/2"      | 62'-3 1/2"         | 2'-8 1/2" | 64           | 23        | 18        |                  |
| 12                              | 45+19.48 | 30.88         | 0              | +6.5            | 22'-4 1/2"      | 62'-3 1/2"         | 2'-8 1/2" | 52           | 22        | 8         |                  |
| 13                              | 45+92.38 | 30.68         | 0              | +6.5            | 22'-2 1/2"      | 62'-3 1/2"         | 2'-8 1/2" | 44           | 22        | 0         |                  |

\* Given at E of Bridge, allowing 3/4" for grout under bearing.

**Notes:**  
All piers have same coping and batter on faces of shaft.  
Piers No. 1, 3, 4, 6, 7, 9, 10, 12 and 13 have same footing dimensions, see Pier No. 6 detail.  
Piers No. 2, 5, 8 and 11 have same footing dimensions, see footing plan for Pier No. 2.  
Variation in piling affects the middle rows only.  
Chamfers: shaft corners 1/4", coping corners 3/8".  
Concrete to be class 'B' in copings and shafts, & class 'C' in footings.  
Reinforcing shown for Pier No. 6 is typical for Piers No. 1 to 13 incl.  
Anchor bolts to be furnished and placed as specified elsewhere see Sheet No. 13.  
All exposed surfaces of Piers shall receive "Class B" finish in accordance with Standard Specifications.

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STATE ROAD NO. 1  
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BETWEEN OREGON ST. & DENVER ST.  
IN CITY OF SEATTLE  
KING COUNTY

## **MAIN PIERS**

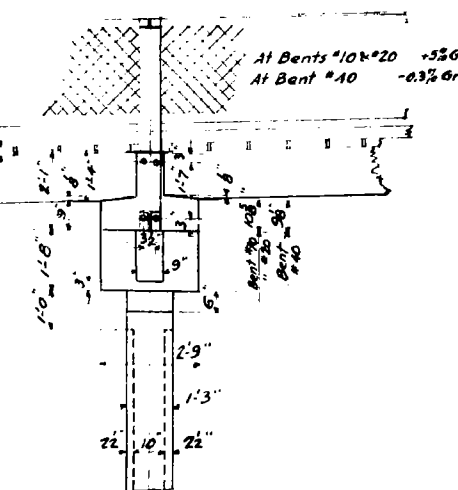
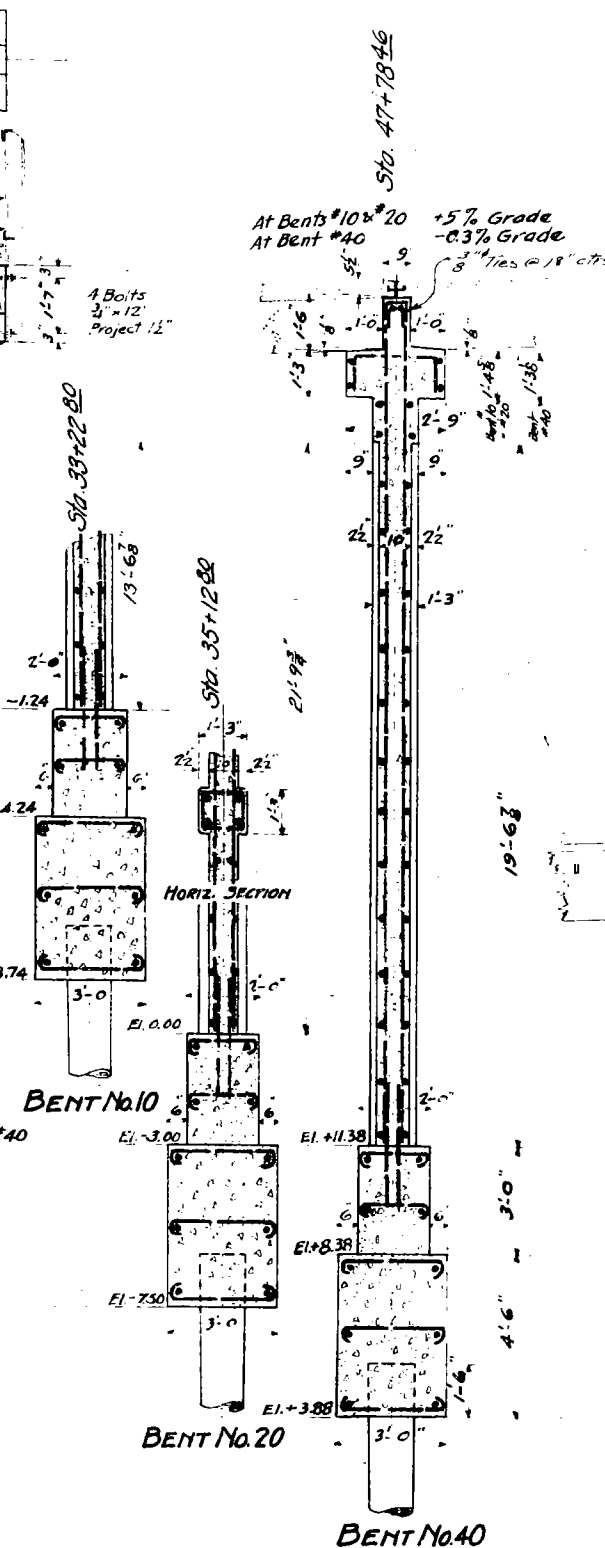
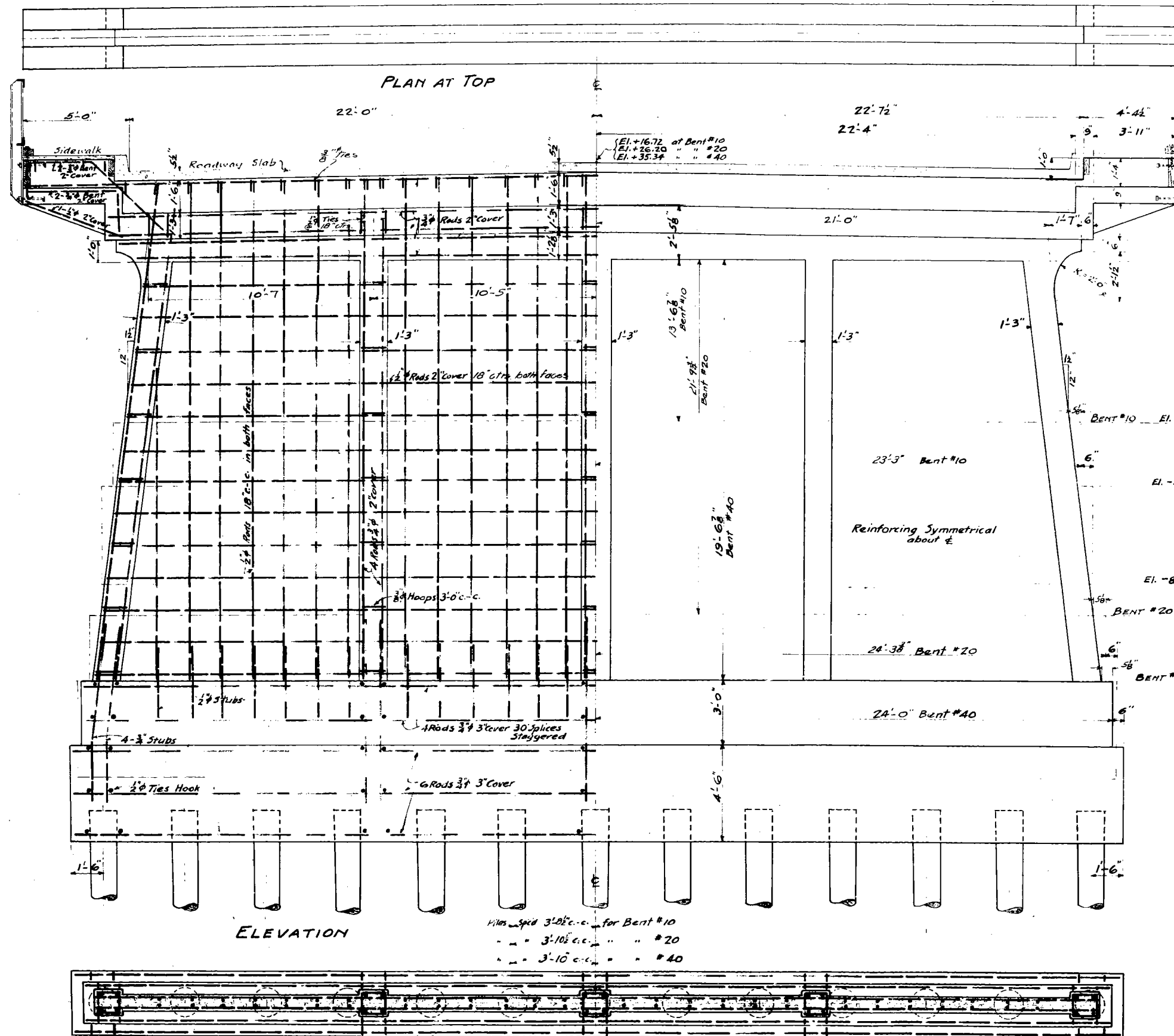
STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON  
APPROVED: DEC. 15, 1934  
DIRECTOR OF HIGHWAYS  
SHEET 10 OF 13 SHEETS  
CONTRACT NUMBER  
TYPE OF CONSTRUCTION

| 12-22-33 | Pier Dimensions | EMM |
|----------|-----------------|-----|
| Info     | REVISION        | By  |



| FED. ROAD DIST. NO. | STATE | USPW PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|----------------|-------------|-----------|--------------|
| 1                   | WASH. | NRM 1500       | 1934        | 27        | 32           |

UNIT 3



END ELEVATION  
TOP OF BENTS  
Scale 3/8" = 1'-0"

CROSS SECTIONS  
Scale 3/8" = 1'-0"

PLAN OF FOOTING

TYPICAL FIRE STOP BENT  
Symmetrical about  $\pm$  of Roadway  
Scale 3/8" = 1'-0"

NOTE:

Concrete shall be Class B in accordance with Std. Spec.  
Chamfer exposed corners 3" x 3"  
Exposed surfaces shall receive Class B finish in accordance with Standard Specifications.

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SEATTLE, WASHINGTON  
ATTEST: \_\_\_\_\_  
CHAIRMAN

STATE ROAD NO. 1  
FOURTH AVENUE SOUTH - VIADUCT  
BETWEEN OREGON ST. & DENVER ST.  
IN CITY OF SEATTLE  
KING COUNTY

FIRE STOP CONCRETE BENTS

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON  
APPROVED, DEC. 18, 1933  
DIRECTOR OF HIGHWAYS

SHEET 12 OF 13 SHEETS  
CONTRACT NUMBER  
TYPE OF CONSTRUCTION -

| DATE     | REVISIONS     | BY  | CHK. |
|----------|---------------|-----|------|
| 12-22-33 | Minor changes | RMM |      |



# BAR LIST FOR APPROACH SLABS, ABUTMENTS AND PIERS.

| Mark                                      | Location     | No. Size Length         | Bending Diagram |
|-------------------------------------------|--------------|-------------------------|-----------------|
| <b>APPROACH SLABS (NORTH &amp; SOUTH)</b> |              |                         |                 |
| 1                                         | Longitudinal | 70 $\frac{1}{2}$ 20'-9" |                 |
| 2                                         | "            | 68 " 19'-9"             |                 |
| 3                                         | "            | 4 " 7'-0"               |                 |
| 4                                         | "            | 4 " 5'-9"               |                 |
| 5                                         | "            | 4 " 3'-4"               |                 |
| 6                                         | "            | 4 " 3'-0"               |                 |
| 7                                         | Transverse   | 8 " 39'-6"              |                 |
| 8                                         | "            | 2 " 40'-6"              |                 |
| 9                                         | "            | 2 " 42'-6"              |                 |
| 10                                        | "            | 8 " 25'-0"              |                 |
| 11                                        | Curb         | 8 $\frac{1}{2}$ 2'-5"   |                 |

|                       |                      |                         |  |
|-----------------------|----------------------|-------------------------|--|
| <b>NORTH ABUTMENT</b> |                      |                         |  |
| 12                    | Footings             | 52 $\frac{1}{2}$ 4'-0"  |  |
| 13                    | "                    | 8 " 5'-11"              |  |
| 14                    | "                    | 4 $\frac{3}{4}$ 3'-6"   |  |
| 15                    | "                    | 4 " 59'-6"              |  |
| 16                    | Wing Walls           | 4 $\frac{1}{2}$ 7'-0"   |  |
| 17                    | "                    | 8 $\frac{1}{2}$ 10'-11" |  |
| 18                    | "                    | 12 " 2'-10"             |  |
| 19                    | "                    | 4 " 3'-10"              |  |
| 20                    | Post                 | 8 $\frac{3}{8}$ 4'-8"   |  |
| 21                    | Wall (Vertical rods) | 37 $\frac{1}{2}$ 5'-9"  |  |
| 22                    | " (Horizontal rods)  | 35 " 5'-4"              |  |
| 23                    | "                    | 2 $\frac{3}{4}$ 54'-6"  |  |
| 24                    | "                    | 4 " 56'-2"              |  |
| 25                    | "                    | 4 $\frac{1}{2}$ 9'-5"   |  |

|                       |                       |                        |  |
|-----------------------|-----------------------|------------------------|--|
| <b>SOUTH ABUTMENT</b> |                       |                        |  |
| 12                    | Footings              | 52 $\frac{1}{2}$ 4'-0" |  |
| 13                    | "                     | 8 " 5'-11"             |  |
| 14                    | "                     | 4 $\frac{3}{4}$ 3'-6"  |  |
| 15                    | "                     | 4 " 59'-6"             |  |
| 16                    | Wing Walls            | 4 $\frac{1}{2}$ 8'-5"  |  |
| 17                    | "                     | 8 " 12'-4"             |  |
| 18                    | "                     | 12 " 2'-10"            |  |
| 19                    | "                     | 4 " 3'-10"             |  |
| 20                    | Post                  | 8 $\frac{3}{8}$ 4'-8"  |  |
| 21                    | Walls (Vertical rods) | 37 $\frac{1}{2}$ 7'-2" |  |
| 22                    | " (Horizontal rods)   | 35 " 6'-9"             |  |
| 23                    | "                     | 2 $\frac{3}{4}$ 54'-6" |  |
| 24                    | "                     | 4 " 56'-2"             |  |
| 25                    | "                     | 4 $\frac{1}{2}$ 9'-5"  |  |

|                                                           |                  |                         |  |
|-----------------------------------------------------------|------------------|-------------------------|--|
| <b>COPINGS PIERS No. 1 to No. 13 INCL. (Total Listed)</b> |                  |                         |  |
| 30                                                        | 6 in each coping | 78 $\frac{3}{8}$ 37'-4" |  |
| 31                                                        | "                | 52 $\frac{1}{2}$ 5'-2"  |  |
| 32                                                        | "                | 52 $\frac{3}{4}$ 5'-4"  |  |
| 33                                                        | "                | 52 " 9'-0"              |  |

|                                      |       |                              |  |
|--------------------------------------|-------|------------------------------|--|
| <b>PIER No. 1 (excepting coping)</b> |       |                              |  |
| 34                                   | Stubs | 82 $\frac{1}{2}$ 9'-5"       |  |
| 35                                   | Shaft | 42 " 21'-5"                  |  |
| 36                                   | "     | 40 " 12'-6"                  |  |
| 37                                   | "     | 12 $\frac{3}{8}$ 32'-0"      |  |
| 38                                   | "     | 12 " 31'-7"                  |  |
| 39                                   | "     | 4 " 32'-10"                  |  |
| 40                                   | "     | 21 $\frac{1}{2}$ 3'-0" 2'-3" |  |
| 41                                   | "     | 21 " 2'-10" 2'-1"            |  |
| 42                                   | "     | 21 " 2'-7" 1'-10"            |  |
| 43                                   | "     | 2 " 2'-6" 1'-9"              |  |

|                                      |       |                              |  |
|--------------------------------------|-------|------------------------------|--|
| <b>PIER No. 2 (excepting coping)</b> |       |                              |  |
| 34                                   | Stubs | 82 $\frac{1}{2}$ 9'-5"       |  |
| 44                                   | Shaft | 42 " 23'-2"                  |  |
| 36                                   | "     | 40 " 12'-6"                  |  |
| 37                                   | "     | 16 $\frac{3}{8}$ 32'-0"      |  |
| 38                                   | "     | 12 " 31'-7"                  |  |
| 45                                   | "     | 4 " 31'-3"                   |  |
| 46                                   | "     | 21 $\frac{1}{2}$ 3'-1" 2'-4" |  |
| 47                                   | "     | 21 " 2'-10" 2'-1"            |  |
| 48                                   | "     | 21 " 2'-8" 1'-11"            |  |
| 49                                   | "     | 2 " 2'-6" 1'-9"              |  |

|                                     |       |                              |  |
|-------------------------------------|-------|------------------------------|--|
| <b>PIER No. 3, excepting coping</b> |       |                              |  |
| 34                                  | Stubs | 82 $\frac{1}{2}$ 9'-5"       |  |
| 42                                  | Shaft | 42 " 25'-8"                  |  |
| 36                                  | "     | 40 " 12'-6"                  |  |
| 37                                  | "     | 12 $\frac{3}{8}$ 32'-0"      |  |
| 38                                  | "     | 16 " 31'-7"                  |  |
| 45                                  | "     | 4 " 31'-3"                   |  |
| 50                                  | "     | 21 $\frac{1}{2}$ 3'-2" 2'-5" |  |
| 51                                  | "     | 21 " 2'-11" 2'-2"            |  |
| 52                                  | "     | 21 " 2'-9" 2'-0"             |  |
| 53                                  | "     | 23 " 2'-7" 1'-10"            |  |

|                                                                  |       |                              |  |
|------------------------------------------------------------------|-------|------------------------------|--|
| <b>PIERS No. 4 and No. 13 (excepting copings) (Total Listed)</b> |       |                              |  |
| 34                                                               | Stubs | 164 $\frac{1}{2}$ 9'-5"      |  |
| 54                                                               | Shaft | 84 " 23'-11"                 |  |
| 36                                                               | "     | 80 " 12'-6"                  |  |
| 37                                                               | "     | 32 $\frac{3}{8}$ 32'-0"      |  |
| 38                                                               | "     | 24 " 31'-7"                  |  |
| 45                                                               | "     | 8 " 31'-3"                   |  |
| 46                                                               | "     | 42 $\frac{1}{2}$ 3'-1" 2'-4" |  |
| 47                                                               | "     | 42 " 2'-10" 2'-1"            |  |
| 48                                                               | "     | 42 " 2'-8" 1'-11"            |  |
| 49                                                               | "     | 46 " 2'-6" 1'-9"             |  |

|                                                                  |       |                              |  |
|------------------------------------------------------------------|-------|------------------------------|--|
| <b>PIERS No. 5 and No. 12 (excepting copings) (Total Listed)</b> |       |                              |  |
| 34                                                               | Stubs | 164 $\frac{1}{2}$ 9'-5"      |  |
| 55                                                               | Shaft | 84 " 24'-1"                  |  |
| 36                                                               | "     | 80 " 12'-6"                  |  |
| 37                                                               | "     | 32 $\frac{3}{8}$ 32'-0"      |  |
| 38                                                               | "     | 24 " 31'-7"                  |  |
| 56                                                               | "     | 8 " 33'-0"                   |  |
| 46                                                               | "     | 42 $\frac{1}{2}$ 3'-1" 2'-4" |  |
| 47                                                               | "     | 42 " 2'-10" 2'-1"            |  |
| 48                                                               | "     | 42 " 2'-8" 1'-11"            |  |
| 49                                                               | "     | 46 " 2'-6" 1'-9"             |  |

|                                      |       |                              |  |
|--------------------------------------|-------|------------------------------|--|
| <b>PIER No. 6 (excepting coping)</b> |       |                              |  |
| 34                                   | Stubs | 82 $\frac{1}{2}$ 9'-5"       |  |
| 57                                   | Shaft | 42 " 24'-4"                  |  |
| 36                                   | "     | 40 " 12'-6"                  |  |
| 37                                   | "     | 16 $\frac{3}{8}$ 32'-0"      |  |
| 38                                   | "     | 12 " 31'-7"                  |  |
| 56                                   | "     | 4 " 33'-0"                   |  |
| 46                                   | "     | 21 $\frac{1}{2}$ 3'-1" 2'-4" |  |
| 47                                   | "     | 21 " 2'-10" 2'-1"            |  |
| 48                                   | "     | 21 " 2'-8" 1'-11"            |  |
| 49                                   | "     | 23 " 2'-6" 1'-9"             |  |

|                                                                         |       |                              |  |
|-------------------------------------------------------------------------|-------|------------------------------|--|
| <b>PIERS No. 7 No. 10 and No. 11 (excepting copings) (Total Listed)</b> |       |                              |  |
| 34                                                                      | Stubs | 246 $\frac{1}{2}$ 9'-5"      |  |
| 58                                                                      | Shaft | 126 " 24'-6"                 |  |
| 36                                                                      | "     | 120 " 12'-6"                 |  |
| 37                                                                      | "     | 36 $\frac{3}{8}$ 32'-0"      |  |
| 38                                                                      | "     | 48 " 31'-7"                  |  |
| 56                                                                      | "     | 12 " 33'-0"                  |  |
| 46                                                                      | "     | 63 $\frac{1}{2}$ 3'-1" 2'-4" |  |
| 47                                                                      | "     | 63 " 2'-10" 2'-1"            |  |
| 48                                                                      | "     | 63 " 2'-8" 1'-11"            |  |
| 49                                                                      | "     | 69 " 2'-6" 1'-9"             |  |

|                                                                 |       |                              |  |
|-----------------------------------------------------------------|-------|------------------------------|--|
| <b>PIERS No. 8 and No. 9 (excepting copings) (Total Listed)</b> |       |                              |  |
| 34                                                              | Stubs | 164 $\frac{1}{2}$ 9'-5"      |  |
| 59                                                              | Shaft | 84 " 24'-8"                  |  |
| 36                                                              | "     | 80 " 12'-6"                  |  |
| 37                                                              | "     | 24 $\frac{3}{8}$ 32'-0"      |  |
| 38                                                              | "     | 32 " 31'-7"                  |  |
| 56                                                              | "     | 8 " 33'-0"                   |  |
| 46                                                              | "     | 42 $\frac{1}{2}$ 3'-1" 2'-4" |  |
| 47                                                              | "     | 42 " 2'-10" 2'-1"            |  |
| 48                                                              | "     | 42 " 2'-8" 1'-11"            |  |
| 49                                                              | "     | 46 " 2'-6" 1'-9"             |  |

|                                             |          |                                    |  |
|---------------------------------------------|----------|------------------------------------|--|
| <b>PIER No. 14 (Total for both Columns)</b> |          |                                    |  |
| 60                                          | Cap      | 20 $\frac{1}{2}$ 3'-10"            |  |
| 61                                          | Footings | 12 $\frac{3}{4}$ 8'-0"             |  |
| 62                                          | "        | 24 " 6'-9"                         |  |
| 63                                          | Shaft    | 8 " 3'-4"                          |  |
| 64                                          | "        | 8 " 10'-0"                         |  |
| 65                                          | "        | 16 " 19'-0"                        |  |
| 66                                          | "        | 8 " 17'-6"                         |  |
| 67                                          | Hoops    | 6 $\frac{3}{8}$ 13'-5" 3'-3" 3'-3" |  |
| 68                                          | "        | 2 " 12'-7" 3'-1" 3'-1"             |  |
| 69                                          | "        | 2 " 12'-3" 3'-0" 3'-0"             |  |
| 70                                          | "        | 4 " 8'-7" 1'-4" 2'-9"              |  |
| 71                                          | "        | 4 " 8'-3" 2'-7"                    |  |
| 72                                          | "        | 4 " 7'-11" 2'-5"                   |  |
| 73                                          | "        | 4 " 7'-7" 2'-3"                    |  |
| 74                                          | "        | 4 " 7'-3" 2'-1"                    |  |
| 75                                          | "        | 4 " 6'-11" 1'-11"                  |  |
| 76                                          | "        | 4 " 6'-7" 1'-9"                    |  |

|                                             |          |                                    |  |
|---------------------------------------------|----------|------------------------------------|--|
| <b>PIER No. 15 (Total for both Columns)</b> |          |                                    |  |
| 77                                          | Cap      | 20 $\frac{1}{2}$ 4'-2"             |  |
| 78                                          | Footings | 12 $\frac{3}{4}$ 11'-0"            |  |
| 61                                          | "        | 6 " 8'-0"                          |  |
| 79                                          | Shaft    | 32 $\frac{1}{2}$ 7'-10"            |  |
| 63                                          | "        | 8 $\frac{3}{4}$ 3'-4"              |  |
| 80                                          | "        | 8 $\frac{1}{2}$ 15'-6"             |  |
| 81                                          | "        | 4 " 13'-0"                         |  |
| 82                                          | "        | 12 " 4'-0"                         |  |
| 83                                          | "        | 16 " 17'-4"                        |  |
| 34                                          | Hoops    | 6 $\frac{3}{8}$ 14'-3" 3'-6" 3'-6" |  |
| 67                                          | "        | 2 " 13'-5" 3'-3" 3'-3"             |  |
| 85                                          | "        | 2 " 12'-11" 3'-2" 3'-2"            |  |
| 86                                          | "        | 4 " 9'-7" 1'-8" 3'-0"              |  |
| 87                                          | "        | 4 " 9'-3" 2'-10"                   |  |
| 88                                          | "        | 4 " 8'-11" 2'-8"                   |  |
| 89                                          | "        | 4 " 8'-7" 2'-6"                    |  |
| 90                                          | "        | 4 " 8'-3" 2'-4"                    |  |
| 91                                          | "        | 4 " 7'-11" 2'-2"                   |  |

|                                             |          |                                    |  |
|---------------------------------------------|----------|------------------------------------|--|
| <b>PIER No. 16 (Total for both Columns)</b> |          |                                    |  |
| 77                                          | Cap      | 20 $\frac{1}{2}$ 4'-2"             |  |
| 78                                          | Footings | 12 $\frac{3}{4}$ 11'-0"            |  |
| 81                                          | "        | 24 $\frac{1}{2}$ 13'-0"            |  |
| 79                                          | Shaft    | 60 " 7'-10"                        |  |
| 92                                          | "        | 16 " 12'-0"                        |  |
| 93                                          | "        | 20 " 8'-6"                         |  |
| 94                                          | "        | 24 " 15'-4"                        |  |
| 63                                          | "        | 8 $\frac{3}{4}$ 3'-4"              |  |
| 67                                          | Hoops    | 6 $\frac{3}{8}$ 13'-5" 3'-3" 3'-3" |  |
| 68                                          | "        | 2 " 12'-7" 3'-1" 3'-1"             |  |
| 69                                          | "        | 2 " 12'-3" 3'-0" 3'-0"             |  |
| 87                                          | "        | 4 " 9'-3" 1'-8" 2'-10"             |  |
| 88                                          | "        | 4 " 8'-11" 2'-8"                   |  |
| 89                                          | "        | 4 " 8'-7" 2'-6"                    |  |
| 90                                          | "        | 4 " 8'-3" 2'-4"                    |  |
| 91                                          | "        | 4 " 7'-11" 2'-2"                   |  |
| 43                                          | Ties     | 28 $\frac{1}{2}$ 2'-6"             |  |
| 95                                          | "        | 24 " 4'-1" 3'-4"                   |  |
| 96                                          | "        | 8 " 3'-10" 3'-1"                   |  |
| 97                                          | "        | 8 " 3'-9" 3'-0"                    |  |

|                                             |          |                                    |  |
|---------------------------------------------|----------|------------------------------------|--|
| <b>PIER No. 17 (Total for both Columns)</b> |          |                                    |  |
| 60                                          | Cap      | 20 $\frac{1}{2}$ 3'-10"            |  |
| 61                                          | Footings | 12 $\frac{3}{4}$ 8'-0"             |  |
| 62                                          | "        | 24 " 6'-9"                         |  |
| 98                                          | Shaft    | 8 " 6'-3"                          |  |
| 99                                          | "        | 16 " 13'-0"                        |  |
| 100                                         | "        | 8 " 11'-6"                         |  |
| 63                                          | "        | 8 " 3'-4"                          |  |
| 101                                         | Hoops    | 6 $\frac{3}{8}$ 11'-5" 2'-9" 2'-9" |  |
| 102                                         | "        | 2 " 10'-7" 2'-7" 2'-7"             |  |
| 103                                         | "        | 2 " 10'-2" 2'-5" 2'-5"             |  |
| 73                                          | "        | 4 " 7'-7" 1'-4" 2'-3"              |  |
| 74                                          | "        | 4 " 7'-3" 2'-1"                    |  |
| 75                                          | "        | 4 " 6'-11" 1'-11"                  |  |
| 76                                          | "        | 4 " 6'-7" 1'-9"                    |  |

- GENERAL NOTE**
- Steel reinforcing to be in accordance with Standard Specifications.
  - All bends unless otherwise noted shall have a radius to the inside of bend of 3 times the diameter of the bar. Hooks shall have a length of tangent of not less than 6" unless otherwise noted.
  - Corner bends in Hoop bars to be made to an inside radius equal to the diameter of the longitudinal bars at corners.
  - All dimensions shown on bending diagrams are out to out of metal.
  - Lengths recorded in tabulations are the total lengths of bars figured on the  $\angle$  of piece.
  - Transverse bars on lines crossing the diagonal floor-expansion joints have been listed continuous across these joints. Such bars are to be cut in the field, according to the position they occupy, then moved endwise in placing, to clear the expansion joint members.
  - See Standard

# CONCRETE FIRE STOP BENTS (All dimensions Out to Out.)

| Mark                           | Location                    | No. | Size | Length    | Bending  | Diagram |
|--------------------------------|-----------------------------|-----|------|-----------|----------|---------|
| CONCRETE FIRE STOP BENT No. 10 |                             |     |      |           |          |         |
| 104                            | Bracket                     | 4   | 3/4" | 10'-4"    |          |         |
| 105                            |                             | 2   | 1/2" | 5'-0"     | Straight |         |
| 106                            |                             | 4   | 3/4" | 6'-7"     |          |         |
| 107                            | Footings                    | 30  | 1/2" | 3'-4"     |          |         |
| 108                            |                             | 20  | 1/2" | 2'-4"     |          |         |
| 109                            | Stubs in Panels             | 52  | 3/4" | 3'-4"     | Straight |         |
| 110                            | " Cols.                     | 12  | 3/4" | 8'-0"     |          |         |
| 111                            |                             | 8   | 1/2" | 8'-0"     |          |         |
| 112                            |                             | 6   | 1/2" | 47'-0"    | Straight |         |
| 113                            |                             | 4   | 1/2" | 46'-5"    |          |         |
| 114                            | Wall Panels (Vertical bars) | 4   | 1/2" | 6'-6"     |          |         |
| 115                            | " (Horiz. bars)             | 16  | 1/2" | 23'-8"    |          |         |
| 116                            |                             | 20  | 1/2" | 22'-10"   |          |         |
| 117                            | (Bars in Drop)              | 8   | 3/4" | 23'-9"    |          |         |
| 118                            | (Top Horiz. bars)           | 4   | 1/2" | 28'-2"    |          |         |
| 119                            | Coping                      | 8   | 1/2" | 24'-3"    |          |         |
| 120                            |                             | 39  | 3/8" | 1'-4"     |          |         |
| 121                            |                             | 33  | 1/2" | 4'-1 1/2" |          |         |
| 122                            | Columns                     | 20  | 3/4" | 17'-6"    | Straight |         |
|                                |                             | 25  | 3/4" | 4'-2"     |          |         |

|                                |                             |    |      |           |          |  |
|--------------------------------|-----------------------------|----|------|-----------|----------|--|
| CONCRETE FIRE STOP BENT No. 20 |                             |    |      |           |          |  |
| 104                            | Bracket                     | 4  | 3/4" | 10'-4"    |          |  |
| 105                            |                             | 2  | 1/2" | 5'-0"     | Straight |  |
| 106                            |                             | 4  | 3/4" | 6'-7"     |          |  |
| 107                            | Footings                    | 30 | 1/2" | 3'-4"     |          |  |
| 108                            |                             | 20 | 1/2" | 2'-4"     |          |  |
| 109                            | Stubs in Panels             | 52 | 3/4" | 3'-4"     | Straight |  |
| 110                            | " Cols.                     | 12 | 3/4" | 8'-0"     |          |  |
| 111                            |                             | 8  | 1/2" | 8'-0"     |          |  |
| 112                            |                             | 6  | 1/2" | 49'-0"    | Straight |  |
| 113                            |                             | 4  | 1/2" | 48'-0"    |          |  |
| 114                            | Wall Panels (Vertical Bars) | 4  | 1/2" | 15'-0"    |          |  |
| 115                            | " (Horiz. Bars)             | 48 | 1/2" | 25'-7"    |          |  |
| 116                            |                             | 20 | 1/2" | 24'-8"    |          |  |
| 117                            | (Bars in drop)              | 8  | 3/4" | 23'-9"    |          |  |
| 118                            | (Top Horiz. bars)           | 4  | 1/2" | 28'-2"    |          |  |
| 119                            | Coping                      | 8  | 1/2" | 24'-3"    |          |  |
| 120                            |                             | 39 | 3/8" | 1'-4"     |          |  |
| 121                            |                             | 33 | 1/2" | 4'-1 1/2" |          |  |
| 122                            | Columns                     | 20 | 3/4" | 25'-7"    | Straight |  |
|                                |                             | 40 | 3/4" | 4'-2"     |          |  |

|                                |                             |    |      |           |          |  |
|--------------------------------|-----------------------------|----|------|-----------|----------|--|
| CONCRETE FIRE STOP BENT No. 40 |                             |    |      |           |          |  |
| 104                            | Bracket                     | 4  | 3/4" | 10'-4"    |          |  |
| 105                            |                             | 2  | 1/2" | 5'-0"     | Straight |  |
| 106                            |                             | 4  | 3/4" | 6'-7"     |          |  |
| 107                            | Footings                    | 30 | 1/2" | 3'-4"     |          |  |
| 108                            |                             | 20 | 1/2" | 2'-4"     |          |  |
| 109                            | Stubs in Panels             | 52 | 3/4" | 3'-4"     | Straight |  |
| 110                            | " Cols.                     | 12 | 3/4" | 8'-0"     |          |  |
| 111                            |                             | 8  | 1/2" | 8'-0"     |          |  |
| 112                            |                             | 6  | 1/2" | 46'-0"    | Straight |  |
| 113                            |                             | 4  | 1/2" | 45'-0"    |          |  |
| 114                            | Wall Panels (Vertical Bars) | 4  | 1/2" | 14'-0"    |          |  |
| 115                            | " (Horiz. Bars)             | 16 | 1/2" | 24'-8"    |          |  |
| 116                            |                             | 20 | 1/2" | 23'-8"    |          |  |
| 117                            | (Bars in drop)              | 8  | 3/4" | 23'-9"    |          |  |
| 118                            | (Top Horiz. bars)           | 4  | 1/2" | 28'-2"    |          |  |
| 119                            | Coping                      | 8  | 1/2" | 24'-3"    |          |  |
| 120                            |                             | 39 | 3/8" | 1'-4"     |          |  |
| 121                            |                             | 33 | 1/2" | 4'-1 1/2" |          |  |
| 122                            | Columns                     | 20 | 3/4" | 23'-4"    | Straight |  |
|                                |                             | 35 | 3/8" | 4'-2"     |          |  |

# PAVING SLAB AND CONCRETE BRIDGING (All dimensions Out to Out.)

|                                                 |                                |      |      |            |          |  |
|-------------------------------------------------|--------------------------------|------|------|------------|----------|--|
| CONCRETE SLAB ON TIMBER STRUCTURE               |                                |      |      |            |          |  |
| 133                                             | Transverse Slab Bars           | 2302 | 3/8" | 44'-10"    | Straight |  |
| 134                                             |                                | 2302 | 3/8" | 46'-7"     |          |  |
| Transverse Slab Bars                            |                                |      |      |            |          |  |
| 135                                             | at diagonal expansion Jts.     | 306  | 3/8" | 23'-7"     | Straight |  |
| 136                                             |                                | 306  | 3/8" | 24'-5"     |          |  |
| Bars at Expansion Joints                        |                                |      |      |            |          |  |
| 137                                             | Piers No. 1 and No. 13         | 4    | 3/8" | 34'-4"     |          |  |
| 138                                             |                                | 4    | 3/8" | 35'-3"     |          |  |
| 139                                             | Curb Bars                      | 1685 | 1/2" | 1'-6 1/2"  |          |  |
| Longitudinal Steel                              |                                |      |      |            |          |  |
| 140                                             | 19'-0" Spans                   | 2220 | 1/2" | 18'-8"     | Straight |  |
| 141                                             | Bent 27-28                     | 29   | 1/2" | 18'-8"     |          |  |
| 142                                             | 28-28a                         | 18   | 1/2" | 14'-9"     |          |  |
| 143                                             | 28a-28b                        | 8    | 1/2" | 14'-9"     |          |  |
| 144                                             | Pier 13-Bent 29                | 4    | 1/2" | 14'-0"     |          |  |
| 145                                             | Bent 29-30                     | 26   | 1/2" | 12'-8"     |          |  |
| 146                                             | 30-31                          | 37   | 1/2" | 21'-8"     |          |  |
| 147                                             | 32-33                          | 19   | 1/2" | 13'-1 1/2" |          |  |
| Longitudinal Steel (Cut in field - see note *e) |                                |      |      |            |          |  |
| 130                                             | Bent 27-28 and 28b-Pier 1      | 8    | 1/2" | 14'-0"     | Straight |  |
| 141                                             | 28-28b                         | 10   | 1/2" | 14'-9"     |          |  |
| 142                                             | Pier 13-Bent 30, Bent 2930     | 10   | 1/2" | 12'-8"     |          |  |
| 143                                             | 13 to Bent 29                  | 7    | 1/2" | 19'-0"     |          |  |
| 144                                             | Bent 31-33 and 32-33           | 18   | 1/2" | 13'-1 1/2" |          |  |
| Concrete Bridging                               |                                |      |      |            |          |  |
| 146                                             | Roadway at Square Bents        | 462  | 1/2" | 22'-9"     |          |  |
| 147                                             | Sidewalk                       | 230  | 1/2" | 7'-9"      |          |  |
| 148                                             | Roadway at Skew Bents          | 22   | 1/2" | 24'-5"     |          |  |
| 149                                             | Sidewalk                       | 10   | 1/2" | 8'-7"      |          |  |
| 150                                             | Roadway at intermediate points | 130  | 1/2" | 22'-7"     |          |  |
| 151                                             | "                              | 130  | 1/2" | 22'-1"     |          |  |
| 152                                             | "                              | 254  | 1/2" | 22'-4"     |          |  |
| 153                                             | Sidewalk at intermediate pts   | 490  | 1/2" | 7'-8"      |          |  |
| 153A                                            | Sidewalk at Skew Bents         | 10   | 1/2" | 8'-6"      |          |  |
| Concrete Bridging (cut in field - See Note *e)  |                                |      |      |            |          |  |
| 146                                             | Roadway at Square Bents        | 2    | 1/2" | 22'-9"     |          |  |
| 150                                             | intermediate points            | 2    | 1/2" | 22'-7"     |          |  |
| 151                                             | "                              | 2    | 1/2" | 22'-1"     |          |  |
| 152                                             | "                              | 2    | 1/2" | 22'-4"     |          |  |

|                                  |                                |      |      |           |          |  |
|----------------------------------|--------------------------------|------|------|-----------|----------|--|
| CONCRETE SLAB ON STEEL STRUCTURE |                                |      |      |           |          |  |
| 154                              | Transverse (Square portion)    | 439  | 3/8" | 44'-10"   | Straight |  |
| 155                              | "                              | 439  | 3/8" | 46'-8"    |          |  |
| 156                              | "                              | 848  | 3/8" | 26'-6"    |          |  |
| 157                              | Transverse (Skew ends)         | 960  | 3/8" | 24'-8"    |          |  |
| 117                              | "                              | 960  | 3/8" | 23'-9"    |          |  |
| 156                              | "                              | 960  | 3/8" | 26'-6"    |          |  |
| 158                              | Parallel to copper Exp. Joints | 64   | 3/4" | 39'-5"    |          |  |
| 159                              | Steel Exp. Dams                | 16   | 3/4" | 34'-6"    | Straight |  |
| 160                              | "                              | 16   | 3/4" | 35'-6"    |          |  |
| 161                              | Sidewalk Bracket               | 248  | 1/2" | 10'-1"    |          |  |
| 139                              | Curb                           | 1860 | 1/2" | 1'-6 1/2" |          |  |
| 162                              | Longitudinal 95'-11" Span      | 165  | 1/2" | 31'-10"   | Straight |  |
| 163                              | " 75'-0"                       | 710  | 1/2" | 38'-0"    |          |  |
| 164                              | " 72'-10 1/2"                  | 440  | 1/2" | 37'-0"    |          |  |
| 165                              | " 54'-0"                       | 330  | 1/2" | 27'-8"    |          |  |

# SUMMARY - BAR LIST

Note: Straight Bars are marked "s". Bent Bars are marked "b".

| Mark | Location             | No.  | Size | Length     | Mark | Location            | No.             | Size | Length     | Mark   | Location                            | No.  | Size | Length    |
|------|----------------------|------|------|------------|------|---------------------|-----------------|------|------------|--------|-------------------------------------|------|------|-----------|
| 1    | Approach Slabs       | 70   | 3/8" | 20'-9"     | 76   | Piers 14 and 17     | 8               | 3/8" | 6'-7 1/2"  | 151    | Slab                                | 132  | 1/2" | 22'-1"    |
| 2    | "                    | 68   | 1/2" | 19'-9"     | 77   | " 15 and 16         | 40              | 1/2" | 4'-2"      | 152    | "                                   | 256  | 1/2" | 22'-4"    |
| 3    | "                    | 4    | 1/2" | 7'-0"      | 78   | "                   | 24              | 3/8" | 11'-0"     | 153    | "                                   | 490  | 1/2" | 7'-8"     |
| 4    | "                    | 4    | 1/2" | 5'-9"      | 79   | "                   | 92              | 1/2" | 7'-10"     | 154    | "                                   | 439  | 3/4" | 44'-10"   |
| 5    | "                    | 4    | 1/2" | 3'-4"      | 80   | Pier No. 15         | 8               | 1/2" | 15'-6"     | 155    | "                                   | 439  | 3/4" | 44'-10"   |
| 6    | "                    | 4    | 1/2" | 3'-0"      | 81   | " and 16            | 28              | 1/2" | 13'-0"     | 156    | "                                   | 1808 | 1/2" | 26'-6"    |
| 7    | "                    | 8    | 1/2" | 39'-6"     | 82   | " 15                | 12              | 1/2" | 9'-0"      | 157    | "                                   | 960  | 1/2" | 24'-8"    |
| 8    | "                    | 2    | 1/2" | 40'-6"     | 83   | "                   | 16              | 1/2" | 17'-4"     | 158    | "                                   | 64   | 1/2" | 39'-5"    |
| 9    | "                    | 2    | 1/2" | 42'-6"     | 84   | "                   | 6               | 3/8" | 14'-3"     | 159    | "                                   | 16   | 1/2" | 34'-6"    |
| 10   | "                    | 8    | 1/2" | 25'-0"     | 85   | "                   | 2               | 1/2" | 12'-11"    | 160    | "                                   | 16   | 1/2" | 35'-6"    |
| 11   | "                    | 8    | 1/2" | 2'-5"      | 86   | "                   | 4               | 1/2" | 9'-7 1/2"  | 161    | "                                   | 248  | 1/2" | 10'-1"    |
| 12   | Abutments            | 104  | 1/2" | 4'-0"      | 87   | Piers No. 15 and 16 | 8               | 1/2" | 9'-3 1/2"  | 162    | "                                   | 165  | 1/2" | 32'-10"   |
| 13   | "                    | 16   | 1/2" | 5'-11"     | 88   | "                   | 8               | 1/2" | 8'-1 1/2"  | 163    | "                                   | 770  | 1/2" | 38'-0"    |
| 14   | "                    | 8    | 3/8" | 3'-6"      | 89   | "                   | 8               | 1/2" | 8'-7 1/2"  | 164    | "                                   | 440  | 1/2" | 37'-0"    |
| 15   | "                    | 8    | 1/2" | 59'-6"     | 90   | "                   | 8               | 1/2" | 8'-3 1/2"  | 165    | "                                   | 330  | 1/2" | 27'-8"    |
| 16   | North Abutment       | 4    | 1/2" | 7'-0"      | 91   | "                   | 8               | 1/2" | 7'-1 1/2"  | 166    | Hoops-Pier #14 Total for both cols. | 4    | 3/8" | 8'-0 1/2" |
| 17   | "                    | 8    | 1/2" | 10'-11"    | 92   | Pier No. 16         | 16              | 1/2" | 12'-0"     | 167    | "                                   | 4    | 1/2" | 8'-5 1/2" |
| 18   | Abutments            | 24   | 1/2" | 2'-10"     | 93   | "                   | 20              | 1/2" | 8'-6"      | 168    | "                                   | 4    | 1/2" | 8'-1 1/2" |
| 19   | "                    | 8    | 1/2" | 3'-10"     | 94   | "                   | 24              | 1/2" | 15'-4"     | 169    | "                                   | 4    | 1/2" | 7'-9 1/2" |
| 20   | "                    | 16   | 3/8" | 4'-8"      | 95   | "                   | 24              | 1/2" | 4'-1"      | 170    | "                                   | 4    | 1/2" | 7'-5 1/2" |
| 21   | North Abutment       | 37   | 1/2" | 5'-9"      | 96   | "                   | 8               | 1/2" | 3'-10 1/2" | 171    | "                                   | 4    | 1/2" | 7'-1 1/2" |
| 22   | "                    | 35   | 1/2" | 5'-4 1/2"  | 97   | "                   | 8               | 1/2" | 3'-9"      | 172    | "                                   | 4    | 1/2" | 6'-9 1/2" |
| 23   | Abutments            | 4    | 3/8" | 54'-6"     | 98   | Pier No. 17         | 8               | 3/8" | 6'-3"      | 173    | "                                   | 4    | 1/2" | 6'-5 1/2" |
| 24   | "                    | 8    | 1/2" | 56'-2"     | 99   | "                   | 16              | 1/2" | 13'-0"     | 174    | " #15                               | 4    | 1/2" | 9'-9 1/2" |
| 25   | "                    | 8    | 1/2" | 9'-5"      | 100  | "                   | 8               | 1/2" | 11'-6"     | 175    | "                                   | 4    | 1/2" | 9'-5 1/2" |
| 26   | South Abutment       | 4    | 1/2" | 8'-5"      | 101  | "                   | 6               | 3/8" | 11'-5"     | 176    | "                                   | 4    | 1/2" | 9'-1 1/2" |
| 27   | "                    | 8    | 1/2" | 12'-4"     | 102  | "                   | 2               | 1/2" | 10'-7"     | 177    | "                                   | 4    | 1/2" | 8'-9 1/2" |
| 28   | "                    | 37   | 1/2" | 7'-2"      | 103  | "                   | 2               | 1/2" | 10'-2"     | 178    | "                                   | 4    | 1/2" | 8'-3 1/2" |
| 29   | "                    | 35   | 1/2" | 6'-9 1/2"  | 104  | Fire Stops          | 12              | 3/8" | 10'-4"     | 179    | "                                   | 4    | 1/2" | 8'-1 1/2" |
| 30   | Main Pier Copings    | 78   | 3/8" | 37'-4 1/2" | 105  | "                   | 6               | 1/2" | 5'-0"      | 180    | "                                   | 4    | 1/2" | 7'-9 1/2" |
| 31   | "                    | 572  | 1/2" | 5'-2 1/2"  | 106  | "                   | 12              | 3/8" | 6'-7"      | 181    | " #16                               | 4    | 1/2" | 9'-5 1/2" |
| 32   | "                    | 52   | 3/8" | 5'-4 1/2"  | 107  | "                   | 90              | 1/2" | 3'-4"      | 182    | "                                   | 4    | 1/2" | 9'-1 1/2" |
| 33   | "                    | 52   | 1/2" | 9'-0"      | 108  | "                   | 60              | 1/2" | 2'-4"      | 183    | "                                   | 4    | 1/2" | 8'-9 1/2" |
| 34   | 13 Main Piers        | 1066 | 1/2" | 9'-5"      | 109  | "                   | 156             | 1/2" | 3'-4"      | 184    | "                                   | 4    | 1/2" | 8'-5 1/2" |
| 35   | Pier No. 1           | 42   | 1/2" | 21'-5"     | 110  | "                   | 24              | 3/8" | 8'-0"      | 185    | "                                   | 4    | 1/2" | 8'-1 1/2" |
| 36   | 13 Main Piers        | 520  | 1/2" | 12'-6"     | 111  | F.S. No. 10         | 6               | 1/2" | 47'-0"     | 186    | " #17                               | 4    | 1/2" | 7'-9 1/2" |
| 37   | "                    | 180  | 3/8" | 32'-0"     | 112  | " and No. 40        | 10              | 1/2" | 46'-0"     | 187    | "                                   | 4    | 1/2" | 7'-5 1/2" |
| 38   | "                    | 180  | 1/2" | 31'-7"     | 113  | "                   | 4               | 1/2" | 6'-6"      | 188    | "                                   | 4    | 1/2" | 7'-1 1/2" |
| 39   | Pier No. 1           | 4    | 1/2" | 32'-10"    | 114  | "                   | 48              | 1/2" | 17'-4"     | 189    | "                                   | 4    | 1/2" | 6'-9 1/2" |
| 40   | "                    | 21   | 1/2" | 3'-0 1/2"  | 115  | "                   | 60              | 1/2" | 22'-10"    | 190    | "                                   | 4    | 1/2" | 6'-5 1/2" |
| 41   | "                    | 21   | 1/2" | 2'-10"     | 116  | "                   | 20, 40, and Sub | 984  | 3/8"       | 23'-9" |                                     |      |      |           |
| 42   | "                    | 21   | 1/2" | 2'-7 1/2"  | 117  | "                   | 12              | 1/2" | 28'-2"     |        |                                     |      |      |           |
| 43   | Main Piers           | 283  | 1/2" | 2'-6 1/2"  | 118  | "                   | 24              | 1/2" | 24'-3"     |        |                                     |      |      |           |
| 44   | Pier No. 2           | 42   | 1/2" | 23'-2"     | 119  | "                   | 117             | 3/8" | 1'-4"      |        |                                     |      |      |           |
| 45   | Main Piers           | 16   | 5/8" | 31'-3"     | 120  | "                   | 99              | 1/2" | 4'-1 1/2"  |        |                                     |      |      |           |
| 46   | "                    | 231  | 1/2" | 3'-1 1/2"  | 121  | "                   | 100             | 3/8" | 4'-2"      |        |                                     |      |      |           |
| 47   | "                    | 231  | 1/2" | 2'-10 3/8" | 122  | "                   | 6               | 3/8" | 49'-0"     |        |                                     |      |      |           |
| 48   | "                    | 231  | 1/2" | 1'-11 1/2" | 123  | F.S. No. 20         | 4               | 1/2" | 48'-0"     |        |                                     |      |      |           |
| 49   | Pier No. 3           | 42   | 1/2" | 25'-8"     | 124  | "                   | 4               | 1/2" | 15'-0"     |        |                                     |      |      |           |
| 50   | "                    | 21   | 1/2" | 3'-2"      | 125  | "                   | 48              | 1/2" | 25'-7"     |        |                                     |      |      |           |
| 51   | "                    | 21   | 1/2" | 2'-11 1/2" | 126  | "                   | 36              | 1/2" | 24'-8"     |        |                                     |      |      |           |
| 52   | "                    | 21   | 1/2" | 2'-9 3/8"  | 127  | "                   | 20              | 3/8" | 25'-7"     |        |                                     |      |      |           |
| 53   | "                    | 23   | 1/2" | 2'-7"      | 128  | "                   | 4               | 1/2" | 45'-0"     |        |                                     |      |      |           |
| 54   | Piers No. 4 and 13   | 84   | 1/2" | 23'-11"    | 129  | F.S. No. 40         | 16              | 1/2" | 14'-0"     |        |                                     |      |      |           |
| 55   | " 5 12               | 84   | 1/2" | 24'-1"     | 130  | " and Slab          | 48              | 1/2" | 23'-4"     |        |                                     |      |      |           |
| 56   | " 5 to 12 incl       | 32   | 3/8" | 33'-0"     | 131  | "                   | 20              | 3/8" | 23'-4"     |        |                                     |      |      |           |
| 57   | " 6                  | 42   | 1/2" | 24'-4"     | 132  | "                   | 2302            | 3/8" | 44'-10"    |        |                                     |      |      |           |
| 58   | " 7, 10, and 11      | 126  | 1/2" | 24'-6"     | 133  | Slab                | 2302            | 1/2" | 46'-7"     |        |                                     |      |      |           |
| 59   | " 8 and 9            | 84   | 1/2" | 24'-8"     | 134  | "                   | 306             | 1/2" | 23'-7"     |        |                                     |      |      |           |
| 60   | " 14 and 17          | 40   | 1/2" | 3'-10"     | 135  | "                   | 306             | 1/2" | 24'-5"     |        |                                     |      |      |           |
| 61   | " 14, 15, 17, & F.S. | 66   | 3/8" | 8'-0"      | 136  | "                   | 4               | 1/2" | 34'-4"     |        |                                     |      |      |           |
| 62   | " 14, 17, "          | 48   | 1/2" | 6'-9"      | 137  | "                   | 4               | 1/2" | 35'-3"     |        |                                     |      |      |           |
| 63   | " 14 to 17 incl      | 32   | 1/2" | 3'-4"      | 138  | "                   | 3545            | 1/2" | 1'-6 1/2"  |        |                                     |      |      |           |
| 64   | " 14                 | 8    | 1/2" | 10'-0"     | 139  | Curb                | 2249            | 1/2" | 18'-8"     |        |                                     |      |      |           |
| 65   | "                    | 16   | 1/2" | 19'-0"     | 140  | Slab                | 36              | 1/2" | 14'-9"     |        |                                     |      |      |           |
| 66   | " 14 & F.S. 10       | 28   | 1/2" | 17'-6"     | 141  | "                   | 36              | 1/2" | 12'-8"     |        |                                     |      |      |           |
| 67   | " 14, 15, & 16       | 14   | 3/8" | 13'-5"     | 142  | "                   | 37              | 1/2" | 21'-8"     |        |                                     |      |      |           |
| 68   | " 14 & 16            | 4    | 1/2" | 12'-7"     | 143  | "                   | 37              | 1/2" | 13'-1 1/2" |        |                                     |      |      |           |
| 69   | " " "                | 4    | 1/2" | 12'-3"     | 144  | "                   | 7               | 1/2" | 19'-0"     |        |                                     |      |      |           |
| 70   | " 14                 | 4    | 1/2" | 8'-7 1/2"  | 145  | "                   | 464             | 1/2" | 21'-9"     |        |                                     |      |      |           |
| 71   | "                    | 4    | 1/2" | 8'-3 1/2"  | 146  | "                   | 230             | 1/2" | 7'-9"      |        |                                     |      |      |           |
| 72   | "                    | 4    | 1/2" | 7'-11 1/2" | 147  | "                   | 22              | 1/2" | 24'-5"     |        |                                     |      |      |           |
| 73   | " 14 & 17            | 8    | 1/2" | 7'-7 1/2"  | 148  | "                   | 10              | 1/2" | 8'-7"      |        |                                     |      |      |           |
| 74   | "                    | 8    | 1/2" | 7'-3 1/2"  | 149  | "                   | 132             | 1/2" | 22'-7"     |        |                                     |      |      |           |
| 75   | "                    | 8    | 1/2" | 6'-11 1/2" | 150  | "                   |                 |      |            |        |                                     |      |      |           |

1837

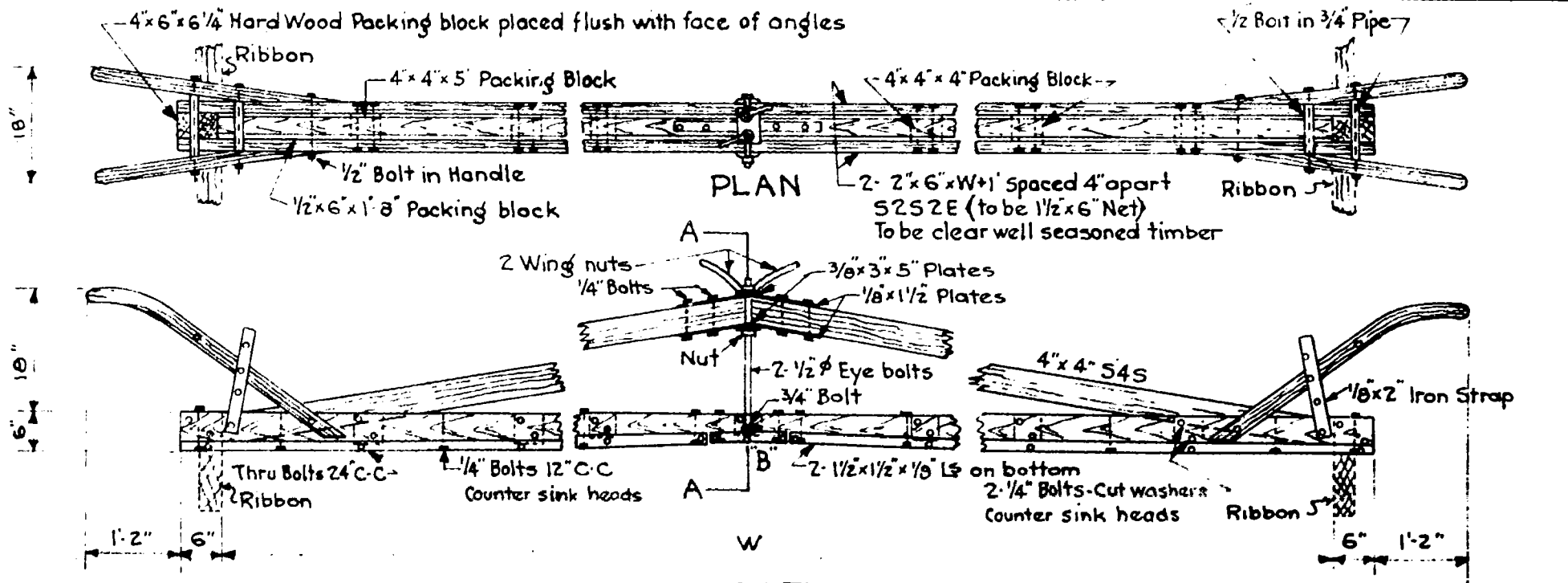
2-15-34 Added Bars 166 to 190 etc. N.S.M.  
DATE REVISION BY

STATE ROAD NO. 4  
4TH AVE. SOUTH -- VIADUCT  
ON EXTENSION OF 4TH AVE. S  
SEATTLE

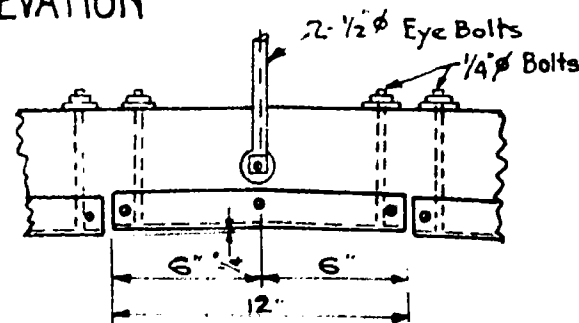
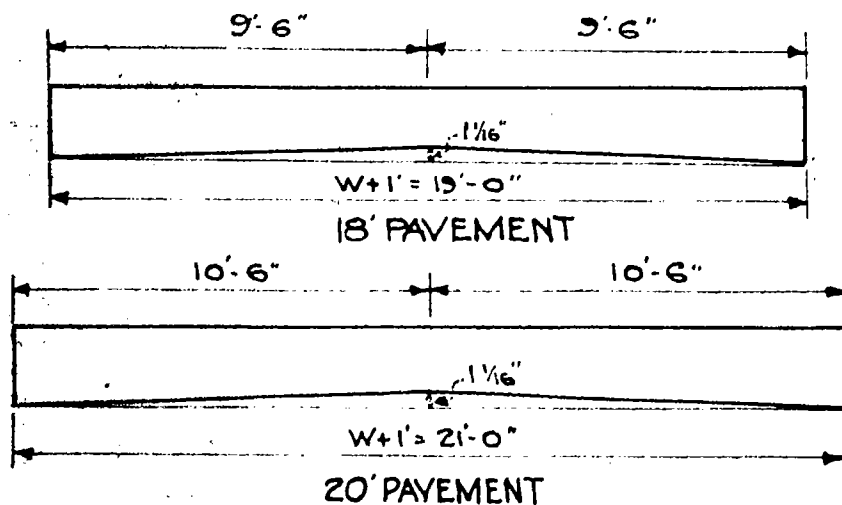
SHEET 2 OF 2, BAR LIST

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON

NRM-150-D, UNIT 3 Dec 26, '33

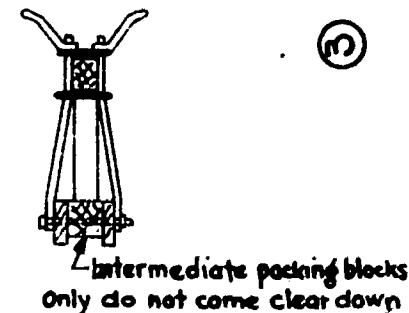


ELEVATION



ELEVATION AT "B"

NOTE: Cut angles as shown or bend to give 1/4" offset for 12"



## SECTION A-A STANDARD STRIKE BOARD FOR CONCRETE PAVEMENT

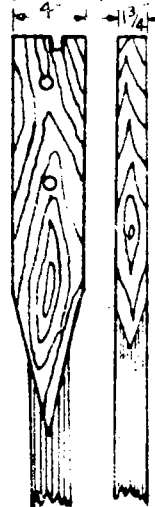
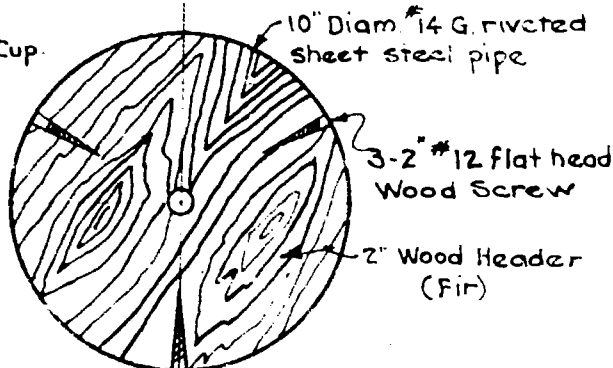
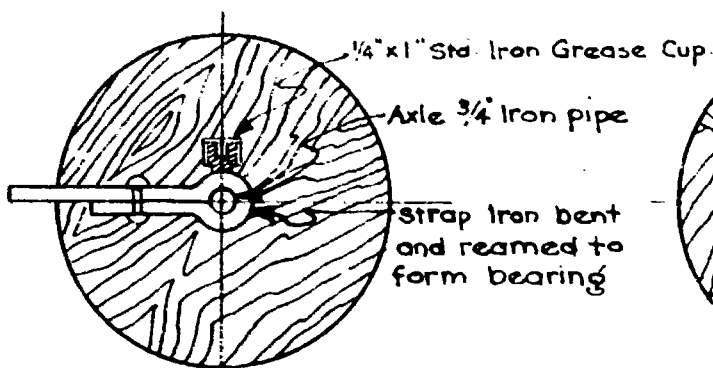
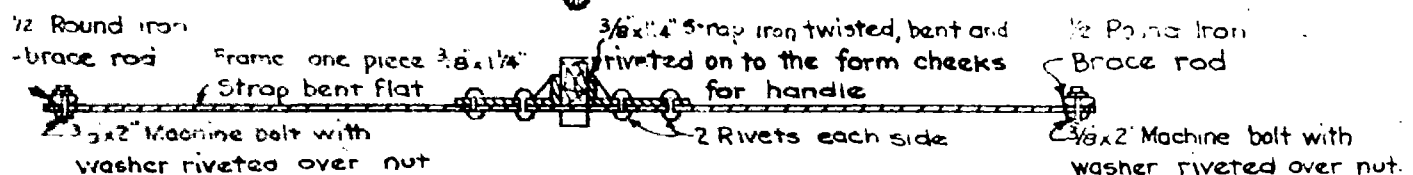
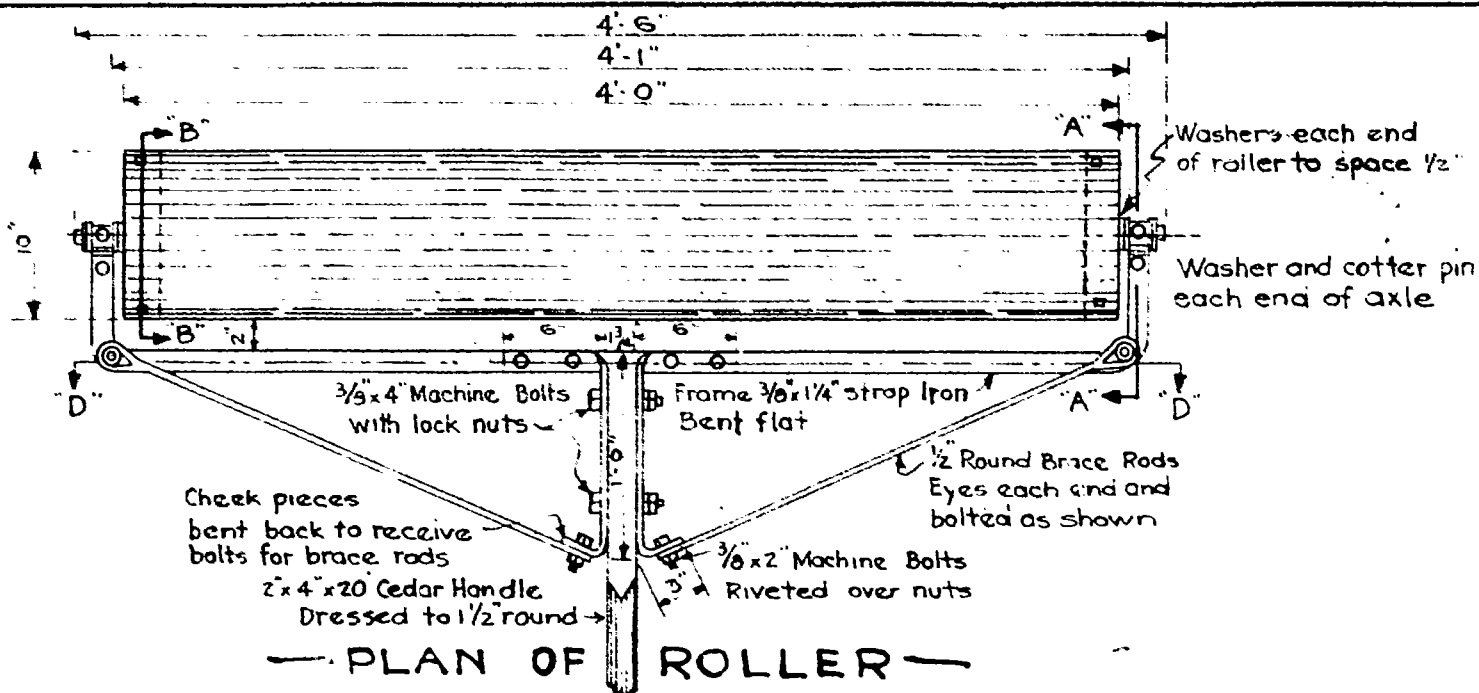
STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON

APPROVED: OCTOBER 1, 1929

*Samuel Johnson*  
DIRECTOR OF HIGHWAYS

Cut template to 3/4" crown and draw by means of wing nuts to give concrete pavement full crown specified.

A strike board similar in construction detail to the strike board shown above shall be constructed for use on super-elevated curves.  
Length in feet =  $W + 1.0 \sqrt{\text{Maximum degree of curve}}$   
(ask the Resident Engineer for the length)  
Set 1/2 Eye bolts and 1/4x12" offset ( $\frac{W}{2} + 6'$ ) from one end of strike board for curves, to make center brace of truss stand over longitudinal expansion joint.



### BILL OF MATERIAL FOR FINISHING ROLLER

| PIECES | SIZE AND KIND                         | FOR        |
|--------|---------------------------------------|------------|
| 1      | 10" x 4'-0" #14 G. Riveted steel pipe | Roller     |
| 2      | 2" x 10" diam. Douglas Fir            | Headers    |
| 6      | 2" #12 Flat head Wood Screws          | "          |
| 1      | 3/4" x 4'-6" Iron Pipe                | Axle       |
| 1      | 3/8 x 1/4 x 6'-8" Strap Iron          | Frame      |
| 2      | 3/8 x 1/4 x 2'-0" Strap Iron          | Side Chks. |
| 2      | 3/8 x 4" Machine Bolts with Lock nuts | Handle     |
| 1      | 2" x 4" x 20' Rough #1 Select Cedar   | "          |
| 2      | 1/2" x 2'-0" Round Iron Rods          | Brace Rods |
| 10     | 3/8 x 1/4" Cut Washers                |            |
| 4      | 3/8 x 2" Machine Bolts with nuts.     |            |
| 2      | 1 3/4" Cotter pins                    |            |
| 6      | 1/2 x 1" Soft Iron Rivets             |            |
| 2      | 1/4 x 1" Std. Black Iron Grease Cups. |            |

(4)

**— PLAN OF HANDLE —**

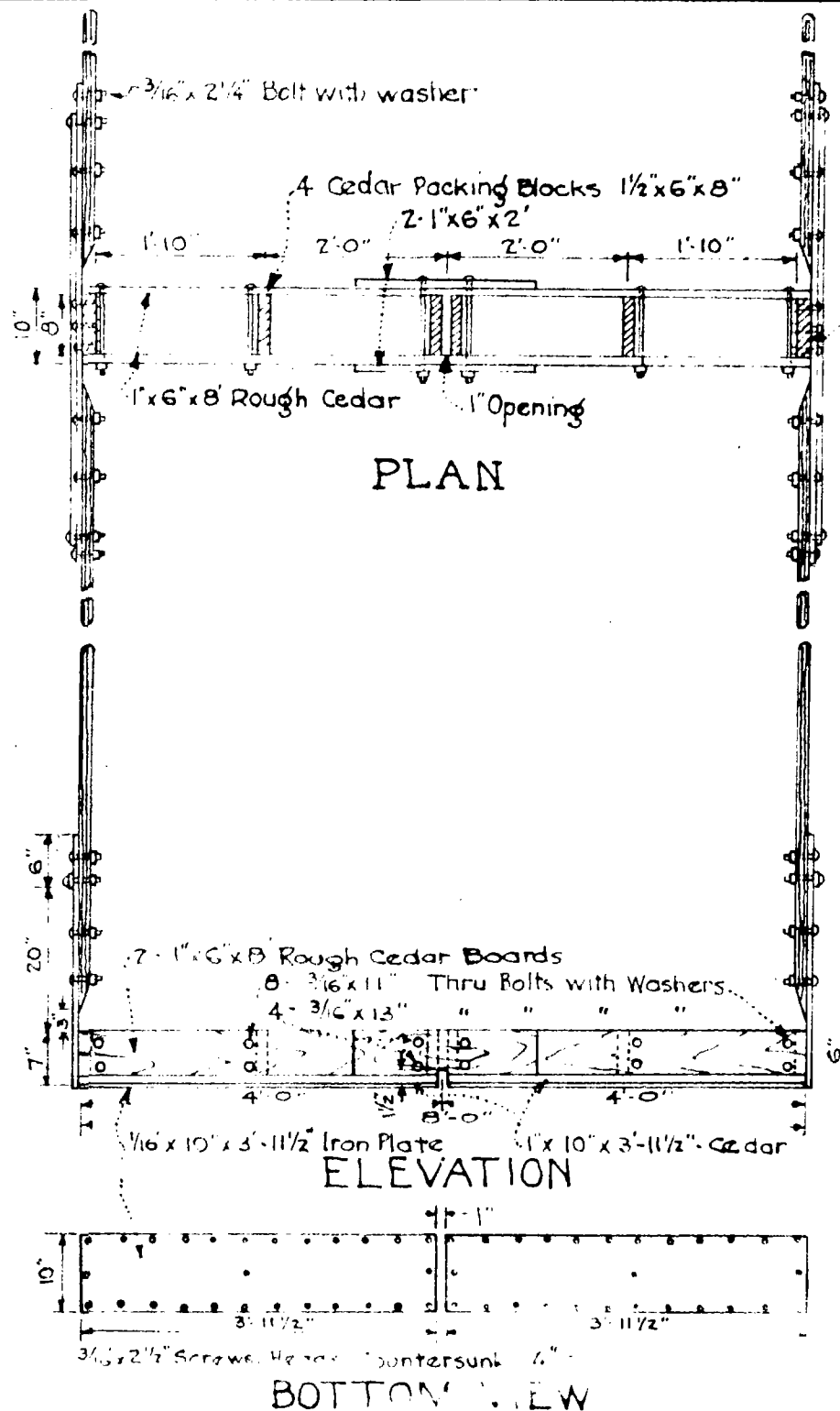
Note :- Two Rollers required.

## STANDARD FINISHING ROLLER FOR CONCRETE PAVEMENT

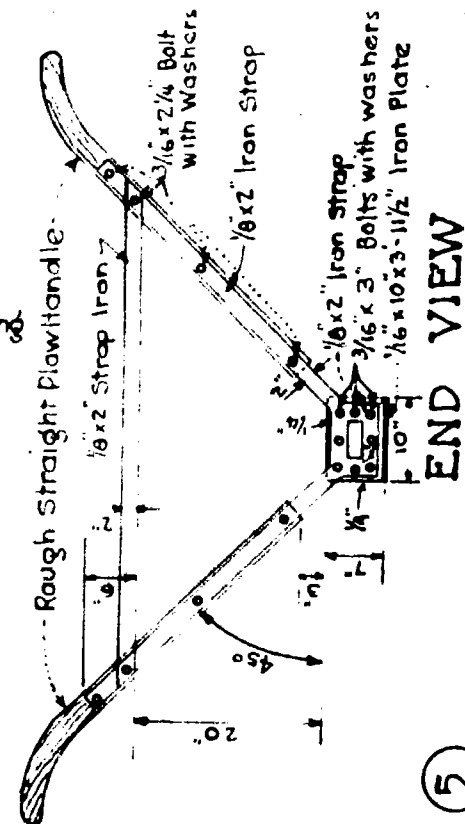
STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON.

APPROVED: OCTOBER 1, 1929

*Samuel H. Hume*  
DIRECTOR OF HIGHWAYS



2" x 6" x 8" Hardwood Packing Block at each end

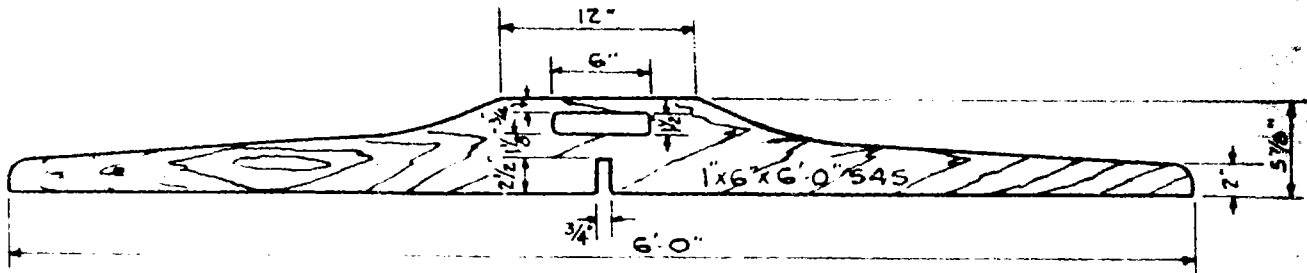


# **STANDARD STRADDLE FLOAT FOR CONCRETE PAVEMENT**

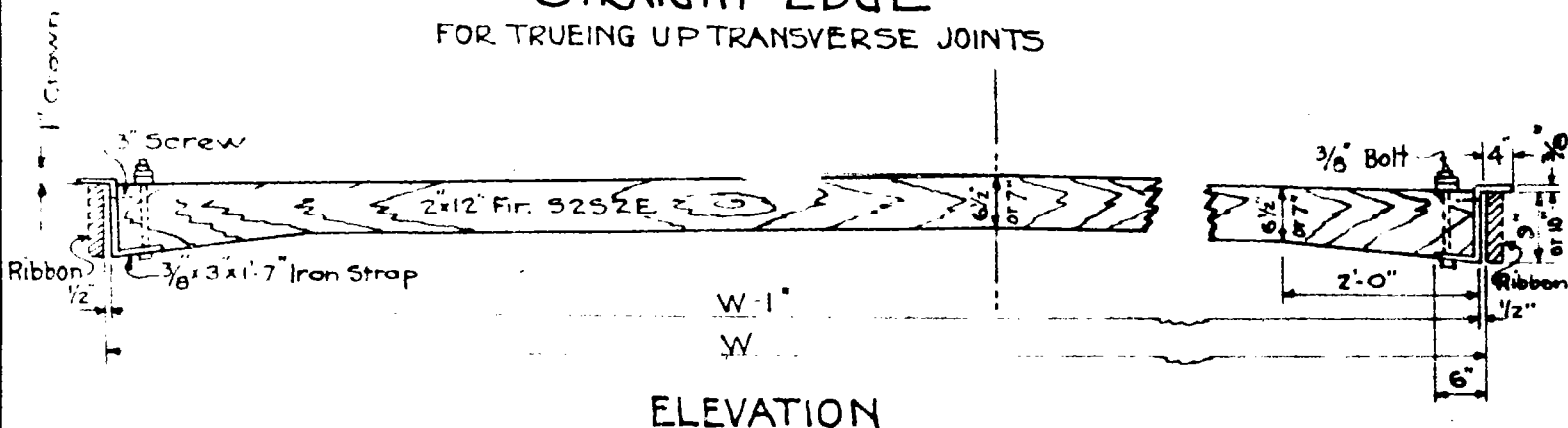
STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON

APPROVED: OCTOBER 1, 1929

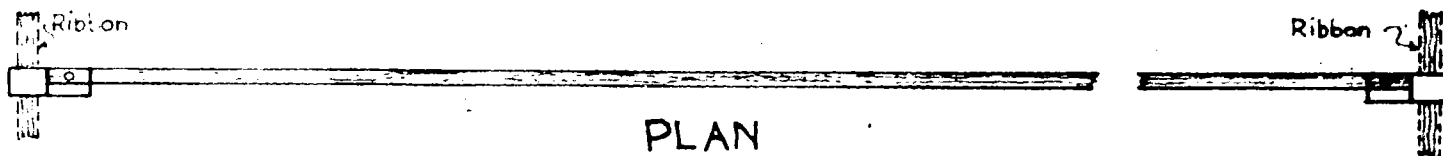
*Harold H. Humes*  
DIRECTOR OF HIGHWAYS



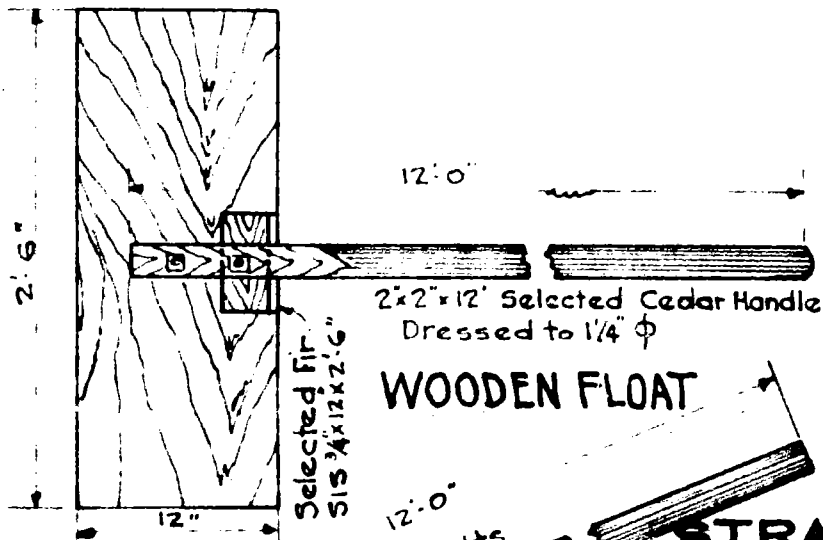
**STRAIGHT EDGE**  
FOR TRUEING UP TRANSVERSE JOINTS



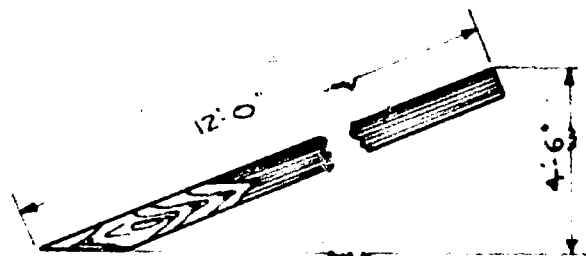
**ELEVATION**



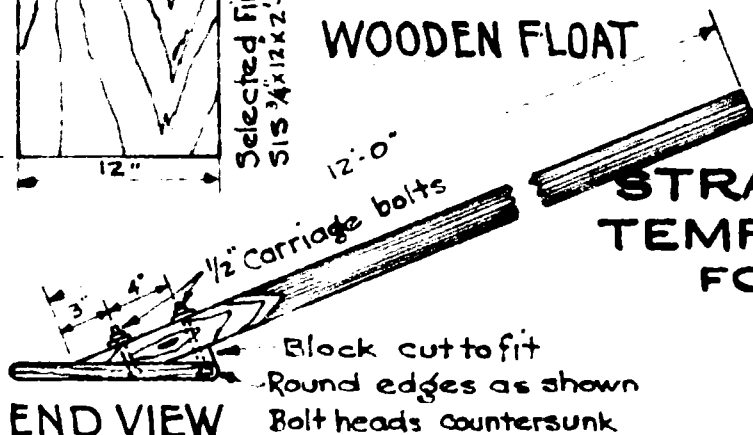
**PLAN**  
**PAVEMENT TEMPLATE**  
TO BE USED AT END OF DAYS WORK



**WOODEN FLOAT**



**CUTTING DIAGRAM FOR HANDLE**



**END VIEW**

**STANDARD**  
**STRAIGHT EDGE, PAVEMENT**  
**TEMPLATE & WOODEN FLOAT**  
**FOR CONCRETE PAVEMENT**

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON

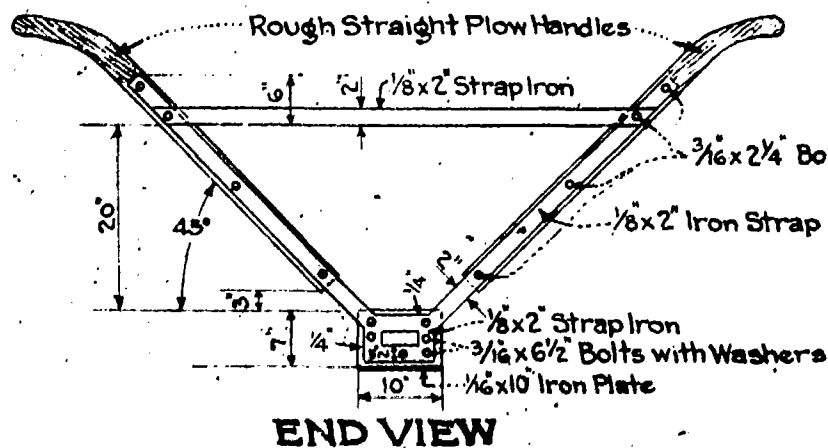
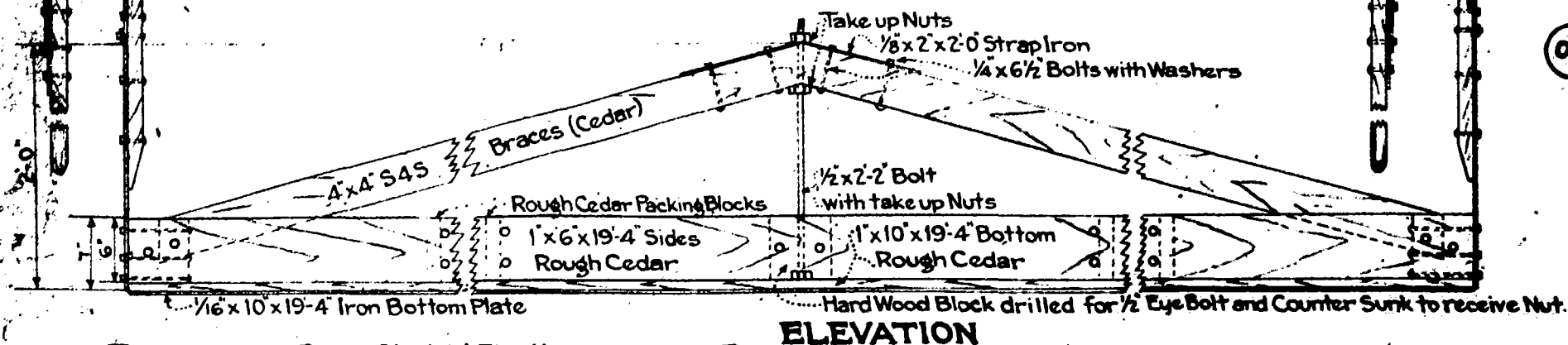
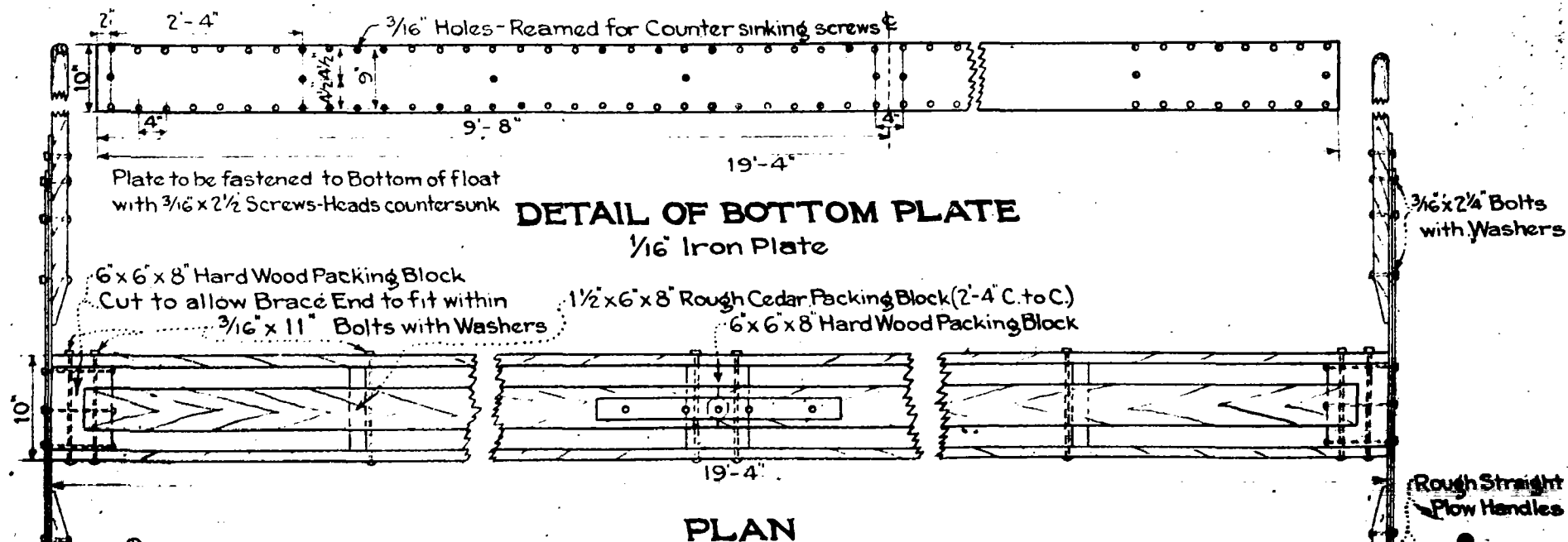
APPROVED: OCTOBER 1, 1929

⑥

*Samuel Johnson*  
DIRECTOR OF HIGHWAYS

10'x7'x10' PAVEMENT  
9'x6 1/2'x9' "

NEW  
J.E.

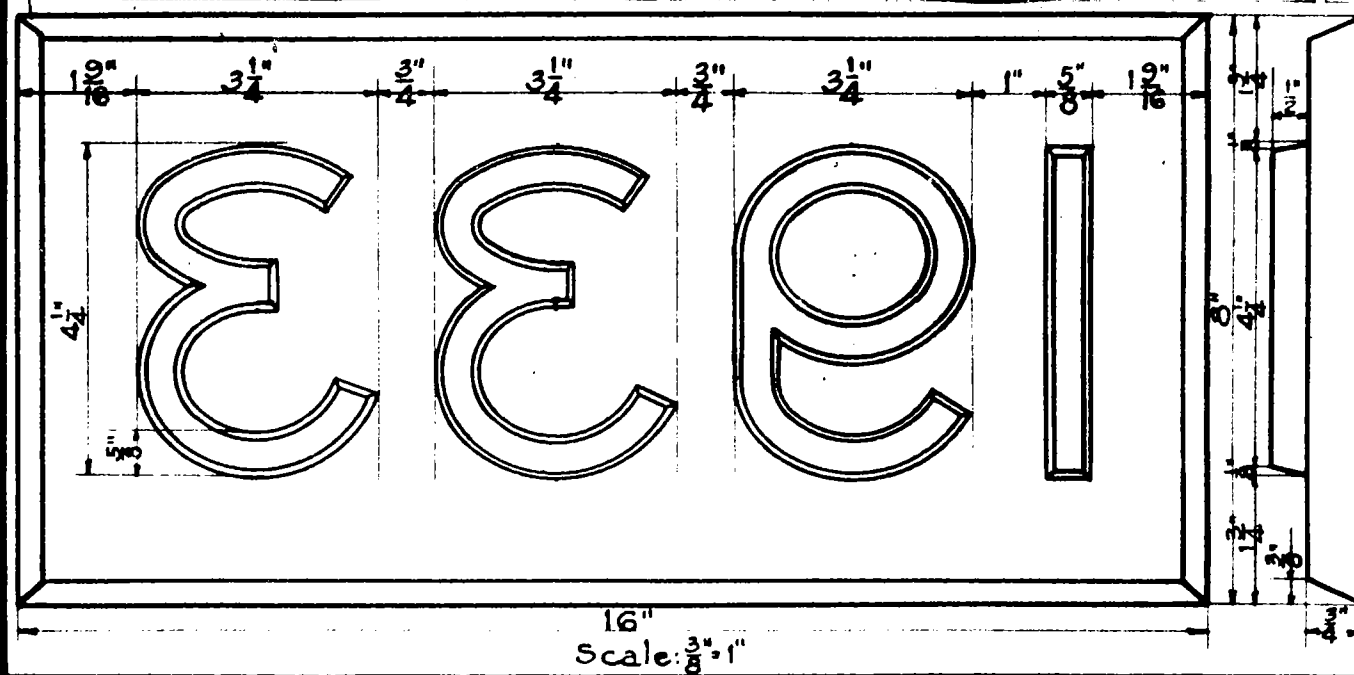
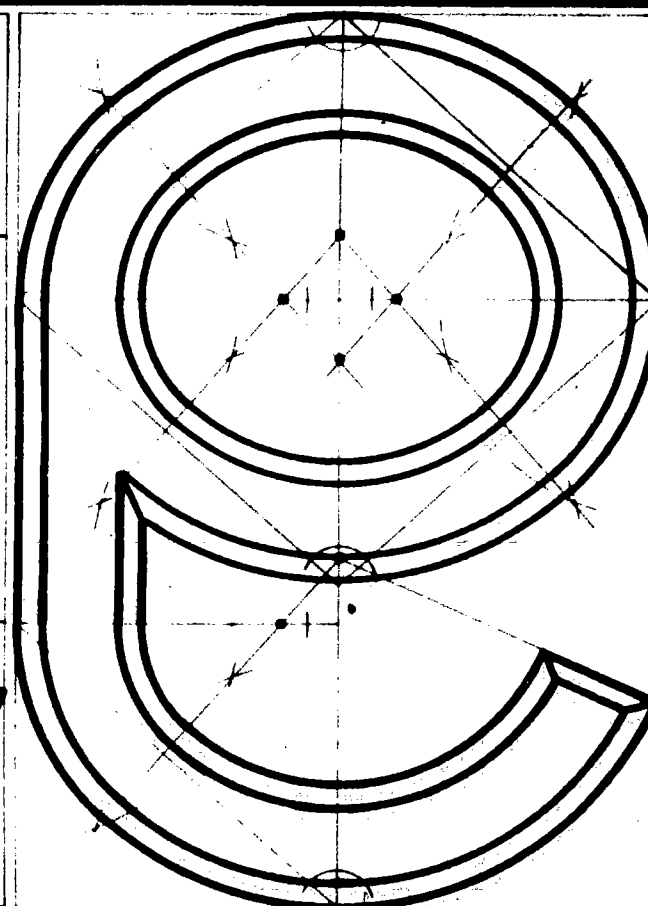
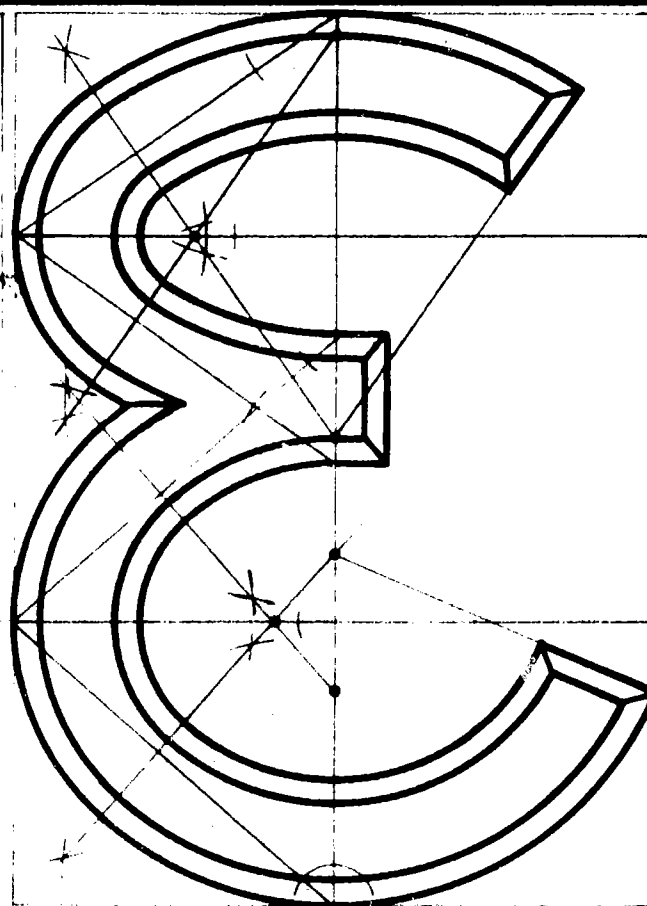
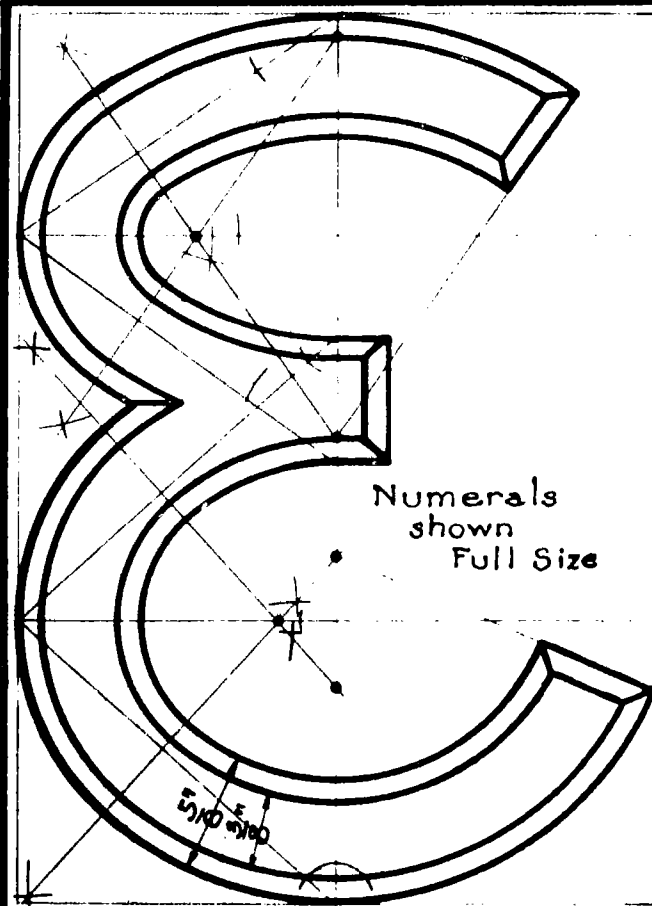


**STANDARD  
 TRANSVERSE FLOAT  
 FOR CONCRETE PAVEMENT**

STATE OF WASHINGTON  
 DEPARTMENT OF HIGHWAYS  
 OLYMPIA, WASHINGTON

APPROVED: JAN. 17, 1930.

*Samuel H. Thomas*  
 DIRECTOR OF HIGHWAYS



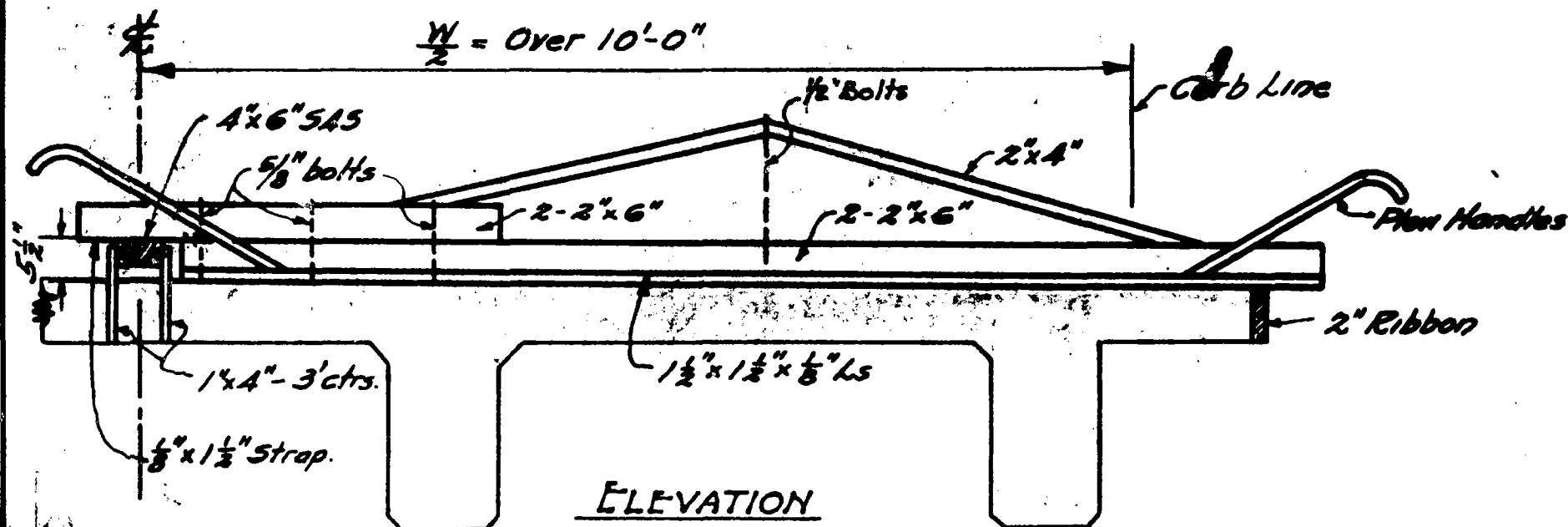
Note:  
Curve panel to fit end post.

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA, WASHINGTON

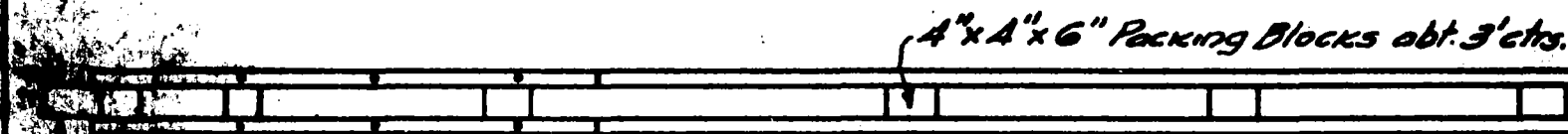
## STANDARD DATE PANEL

Approved: Dec. 1, 1932.

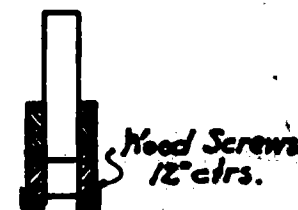
*Samuel H. Hennes*  
Director of Highways.



ELEVATION



PLAN



SECTION

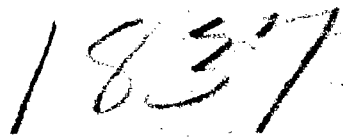
Details of fastenings for Strike Board to be same as for Standard Strike Board for Concrete Pavement. Use Truss for Rods over 12 ft. long. Center Screed to be used also on Bridge Decks on horizontal curves that have super-elevation.

**STANDARD  
STRIKE BOARD & SCREED  
FOR BRIDGE ROADWAYS OVER 20 FT. IN WIDTH**

STATE OF WASHINGTON  
DEPARTMENT OF HIGHWAYS  
OLYMPIA WASHINGTON

APPROVED: JAN. 27, 1931.

*Samuel H. Hume*  
DIRECTOR OF HIGHWAYS



**Laurel Thomas**  
DIRECTOR OF HIGHWAYS