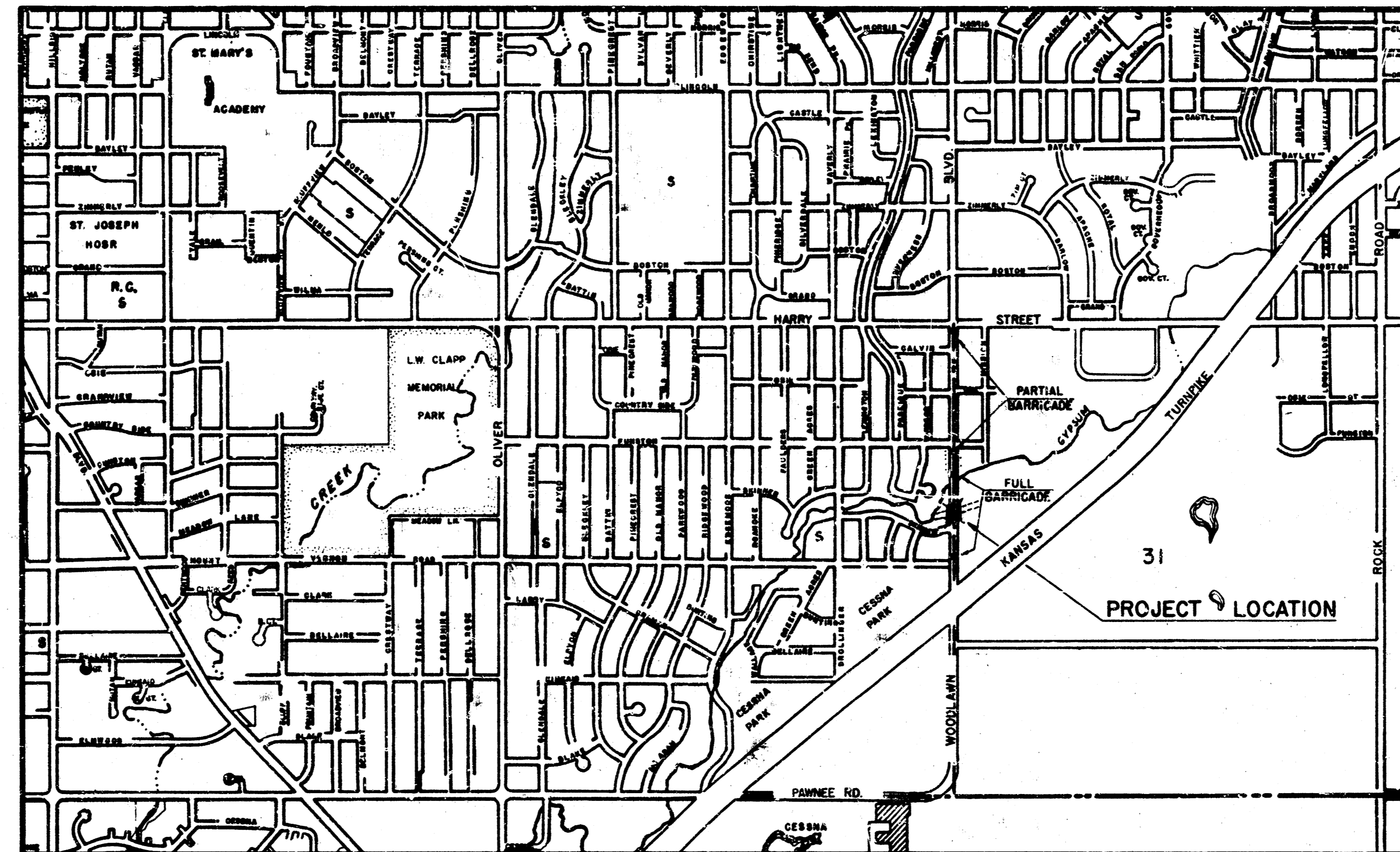


# WOODLAWN BRIDGE

OVER

# GYPSUM CREEK



## CITY OF WICHITA

### DEPARTMENT OF PUBLIC WORKS

R. W. BRUGGEMAN, P.E. DIRECTOR OF PUBLIC WORKS

R. W. LINN, P.E. CITY ENGINEER

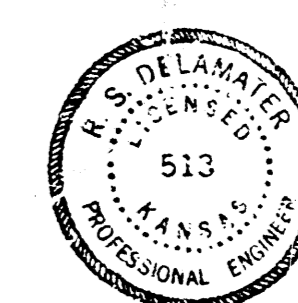
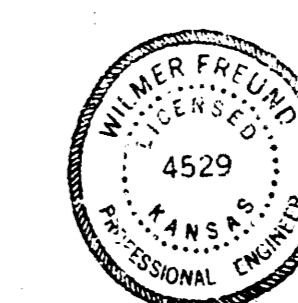
R. S. DELAMATER & ASSOCIATES, WICHITA, CONSULTING ENGINEERS

PROJECT DAKB 571018

SEPTEMBER, 1971

**INDEX OF SHEETS**

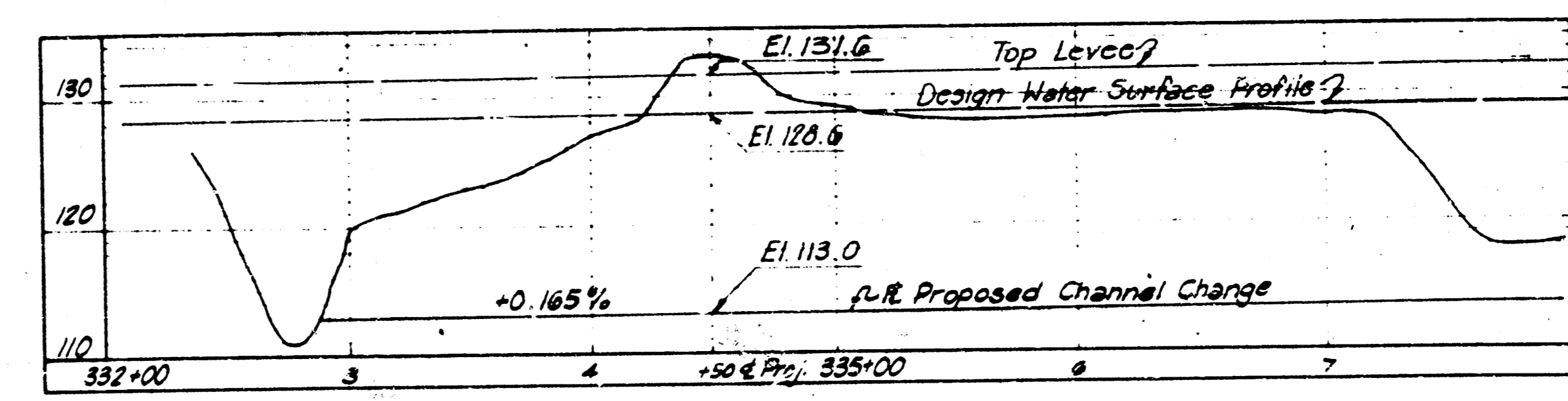
Sheet No.	Description
1.	Title Sheet
2.	Contour Map
3.	Construction Layout
4.	Abutment Details
5.	Pier Details
6.	Prestressed Beam Details
7.	Superstructure Layout
8.	Superstructure Details
9.	Auxiliary Details
10.	Standard Pile Details
11.	Approach Slab Details
12.	Bar Supports, Bridge Excavation, Hondrail Details, and Summary of Quantities



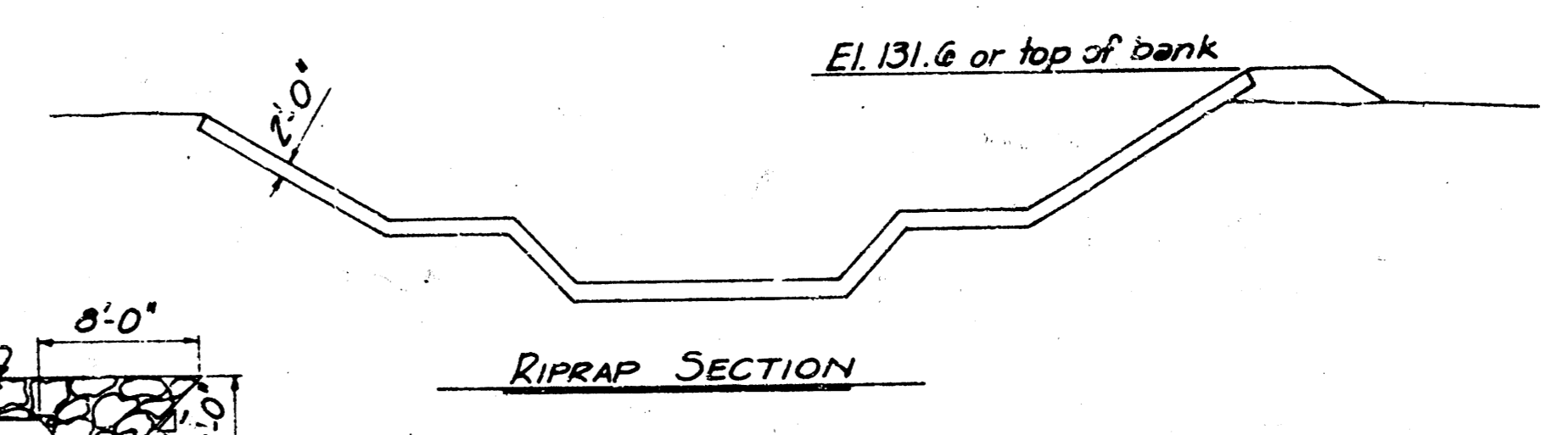
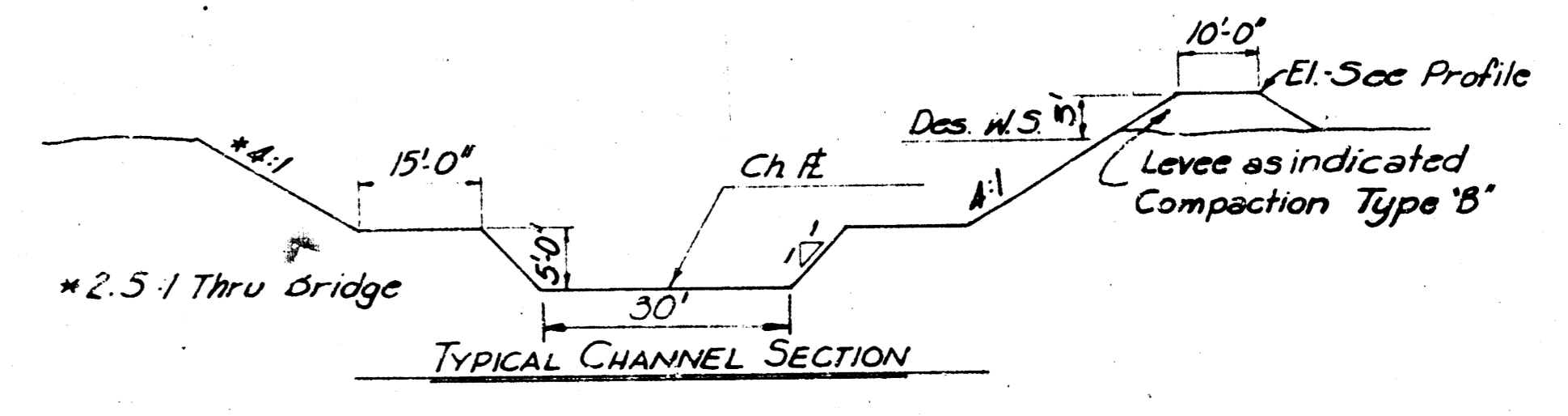
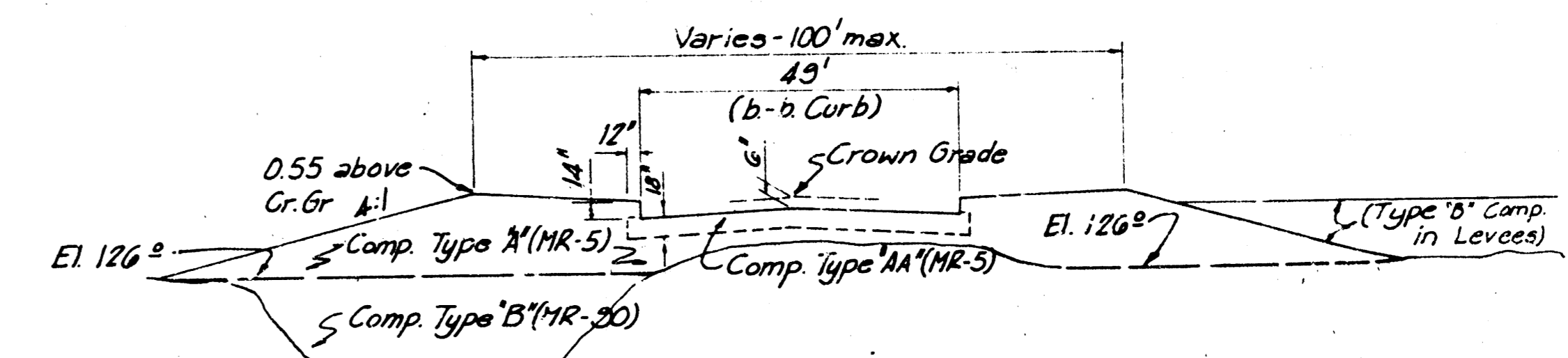
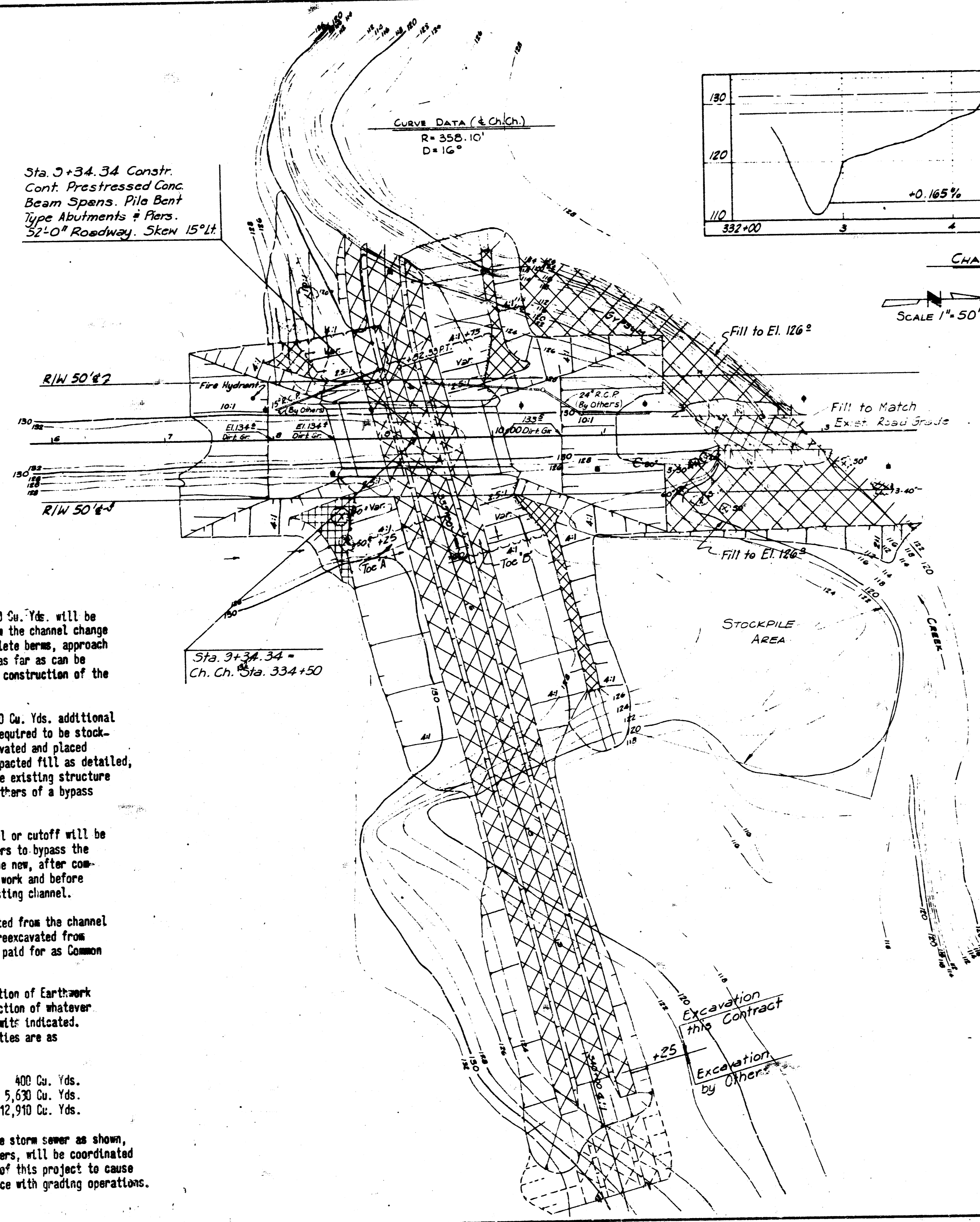
PUB. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	KANSAS		1971	2	12

Sta. 3+34.34 Constr.  
Cont. Prestressed Conc.  
Beam Spans. Pile Bent  
Type Abutments & Piers.  
32'-0" Roadway. Skew 15°H

CURVE DATA (S. Ch. Ch.)  
R = 558.10'  
D = 16°



SCALE 1" = 50'



**NOTES:**

Approximately 10,000 Cu. Yds. will be hauled directly from the channel change and placed to complete berms, approach grades and levees, as far as can be constructed, before construction of the bridge.

Approximately 11,650 Cu. Yds. additional is expected to be required to be stockpiled, to be reexcavated and placed to complete the compacted fill as detailed, after removal of the existing structure and completion by others of a bypass channel.

A connecting channel or cutoff will be constructed by others to bypass the old channel into the new, after completion of the new work and before filling of the existing channel.

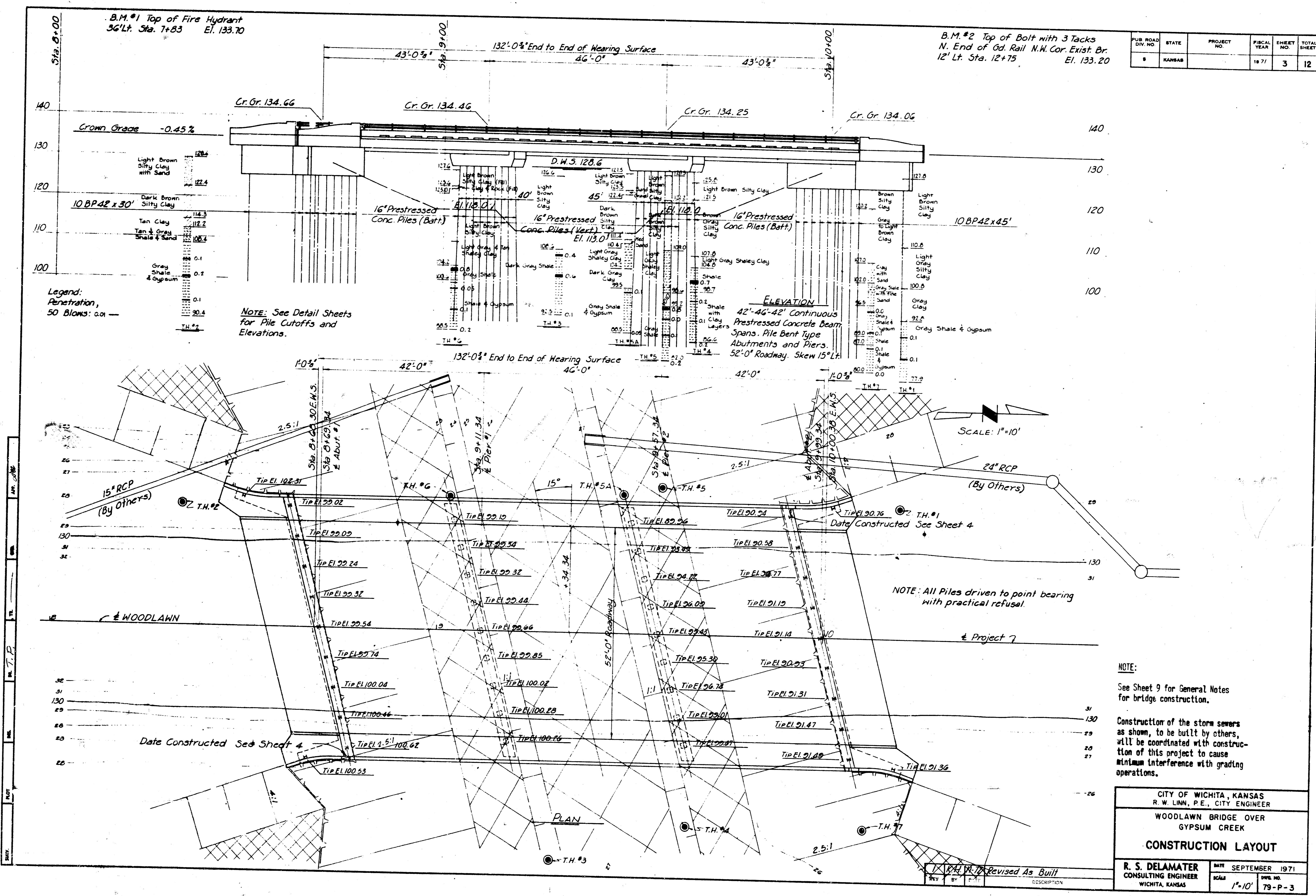
Dirt either excavated from the channel or required to be reexcavated from stock pile will be paid for as Common Excavation.

The Item of Compaction of Earthwork includes all compaction of whatever type within the limits indicated. Approximate quantities are as follows:

Type AA 400 Cu. Yds.  
Type A 5,630 Cu. Yds.  
Type B 12,910 Cu. Yds.

Construction of the storm sewer as shown, to be built by others, will be coordinated with construction of this project to cause minimum interference with grading operations.

2	KH 11-12	Revised As Built
1	8-30-71	
CITY OF WICHITA, KANSAS R. W. LINN, P.E., CITY ENGINEER WOODLAWN BRIDGE OVER GYPSUM CREEK CONTOUR MAP		
R. S. DELAMATER CONSULTING ENGINEER WICHITA, KANSAS	DATE SEPTEMBER 1971	SHEET NO. 79-P-2



PUB. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	KANSAS		1971	3	12

B.M. #1 Top of Fire Hydrant  
36' Lt. Sta. 7+83 El. 133.70

B.M. #2 Top of Bolt with 3 Tacks  
N. End of Old Rail N.W. Cor. Exist. Br.  
12' Lt. Sta. 12+75 El. 133.20

Legend:  
Penetration,  
50 Blows: 0.01 —

NOTE: See Detail Sheets  
for Pile Cutoffs and  
Elevations.

ELEVATION  
42'-46'-42" Continuous  
Prestressed Concrete Beam  
Spans. Pile Bent Type  
Abutments and Piers.  
52'-0" Roadway, Skew 15° Lt.

SCALE: 1"=10'

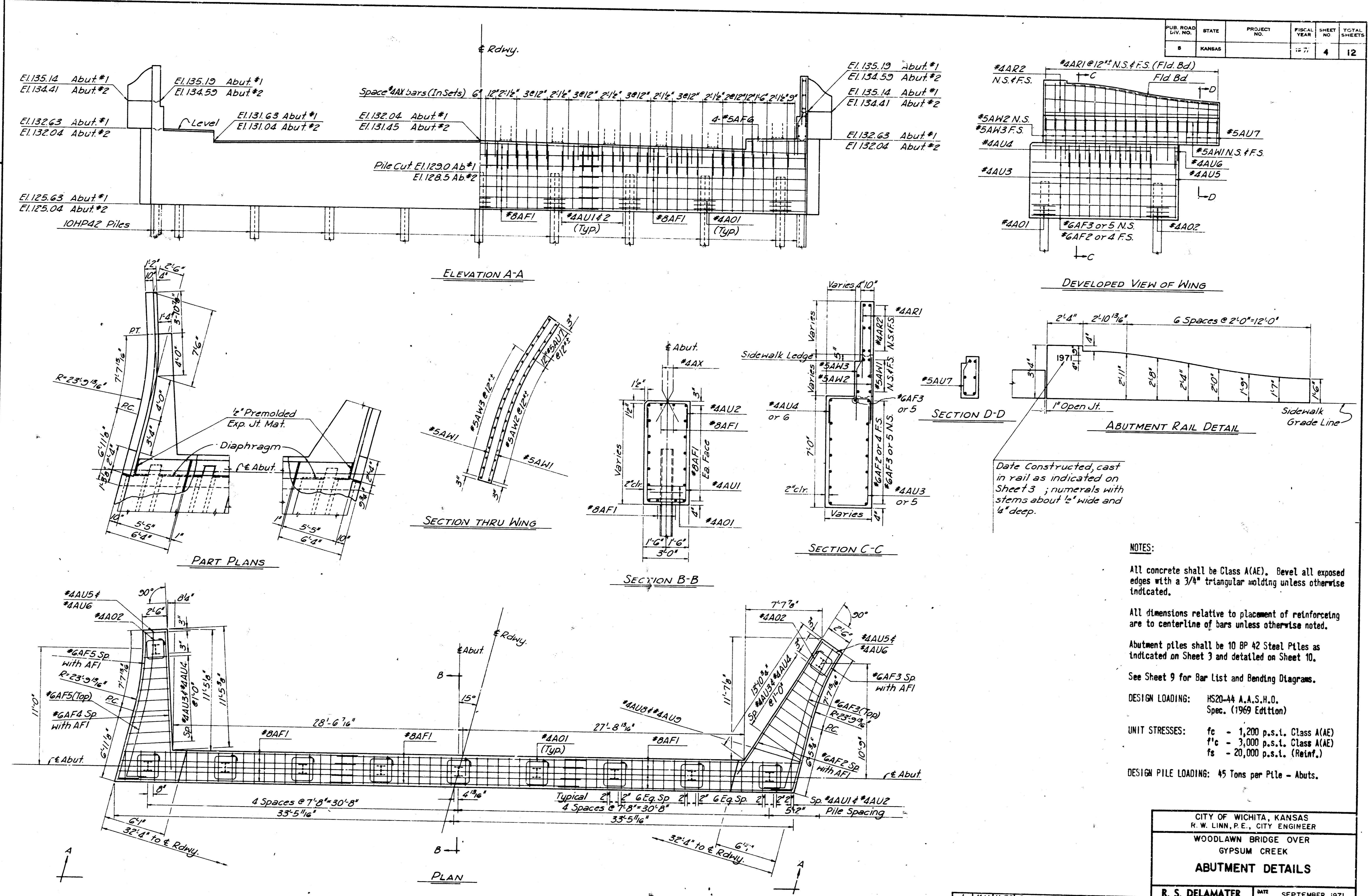
NOTE: All Piles driven to point bearing  
with practical refusal.

NOTE:  
See Sheet 9 for General Notes  
for bridge construction.

Construction of the storm sewers  
as shown, to be built by others,  
will be coordinated with construction  
of this project to cause  
minimum interference with grading  
operations.

CITY OF WICHITA, KANSAS R. W. LINN, P.E., CITY ENGINEER	
WOODLAWN BRIDGE OVER GYPSUM CREEK	
CONSTRUCTION LAYOUT	
R. S. DELAMATER CONSULTING ENGINEER WICHITA, KANSAS	DATE: SEPTEMBER 1971 SCALE: 1"=10' 79-P-3

PUB. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
B	KANSAS		1977	4	12



Date Constructed, cast in rail as indicated on Sheet 3; numerals with stems about 1/2" wide and 1/4" deep.

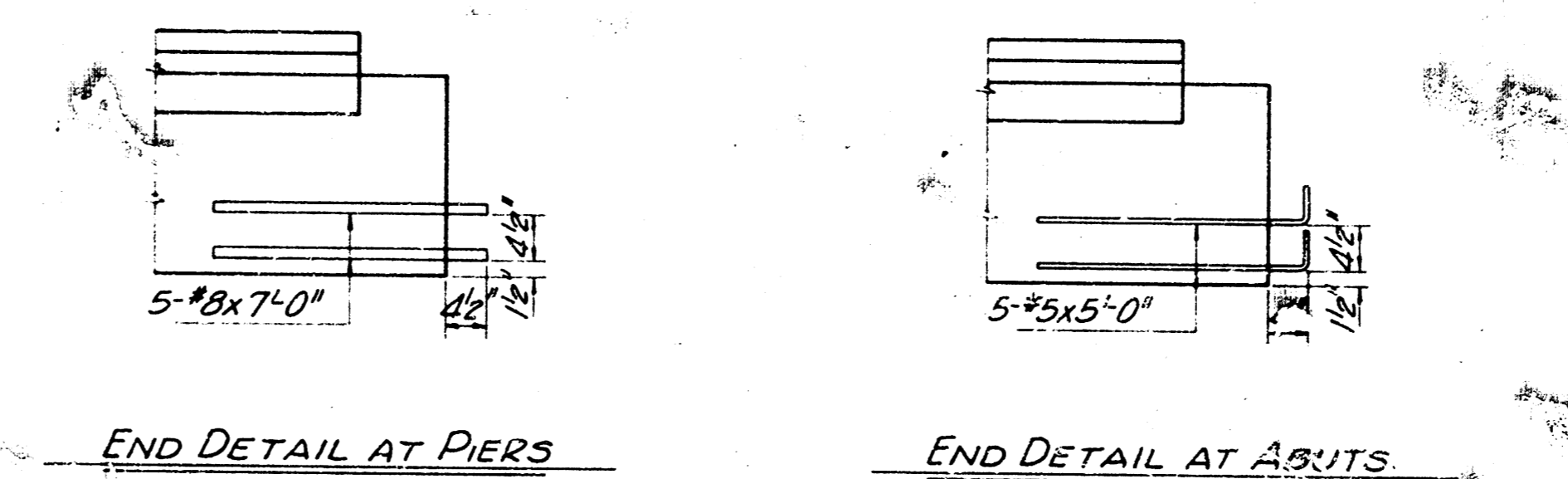
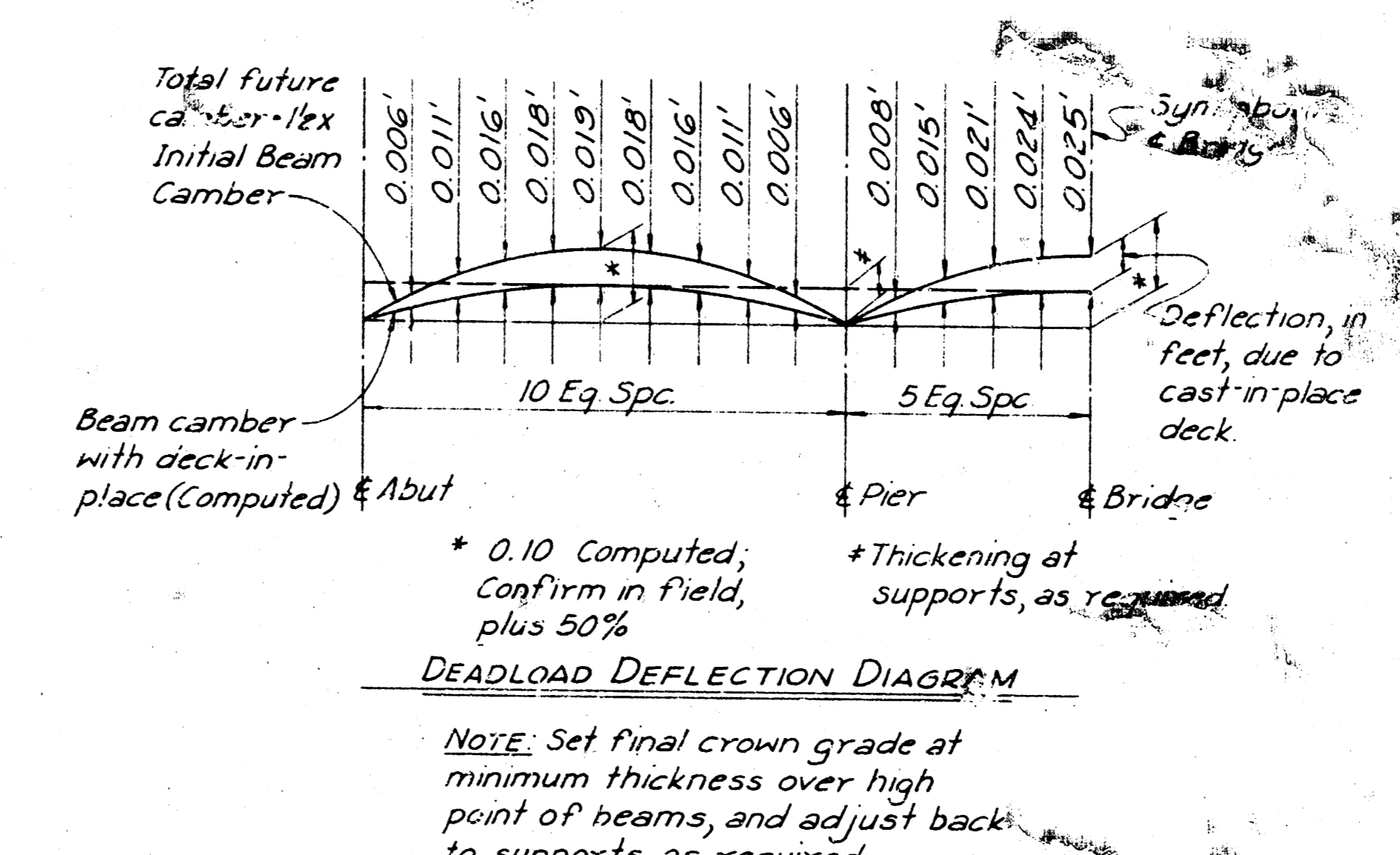
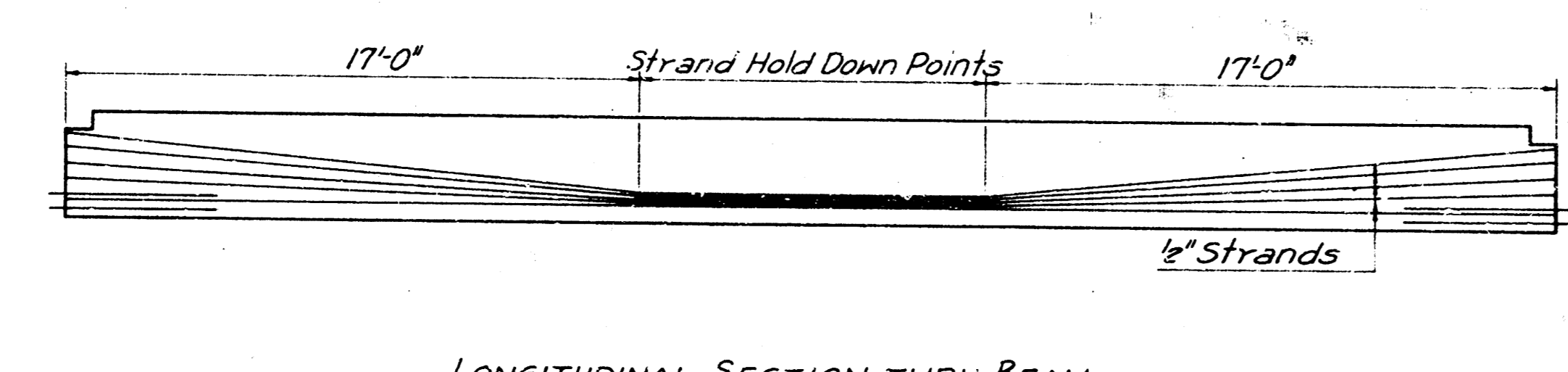
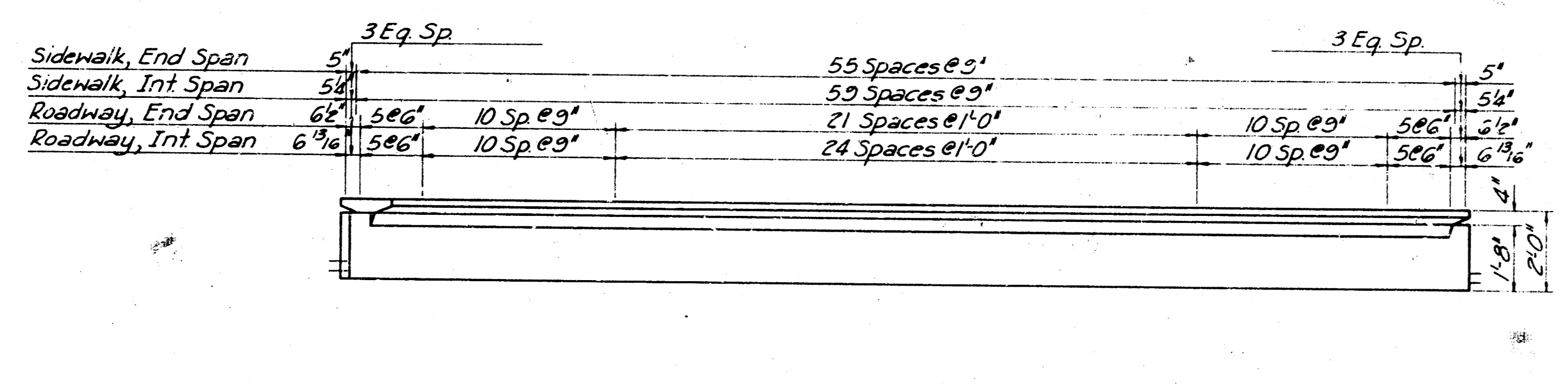
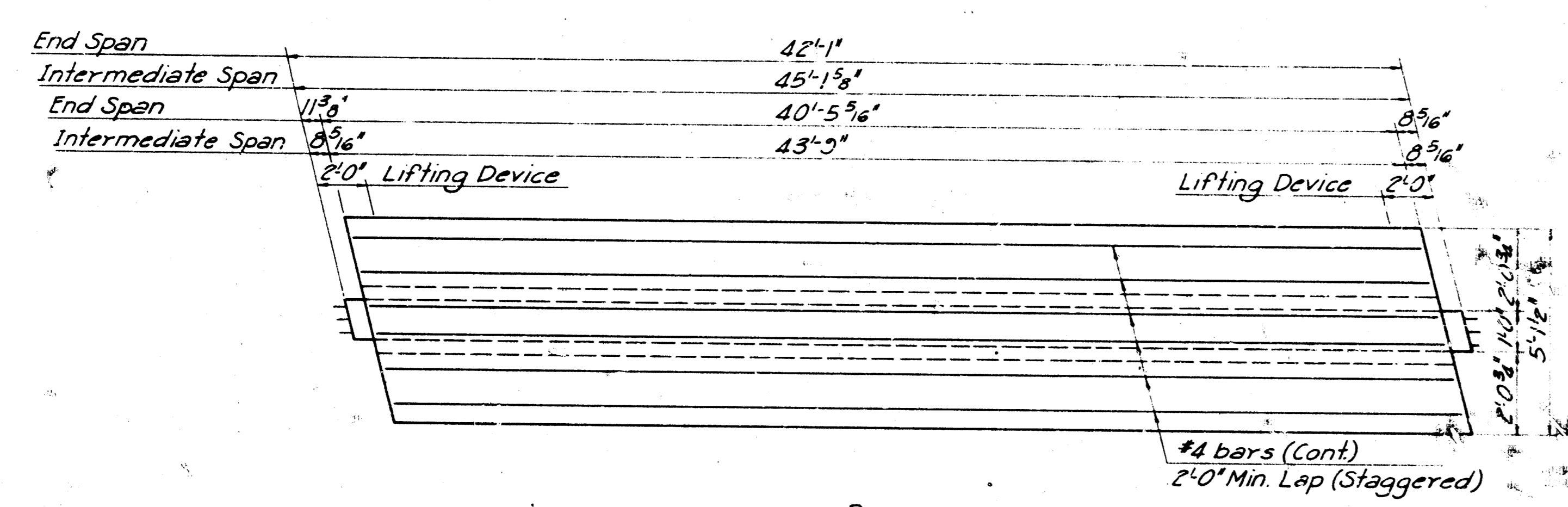
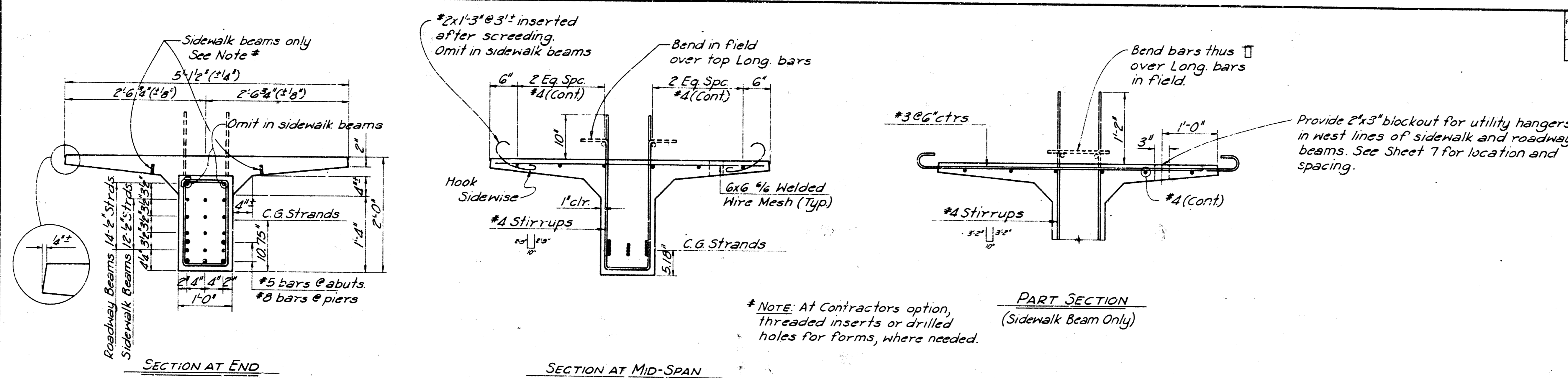
- NOTES:**
- All concrete shall be Class A(AE). Bevel all exposed edges with a 3/4" triangular molding unless otherwise indicated.
  - All dimensions relative to placement of reinforcing are to centerline of bars unless otherwise noted.
  - Abutment piles shall be 10 BP 42 Steel Piles as indicated on Sheet 3 and detailed on Sheet 10.
  - See Sheet 9 for Bar List and Bending Diagrams.
  - DESIGN LOADING: HS20-44 A.A.S.H.O. Spec. (1969 Edition)
  - UNIT STRESSES:
    - fc - 1,200 p.s.i. Class A(AE)
    - f'c - 3,000 p.s.i. Class A(AE)
    - fs - 20,000 p.s.i. (Reinf.)
  - DESIGN PILE LOADING: 45 Tons per Pile - Abuts.

CITY OF WICHITA, KANSAS R. W. LINN, P.E., CITY ENGINEER	
WOODLAWN BRIDGE OVER GYPSUM CREEK	
<b>ABUTMENT DETAILS</b>	
R. S. DELAMATER CONSULTING ENGINEER WICHITA, KANSAS	DATE: SEPTEMBER 1971 SCALE: _____ DWG. NO.: 79-P-4

1 K.H.VI-72 Revised As Built  
REV BY DATE



PUB. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	KANSAS		1971	6	12



DESIGN: HS20-44 A.A.S.H.O. Spec. (1969 Edition)

CONCRETE: f'c - 6,000 p.s.i. at 28 days  
 f'ct - 4,800 p.s.i. (Minimum Release Strength)

PRESTRESSING STEEL: 3/8" diameter 7-wire high tensile type, uncoated, stress relieved strands having the following properties:  
 Minimum Ultimate Strength = 268,000 p.s.i.  
 Initial Stress - 70% Ult. = 187,600 p.s.i.  
 Initial Tension per strand = 28,910 lbs.

STEEL PLACEMENT: All dimensions shown relative to placement of reinforcing steel are to centerline of bars or strands unless otherwise noted.

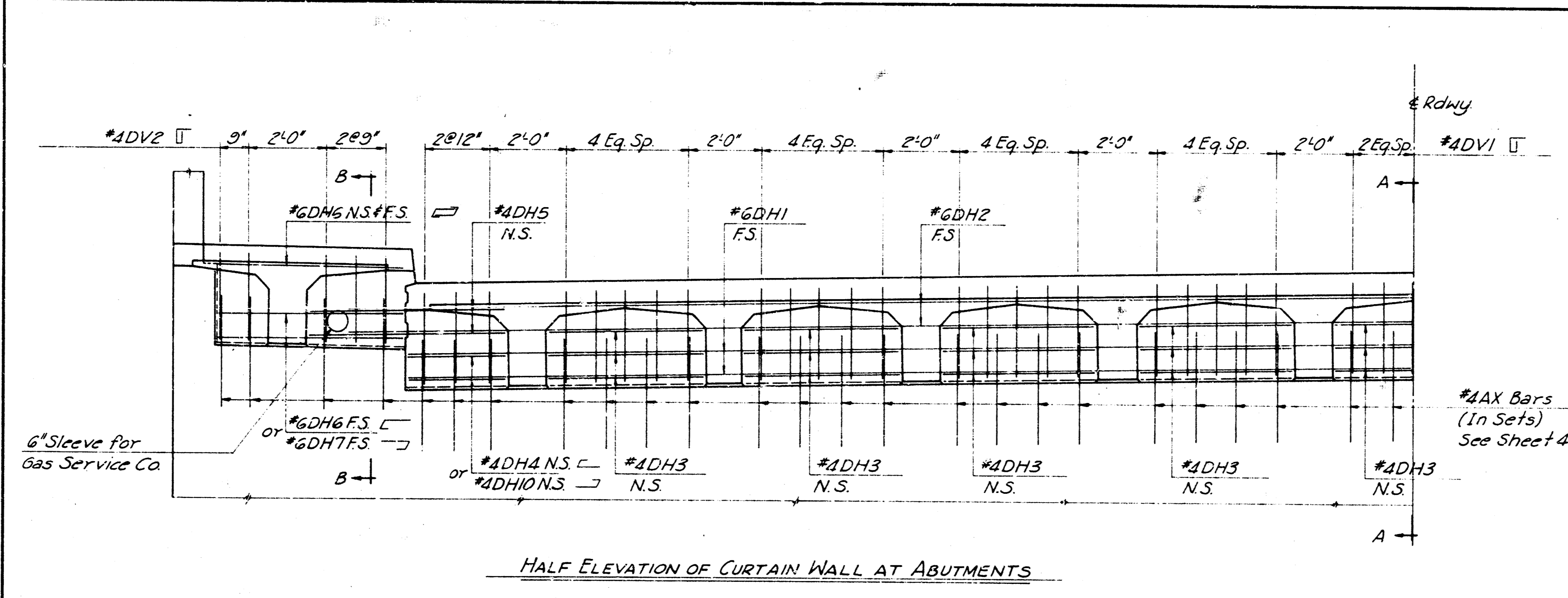
HANDLING: Precast beams shall at all times be handled and transported in an upright position and points of support shall be approximately the same during transportation and storage as when the beam is in its final position.

See Sheet 7 for Beam Erection Notes.

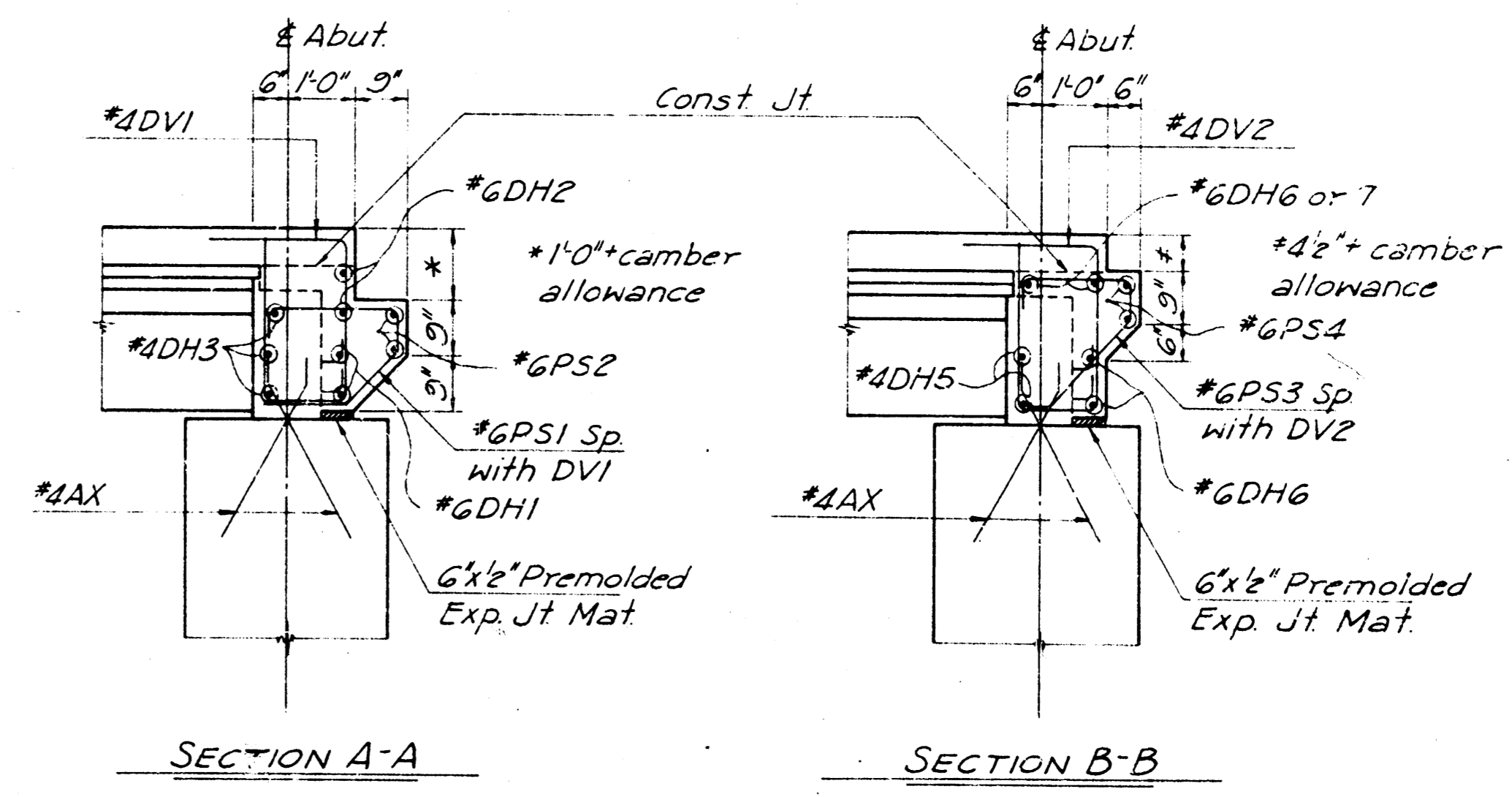
K.H. 11-72 Revised As Built	
REV	DATE
CITY OF WICHITA, KANSAS R. W. LINN, P.E., CITY ENGINEER	
WOODLAWN BRIDGE OVER GYPSUM CREEK	
PRESTRESSED BEAM DETAILS	
R. S. DELAMATER CONSULTING ENGINEER WICHITA, KANSAS	DATE SEPTEMBER 1971 SCALE DWG. NO. 79-P-6



FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	KANSAS		1977	6	12

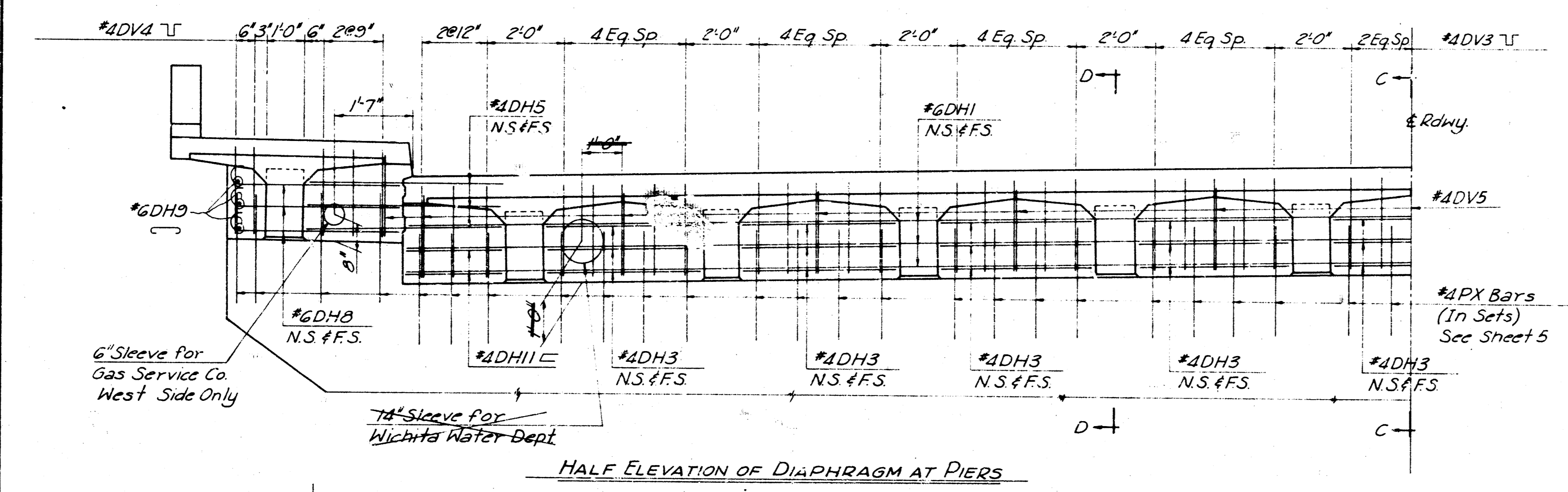


HALF ELEVATION OF CURTAIN WALL AT ABUTMENTS

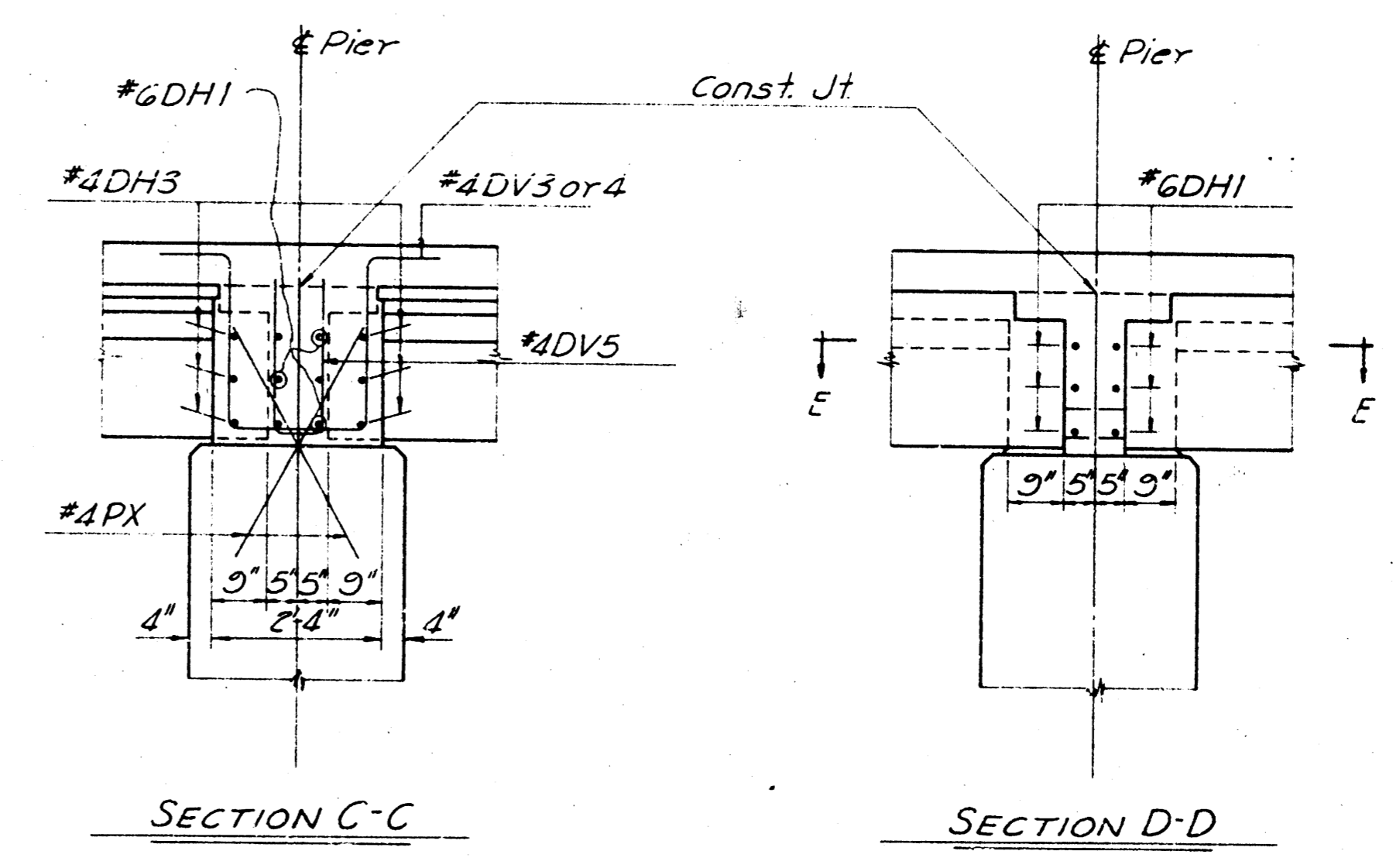


SECTION A-A

SECTION B-B

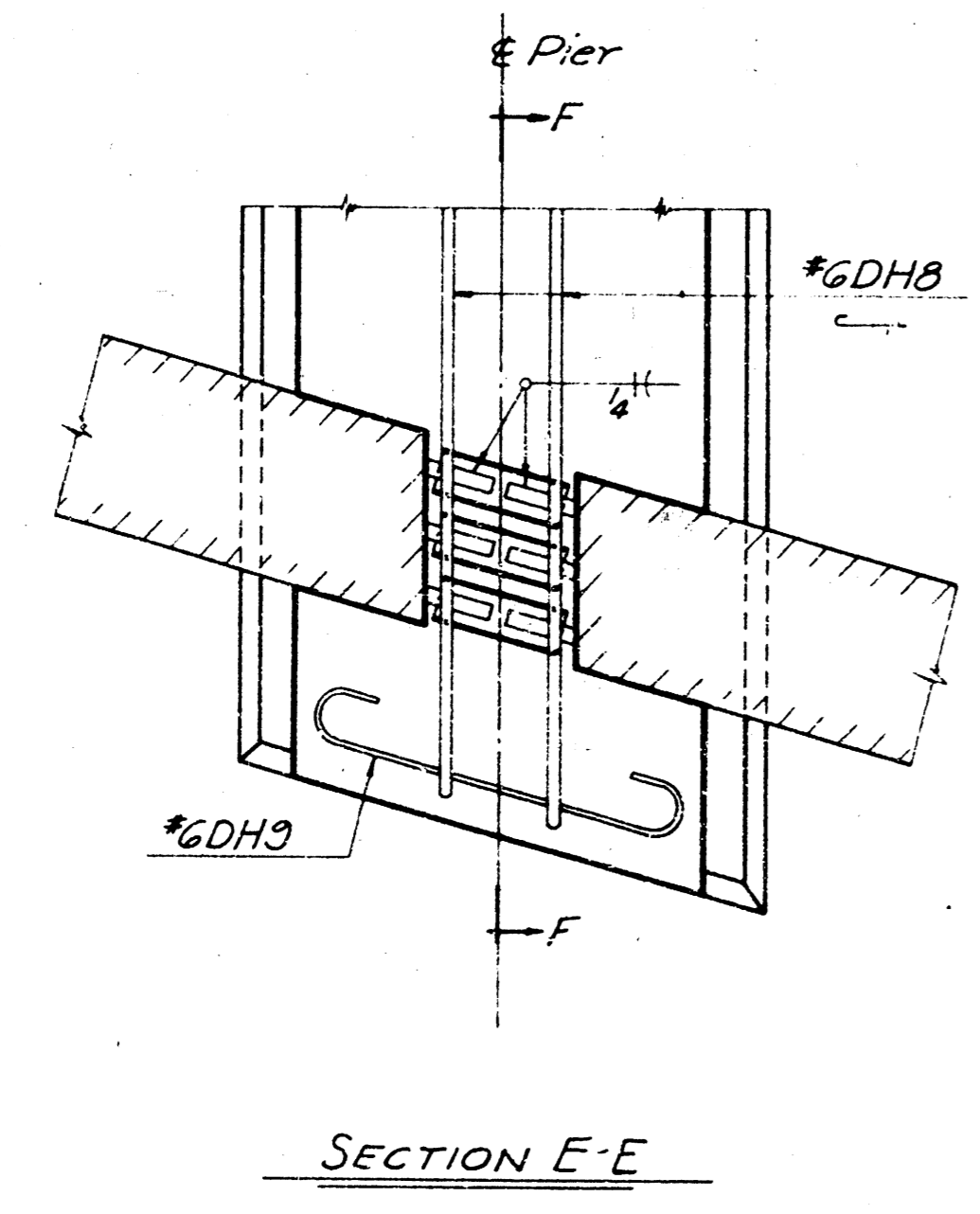


HALF ELEVATION OF DIAPHRAGM AT PIERS

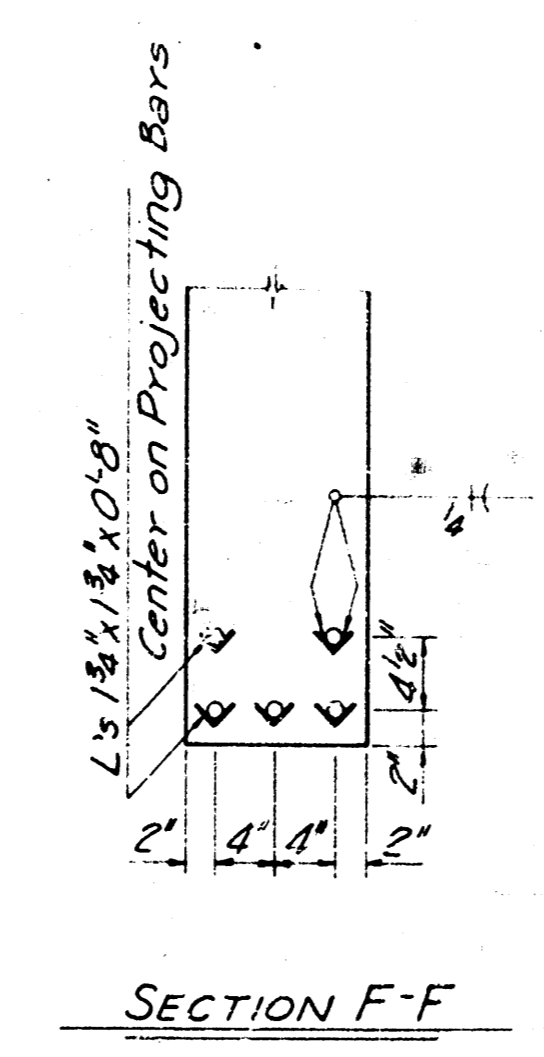


SECTION C-C

SECTION D-D



SECTION E-E



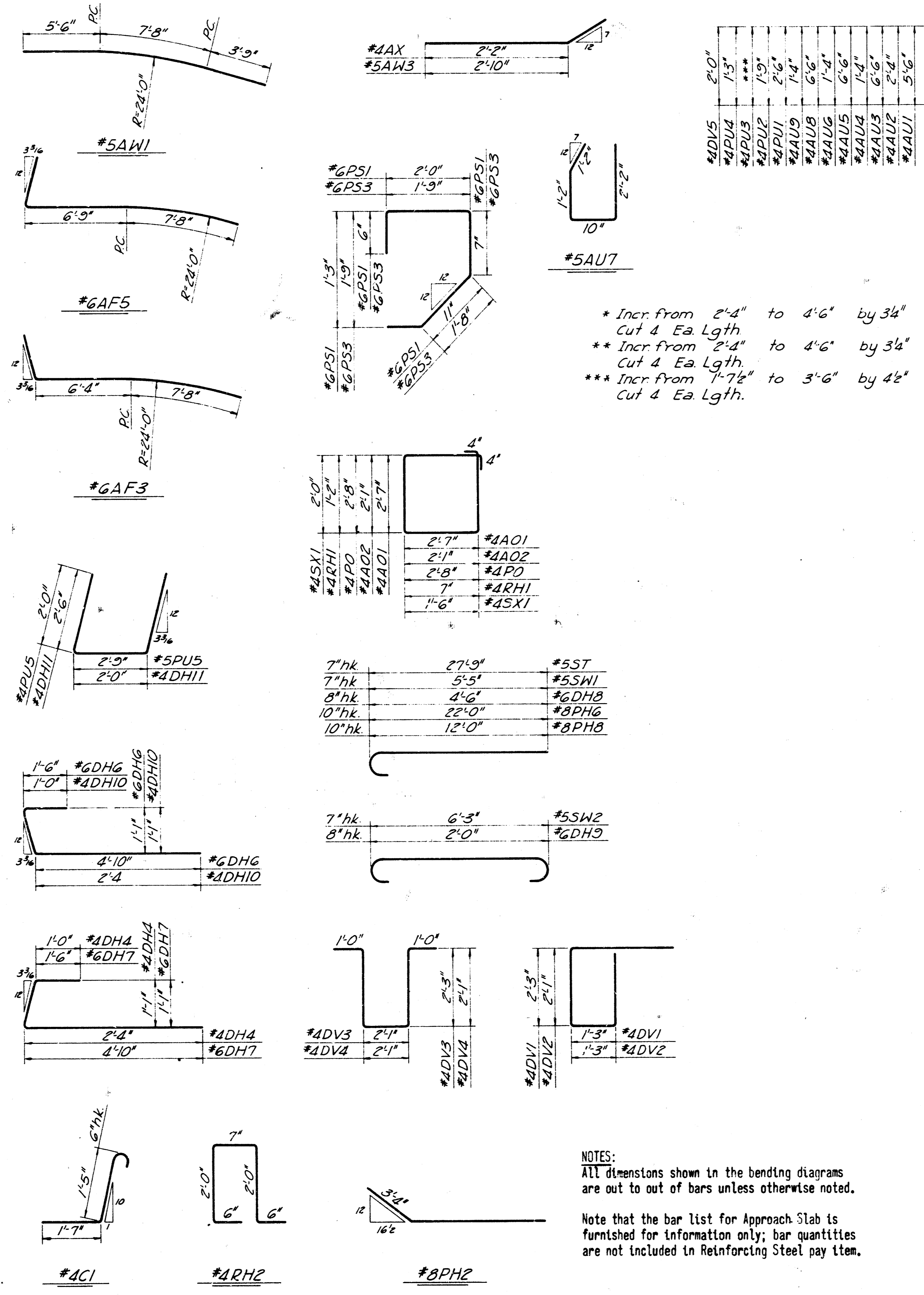
SECTION F-F

NOTES:  
 Class AAA(AE) Concrete shall be used in the Superstructure, including Curbs and Diaphragms, except for Prestressed Beams. Bevel all exposed edges with a 3/4" triangular molding unless otherwise noted.  
 All dimensions relative to placement of reinforcing steel are to centerline of bars unless otherwise noted. See Sheet 9 for Bar List and Bending Diagrams.  
 See Sheet 7 for Beam Erection Notes.

Diaphragms shall not be placed until all beams have cured a minimum of 28 days. Topping shall be placed a minimum of three days after pier and abutment diaphragms are placed and shall preferably be placed continuously the full length of the bridge; if a joint is used it shall be at the quarter point short of the pier.  
 See Sheet 12 for Handrail Details  
 UNIT STRESSES: fc - 1,600 p.s.i. Class AAA(AE)  
 f'c - 4,000 p.s.i. Class AAA(AE)  
 fs - 20,000 p.s.i. (Reinf.)

K.H. VI-72 Revised As Built	
REV BY	DATE
CITY OF WICHITA, KANSAS R. W. LINN, P.E., CITY ENGINEER	
WOODLAWN BRIDGE OVER GYPSUM CREEK	
SUPERSTRUCTURE DETAILS	
R. S. DELAMATER CONSULTING ENGINEER WICHITA, KANSAS	DATE SEPTEMBER 1971 SCALE DWG. NO. 79-P-8

BAR LIST											
STRAIGHT BARS						BENT BARS					
Mark	No	Req	Size	Length	Mark	No	Req	Size	Length		
AF1	54	8	24'-6"		AF3	8	6	16'-0"			
AF2	7	6	15'-6"		AF5	8	6	16'-6"			
AF4	7	6	15'-0"		A01	27	4	11'-0"			
AF6	8	5	6'-0"		A02	6	4	9'-0"			
					AU1	60	4	13'-8"			
					AU2	60	4	7'-4"			
					AU3	18	4	#			
					AU4	18	4	#			
ARI	72	4	4'-0"		AU5	2	4	13'-2"			
AR2	12	4	17'-0"		AU6	2	4	4'-10"			
					AU7	8	5	5'-4"			
					AU8	1	4	17'-8"			
					AU9	1	4	10'-0"			
AW2	28	5	4'-0"		AW1	12	5	16'-11"			
					AW3	28	5	4'-0"			
					AX	100	4	5'-0"			
*See Bending Diagrams											
ONE PIER											
PH1	4	8	30'-0"		PH2	8	8	19'-6"			
PH3	4	7	21'-0"		PH6	8	8	22'-0"			
PH4	4	7	21'-0"		PH8	6	8	12'-10"			
DH5	4	8	24'-0"		PO	27	4	11'-4"			
DH7	4	7	22'-0"								
PH9	8	5	4'-6"								
PX	104	4	3'-6"		PUI	52	4	7'-9"			
					PUP	48	4	6'-3"			
					PUS	12	4	#			
					PUD	14	4	5'-3"			
					PUS	10	4	6'-9"			
*See Bending Diagrams											
SUPERSTRUCTURE											
SL1	156	4	23'-0"		DV1	102	4	7'-9"			
SL2	132	4	27'-6"		DV2	20	4	7'-5"			
SL3	213	5	40'-0"		DV3	102	4	8'-7"			
SL4	152	7	35'-0"		DVA	20	4	8'-3"			
SL5	142	8	11'-0"		DV5	26	4	4'-9"			
SL6	66	4	15'-6"		ST	528	5	28'-4"			
SB	522	4	27'-9"		SW1	12	5	6'-0"			
DH1	49	6	19'-6"		SW2	620	5	7'-5"			
DH2	12	6	21'-0"		DH4	4	4	4'-6"			
DH3	162	4	3'-9"		DH6	12	6	7'-5"			
DH5	32	4	5'-0"		DH7	4	6	7'-5"			
					DH8	24	6	5'-2"			
RI	16	4	4'-2"		DH9	12	6	3'-4"			
R2	120	4	7'-9"		DH10	4	4	4'-6"			
					DH11	8	4	7'-0"			
PS2	12	6	19'-6"		RH1	180	4	4'-2"			
PS4	8	6	4'-6"		RH2	260	4	5'-7"			
					PS1	102	6	5'-4"			
					PS3	20	6	5'-1"			
ONE APPROACH SLAB											
CT1	2	6	12'-0"		CI	26	4	3'-6"			
AS1	76	8	11'-8"								
AS2	26	5	29'-0"		SX1	57	4	7'-8"			
SX2	12	8	30'-0"								



GENERAL NOTES:

EXISTING STRUCTURE: The Contractor shall remove the existing structure, consisting of 100', three span steel beam bridge, on wood timber piers and abutments, with laminated timber deck; salvage to become the property of the Contractor, to be removed from the job.

COMPACTED EMBANKMENTS: The Contractor shall construct the embankments and the berms at the abutments as shown on Sheet No. 3 and on the Contour Map prior to construction of the bridge.

BRIDGE EXCAVATION: All bridge excavation shall be Class III. See Sheet 12 for limits of pay excavation.

SOUNDINGS: Sounding information shown on Sheet 3 is as obtained from borings made in the field, by Engineering Testing Company, and represents the best information available to the City of Wichita.

PILES: Piles shall be 16" prestressed concrete in piers and 10" steel piles in abutments, as described and detailed on Sheet 10. Piles shall be driven to the penetration shown unless in the opinion of the Engineer such penetration cannot be secured without injury to the pile. All piles shall be driven to a minimum computed bearing value of 45 tons per pile in abutments, 55 tons per pile in piers.

PILE DRIVING: All piles shall be driven with a steam or diesel hammer; if a diesel hammer is used, sufficient hammer data shall be provided to permit rating by the Engineer before driving starts.

CONCRETE: Class A(AE) concrete shall be used in abutments and piers, except for prestressed piles. Class AAA(AE) concrete shall be used in the superstructure, including curbs and diaphragms, except for prestressed beams. Bevel all exposed edges with a 3/4" triangular molding unless otherwise noted.

REINFORCING STEEL: All dimensions relative to reinforcing steel placement are to centerline of bars unless otherwise noted. All dimensions shown in bending diagrams are out to out of bars.

UTILITY HANGERS: Concrete inserts for pipe hangers for gas and water lines are to be furnished by the Contractor and installed as shown and detailed.

DESIGN: Design Loading: HS20-44 A.A.S.H.O. Spec. (1969 Edition)

Unit Stress:  $f_c = 1,600$  psi Class A(AE)  
 $f_c = 1,200$  psi Class A(AE)  
 $f_s = 20,000$  psi (Rein.)  
 $f'_c = 4,000$  psi Class AAA(AE)  
 $f'_c = 3,000$  psi Class A(AE)

Pile Loading: 55 tons per pile in piers  
 45 tons per pile in abutments

QUANTITIES: All quantities shown on these plans shall be used as final pay quantities except that measurement and payment for piling, common excavation and compaction of earthwork shall be in accordance with the specifications.

GENERAL REQUIREMENTS: It is the intention of these plans and specifications that construction of the bridge shall be in accordance with applicable standard specifications and requirements of the Kansas State Highway Commission and that materials shall conform to these specifications unless otherwise noted.

NOTES:  
 ALL dimensions shown in the bending diagrams are out to out of bars unless otherwise noted.  
 Note that the bar list for Approach Slab is furnished for information only; bar quantities are not included in Reinforcing Steel pay item.

PUB. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	KANSAS		19	9	12

REV	BY	DATE	DESCRIPTION

K.H.VI-72 Revised As Built

CITY OF WICHITA, KANSAS  
 W. LINN, P.E., CITY ENGINEER

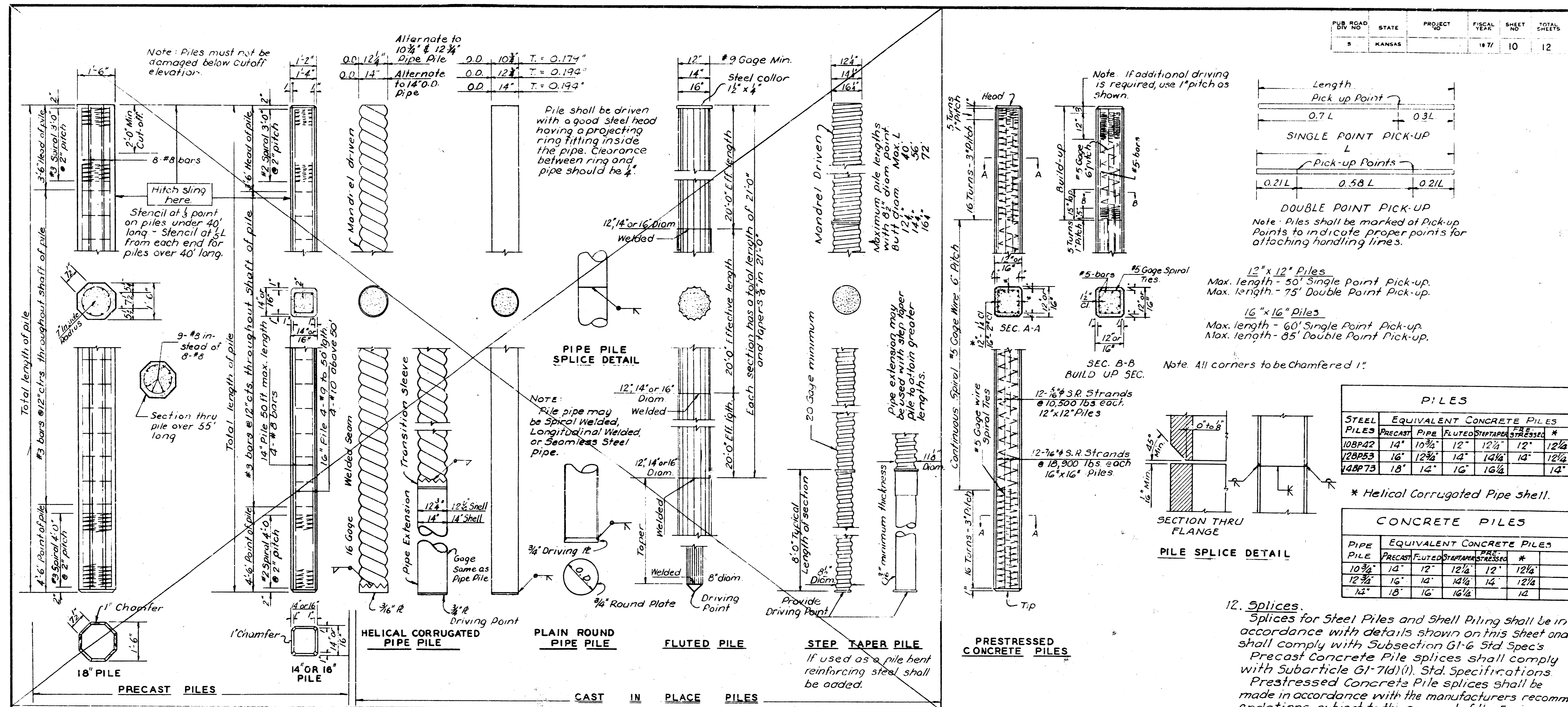
WOODLAWN BRIDGE OVER  
 GYPSUM CREEK

AUXILIARY DETAILS

R. S. DELAMATER  
 CONSULTING ENGINEER  
 WICHITA, KANSAS

DATE: SEPTEMBER 1971  
 SCALE: \_\_\_\_\_  
 DWG. NO.: 79-P-9

PUR. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	KANSAS		1971	10	12



**GENERAL NOTES**

1. **Specifications.**  
Standard Specifications for State Road and Bridge Construction as currently used by the State Highway Commission of Kansas (Ed. 1966).

**Choice of Piles.**  
Where Piles are specified, the Contractor may elect to use either the Steel Pile specified on the plans or the equivalent precast concrete, cast-in-place concrete or prestressed concrete pile shown on the construction layout sheet.  
Where Concrete Piles are specified the Contractor may elect to use either the size and type concrete pile specified on the plans or the equivalent precast concrete, cast-in-place concrete or prestressed concrete pile shown on the construction layout sheet.  
Other types of concrete piles not shown here are subject to the approval of the Engineer. Prestressed Concrete piles, Helical Corrugated Pipe Shell or Step Taper piles shall not be used for abutments without expansion joints on bridges more than 150 ft. long.

3. **Concrete.**  
All concrete for Precast and Cast-in-place shall be Class A Concrete.  $f_c = 3,000$  p.s.i. See Article G1-7(a) Standard Specs.  
Concrete for Prestressed Concrete piles shall be Class AAA Concrete.  $f_c = 4,000$  p.s.i. See Article G1-7(b) Standard Specs.

4. **Reinforcement**  
Reinforcing bars shall be new billet steel of intermediate grade without exception. Hoops and spirals may be either plain or deformed bars.

5. **Precast Piles**  
Precast piles shall conform to the requirements of Article G1-7(a) Standard Specifications.

6. **Cast-in-Place Shells.**  
Steel Shells for Cast-in-place Concrete Piles shall conform to the requirements of Section U-7 Standard Specifications.  
All piles driven without mandrel use gages or thicknesses shown above, except fluted pile use No. 9 gage minimum. Piles driven with mandrel shall be of sufficient strength and thickness to withstand driving without injury and to resist harmful distortion and/or buckling due to soil pressure after the mandrel is removed.  
Improperly driven, broken or otherwise defective shells shall be removed and replaced or otherwise corrected to the satisfaction of the Engineer by removal and replacement, or the driving of an additional pile at no extra cost.  
The Contractor shall maintain on the job at all times prior to and during the filling of the shells, a light suitable for visual inspection of the pile.

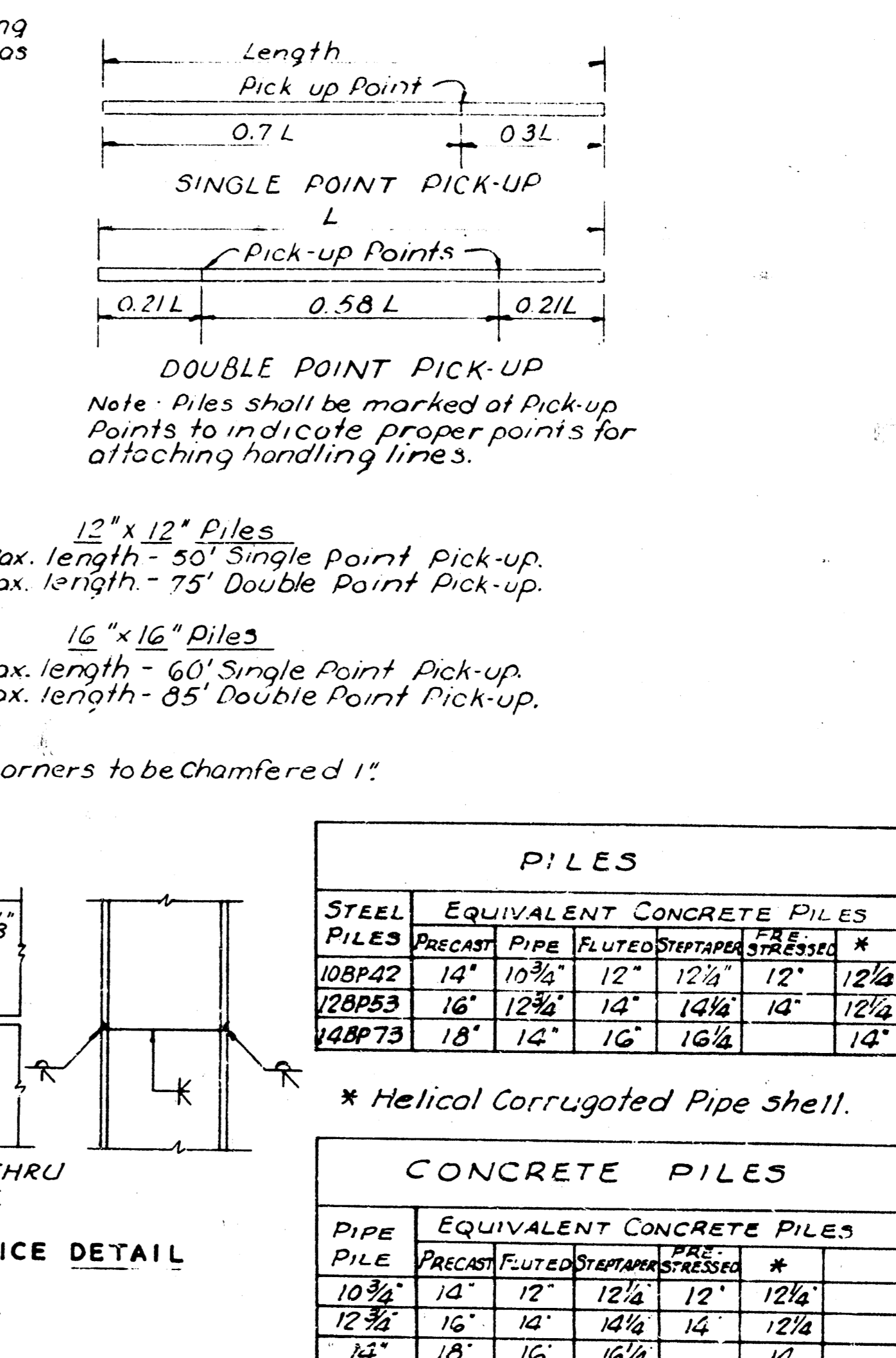
7. **Steel Pile**  
Steel Pile shall conform to requirements of Sub-section U5-8 Standard Specifications.

8. **Pile Points**  
Pile points shall conform to the dimensions shown and requirements of Article U7-2(c) Standard Specifications. Pile points shall be mill welded to pile.

9. **Welding**  
All field welding shall meet the requirements of Sub-section G1-6 Standard Specifications.

10. **Point**  
All point shall comply with Subsection G3-B Standard Specifications. Or as specified on the plans.

11. **Test Piles**  
Test Piles shall be driven where called for on the Bridge plans. All test piles shall be located so that they will become part of the Bridge Pile system.



12. **Splices.**  
Splices for Steel Piles and Shell Piling shall be in accordance with details shown on this sheet and shall comply with Subsection G1-6 Std Specs.  
Precast Concrete Pile splices shall comply with Subarticle G1-7(d)(1) Std Specifications.  
Prestressed Concrete Pile splices shall be made in accordance with the manufacturers recommendations, subject to the approval of the Engineer.

13. **Driving Formula.**  
Driving Formula shall conform to Subarticle G1-4(d)(3).

14. **Mill Test Reports.**  
Steel Piles Test reports shall comply with Art. U5-8(c) Standard Specifications.  
Steel Shells test reports for cast-in-place piles shall comply with Subsection U7-4 Std Specs.

15. **Payment**  
Payment for all piles shall comply with Subsec. G1-9. Std. Specifications.

5	8-26-64	Revise Entire Gen. Note	J.C.L.	R.E.W.
4	8-8-64	Add Longitudinal Welded Pipe Pile	J.C.L.	T.W.O.
3	7-9-64	Revise Pipe Pile General Note	J.C.L.	T.W.O.
2	3-27-64	Revise Pipe Pile General Note	J.C.L.	T.W.O.
1	1-24-64	Move hole in Prestressed Conc. Pile	J.C.L.	T.W.O.

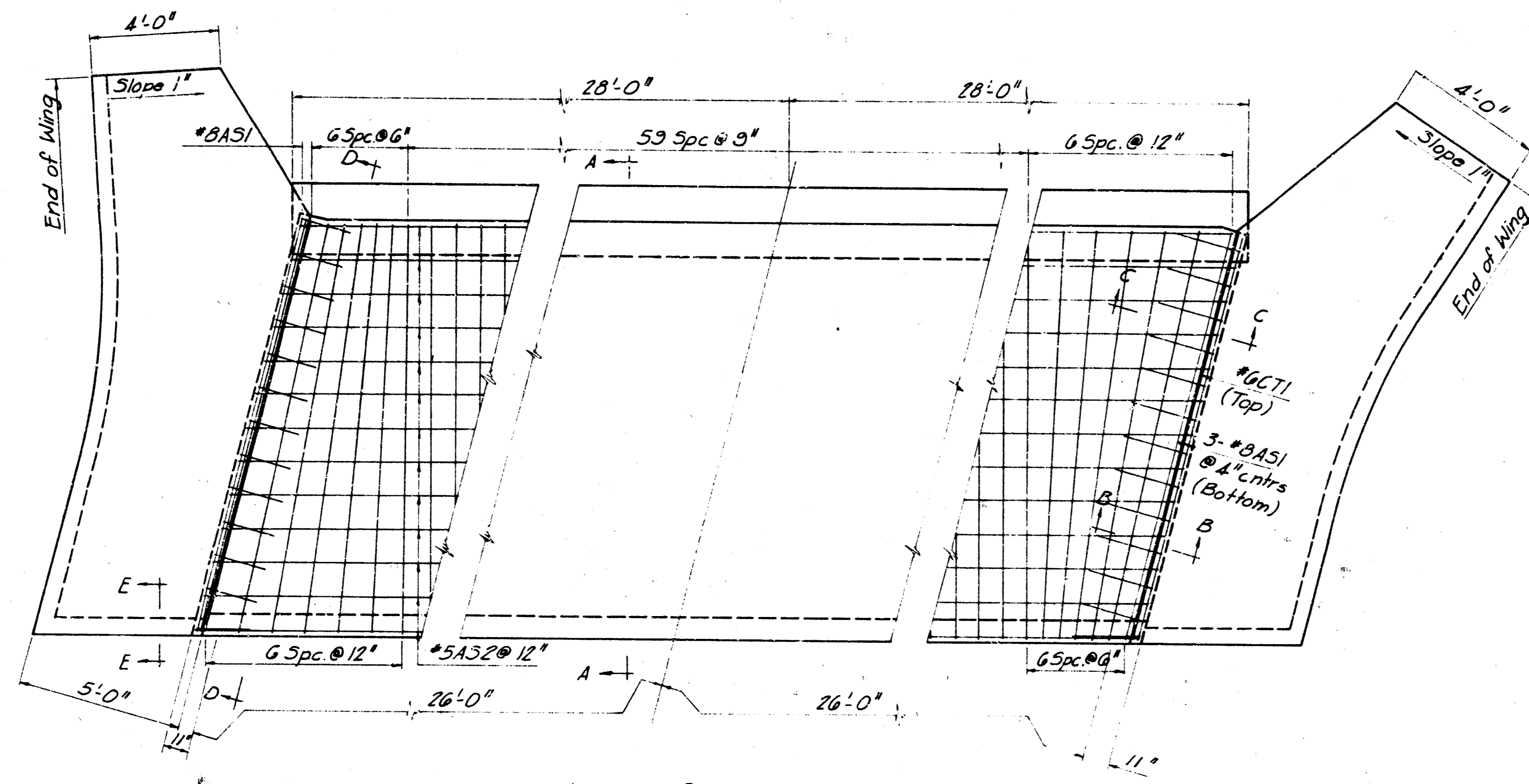
STATE HIGHWAY COMMISSION OF KANSAS

STANDARD PILE DETAILS

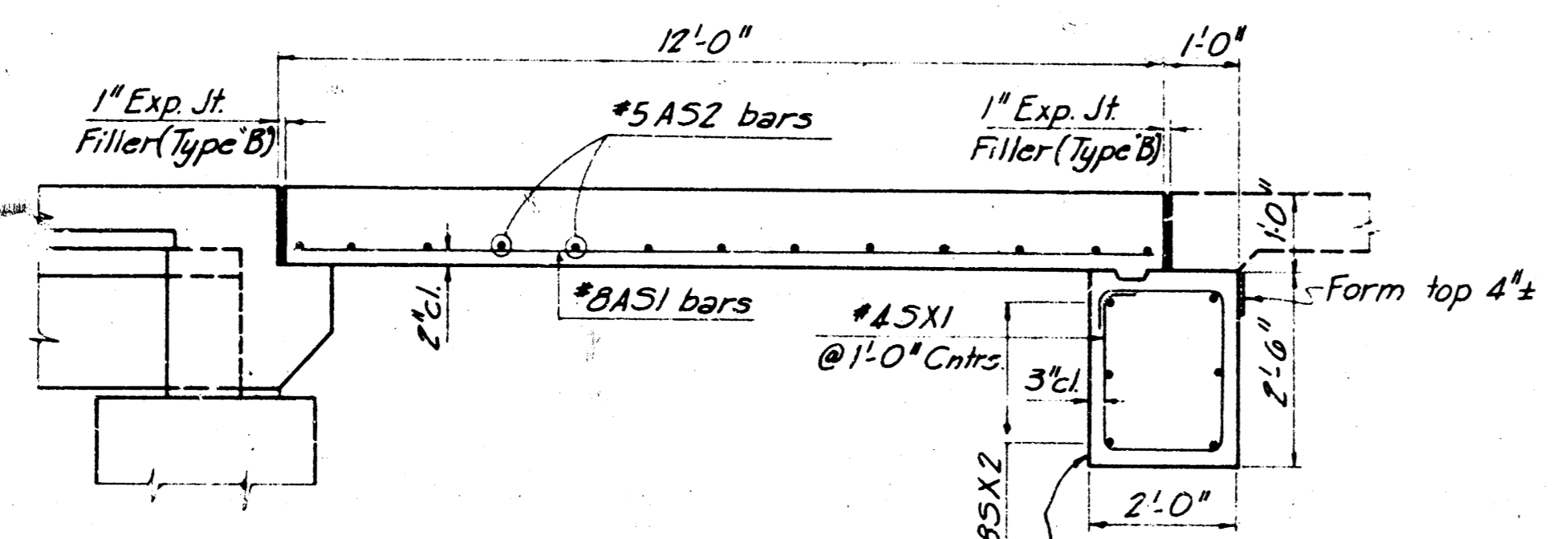
STD. NO. 102

DESIGNED BY: K.H. VILIZ  
CHECKED BY: J.C.L.  
SCALE: AS SHOWN  
APP'D: J.C.L.  
QUANTITIES: J.C.L.  
TRACED: J.C.L.

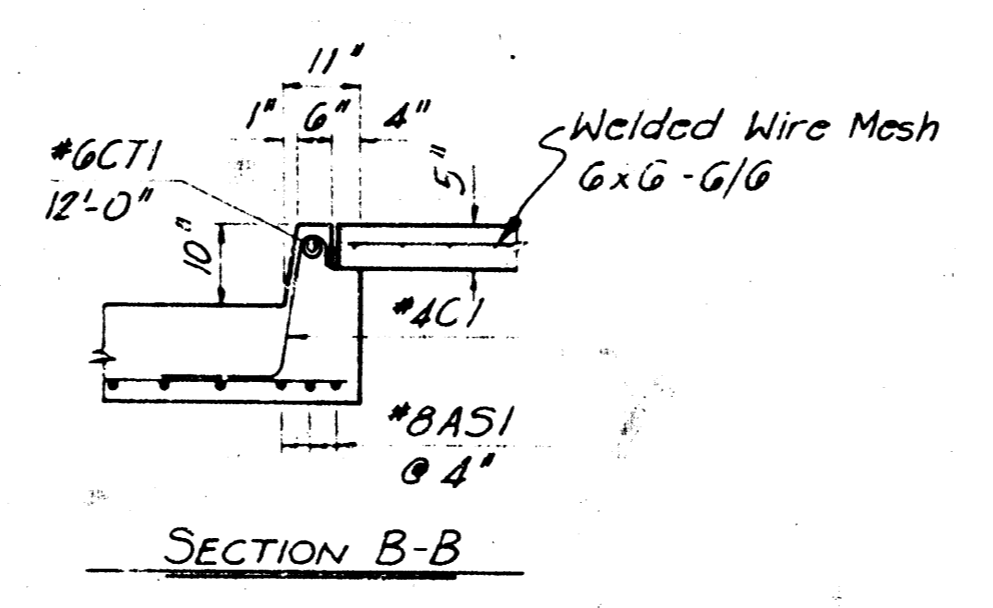
PUB. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
0	KANSAS		1977	11	12



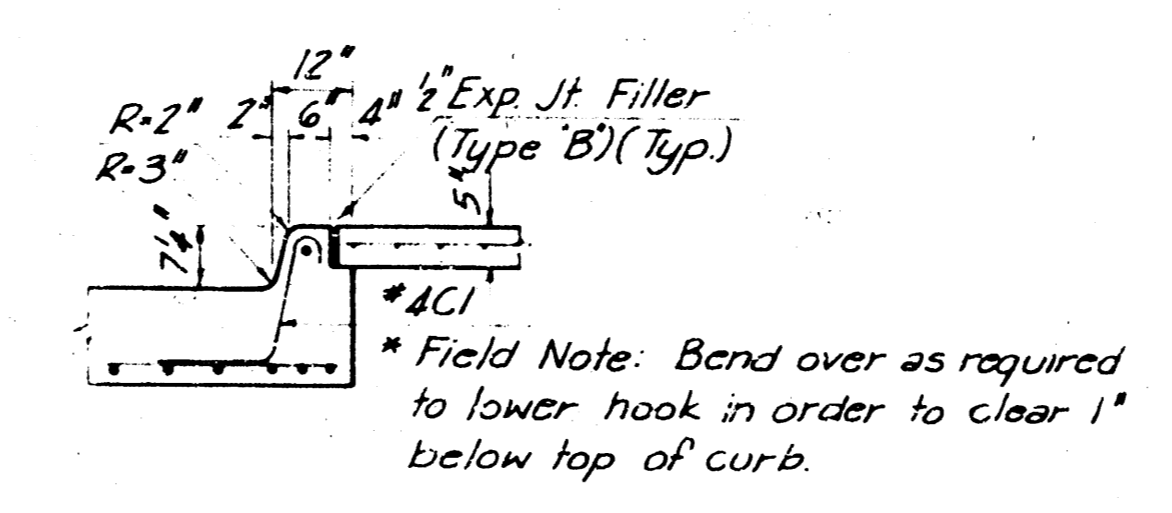
APPROACH SLAB  
PLAN SHOWING REINFORCEMENT



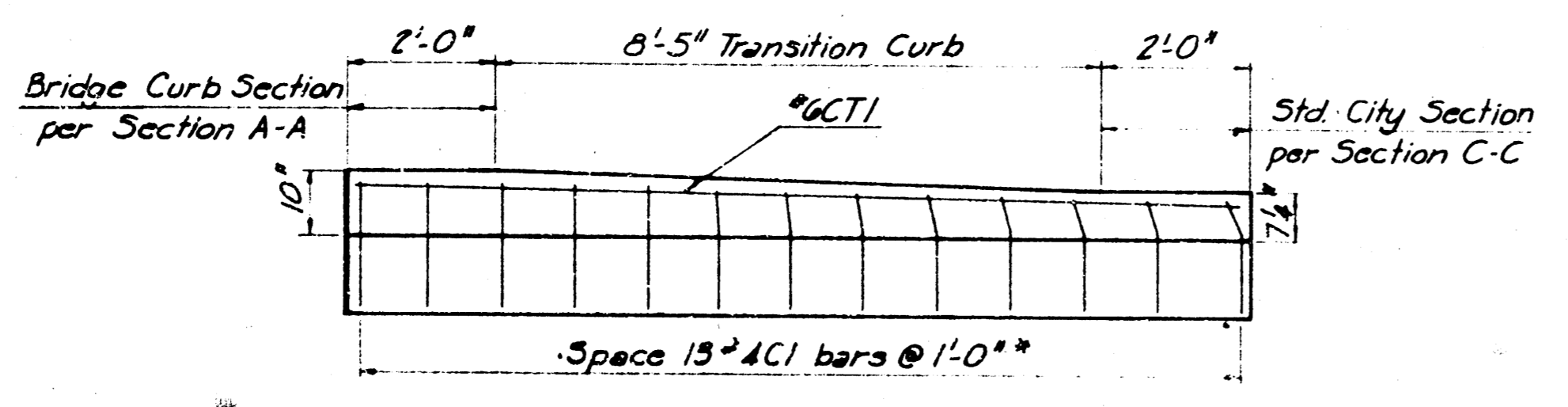
SECTION A-A  
NOTE: Pour against neat lines of excavation, no forming except as shown.



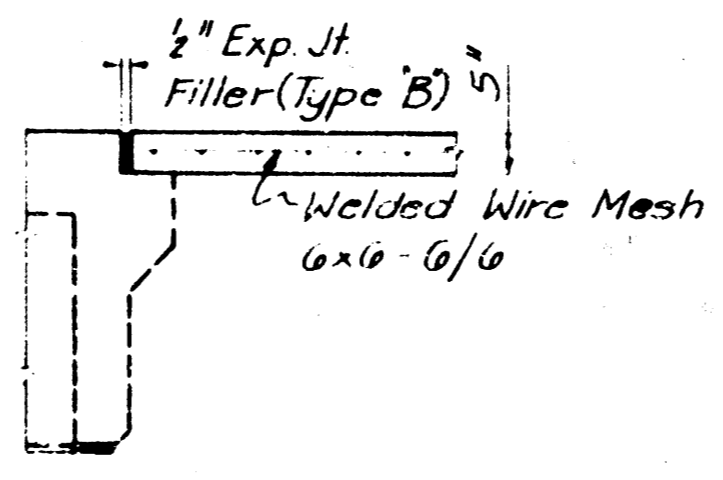
SECTION B-B



SECTION C-C  
\* Field Note: Bend over as required to lower hook in order to clear 1" below top of curb.



SECTION D-D



SECTION E-E

NOTES:  
The item "Approach Slab" includes fine grading, and furnishing, forming, placing and finishing all concrete and reinforcing steel required for one approach slab at each end of the bridge, as detailed on this sheet.

Cure the concrete as provided for bridge deck.

Use Class AAA(AE) Concrete in approach slabs, including sidewalks.

See Sheet 9 for General Notes.

See Sheet 9 for Bar List and Bending Diagrams, (for information only).

Approximate Quantities, Each Slab (Two thus)  
Concrete, Class AAA(AE) 38.5 Cu. Yds.  
Reinforcing Steel 4,580 Lbs.\*  
\*Includes 80 Lbs. wire mesh

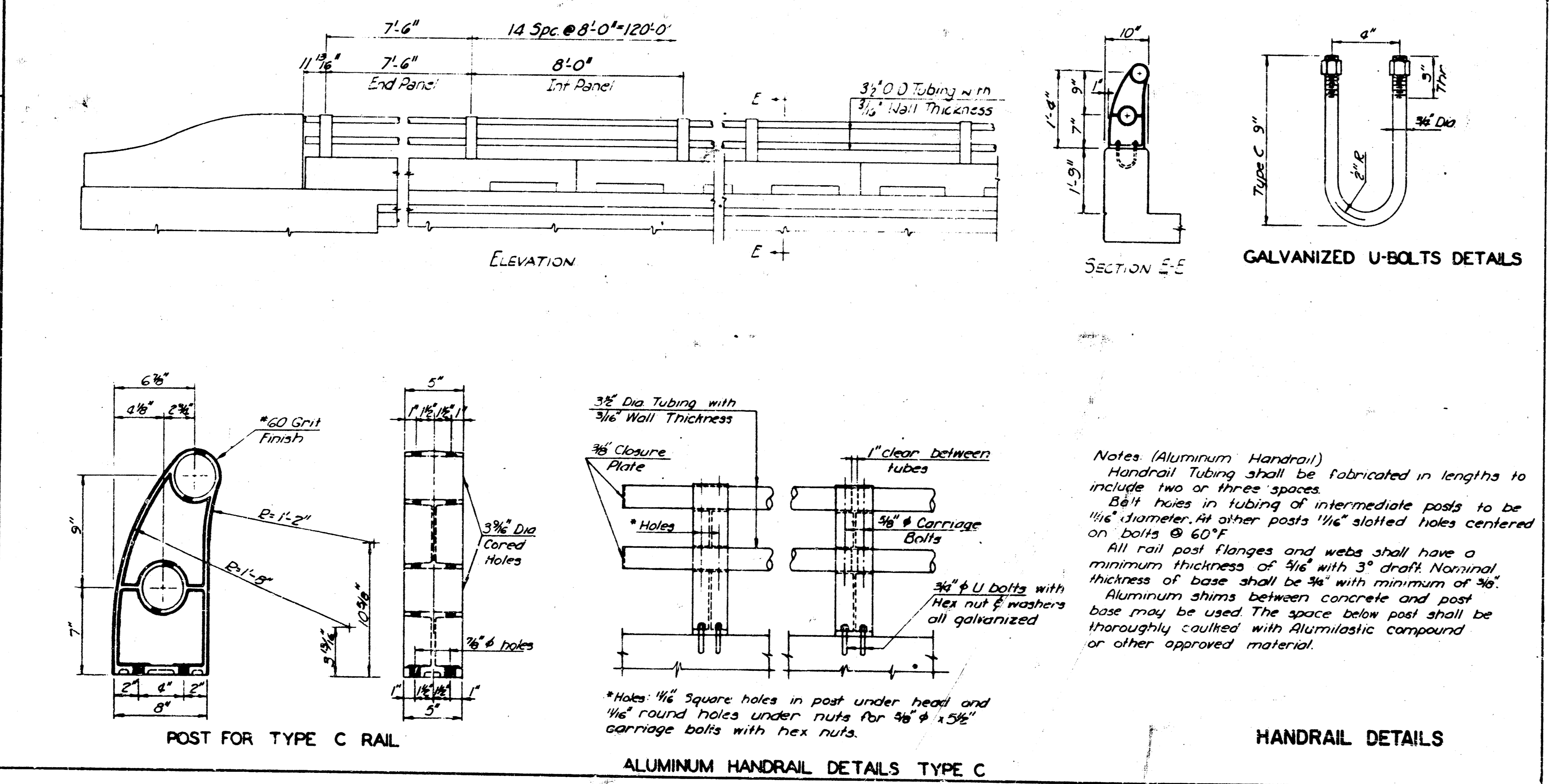
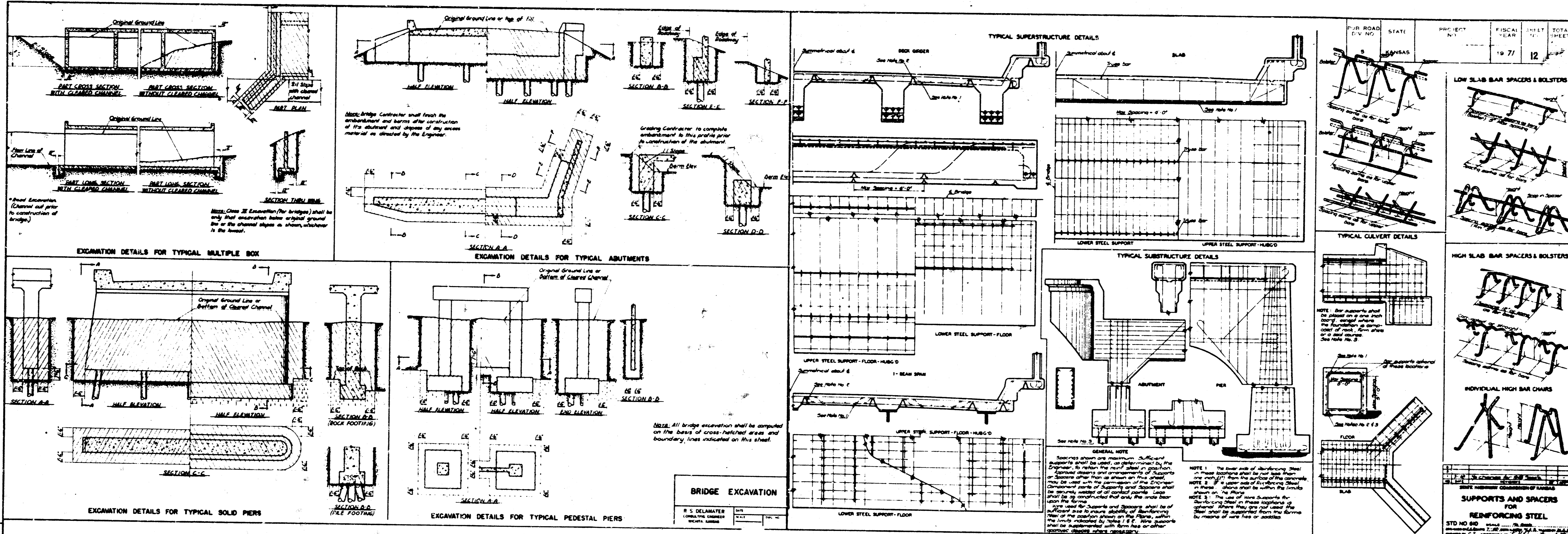
REV.	BY	DATE	DESCRIPTION
1	K.H. VI-72	Revised As Built	

CITY OF WICHITA, KANSAS  
R. W. LINN, P.E., CITY ENGINEER  
WOODLAWN BRIDGE OVER  
GYPSUM CREEK

**APPROACH SLAB DETAILS**

R. S. DELAMATER  
CONSULTING ENGINEER  
WICHITA, KANSAS

DATE: SEPTEMBER 1971  
SCALE: ————  
DWG. NO.: 79-P-11



**SUMMARY OF BRIDGE QUANTITIES**

Item	Abut #1	Pier #1	Pier #2	Abut #2	Superst.	Total	Unit
Excavation, Class III	100			100		200	Cu. Yds.
Class AAA(AE) Conc.					203d	* 203d	Cu. Yds.
Class A(AE) Conc.	747	230	230	747		1954	Cu. Yds.
Reinforcing Steel	6,680	3,350	3,350	6,680	71,900	91,960	Lbs.
Prest'r'd Conc. Beams					36	36	Each
Aluminum Handrail					254	254	Lin. Ft.
Steel Piles (10")	330			495		825	Lin. Ft.
Prest'r'd Conc. Piles (16")		360	405			765	Lin. Ft.
Approach Slabs						2	Each

**SUMMARY OF GRADING QUANTITIES**

Item	Quan.	Unit
Large Trees	10	Each
Common Excavation	34,360	Cu. Yds.
Compaction of Earthwork	18,940	Cu. Yds.
Removal of Exist Structure	L. S.	L. S.
Dumped Rock Rip Rap	2,150	cu. Yds.

\*NOTE: Superstructure concrete quantity includes allowance for concrete required to level up prestressed beam camber.

**Revised As Built**

DATE: \_\_\_\_\_

CITY OF WICHITA, KANSAS  
R. W. LINN, P.E., CITY ENGINEER

WOODLAWN BRIDGE OVER  
GYPSUM CREEK  
BAR SUPPORTS, BR. EXC., HANDRAIL

**SUMMARY OF QUANTITIES**

R. S. DELAMATER  
CONSULTING ENGINEER  
WICHITA, KANSAS

DATE: SEPTEMBER 1971  
SCALE: \_\_\_\_\_  
DWG NO: 79-P-12