FED. ROAD DIST. NO.	STATE	COUNTY	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	S. C.	NEWBERRY	187		1	80

INDEX OF SHEETS

SHEET No. 1 TITLE PAGE.
" " 2 TYPICAL CROSS SECTION OF IMPROVEMENT.
" " 3 PLAN AND PROFILE STA. 14+11.1 TO STA. 40+00
" " 4 " " " 40+00 " " 70+00
" " 5 " " " 70+00 " " 97+00
" " 6 " " " 97+00 " " 120+00
" " 7 " " " 120+00 " " 150+00
" " 8 " " " 150+00 " " 180+00
" " 9 " " " 180+00 " " 210+00
" " 10 " " " 210+00 " " 240+00
" " 11 " " " 240+00 " " 270+00
" " 12 " " " 270+00 " " 300+00
" " 13 " " " 300+00 " " 330+00
" " 14 " " " 330+00 " " 360+00
" " 15 " " " 360+00 " " 390+00
" " 16 " " " 390+00 " " 420+00
" " 17 " " " 420+00 " " 450+00
" " 18 " " " 450+00 " " 480+00
" " 19 " " " 480+00 " " 510+00
" " 20 " " " 510+00 " " 540+00
" " 21 " " " 540+00 " " 570+00
" " 22 " " " 570+00 " " 600+00
" " 23 " " " 600+00 " " 630+00
" " 24 " " " 630+00 " " 660+00
" " 25 " " " 660+00 " " 690+00
" " 26 " " " 690+00 " " 712+00
" " 27 10'x10' CONCRETE BOX CULVERT AT STA. 76+85
" " 27A 5'x5' CONCRETE " " " 429+00
" " 28 TRIPLE 10'x12' CONC. 88 Conc. Bridge " " 574+30 575+00
" " 29 DOUBLE 6'x9' " " " " 632+85
" " 30 5'x5' CONCRETE " " " 693+45
" " 30A 3'x2'; 2'x2'; & 3'x3' CONCRETE BOX CULVERTS
" " 30B 3'x2' CONCRETE BOX CULVERT
" " 31 ENDWALLS FOR PIPE CULVERTS
" " 32-00 CROSS SECTIONS - STA. 14+11.1 TO STA. 712+00

STATE OF SOUTH CAROLINA

STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

FEDERAL AID PROJECT No. 187

R-34

NEWBERRY COUNTY

FROM INTERSECTION WITH WHITMIRE ROAD NELY. TO STROTHERS FERRY

SCALES: PLAN AND PROFILE, 1 INCH = 100 FEET HORIZONTAL; 1 INCH = 10 FEET VERTICAL.

SUMMARY OF ESTIMATED QUANTITIES

STATION	SHEET NO.	ITEM	CONCRETE (CUBIC YARDS) CLASS "A"	CLASS "B"	CLASS "C"	REINFORCING STEEL (LBS.)	EXCAVATION (CU. YDS.) WET	DRY	PILES (LINEAL FEET) TREATED	UNTREATED	BORING (LIN. FT.)	
76+85	5,27	10'x10' CONCRETE BOX CULVERT	74.6			6674						
+ 121+90	7,30A	3'x2' CONCRETE BOX CULVERT	8.27			578						
+ 242+62	11,30B	3'x2' " "	10.57			756						
+ 252+00	11,30B	3'x2' " "	10.57			756						
429+00	17,27A	5'x5' (88) Bridge	24.70	125.1	23.70	1,745						
574+80	22,28	TRIPLE 10'x12' CONC. BOX CULVERT	125.7			23,700	175	900	15		176	150
+ 617+23	23,30A	2'x2' CONCRETE BOX CULVERT	7.46			465						
+ 631+10	24,30A	3'x3' 10'x10' " "	18.38			1,100						
632+85	24,29	DOUBLE 6'x9' CONC. BOX CULVERT	155.10			13,887						
694+10	26,30	5'x5' CONCRETE BOX CULVERT	22.90			2,241						
	31	ENDWALLS FOR PIPE CULVERTS		163.18								
		10'x10'				5,700	175	90			176	
		TOTAL PIPE FOR CULVERTS	TOTALS 464.85	163.18		51,900	175	90			176	

DIAM.	CORRUGATED IRON LINEAL FEET	VITRIFIED CLAY LINEAL FEET	REINF. CONCRETE LINEAL FEET
15"	"	"	1002 "
18"	"	"	830 "
24"	"	"	392½ "
30"	"	"	+112½ "
36"	"	"	+92½ "

TOTAL CLEARING & GRUBBING ON PITS	—	1.00 ACRES
TOTAL STRIPPINGS ON PITS	—	0.0 CUBIC YARDS
TOTAL OVERHAUL ON EXCAVATION	—	*22,445 CUBIC YARD STATIONS
TOTAL EXCAVATION (EXCLUDING THAT AT BRIDGES)	—	**90,820.4 CUBIC YARDS
TOTAL TOP-SOIL SURFACING (COMPACTED)	—	**41,372.1 CUBIC YARDS
TOTAL CLEARING & GRUBBING WITHIN R/W	—	13.74 ACRES
TOTAL OVERHAUL ON SURFACING	—	20,000 CUBIC YARD STATIONS
TOTAL ROCK EXCAVATION	—	618 CUBIC YARDS

* INCLUDES 10,000 CUBIC YDS. STAP. ESTIMATED FOR BORROW

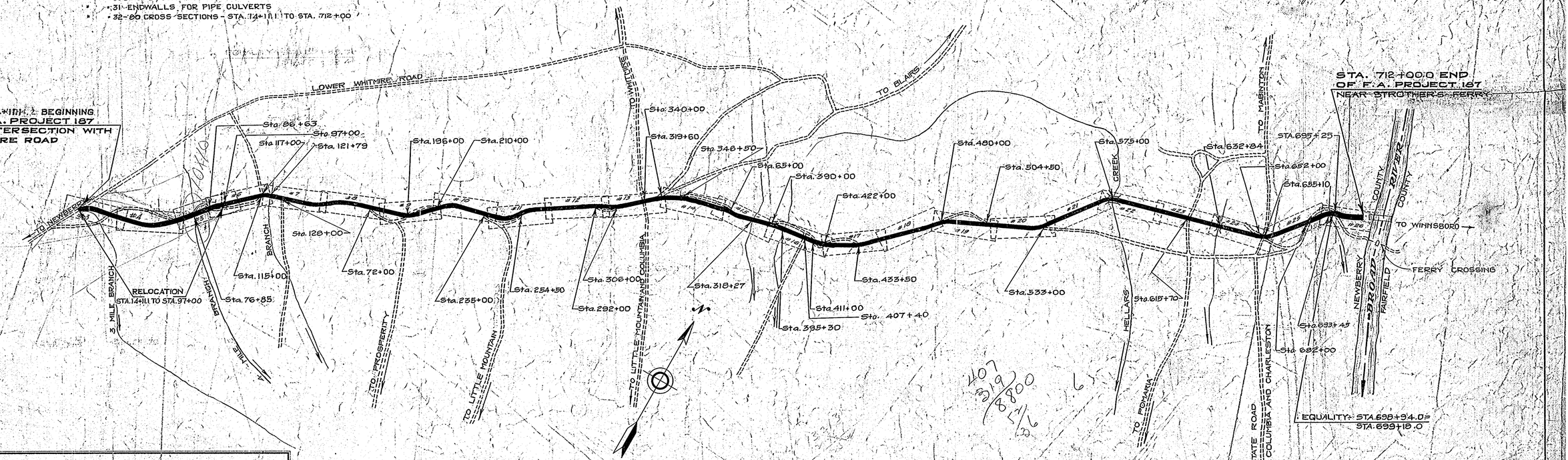
** INCLUDES 10% IN ADDITION TO THE AMOUNT OF TOP-SOIL CALCULATED FROM AREA OF TYPICAL SECTION WHICH IT IS ESTIMATED WILL BE NECESSARY TO REPLACE TOP-SOIL WHICH DUE TO ITS QUALITY, WEATHER CONDITIONS ETC., FAILS TO BIND.

+ ALTERNATE

*** Total Excavation does not include 618 cu yds. of rock excavation.

1125
938

For quantities see B.H. of Bridge Sheet
See R.E. letter dated 11-29-22



LAYOUT
Scale: 1 inch = 2500 ft.

Gross Length of Project	=	13.213	Miles
Exceptions	=	0.000	Miles
Net Length of Project	=	13.213	Miles

Equalities in Stationing
STA. 698+94.0 = STA. 699+18.0

Note: All workmanship and material on this project to conform with South Carolina State Highway Department Specifications, Contract and Bond; for Roads and Culverts, revised May 1st. 1921 and for Bridges, revised Dec. 1st. 1921, as amended and approved by the U. S. Secretary of Agriculture.

CONVENTIONAL SIGNS

State Line
County Line
City or Town Limits
Property Line
Fence
Retaining Wall
Existing Road
℄ and R.O.W. Lines of
Proposed Road
Railroad
Levee or Embankment
Guard Rail
Point of Intersection (P. I.)
Trolley Poles
Power Poles
Telephone or Telegraph Poles
Marsh
Trees
Brush
Stumps
Buildings
Bridge
Concrete Box Culvert
Pipe Culvert
Drop Inlet and Culvert
Hub on Center Line

PROPOSED ROAD SHOWN THUS
OLD ROAD SHOWN THUS

APPROVED [redacted] DATE 11-24-22
STATE HIGHWAY ENGINEER

RECOMMENDED FOR APPROVAL [redacted] DATE [redacted]
DISTRICT ENGINEER - BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL [redacted] DATE [redacted]
CHIEF ENGINEER - BUREAU OF PUBLIC ROADS

APPROVED [redacted] DATE [redacted]
DIRECTOR - BUREAU OF PUBLIC ROADS

R-34

FED. ROAD DIST. NO.	STATE	COUNTY	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	S.C.	NEWBERRY	187		21	80

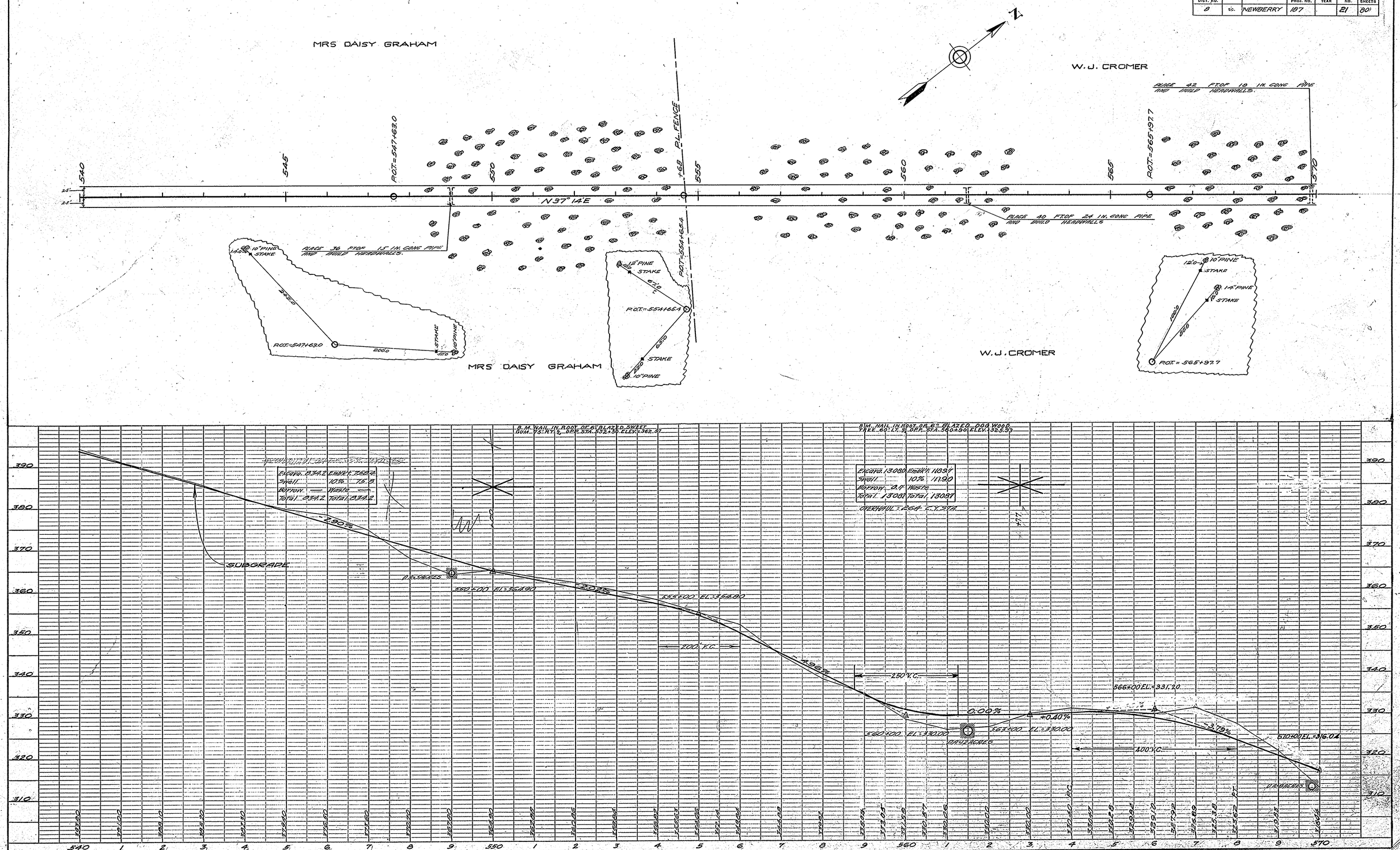


PLATE 1-PLAN-PROFILE B. P. R. STANDARD

EUGENE DIETZGEN CO. - CHICAGO - N.

| PLAN | | |

FED. ROAD DIST. NO.	STATE	COUNTY	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	S.C.	NEWBERRY	187		22	801

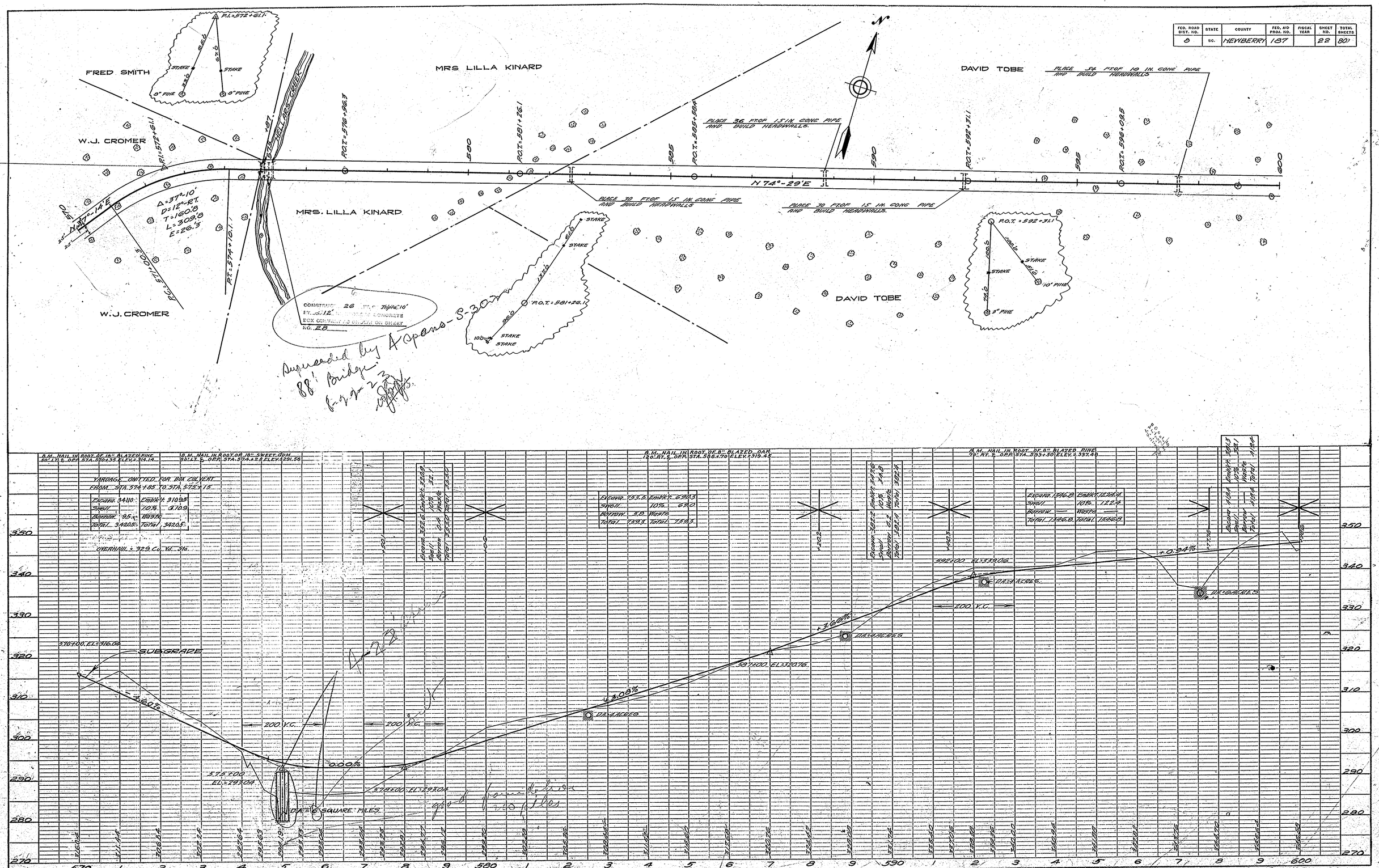


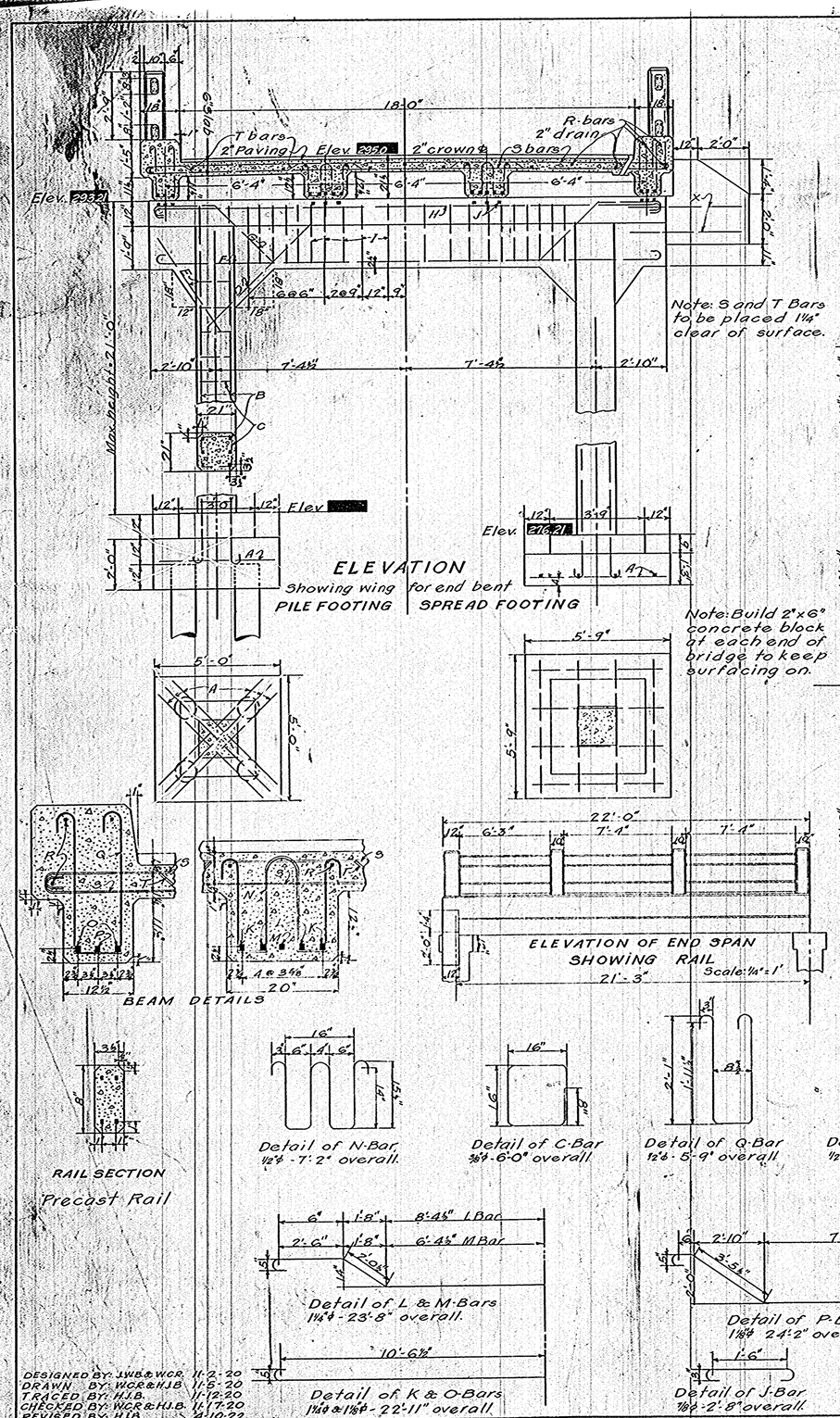
PLATE 1-PLAN-PROFILE B.P.R. STANDARD

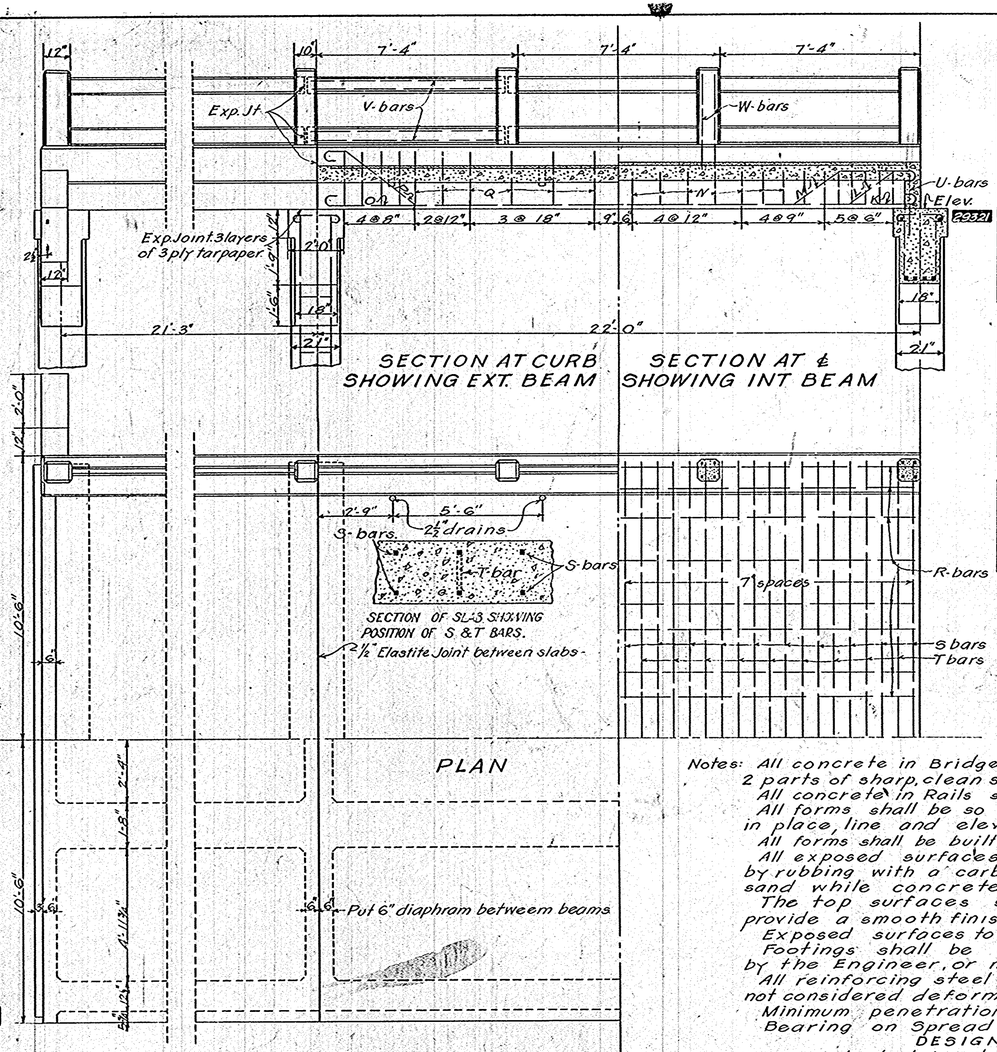
EUGENE DIETZGEN CO. · CHICAGO · N.Y.

PLAN																			
ITEM		BY	PLOTTED	BY	CHECKED	BY	INKED	DATE	BY	CHECKED	BY	INKED	DATE	STA.	REVISED	BY	STA.	REVISED	BY
ALIGNMENT																			
TOPOGRAPHY																			
PROFILE																			
FINAL CHECK	BRIDGE & BOX CLVTS.																		

PROFILE						
GROUND LINE	PLOTTED	CHECKED	B. N. S. NOTED	INKED	B. N. S. INKED	INKED
AVERAGE POINTS	PLOTTED	CHECKED				
BRIDGE & CULVERT	PLOTTED	CHECKED	DRAWN & PRO.	INKED		
GRADES						
FINAL CHECK YARDAGE			NOTED	INKED		

FED ROAD DIST NO.	STATE	COUNTY	FED. AID PROJ NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	S.C.	Newberry	187	22	70	80





STEEL TABLE

One Bent				One Superstructure			
Mark	No.	Size	Length	Location	Mark	No.	Size	Length	Location
A	12	1"ϕ	5'-6"	Footing	K	4	1⅛"ϕ	22'-11"	Int. Bms.
B	12	⅞"ϕ	22'-6"	Posts	L	4	1⅛"ϕ	23'-8"	" "
C	28	⅜"ϕ	6'-0"	"	M	2	1⅛"ϕ	23'-8"	" "
D	4	⅞"ϕ	5'-6"	Beam	N	56	½"ϕ	7'-2"	" "
E	4	⅞"ϕ	4'-6"	"	O	4	1⅛"ϕ	22'-11"	Ext. Bms.
F	2	1⅛"ϕ	21'-4"	"	P	2	1⅛"ϕ	24'-2"	" "
G	2	1⅛"ϕ	23'-3"	"	Q	40	½"ϕ	5'-9"	" "
H	2	⅞"ϕ	21'-4"	"	R	19	½"ϕ	21'-9"	Slab
I	20	½"ϕ	7'-0"	"	S	40	½"ϕ	21'-6"	"
J	12	⅞"ϕ	2'-8"	"	T	18	½"ϕ	22'-2"	"
					U	8	½"ϕ	2'-0"	Dowels
					V	48	½"ϕ	7'-0"	Rails
		Wings			W	24	½"ϕ	3'-8"	Rail Posts
X	8	½"ϕ	4'-6"	Wings					

ESTIMATED QUANTITIES

Location	Item	Quantity	Location	Item	Quantity
One Bent	Conc. A	12.27 cu.yd.	Two Wings	Conc. A	0.7 cu.yd.
	Steel	1528 lb.		Steel	15 lb.
One Superstr.	Conc. A	16.83 cu.yd.	Two End Posts	Conc. A	0.2 cu.yd.
	Steel	4060 lb.		Steel	25 lb.
	Conc. I:3 (Roll)	.62 cu.yd.	Posts per lin. ft.	Conc. A	0.227 cu.yd.
	Paving	44 sq.yd.		Steel	27.5 lb.

TOTAL QUANTITIES FOR BRIDGE

Concrete A	123.1	cu.yds.	Wet Exc.	175	cu.yds.
Steel	23,700	lb.	Dry Exc.	90	cu.yds.
Paving	476	sq.yds.	Piling		lin. ft.

Station 575+00 ± Date 3-22-23
County Newberry Project 187

2 Spans. Total Length of Bridge c. to c. end Bents 39'-8"

Notes: All concrete in Bridge shall consist of 1 part of Portland cement 2 parts of sharp, clean sand, and 4 parts of broken stone, ¼" to 1½" in size.
All concrete in Rails shall consist of a 1:3 mixture, ¼" max. aggr.
All forms shall be so constructed and braced as to be held rigidly in place, line and elevation.
All forms shall be built of sized and dressed lumber.
All exposed surfaces shall be brought to a smooth, neat finish by rubbing with a carborundum brick, or a block of wood and sand while concrete is green.
The top surfaces shall be tamped and troweled so as to provide a smooth finish, free from pits and porous places.
Exposed surfaces to be chamfered 1", except where otherwise shown.
Footings shall be carried down to a firm bearing as directed by the Engineer, or modified at his desire.
All reinforcing steel to be deformed bars. Square, twisted bars not considered deformed. All bends to be made cold.
Minimum penetration of piles to be 10 ft.
Bearing on Spread Footing = 1.6 tons per sq. ft.

DESIGN DATA

Concentrated Load - 2-15 ton typical trucks.
Impact Allowance - 25%
Steel in tension - 16000 lbs. per sq. in.
Concrete in Compression - 650 lbs. per sq. in.

Note: For each complete bridge use quantities for (1 Bent + 1 superstructure) × number of spans, and then add 1 Bent, 4 Wings, and 2 End Rail Posts.
If no piles are used, subtract .05 cu.yd. of concrete from and add 4-A bars (63 lbs.) to quantities for 1 Bent.
Note that quantities are based on a max. height of bent above top of footing = 21'-0". For each 1' height less than 21', subtract quantities for 1' length of 2 Posts. Also observe that length of B-bars is variable, and that number of C-bars changes with difference in height.

S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA, S.C.

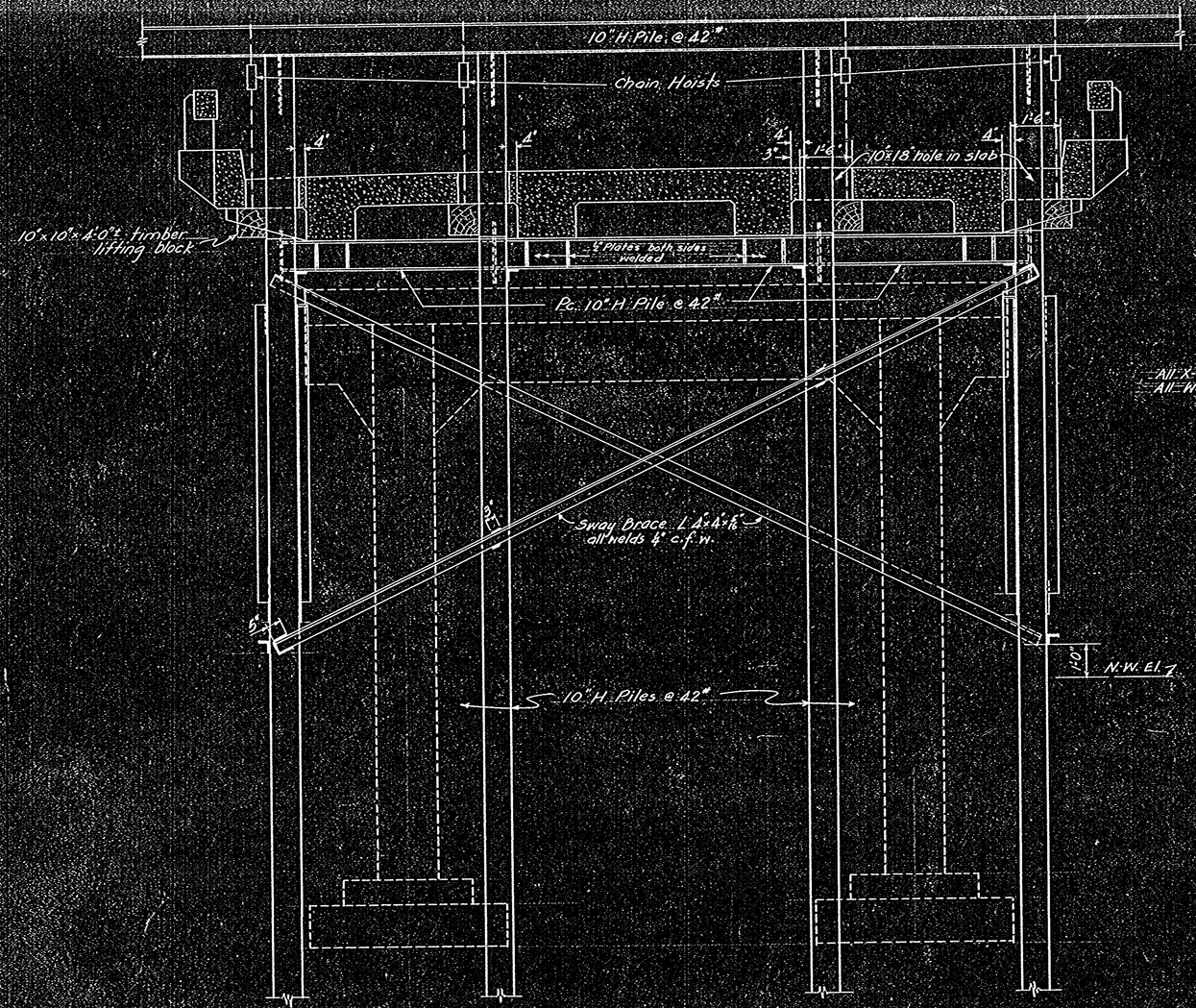
CONCRETE BRIDGE

REINFORCED BEAM TYPE ON CONCRETE BENTS

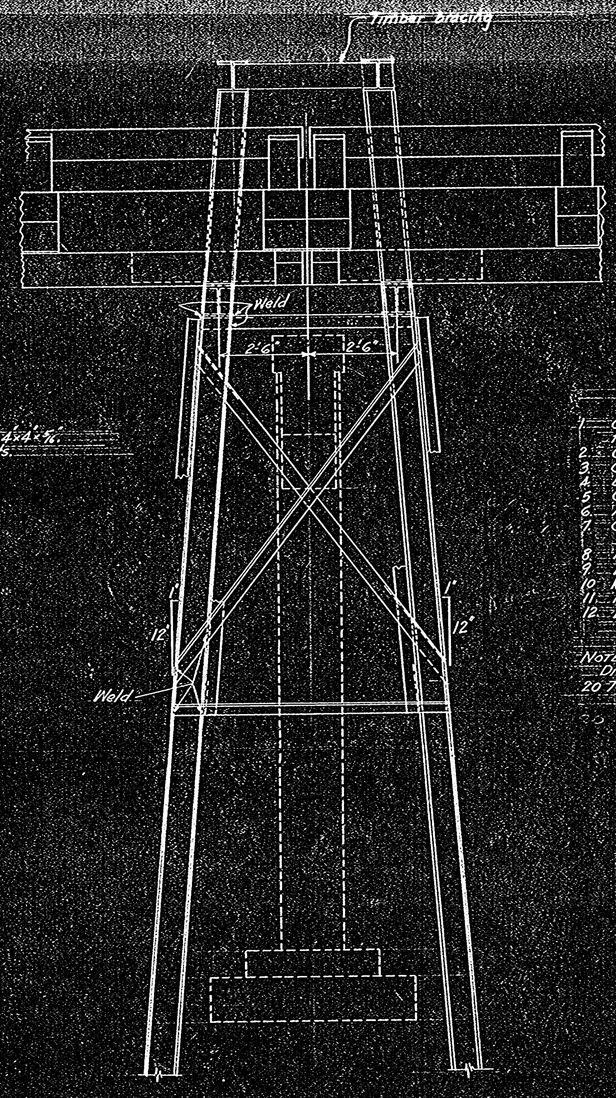
22'-0" SPAN 18'-0" ROADWAY
SCALE: ⅜ IN = 1 FT. MAY, 11, 1922
CORRECT: J. M. Bannister Jr. BRIDGE ENGINEER.
APPROVED: Rand Morgan STATE HIGHWAY ENGINEER.

DESIGNED BY: J.W.B. & W.C.R. 11-2-20
DRAWN BY: W.C.R. & H.J.B. 11-6-20
TRACED BY: H.J.B. 11-12-20
CHECKED BY: W.C.R. & H.J.B. 11-17-20
REVISED BY: H.J.B. 4-10-22

S-302



SECTION

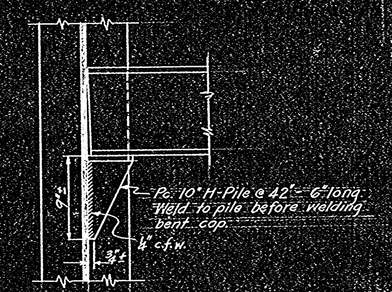


ELEVATION

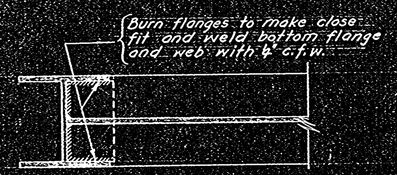
SUGGESTED PROCEDURE

1. Cable off top of bent near both columns securely to columns of both end bents.
2. Cut out short sections of handrail.
3. Cut holes in slab for piles and hoist chains.
4. Drive all 8 piles.
5. Cutoff piles above roadway - cutoffs to be level.
6. Arrange hoisting equipment and tighten up.
7. Cut dowels between beams & cap.
8. Raise span.
9. Weld in H-sections for bent cap.
10. Release span and cut off piles.
11. Repeat 5 thru 9 for other span.
12. Weld sway braces and cross braces.

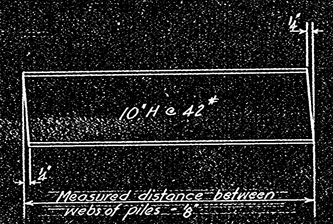
Note:
Drive piles to a minimum bearing value of 20 Tons per pile.



DETAILS OF BENT CAP SUPPORT



SECTION SHOWING CONNECTION OF CAP TO PILE



DETAIL OF H-SECTION BENT CAP

Total volume of concrete in one 22' Span = 27.8 C.Y. = 112,600#

S. C. STATE HIGHWAY DEPARTMENT
COLUMBIA

DETAILS OF RECONSTRUCTION OF CENTER BENT
FOR BRIDGE OVER
HELLARS CREEK

F.A. PROJ. NO. 187 — ROUTE NO. 22
NEWBERRY COUNTY — DATE: SEPT. 1948
Scales: ½" & 1" = 1'0"

Drawn by: W.F.L. Sept. 9, 1948.