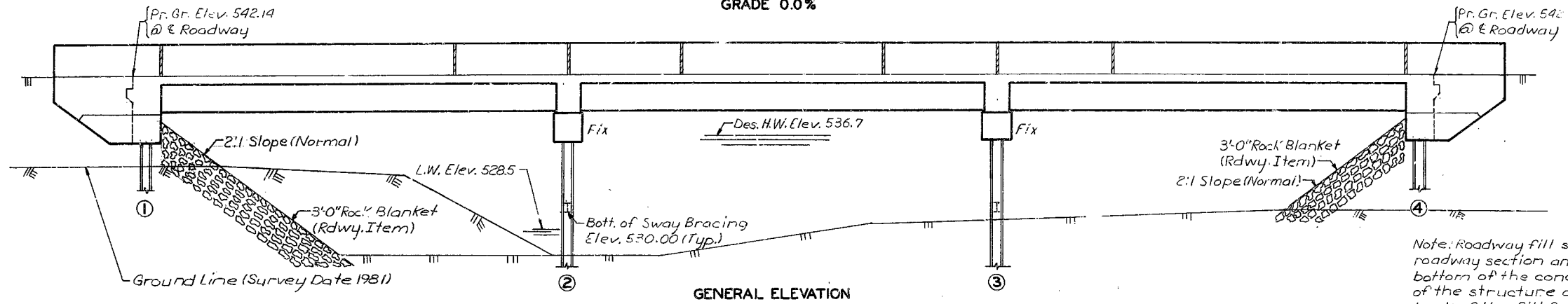


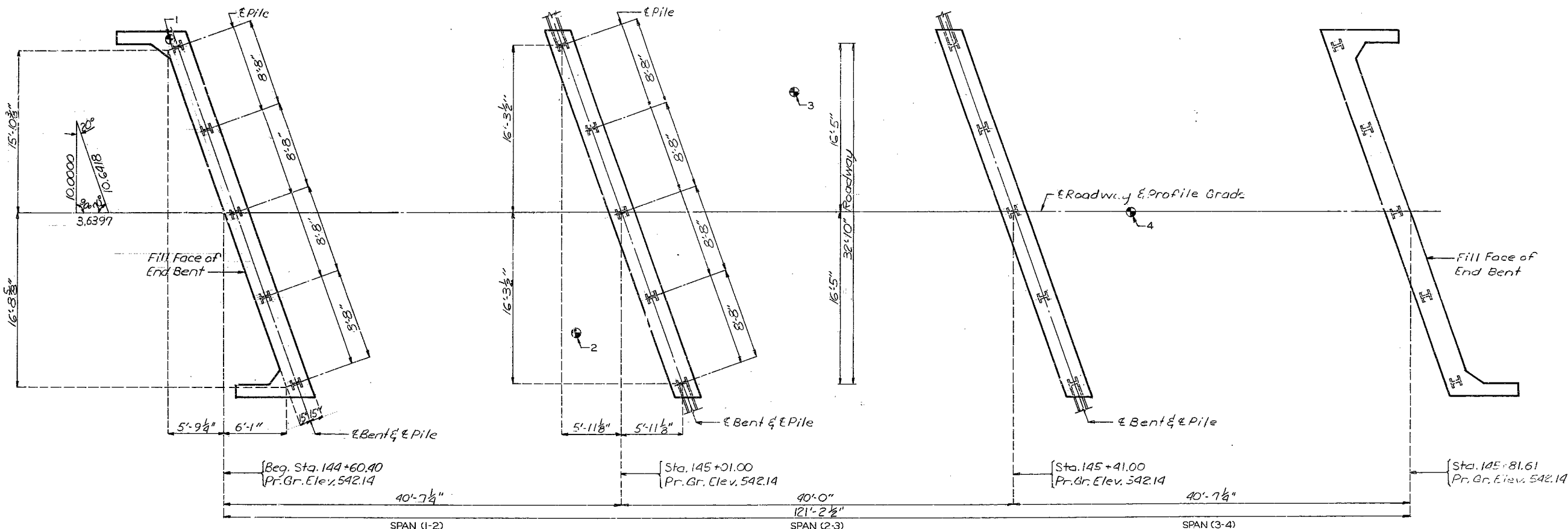
MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

(40'-40'-40') PRESTRESS CONC. DBL. TEE SPANS  
GRADE 0.0%

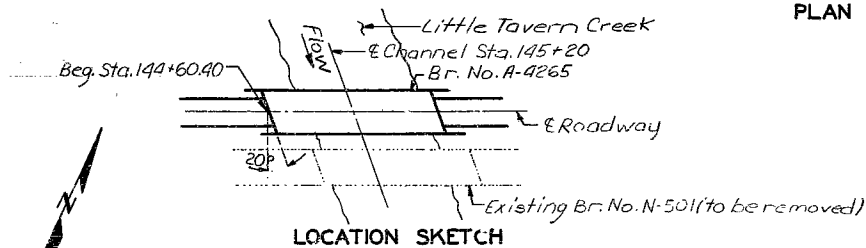
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		83	8	
SEC./SUR. 25		TWP. 46N	RGE. 7W		



Note: Roadway fill shall be completed to the final roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for not less than 25' in back of the fill face of the end bents before piles are driven for any bents falling within the embankment section.



Note: For boring data see sheet No. 4  
● Indicates location of boring.



HYDROLOGIC DATA	
Drainage Area = 6.5 Sq. Mi.	
Design Discharge = 5160 c.f.s.	
Design H.W. Elev. = 536.7	
Frequency = 50 yrs.	
BASIC FLOOD	
Q <sub>100</sub> = 6000 c.f.s.	
H.W. Elev. 537.3	

B.M. Elev. 538.82 "0" on N.W. Corner Bridge Rt.  
Sta. 144+98

**BRIDGE OVER LITTLE TAVERN CREEK**  
STATE ROAD FROM PORTLAND TO BLUFFTON  
ABOUT 4 MILES NORTHEAST OF PORTLAND  
PROJECT NO. CALLAWAY  
JOB NO. 5-S094-223  
STA. 144+60.40  
RTE. 94  
COUNTY

STD.
STD. 706.30
A-4265

DESIGNED NOV. 1982  
DETAILED NOV. 1982  
CHECKED NOV. 1982

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1 of 9

DATE 7/5/83

191

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	9	

**GENERAL NOTES:**

Design Specifications: A.A.S.H.T.O. - 1977 and Interim Specs. Thru 1980 Load Factor Design

Design Loading:

H20-44

15" per sq. ft. Future Wearing Surface

Earth 120% cu. ft., Equivalent Fluid Pressure 30% cu. ft.

Superstructure: Simply supported non-composite for Dead Load, Continuous composite for Live Load

Design Unit Stresses:

Class B Concrete (Substructure)  $f'_c = 3000$  p.s.i.

Class B1 Concrete (Safety Barrier Curb)  $f'_c = 4000$  p.s.i.

Class B2 Concrete (Superstructure except Safety Barrier Curb)  $f'_c = 4000$  p.s.i.

Reinforcing Steel (Grade 60)  $f_y = 60,000$  p.s.i.

Steel Pile  $f_b = 7000$  p.s.i.

For Pre-stressed Girder Stresses see sheet No. 5

Bearings shall be 60 durometer neoprene pads.

No direct payment will be made for furnishing, installing, cleaning and painting of bracing at intermediate bents.

All joint filler shall meet the requirement of Std. Spec. 10572.4.

Minimum clearance to reinforcing steel shall be 1/2" unless otherwise shown.

The test system for epoxy coated reinforcing as specified in Sec. 710.3.4 of the Standard Specification will not be required on this bridge.

Cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, shall be paid for at the contract unit price for Plain Neoprene Bearing Pads per each.

ESTIMATED QUANTITIES			
ITEM		SUBSTR.	SUPERSTR. TOTAL
Removal of Bridges (N-501)	Lump Sum		1
Structural Steel Piles (10")	Lin. Ft.	660	660
Class B Concrete	Cu. Yd.	38.2	38.2
Class B2 Concrete	Cu. Yd.		114.8
Safety Barrier Curb	Lin. Ft.		269
Plain Neoprene Bearing Pads	Eq.		60
Prestressed Concrete Dbl. Tee Gdn. (40' Span)	Eq.		15
Reinforcing Steel	Lb.	2430	5030
Reinforcing Steel (Epoxy Coated)	Lb.		14080
Slab Drains	Eq.		16
Pile Point Reinforcement	Eq.		20

Note: All concrete above lower construction joint in end bents is included with superstructure quantities.

All reinforcement in the end bents is included with superstructure quantities.

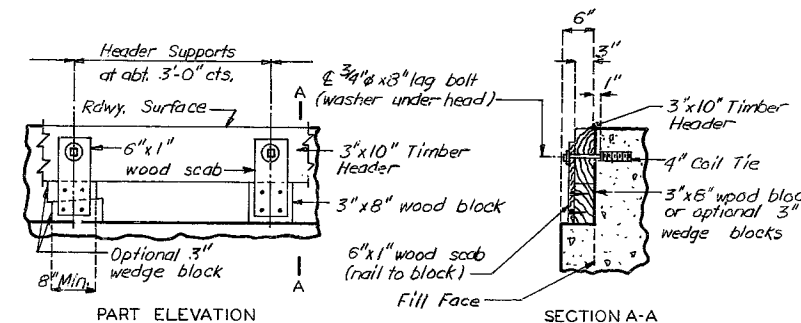
Manufactured pile point reinforcement shall be used on all piles in this structure. See Special Provisions.

Cost of any required excavation for bridge shall be included in contract unit price for other items.

PILE DATA				
BENT NO.	1	2	3	4
Pile Type and size	HP10x42	HP10x42	HP10x42	HP10x42
Number	5	5	5	5
Approximate Length Ft.	33	33	33	33
Design Bearing Tons	38	48	48	38
Hammer Energy required Ft.Lbs.	8600	11200	11200	8600

Minimum energy requirement of hammer based on plan length and design bearing value of piles.

All pile shall be driven to practical refusal.



Note: Cost of timber headers complete in place to be included in contract unit price for concrete.

DETAILS OF TIMBER HEADER AT END BENTS

SEE FINAL PLANS

192  
 DETAILED NOV. 1982  
 CHECKED NOV. 1982

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 2 of 9

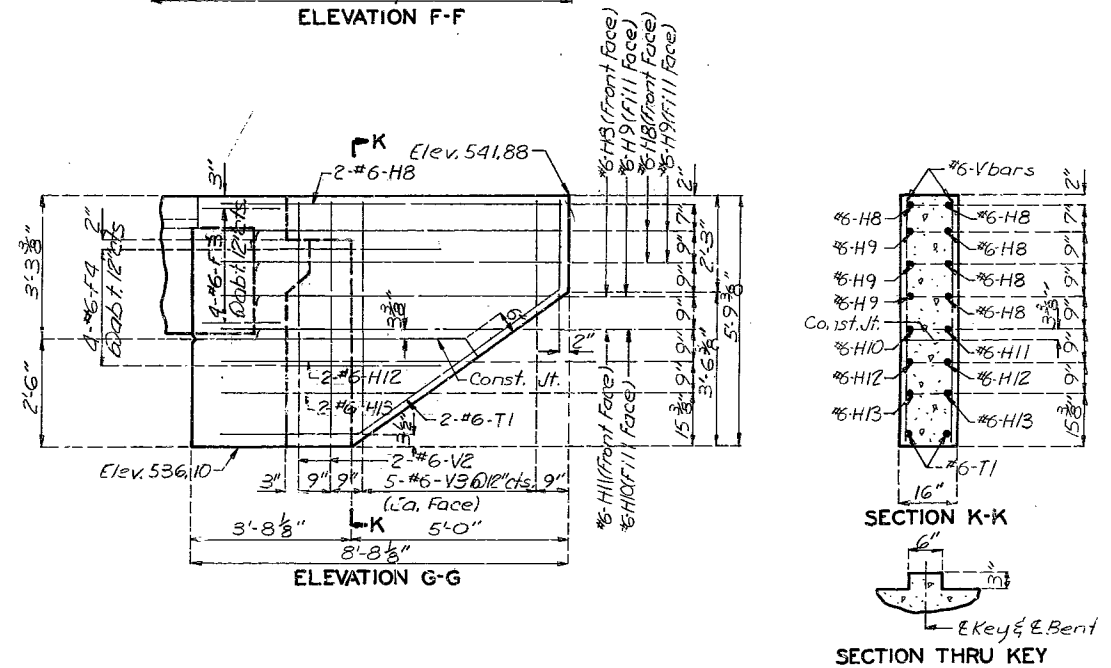
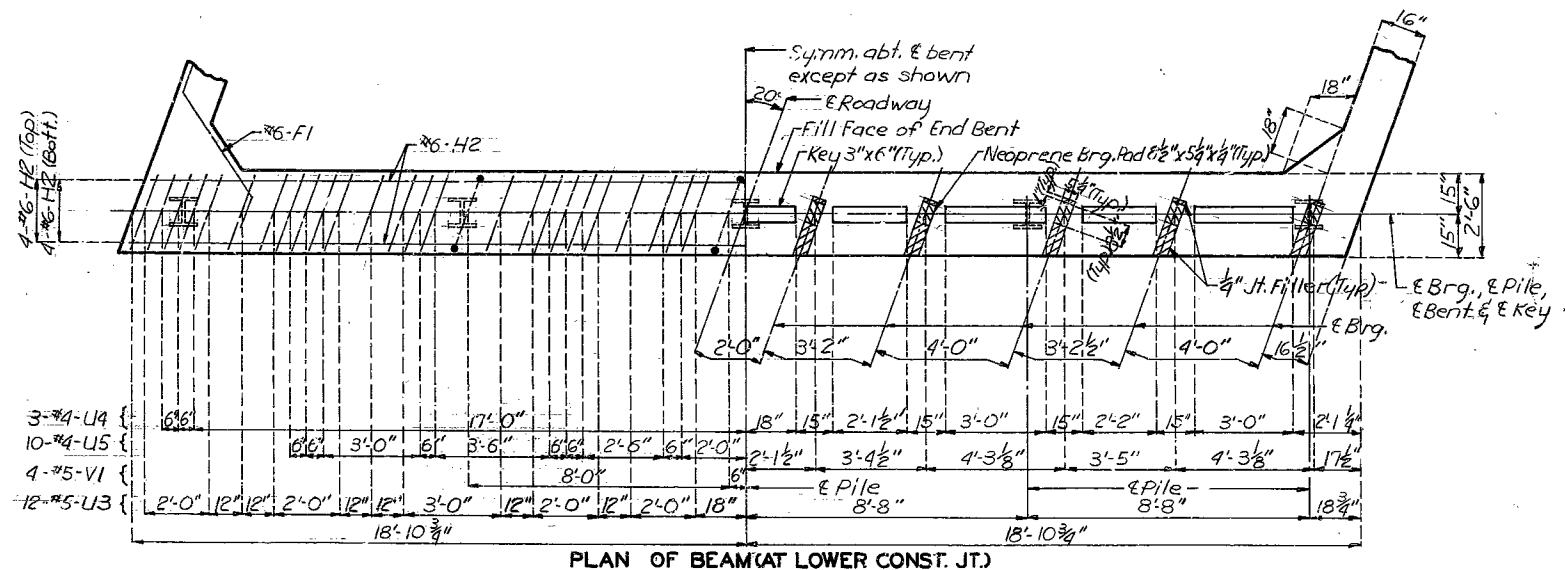
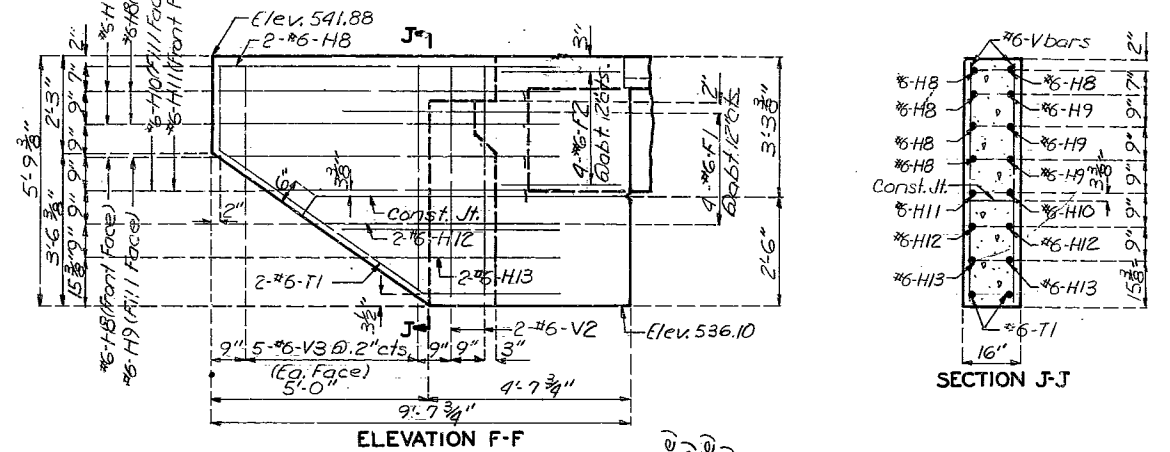
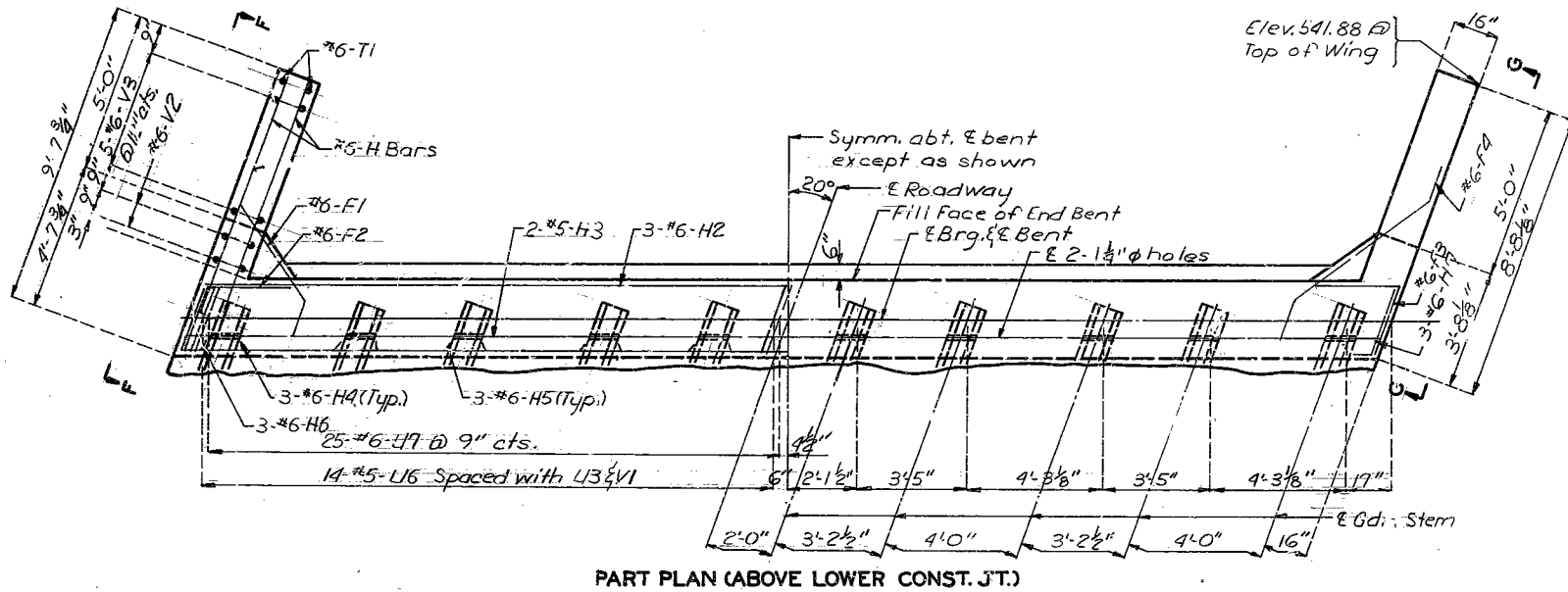
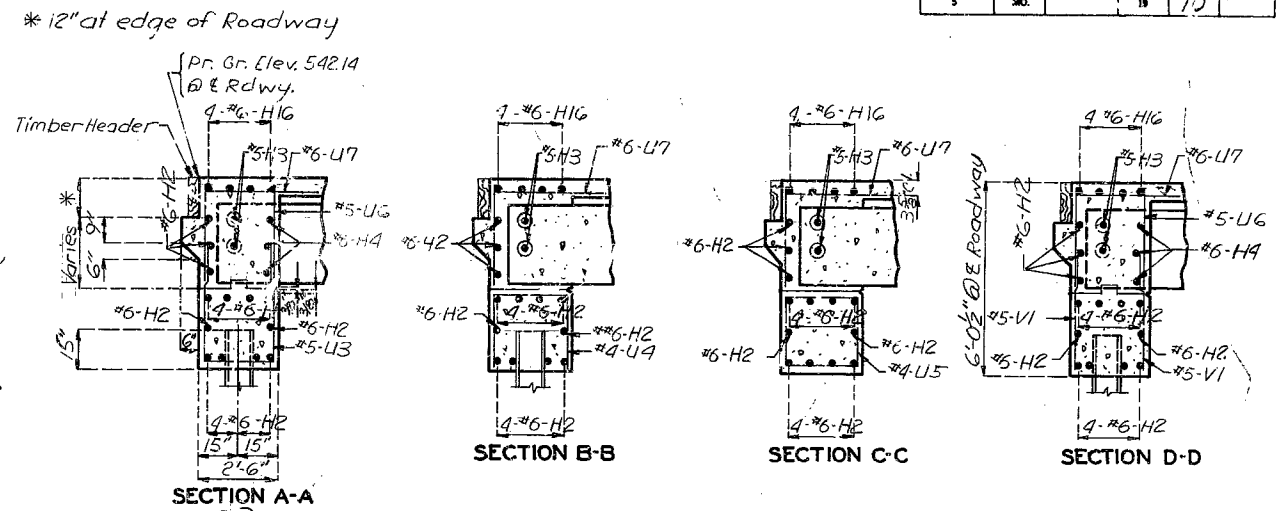
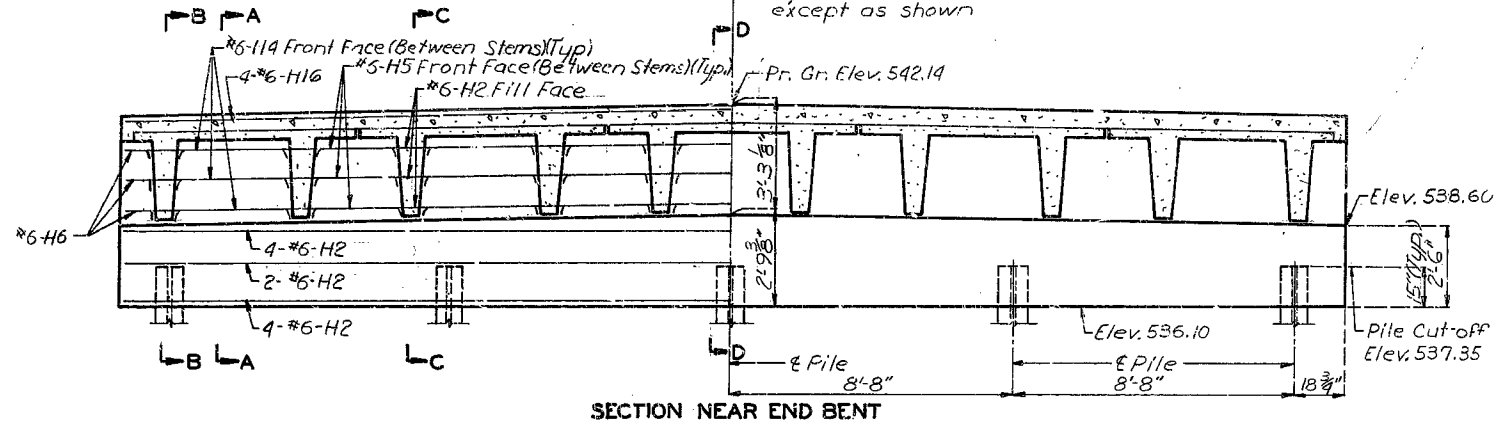
CALLAWAY COUNTY

A-4265

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	10	

Note: For details of timber header see sheet No. 2  
For details of pile splice see sheet No. 4

Note: All concrete in the end bent above top of beam and below top of slab shall be Class B2. See Barrier Curb Sheet for location of coil inserts in wings.



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DETAILED NOV. 1982  
CHECKED NOV. 1982

Note: This drawing is not to scale. Follow dimensions.

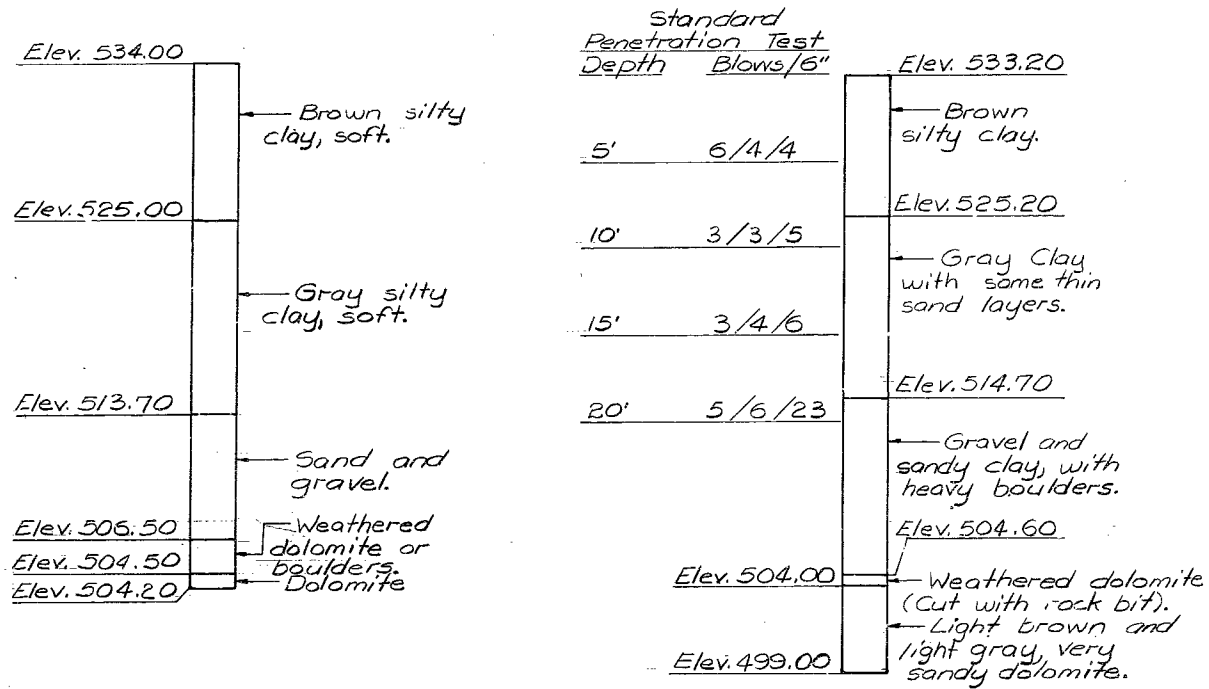
DETAILS OF END BENTS NO. 1 & 4

Sheet No. 3 of 9

CALLAWAY COUNTY

A-4265

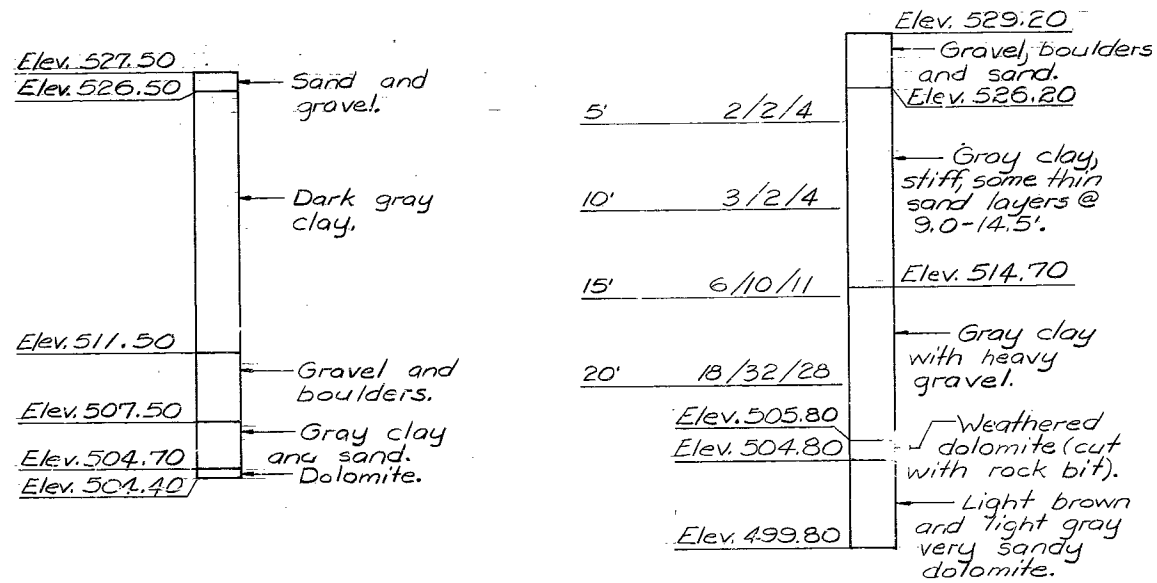
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		88	11	



①

②

(Core)



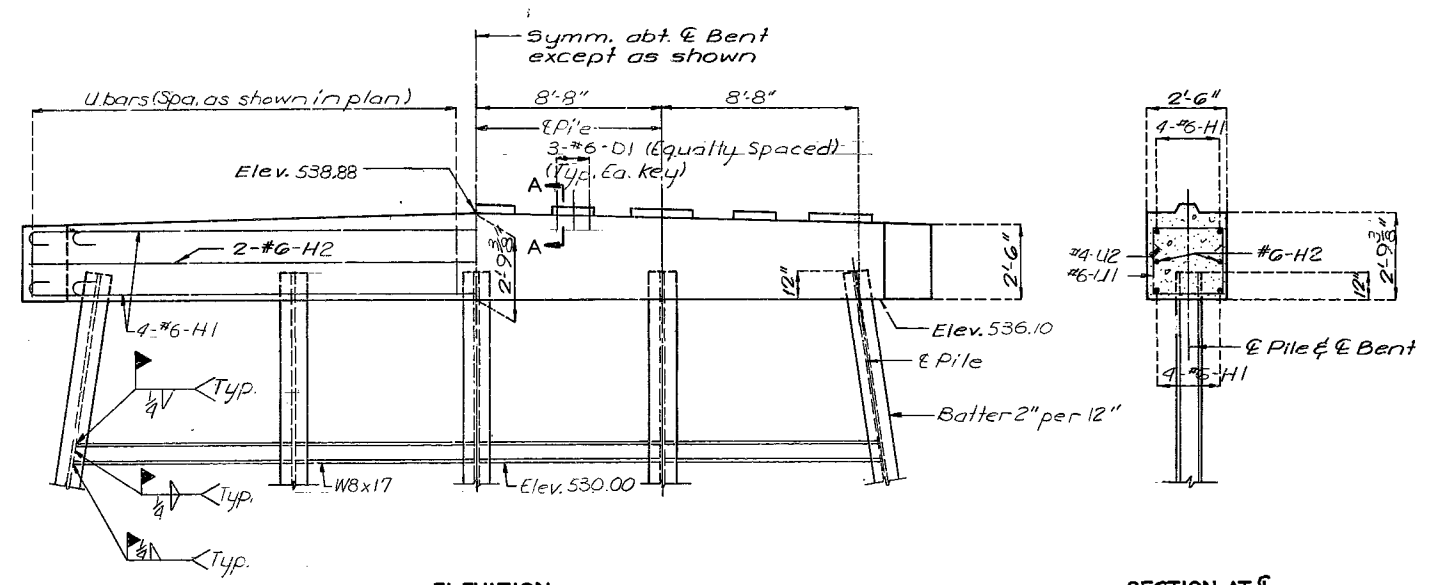
③

④

(Core)

BORING DATA

Note: For location of borings see sheet No. 1.

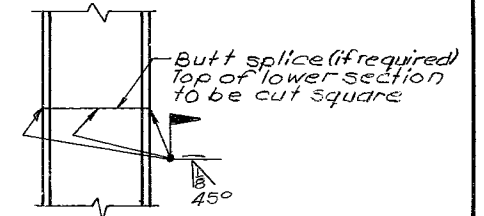


ELEVATION

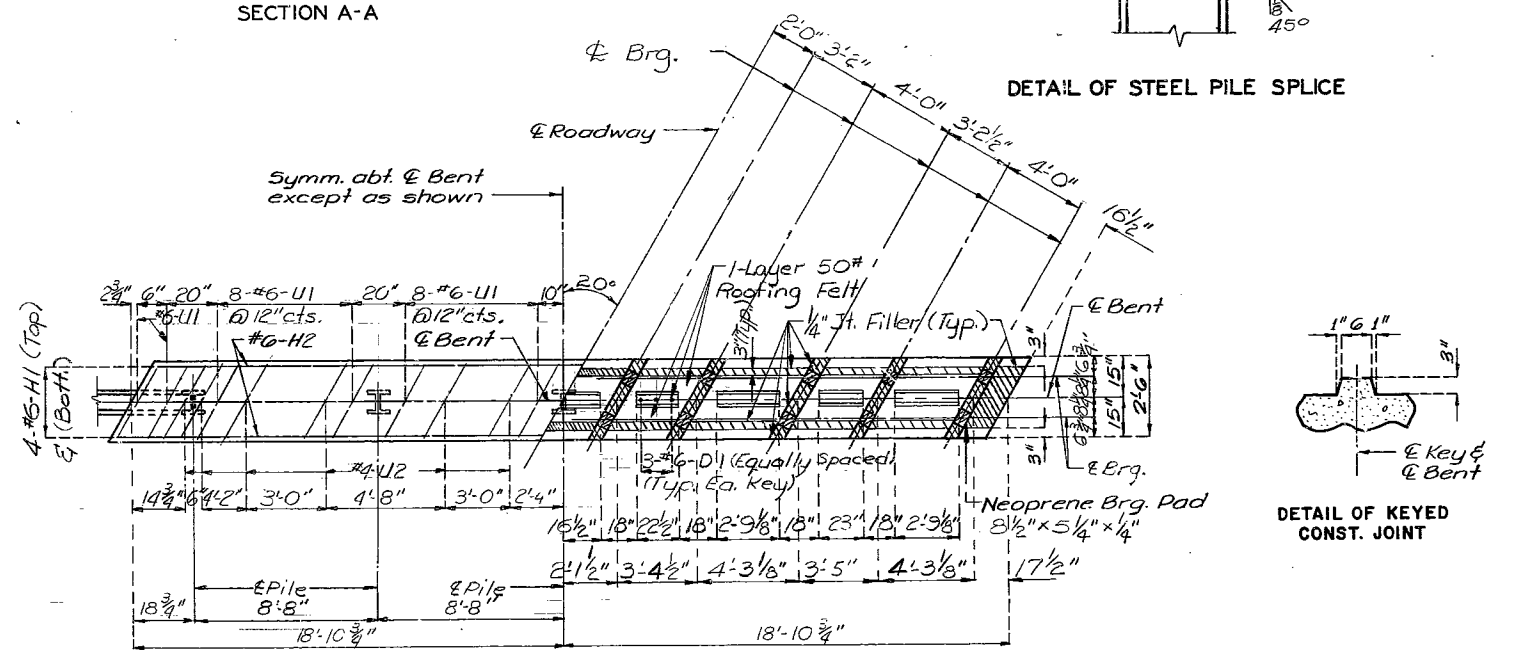
SECTION AT E



SECTION A-A

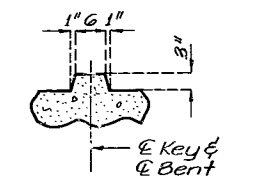


DETAIL OF STEEL PILE SPLICE



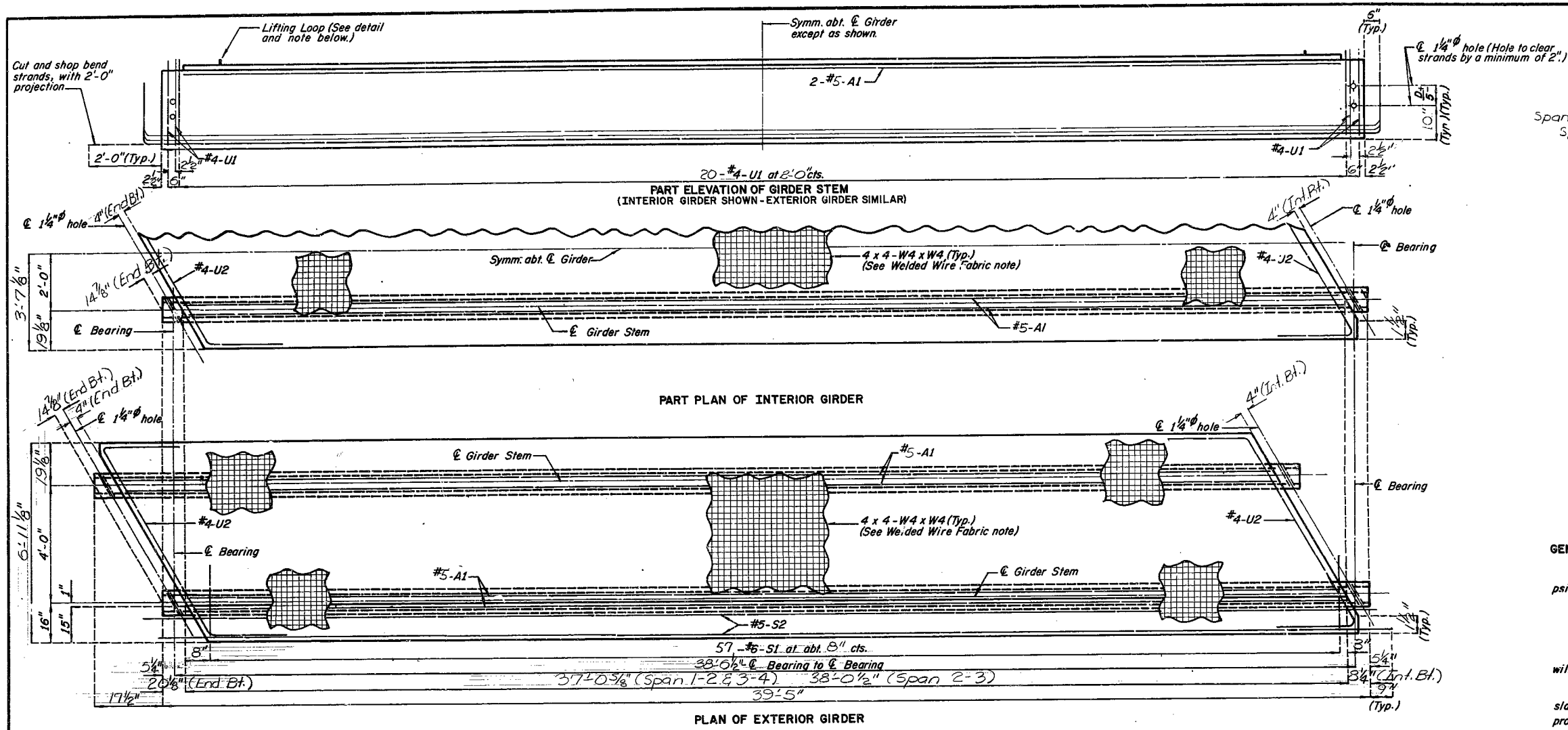
PLAN

DETAILS OF INTERMEDIATE BENTS NO. 2 & 3



DETAIL OF KEYED CONST. JOINT

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		12	12	

BILL OF REINFORCING STEEL - EACH GIRDER			BENDING DIAGRAMS
NO.	SIZE & MARK	LENGTH	
4	5 A1	36'-9"	
4	5 A1	37'-9"	
57	6 S1	2'-6"	
2	5 S2	40'-11"	
48	4 U1	7'-3"	
2	4 U2	12'-1"	

Span (1-2 & 3-4)  
Span (2-3)

**GENERAL NOTES:**

Concrete for prestressed girders shall be Class A1 with  $f'c = 5,000$  psi.

(+) Indicates prestressed strand.

Use 10 strands with an initial prestress force of 289.0 kips.

Girders shall be handled and erected into position in a manner that will not impair the strength of the girder.

The vertical face of the exterior girder that will be in contact with the slab shall be roughened by sandblasting or other approved methods to provide suitable bond between girder and slab.

All exposed edges of concrete shall have  $1/2$ " radius or  $3/8$ " bevel unless otherwise noted.

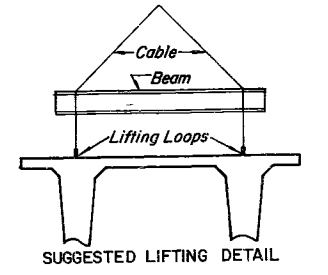
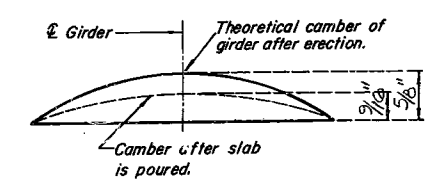
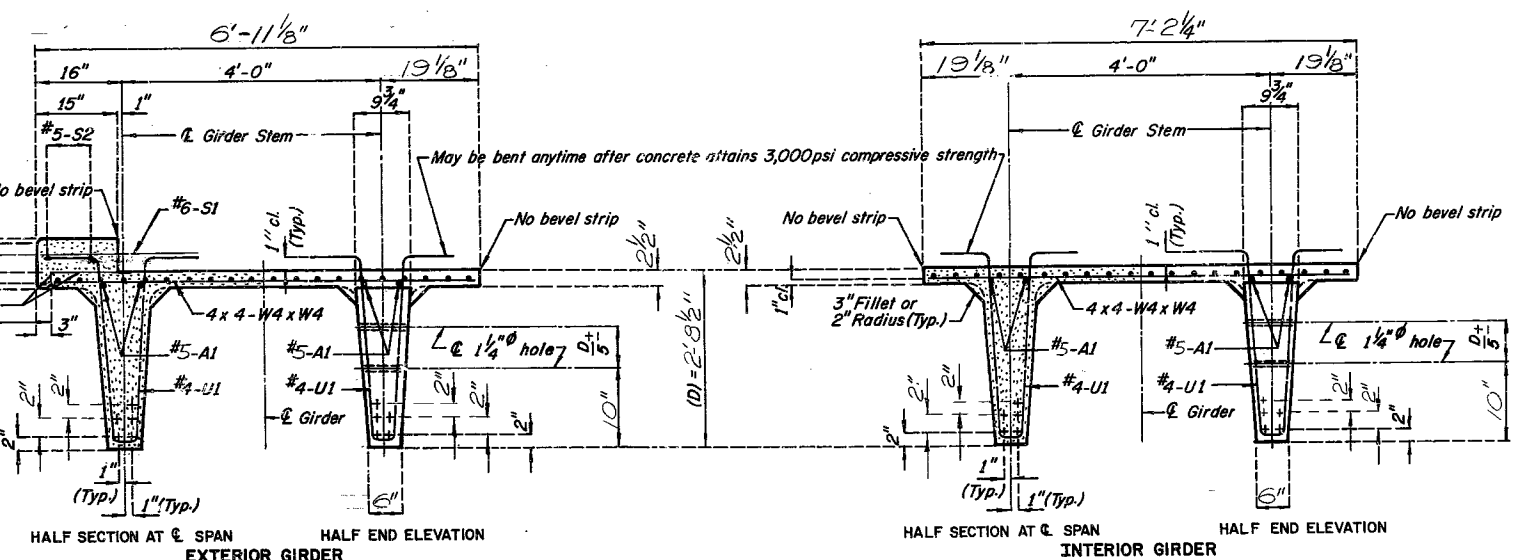
**LIFTING LOOPS:**  
Provide lifting loops in each end of Double-Tee girder. Located near center of stem, 2 feet from each end.

**WELDED WIRE FABRIC:**  
Adequate reinforcing other than the specified welded wire fabric may be used with the approval of the engineer.

Note: See Barrier Curb sheet for location of Coil Inserts for Coil Tie Rods.  
For slab drain details see sheet No. 6.

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SPS 11-BC-2 Revised October 1978 April 1982



Note: Girder Camber @ 0.25 pt. = 0.7125 x 0.5 pt.

DETAILED NOV. 1982  
CHECKED NOV. 1982

Note: This drawing is not to scale. Follow dimensions.

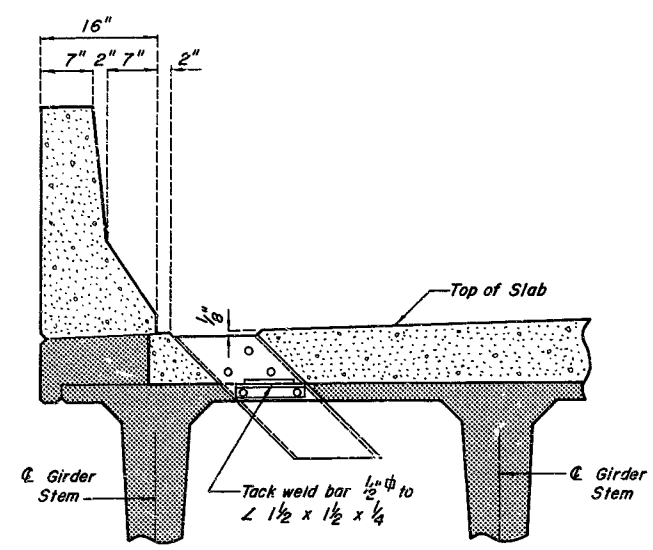
Sheet No. 5 of 9

CALLAWAY

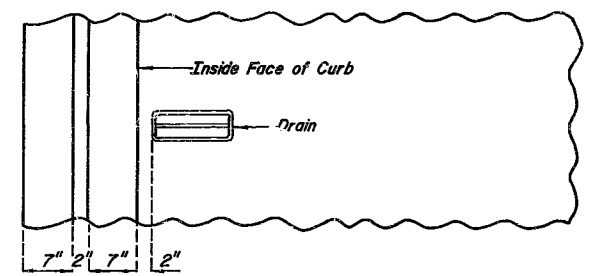
COUNTY

A-4265

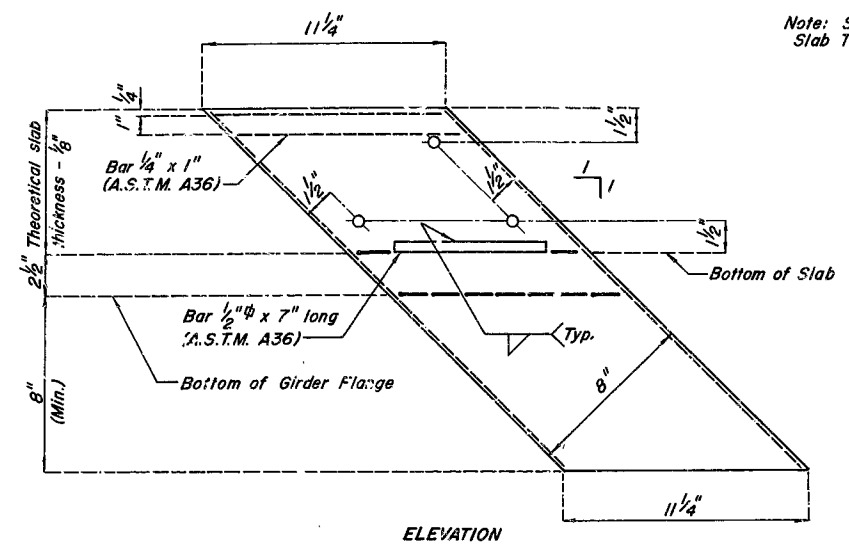
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO		2	13	



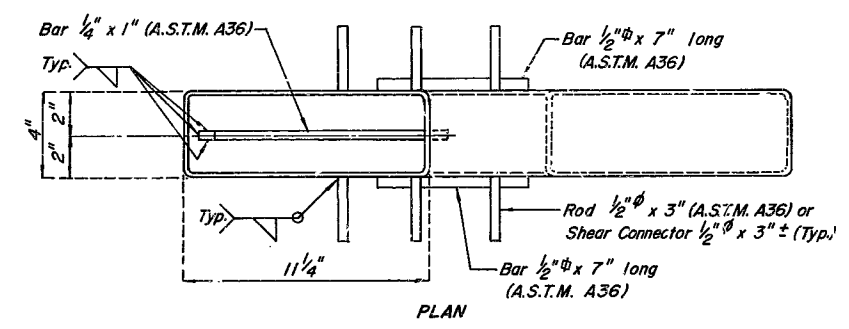
PART ELEVATION OF SLAB



PART PLAN OF SLAB



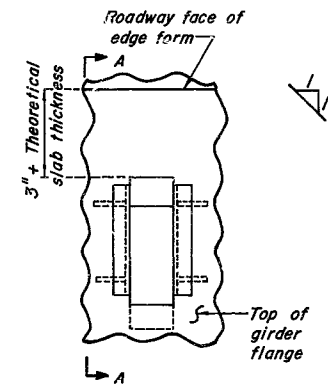
ELEVATION



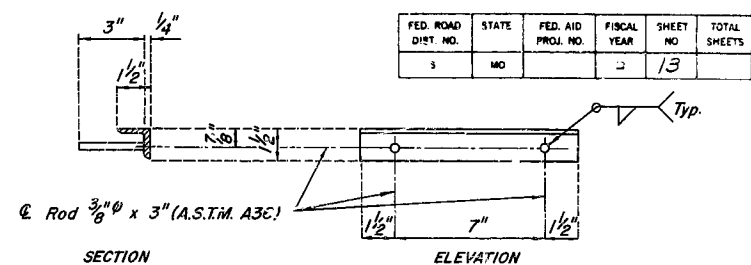
PLAN

SLAB DRAIN DETAILS

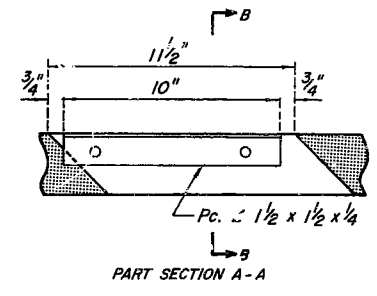
Note: See sheet no. 7 for Theoretical Slab Thickness Diagram.



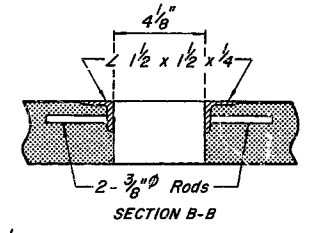
PART PLAN OF DRAIN BLOCKOUT



SECTION ELEVATION  
DETAIL OF ANGLE



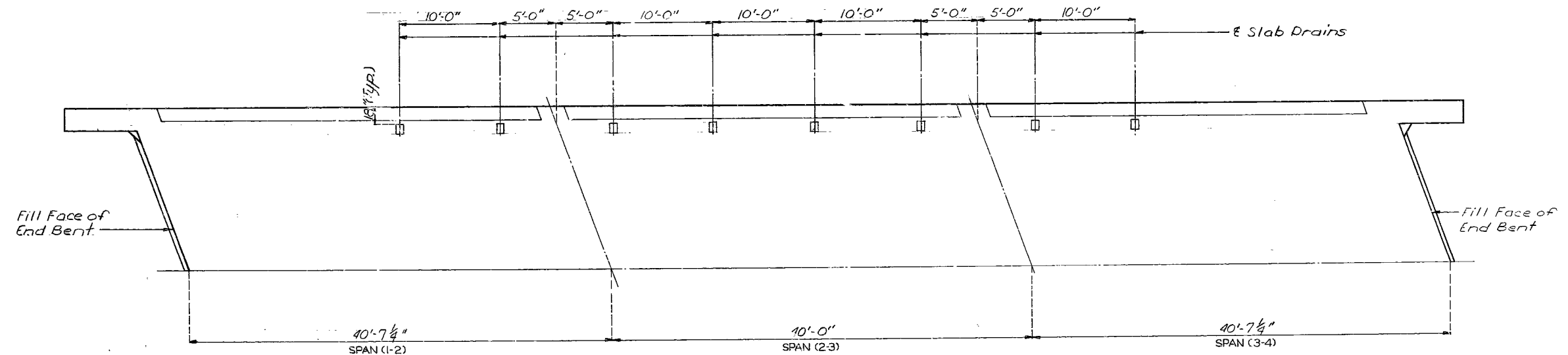
PART SECTION A-A



SECTION B-B

GENERAL NOTES:

- Slab drains may be fabricated of either 1/4" welded sheets of A.S.T.M. A36 steel or from 1/4" structural steel tubing A.S.T.M. A500 or A501.
- Outside dimensions of drains are 8" x 4".
- The drains shall be cast in the concrete with the top of the drains being 1/8" below the finished concrete line.
- Locate drains in the slab by dimensions shown in the part elevation.
- Shift reinforcing steel in field where necessary to clear drains.
- The drains shall be galvanized in accordance with A.S.T.M. A123.
- Shop drawings will not be required for the slab drains.



HALF PLAN OF SLAB SHOWING LOCATION OF SLAB DRAINS

196

SPS S.D. - DBL.TEE  
FEB. 1981  
REVISED  
AUG. 1982

DETAILED NOV. 1982  
CHECKED NOV. 1982

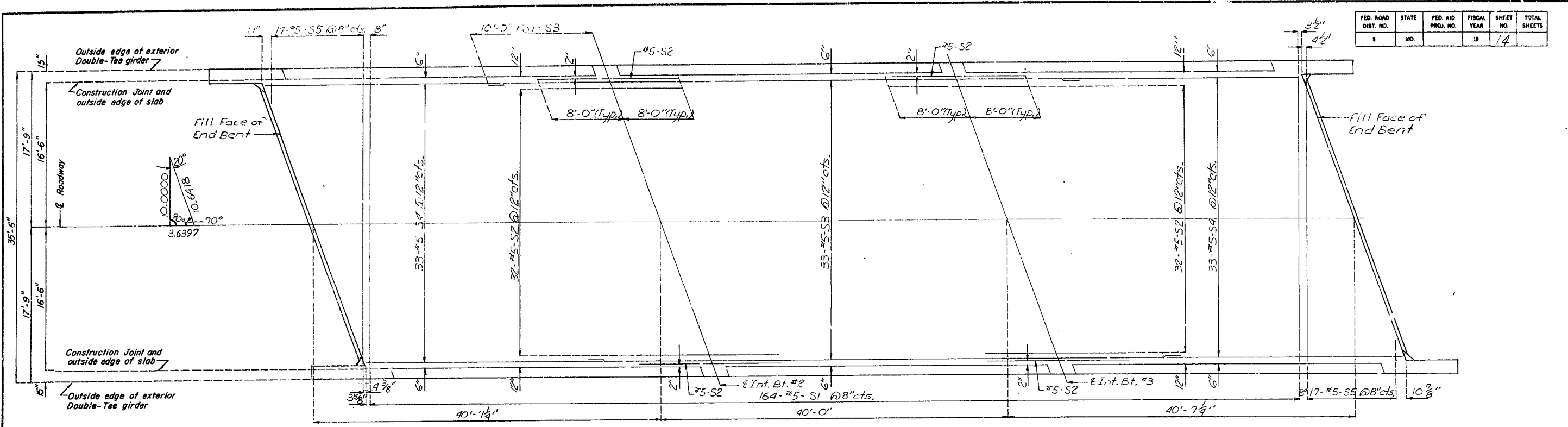
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 6 of 9

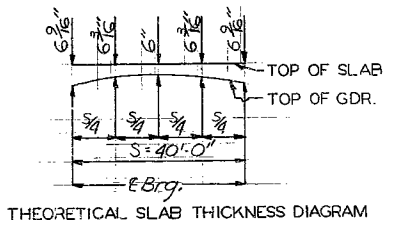
CALLAWAY COUNTY

A-4265

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	14	



PLAN OF SLAB SHOWING REINFORCEMENT



**SLAB HAUNCHING NOTES:**  
 SLAB HAUNCHES TO BE ADJUSTED FOR ANY DIFFERENCE IN GIRDER CAMBER FROM THAT SHOWN IN CAMBER DIAGRAM. CONCRETE 1/4 THE SLAB HAUNCHES IS INCLUDED IN THE ESTIMATED QUANTITIES AS CLASS B2 CONCRETE.

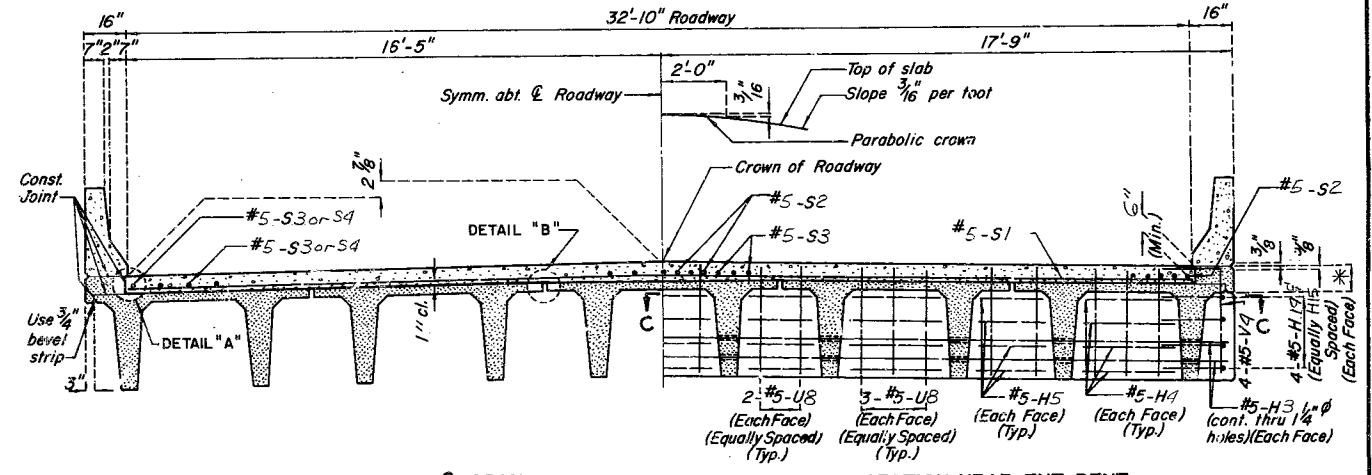
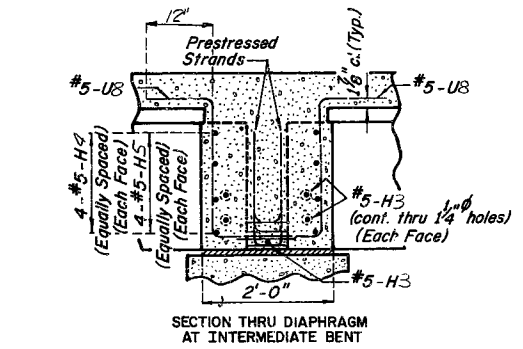
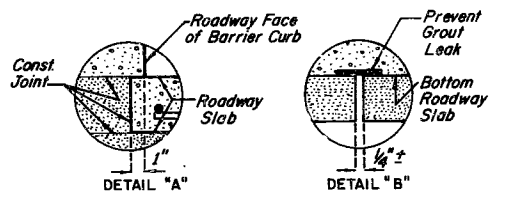
THE SLAB IS TO BE BUILT PARALLEL TO GRADE AND TO A MINIMUM THICKNESS OF 6" .

IN ORDER TO MAINTAIN MINIMUM SLAB THICKNESS IT MAY BE NECESSARY TO RAISE THE GRADE UNIFORMLY THROUGHOUT THE STRUCTURE. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS REQUIRED FOR VARIATION IN HAUNCHING OR NECESSARY GRADE ADJUSTMENT.

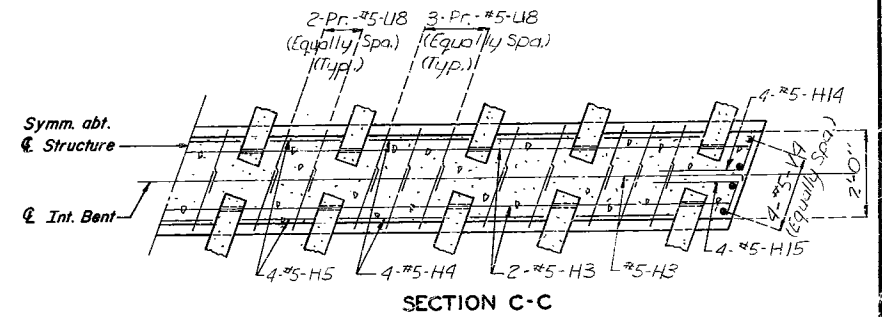
SEE GIRDER SHEET FOR GIRDER CAMBER DIAGRAM.

**SLAB POURING NOTES:**  
 THE CONTRACTOR SHALL FURNISH AN APPROVED RETARDER TO RETARD THE SET OF THE CONCRETE TO 2.5 HOURS AND SHALL POUR AND SATISFACTORILY FINISH THE SLAB POURS AT NOT LESS THAN 25 CUBIC YARDS PER HOUR.

THE DIAPHRAGM OF THE INTERMEDIATE AND END BENTS SHALL BE POURED A MINIMUM OF 30 MINUTES AND MAXIMUM OF 2 HOURS BEFORE THE SLAB IS POURED ACROSS THE DIAPHRAGM AT BENTS.



HALF SECTION NEAR C SPAN HALF SECTION NEAR INT. BENT



SECTION C-C

Note: For details and reinforcement of safety barrier bridge curb not shown see sheet no. 8

Sheet No. 7 of 9.

Note: This drawing is not to scale. Follow dimensions.

DETAILED NOV. 1982  
 CHECKED NOV. 1982

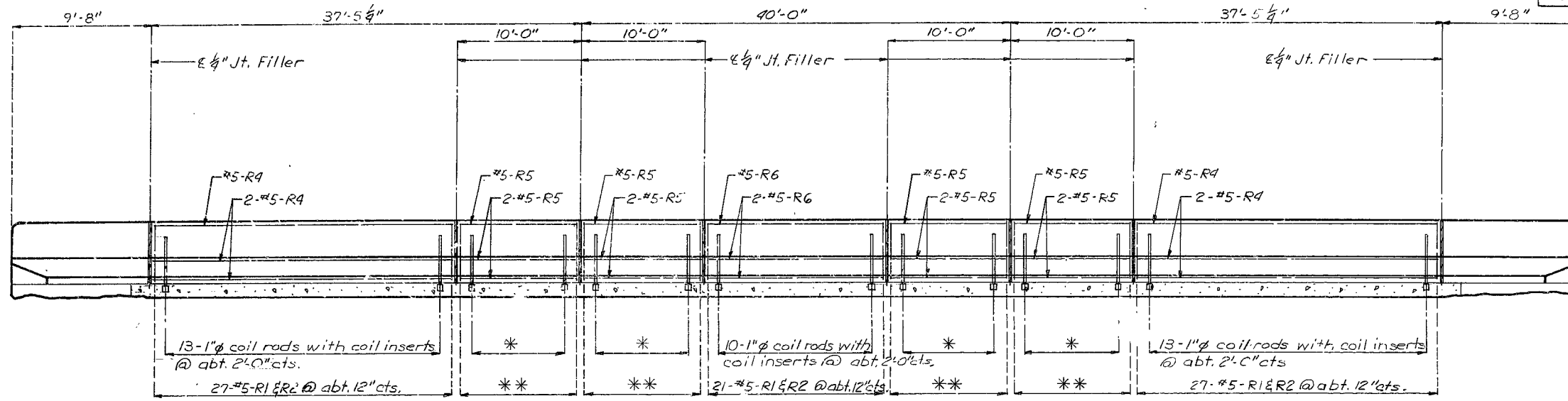
CALLAWAY COUNTY

A-4265

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Revised SEPT. 1982  
 SPS 32-10 (TT)  
 April 1981

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	15	



SECTION NEAR LEFT BARRIER CURB

\* 1" coil rods with coil inserts @ abt. 2'-0" cts.  
 \*\* 11-#5-R1 & R2 @ abt. 12" cts.

Note: Measurement of safety barrier curb is to the nearest linear foot for each structure, measured along the outside top face of the curb from end of wing to end of wing.

GENERAL NOTES:

Coil inserts shall have a concrete ultimate pull-out strength of not less than 40,000 pounds in 5,000 psi concrete and an ultimate tensile strength of not less than 40,000 pounds.

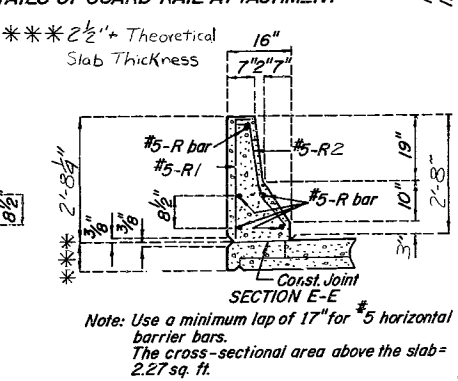
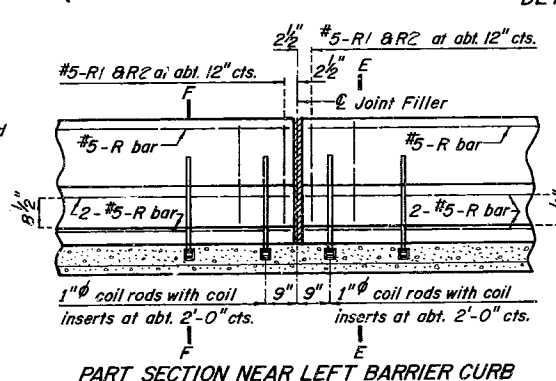
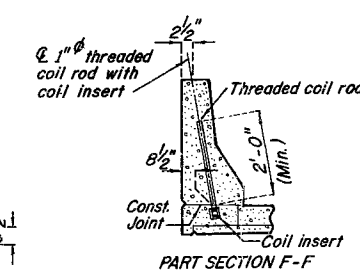
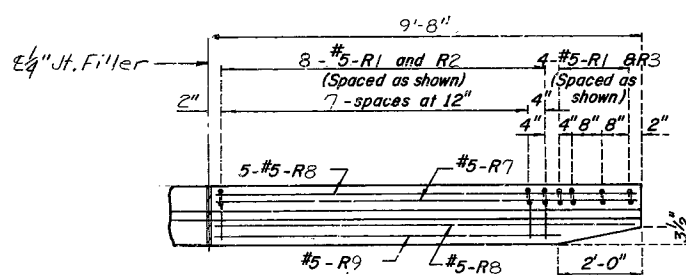
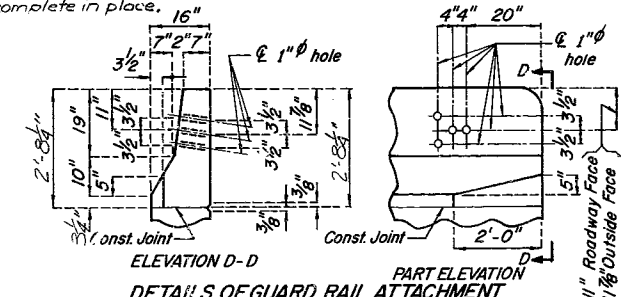
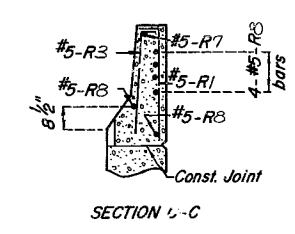
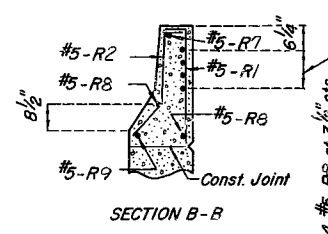
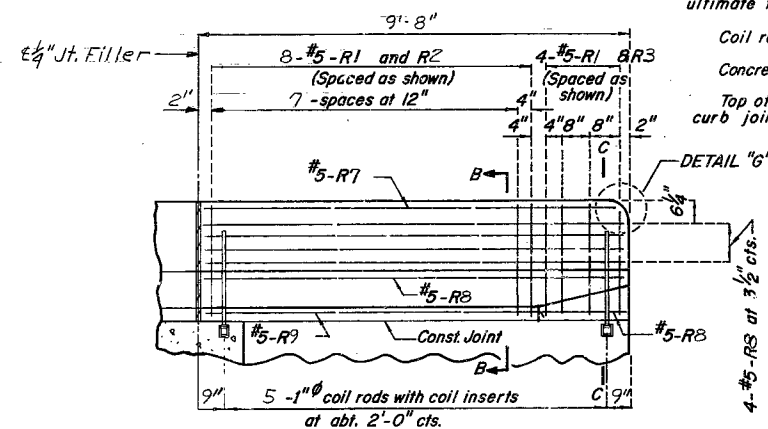
Coil rods shall have an ultimate capacity of 36,000 pounds. Concrete for barrier curbs shall be B1 with  $f_c = 4,000$  psi.

Top of barrier curb shall be parallel to grade with barrier curb joints normal to grade.

All exposed edges of barrier curb shall have 1/2" radius or 3/8" bevel unless otherwise noted.

Payment for furnishing and installing coil inserts and threaded coil rods shall be fully covered by the contract unit price for safety barrier curb.

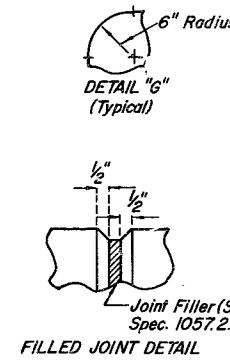
When the barrier curb is bid by linear feet, the contract unit price shall include the cost of all concrete and reinforcement, complete in place.



DETAILS OF BARRIER CURB AT END BENTS

PART SECTION NEAR LEFT BARRIER CURB

Note: Use a minimum lap of 17" for #5 horizontal barrier bars. The cross-sectional area above the slab = 2.27 sq. ft.



FILLED JOINT DETAIL

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 8 of 9

CALLAWAY COUNTY

A-4265

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Revised June 1982  
 TT-SBC (0N)  
 CHECKED NOV. 1982

DETAILED NOV. 1982  
 CHECKED NOV. 1982

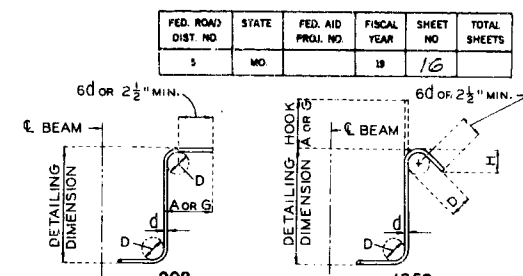


COMPLETE BILL OF REINFORCING STEEL

COMPLETE BILL OF REINFORCING STEEL

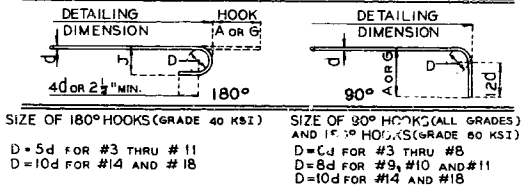
Table with columns: NO. REQD., MARK NO., LOCATION, DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Includes substructure and superstructure items.

Table with columns: NO. REQD., MARK NO., LOCATION, DIMENSIONS (B, C, D, E, F, H, K), NOMINAL LENGTH, ACTUAL LENGTH, WEIGHT. Includes roadway slab and curb items.



STIRRUP HOOK DIMENSIONS table with columns: BAR SIZE, D (IN.), 90° HOOK, 135° HOOK, APPROX. H.

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.

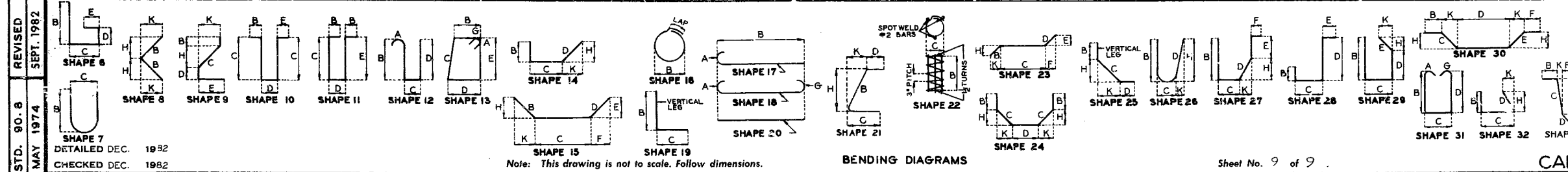


SIZE OF 180° HOOKS (GRADE 40 KSI) AND 135° HOOKS (ALL GRADES) AND 90° HOOKS (GRADE 60 KSI)

END HOOK DIMENSIONS table with columns: BAR SIZE, GRADE 40, GRADE 60, ALL GRADES.

NOTES: ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

\*TWO ADDITIONAL #5-S2 REF. INCLUDED IN BAR BILL FOR TESTING.



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REVISED MAY 1974, SEPT. 1982, CHECKED DEC. 1982

Note: This drawing is not to scale. Follow dimensions.

BENDING DIAGRAMS

Sheet No. 9 of 9

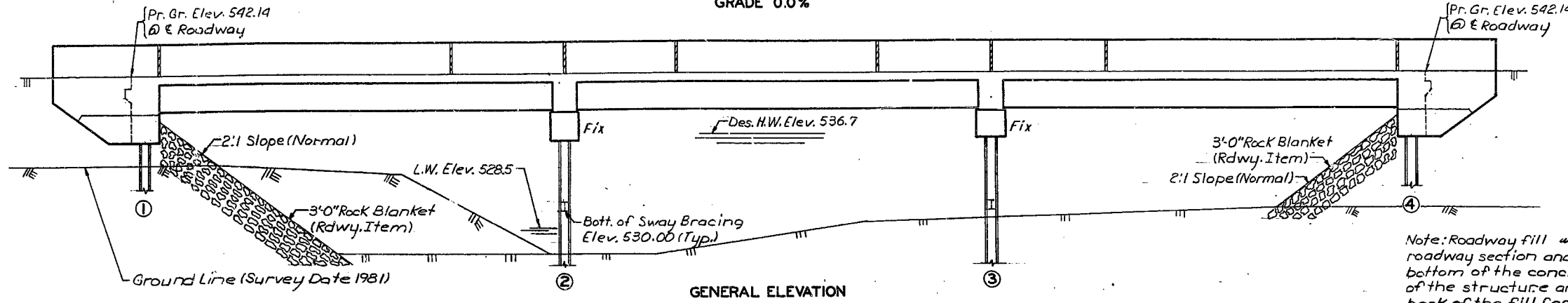
## MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

(40'-40'-40') PRESTRESS CONC. DBL. TEE SPANS  
GRADE 0.0%

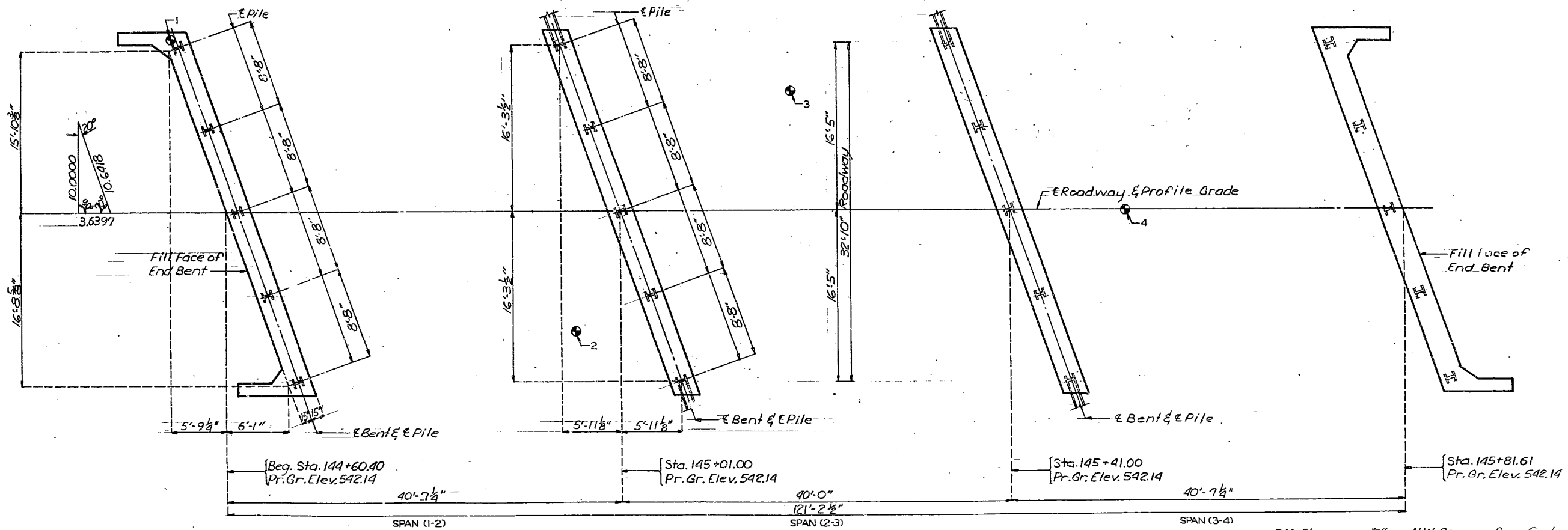
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	MO.		19	8	

SEC./SUR. 25 TWP. 46N RGE. 7W

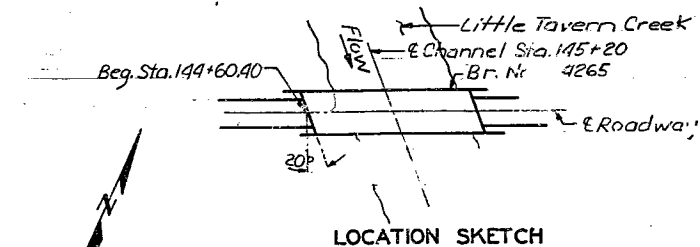
FINAL PLANS



Note: Roadway fill was completed to the final roadway section and up to the elevation of the bottom of the concrete beam within the limits of the structure and for not less than 25' in back of the fill face of the end bents before piles were driven for any bents falling within the embankment section.



Note: For boring data see sheet No. 4  
⊙ Indicates location of boring.



LOCATION SKETCH

HYDROLOGIC DATA	
Drainage Area =	6.5 Sq. Mi.
Design Discharge =	5160 c.f.s.
Design H.W. Elev. =	536.7
Frequency =	50 yrs.
BASIC FLOOD	
Q <sub>100</sub> =	6000 c.f.s.
H.W. Elev. =	537.9

B.M. Elev. "0" on N.W. Corner Barr. Curb.  
Sta. 144+60 Elev. 544.54

### BRIDGE OVER LITTLE TAVERN CREEK

STATE ROAD FROM PORTLAND TO BLUFFTON  
ABOUT 4 MILES NORTHEAST OF PORTLAND

PROJECT NO. STA. 144+60.40

JOB NO. 5-S094-223 RTE. 94

CALLAWAY COUNTY

DATE 7/5/53

STD.
STD. 706.30
A-4265

DESIGNED NOV. 1952  
DETAILED NOV. 1952  
CHECKED NOV. 1952

Note: This drawing is not to scale. Follow dimensions.

Sheet No. 1A of 9

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MO.		18	9	

**GENERAL NOTES:**

Design Specifications: A.A.S.H.T.O.-1977 and Interim Specs. Thru 1980 Load Factor Design

Design Loading:

H20-44

15\* per sq. ft. Future Wearing Surface

Earth 120\* Cu. Ft. Equivalent Fluid Pressure 30\* Cu. Ft.

Superstructure: Simply supported non-composite for Dead Load, Continuous composite for Live Load

Design Unit Stresses:

Class S Concrete (Substructure) f'c = 3000 psi.

Class B1 Concrete (Safety Barrier Curb) f'c = 4000 psi.

Class B2 Concrete (Superstructure except Safety Barrier Curb) f'c = 4000 p.s.i.

Reinforcing Steel (Grade 60) fy = 60,000 p.s.i.

Steel Pile fb = 9,000 p.s.i.

For Pre-stressed Girder Stresses see sheet No. 5  
Bearings 60 durometer neoprene pads.  
No direct payment was made for furnishing, installing, cleaning and painting of bracing at intermediate bents.

All joint filler did meet the requirement of Std. Spec. 1057.2.4.

Minimum clearance to reinforcing steel was 1/2" unless otherwise shown.

The test system for epoxy coated reinforcing as specified in Sec. 710.3.4 of the Standard Specification were not required on this bridge.

Cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, was paid for at the contract unit price for Plain Neoprene Bearing Pads per each.

ITEM	SUBSTR.	SUPERSTR.	TOTAL
Removal of Bridges (N-501) Lump Sum			1 ✓
Structural Steel Piles (10") Lin. Ft. 632 ✓			632 ✓
Class B Concrete Cu. Yd. 38.2 ✓			38.2 ✓
Class B2 Concrete Cu. Yd. 114.8 ✓		114.8 ✓	114.8 ✓
Safety Barrier Curb Lin. Ft. 269 ✓		269 ✓	269 ✓
Plain Neoprene Bearing Pads Ea. 60 ✓		60 ✓	60 ✓
Prestressed Concrete Dbl. Tee Gdn. (40' Span) Ea. 15 ✓		15 ✓	15 ✓
Reinforcing Steel Lb. 2430 ✓		5030 ✓	7460 ✓
Reinforcing Steel (Epoxy Coated) Lb. 14080 ✓		14080 ✓	14080 ✓
Slab Drains Ea. 16 ✓		16 ✓	16 ✓
Pile Point Reinforcement Ea. 20 ✓		20 ✓	20 ✓

Note: All concrete above lower construction joint in end bents was included with superstructure quantities.

All reinforcement in the end bents was included with superstructure quantities.

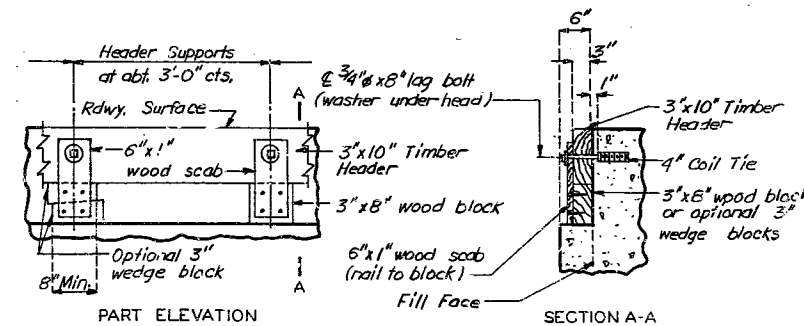
Manufactured pile point reinforcement were used on all piles in this structure. See Special Provisions.

Cost of any required excavation for bridge was included in contract unit price for other items.

BENT NO.	1	2	3	4
Pile Type and size	HP10x42	HP10x42	HP10x42	HP10x42
Number	5	5	5	5
In Place Length Ft.	32-34	31-33	30-33	30
Design Bearing Tons	38	48	48	38
Hammer Energy required Ft.lbs	8600	11200	11200	8600

Minimum energy requirement of hammer based on plan length and design bearing value of piles.

All pile were driven to practical refusal.



Note: Cost of timber headers complete in place was included in contract unit price for concrete.

DETAILS OF TIMBER HEADER AT END BENTS

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