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**SOUTH CAROLINA
STATE HIGHWAY DEPARTMENT
COLUMBIA**

PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

F. A. PROJECT NO RF-0831(51)

FILE NO. 34.389

ROUTE NO. SC. 41

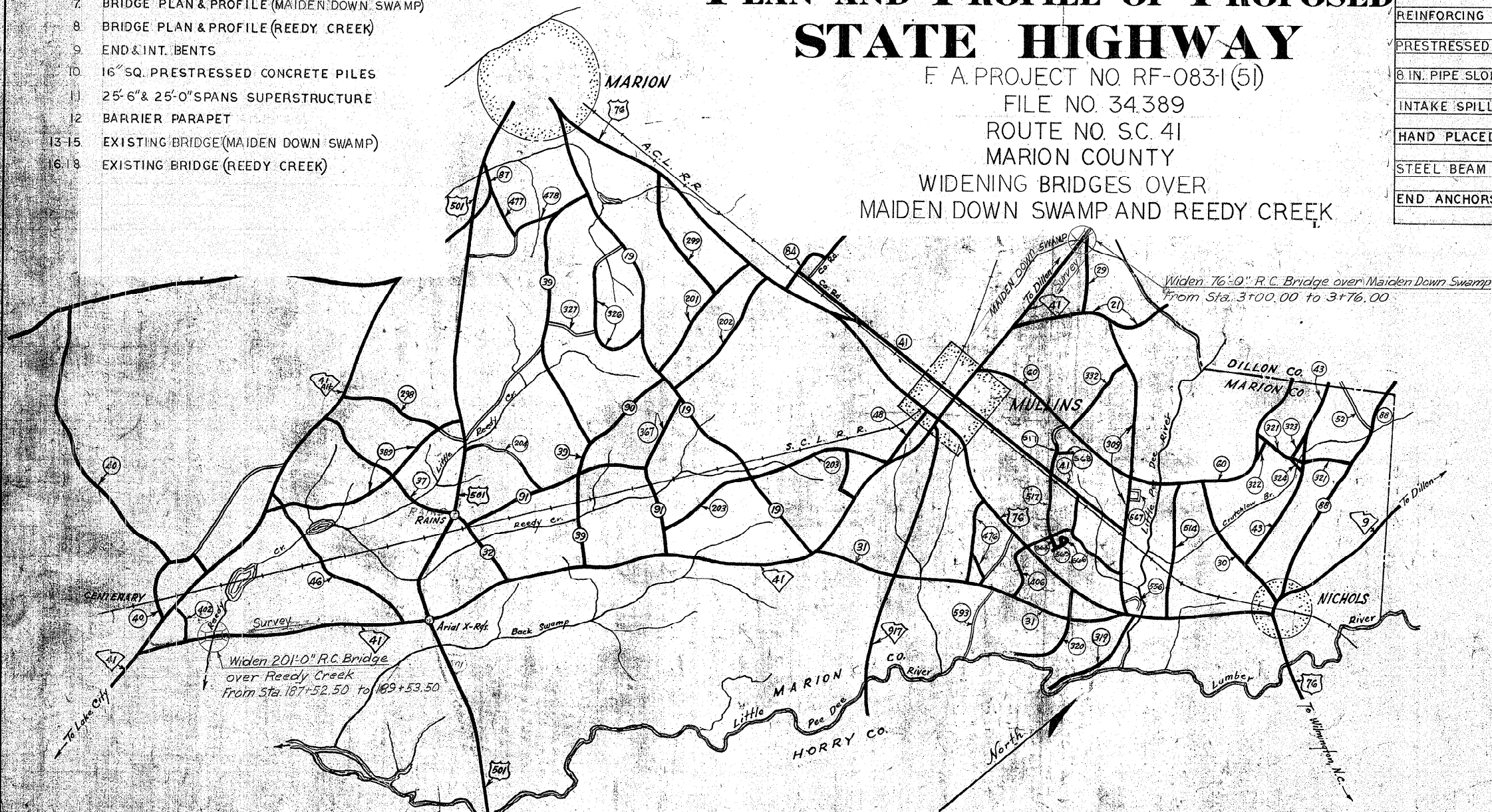
MARION COUNTY

WIDENING BRIDGES OVER
MAIDEN DOWN SWAMP AND REEDY CREEK

FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	F. A. PROJ. NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S. C.	Marion	34.389	RF-0831(51)	SC. 41	1	18

SUMMARY OF ESTIMATED QUANTITIES

ITEM	UNIT	MAIDEN DOWN SWAMP	REEDY CREEK	TOTAL
CLEARING AND GRUBBING WITHIN RIGHT-OF-WAY	L. S.	NECESSARY	NECESSARY	NECESSARY
CONCRETE FOR STRUCTURES CLASS "A"	C. Y.	142.5	359.5	502.0
REINFORCING STEEL FOR STRUCTURES	LBS.	29,214	75,159	104,373
PRESTRESSED CONCRETE PILING 16 IN. SQ.	L. F.	500	1500	2000
6 IN. PIPE SLOPE DRAIN	L. F.	60	50	110
INTAKE SPILLWAY ASSEMBLY	EA.	4	4	8
HAND PLACED RIP RAP	C. Y.	180	140	320
STEEL BEAM GUARD RAIL	L. F.	300	300	600
END ANCHORS (CABLE)	EA.	4	4	8



CONVENTIONAL SIGNS

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

LEGEND

PROPOSED PROJECT
OTHER ROADS

LAYOUT

Scale: 1 inch = 5200 feet

Net Length of Roadway	0.000 Miles
Net Length of Bridges	0.052 Miles
Net Length of Project	0.052 Miles
Length of Exceptions	0.000 Miles
Gross Length of Project	0.052 Miles

Note: All workmanship and material on this project to conform with South Carolina State Highway Department Standard Specifications for Highway Construction dated 1-7-73.

APPROVED:
Barbara M. Bell
STATE HIGHWAY ENGINEER
DATE: 1-9-76

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:
DISTRICT ENGINEER
DATE

RECOMMENDED BY:

W. E. Robinson
BRIDGE ENGINEER-DESIGN
DATE: 1-9-76

WIDENING EXISTING CONCRETE STRUCTURES

Existing structure is indicated on the plans by light lines, new structure by heavy lines.

Connecting surfaces of the old concrete shall be thoroughly roughened, cleaned of loose material, wetted and flushed with 1-2 cement mortar immediately before pouring new concrete, except as noted on other sheets of these plans.

All reinforcing steel protruding beyond surface after chipping shall be left in place and imbedded in new concrete if feasible. Reinforcing steel which can not be imbedded in new concrete shall be cut off flush with surface of concrete where asphalt surfacing will cover. Where exposed the old reinforcing shall be cut off 1/2" below the exposed concrete surface and the hole patched with dry 1-3 mortar to the satisfaction of the Engineer.

The Contractor shall repair or replace at his own expense, and in a manner satisfactory to the Engineer, any portion of the existing structure damaged as a result of his carelessness or negligence.

The entire cost of the above work including all drilling and chipping, and removing and disposing of portions of old structure necessary to construct new structure, shall be included in the unit price bid for Class A Concrete.

If expansion anchor bolts are called for they shall be similar and equal to Rawl's Multi-Calk Anchor or American Exp. Bolt and shall be installed in accordance with the manufacturer's directions.

Expansion anchor bolts will be paid for at unit price bid for reinforcing steel.

Unless otherwise specified in these plans or Special Provisions the contractor shall provide necessary temporary supports for utilities attached to the bridge to maintain service during construction.

The owner will make all necessary changes in alignment and elevation of the utility and furnish permanent supports which shall be placed in the concrete by the Contractor.

All costs of the work to be performed by the Contractor shall be included in the unit price bid for Class A Concrete.

Any necessary repairs to the existing structure, in the opinion of the Engineer, are to be paid for as extra work.

All dimensions of new construction are subject to existing conditions. It is recommended that all dimensions which might affect materials and quantities as shown in these plans be verified by the Contractor prior to ordering the materials.

SPECIAL NOTE

Generally, in case of discrepancy, this standard sheet of notes shall govern over the Specifications, but the remainder of the plans shall govern over notes hereon, and Special Provisions shall govern over all. See Standard Specifications paragraph 105.04.

EXCAVATION FOR PILE TYPE END BENT

All cost of excavation necessary to construct end bents and to remove material under superstructure to an elevation 1'-0" below tops of end bent caps shall be included in the unit price bid for Class A Concrete.

EXCAVATION FOR CONC. FTG. END BENT

If a concrete footing is used for the end bent, the excavation below that included for the cap and berm in the above paragraph will be paid for at the unit price bid for excavation. Excavation above this shall be included in the unit price bid for Class A Concrete.

DRIVING PILES THROUGH FILL

Where piles occur in fill exceeding 10ft. in height, the fill shall be in place before piles are driven.

ALLOWANCE FOR DEAD LOAD DEFLECTION AND SETTLEMENT

Bridges shall be built on the grade ~~shown on plans~~ shown on plans. Handrails, slabs and curbs shall conform to the grade ~~shown on plans~~ shown on plans.

In setting forms for structural steel or prestressed concrete beam bridges, an allowance shall be made for dead load deflections in addition to the elevations shown.

In setting falsework and forms for reinforced concrete spans an allowance shall be made for dead load deflections, settlement of falsework, and permanent camber which shall be provided for in addition to the elevations shown. After removal of the falsework, the finished structure shall conform to the elevations shown plus the allowance for permanent camber specified by the Engineer.

BRONZE EXPANSION PLATES

Bronze IR's to be self-lubricating Exp. IR's manufactured from rolled bronze alloy complying with A.S.T.M. B100 - Alloy 510 or A.S.T.M. B22 - Alloy 911 casting, and have special inserts consisting of graphite and metallic substances with a lubricating binder in both faces. The Coeff. of friction shall not exceed 0.1. The Bronze IR's shall be similar to those manufactured by Merrimack Bros. Inc., 183 Amory St., Boston 30, Mass., or Whiteley Bearing Corporation, Chicago, Ill., on an approved equal.

The Bronze IR's shall not be painted. Both steel surfaces in contact with the bronze IR shall be left unpainted but coated with a hot mixture of white lead and tallow. Immediately prior to installation on the bents or piers the plates shall be thoroughly cleaned and a graphite material, as recommended by the manufacturer of the bronze IR's, shall be applied to both surfaces of the steel IR's in contact with the bronze IR.

STRUCTURAL STEEL

Beams shall be cambered for vertical curve and dead load deflection either in mill on shop.

Layout dimensions and standard lengths of beams shown are horizontal dimensions and must have the additional lengths added for lengths along grade.

All rivets shall be 5/8" unless noted. All high-tensile-strength bolts shall be 3/4" unless noted.

All holes shall be 1 1/2" unless noted. Holes in all main member splices shall be sub-punched, the connecting members shop assembled in their proper positions, and the holes reamed to full size while assembled, or shop assembled and drilled full size with an approved template.

Floor beam connections shall be reamed to a metal template. All stiffeners of floor beams and of precast slabs shall have full size interior stiffeners between floor beams shall be crimped or filled.

Shims shall be placed between beam flange and rocker plate where required and shall be adjusted to bring top of beam to theoretical grade.

Bearing plates and rocker plates to be rolled steel.

Nuts on Anchor Bolts at Expansion Ends to be tightened 1/2" clear to allow for movement.

Anchor bolt assemblies will be paid for as reinforcing steel and are included in the bent quantities unless specifically stated elsewhere as included in the structural steel quantities.

Shop inspection of the structural steel will be performed by Froehling & Robertson, Inc., 814 West Cory St., Richmond, Virginia. The contractor shall notify that company of the name and address of the fabricator of the structural steel as soon as the fabricator has been given the contract to fabricate so that the inspection procedure can be set up. The contractor shall also stipulate in his order to the fabricator that Froehling & Robertson, Inc., will perform the shop inspection of the structural steel.

COMPOSITE BEAMS

A 5 day interval shall be allowed between time of pouring slab and sidewalk.

Tops of beam flanges shall not be painted.

All equipment, materials and workmanship for electric arc welded stud shear connectors shall be in accordance with the recommendations of the manufacturer and Special Provisions.

Alternate for welded studs: An approved alternate method of securing composite action between beams and slab may be used, or no additional cost to the Dept. Details must be submitted for approval in advance of making the change.

3/4" studs may be substituted for 1/2" studs. The 3/4" studs shall be placed with the same number in each transverse row as the 1/2" studs. The pitch of the 3/4" studs shall be equal to 1.36 times the pitch of the 1/2" studs. The 3/4" studs must be welded within the recommended area of an approved arc stabilizer cap.

REINFORCING STEEL

Grade 60 reinforcing steel conforming to A.S.T.M. Specification A615 will be allowed as a substitute for the Grade 40 reinforcing steel specified in the S.C.H.D. Standard Specifications. Such substitution will be at no additional expense to the Department. Bar sizes and spacings as detailed in the plans will be maintained.

PRESTRESSED BEAMS

Tops of beams shall be rough floated. At the approximate time of initial set, entire top of beam shall be scrubbed with a coarse wire brush to remove all laitance, and to produce a roughened surface for bonding slab. Membrane curing compound shall not be used on tops of ends of beams.

Concrete in prestressed beams shall be class X as described in the Standard Specifications.

The prestressing strands, wire or bars, must be thoroughly cleaned of any loose rust, dirt, grease, form lubricant, or other deleterious substances, to the satisfaction of the Engineer before the concrete is placed.

Beams shall not be transported to the bridge site until concrete has cured for at least 6 days.

Beam lengths given are based on horizontal span only. These lengths shall be increased to correct for concrete shrinkage, concrete shortening when the strands are cut, and for beams being on a grade.

CONCRETE

All concrete shall be Class A unless noted below on other sheets of these plans.

Build-ups on bent caps shall be cast monolithic with cap unless shown or noted elsewhere on these plans.

Top of each build-up shall be level.

Payment for Concrete in slab will be based on theoretical plan quantity.

Any necessary adjustment for Camber shall be at the Contractor's expense.

Simple spans 80ft. and less shall be poured without a transverse construction joint.

For simple spans over 80ft. in length, the center portion (approximately 1/3 of the length) of the slab shall be poured first and allowed to cure for not less than 4 days before the remaining end sections are poured. However, when the temperature permits (in the opinion of the engineer) the entire slab may be poured provided a suitable retaining agent is used in such amounts that the slab concrete shall not have had its initial set prior to the completion of the casting of the slab concrete.

All exposed edges shall be chamfered 1/2" unless otherwise noted.

Horizontal Construction Joints shall be scrubbed with a coarse wire brush at the approximate time of initial set, to remove all laitance & to produce a roughened surface.

BEARINGS

For concrete slabs bearing on concrete, the top of caps, ~~or tops of beams~~ under bearing areas of slabs shall receive a steel trowel finish to insure a smooth and level bearing surface. See Standard Specifications paragraph 702.25.

FED. RD. DIV. NO.	STATE	COUNTY	FILE NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	MARION	34.389	S.C.41	3	18

DESIGN DATA

SPECIFICATIONS: A.A.S.H.O. 1973 with rev. thru 1974.

LIVE LOAD: HS 20-44 Includes provision for alternate loading of 2 axles 4' apart with each axle weighing 7.5% of total loading for spans under 40'.

UNIT STRESSES

STRUCTURAL STEEL & REINFORCED CONCRETE
 f_s (struct) = 20,000 psi
 f_s (reinf) = 20,000 psi
 CLASS "A" CONCRETE:
 f_c = 1,200 psi; n = 10; v = 225 psi; u = varies. See Spec's.
 CLASS "B" CONCRETE:
 f_c = 2,000 psi; n = 6; v = 225 psi; u = 200 psi
 PRESTRESSED CONCRETE
 f_c = 5,000 psi; f_{ci} = 4,000 psi; f_e = 2,000 psi
 PRESTRESSING STEEL:
 f_s = 250,000 psi; f_{si} = 175,000 psi

MATERIAL AND WORKMANSHIP

Except as may otherwise be specified on plans or in the Special Provisions, all material and workmanship shall be in accordance with the South Carolina Highway Department Standard Specifications for Highway Construction, Edition of 1973.

LINSEED OIL CONCRETE PROTECTION

The linseed oil concrete protection shall be applied in accordance with subsection 702.29 of the specifications. The linseed oil protective coating shall not be applied to those surfaces which are to be covered by the bridge deck protective membrane. The thinner which is to be combined with the linseed oil may be kerosene instead of the petroleum mineral spirits as required by the Standard Specifications.

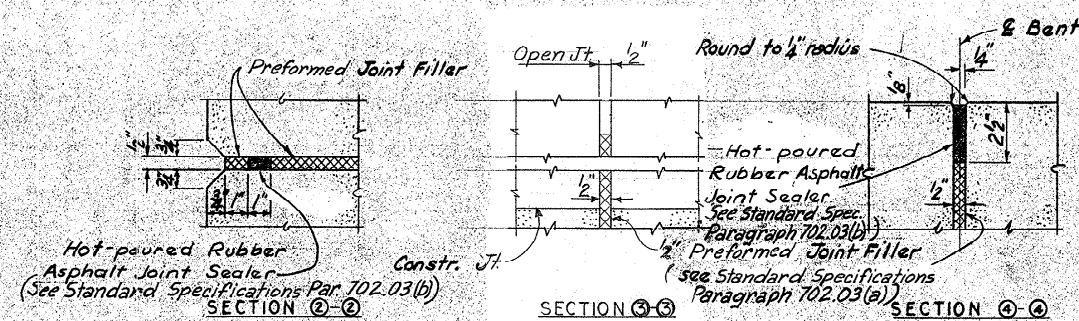
REV.	WKM	9-75
	For File 34-389	
REV.	BAM	11-73
	Std. Spec. 1973	
REV.	BAM	9-73
	OMIT MILL INSPECTION	
REV.	JWG	9-73
	Add Linseed Oil	
REV.	RET	12-72
	Add grease, plate, plate	
REV.	FMR	11-67
	Bronze Exp. IR	
REVISED:	WKM	
	IN CHARGE	

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

STANDARD NOTES

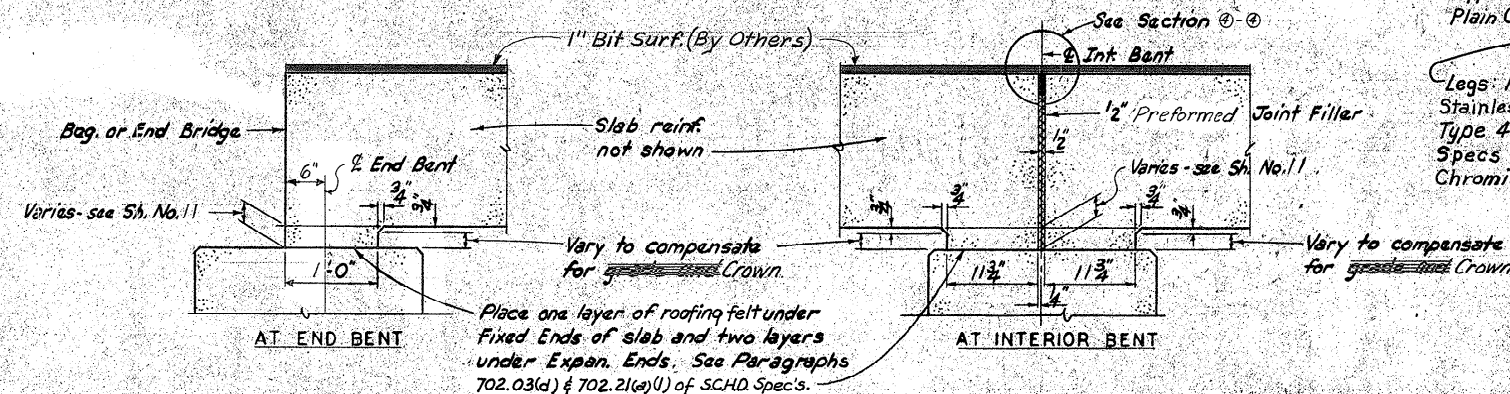
REV.	WKM	11-74	QUAN.	FILE NO.	COUNTY	ROUTE NO.	DATE
REV.	WKM	11-74	TR	34.389	MARION	S.C.41	9-75
REV.	WKM	11-74	DR				
REV.	WKM	11-74	DES.				
REV.	WKM	11-74	DES.				

APPROVED BY: *[Signature]* ASS'T. BRIDGE ENGINEER
 DESIGNED BY: *[Signature]* BRIDGE ENGINEER



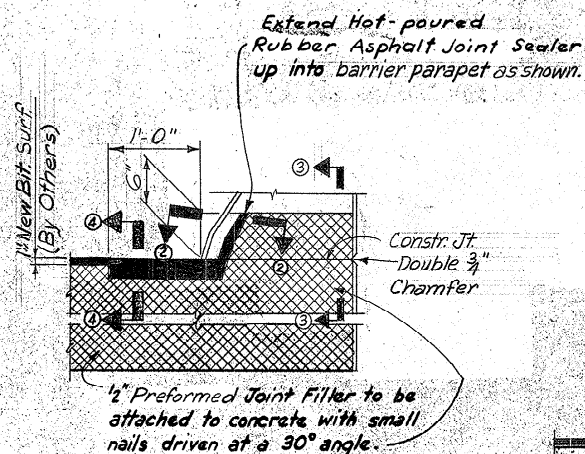
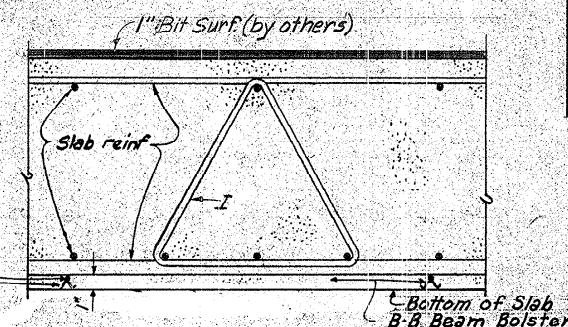
SCALE, SECTIONS 2-2 THRU 4-4: 3" = 1'-0"

JOINT DETAILS



SLAB BUILD-DOWN DETAILS

SCALE: 1" = 1'-0"

SECTION ALONG
EXPANSION JOINT
SCALE: 1" = 1'-0"

BOLSTER DETAIL

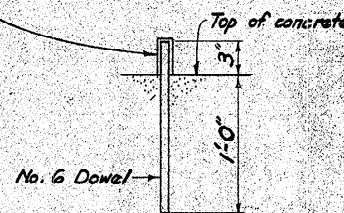
SECTION PARALLEL TO C.R.D.W.Y.
SCALE: 1 1/2" = 1'-0"

Note:

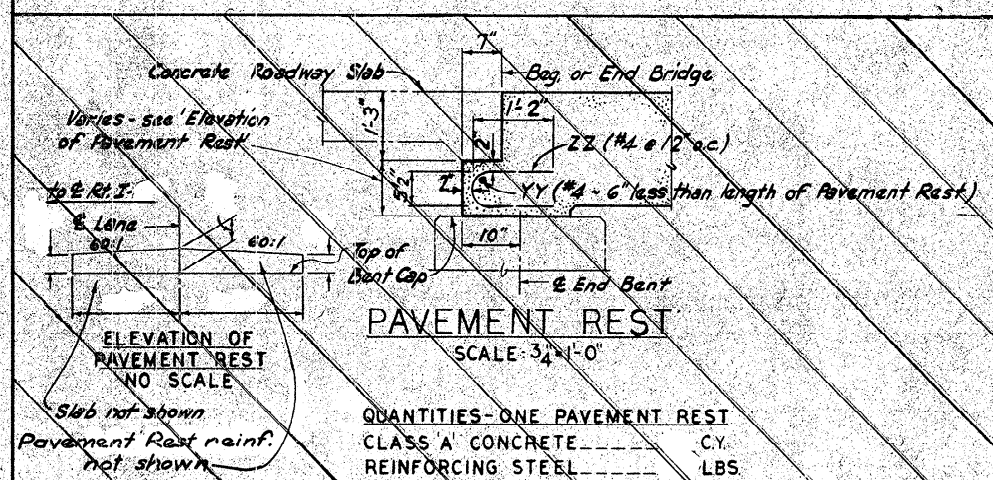
Bolsters shall be placed so that they provide adequate support for the slab reinf. steel.

B-B Bolsters shall be placed with one row near each end of slab and with a maximum spacing of approx. 2'-0" between rows. ~~bolsters under each other must be staggered~~

Bolsters shall be equal to Beam Bolsters BB as manufactured by Meadow Steel Co. or Richmond Screw & Anchor Co. except see above for material Specs. The lengths of bolsters shown in reinforcing steel schedules are approximate. Weights are included in the reinforcing steel quantities and payment will be made at the unit price bid for Reinforcing Steel.

DOWEL
DETAIL

SCALE: 1 1/2" = 1'-0"

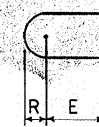


PAVEMENT REST

SCALE: 3/4" = 1'-0"

QUANTITIES - ONE PAVEMENT REST
CLASS A CONCRETE ----- C.Y.
REINFORCING STEEL ----- LBS

HOOK DIMENSIONS			
SIZE NO.	R	E	ADD PER HOOK
3 & 4	1 3/4"	3"	7"
5 & 6	2 3/4"	3"	9"
7 & 8	3 1/2"	4 1/2"	1'-0"
9	5"	5 1/2"	1'-4"
10	5 3/4"	5 3/4"	1'-6"
11	6 1/2"	6"	1'-8"

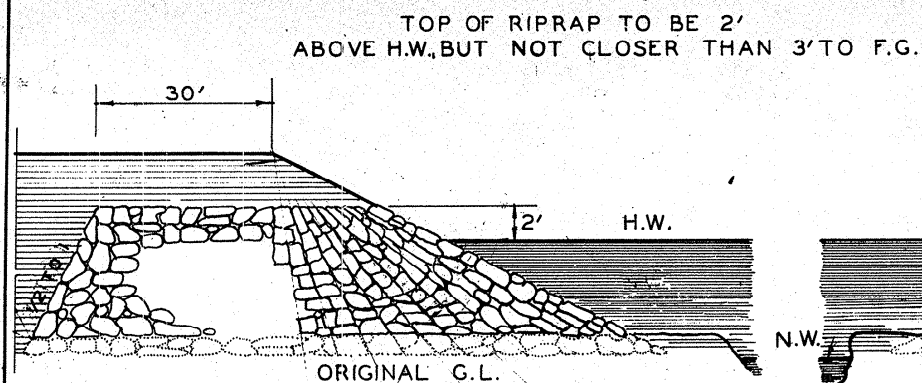
HOOK DETAILS
FOR STEEL REINFORCING BARS
NO SCALE

REV.	WKH/BA/10-75
REV.	BAM/JHB/11-73
REV.	STC Spec. 1973
REV.	RTS JWB/12-70
REV.	Bolster Details
REV.	J.C. JRC. 9-69
REV.	Pay. Rest Depth
REV.	COL JWB/11-68
REV.	Bolster Detail
REVIEWED	BA/BA
IN CHARGE	

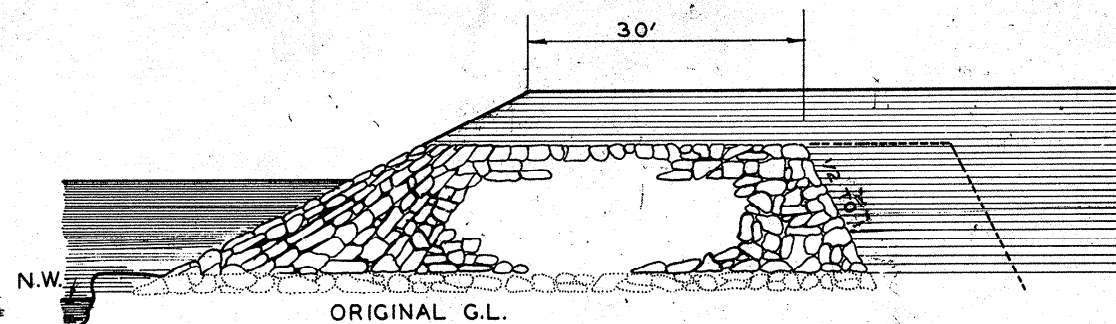
S.C. STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION
COLUMBIA S.C.STANDARD DETAILS
FOR FLAT SLAB BRIDGE

FILE NO.	COUNTY	ROUTE NO.	DATE
34.389	MARION	S.C. 41	9-75
APPROVED BY	DESIGN	APPROVED BY	DESIGN
DES.	JWB 2-67	DES.	JWB 2-67
BY	CHK'D DATE	BY	CHK'D DATE
JT. Mat. revised		JT. Mat. revised	

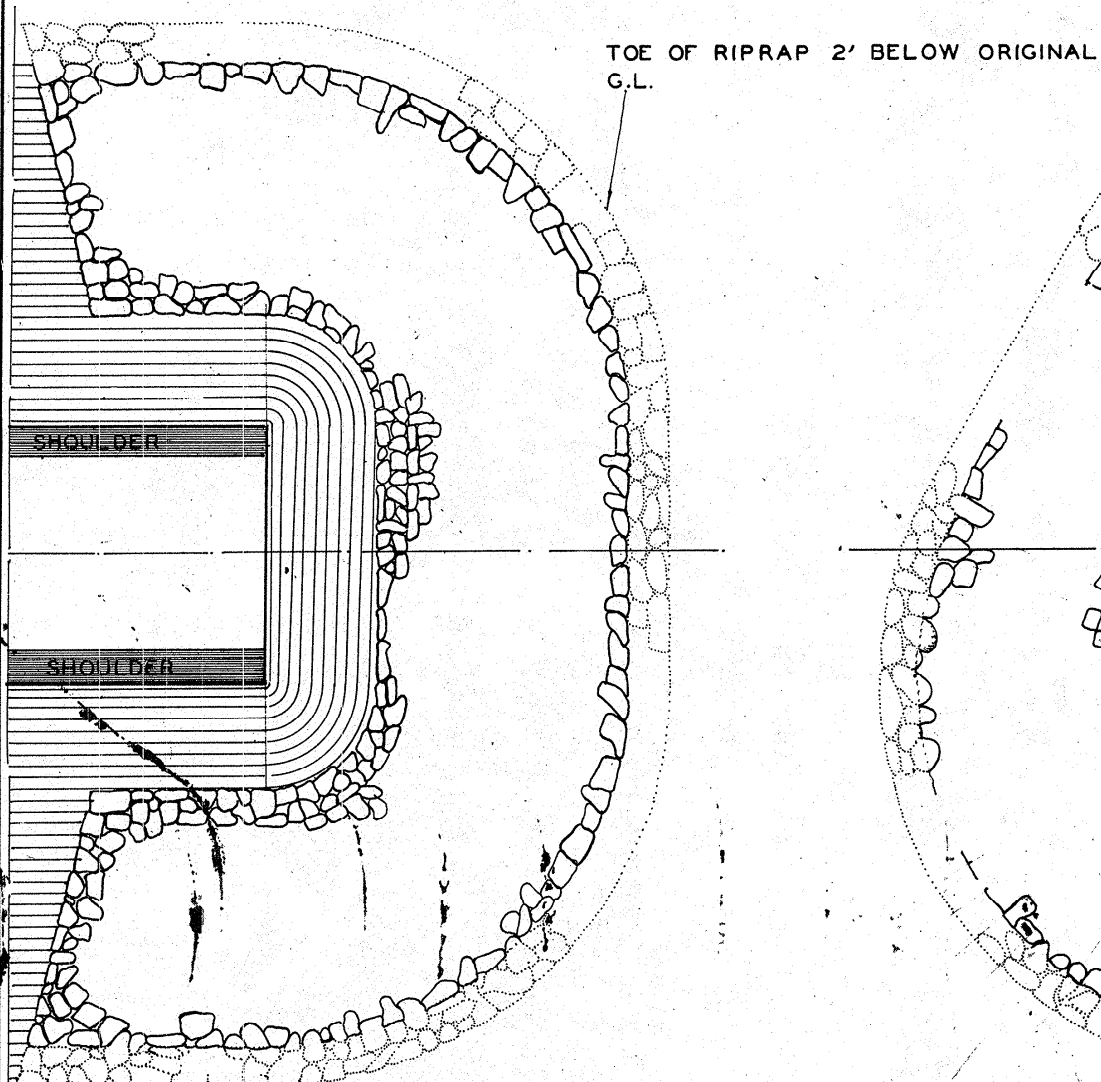
Fed. Div. No.	State	County	FILE No.	ROUTE No.	Sheet No.	Total Sheets
3	S.C.	MARION	34.389	S.C. 41	4-A	18



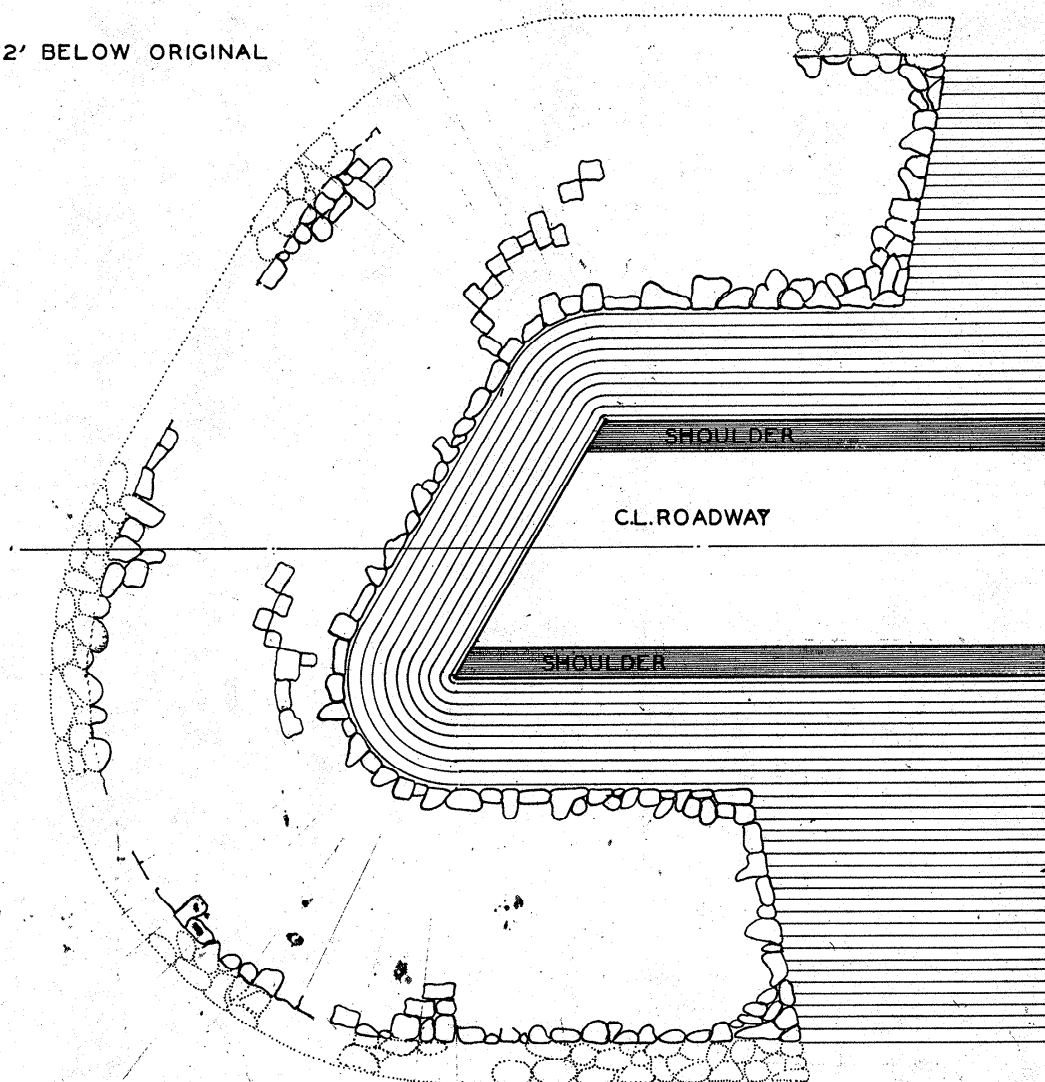
ELEVATION
SQUARE END FILL



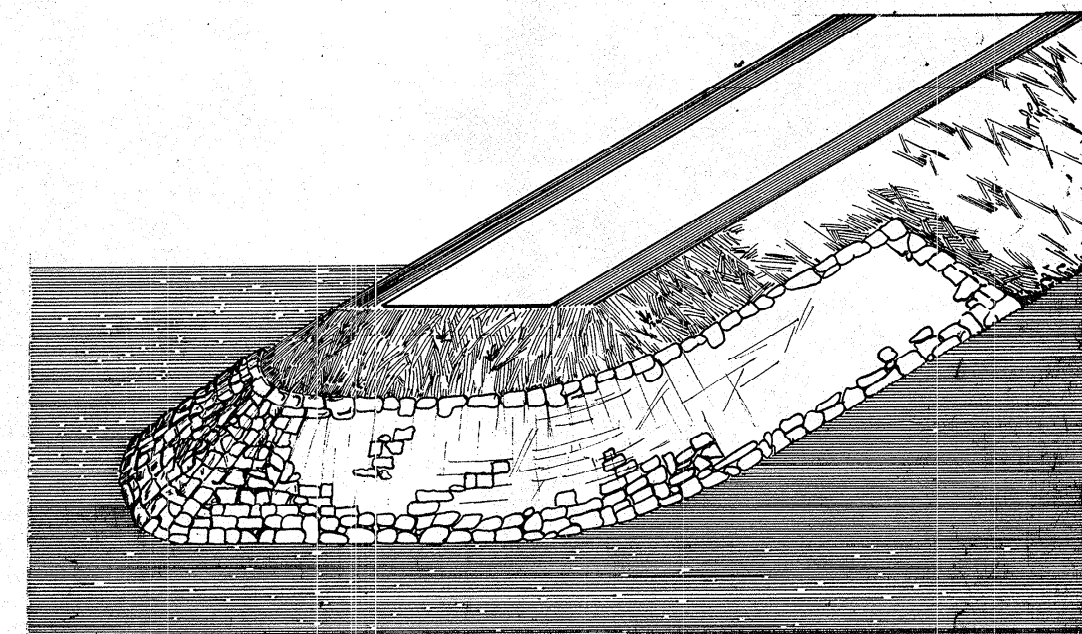
ELEVATION
SKEWED END FILL



PLAN
SQUARE END FILL



PLAN
SKEWED END FILL



ESTIMATED QUANTITIES		
STATION	CU. YDS.	TONS
Maiden Down Swamp	180	
Reedy Creek	140	
TOTAL	320	

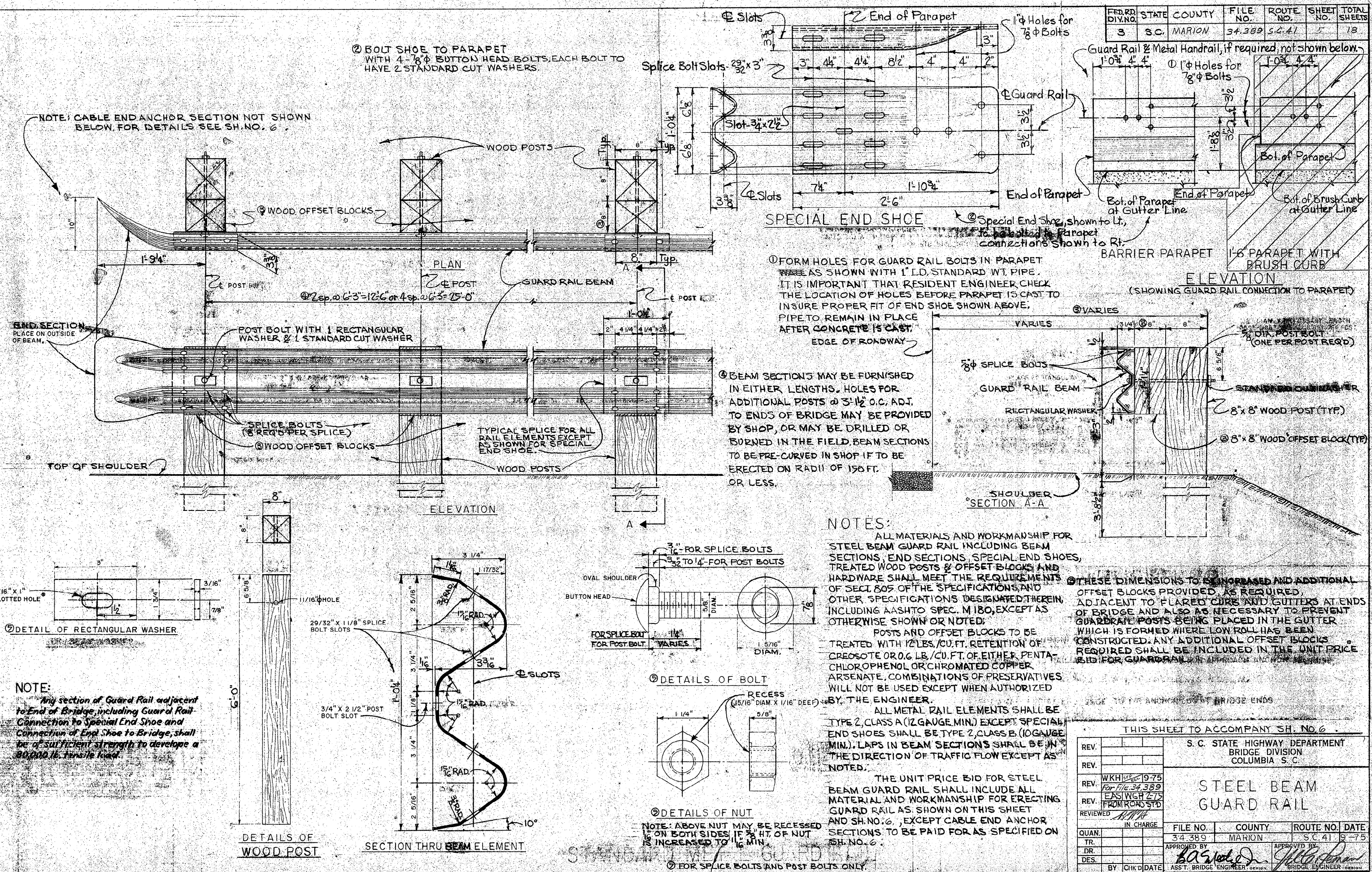
S. C. STATE HIGHWAY DEPT.
COLUMBIA, S.C.

DETAIL SHOWING
RIPRAP TO BE PLACED ON SLOPES
OF EMBANKMENT AT BRIDGE ENDS

FILE NO. 34.389 (ROAD ROUTE S.C. 41)
COUNTY MARION

RIPRAP SHEET

SHOULDER TO GUTTER SHEETS ON SIDE
ELEV. IN SUPPLEMENTAL DETAILS
REMOVE THESE NOTES WHEN USING IN PLANS



Decrease Shoulder Width to Normal Shoulder Line from this location.

Shoulder Line. Normal shoulder to be widened by others, as required, between Concrete Anchor at End of Guardrail and End of Bridge to provide sufficient width for Guardrail, Flared Curb & Gutter and Slope Drains, if required.

One Wood Offset Block between each Post and Guard Rail Beam, except as otherwise shown or noted.

WIDENED SHOULDER

4 Offset Blocks

Wood Posts

20 Offset Blocks

Inside Face of Parapet

Guard Rail Cable End Anchor Section

Wood Posts

4'-0"

1'-3 1/4"

8 sp. @ 6'-3" = 50'-0" (Tapered Section)

Inside Face of Guard Rail Beam

6'-3"

5 sp. @ 3'-1 1/2" = 15'-7 1/2" 25'-0" (Parallel to, or concentric with, Roadway)

3'-1 1/2"

1'-10 1/2"

Flared Curb and Gutter (Slope Drains, if required, not shown)

Special End Shoe

End of Parapet on Bridge

LAYOUT OF GUARD RAIL

NOTES:

FOR ADDITIONAL DETAILS OF STEEL BEAM GUARD RAIL, SEE SH. NO. 5.

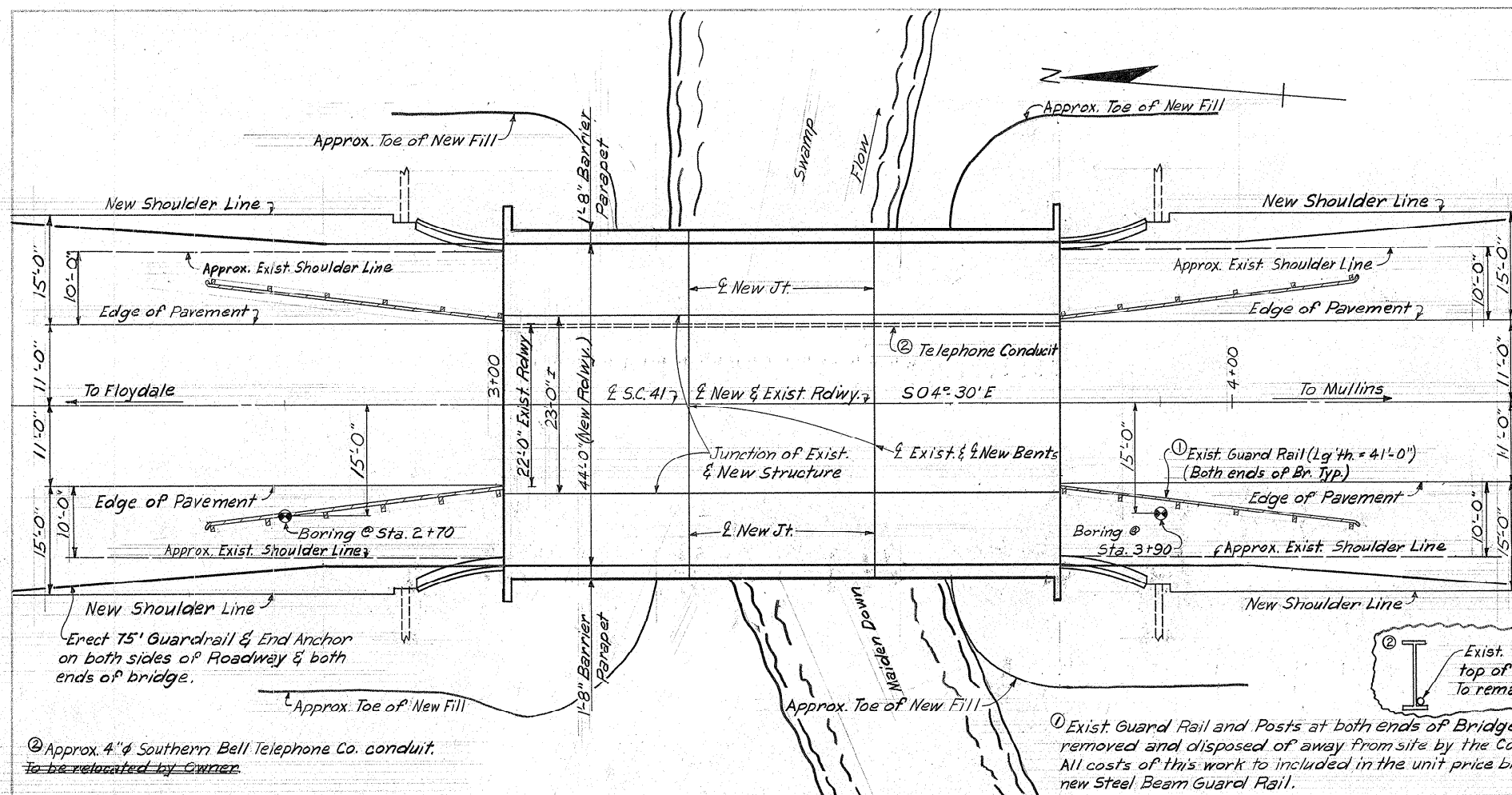
ERECT ONE CABLE END ANCHOR SECTION ON EACH SIDE OF ROADWAY AT BOTH ENDS OF EACH BRIDGE.

THIS SHEET TO ACCOMPANY SH. NO. 5

REV.			
REV.			
REV.	W.K.H. 11-19-75		
REV.	For File 34-389		
REV.	E.S. W.K.H. 12-15		
REV.	FROM R.D. ST. D		
REVIEWED			
IN CHARGE			
QUAN.			
TR.			
DR.			
DES.			

FILE NO.	COUNTY	ROUTE NO.	DATE
34-389	MARION, JO	S.C. 41	12-7
APPROVED BY		APPROVED BY	

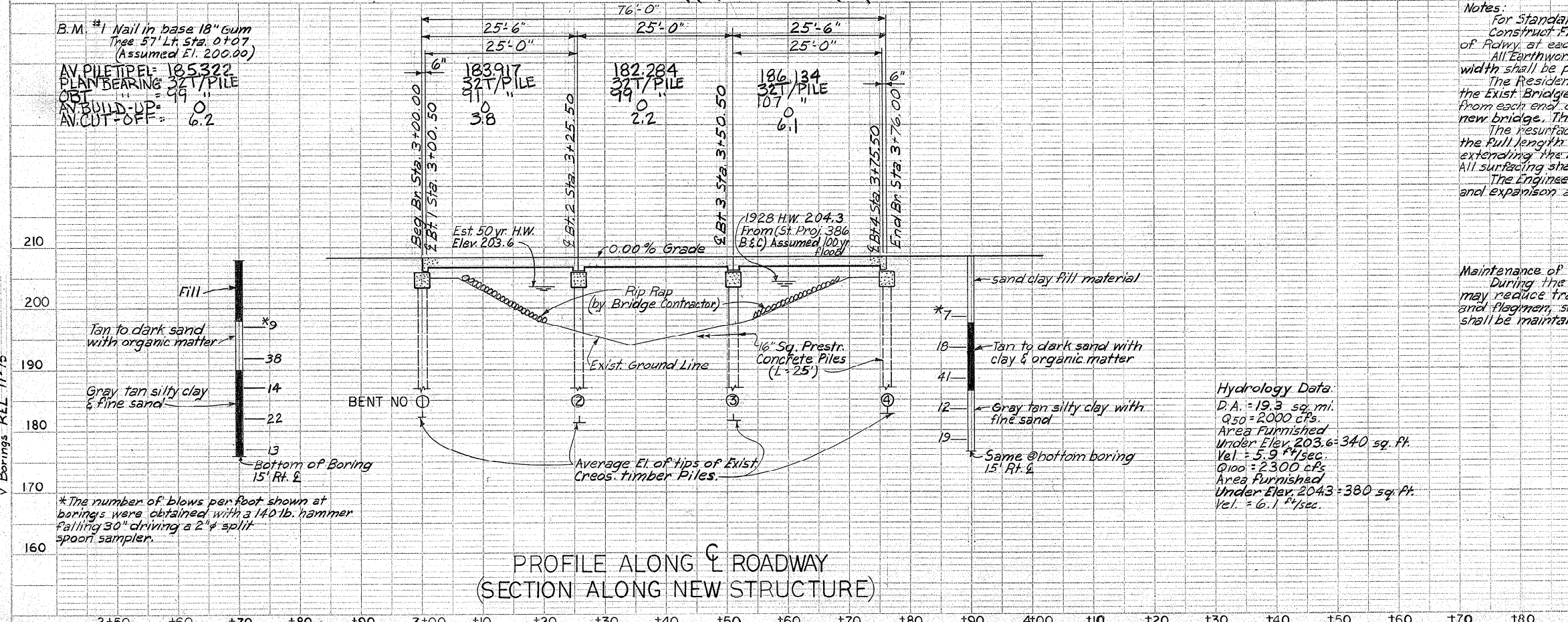
TAPERED OR PARALLEL RAIL SECTION IN LAYOUT MAY REQUIRE CHANGING IN 12" INCREMENTS BY CHANGING NO. OF 6" POST SPACES. FOR SPECIAL INSTALLATIONS, IF LAYOUT REQUIRES EXTENSIVE CHANGING, ADD ROAD WITH STANDARD G.R.'S, WITH REQUIRED REVISIONS OR RETURN LAYOUT



SUMMARY OF QUANTITIES (MAIDEN DOWN SWAMP)									
Item	Concrete No Class "A"	Reinf. Steel ③	16" Sq. Prest. Conc. Piling	8" Pipe Slope Drains	Intake Spillway Assembly	Hand Placed Rip Rap	Steel Beam Guard Rail	End Anchors (Cables)	
End Bents 1 & 4	2	11.2	1968	200	—	See Total	—	—	
Int. Bents 2 & 3	2	11.0	1998	300	—	—	—	—	
25'-6" End Spans	2	79.6	16,862	—	—	—	—	—	
25'-0" Int. Span	1	37.9	8,190	—	—	—	—	—	
Curb & Gutter	4	2.8	196	60	4	—	—	—	
Total	142.5	292.14	500	60	4	180	300	4	

③ Includes 23 lbs. for Dowels for all bents. Subtract 23# per bent where dowels are omitted.

SUMMARY OF QUANTITIES (REEDY CREEK)									
Item	Concrete No Class "A"	Reinf. Steel ③	16" Sq. Prest. Conc. Piling	8" Pipe Slope Drains	Intake Spillway Assembly	Hand Placed Rip Rap	Steel Beam Guard Rail	End Anchors (Cables)	
End Bents 1 & 9	2	11.2	1968	240	—	See Total	—	—	
Int. Bents 2 thru 8	7	38.5	6993	1260	—	—	—	—	
25'-6" End Spans	2	79.6	16,862	—	—	—	—	—	
25'-0" Int. Spans	6	227.4	49,140	—	—	—	—	—	
Curb & Gutter	4	2.8	196	50	4	—	—	—	
Total	359.5	75,159	1500	50	4	140	300	4	



Notes:

- For Standard Notes see sh. 3.
- Construct Flared Curb & Gutters & 8 in. Pipe Slope Drains at both sides of Rdwy. at each End of Bridge.
- All Earthwork necessary to widen shoulders at ends of bridge to 52' width shall be placed by S.C.H.D. Maint. Forces.
- The Resident Engineer shall obtain Existing F.G. Elev. at the Rdwy. on the Exist. Bridge and adjacent road (at about 25' intervals for about 100' back from each end of bridge) for the purpose of establishing a new F.G. for the new bridge. The new F.G. shall be set approx. 12' above the existing F.G.
- The resurfacing shall have a minimum thickness of 1" over the exist. slab for the full length of the bridge and shall be tapered to the exist. F.G. by extending the New Bit Surf. on the adjacent road for an appropriate distance. All surfacing shall be by S.C.H.D. Maint. Forces.
- The Engineer will determine which ends of old superstructure are fixed and expansion and match the new superstructure accordingly.

Maintenance of Traffic:

During the actual driving of piles or pouring of concrete, the Contractor may reduce traffic to one way with adequate advance signs, barricades and flagmen, so as to safeguard traffic. At all other times two-way traffic shall be maintained and the existing Rdwy. shall not be reduced.

Hydrology Data:

D.A. = 19.3 sq. mi.
 Q50 = 2000 cfs.
 Area Furnished Under Elev. 203.6 = 340 sq. ft.
 Vel. = 5.9 ft/sec.
 Q100 = 2300 cfs.
 Area Furnished Under Elev. 204.3 = 380 sq. ft.
 Vel. = 6.1 ft/sec.

REV.		S. C. STATE HIGHWAY DEPARTMENT	180
REV.		BRIDGE DIVISION	
REV.		COLUMBIA S. C.	
REV.		PLAN & PROFILE	170
REV.		FOR WIDENING BRIDGE OVER	
REV.		MAIDEN DOWN SWAMP	160
QUAN.	WKH REL 11-75	FILE NO. 34.389	ROUTE NO. S.C. 41
TR.		COUNTY MARION	DATE 7-75
DES.	WKH REL 7-75	APPROVED BY	DESIGN
		BY CHKD DATE	ASST. BRIDGE ENGINEER

Notes:

For Standard Notes see sh. 3.

All Earthwork necessary to widen shoulders at ends of bridge to 22' width shall be placed by S.C.H.D Maint. Forces.

The Resident Engineer shall obtain Existing F.G. Elev. at the E Rdwy. on Exist. Bridge and adjacent road (at about 25' intervals for about 100' back from each end of bridge) for the purpose of establishing a new F.G. for the new bridge. The new F.G. shall be set approx. 15" above the existing F.G.

The resurfacing shall have a minimum thickness of 1" over the existing slab for the full length of the bridge and shall be tapered to the Existing F.G. by extending the New Bit Surf. on the adjacent road for an appropriate distance. All surfacing shall be by S.C.H.D. Maint. Forces.

Construct Flared Curb & Gutters and 8 in. Pipe Slope Drains at both sides of Rdwy. at each End of Bridge.

Maintenance of Traffic:

During the actual driving of piles, or pouring of concrete, the Contractor may reduce traffic to one way with adequate advance signs, barricades and flagmen, so as to safeguard traffic. At all other times two-way traffic shall be maintained and the existing Rdwy. shall not be reduced.

Tan sand clay

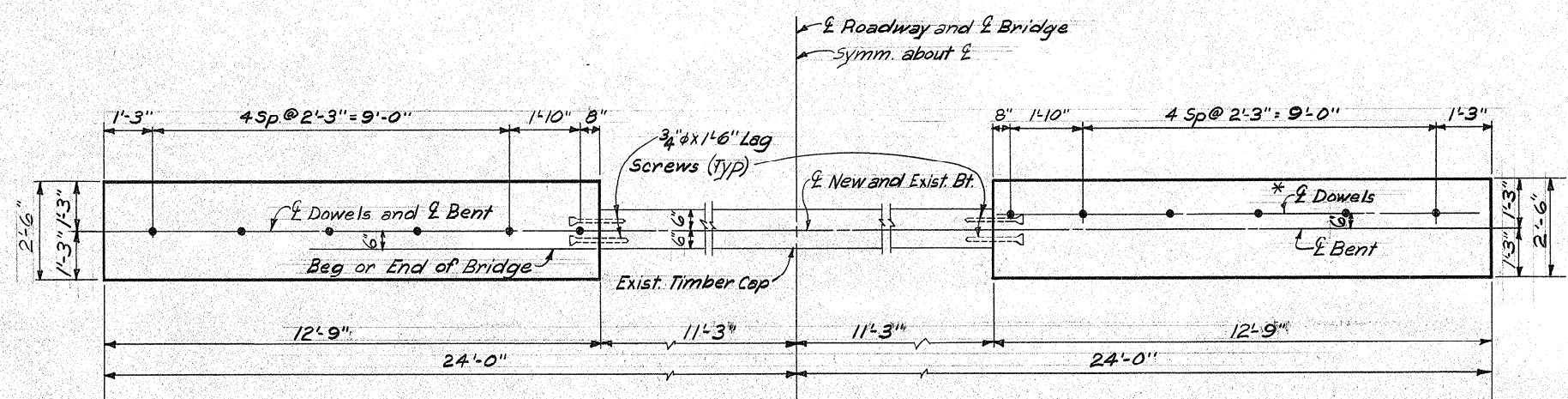
Gray to tan silty clay & sand

Dark gray silty clay & fine sand.

	+70	+80	+90	+100	+110	+120	+130	
REV.				S. C. STATE HIGHWAY DEPARTMENT				150
REV.				BRIDGE DIVISION				
REV.				COLUMBIA S. C.				
REV.				PLAN AND PROFILE				140
REVIEWED				WIDENING BRIDGE OVER				
				REEDY CREEK				
QUAN.				FILE NO.	COUNTY	ROUTE NO.	DATE	130
TR.				34.389	MARION	S.C. 416-75		
DR.				APPROVED BY				
DES.				WKHREL 6-75	BAS	JCB		
				BY CHK'D DATE	ASS'T. BRIDGE ENGINEER DESIGN	BRIDGE ENGINEER DESIGN		

PIEDMONT PRINTMAKERS 1M 11-24 MC3142*

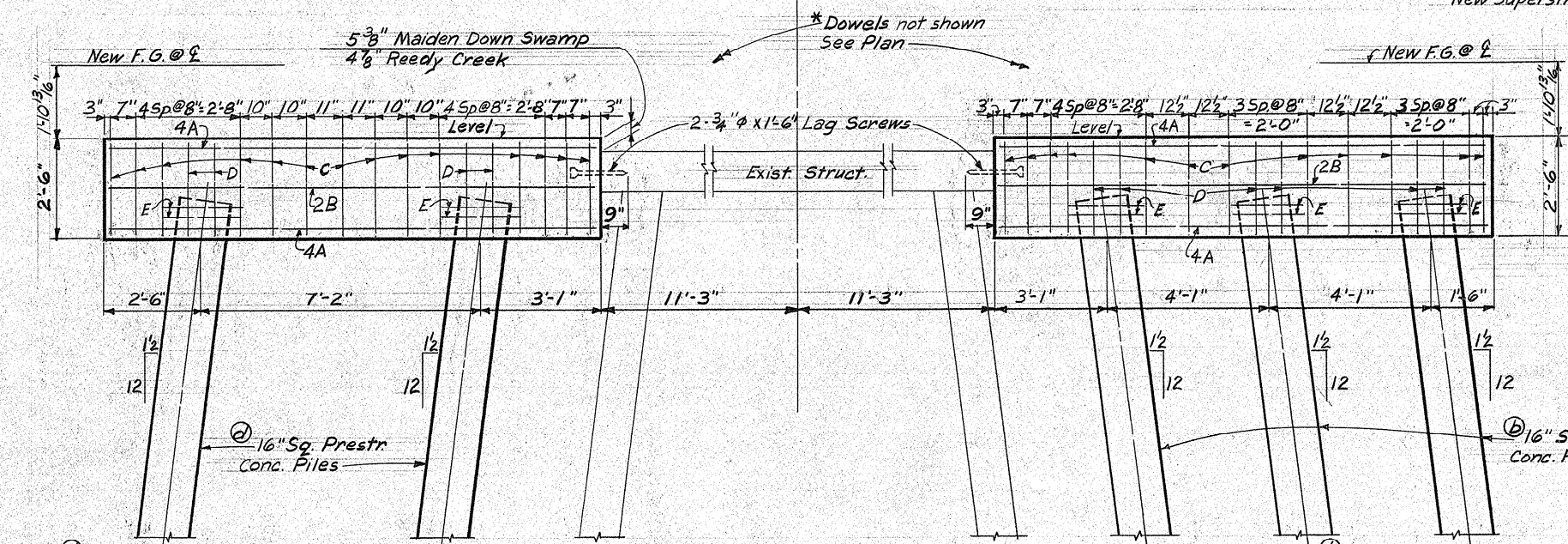
FED. RD. DIV. NO.	STATE	COUNTY	FILE NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	MARION	34.389	S.C.41	9	18



HALF PLAN-END BENT

HALF PLAN-INT. BENT

*Note: Place Dowels at Fixed Ends of Spans only. The Engineer will determine which ends of Old Superstructure are Fixed & match the New Superstructure accordingly.

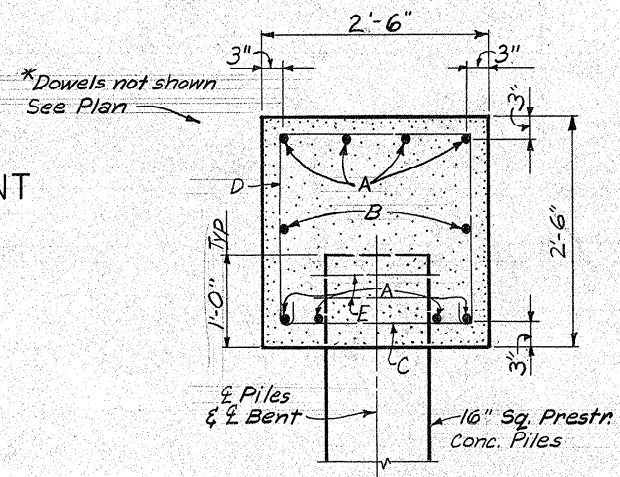


Note: Drive Piles to a minimum Bearing Value of 32 T/pile.

Note: Drive Piles to a minimum Bearing Value of 32 T/pile.

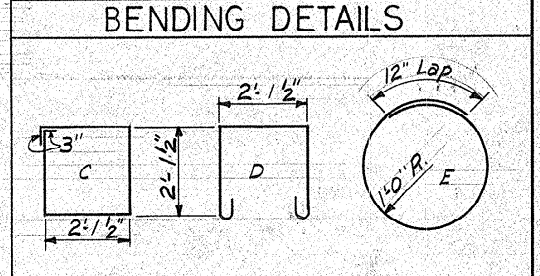
HALF ELEV-END BENT

HALF ELEV-INT BENT



SECTION THRU CAP
SCALE: 1"=1'-0"

REINF STEEL SCHED.						
MARK	SIZE	D	I-END BENT		I-INT. BENT	
			NO. REQ'D	LENGTH	NO. REQ'D	LENGTH
A	9	5	16	12'-4"	16	12'-4"
B	4	5	4	12'-4"	4	12'-4"
C	4	B	23	9'-0"	24	9'-0"
D	4	B	8	7'-6"	12	7'-6"
E	4	B	8	7'-3"	12	7'-3"
Dowels	6	5	12	1'-3"	12	1'-3"
Lag screw	3/4" x 1/4"	-	4	1'-6"	4	1'-6"



QUANTITIES			
Item	Unit	I-End Bent	I-Int. Bent
Concrete Class "A"	C.Y.	5.6	5.5
Reinforcing Steel	Lbs.	984	999
16" Sq. Prestn. Conc. Piles	L.F.	(See Summary)	(See Summary)

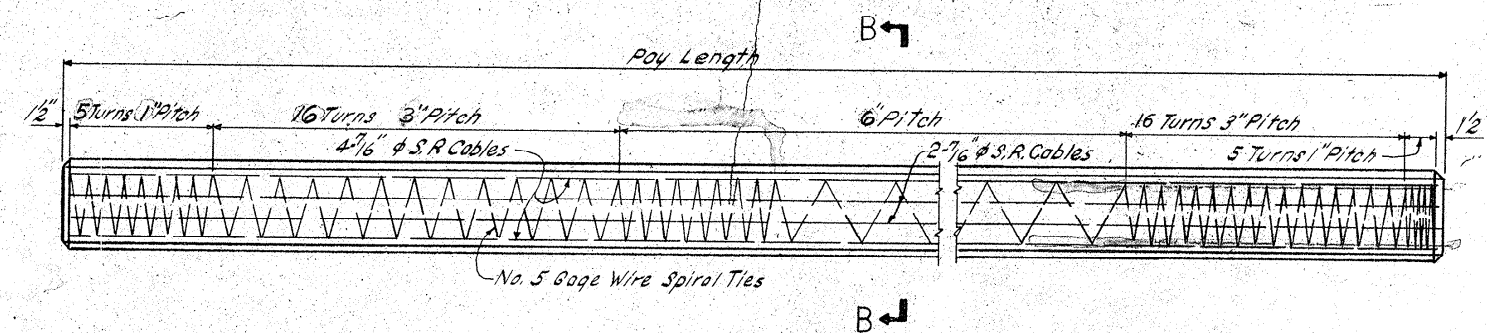
Includes 10 Lbs. for Lag Screws and 23 Lbs. for *Dowels. Deduct 23 Lbs. for *Dowels at Bent with Double Expan.

Note: Reinf Steel Schedule and Quantities are for Both sides of Rdwy.

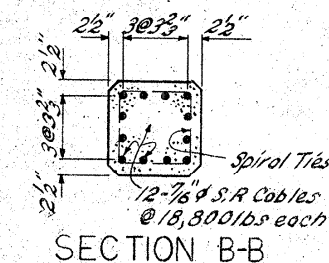
Notes:
For Standard Notes see sh. 3.
For Standard Details see sh. 4.
For Dowel Details see sh. 4.
For Details of 16" Sq. Prestn. Conc. Piles see sh. 10.

REV.				S. C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S. C.			
REV.				END & INT. BENTS FOR WIDENING BRIDGES OVER MAIDEN DOWN SWAMP & REEDY CREEK			
REV.				IN CHARGE			
REV.				FILE NO. 34.389 COUNTY MARION ROUTE NO. S.C.41 DATE 11-75			
REVIEWED				APPROVED BY			
QUAN. WKH REL 11-75				ASST. BRIDGE ENGINEER - DESIGN			
TR. WKH REL 11-75				BRIDGE ENGINEER - DESIGN			
DES. REL 11-75							
BY CHK'D DATE							

FED. RD. DIV. NO.	STATE	COUNTY	FILE NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	MARION	34.389	S.C. 41	10	18

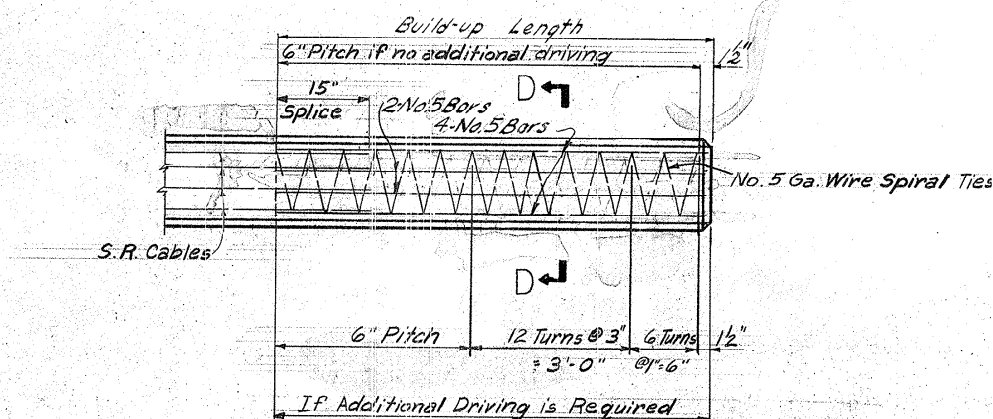


16" SQUARE PRESTRESSED CONCRETE PILE

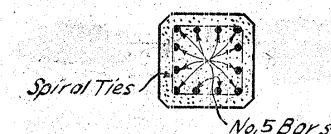


Concrete Quantity per pile = 0.0658 CY/LF

Note: For estimated lengths, see sh. 7 & 8.

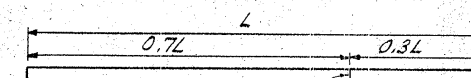


BUILD - UP

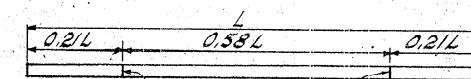


SECTION D-D

NOTES:
Spiral ties shall be tied to all corner cables and reinf. bars.
All dimensions relative to reinforcing steel are to centers of bars.
Chamfer all exposed edges 3/4" unless otherwise noted.
All concrete shall be Class "X" See S.C.H.D. Standard Specs.



Pick-up Point
SINGLE POINT PICK-UP (MAX. LENGTH = 65')



Pick-up Point
DOUBLE POINT PICK-UP (MAX. LENGTH = 80')

Note:
Piles shall be marked at Pick-up Points to indicate proper points for attaching handling lines.

REV.				S.C. STATE HIGHWAY DEPARTMENT
REV.				BRIDGE DIVISION
REV.	WKH	REL 12-75		COLUMBIA S.C.
REV.	REL 12-75	For File: 34.389		16" SQ. PRESTRESSED
REV.	REL 12-75	Reinf. Bar Note		CONCRETE PILES
REVIEWED	RMH			
IN CHARGE				
QUAN.		FILE NO.	COUNTY	ROUTE NO. DATE
TR.	From File 183	34.389	MARION	S.C. 41 12-75
DR.	RJS JRC 11-67	APPROVED BY		DESIGN
DES.				
BY	CHK'D	DATE	BRIDGE DESIGN & PLANS ENGINEER	BRIDGE ENGINEER

$P_1 = 5,000 \text{ psi}$
 $P_2 = 4,000 \text{ psi}$
 $P_3 = 2,000 \text{ psi}$
 $P_4 = 250,000 \text{ psi}$
 $P_5 = 175,000 \text{ psi}$

Piedmont Printmakers 1M 11-74 MC 3147

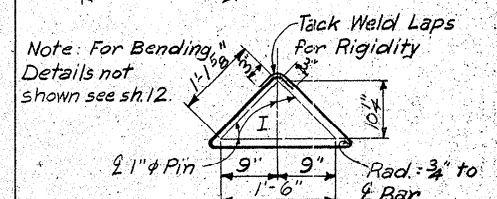
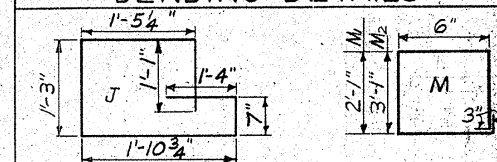
FED. RD. DIV. NO.	STATE	COUNTY	FILE NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	MARION	34.389	S.C. 41	11	18

REINF. STEEL SCHEDULE

MARK	SIZE	D	I-END SPAN		I-INT. SPAN	
			NO. REQ'D	LENGTH	NO. REQ'D	LENGTH
A ₁	9	S	56	25'-1"	—	—
A ₂	9	S	—	—	56	24'-7"
B	5	S	70	12'-4"	70	12'-4"
C	5	S	38	11'-10"	38	11'-10"
D	4	B	52	7'-2"	50	7'-2"
E	5	S	26	25'-1"	26	24'-7"
F	4	B	34	2'-6"	16	2'-6"
G	6	B	26	3'-9"	24	3'-9"
H	6	S	16	25'-1"	16	24'-7"
I	4	B	48	4'-10"	48	4'-10"
J	4	B	50	7'-7"	50	7'-7"
K	4	S	12	4'-3"	—	—
L	4	S	4	2'-8"	—	—
M ₁	4	B	2	5'-8"	—	—
M ₂	4	B	4	7'-8"	—	—

BB	1" Ht.	Req'd	350'	Req'd	350'
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BENDING DETAILS



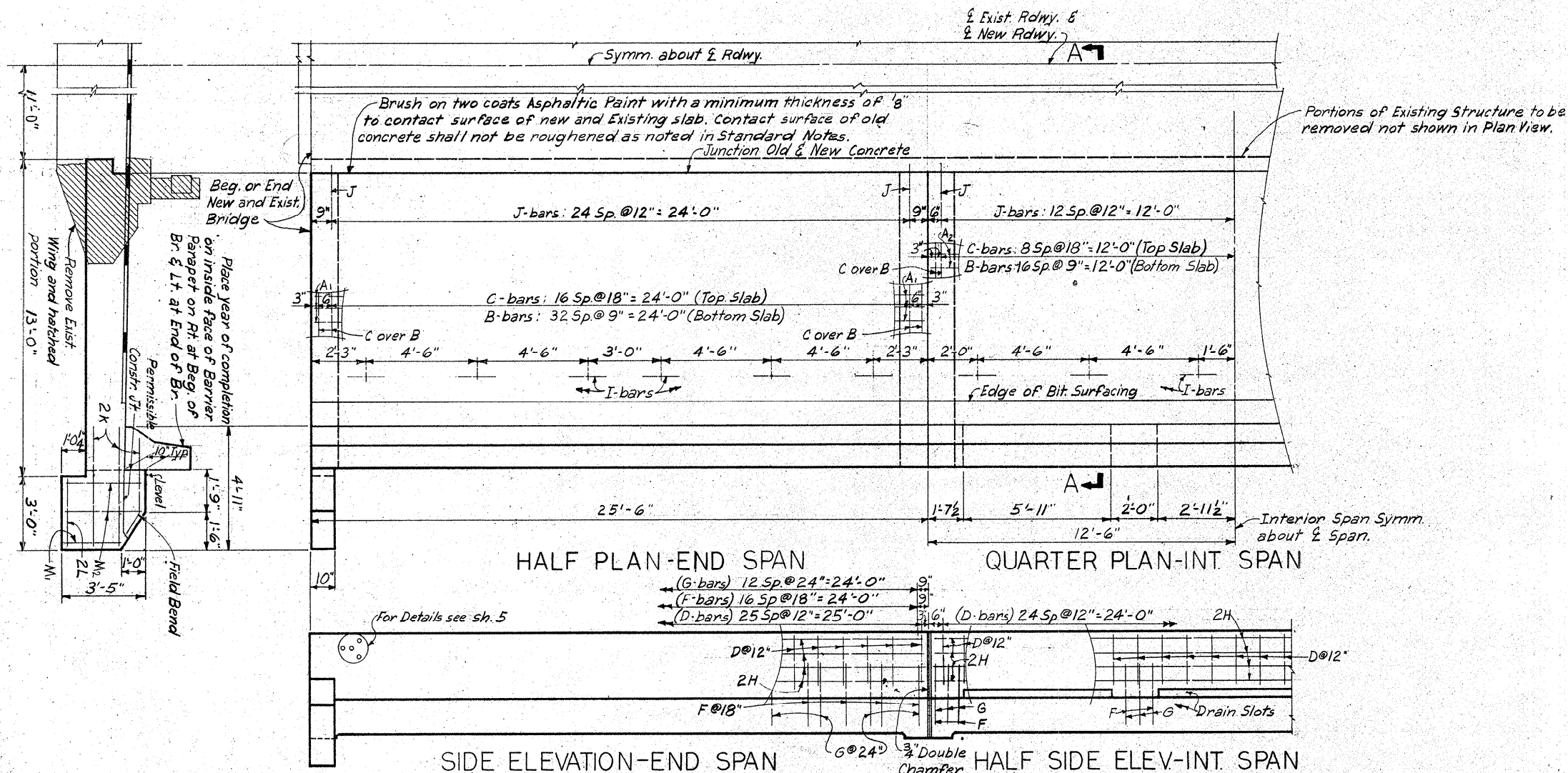
QUANTITIES

Item	Unit	I-End Span	I-Int. Span
Concrete, Class "A"	C.Y. ②	39.8	37.9
Reinforcing Steel	LB ③	8431	8190

Notes:
For Standard Notes see sh. 3.
For Standard Details see sh. 4.
Reinforcing Steel Schedule and Quantities are for both sides of Roadway.

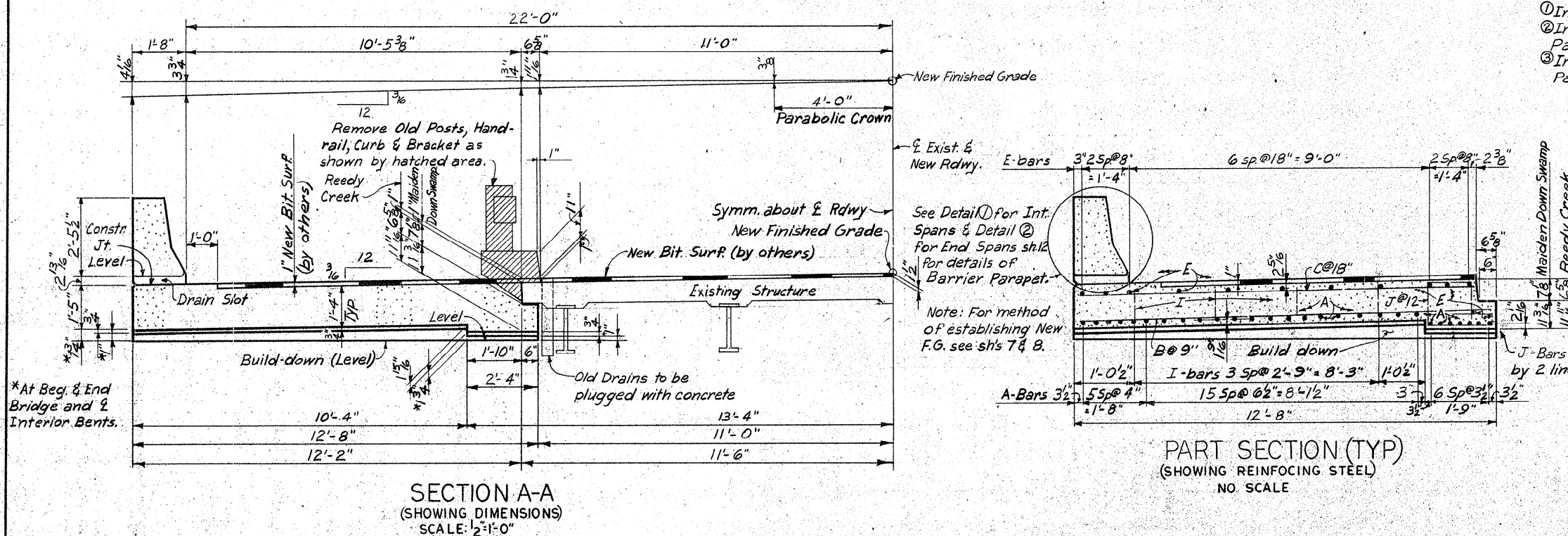
END ELEVATION

Note: Wings below construction joint to be poured monolithic with slab.



SIDE ELEVATION-END SPAN

HALF SIDE ELEV-INT. SPAN



SECTION A-A
(SHOWING DIMENSIONS)
SCALE: 2"=1'-0"

PART SECTION (TYP)
(SHOWING REINFORCING STEEL)
NO. SCALE

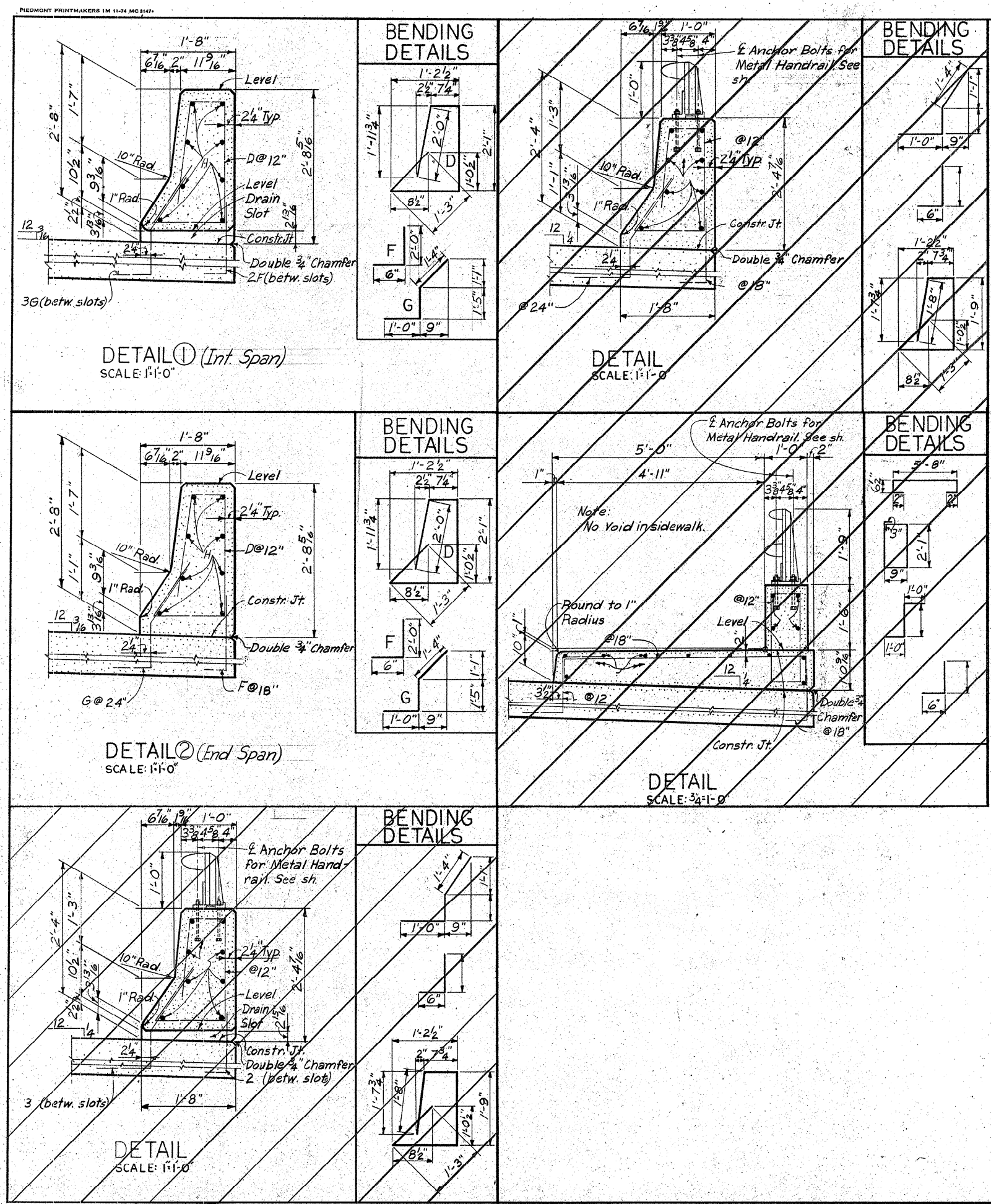
REV.					
REV.					
REV.					
REV.					
REVIEWED					
IN CHARGE					
QUAN. WKH	REL 11-75	FILE NO.	34.389	COUNTY	MARION
TR.		ROUTE NO.	S.C. 41	DATE	9-75
DES.	WKH 9-75	APPROVED BY		APPROVED BY	
BY	CHK'D DATE	ASST. BRIDGE ENGINEER - DESIGN		BRIDGE ENGINEER - DESIGN	

Scale 3/8"=1'-0" or as noted

S. C. STATE HIGHWAY DEPARTMENT
BRIDGE DIVISION
COLUMBIA S. C.25'-6" END & 25'-0" INT SPANS
FOR WIDENING BRIDGES OVER
MAIDEN DOWN SWAMP &
REEDY CREEK

5. Fill in reference sheet numbers
6. If SDWK, with void is used, spacing, location & detail of transverse reinf. must be revised.

Notes to Detailer:
1. Refer to applicable small standards
2. Fill in blank dimensions on re-bars
3. Fill in bar designations
4. Mark thru all views not applicable



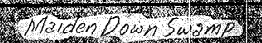
FED. RD. DIV. NO.	STATE	COUNTY	FILE NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	MARION	34.389	S.C. 41	12	18

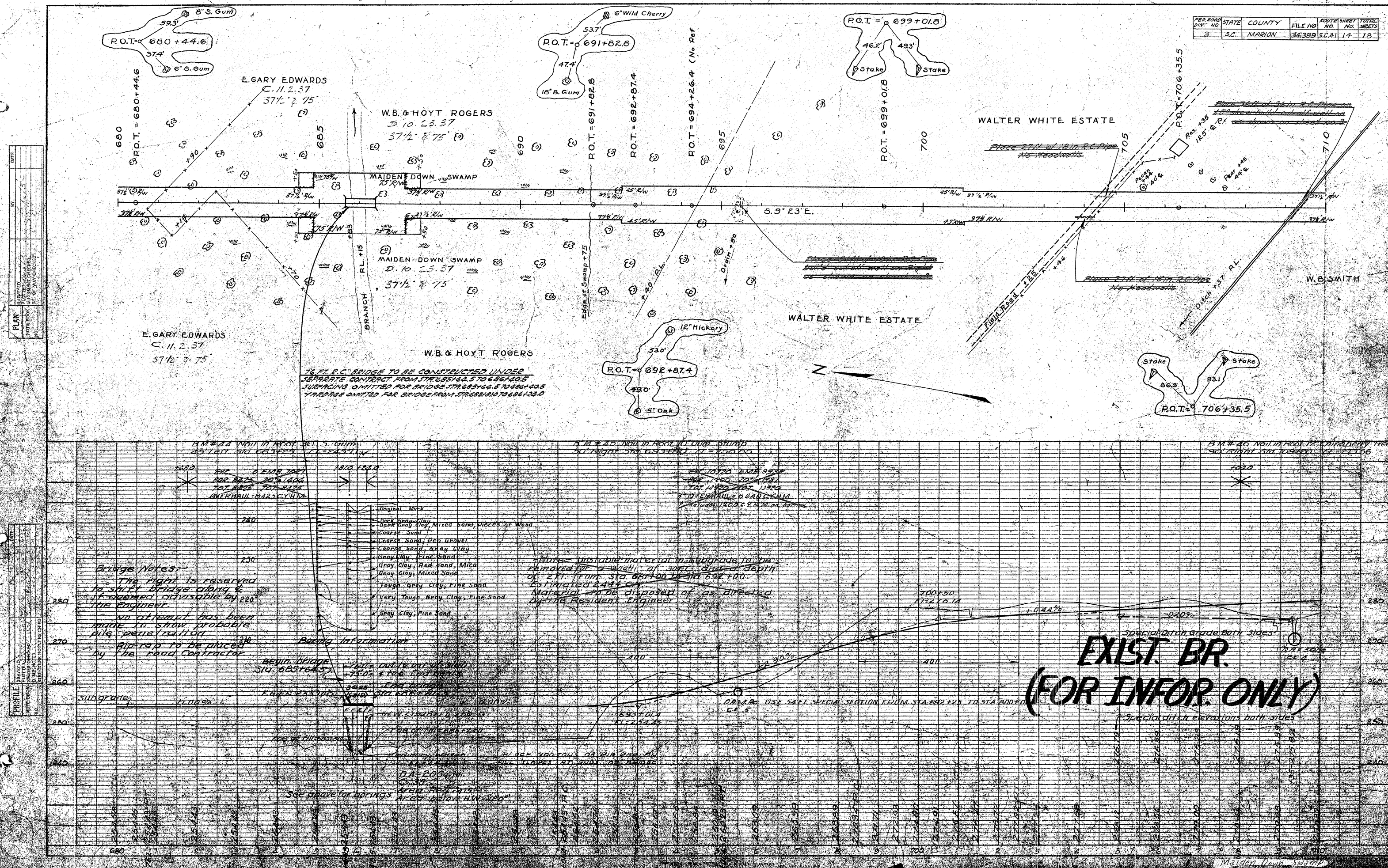
Notes:
For details of slab, slab reinf. etc. see sh. 11.

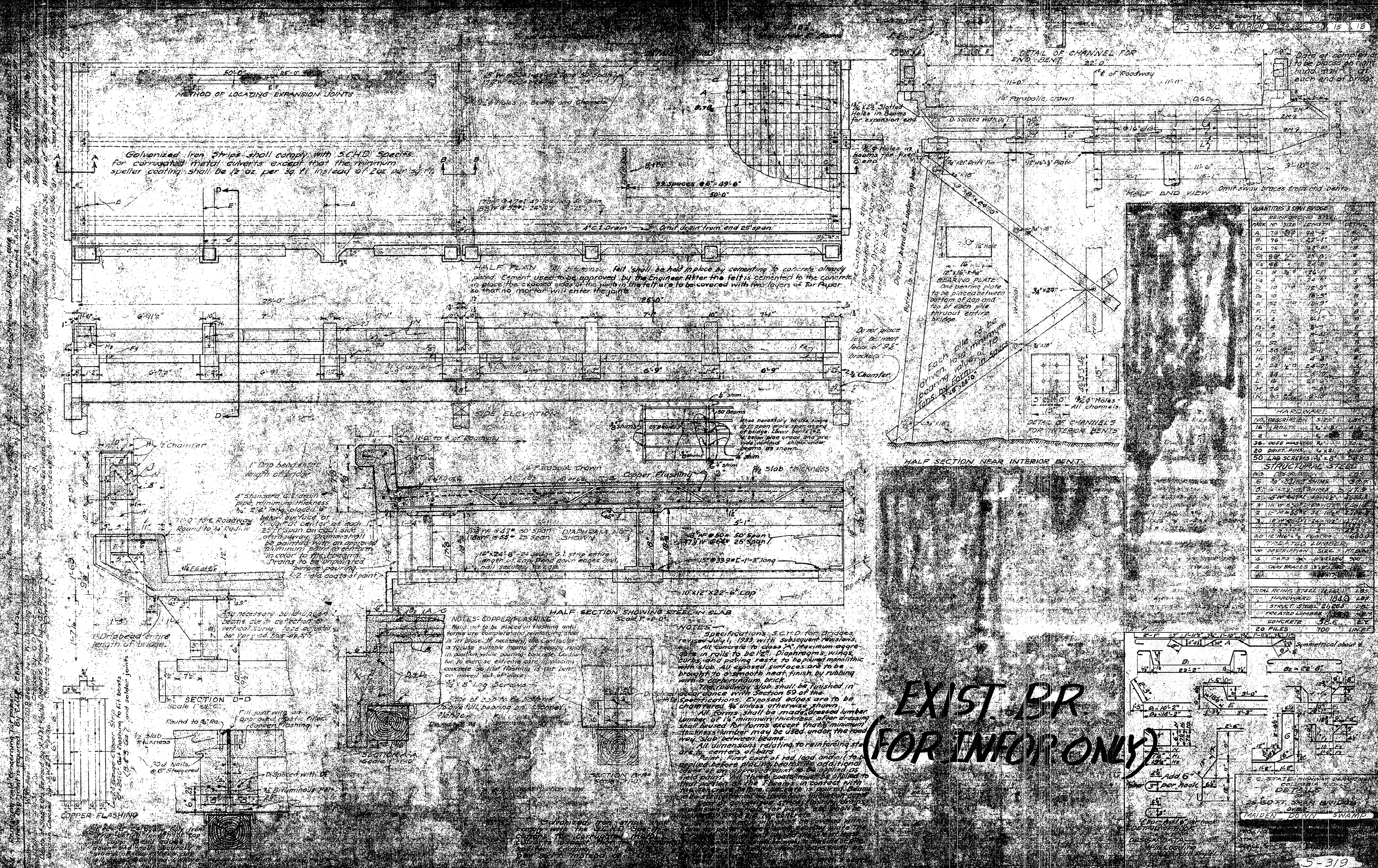
REV.		S. C. STATE HIGHWAY DEPARTMENT BRIDGE DIVISION COLUMBIA S.C.				
REV.		BARRIER PARAPET FOR WIDENING BRIDGES OVER MAIDEN DOWN SWAMP & REEDY CREEK				
REV.	WKH/1-75	For File 34.389				
REVIEWED	10/1/75					
QUAN.		IN CHARGE	FILE NO.	COUNTY	ROUTE NO.	DATE
TR.			34.389	MARION	S.C. 41	9-75
DR.	WKH/RWH	1-75	APPROVED BY			
DES.			ASST. BRIDGE ENGINEER - DESIGN			
BY	CHK'D	DATE	BRIDGE ENGINEER - DESIGN			

FILED	STATE	COUNTY	FILE						
3	ALABAMA	MAPLE	34-389	564	13	18			

SCALE
1 INCH = 2 FEET





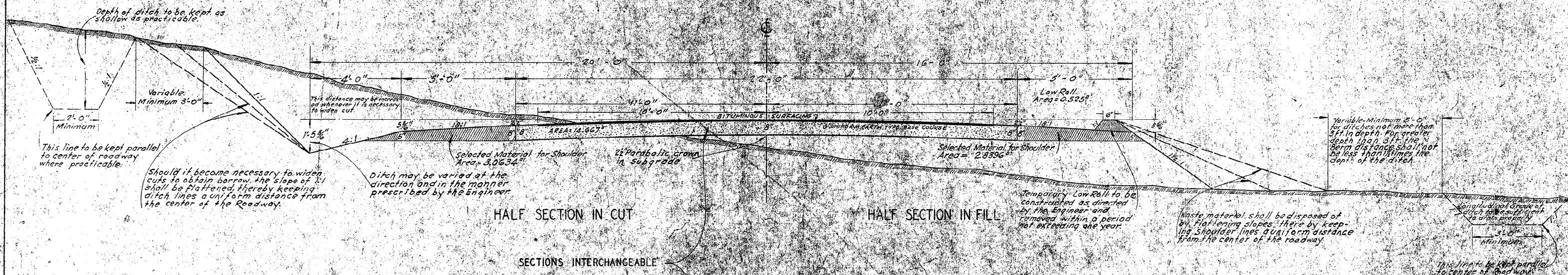


S.C. STATE HIGHWAY DEPARTMENT
COLUMBIA S.C.
TYPICAL SECTIONS
FOR
BITUMINOUS SURFACING

FED. ROAD DIV. NO.	STATE	COUNTY	ROUTE NO.	PROJECT NO.	TOTAL SHEET
3	S.C.	Marion	34.389	ELA	16

SCALE
1 INCH = 2 FEET

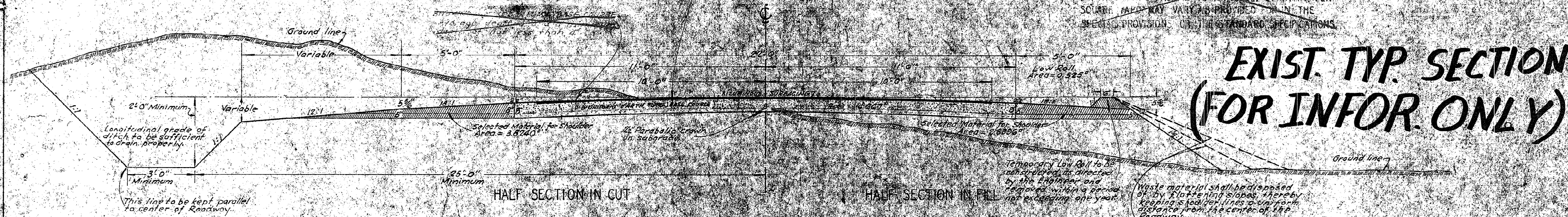
Excavation of Intercepting Ditches should be done in advance of excavation of adjoining roadway cuts. Material excavated from these ditches shall be used on roadway embankments.



Note:
Ditches shown are applicable to any section shown on this sheet and are to be constructed where designated by the Engineer.

STILLING MATERIAL SHALL BE APPLIED IN QUANTITIES OF 50 POUNDS PER SQUARE YARD FOR THE FULL WIDTH OF THE ROAD AND FOR A DEPTH OF 4 INCHES FROM THE SURFACE. QUANTITY PER SQUARE YARD MAY VARY AS PROVIDED IN THE SPECIAL PROVISIONS OF THE STANDARD SPECIFICATIONS.

**EXIST. TYP. SECTION
(FOR INFOR. ONLY)**

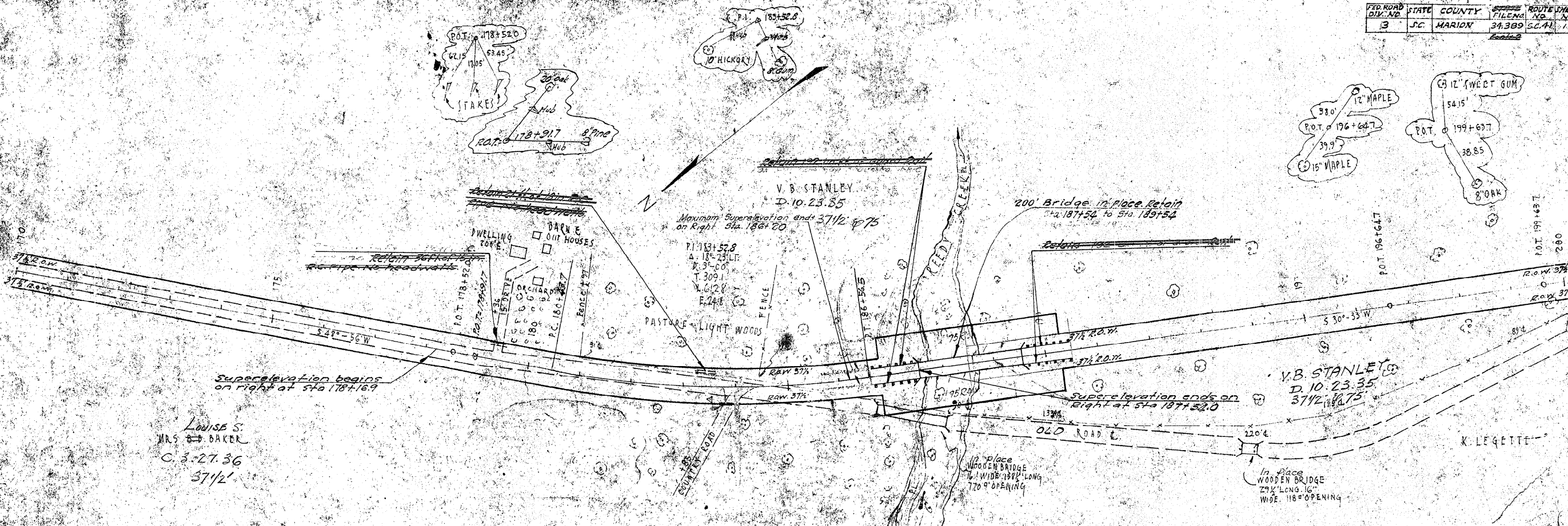


Traced by J. W. Phipps 11-3-34
Checked by R. A. Hunsicker 11-5-34

B.S. DRAWING
NO. 2

Revised by 6-25-75

FED. ROAD DIV. NO.	STATE	COUNTY	ROUTE	SHEET NO.	TOTAL SHEETS
3	SC	MARION	34.389	17	18



LOUISE S.
MRS. BAKER
C. 3-27-36
37 1/2'

